NABET

Northeastern Association Of Business, Economics, and Technology

2009 Proceedings

of the

32nd Annual Meeting

October 29th & 30th, 2009

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History and Purpose of NABET

This organization is in its thirty-second year of existence. It formerly was known as APUBEF (The Association of Pennsylvania University Business and Economics Faculty). It was founded by a small group of Economics professors of the fourteen state universities comprising the Pennsylvania System of Higher Education. Their goal was to provide a platform for sharing and exploring scholarly work among the business faculty of the fourteen state universities in Pennsylvania. As a result of their efforts, the organization has sponsored an academic conference each year for the past 30 years.

Over the years, the fundamental goal of NABET/APUBEF has been to target the business faculty of the small business colleges in Pennsylvania, and surrounding states. The organization has been successful in achieving this goal for the past several years. In 2006 the Executive Board determined that the APUBEF organization should be renamed as NABET and become regional in scope. As a result, the October 2007 – 09 annual meetings presented and average of 85 scholarly and pedagogical papers and workshops for each of those years. These presentations featured authors from eight states including nearly 60 different colleges and universities.

The original founders also established a referred journal, the former Pennsylvania Journal of Business and Economics. It has been renamed as the Northeastern Journal of Business, Economics and Technology. The journal applies a double blind review process and is listed in Cabell‘s Directory. It is published at least once each year, and has a devoted editorial staff supported by an excellent corps of reviewers.

NABET PROCEEDINGS EDITORIAL POLICY AND PROCEEDURES

Articles submitted for inclusion in the 2009 Proceedings are reviewed for grammar, consistency with the original topic presented, and format. After the conference, authors are given about a month to revise their manuscripts and to submit the completed papers to the Proceedings editor. No abstracts are accepted. Upon receipt, the article is forworded to one of the Proceedings co-editors for initial review. Umpon completion of the initial review, the article is sent back to the editor for assembly and final editing. No articles are accepted that were not presented at the Conference. Thus the Proceedings reflect only the actual proceedings at the Conference.

ARE PROFESSIONAL AUDITORS OVERCONFIDENT IN THEIR ABILITIES TO MAKE ACCURATE GOING-CONCERN JUDGMENTS?

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ABSTRACT

This paper examines the extent to which professional auditors are overconfident in their abilities to predict whether or not a company will continue as a going concern. According to auditing standards, auditors are required to determine if substantial doubt exists regarding an audit client's likelihood of continuing as a going concern for one year from the date of the financial statements being audited. Prior research indicates that auditors are prone to "hindsight bias" when making going-concern judgments. Hindsight bias is the tendency for individuals who have been provided the outcome of an event to overstate their abilities to have predicted that outcome in foresight. Prior research assumes that the presence of hindsight bias creates overconfidence, and that this overconfidence will adversely affect the accuracy of subsequent probability judgments made in foresight. This assumption has never been tested, however, and non-hindsight studies found in the confidence literature suggest that the assumption might not hold true for experienced professionals, such as auditors. Using an experimental methodology, the current study finds that auditors are prone to hindsight bias, but finds no evidence that this bias leads auditors to be overconfident in their abilities to make accurate going-concern judgments.

INTRODUCTION

According to Auditing Standards (AICPA, 1988; AICPA, 1990), auditors are required to determine if substantial doubt exists regarding an audit client's likelihood of continuing as a going-concern for one year from the date of the financial statements being audited. This paper examines the extent to which professional auditors are overconfident in their abilities to make accurate going-concern judgments due to the presence of hindsight bias. Hindsight bias is the tendency for individuals who have been provided with the outcome of an uncertain event to systematically overstate their abilities to have predicted that outcome in foresight (Fischhoff, 1975). Further, individuals deny that knowledge of the event's actual outcome has affected their predictions. Hindsight bias has been found to influence several audit judgments, including internal control evaluations (Reimers & Butler, 1992), audit opinion decisions (Reimers & Butler, 1992), preliminary analytical review judgments (Biggs & Wild, 1985; Heintz & White, 1989; McDaniel & Kinney, 1994; Kennedy, 1995), and going-concern judgments (Anderson, 2000; Anderson, 2006; Kennedy, 1993; Kennedy, 1995; Maddocks, 1989).

According to the psychological literature (e.g., Fischhoff, 1975; Hawkins & Hastie, 1990), the "knew-it-all-along" attitude created by hindsight bias creates overconfidence which impedes feedback learning, thereby reducing what individuals could potentially learn from the feedback provided by the outcome. If auditors believe they "knew all along" that a bankrupt company was going to fail, they will not learn what they should from the outcome and will believe more often than they should that they could have actually predicted the outcome. It is assumed that hindsight bias will cause auditors to be overconfident in their abilities to accurately make subsequent going-concern judgments in foresight. This overconfidence may lead auditors to believe they have little reason to re-evaluate and improve their decision making processes and evidence gathering strategies regarding going-concern judgments.

The increasing scale of corporate bankruptcies and the current economic crisis make it more important than ever for auditors to learn from the feedback provided by actual bankruptcies and to avoid overconfidence when making these judgments. Of the 20 largest U.S. corporate bankruptcies since 1980, all but three occurred after the first quarter of 2001 with six occurring during 2009. The two largest, Lehman Brothers Holdings, Inc. and Washington Mutual, Inc. occurred during September 2008 (BankrupcyData.com, 2009). Also, many economists agree that the United States' economy is currently in the midst of the worst economic crisis since the Great Depression of the 1930's. This situation clearly creates the potential for a dramatic increase in the number of U.S. companies filing for bankruptcy. This places increasing pressure on auditors to accurately assess the going-concern status of their clients so that the appropriate audit opinion can be issued.

Case studies describing the facts surrounding recent U.S. bankruptcies are appearing in auditing textbooks and are being used in public accounting firm training programs (Arens, Elder & Beasley, 2010). In order to learn as much as possible from the feedback provided by these case studies, it is critical that auditing students as well as professional auditors not be adversely affected by the presence of hindsight bias.

Prior psychological studies (e.g., Fischhoff, 1975; Synodinos, 1986; Powell, 1988; Hoch & Lowenstein, 1989) and auditing studies (e.g., Kennedy, 1993; Kennedy, 1995; Anderson, 2000; Anderson, 2006) have assumed that hindsight bias impairs future foresight judgments by creating overconfidence. This overconfidence is assumed to exist in all situations where hindsight bias is found to exist. It is assumed that this overconfidence creates an "I-knew-it-all-along" effect which reduces what is learned from the feedback provided, thereby leading to future judgment errors.

However, it is only an assumption that hindsight bias automatically impedes feedback learning in every situation by creating overconfidence. This assumption has not been subjected to empirical testing in either the psychological or accounting literature. In fact, due to this accepted untested assumption, prior psychological (e.g., Davies, 1987) and auditing (e.g.,

Anderson, 2006; Kennedy, 1995) studies have focused on developing debiasing strategies aimed at reducing hindsight bias. It has been suggested that these debiasing strategies be incorporated into audit training programs, which would be costly and may be unnecessary if in fact this untested assumption that hindsight bias always leads to overconfidence is not true.

In a recent study which examines the effects of hindsight bias on jurors' evaluations of auditor negligence, Peecher and Piercey (2008) found that for relatively high Bayesian posteriors, subjects' posterior judgments about auditor negligence were objectively better in hindsight than in foresight. In other words, they found that hindsight bias is potentially functional. Peecher and Piercey (2008) did not examine whether or not hindsight bias leads to overconfidence; however, their finding that hindsight bias does not always lead to dysfunctional judgments does lend credence to the need to empirically test whether or not hindsight bias leads to overconfidence.

Confidence studies found in the psychological literature (to be discussed further in the next section) provide a theoretical basis for questioning the assumption in the hindsight literature that hindsight bias always leads to overconfidence. These studies have found a negative correlation between level of expertise and knowledge and the degree of overconfidence exhibited. Gigerenzer (1991) and Lichtenstein & Fischhoff, (1977) found that subjects who knew less were overconfident; whereas, subjects who knew more were underconfident. These confidence studies do not involve hindsight bias, nor do they use auditors as subjects.

In short, determining whether or not hindsight bias does in fact cause auditors to be overconfident when making going-concern judgments is imperative in terms of guiding future hindsight research and in terms of developing cost effective audit training programs that will ultimately improve auditors' abilities to make accurate going-concern judgments. Before investing more resources toward additional hindsight debiasing research and toward altering existing auditor training programs, the assumption that hindsight bias always leads to overconfidence should be subjected to empirical testing. In an auditing experiment involving going-concern judgments, this paper finds no evidence that hindsight bias causes auditors to be overconfident in their going-concern judgments.

THEORY AND HYPOTHESES

Presence of hindsight bias

Fischhoff (1975) coined the term "creeping determinism" to describe the process he believed was responsible for hindsight bias. According to Fischhoff, "Upon receipt of outcome knowledge judges immediately assimilate it with what they already know about the event in question. In other words, the retrospective judge attempts to make sense, or a coherent whole, out of all that he knows about the event" (1975, 297). Because the process was hypothesized to be quick and unconscious, Fischhoff described the outcome information as "creeping" into the subject's mental representation of the event resulting in cognitive restructuring. The characteristic effect of creeping determinism is the proclivity to view a known outcome as nearly inevitable, as revealed in retrospective probability judgments, because of the seemingly unalterable sequence of events leading up to it (Hawkins & Hastie, 1990). The "creeping determinism" hypothesis is consistent with more of the hindsight literature results than any other explanation offered (Hawkins & Hastie, 1990).

Prior research reveals the presence of hindsight bias in several accounting settings. Financial statement users asked to assess a company's viability have been found to be prone to hindsight bias (Buchman, 1985). Jurors (Lowe & Reckers, 1994; Kadous, 2000;

Kadous, 2001) and judges (Anderson et al., 1995; Anderson et al., 1997) asked to evaluate the actions of auditors have also been found to be prone to the bias. Brown and Solomon (1987) found that capital-budgeting decisions are influenced by outcome information. In an auditing study involving internal control evaluations and audit opinion decisions, Reimers and Butler (1992) found that auditors exhibit significant (insignificant) hindsight bias when provided with surprising (unsurprising) outcome information.

Consistent with these findings, Kennedy (1993, 1995) first predicted that auditors are prone to hindsight bias when making going-concern judgments. This hindsight effect in an audit setting has been replicated by Anderson (2000, 2002, 2006). Kennedy (1995) found that auditors exhibit the bias when making analytical review judgments. Anderson (2000) found that the number of years of experience does not affect the degree of hindsight bias exhibited by auditors; both experienced and inexperienced auditors are prone to hindsight bias to the same extent. These findings suggest that auditors, regardless of experience level, are prone to hindsight bias.

Based on these prior findings, this study predicts that auditors are subject to hindsight bias when making going-concern judgments. This is not an original hypothesis. However, before testing the impact of hindsight bias on auditor confidence, it is first necessary to determine if the auditor subjects in the current study are in fact prone to hindsight bias, which leads to the first hypothesis:

H1: Auditors with outcome information will judge the reported outcome as more likely to occur than will auditors not provided with outcome information.

Hindsight Bias and Overconfidence

Past psychological research (e.g., Synodinos, 1986; Powell, 1988; Hoch & Lowenstein, 1989) and auditing research (e.g., Kennedy, 1993; Kennedy, 1995; Anderson, 2000; Anderson, 2006) assumes that hindsight bias leads to overconfidence in probability judgments. It is argued that if individuals believe they knew all along the outcomes of uncertain events, then they will believe more often than they should that they could have actually predicted the outcomes (Hawkins & Hastie, 1990). It is assumed that such overconfidence will contribute to judgment errors when a decision maker is confronted with future foresight judgments. However, this is an <u>assumption</u>; it has not been empirically tested.

This assumption does have some support in the confidence literature involving non-hindsight studies. In these studies, confidence in one's knowledge is usually measured by requesting subjects to answer a series of questions followed by a request to state their confidence in the correctness of their answers (Novarese, 2009; Van Den Steen, 2004; Klayman et al., 1999). In studies involving student subjects, the general finding is that subjects are overconfident, and they systematically overestimate the correctness of their answers (Rabin & Schray, 1999; Russo & Schoemaker, 1992).

However, the confidence literature also finds that there is a negative correlation between level of expertise and knowledge and the degree of overconfidence exhibited. Gigerenzer (1991) and Lichtenstein & Fischhoff (1977) found that subjects who knew less were overconfident; whereas, subjects who knew more were underconfident. Grimes (2002) found that greater experience and knowledge lead to lower confidence. Novarese (2009) found that as knowledge and performance levels increased, subjects went from being overconfident to being underconfident. Novarese (2009) concluded that a better capacity to evaluate what one knows due to experience can cause an awareness of what one does not know, thereby creating underconfidence.

Auditors have a high level of specialized knowledge and expertise pertaining to going-concern judgments. Experience is particularly important in connection with going-concern judgments given that such judgments are typically made by highly-experienced members of accounting firms. The confidence literature suggests that this experience would lead auditors to be underconfident when making going-concern judgments. The hindsight literature, on the other hand, assumes that hindsight bias always leads to overconfidence. This countervailing effect found in the confidence literature raises questions over the assumption that auditors subject to hindsight bias will be overconfident. Therefore it needs to be empirically tested, which leads to the following hypothesis:

H2a: Auditors with outcome information will be more confident in their probability judgments than will auditors without outcome information.

The current study also explores the extent to which the level of experience affects auditor confidence. Anderson (2000) found that the number of years of experience does not affect the degree of hindsight bias exhibited by auditors; both experienced and inexperienced auditors are prone to hindsight bias to the same extent. These findings suggest that auditors, regardless of experience level, are prone to the same amount of hindsight bias. The hindsight literature assumes that this would then lead to the same level of overconfidence between experienced and inexperienced auditors.

However, based on the findings in the confidence literature, it might be expected that the more experience auditors have, the less confidence they would exhibit. Thus, it would be expected that experienced auditors (i.e., partners and managers) would be less confident in their going-concern judgments as compared to inexperienced auditors (i.e., staff auditors). In short, the hindsight literature assumes no difference in the degree of overconfidence between experienced and inexperienced auditors, but the confidence literature suggests that inexperienced auditors would be more confident than experienced auditors. The current study tests the assumption found in the hindsight literature leading to the following hypothesis:

H2b: Experienced auditors with outcome information will be no more or less confident in their probability judgments than will inexperienced auditors with outcome information.

RESEARCH METHOD

Experimental design

In order to test the proposed hypotheses, one experiment was conducted. The basic design used is a 2X3 factorial. The two between-subjects factors are experience and outcome. The experience factor has two levels, high (i.e., managers and partners) and low (i.e., staff auditors). The outcome factor has three levels: no outcome, (i.e., the foresight condition), failure outcome (i.e., the hindsight condition – the company files for bankruptcy), and the success outcome (i.e., the hindsight condition – the company continues in business and does not file for bankruptcy). The dependent variables are the auditor's going-concern probability judgment (hereafter referred to as a viability judgment) and the auditor's confidence rating of their viability judgment.

Subjects and procedure

The subjects were asked to judge the likelihood that a troubled company would or would not continue as a going concern. The sample of subjects consisted of 114 auditors from international public accounting firms. Responses to the debriefing questionnaire revealed that the mean auditing experience for the experienced (inexperienced) auditors was 9.4 (1.4) years. Given the findings in the confidence literature that there is a negative correlation between level of expertise and knowledge and the degree of overconfidence exhibited, it is important that the current study uses auditors as subjects and not students.

Subjects were first segregated into two groups based on experience (experienced – managers and partners; inexperienced – staff auditors) and then were randomly assigned to experimental conditions. Each subject received a packet of materials, consisting of a sealed envelope, a page of general instructions, and either five or six pages of case data (including a case review task). After completing the case review task, the written instructions indicated that the subjects were to open the sealed envelope. The envelope contained: the outcome information (if provided), the viability judgment task, the confidence rating task, and the debriefing task. The subjects were not allowed to use reference materials and were required to work independently. The sealed envelope approach used in this study is commonly used throughout the hindsight literature as a means of disclosing the outcome information to subjects (e.g., Maddocks, 1989; Kennedy, 1995).

Case review task

The subjects were provided with a page of general instructions. They also received a narrative summary of pertinent information for a real, but disguised, chemical manufacturer and three years of financial data for that manufacturer. The narrative summary contained an equal number of adverse factors (cues pointing toward failure) and mitigating factors (cues pointing toward success). The financial data included the financial statements (i.e., a balance sheet, income statement, and statement of cash flows), a summary of financial highlights, and a set of financial ratios.

Figure 1 illustrates the experimental tasks that the subjects were asked to perform. The subjects' first task was to review the case data for Alpha Chemical, Inc. (the fictitious name given to a real chemical manufacturer). They were instructed to assume the role of audit supervisor for the most recent Alpha audit. They were also told that the fieldwork had been completed, but the final audit opinion had not yet been written. They were to review Alpha's financial statements in an attempt to assess viability.

Figure 1
Experimental Tasks

Steps

I	Review Case Data (Task #1)
II	Failure (Success) Outcome Provided to Subjects in Failure (Success) Outcome Condition
III	Viability Judgment Task (Task #2)
IV	Confidence Rating Task (Task #3)
V	Debriefing Questionnaire (Task #4)

Viability judgment task

After reviewing the case data, subjects were instructed to begin the second task, the viability judgment. Before making their viability judgments, subjects in the failure outcome condition were informed that the company did file for bankruptcy during the last half of the year subsequent to the year under audit. Subjects in the success outcome condition were informed that the company did continue in existence as a going concern throughout the year subsequent to the year under audit. Subjects in the no outcome condition were not provided with any outcome information.

All subjects were instructed to assume that it was the last day of fieldwork for the year-end audit. They were reminded that at that time they would not have known whether the company was going to succeed or whether it was going to fail, so were told to ignore the fact that they now know the outcome. They were instructed to estimate the likelihood that the company would or would not continue as a going concern throughout the year subsequent to the year under audit by placing an "X" on a probability scale ranging from 0% (certain NOT to continue) to 100% (certain to continue).

Confidence Rating Task

Immediately following the viability judgment task, subjects were asked to rate their confidence in that judgment. Subjects were asked to rate their confidence in their viability judgment on a seven-point scale anchored on 0, not at all confident, to 6, extremely confident.

Debriefing task

The final task for all subjects was completing a one-page debriefing questionnaire. Subjects were asked to indicate their number of years and months of experience, their current rank within their firm (partner, manager, staff), and the number of minutes they took in completing the experiment. They were also asked to indicate both the number of audit engagements they had been associated with in which substantial doubt existed regarding the client's ability to continue as a going concern and their degree of involvement in the going-concern evaluation of these clients. In addition, they were asked to rate their degree of proficiency at evaluating a company's going-concern status. Finally, subjects in the failure outcome and success outcome conditions were asked to indicate the degree of influence, if any, the outcome information had on their viability judgments.

RESULTS

Results of tests of hypothesis 1

H1 predicted that, despite instructions to ignore outcome information, auditors with outcome information would judge the reported outcome as more likely to occur than would auditors not provided with outcome information. More specifically, auditors informed that the case company failed (continued) would be more likely to judge the continued viability of the company as being less (more) likely than the auditors not provided with outcome information. The means and standard deviations for the viability judgment dependent variable are presented in Table 1. The viability judgment scale ranged from 0%, the company is certain not to continue, to 100%, the company is certain to continue. Using a 0% to 100% probability scale is commonly used in the hindsight literature dating back to Fischhoff's first studies (Fischhoff, 1975; Fischhoff, 1977).

Table 1

Means & (Standard Deviations) of Viability Judgments by Experimental Conditions

	OUTCOME		
	No	Failure	Success
Experience			
High	57.37%	55.05%	64.42%
	(17.19)	(17.66)	(18.67)
	n = 19	n = 19	n = 19
Low	63.95%	53.68%	69.58%
	(17.12)	(16.90)	(17.00)
	n = 19	n = 19	n = 19

ANOVA results – interaction effects

To test the effect of outcome information on auditors' viability judgments, a 2X3 (experience by outcome) ANOVA was performed. The experience factor has two levels (i.e., high and low), and the outcome factor has three levels (i.e., no, failure, and success).

The ANOVA results are presented in Table 2. The two-way interaction between experience and outcome is not significant (p= 0.80). However, the main effect of outcome is significant (p=0.00).

Table 2
ANOVA: Experience by Outcome on Viability Judgments

Source of Variation	SS	DF	MS	F	sig. of F
Experience	.038	1	.038	1.21	.272
Outcome	1.308	2	.654	20.91	.000
Exp. by Outcome	.014	2	.007	.22	.803

Simple main effect tests

In order to determine the effect of outcome on auditor viability judgment, simple main effect tests consisting of a series of contrasts were conducted. The means contrasted are the combined means for the experienced and inexperienced auditors taken from Table 1.

The combined mean viability judgments are summarized below:

No Outcome………..60.66%
Failure Outcome……54.37%
Success Outcome…..67.00%

In order to test H1, it is necessary to determine if the failure outcome mean viability judgment of 54.37% and the success outcome mean viability judgment of 67.00% are significantly different from the no outcome viability judgment of 60.66%. The failure outcome subjects' mean viability judgment of 54.37% is significantly less than the no outcome mean viability judgment of 60.66% (p = .05, one-tail probability). This indicates that, despite instructions to ignore the outcome information, being informed that the company failed caused the subjects in the failure outcome condition to judge continued viability as less likely than did the no outcome subjects. In other words, the failure outcome subjects were prone to hindsight bias.

In addition, the success outcome subjects' mean viability judgment of 67.00% is significantly greater than the no outcome subjects' mean viability judgment of 60.66% (p = 0.05, one-tail probability). This indicates that, despite instructions to ignore the outcome information, being informed that the company continued caused the subjects in the success outcome condition to judge continued viability as more likely than did the no outcome subjects. In short, both the failure outcome and the success outcome subjects were prone to hindsight bias. This provides support for H1; auditors with outcome information judged the reported outcome as more likely to occur than did auditors not provided with outcome information.

Results of tests of hypothesis 2

H2a predicted that auditors with outcome information will be more confident in their viability judgments than will auditors without outcome information. H2b predicted that experienced auditors will be no more or less confident in their viability judgments than will inexperienced auditors. The means and standard deviations for the confidence rating dependent variable are presented in Table 3.

Table 3
Means & (Standard Deviations) of Confidence Ratings Experimental Conditions

	OUTCOME		
	No	Failure	Success
Experience			
High	3.368	3.263	3.895
	(1.423)	(1.147)	(1.449)
	n = 19	n = 19	n = 19
Low	3.368	3.316	3.895
	(1.012)	(1.057)	(.809)
	n = 19	n = 19	n = 19

ANOVA Results

To test the effect of outcome information on auditors' confidence ratings, a 2X3 (experience by outcome) ANOVA was performed. The experience factor has two levels (i.e., high and low), and the outcome factor has three levels (i.e., no, failure, and success).

The ANOVA results are presented in Table 4. The two-way interaction between experience and outcome is not significant (p=.85). The main effect of outcome is not significant (p=.12), and the main effect of experience is not significant (p=.53). A test of homogeneity of variance was conducted, and the assumption of homogeneity of variance was supported.

H2a predicting that auditors with outcome information will be more confident in their viability judgments than will auditors without outcome information is not supported. H2b predicting that experienced auditors will be no more or less confident in their viability judgments than will inexperienced auditors is supported.

Table 4
ANOVA: Experience by Outcome on Confidence Ratings

Source of Variation	SS	DF	MS	F	sig. of F
Experience	.531	1	.531	.39	.531
Outcome	5.711	2	2.855	2.12	.121
Exp. by Outcome	.430	2	.215	.16	.851

CONCLUSION

In light of the current economic crisis facing the United States, it is more important than ever for auditors to accurately assess the going-concern status of their clients and to issue the appropriate audit opinion. The purpose of this paper is to examine whether or not the presence of hindsight bias causes auditors to be overconfident in their abilities to make accurate going-concern judgments. Prior hindsight studies in both the psychological and accounting literature assume that hindsight bias automatically leads to overconfidence in future foresight judgments in virtually all situations. However, this assumption has never been subjected to empirical testing.

The main contribution of this study is that it does empirically test the assumption that hindsight bias leads to overconfidence. Using an auditing experiment involving going-concern judgments, this paper finds that, although the auditor subjects did exhibit hindsight bias as predicted, this bias did not lead the auditors to be overconfident in their judgments. In short, the current study finds no evidence of a confidence effect. Based on these findings coupled with the findings in the confidence literature, the hindsight literature should exercise caution in naively assuming that hindsight bias leads to overconfidence in all situations. Confidence is a complex construct, and there are several known factors such as existing knowledge and expertise that exacerbate or diminish overconfidence. These factors are likely present in the case of professional auditors making going-concern judgments.

If hindsight bias does not cause auditors to be overconfident when making going-concern judgments, then there is no need to devote resources toward changing existing audit training programs in an effort to eliminate hindsight bias as suggested by previous auditing research. It may also be unnecessary to continue conducting research studies aimed at developing debiasing strategies that eliminate hindsight bias. If hindsight bias does not lead to overconfidence, it may not be as dysfunctional as previously assumed. In fact, in a recent study examining the effects of hindsight bias on jurors' evaluations of auditor negligence, Peecher and Piercey (2008) found that for relatively high Bayesian posteriors, subjects' posterior judgments about auditor negligence were objectively better in hindsight than in foresight. In other words, they found that hindsight bias is potentially functional. Future hindsight research needs to continue examining the extent to which hindsight bias is functional versus dysfunctional. It is also important that in the area of auditor judgments that future research avoid the use of student subjects.

The results of this study must be interpreted in light of certain limitations. First, failure to find a significant confidence effect may be due to an insufficient sample size or the specific details of the experiment. Second, the study involves a sample of auditor subjects from international public accounting firms which limits the ability to generalize the results to smaller public accounting firms at the national, regional, and local levels. Third, it is difficult to determine whether the subjects were sufficiently motivated to concentrate on the experimental tasks and to complete the tasks as they would in practice. Fourth, the subjects did not have access to the array of information, resources, and consultations with others that would normally be available to them during an actual audit. Also, the subjects may not have been able to relate to many situations in practice in which they are required to ignore known outcomes and state explicitly what judgments they would have made at some point in the past.

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SOCIO-ECONOMIC FACTORS, FREEDOM, AND HAPPINESS

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ABSTRACT

This paper investigated the impact of socio-economic factors on happy life and life satisfaction for all countries and for countries based on freedom status. The empirical results suggested that socio-economic factors are statistically significant in improving only life satisfaction but not in increasing happiness in life. The results showed that socio-economic factors improve happy life only in counties that are relatively free.

INTRODUCTION

Factors leading to happiness have been studied for decades by psychologists, but economic research has focused on happiness as a measure of human satisfaction only during the past few decades. Happiness research is based on the concept that individuals' principal goal is happiness or life satisfaction. Research on happiness in the field of economics is getting more and more attention since the pioneered work by Richard Easterlin, called Easterlin Paradox (1974). Original study by Easterlin showed a paradox, called happiness – income paradox. According to studies by Richard Easterlin (1974, 1995, and 2009) happiness and income have a direct relationship at a point in time, but not over time. Studies by Clark, Frijters and Shields (2008), Di Tella and MacCulloch (2008) favor the paradox, whereas studies by Stevenson and Wolfers (2008) do not favor the paradox. Most studies about happiness find that wealthier individuals are, on average, happier than poor ones within a country. As a group, on average, wealthier countries are happier than poor countries. Cross countries and over time studies found very little relationship between increase in per capita income and average level of happiness. Aggregate levels of happiness do not increase as nations get wealthier. Happiness depends on many other factors than just the level of income. Studies by Bruni and Porta (2005), Frey and Stutzer (2002), and Layard (2005) on happiness have focused on the effect of measures, such as, age, marital status, education, gender, inflation, health, and personal freedom. These studies have reported mixed results.

OBJECTIVE

The main objective of this research is to provide new evidence on the relationship between happiness and socio-economic factors, with special emphasis on the role of freedom. The research hypothesis is that the socio-economic factors will have significant effect on happiness and life satisfaction if countries are relatively free. More specifically, the objectives of this study are: (1) to examine the trends in happiness over time. (2) to compare the annual rate of change in happiness and the annual rate of change in real gross domestic product per capita. (3) to compare correlation between socio-economic factors and happiness after grouping countries based on freedom status. (4) to empirically estimate the effects of socio-economic factors on happiness for all countries and for groups of countries based freedom status.

Freedom is measured by political rights, civil liberties, democracy index, and economic freedom. Political rights index involves free and fair governmental election, freedom to form political parties, independence of political party from religion. Civil liberties involve freedom of expression, belief, religion, press, associational and organizational rights, and respect for the rights of minorities. Democracy index includes set of principles and practices that protect freedom. Countries have free and fair elections, government is elected by majority rule and human and minority rights are protected. Economic freedom involves private ownership of resources, personal choice, and freedom to compete. Higher values for political rights, civil liberties, and democracy mean less freedom, whereas for economic freedom, higher value means more freedom. Even though different measures of freedom may be correlated to each other, countries are not equally ranked in these measures of freedom and countries don't improve equally in all measures of freedom. Secondary data from the World Values Surveys, Freedom House, and World Development Indicators are used. Variables used in the study are: GINI = gini coefficient, HDI = human development index, RGDPK = real gross domestic product per capita, LEI = life expectancy index, ALR = adult literacy rate, EI = education index, CL = civil liberties, PR = political rights, EF = economic freedom, DEM = democracy index. The level of happiness is measured by happy life and life satisfaction.

EMPIRICAL RESULTS

To examine the trend in happiness over time for different countries, percentage of people saying they were very or quite happy was calculated from 1990 to 2005-08 for 40 countries. Happiness increased in 37 out of 40, which is in contrast to the belief that happiness remains constant over time.

In order to find whether there is any link between the changes in happiness and changes in income, changes in these variables were compared with each other. The percentage of people saying they were very or quite happy increased by 40 percent in Great Britain from 1990 to 2005-08, the largest increase in more than 15 years, but the annual rate of change in real gross domestic product per capita was only 2.5 percent. Whereas countries with highest rate of growth in real gross domestic product per capita, like China, Korea, Poland, and India had less than 1 percent increase in the number of people saying they were very or quite happy. In Poland, this number was little over 1 percent (1.24 percent).

Real gross domestic product per capita increased by more than 1.6 percent in countries where the percentage of people saying they were very or quite happy was either decreased or increased by a very small amount. Countries where the annual rate of change in real gross domestic product per capita was less than 1 percent do experienced significant increase in the number of people saying they were very or quite happy.

The above results showed that the link between happiness and real gross domestic product is not very strong.

The effects of socio-economic factors on happiness were examined through correlation statistics and regression analysis. The correlation statistics are presented in Tables 1 and 2 and regression results are presented in Tables 3 and 4. Countries were divided into two groups based on the freedom status.

Human development and life expectancy index are statistically correlated with happy life only for counties that are free. Income and happy life are also significantly correlated for all countries, but when countries are divided into two groups, the income is not correlated to happy life for countries that are partly free or not free. Similar results are obtained for measures of freedom. Life satisfaction instead of happy life seemed to have been affected by socio-economic factors (Table 2).

Regression results presented in Table 3 and 4 are for each factor separately. These results show that socio-economic factors increase life satisfaction for all countries, but the effect on happy life depends on the freedom status. Real gross domestic product per capita has a significant impact on life satisfaction for all countries, but higher income improves happy life only for countries that are relatively free. Human development index and life expectancy index increase happy life only if countries are relatively free.

Income inequality, measured by gini coefficient has a statistically significant impact on both life satisfaction and happy life in countries that are not free or partly free, but is not significant in countries that are free. If people are free, income inequality does not seem to have an effect on happiness. Freedom may be considered more important than the level of income.

The empirical results show that happy life and life satisfaction are two different measures and are affected by different factors. Improvements in life satisfaction do not mean people are living a happy life too. People may be satisfied with life, but may not be happy. In order to make people happy, countries should focus on being free.

The above study will be extended by including more measures of socio-economic factors, such as, culture, age, marital status and so on. It is believed that some people are born happy. Happiness is in their culture. Factors like age and material status have also been shown to have an impact on happiness. Simultaneous regression equations will be used to examine the impact of happiness and socio-economic factors on each other.

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Table 1
Correlation with Happy Life

	All Countries	Free Countries	Not Free and Partly Free Countries
GINI	0.12*.	0.079	0.181*
HDI	0.104	0.443**	0.198
RGDPK	0.422**	0.845**	0.068
LEI	0.111	0.375*	0.067
ALR	-0.306	-0.352	-0.229
EI	-0.047	0.114	-0.268
CL	-0.164	-0.394*	-0.281
PR	-0.162	-0.431*	-0.304
EF	0.285*	0.422**	0.207
DEM	-0.165	-0.44**	-0.300

* Significance at 0.05 level (2-tailed)
** Significance at 0.01 level (2-tailed)

Table 2
Correlation with Life Satisfaction

	All Countries	Free Countries	Not Free and Partly Free Countries
GINI	0.183*	0.157	0.398*
HDI	0.649**	0.487**	0.146
RGDPK	0.554**	0.589**	0.408*
LEI	0.581**	0.487**	0.464*
ALR	0.468*	0.054	0.374
EI	0.587**	0.410*	0.356
CL	-0.455**	-0.488**	-0.122
PR	-0.466**	-0.451*	-0.294
EF	0.482**	0.501**	0.393*
DEM	-0.354*	-0.54**	-0.199

* Significance at 0.05 level (2-tailed)
** Significance at 0.01 level (2-tailed)

Table 3
Effects of Socio-Economic Factors on Happy Life

Independent Variable	All Countries	Free Countries	Not Free and Partly Free Countries
GINI	0.004 (1.95)	0.003 (0.48)	0.007 (1.84)
HDI	0.00001 (0.83)	1.42 (3.09)	0.0001 (0.91)
RGDPK	0.00001 (3.75)	0.00002 (5.28)	-0.000004 (-0.31)
LEI	0.21 (0.89)	1.01 (2.53)	-0.31 (-0.88)
ALR	-0.006 (-1.96)	-0.01 (-1.52)	-0.004 (-0.97)
EI	-0.10 (-0.38)	0.47 (0.74)	-0.53 (-1.25)
CL	-0.03 (-1.34)	-0.13 (-2.68)	-0.07 (-1.34)
PR	-0.02 (-1.32)	-0.17 (-2.99)	-0.06 (-1.46)
EF	0.09 (2.36)	0.19 (2.87)	0.06 (0.95)
DEM	-0.01 (-1.35)	-0.08 (-3.06)	-0.03 (-1.44)

Table 4
Effects of Socio-Economic Factors on Life Satisfaction

Independent Variable	All Countries	Free Countries	Not Free and Partly Free Countries
GINI	0.02 (1.24)	0.01 (0.84)	0.07 (2.03)
HDI	3.36 (5.73)	3.06 (3.55)	4.11 (3.09)
RGDPK	0.00004 (4.46)	0.00004 (3.93)	0.00001 (2.67)
LEI	2.84 (4.76)	2.62 (2.96)	3.01 (2.90)
ALR	0.02 (2.75)	0.01 (0.94)	0.03 (3.22)
EI	2.81 (4.86)	2.10 (2.42)	3.46 (3.55)
CL	-0.26 (-3.47)	-0.42 (-3.01)	-0.25 (-0.95)
PR	-0.22 (-3.57)	-0.43 (-2.72)	-0.24 (-1.36)
EF	0.49 (3.73)	0.49 (3.06)	0.79 (1.65)
DEM	-0.09 (-2.43)	-0.27 (-3.40)	-0.12 (-1.21)

A RISK ANALYSIS OF FIXED AND VARIABLE RATE LOANS

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ABSTRACT

The economic environment since 2007 has seen substantial volatility. While there are various reasons for this, many blame the losses from collateralized mortgage obligations. Chief among these losses were those from the subprime markets as well as those from variable rate loans (ARMs). While there are financial situations where the use of variable rate loans is financially optimal, borrowers are usually better off using fixed rate loans. This paper will examine industry standard underwriting criteria applied to holders of both fixed and variable rate loans to examine the riskiness of the loans each year for five years from the inception of the loan.

INTRODUCTION

In the early spring of 2008, there was a little noticed but fateful increase in interest rates. With the increased interest rates, there was a corresponding drop in the price home purchasers could afford to pay. This drop in affordability resulted in a drop in the demand. The drop in demand weakened prices that were already stretched by speculators in several key markets within the United States. Because of the substantial use of types of mortgage products that allowed purchasers to buy homes with little equity, the weakness in prices resulted in significant numbers of borrowers who found themselves with mortgages in excess of the market values of the property. In addition, the increase in interest rates resulted in the increasing of payments on variable rate mortgages reducing the affordability of those home mortgages. As a consequence, the default rate increased precipitously. As the lenders then foreclosed on the properties and placed them in the marketplace, the supply of properties increased and with no increase in the demand, prices fell. With lower prices, there were more defaults and then more foreclosures and the spiral downward had begun.

To further exacerbate the situation, many of these loans had been previously sold and made a part of various financial products. Losses mounted and large losses in these financial products were realized and investor confidence plummeted. This lack of confidence spread to other financial products and then to various financial intermediaries and finally to the banking industry. This lack of confidence led to a run on our financial institutions and a general loss in consumer confidence in the economy and reduced consumer spending. In addition, the presidential and congressional elections added to the uncertainty facing business. The stock market fell to almost half of its previous high. Significant attempts by both Republican and Democratic administrations to ameliorate the economic damage were undertaken and continue even today.

As a consequence of the traumatic economic environment, there were some important changes in the marketplace. The losses experienced by the banking industry put considerable pressure on the reserves of the FDIC. To avoid further losses, the FDIC increased their diligence and substantially reduced the flexibility previously afforded to lenders. Required down payments increased. Minimum credit scores required for a loan rose to previously unheard of levels. Sub-prime lending all but disappeared. The resulting demand caused the housing market to fall even more and defaults escalated.

Adjustable rate mortgages for home mortgages are nothing new to the mortgage market. They first became a common product in the mid to late 1970s during a period of historically high interest rates. Lenders strongly favored adjustable rate loans since the loans transferred the interest rate risk from the lenders to the borrowers. Initially, however, they were not well received because of the fear of consumers that interest rates would climb even further and that they could then no longer be able to afford their mortgage payments. In order to increase their popularity, these loans were marketed with caps on the amount that the interest could increase in any one year and also a cap on the maximum amount the interest could ever increase during the life of the loan. The loans were priced at an index rate plus a profit. Since these loans had less interest rate risk, lenders were able to price the index rate plus profit to be a little less than the fixed rate mortgage. To further increase their popularity, the lenders priced the initial rate of the loan (called by the industry a "teaser" rate) significantly below the market rate of interest.

The underwriting standards allowed lenders to underwrite the loan based upon that initial "teaser" rate. As a result, borrowers could purchase more expensive homes than possible with fixed rate loans. For example, assuming a 30-year market fixed rate mortgage of 8% and using only the historic front-end underwriting ratio of the mortgage payment should not exceed 28% of their gross income, a borrower with a family income of $50,000 would be able to qualify for a loan of $158,997. This would reflect a monthly payment of $1,166.67 ($50,000 X .28 ÷ 12). With a variable rate loan of 5.5% however, the borrower could obtain a loan of $205,475. Assuming an annual cap of 1.5% and no change in interest rates, the monthly payment for the second year would increase to $1,362.45 reflecting an increase in the interest rate to 7%. Again assuming the interest rate did not change, the monthly payment would increase to $1,497.08 reflecting an increase in the interest rate to 8%. (Since the market rate was only 8% the annual increase would only be 1% to bring it to market.) For the loan to have the same underwriting risk for the second and third years, the borrower's family income would have to increase to $58,390 for the second year and $64,160 in the third year. (The incomes are calculated by taking the monthly payment for the year, multiplying by 12 to get the annual payments and then dividing by .28.) In other words, the annual income would have to increase by 16.78% in the second year and by another 9.88% by the third year. This increasing payment is referred to as payment shock.

This paper will focus upon the underwriting risks of fixed and variable rate loans for loans created each year between 2001 and 2007 leading up to the financial market difficulties of 2008 and 2009.

REVIEW OF THE LITERATURE

There have been a number of articles published in 2008 and 2009 related to the collapse of the financial markets and the factors that may have contributed to their demise. High on many analyst lists of contributing factors is the use of Adjustable Rate Mortgages.

Thomas Sowell blames Congress for pressuring Fannie Mae, Freddie Mac, and the nation's banks for the issuance of subprime adjustable rate mortgages with no down payment, low teaser rates, no documentation of income or assets, and interest-only payments.

Elena Warshawsky sees more problems ahead with a large percentage of option ARMs issued over the past several years. Warshawsky expects 81% of options ARMs issued in 2007 to enter default and expects many of those to end in foreclosure.

Demyanyk and Van Hemert found that loan quality had deteriorated for six consecutive years leading up to the collapse and that to some extent lender's where aware of it. They also believe that problems were able to be masked by the large increase in home values between 2003 and 2005.

Koijen, Hemert, and Nieuwerburgh argue that the term structure of interest rates influences the consumer's choice of mortgage products. They suggest that when the long-term bond risk premiums are high, fixed rates are driven upward and consumers will migrate to adjustable rate products. (This finding is particularly interesting. High long-term bond risk premiums are indicative of the expectation of increasing interest rates. If the authors are correct in their assertions, consumers are selecting adjustable rate loans at precisely the time when the payment shock would continue into the future as interest rates climb.)

Coleman, LaCour-Little and Vandell suggest that sub-prime lending was not the prime culprit that led to the housing price declines in 2007 and 2008 that precipitated the financial markets decline. Rather they suggest that it may have been a shift in the credit regime in late 2003 and that Government Sponsored Enterprises (such as FNMA and FHLMC) were displaced by private issuers of new mortgage products (AIG, Leman Brothers, etc.)

METHODOLOGY

In order to examine the relative riskiness of fixed rate and variable rate consumer mortgages with standard underwriting criteria, this study used secondary data--a data set created by Bureau of Labor Statistics (BLS)—the 2007 Consumer Expenditure Interview Survey Public Use Microdata. This survey is conducted annually by the BLS; it consists of an anchoring interview for about 7, 000 or more US households followed by four successive quarterly interviews about their revenues and expenditures. The survey uses a national probability sample in a panel format, with roughly one-fifth of the households rotating off the panel and one-fifth of the households joining the panel each quarter (2007 CONSUMER EXPENDITURE INTERVIEW SURVEY PUBLIC USE MICRODATA User's Documentation February 9, 2009).

The most recent quarter (first quarter of 2008) has data on mortgage holders, their mortgages, and monthly payments for fixed rate, variable rate, or other types of mortgages as well as annual household before tax income. It can therefore serve to test the hypotheses of this study. Although quarter 1 of 2008 has a total of 6,914 households, only 3,278 of these households reported current mortgages on the housing unit in which they presently live.

Profiles of this sample showing their personal characteristics, their household characteristics, their geographic characteristics, and the housing unit characteristics are presented in Tables 1 through 4.

A debt ratio for each mortgage holder with either a fixed rate mortgage or a variable rate mortgage was computed from the ratio of monthly mortgage payment to annual household before tax income. Using the industry standard, debts ratios in excess of 28% were considered higher risk. The amount of risk, represented by the percentage of mortgages in the higher risk category, was compared for fixed and variable rate mortgages for each of the years in which mortgages were taken out that were included in the data set.

Table 5 shows the results for the riskiness percentages of fixed versus variable rate loans.

RESULTS

As Table 1in the appendix shows, the respondents for each mortgage-holding household were 50/50 in terms of gender; clustered in the higher prestige occupations (47.9% administrators, managers, teachers, or professionals); usually married (69.6%); usually white (85%); usually non-hispanic (91.5%); and, if not working, generally retired (43.8%) or taking care of the home (34.6%). This profile fits well with home owners.

As Table 2 in the Appendix shows, the most common type of family is some variation on the husband-wife family (68.4%); the most common income class is $70 K or over (55.4%); and the most common pattern of earners in the household is some variation on reference person only/reference person and spouse/ or reference person, spouse and others (74.4%). The resources of the mortgage holders are upscale.

As Table 3 in the appendix shows, most households in the sample are urban (95.8%), with representation in all census regions, but usually located in metropolitan statistical areas (89.3%) in cities of 1.20 million or more (61.1%). When the geographic locations of each of the major primary sampling units are examined, there is representation across the major metro areas. The sample's results from mortgages will be more generalizable because of this pattern of geographic coverage.

As Table 4 in the appendix shows most, housing units are single family detached (84.1%) and over 50% of them were built in 1980 or later. As far as number of units in the housing are concerned, most are either one unit, detached, or one unit, attached (88.#%). It is interesting to note, however, that the sample does include some housing with twenty units or more.

As Table 5 below shows, there are considerably more households whose payments are exceeding 50% of their income when using adjustable rate loans in contrast to fixed rate loans.

Table 5

Percentage Exceeding 50% of Gross Income in Payments

Year Loan Originated	Fixed	Adjustable
2001	10.85%	33.33%
2002	9.15%	15.38%
2003	8.63%	14.29%
2004	11.11%	17.24%
2005	12.77%	24.49%
2006	8.80%	36.36%
2007	9.86%	37.93%

What is particularly interesting about these results is that from the period of 2001 to 2007, interest rates never rose above the levels of 2001. Consequently, payment increases were due primarily to changes due to a below market "teaser" rate rather than an increase in interest rates.

MANAGERIAL IMPLICATIONS

The primary concept behind the development of the variable rate products was to allow the lender to transfer the interest rate risk from the lender to the borrower by allowing the interest rate on the mortgage to increase during periods of rising interest rates.

> (This is the risk that the market interest rate during the life of the mortgage loan would increase above the market interest rate at the time the loan was originated. Since lenders "borrow" the money they lend from the depositors, when the market interest rate increases, the lenders must pay the depositors an

increased interest rate payment in order to avoid the depositors withdrawing their money and placing it elsewhere in order to get the market interest rates. This is otherwise known as disintermediation. A lenders profit margin on a loan results from being able to "borrow" from depositors at a low rate and lending the money to mortgage consumers at a higher rate. Traditionally, when using fixed rate mortgage loans, the lenders profit margin was then squeezed as interest rates rose. If the rates rose high enough, the loans could even lose money as the lenders were required by market forces to increase their payments for deposits above what the mortgage loan was earning.)

The problem for the lenders with this product is that while they were able to transfer the interest rate risk to the borrower, the risk reduction was offset in part or in whole by an increase in the default risk. Clearly, as evidenced by the collapse in the financial markets during 2008 and the necessity of massive federal intervention in the marketplace, the lenders were not successful in reducing their overall risk. Lenders have other means of reducing interest rate risk including hedging their loan pipeline through the futures market.

Another managerial policy issue is the pricing of the loans with a "teaser rate." Since the adjustable rate loans made during the period of 2001 to 2007 may be inferred to have more risk due to the greater number of households requiring over 50% of their income to support their house payment and since the index rate in 2001 is not higher than that at the end of 2007, the increased risk may reasonable be attributed to the payment shock brought about by the teaser rate. This suggests that either the lenders should consider pricing the loans with an initial rate more reflective of the market rate or underwrite the loans using the market rate for their ratios rather than the teaser rate.

As an avenue for future research, it would be enlightening to study the costs of the various interest rate hedging programs relative to the costs of using variable rate mortgages and accepting the increase default risk associated with them. Perhaps the adjustable rate mortgage product in its current form is a more costly method of managing loan risk.

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Table 1: Respondent's Personal Characteristics of the Sample, Quarter 1 2009, Consumer Expenditure Survey Data

Characteristics	Number	Percentage or Mean with Missing Included	Percentage or Mean Without Missing Included	Total Including Missing
Gender of Respondent	3278	100	100	3278
Male	1638	50.0	50.0	
Female	1640	50.0	50.0	
Missing	0	--	--	
Hispanic Origin of Respondent	3278	100	100	3278
Yes	280	8.5	8.5	
No	2998	91.5	91.5	
Missing	0	--	--	
Racial Origin of Respondent	3278	100	100	3278
White	2785	85.0	85.0	
Black	296	9.0	9.0	
Native american	8	0.2	0.2	
Asian or pacific islander	151	4.6	4.6	
Multi-race	9	0.3	0.3	
Missing	0	--	--	
Marital Status of Respondent	3278	100	100	3278
Married	2291	69.9	69.9	
Widowed	119	3.6	3.6	
Divorced	433	13.2	13.2	
Separated	55	1.7	1.7	
Never married	380	11.6	1.6	
Missing	0	--	--	
Occupation of Respondent	3278	100	83.8	3278
Administrator, manager	434	13.2	15.8	
Teacher	154	4.7	5.6	
Professional	729	22.2	26.5	
Administrative support including clerical	231	7.0	8.4	
Sales, retail	142	4.3	5.2	
Sales, business goods and services	161	4.9	5.9	
Technician	120	3.7	4.4	
Protective services	37	1.1	1.3	
Private household service	22	0.7	0.8	
Other service	295	9.0	10.7	
Machine operator, assembler, inspector	77	2.3	2.8	
Transportation handler	44	1.3	1.6	
Handler, helper, laborer	81	2.5	2.9	
Mechanic, repairer, precision production	63	1.9	2.3	
Construction, mining	105	3.2	3.8	
Farming	19	0.6	0.7	
Forestry, fishing, grounds keeping	9	0.3	0.3	
Armed forces	24	0.7	0.9	
Missing	531	16.2	--	
Reason not working	3278	100	16.2	3278
Retired	233	7.1	43.8	
Taking care of home/consumer unit	184	5.6	34.6	
Going to school	12	0.4	2.5	
Ill, disabled, unable to work	89	2.7	16.7	
Unable to find work	8	0.2	1.2	
Doing something else	5	0.2	1.2	
Missing	2747	83.8	--	

Table 2
Household Characteristics of the Sample, Quarter 1 2009, Consumer Expenditure Survey Data

Characteristics	Number	Percentage or Mean with Missing Included	Percentage or Mean Without Missing Included	Total Including Missing
Composition of Earners in Household	3278	100	100	3278
Reference person only	841	25.7	25.7	
Reference person and spouse	1283	39.1	39.1	
Reference person, spouse and others	315	9.6	9.6	
Reference person and others	302	9.2	9.2	
Spouse only	201	6.1	6.1	
Spouse and others	52	1.6	1.6	
Others only	61	1.9	1.9	
No earners	223	6.8	6.8	
Missing	0	--	--	
Type of Family	3278	100	100	3278
Husband and wife only	723	22.1	22.1	
H/W, own children only, oldest child under 6	236	7.2	7.2	
H/W, own children only, oldest child 6 - 17	763	23.3	23.3	
H/W, own children, oldest over 17	357	10.9	10.9	
All other H/W	162	4.9	4.9	
One parent, male, own children only, at least one child	42	1.3	1.3	
One parent, female, own children only, at least one child	120	3.7	3.7	
Single persons	523	16.0	16.0	
Other households	352	10.7	10.7	
Missing	0	--	--	
Income class	3278	100	100	3278
Less than $5 K	43	1.3	1.3	
$5K - $9,999	32	1.0	1.0	
$10K - $14,999	52	1.6	1.6	
$15K - $19,999	63	1.9	1.9	
$20K - $29,999	156	4.8	4.8	
$30K - $39,999	231	7.0	7.0	
$40K - $49,999	308	9.4	9.4	
$50K - $69,999	576	17.6	17.6	
$70K and over	1817	55.4	55.4	
Missing	0	--	--	

Table 3
Geographical Characteristics of the Sample, Quarter 1 2009, Consumer Expenditure Survey Data

Characteristics	Number	Percentage or Mean with Missing Included	Percentage or Mean Without Missing Included	Total Including Missing
Geographic Residence	3278	100	100	3278
Urban	3141	95.8	95.8	
Rural	137	4.2	4.2	
Missing	0	--	--	
Region of USA	3278	100	99.5	3278
Northeast	554	16.9	17.0	
Midwest	757	23.1	23.2	
South	1151	35.1	35.3	
West	801	24.4	24.5	
Missing	15	0.5	--	
Residence inside Metropolitan Statistical Area	3278	100	100	3278
Yes	2928	89.3	89.3	
No	350	10.7	10.7	
Missing	0	--	--	
Size of Primary Statistical Area	3278	100	99.5	3278
More than 4 million	1126	34.4	34.5	
1.20 – 4 million	869	26.5	26.6	
0.33 – 1.19 million	207	6.3	6.3	
125 – 329.9 thousand	761	23.2	23.2	
Less than 125 thousand	300	9.2	9.2	
Missing	15	0.5	--	
Primary Sampling Unit	1445	44.1	100	3278
Philadelphia-Wilmington-Atlantic City, PA – NJ – DE –MD	78	2.4	5.4	
Boston-Brockton-Nashua, MA—NH—ME—CT	82	2.5	5.7	
New York, NY	44	1.3	3.0	
New York, Connecticut suburbs	105	3.2	7.3	
New Jersey suburbs	86	2.6	6.0	
Chicago-Gary-Kenosha, IL—IN—WI	149	4.5	10.3	
Detroit-Ann Arbor-Flint, MI	78	2.4	5.4	
Cleveland-Akron, OH	28	0.9	1.9	
Minneapolis-St. Paul, MN-WI	48	1.5	3.3	
Washington, DC , MD—VA—WV	92	2.8	6.4	
Baltimore, MD	42	1.3	2.9	
Dallas-Ft. Worth, TX	69	2.1	4.8	
Houston-Galveston-Brazoria, TX	54	1.6	3.7	
Atlanta, GA	67	2.0	4.6	
Miami-Ft. Lauderdale, FL	48	1.5	3.3	
Los Angeles-Orange, CA	99	3.0	6.9	
Los Angeles suburbs, CA	51	1.6	3.5	
San Francisco-Oakland-San Jose, CA	72	2.2	5.0	
Seattle-Tacoma-Bremerton, WA	63	1.9	4.4	
San Diego, CA	40	1.2	2.8	
Phoenix-Mesa, AZ	50	1.5	3.5	
Missing	1833	55.9	--	

Table 4
Housing Characteristics of the Sample, Quarter 1 2009, Consumer Expenditure Survey Data

Characteristics	Number	Percentage or Mean with Missing Included	Percentage or Mean Without Missing Included	Total Including Missing
Type of Building	3278	100	100	3278
Single family detached	2758	84.1	84.1	
Row or townhouse inner unit	142	4.3	4.3	
End row or end townhouse	56	1.7	1.7	
Duplex	51	1.6	1.6	
3-plex or 4-plex	21	0.6	0.6	
Garden	15	0.5	0.5	
High-rise	26	0.8	0.8	
Apartment or flat	71	2.2	2.2	
Mobile home or trailer	111	3.4	3.4	
Other	27	0.8	0.8	
Missing	0	--	--	
Year Built	3278	100	91.6	3278
Pre 1900	55	1.7	1.8	
1900 – 1909	50	1.5	1.7	
1910 – 1919	40	1.2	1.3	
1920 – 1929	105	3.2	3.5	
1930 – 1939	61	1.9	2.0	
1940 – 1949	116	3.5	3.9	
1950 – 1959	308	9.4	10.3	
1960 – 1969	271	8.3	9.0	
1970 – 1979	440	13.4	14.7	
1980 – 1989	426	13.0	14.2	
1990 – 1999	580	17.7	19.3	
2000 – 2007	550	16.8	18.3	
Missing	276	8.4	--	
Number of Units in Building	3278	100	99.9	3278
Only other units	25	0.8		
Mobile home or trailer	108	3.3		
One, detached	2675	81.6		
One, attached	219	6.7		
Two	53	1.6		
Three to four	46	1.4		
Five to nine	59	1.8		
Ten to nineteen	28	0.9		
Twenty to forty-nine	16	0.5		
Fifty or more	47	1.4		
Missing	2	0.1	--	

AGENCY RELATIONSHIPS AND ETHICAL CONFLICTS IN REAL ESTATE MARKETS

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ABSTRACT

With all on the recent media attention on the degradation of certain financial markets and some local real estate markets, there has been increasing scrutiny and pressure on the practice of real estate residential brokerage. This problem has been exacerbated by some significant changes in the legal structure of the industry as is practiced today with the dramatic increase in buyer agency relationships. Buyer agency relationships have increased the potential for ethical conflicts for the agents. The problems have been magnified by the availability and promotion of certain financial mortgage products. This paper will explore these ethical conflicts.

INTRODUCTION

Nationally the real estate markets in the decade preceding 2008 were strong and prices were continuing to climb or at least hold steady. In 2008, however, the boom began to turn to a bust. It began in early 2008 when interest rates began to climb. Markets weakened and by summer the financial markets had begun to implode. Prices began to fall in several key markets by as much as 20%-40%. Lenders almost completely shut down the residential mortgage pipeline as they struggled to stay solvent and avoid being taken over. Real estate brokers and agents turned to rentals and repossessions to survive. As in any difficult financial times, ethical behavior is sometimes a casualty. Enron and Madoff did not have a monopoly on poor ethical conduct. Some real estate brokers and salespersons have given way to their own interests in contrast to their published ethical standards.

> "The term Realtor® has come to connote competency, fairness, and high integrity resulting from adherence to a lofty ideal of moral conduct in business relations. No inducement of profit and no instruction from clients ever can justify departure from this ideal."[1]

In the mid 1990s, most states underwent a significant restructuring of the real estate brokerage business. Prior to this period, the vast majority of the transactions in residential brokerage used traditional seller agency relationships. In this type of agency relationship, the broker was an agent or subagent of the seller of the property. The seller paid the broker a fee and it was then divided with any subagents. When a broker showed a prospective buyer a property, the broker was an agent for the seller and the buyer was simply a prospect. Legally the broker was obligated to protect and promote the best interests of the seller. Buyer agency relationships were very rare and when they were used, the buyer paid a commission to the agent. Dual agency relationships were also rare and required full disclosure and the payment of a commission by both the buyer and the seller.

Problems sometimes arose in traditional seller agency relationships when the broker working hard to find a buyer a property took actions that were to the detriment of the sellers to whom they had an agency relationship and who paid the broker the commission for the sale. While some of these brokers received disciplinary action from the state licensing authorities, legislators sought to implement another remedy. The legislative response was to require full disclosure of the agency relationship. Generally the possible agency relationships were as follows:

1. Traditional seller agency relationships where the broker protects and promotes the best interests of the seller.
2. Buyer agency relationships where the broker protects and promotes the best interests of the buyer.
3. Dual agency relationships where the broker represents both parties. In this agency relationship, the broker is bound to "fair" treatment of both the buyer and the seller.
4. Designated agency relationships where the broker has salespersons that separately represent the buyer and the seller. The salespersons function as buyer or seller agents. The broker functions more as a dual agent while requiring the designated agent salespersons to maintain their separate agency relationships.

[1] Code of Ethics and Standards of Practice of the NATIONAL ASSOCIATION OF REALTORS® Effective January 1, 2009.

5. Transactional agency relationships. This agency relationship serves simply to transact a sale when the seller and buyer have already reached the decision to purchase and sell. The agent has no responsibility to protect and promote either party's interests.

While buyer and dual agency relationships were infrequently used before the changes in the law, the big difference in their use today resulted from a change in practice. While the agency law does not specify who pays the real estate commission, buyer agents and dual agents are now usually paid by the seller. Prior to this time, the buyer would pay the commission to buyer agents and the dual agents were paid by both parties.

This paper will examine some of the ethical difficulties in residential real estate brokerage. The focus will be on particular difficulties imposed by the changes in agency relationships from primarily a seller agency marketplace to one where buyer, dual, and transactional agency relationships are more frequently used.

REVIEW OF THE LITERATURE

There have been several studies that have concluded that the increased access to buyer agency has increased the efficiency of the marketplace and resulted in lower prices for the consumer.[2]

Curran and Schrag found that the change in the agency law caused a drop in the prices of more expensive properties in the Atlanta market and little change in lesser priced properties. However they found that the average marketing times fell in both price ranges indicative of increased efficiency in the market.[3]

Pancak found that buyers were underrepresented in transactions.[4] She also found that buyers were reluctant to share information with seller agents and that higher transaction cost resulted.

Olazábal found that the regulatory changes that have increased buyer agencies did not have as big of an impact at consumer protection as had been anticipated.[5] She found that the new laws did not adequately specify the agency responsibilities particularly those responsibilities as they relate to third parties.

Springer, Rutherford, and Yavas found evidence that agents that sold their own properties received about a 4.5% premium over their clients.[6] They surmised that this premium was due to improved access to information not readily available to non-agents. Buyer's agents have access to the same information. Presumably, if the buyer's agents were acting ethically, a somewhat similar savings would be expected for the buyer.

REGULATORY AGENCY HISTORY

Agency law in Pennsylvania had a very typical and traditional common law approach, prior to 1990. Case law established all of the agency relationships that are discussed in this paper.

The law in all of these areas had been well settled long before Pennsylvania's legislature decided to remedy a problem best left to the courts. As early as 1808, the Supreme Court of Pennsylvania was applying seller agency principles to the sale of property in Philadelphia. The court reached the same decision in 1808 that we would reach today, over two-hundred years later, by applying the same agency principles.[7]

The Pennsylvania Supreme Court decided the issue of dual agency in 1872. "The case before us is rather novel. It involves a question whether the same person may be an agent in a private transaction for both parties, without the consent of both, so as to entitle

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[2] It is not surprising that increased buyer agency usage has resulted in lower prices paid. It is the agency duty for a buyer agent to assist the buyer in paying less for a property.

[3] Curran, Christopher and Schrag, Joel L., Does it Matter Whom an Agent Serves? Evidence from Recent Changes in Real Estate Agency Law. *Journal of Law and Economics*, Vol. 43, No. 1, April 2000. Available at SSRN: http://ssrn.com/abstract=231741

[4] Pancak, Katherine A., Restructuring Agency Relationships in the Real Estate Brokerage Industry: A Legal & Economic Analysis (February 4, 1997). Available at SSRN: http://ssrn.com/abstract=9225

[5] Olazábal, Ann Morales, Redefining Realtor Relationships and Responsibilities: The Failure of State Regulatory Responses (2003). *Harvard Journal on Legislation*, Vol. 40, pp. 65-132, 2003.

[6] Springer, Thomas M., Rutherford, Ronald C. and Yavas, Abdullah, Conflicts Between Principals and Agents: Evidence from Residential Brokerage. *Journal of Financial Economics*, Forthcoming. Available at SSRN: http://ssrn.com/abstract=584241

[7] *Ewing v Tees* 1 Binn. 450 (1808).

him to compensation from both or either." The court unanimously said no and cited what they called "Holy Writ" to declare that no one can serve two masters.[8]

Problems began to develop when the multiple listing services became popular. A seller would contract with a broker to sell a particular piece of property. Another agency would get involved and show the property to a potential buyer. Legally these additional agents are subagents of the buyer's agent. However, in practice the subagents ended up performing tasks for the potential buyers and consumers began to assume that they were working for them. [9]

Eventually lobbying groups, most notably the National Association of Realtors, began to lobby every state for legislative action. They feared the common law response to their blurring of the lines of principle and agent. As the lines continued to blur consumers were suing real estate brokers for agency violations. The lobbyists successfully argued that legislation would clarify the matter. Most states, including Pennsylvania, responded with legislation.[10]

In its present form, Pennsylvania's statute defines the various forms of agency and requires lengthy and detailed disclosure requirements that brokers are required to provide to consumers.[11] Unfortunately, the good intentions of the legislature resulted in more consumer confusion.

Common law has the national ability to apply old tried and true legal principles to modern problems, by focusing directly on an issue, in a way that the legislature was never designed to do. The best that can be said for the statute is that it gives some protection to brokers who can point to the unread disclosure form for protection from an angry buyer who didn't understand who the broker really represented.

The statutory response to a problem best decided by common law created more ethical problems then it solved.

ETHICAL AGENCY DILEMMAS

The first dilemma in buyer agency relationships is the practice that expects the seller to pay the buyer's agent's fee. This requires that the seller pay the fee for a person that is, by definition, acting against their best interests. Normally, there is a moral expectation from the purchaser of a service that the deliverer of the service give value to the purchaser. It is the duty of a buyer's agent to promote the well-being of the buyer necessarily at the expense of the seller, yet the buyer pays nothing for this service and the seller pays the entire bill.

A problem for buyer agents occurs when the buyer's agent recommends against the purchase of a property because the purchase is not in the buyer's best economic interest. The problem is then the agent gets no remuneration. This creates an obvious temptation for the agent to recommend the purchase in order to get paid.

Similarly, the buyer agent has an economic disincentive to assist the buyer to negotiate a lower purchase price as it would result in less commission. Protracted negotiation to reduce the price also jeopardizes the sale and increases the risk that the agent will end up with no commission at all.

Designated agency relationships pose a particular ethical dilemma. In any brokerage office, the salespersons work as subagents for their broker. Listing agreements are with the broker and not the subagent. Likewise, buyer agency agreements are with the broker rather than the subagent salesperson. In offices where one salesperson is serving as a seller's agent for the seller and another salesperson in the same office is serving as a buyer-agent, the broker is placed in an impossible ethical position. While individual sales agents can serve their respective parties appropriately, the broker cannot protect and promote the buyer's and seller's best interest at the same time.

Legislative and Practical Implications

The promulgation of agency legislation throughout the United States was the result of perceived systematic violations of seller agencies favoring the buyers. Interestingly, research [12] has suggested that prices for buyers were lower by the imposition of such legislation. This result would be counter to the expectation if such systematic violations were occurring. To the contrary, seller agencies should be expected to result in higher prices for the sellers. If

[8] *Everhart v Searle* 71 Pa 256 (1872).

[9] Coles, Gretchen D., Comment: The Pennsylvania Real Estate Licensing Act: The "Miranda Warning" of Real Estate (2002) *Dickinson Law Review* vol. 107, p 119.

[10] LexisNexis 50 State Comparative Legislation/Regulations Real Estate Broker Fiduciary

Responsibility, *Lexis-Nexis*, Spreadsheet 218795, 2008.

[11] 63 Pa. C.S. § 455.601 et. seq. (2009).

indeed there were violations of seller agency relationships in favor of the buyer, there were remedies other than legislative reform that were available such as civil action by seller to recover damages that they realized as well as regulatory punitive action against the violators.

It could be argued that buyer agency relationships are beneficial since they have resulted in lower prices for the buyer. This argument has two difficulties. First, the lower prices for the buyers are at the expense of greater profits for the sellers. Should government policy favor one particular side of a business transaction? Second, as suggested by Springer, et. al., agents possess improved access to information in a real estate transaction. Seller agency pays a premium to receive access to that information. It would appear inappropriate for a seller to pay for that information and then have the buyer's agent (paid by the seller) give that information without cost to the buyer.

Perhaps legislative relieve is now needed to correct the ethical conflicts from the current legislation. Perhaps buyer's agents should be precluded from receiving compensation from the seller. If, as suggested by Springer, et. al., a buyer's agent possesses valuable information, it seems appropriate for the buyer to pay for that information.

A final regulatory implication from this study is that designated agencies should not be allowed since the broker is put into a position of effectively being an undisclosed dual agent. At a minimum, there should be adequate disclosure that in a designated agency relationship, neither the buyer nor the seller can rely upon the broker to affirmatively represent their best interests.

[12] Op. Cit Curran and Schrag as well as Pancak.

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THE INTERDEPENDENCE OF NATURAL GAS PRICES AND RIG COUNT ON THE DEVELOPMENT OF THE MARCELLUS SHALE INDUSTRY AND ITS ECONOMIC IMPACT ON PENNSYLVANIA

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ABSTRACT

The discovery of Marcellus Shale underneath much of the Commonwealth of Pennsylvania has inspired landowners, banks, and numerous other entities throughout the state to consider the economic impact of this potential industry. Because this exploration is new to the state, the possible effects of this industrial shift have yet to be thoroughly examined. Consequently, the purpose of this paper is to develop a model that will assist regional institutions and individuals in understanding the key components to the development of this industry within Pennsylvania. Our research reveals that the speed and depth of this economic development will depend largely upon the current levels of natural gas prices and the success of current rigs operating in Pennsylvania, especially the corresponding volume of natural gas that is proven at the wellhead. Based upon this empirical relationship, we then devise a model detailing the potential economic impact on Pennsylvania under various conditions of these underlying components.

INTRODUCTION

Between October 2009 and January 2010, Northeastern Pennsylvania will receive an economic stimulus package unparalleled in its history. During this period, gas exploration companies will pump over $438 million into the local economy across over 2000 landowners. This money is called a "bonus payment," and it constitutes upfront money gas explorers spend as incentive to get landowners to partner with a particular company and lease their land to them as inventory for future exploration of gas resources underneath the property. Additionally, each landowner is entitled to a percent, or royalty, of gas that will be extracted from underneath their property, which may reach as high as 20% of production. These impressive figures (and others) associated with the recent discovery of Marcellus Shale underneath much of the Commonwealth of Pennsylvania has inspired landowners, banks, government officials, analysts, and numerous other entities throughout the state to consider the economic impact of this potential industry throughout the region.

Because this exploration is new to the state, the possible effects of this industrial shift have yet to be thoroughly examined, and most research thus far has focused on comparisons to other natural gas discoveries throughout the United States such as the Barnett Shale in Texas and the Fayetteville Shale in Arkansas. However, such studies have left much to be desired for interested entities as they rely upon assumptions of similarity and they lack a measurable economic benefit to this particular region. As mentioned above, the direct landowner benefit comes in two parts: the upfront payment and the royalty fees from production. While many individual landowners have focused on the immediate gratification of the upfront payments, it is the latter royalty fees that hold the greatest economic potential. To quote John Baen, a professor at The University of North Texas and a landowner advocate, "Landowners are focused on the wrong thing. You need to focus on extraction of gas from under your property and earning royalties." (Baen, 2008) So, because drilling encompasses the most promising economic impact on the residents of the Commonwealth of Pennsylvania (possibly in its entire history), the more important question for landowners and the Commonwealth is how do we get the exploration companies to drill? And, just as important, *when* will the region begin to see the long term economic impact of the development of the Marcellus play in Pennsylvania come to fruition?

Consequently, the purpose of this paper is to develop a model that will assist regional institutions and individuals in understanding the key components to the development of this industry within Pennsylvania. As other researchers have indicated, the possible extent of the Marcellus Shale impact could approach $1 trillion in Pennsylvania. Our research, though, reveals that the speed and depth of this economic development will depend largely upon the current levels of natural gas prices and the success of current rigs operating in Pennsylvania, especially the corresponding volume of natural gas that is proven at the wellhead. Based upon this empirical relationship, we are able to devise a model detailing the potential economic impact on Pennsylvania under various conditions of these underlying components.

BACKGROUND AND LITERATURE REVIEW

Barnett and Haynesville Shale

Because the technology to drill for the Marcellus Shale natural gas has only recently become viable, the depth of literature on the geological implications and any potential economic impact is limited. As a result, much of the preliminary literature attempts to utilize comparisons of the Marcellus play to that of other recent natural gas discoveries in the United

States such as the Barnett Shale in Texas and the Haynesville Shale in northern Louisiana.

The Barnett Shale area covers over 5000 square miles of land in 20 northern Texas counties, and it is estimated to contain about 39 Tcf (Trillion cubic feet) of gas. The Haynesville play encompasses the far eastern part of Texas and the northwestern part of Louisiana. While natural gas has been known to exist in these two areas for years, extraction rates and drilling in these areas were limited until 2003 with the advance of horizontal drilling. Horizontal drilling, coupled with hydrolic fracturing, or fracing, allows for economic development of deep gas plays in the United States. Fracing, which was developed in the 1990s, and horizontal drilling became widely accepted and viable in 2003. Thus, both the Barnett and Haynesville shale plays are still relatively new due to only recent technological advancements.

From the first proven well drilled in the Barnett area in 1982 through the next 20 years, only 2000 wells (or roughly 100 per year) were spaced and even less were loaded in the area from 1993 to 2002. After the development of horizontal drilling became viable, those numbers increased tenfold per year with over 1000 wells being drilled each year in 2003, 2004 and 2005. That figure increased to over 1500 in 2006 and over 2300 by 2007 which amounts to more than 197 wells being successfully drilled *each month* in 2007. The number of rigs operating in the Barnett play has jumped from about 200 in 1999 to over 900 in 2008 as the reliability of this play increased. (Baker Hughes, 2009)

The Haynesville shale play is even newer with full production of this play not starting until 2007. This shale ranges from 8,500 to over 10,000 feet below the surface. The significance of this figure is the increase in cost caused by the deep drilling. On the other hand, the Haynesville play does have an offsetting cost advantage – the gas is produced at a much higher pressure, which means that it can drain a larger area with fewer wells required.

Big players like Chesapeake Energy are excited about this play and have actively engaged in the drilling process. They currently operate 26 rigs in the area and expect to increase that number to 35 by mid 2010 (Durham, 2009). However, early findings seem to suggest that the Haynesville shale walls have a rapid decline rate of about 80% in the first year. This issue alone puts much focus on the allocation of limited resources of the exploration companies on play deployment.

The number of rigs operating in this area has grown quickly from an average of just 50 in northern Louisiana in 2007 to almost 100 operating in 2008 and most of 2009. It is estimated the Haynesville play contains reserves of approximately 250 Tcf of natural gas (Durham, 2009).

Marcellus Shale

At the forefront of the geological research in the Marcellus Shale area is Terry Engelder, Professor of Geosciences at The Pennsylvania State University. His detailed studies have mainly focused on the yield potential of this shale discovery, and he has successfully gathered empirical data on numerous key operational variables within the Marcellus area. “The Marcellus will ultimately yield 484 Tcf [of natural gas]. At present consumption rates in the United States, the Marcellus alone can meet the natural gas demands of our country for more than 20 years, if the gas could be produced fast enough, which, of course it can’t.” (Engelder, 2009)

It is important to quantify the dimensions of the sheer size of this area. The Marcellus region contains over 15 million acres of land in 4 states, with the center of the play fairway in Pennsylvania. It is five times bigger than the Haynesville Shale play and ten times bigger than the Barnett play in Texas.

In addition to its size advantage, the Marcellus play also offers an advantage in proximity to consumer markets. At comparable costs of production the greatest challenge presented to the Haynesville and Barnett plays is transportation costs. Pennsylvania, on the other hand, lies geographically closer to the large commercial and residential users of gas than any other play in the US. The proximity to these markets makes the Marcellus play the most economically efficient natural gas play in the country. The cost of transmitting gas from the Gulf of Mexico or Texas to the northeastern US is very expensive at approximately $2 per dekatherm. In fact, a recent study completed by ICE, Bentak Energy, LLC, claims that Northeastern gas, Marcellus in particular, maintains a $1.49/dekatherm cost advantage of gas produced in the Marcellus fairway over gas produced elsewhere in the United States (Bentak Energy, 2009). Regardless of whether it is being paid by the buyer or the seller of the gas, transmission costs must be ultimately factored into the price. Thus, due to its lower transmission costs, Pennsylvania Marcellus is more valuable and has a distinct cost advantage over other shale plays.

CURRENT RESEARCH

Engelder divided the entire Marcellus play into 6 tiers, with Tier 1 having the highest probability of success and Tier 6 with the lowest. Each tier was graded by “geological perimeters including thickness, depth, degree over processing, thermal maturity, structural complexity, TUC profile, quartz/clay ratio and other geological parameters included in the Cogin tornado chart." (Engelder, 2009) He states that the top four tiers of counties will be developed in the next five years, yielding an excess of 127 Tcf of gas. While the full development of this play is the question at hand, the total economic potential in terms of royalty fees alone for the entirety of the Marcellus region is $265 Billion by 2020 (Murray and Ooms, 2008), of which Pennsylvania would have the lion's share with over half of the counties in the top four tiers.

In particular, Northeastern PA will participate to the tune of almost $100 Million to $500 Million over the next five years from just royalty fees alone dependent upon the pace of drilling. (Assuming there is gas at the well head.) These figures are based upon Engelder's assumptions that 70% of the land in the top 4 tiers is accessible with each well spaced on 80 acre intervals and that the production decline curve would be the "power law rate decline" (which is the most conservative of decline curves readily accepted in the market place and it is reported by Chesapeake Energy to closely approximate it wells in the Marcellus Region.) The initial production (IP) rates will mirror the curve of the Barnett Shale in Texas.

Drilling activity within these areas is dependent upon a multitude of factors. First and foremost is the price of gas at the well head. Second is the cost of drilling, which includes factors such as the bonus money paid and the royalty agreements on the extracted gas levels, the depth of the gas, and the condition of the shale in terms of its ability to be fractured. Other variables that need to be considered are production costs (including the cost of oil and the cost of dealing with waste water) and, perhaps most importantly, the level of severance taxes or other taxes imposed by the government. Some ancillary factors include consolidations of the decline curve for daily initial production, the proximity to the major gas user markets, and the inter-community pipelines that deliver the gas.

As discussed above, our primary objective in writing this paper is to quantify the local economic impact that can be expected from the development of this play. We have based our research on geological and industry predictions as to the speed of this process, and we have focused on Pennsylvania. In the process, we developed a simple model that performs a county by county evaluation based upon land size, accessible acreage, well spacing, average production life, and royalty payments. As an initial case study, we concentrated on Susquehanna County, which is located in Northeastern Pennsylvania and is considered to be one of the top tier targets in the Marcellus play.

Susquehanna County

Total Land Area	823 sq. miles
Total Land Acreage	526,720 acres
70% Accessible	368,704 acres
80 acres per well spacing	4,608 wells
Production per well life	3.75Bcf
Value to landowner	$ 3,750,000
Annual Royalty	$75,000/well
Total Annual Royalty	4608 wells ~ $345,600,000
Total Royalty Paid in SC	*$17,280,000,000*

Each year, if Susquehanna County is fully developed to its potential of 4,608 wells, gas producers will pay over $345 million to landowners in the form of royalty payments. This figure amounts to more than $17 billion over the next 50 years to landowners in Susquehanna County alone. (Assuming that gas prices stay at or around $5 per decatherm for the next 50 years – a price most experts would argue is highly undervalued considering the pace at which we are depleting other resources like oil.)

Susquehanna County is the most active county in northwestern Pennsylvania with over 50 wells. But the reality is that at the current rate of production and drilling in Susquehanna County, it would take almost 100 years to drill all 4,608 wells. The gas producers would have to relocate almost 200 rigs into Susquehanna County alone to fully develop this county – which is just a single county out of more than 117 counties that are considered worthy of drilling.

Table 1 extrapolates the data available and applies a county by county method. We have selected a sampling of counties that are in the top four tiers as described by Engelder.

Table 1	**Total Potential Revenues**	
County	*12.5% Royalty*	*20% Royalty*
Allegheny	$ 9,582,956	$15,332,730
Centre	$14,536,331	$23,258,130
Lackawanna	$ 6,019,518	$ 9,631,230
Lycoming	$16,207,406	$25,931,850

DISCUSSION

All of the above calculations are based upon the critical assumption that gas exploration companies will continue to relocate rigs to the Marcellus region from other locations around the country. Only until that rig count increases substantially will we begin to see any observable economic impact on the Commonwealth of Pennsylvania. At the October 2009 DUG Conference in Pittsburgh, Pennsylvania, most of the major players in the Marcellus region made presentations as to production, leasing, and costs. But, more importantly, they projected their particular development plans for this play. Table 2 (in the Appendix) provides an example of the approximate acreage size currently maintained by various companies, and Figure 2 (in the Appendix) displays the rig count by state since 2005 and the corresponding natural gas prices prevalent at the time.

Assuming that the current industry focus remains on the Marcellus region, the number of wells drilled will soon begin to reach those levels achieved in the Barnett and Haynesville plays during the 2006-07 time period. But, the full economic potential of this play will not be achieved efficiently (or completely) unless the Commonwealth takes appropriate measures to provide an environment conducive for these gas exploration companies to rapidly increase their rig counts. Balancing such incentives and the economic benefits that result from increased production with possible negative externalities will be a formidable task for policymakers.

CONCLUSION

There are a multitude of factors that can change the focus of the exploration companies relative to the Marcellus play, and unfortunately, those factors can change quickly. Making the assumptions that no new large reserves are discovered in the next few years, that initial production numbers continue to outperform other plays, that the decline curve does not radically change, and that the Commonwealth of Pennsylvania does not tax this industry out of the state, we are confident that the development of the Marcellus region will be the biggest economic development that Pennsylvania has ever seen – even greater than the economic impact of the steel or coal industry over the past 150 years. However, should any of the aforementioned assumptions not come to fruition, the likelihood of achieving the vast economic potential of the Marcellus region will come into question. Furthermore, unless the gas exploration companies substantially increase the number of rigs deployed in the region, this economic impact will not be recognized for quite some time.

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Figure 1: Chesapeake's Marcellus Pro Forma Decline Curve

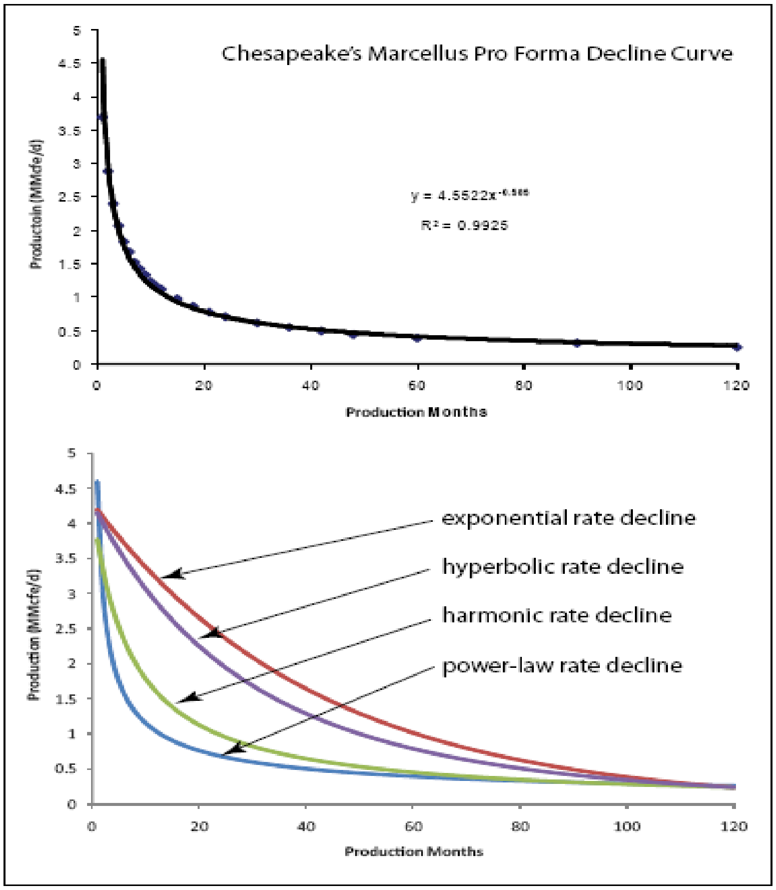
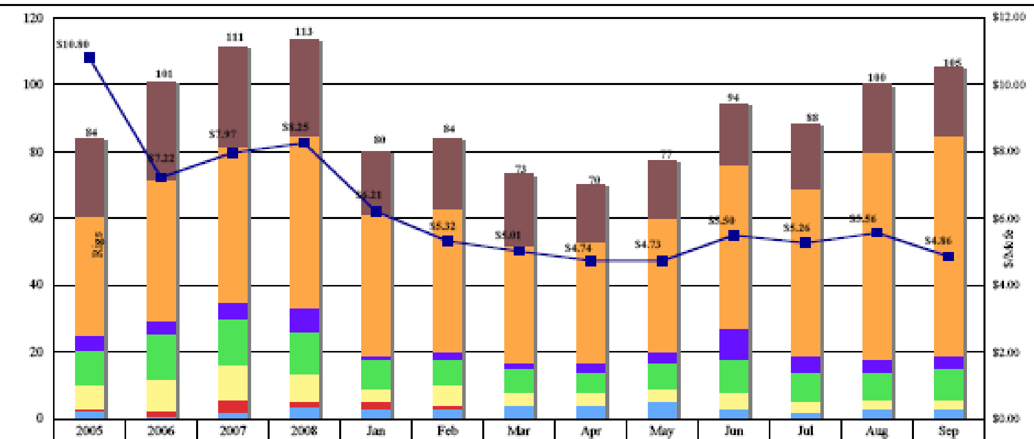


Table 2: Current Acreage for Various Marcellus Companies

COMPANY	STOCK SYMBOL	APPROX NET MARCELLUS ACREAGE	COMPANY	STOCK SYMBOL	APPROX NET MARCELLUS ACREAGE
Chesapeake Energy	CHK	1,450,000	XTO Energy	XTO	152,000
Range Resources	RRC	900,000	Cabot Oil & Gas	COG	160,000
Talisman/Fortuna	TLM	800,000	Southwestern Energy	SWN	137,000
Dominion Resources	D	685,000	Continental Resources	CLR	88,000
StatoilHydro	STO	600,000	AB Resources	---	85,000
Atlas Energy Resources	ATN	555,000	Penn Virginia	PVA	80,000
Chief Oil & Gas	---	500,000	Quest Resources	QRCP	78,000
Equitable Resources	EQT	400,000	Rex Energy	REXX	70,000
Exco Resources	XCO	395,000	Unit Corporation	UNT	67,500
Anadarko Petroleum	APC	312,500	Marathon Oil	MRO	65,000
EnerVest	---	250,000	Petroleum Development	PETD	54,000
EOG Resources	EOG	240,000	Carrizo Oil & Gas	CRZO	32,000
CNX Gas	CXG	185,000			
				TOTAL	8,341,000

Source: Public Records

Figure 2: Rig Count by State Since 2005



	2005	2006	2007	2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
West Virginia	23	29	30	28	19	21	21	17	17	18	19	20	20
Pennsylvania	36	43	47	52	42	43	35	36	40	49	50	62	66
New York	4	4	5	7	1	2	2	3	3	9	5	4	4
Ohio	11	14	14	13	9	8	7	6	8	10	9	8	9
Kentucky	7	9	10	9	4	6	4	4	4	5	3	3	3
Tennessee	1	2	4	2	2	1							
Virginia	3	1	2	4	3	3	4	4	5	3	2	3	3
NYMEX 12 Month Strip	$10.80	$7.22	$7.97	$8.25	$6.21	$5.32	$5.01	$4.74	$4.73	$5.50	$5.26	$5.56	$4.86

BLENDING ACADEMIA AND EXPERIENTIAL LEARNING: CRACKING THE MILLENNIAL GENERATION PUZZLE

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ABSTRACT

The Millennial Generation is among us, yet many educational institutions are struggling with how to connect with these students. In an environment where chalkboards and Cliff Notes once ruled, administration and faculty are now faced with adapting to a student who is more interested in their I pod and MySpace page than they are with each other. Capturing the helicopter generation's attention has been a recent topic of research and debate in higher education. With part-time jobs, extracurricular activities, and strong family ties being the common standard, competition for this generation's interests is fiercer than ever. So how can a university career center realistically expect to entice the Millennials to voluntarily attend a career seminar or to seek out a critical (but academically optional) internship? This session will focus on how one university career center is collaborating with academic faculty to create a seamless environment for students to transition from academic concepts into real world know-how. During a time when a student can instantly connect with peers around the world, why is a university class the answer? This program will discuss the unique work personalities of the Millennial generation, analyzing how to most effectively capitalize on this population's needs for structure and guidance in order to promote career development and experiential learning participation. Participants will gain strategies to effectively build relationships within the university, as well as a concrete blueprint on how to construct a high-touch curriculum that sparks motivation and supports career development while maintaining academic integrity and promoting buy-in from faculty.

DECIPHERING THE MILLENNIAL GENERATION

The Millennial Generation is among us, yet many educational institutions are struggling with how to connect with these students. In an environment where chalkboards and Cliff Notes once ruled, administration and faculty are now faced with adapting to a student who is more interested in their I pod and MySpace page than they are with each other. Capturing the helicopter generation's attention has been a recent topic of research and debate in higher education. With part-time jobs, extracurricular activities, and strong family ties being the common standard, competition for this generation's interests is fiercer than ever. So how can a business college realistically expect to entice the Millennials to voluntarily attend a career seminar or to seek out a critical (but academically optional) internship? The key is to first understand this complex population of students.

Millennials: Also known as Generation Y, population is identified as the generation of children born between 1980 and 1988. (Ob linger and Oblinger 2005) This generation is often referred to as the "Trophy Generation", as this population is being raised with a "no lose" philosophy where everyone is rewarded for their participation, whether it be in athletics, academics, or the corporate workplace. ("Generation Y", 2009) Researchers speculate that this winning philosophy has is lead to a developed sense of entitlement among these individuals, and caution future employers that interactions with these individuals will differ from past generations. ("Myths About Millenials", 2009) This characteristic, paired with several other egocentric traits, often make Millennials misunderstood by their coworkers and supervisors, thus reinforcing the importance of understanding how this generation views the world and the idea of work.

Work Characteristics of the Millennial Generation: Because the millennial employee's behavior differs drastically from those generations previously, there is often times a negative stereotype associated with hiring these candidates. In reality, the Millennial Generation has many gifts to contribute to the world of work, including the following positive attributes:

- Self-Centered Work Ethic: Although this produces a negative image, the self-centered work ethic isn't necessary bad. These individuals are very dedicated to completing assignments their tasks thoroughly and in the fastest manner possible. ("Myths About Millennials", 2009)
- Confidence: With parents who basked this generation in praise, this population has been raised in a culture that promotes self-assurance and confidence in their abilities. ("Managing Millennials", 2007)
- Inclusive: Focused on collaboration and equality, this generation is characteristically team-oriented. ("Managing Millennials", 2007)

- Goal-Oriented: Raised by helicopter parents with super-structured schedules, the millennial generation is comfortable with closure and moving from project to project. ("Managing Millennials", 2007)

It is acknowledged that while this generation has a lot of potential, it also embraces viewpoints that challenge today's workplace rules and etiquette. With their lofty expectations for their career paths, the Millennial Generation is not just focused on securing employment. Rather, this population is interested in obtaining worthy level positions, and then shaping their positions and employers to fit their lifestyles ("Generation Y", 2009). However, corporate recruiters and faculty are more likely of the Boomers (1946-64) or Generation X (1965-82) eras with different expectations of their new hires (Oblinger 2003). The Millennial's radical thought process is alarming not only to corporate America, but also to the universities who are endorsing these candidates as innovative, highly educated candidates. While this generation will undoubtedly rewrite the workplace rules in the future, for now universities are faced with the challenge of teaching this misunderstood population the skills needed for survival in today's corporate world. Business professionalism is critical to their success and reflects on the university.

Defining professionalism is the subject of many articles and it's affect on students and their careers. One article (Borders & Benshoff, 1992) says that "professionalism orientation coursework should help students develop an internalized, personal commitment to professional standards and ideals, along with a sense of responsibility for promoting or maintaining the image of the profession." Can the university or others in fact affect the students professionalism. This is subject to interpretation. Another study (VanZandt, 1990) defined professionalism and purports that "professionalism is a complex attribute; and there may not be total agreement on its definition."

Emotional intelligence in the last decade also became a "hot business topic." The soft skills such as communication, manners, dress, and teamwork appeared more often in recruiter's assessments of candidates. In fact one study (Liptak, 2005) cautioned that "research related to the characteristics that are sought by recruiters and prospective employers in graduating college students suggests that EI skills are as important if not more important than job related skills."

Recognizing that the university is responsible for not only producing candidates that are academically prepared to become tomorrow's leaders but also socially prepared including exhibiting soft skills and emotional intelligence; Youngstown State University's Williamson College of Business Administration (WCBA) developed and implemented a "career intervention" into its curriculum. This intervention is in the form of a mandatory course, Marketing 3702 (MKTG 3702), which exposes the millennial generation to the expectations and reality of today's business world.

Since this generation responds well when learning is "hands-on", engaging, and experiential ((Skiba & Baron, 2006) the course is designed to be interactive and discussion based versus traditional lecture method. Interview practice and presentations would be required in all classes. Since "learning is a social activity (Tapscott, 1998) there are group exercises. The course methodology must be influenced by the Millennials preferred learning style. Many authors expressed the view that authoritarian, lectures, and pontificating would not suffice (Brown, 2000).

YSU SITUATION IN 2003 -2008

Youngstown State University is an urban based university located in northeast Ohio. The university is often times referred to as a "commuter school," with 85% of its students residing in the northeast Ohio and western Pennsylvania regions. The majority of YSU's students are first generation college attendees, with family who are rooted within manufacturing careers. As a result, faculty and counselors have noted that the average YSU student does not have an early acumen for career development and its importance within their academic experience.

Throughout the academic years of 2003-2008, the WCBA's dean and chairpersons noted a number of unfilled internships that were marketed to YSU's business students. Typifying the averaging YSU student, WCBA students often wait to begin their professional job searches until after graduation. These students fail to recognize the importance of gaining experience through internships, do not take advantage of free seminars and events offered by the university's Office of Career & Counseling Services (CCS) or the WCBA Office of Professional Practice (OPP), and avoided campus recruiting activities.

The OPP, responsible for tracking all credit-earning experiential learning activities within the WCBA, have calculated statistics which showed on average 75% of accounting majors likely to seek one or more internships during their academic tenure. In contrast, the marketing department students were at 66%, management at 25%, and finance, economics and management information systems majors in the levels below 10%. The non-profit humanics students were at 100%, as an internship experience is an academic requirement for program completion.

National statistics state that human resource recruiters expect one or two internships to be completed of college graduates. YSU's CCS and OPP reinforce this preference and have documented that recruiters have personally noted the absence of internships on WCBA students' resumes. In addition, the recruiters commented on below par interview competency, etiquette and the image of WCBA students in general. This feedback was perplexing to the WCBA dean as the companies on her professional advisory council have praised the WCBA interns that they have hired. Regardless of this contradiction, the WCBA administration committed to improve the overall levels of involvement its students were engaging in relating to career development and professional image.

PLAYING THE MIDDLEMAN- UNIVERSITY CAREER CENTERS DILEMMA

Similar to the frustration that the academic college was experiencing in 2003-2008, YSU's Office of Career and Counseling Services (CCS) was also struggling with balancing the needs of students and employers. While the local and national economy was beginning to show signs of instability, the CCS staff noted that YSU students were either unaware or apathetic of the steps needed to compete in the global market. Daily, Career Services professionals struggled with the following:

- Students rejecting action plans suggested, including experiential learning experiences, additional coursework, and volunteer work
- Employers frustrated due to the lack of applicants for open internships, co-ops, and professional employment
- On-campus interview visits being cancelled due to empty schedules
- Decreased number of students obtaining employment prior to graduation
- Increase in number of alumni appointments due to unemployment
- Increase in graduates "waiting" to begin job searching; scheduling job searches around vacations, extracurricular activities, etc.
- Expectations that Career Services will "place" students/graduates in internships and professional employment with little/no effort on behalf of candidates
- Expectations that posting a resume on a job board will bring employers to contact candidates
- Little/no ownership of student/graduate on career; blame on outside forces for lack of success; outrage when success is not obtained
- Increased involvement of parents in the career and job search processes

With the onset of the recession in 2008, the university was faced with a significant decline in internship and professional recruitment activities. In fact, the recruiters who normally attended the YSU Career Services Fall Job Fair noticeably cancelled appearances. The WCBA Intern Interview Day in late October saw a one third decrease in employers. Most companies who attended were present for "marketing purposes only," with some employers stating that internship positions would be on hold until the fall of 2010. The internship and professional placement rates further declined in December 2008, as a percentage of recruiters whom had made offers to students rescinded due to the worsening of the economy.

Influenced significantly by these events, Career & Counseling Services sought a new strategy in working with the millennial generation. After engaging in discussion with the WCBA regarding the struggles of sparking career development in students, Career & Counseling Services became invested in the development and implementation of Marketing 3702.

FACULTY & CAREER SERVICES COLLABORATION: THE HISTORY AND THE WIN-WIN SOLUTION

For a period of time, due to retirement and funding issues, there was a lack of focus on the WCBA students through the CCS. By 2006, however, a new Career Services Coordinator was in place and assigned the role of liaison to the WCBA. In addition, the WCBA dean was able to create a full-time Coordinator position for the OPP with the intent that this individual would be dedicated to the development and tracking of internships.

The coordinators in CCS and OPP collaborate on a regular basis to market and place WCBA's students in internship and professional position. Although the offices have similar goals, there were growing pains associated with the establishment of these roles. For example, each office is located in a separate physical location, which is often confusing for students and faculty. Also, the two offices utilize two different job databases and tracking systems, which adds to the confusion for students.

In addition to the CCS and OPP student focus, the WCBA's dean also created and supported a supplemental contract for a Marketing Instructor to assist both offices with employer development initiatives. Although this individual represented the entire university, her primary focus was on growing

WCBA internships, creating and developing professional relationships with local and regional employers, and implementing professional development events for students. This instructor, along with the coordinators from CCS and OPP, was designed as the WCBA Placement Team.

The WCBA dean and Placement Team met frequently to strategically plan and coordinate policies, practices and events ensuring less duplication, more effective programs, and follow up on all employer inquiries regarding internships and jobs. The WCBA faculty, chairpersons, and the dean's Employer Advisory Council sanctioned this direction and supported through attendance at events and in marketing promotions. As a result of this new focus on career development within the academic college, the Placement Team along with the WCBA dean, chairpersons and faculty recognized the impetus and supported events that were created prior to the Course 3702's approval. This included:

- YSU's Career Center's: Job Fairs, Career Panels, and What Not to Wear
- WCBA's: PPOD Intern Interview Day, resume , internship and interview workshops
- WCBA: Shadow Day, Professional Etiquette Lunch, Accounting Practitioner Day and Diversity Seminars to name a few.

CONSTRUCTION AHEAD: DEFINING AND DEVELOPING A HIGH-TOUCH CAREER CURRICULUM

Reflecting the newly developed alliance between Career & Counseling Services and the WCBA, the development of MKTG 3702 was to balance academic principles with real-world work scenarios. With the focus on college sophomores, the course was designed to reflect the learning style preferences of the millennial generation. The result was a high touch curriculum that taught key business and career concepts in a fast-paced, interactive manner while adhering to WCBA and AACSB guidelines.

Specifically, the following were identified as desired learning outcomes relating to career development:

- Assessment of personal skills, interests and values that influence ownership of career exploration and development and business professionalism
- Exploration and identification of internship/career options that best fit individual student's personality and values
- Demonstrated knowledge of effective business communications and networking strategies
- Development of an internship resume and strategic internship search plan
- Increased awareness of conflict management techniques and role play behavior to enable a successful understanding of office politics and employer expectations of business professional behavior for entry level or internship positions.

Desired learning outcomes in support of WCBA educational goals include:

- The ability to communicate effectively in a professional context. Specifically: Communicate effectively, both orally and in writing, in a variety of formats.
- The ability to lead and form/maintain/grow effective professional relationships with diverse others. Specifically: Manage conflict.
- An understanding and appreciation of the behaviors, traits and characteristics of successful business professionals. Specifically: How to perform a career search. How to act and dress professionally. How to network with professionals. The role of social involvement in professional development.

Desired placement and professional development outcomes include:

- Increased number of students securing internships
- Increase number of students securing professional opportunities prior to graduation
- Increased number of students utilizing services provided by Career & Counseling Services and Office of Professional Practice

The goals of this course exploded with reality when the economy struggled with housing, finance, and unemployment debacles in September of 2008. This was the first semester the course was offered. The bad economic news meant that YSU students, who have already experienced the impact of local unemployment rates of 12 %, would now face more competition for fewer internships and jobs in 2008-9. The increased unemployment rates reinforced the critical need for a structured career intervention course for YSU's millennial students. This entitled generation was now facing one of the worst job markets in post depression years and was in need of intense professional development training.

ACADEMIA: NAVIGATING THE APPROVAL PROCESS

The WCBA challenge to increase internships, was verbalized for six years; driven in part by the dean and chairpersons, as well as the Placement Team.

With the MKTG 3702 course outline in place, the next step in the process was to have the course academically recognized and accepted by the institution. In order to do so, YSU required the approval of course proposal, academic syllabus and prerequisites by the following individuals:

- Department chair and faculty within the WCBA Marketing Department
- Dean of WCBA
- WCBA Curriculum Team
- YSU Academic Curriculum Committee.

An early initiative came in September 2006 when the WCBA faculty approved the Undergraduate Curriculum Teams goals for core and tool courses relative to the AACSB review process (in 2010 WCBA will be re assessed). The document outlined the operational definitions in the knowledge areas of accounting, finance, marketing, management, operations, global business and strategic management. Further it emphasized analytical skills, information management, communications, interpersonal skills; attitudes and behaviors relative to: ethics, entrepreneurship and business professionalism. More importantly, it stated that students should have an understanding and appreciation of the behaviors, traits and characteristics of successful business professionals and that students should have the knowledge to:

- Perform a career search
- Act and dress professional
- Network with professionals
- Understand the role of social involvement/service learning.

Prior to MKTG 3702, there was limited evidence of such learning outside of students attending optional WCBA or YSU career development events. Because of this, the stage was then set for the next step. Research was completed to show that other universities in Ohio required students to enroll in one or more Business Professionalism and/or Career Development courses to prepare a "portfolio." In addition, some institutions required students to complete interview practice, document their professionalism progression through videos/digital recordings, and participate in internships prior to conferring a degree. The WCBA debated these issues intensely but ultimately selected a different solution; the implementation of Marketing 3702.

The dean, faculty and chairpersons of WCBA were ready to incorporate a new course. The course would face intense scrutiny in curriculum design and review. The critical success factors in navigating through a comprehensive college and university approval process meant gaining champions from all three departments to support a new course.

Critical Issues and Challenges: During the academic review process, the WCBA committee faced several critical decisions and debates which included:

- Course Design: Debate regarding number of credit hours assigned to the course; one, two or three credit hours
- Instructors: Who would teach the course
- Course Level: What level would it be offered
- Mandatory Completion: Decision to make course required for all business majors
- Integration: How to incorporate new course into the current core and tool courses without changing the number of hours required to major or minor in WCBA, and thereby increasing student course load and fees

The solution to these issues emerged after several months. It was agreed upon that a currently required 4-credit marketing course, Marketing 3704, would be reduce by one credit hour, and that the new course Marketing 3702 would be added as a required Business Professionalism class. When students register for MKTG 3704 (now called 3703), they must also add MKTG 3702. Students enrolled in 3703 are usually at the end of their sophomore year.

The Marketing 3702 course is offered 6 to 10 times a semester. The one hour credit is a 2 hour class that meets 8 consecutive weeks during the academic semester. The class size is limited to 20-25 to encourage more experiential learning, participation and emphasis on open communication. Several instructors were available and ready to instruct the new course, including the WCBA Career Services Coordinator, Employer Development Instructor, and another Marketing Instructor. If teaching schedules conflicted, the Marketing Department chairperson and OPP coordinator were also available to instruct the course.

SHOCK AND AWE:
CAREER INTERVENTION-
"THIS IS NOT A FLUFF COURSE!"

The syllabus designed by the instructors and approved by the Marketing Department Chair included strict attendance requirements. Only one of eight class absences was permitted or course failure resulted. All assignments were due on time or lost 50% of possible points. Requirements included an error free resume, cover letter, network audit chart, and the culminating internship research paper. This paper was completed independently and included:

- Students' career missions, visions, values statements

- SWOT analyses
- Research of five potential, realistic internships and an action plan to attain each.

Students would then present this paper to the class orally with a Power Point visual aid. The WCBA-approved written and oral communication skill rubrics are used as a method of evaluation for the presentations. Students also completed a comprehensive final exam at the end of the eight week course. Students' experiential assignments in class included conflict management, teamwork, networking, interview practice and presentation of a "90 second personal commercial."

The textbook selection process proved daunting for the marketing department. There were a number of texts available for consideration; however most were elementary and more appropriate for high school level students. After careful consideration, the instructors selected *Professionalism-Real Skills for Workplace Success* by Lydia E. Anderson and Sandra B. Bolt, published by Pearson Prentice Hall in 2008. (ISBN- 0-13-171439-2.) This text covered 75% of the materials and presented experiential exercises which the instructors also supplemented. Students used the text to write their mission statement, explore values and visions, and translate these areas to their internship search.

The text also presented relevant and current information on resumes, cover letters, and interviewing skills. Beyond the job search and attainment the text offered more experiential exercises on: dining, dress, netiquette, etiquette, conflict at work, negotiating skills, team work, unions and career development.

An optional text for more detailed emphases on etiquette supplemented course material was also selected: *Guide to Business Etiquette* by Roy A. Cook, Gwen O. Cook and Laura J. Yale also from Pearson Prentice Hall, NJ in 2005. (ISBN is 0-13-144917-6.)

Planning & Implementation by Instructors –Summer 2008: With less than two months notice, instructors were notified that the course was approved and students would register for the first session of summer classes. This was a challenge and trial balloon prior to fall 2008 when more than 8 sections would be offered. The instructor would not have a text yet many supplemental materials and exercises needed to be created. They revised the syllabus, created PowerPoint visual aids, utilized older etiquette type media, and created assignments.

Results of the first Summer 2008 session: The first session of the course was a learning experience for the instructors, as timelines needed to be adjusted and assignments tweaked in order to accommodate discussion of course content that had peaked the students' interests, such as legality of employers researching candidates online, proper business etiquette for interviews, conflict resolution, and the navigation of office politics.

With the lack of textbook and materials, the instructor relied heavily on supplemental materials developed from professional experience in Career Services. Additional materials and content were developed from the feedback provided by local and national employers and the National Association of Colleges and Employers (NACE).

EVALUATIONS RESULTS:

In Fall 2008, both instructors secured informal evaluations from four MKTG 3702 classes. Although these evaluations were positive overall, feedback was given that the workload was heavy for a one hour course with an assignment due every week. After the fall session, the instructors revised the MKTG 3702 syllabus. Networking skills were emphasized more and a DVD series on communication, etiquette, and conflict management skills was ordered with the intention of implementation. Instead of eliminating assignments, more detailed descriptions and project evaluations were adopted. Once again the syllabus was presented to and approved by the Marketing Chair.

YSU required formal evaluations in Spring 2009 of two more classes and these were also positive. Student comments included: "it's a challenging class with much work-but don't drop the requirements; increase the course to 2 or 3 hours; instructors were knowledgeable, inclusive, supportive."

In addition, students who completed the first eight week course in Business Professionalism and who also attended the YSU Job Fair or WCBA Interview Day said they were: "better prepared since their resumes were completed, they had practiced interviewing, and had honed their phone skills for informational interviews." WCBA student secured internships in 2008 did not increase, but recruiters were quick to note the economy's impact on their hiring needs. Many employers were reducing staff through layoffs. Students in contact with the instructors are now looking for more internships, but the numbers are not actual. No declarative indictor of the courses impact can be extrapolated at this time.

Due to the economic collapse in Fall 2008-9 the actual number of internships offered to YSU students has dropped. The WCBA students who did interview were able to network continuously in the fall at WCBA events like Shadow Day, Accounting Practitioner Day, and Diversity, Management Days. The spring Business Etiquette Lunch found more than 30 professionals, twelve faculty and 80 students informally networking. Some students reported they later received offers from many recruiters who could not make offers during the early fall with strained budgets. In fact some recruiters called later in the winter months to find that one student who they could bring on board. Many commented on the improved dress, etiquette, resumes, and interviewing skills of WCBA students.

EVALUATIONS AHEAD

First the official instructor evaluations YSU -WCBA Student written comments on evaluations of the course will be considered in revising and or enhancing the course. Spring 09 evaluations are very good regarding their expectations, difficulty level, and instructor evaluations. These will be included in the next pilot study in Fall 2009. To date students positively comment on their improved professionalism preparedness through the course and the experiential exercises.

The second evaluation involves a goal of increasing the number of attained internships by students .This will be a critical piece of the pilot study. Course effectiveness should increase: successful resumes leading to more interviews; enrolled students should interview well and if qualified successfully attain a valuable internship and or job.

The third evaluation pertains to the first evaluation of the instructors by students each semester. Department chairs and the Dean use the results in part to determine instructor's renewable contract, pay and or promotion.

The fourth Evaluation will arrive post 2010. This new course 3702 Business Professionalism will be exposed in 2010 to AACSB accreditation scrutiny. Intentionally, the course objectives, goals, attendance requirements and student papers and presentations evaluations were challenging. The career development and professionalism required cannot be considered a fluff course that is easily passed without expectation of and evidence of change in attitude and behavior.

The fifth evaluation relates to the Ohio Chancellor of Education. This created its own Shock and Awe in fall 2009 when presented by the YSU Provost to the entire faculty. One of the Measurement and Metrics accountability initiatives includes: increasing by 100,000 or double the number of internships at each university by 2017. Currently these are voluntary initiatives, but the implication is that Ohio educational dollars to each university budget may be impacted if the measure is not met. Another is the business satisfaction survey to be developed by the Ohio Business Roundtable and the Ohio Business Alliance for Higher Education and the Economy. They will gage the university's "relationship with the business community." Internships successfully granted to high performing YSU students can positively influence that measure.

FUTURE RESEARCH

The presenters/instructors expect several follow up pilot, empirical studies beginning with data collection this fall in all Business Professionalism classes. A Myers Briggs survey and student perceptions of several communication and etiquette skills is in development. And the results will be collected and correlations will be measured. Longitudinal studies will follow with all classes to measure the attainment of internships, job offers, and possibly student/employer perceptions pre and post taking the new course.

Issues that will challenge our interpretations include: students who already completed an acceptable internship but still needed to take the course to fill the curriculum requirements. Differences by major (are the accounting students more focused on internships than other majors or are there fewer internships in general for the other majors; if other faculty members act as informal mentors will their involvement influence students more to seek internship than the course; if students already plan to leave Ohio are they more likely to search for an internship outside the state and not advise WCBA thus skewing internship statistics; is the students family or ethnic background or second generational college attendance a motivator or hindrance in seeking internships.

Other longitudinal Research Challenges include accurately measuring the course impact if the following occurred:

- A student completed an internship prior to course completion and already has a job offer
- Student differences by gender, by age, by level, geographic location,
- A student performed part time work similar to an internship, but did not advise the WCBA OPP office (they preferred not to pay for the 3 credit hour internship course)
- Internships increase naturally due to economic recovery in the region, state, and nation
- Students job search skills increase but communication skills are a subjective measure that cannot be evaluated objectively

- Students perception is their communication and interview skills increased due to the course and will enhance their ability to successfully interview and accrue more job / intern offers; is this a confidence and esteem factor; and not the result of the course experiential learning.

These and others research questions will be necessary to fully understand the impact, if any we can extrapolate that this course has on our WCBA Millennials.

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BUSINESS SIMULATION FOR COLLABORATION AND TEAM BUILDING IN ONLINE BUSINESS CLASSES

Paul Ditmore, Edinboro University of Pennsylvania

ABSTRACT

The paper will define the course structure and the tools available to support the online experience. The teamwork Learning Goal could be difficult to address online. Collaboration tools such as threaded discussions, conferences and email were used to complete assignments. The Business Simulation was expected to be the primary vehicle for team building as well as an integration opportunity for concepts and practice that utilized skills from the major business disciplines. In addition to the conventional grading of test performance and participation in the discussions, the teams received a grade for their performance in the Business Simulation Competition. A course assessment was included for the overall course and support tools. The results of the survey from the first course offering will be presented as a basis for course planning and evaluation. Although the sample was limited in this first course offering, the results were informative.

INTRODUCTION

As educators we face the challenges of evaluation of learning through accreditation, alternative delivery methods and increasing competition among our peer institutions. These challenges came into focus for the Business and Economics Department of Edinboro University with the convergence of three initiatives:

- AACSB Accreditation (Learning Goals and Assessment)
- University initiative for Online Education and expanded student opportunities
- A need for an introductory level course that provided a broad view of Business disciplines.

The mission of the Association to Advance Collegiate Schools of Business (AACSB) states that the

"AACSB International advances quality management education worldwide through accreditation and thought leadership." Their approach is to evaluate the institution and the business program through assessment of program defined learning goals and objectives. They have stated that management games may play a more significant role in management development and assessment efforts in business schools as a part of the move toward competency-based outcome measurement (AACSB, 1987). Our program practice has been limited to the use of a business simulation in our capstone course. The potential exists to expand the student experience with additional exposure.

A change in the leadership coupled with a shrinking college age demographic for local students led to an online education initiative throughout the university. As people move south and west, mid-Atlantic and more specifically Pennsylvania population numbers continue to decline. Pittsburgh and Cleveland, both major cities within our market have shown significant declines in population rankings (Bernstein, 2007). One strategy to counteract this trend is to extend the university market reach. Online education provides a vehicle for that expansion. Articulation agreements with regional community colleges for completion of a four year degree online as well as international relationships for degree programs are both enrollment expansion opportunities.

A program concern tied to the issue of student enrollment is the issue of student retention. Attracting the appropriate student and providing the incentives for success can be a challenge. Many students have difficulty integrating the various business disciplines and applying them to real world situations. As an instructor for the capstone course, this can be seen even in graduating seniors. Their experience with the business simulation during that course seems to help students tie the program disciplines together. Could an earlier exposure to business simulation provide the integration and synthesis that we desire? Fortmuller notes that "It cannot be expected that participation in one game enables the development of complete elaborate mental models. Participation in a game several times is what distinguishes an expert." (Fortmuller, 2009).

LITERATURE REVIEW

Research relevant to the topic is categorized in two subsets, first the issues and constructs of the successful online education environment and second the application of gaming and simulation in business education.

Issues and Constructs in Online Education

Online Education differs from Distance Education or video based remote classrooms in that it relies on computer and Internet technologies to facilitate interactive communications between an instructor(s) and students inside an online learning environment. It supports interact through electronic communications, such as e-mail and threaded online discussions. In the mid-1990's the Alfred P. Sloan Foundation Sloan Consortium established its Five Pillars for Quality Online Education as the values, principles and goals of asynchronous learning networks. (Lorenzo and Moore, 2002):

I. Learning Effectiveness – Facilitation of active learning exercises, where students are placed in situations that require them to think and respond to course materials presented online.
II. Student Satisfaction - Online learners, like customers, are satisfied when they receive responsive, timely, and personalized services and support, along with high-quality learning outcomes.
III. Faculty Satisfaction - Faculty members often find that electronic communication offers better interaction with individual students and groups of students, as well as among the students themselves. Faculty members also appreciate the additional flexibility offered by online learning environments both for themselves and for their students.
IV. Cost Effectiveness - Increased use of educational technology to enhance face-to-face classes, as well as for fully online courses, has become mandatory for remaining competitive. Colleges and universities are increasing learning effectiveness, achieving lower dropout rates, decreasing the use of over-crowded buildings and ultimately decreasing labor costs through creative development of technology-enhanced and fully online courses.
V. Access - Universal access through the development of an accessible and affordable ubiquitous technical infrastructure must be the goal at the national, regional, state and institutional levels.

As the number of online courses and programs grew, many questioned the balance between technology and pedagogy. The lack of empirical data on effective web-based pedagogy highlighted the question on the role of technology. One approach was to apply the "Seven Principles of Good Practice in Undergraduate Education" (American Association of Higher Education, 1987) to the online education environment. Newlin and Wang (2002) addressed the application of this model as follows:

1. Encourage Contact between Students and Faculty

   Computer Mediated Communications (CMC) both synchronous (e.g., chat rooms) and asynchronous (e.g., email, threaded discussions) seem to allow for a greater amount of humor than conventional lectures. Since humor seems to relax the students, their interactions were more enjoyable.

2. Develop Reciprocity and Cooperation among Students

   Student collaboration may be more important for the virtual classroom compared to conventional classes - data reveal that students who regularly communicate with others (e.g., via e-mail, student-organized chat rooms) not only enjoyed these contacts, but had higher final grades in the class.

3. Use Active Learning

   Instructors can use the vast amounts of available information on the Web to increase the active learning. Instructors should develop assignments and projects designed to take advantage of the potential of technology to support this principle.

4. Give Prompt Feedback

   Prompt feedback seems to contribute to greater feelings of instructor contact, support, and availability for the students. Web-based course management systems can track students in terms of the number of times (and duration) that they access the various components of the virtual classroom (e.g., course home page, assignment links, course forum). There is a strong correlation between the frequency of course home page hits during the first week of class and students' final grade in the class.

5. Emphasize Time on Task

   A high level of instructor–student contact and peer collaboration (e.g., cyber learning communities) can increase course performance and student satisfaction. It is crucial that instructors release (i.e., post on the Web) course materials on a regularly scheduled basis throughout the semester. These postings and deadlines should be specified on the course syllabus at the beginning of the term. Regular postings of course materials (and assignment deadlines) will prevent end-of-semester cramming, and give the class the opportunity to organize study groups as needed.

6. Communicate High Expectations

Some students misconstrue their first Web course as a correspondence course. This includes notions that course assignments are student paced, that there is minimal interaction between instructor and student, that Web-based courses are easy to master, and that peer collaboration is prohibited. In practice, instructors can avoid this misinterpretation by employing a syllabus comparable to that used in a conventional class. Materials typically used by the instructor for a conventional class (e.g., textbook, assignments, lecture notes) would be similarly described on the Web-based syllabus.

7. Respect Diverse Talents and Ways of Learning

In addition to a textbook, students can select from a rich array of Web resources to master the content of a course (e.g., internal and external links, posted lecture notes, chat room discussions, forum postings, student questions and comments). It should be noted that Web technologies can serve a democratizing function. Students with personal circumstances (e.g., physical disabilities, family responsibilities, distance, travel requirements) that prevent them from commuting to campus can take a Web course from their homes. Students who would never consider speaking in a conventional classroom discussion may no longer be intimidated in an online situation. Students tend to be far more interactive in Web-based environments as compared to conventional lectures.

The Sloan Consortium Pillar II suggests Student Satisfaction is tied to timely, responsive and personalized feedback. Principe 4 supports this assertion with a focus on Prompt Feedback. Gallien and Oomen (2008) studied the impact on student satisfaction, academic performance and perceived connectedness in relation to Personalized versus Collective Feedback. The findings revealed that students who received personalized feedback were more satisfied and performed academically better than students who received only collective feedback. However, no significant findings were found between treatment groups and the variable of perceived connectedness. Empirical evidence suggests that a "high degree" of faculty student interaction is important to foster a sense of student-instructor "connectedness" (relationship) and satisfaction. The disadvantage relates to Pillar III Faculty Satisfaction. Personalized Feedback is more time consuming and the time increase with class size.

An extension of the *Seven Principles of Good Practice in Undergraduate Education* is the National Survey of Student Engagement. The measures were built on five benchmarks level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experience and a supportive campus environment. Robinson and Hullinger (2008) analyzed responses to the first four standards in a student population of online courses. Online students reported higher levels of engagement than both freshmen and senior on-campus students on each of the four benchmarks. Seniors from the top 10% of NSSE respondent institutions reported higher levels of engagement in the level of academic challenge, active and collaborative learning, and enriching educational experience. Additional observations were

- The online classroom presented challenging standards and expectations. Often, the majority of the students had to work harder than they thought they could to meet academic expectations.
- The present findings confirmed that online learners worked together on projects fairly frequently.
- Students acknowledged gains in knowledge and skill acquisition that facilitated their understanding of real world and job-related problems.
- Slightly more emphasis can be given to incorporating assignments that require synthesis of and making judgments on course-related materials. Memorization of facts and information has to be minimized to the extent that there is a clear emphasis on higher order levels of thinking.

Gallini and Barron (2001) studied participants' perceptions of web infused environments and found that students preferred course structure with clear guidelines along with opportunities to suggest alternative approaches. Approximately 97% indicated that they communicated more with their instructors and peers in courses that integrated Web-based components than in courses that did not. A majority of the faculty and students expressed feeling more engaged in the Web-based courses compared to their nontechnology courses.

Some suggest that the collaborative and flexible style of online learning may promote a new form of collaborative leadership. Raelin (2006) looked at Action Learning as a key to development of Collaborative Leadership. Action Learning is a method to generate learning from human interaction occurring as learners engage together in real-time work problems that entail reflection on practice under unfamiliar conditions. It is characterized by three common principles

- That learning be acquired in the midst of action and dedicated to the task at hand.
- That knowledge creation and utilization be seen as collective activities wherein learning can become everyone's job.
- That its users demonstrate a learning-to-learn aptitude which frees them to question the underlying assumptions of practice.

What is critical is that the experience confronts learners with the constraints of organizational realities, leading oftentimes to the discovery of alternative and creative means to accomplish their objectives. Although action learning has been applied most frequently within corporate settings, it has gained a foothold in the academic world as well, especially in business and management schools.

The flexible, open, collaborative online environment coupled with the action learning model that places the students in an organizational reality of the company links to the discussion of the business simulations.

<u>Gaming and Simulation in Business Education</u>

Simulation is the imitation of some real thing, state of affairs, or process. Games are contests in which players and opponents operate under rules to gain a specific objective. For the purpose of this discussion, the product used is both a simulation and a game. The simulation is of an electronic sensor industry with six companies that compete in the industry and are measured on their company performance. Performance is determined through accepted financial ratios and alternatively through the broader more comprehensive Balanced Scorecard (Hall, 2008).

Cruickshank and Telfer (1980) describe the advantages and disadvantages of Simulations/Games in the academic environment.

- Advantages of Simulation/Games
  - They guarantee an experience that is like experiences they would have in the real world.
  - They afford opportunities to solve difficult problems themselves rather than observing the way someone else solves them.
  - They provide potentially greater transfer from the training situation to a real life.
  - They provide a responsive environment. There is always immediate knowledge of how the participant is doing.
  - They telescope time.
  - They are psychologically engaging.
  - They are safe. (as the author of Foundation noted, "If you are going to destroy a company do it here, it's just a simulation…")
  - They are enjoyable.
- Disadvantages of Simulation/Games
  - Teachers are relatively unfamiliar with simulations/games and consequently hesitant to use them.
  - They require large amounts of time.
  - They focus on experiences which are more supplementary than basic.
  - They are less available than traditional teaching and learning materials.
  - They can be expensive.
  - They can result in seeming confusion and real noise.

- Some games are poorly developed and their use results in failure and frustration.

- Like other instructional alternatives not all participants will like them.

- They often limit the number of people who can play.

Business games arrived on the scene in late 1950's, spawned by the fusion of developments in war games, operations research, computer technology and educational theory. Some instructors may view the simulation/game as self managing exercise that minimizes their role. Keys (1977) defined the Management of Learning Grid to describe learning as "the organization of reality". He established three factors as prerequisites to learning:

- The dissemination of new ideas, principles, or concepts, which will be captioned *content.*

- An opportunity to apply *content* in an experiential environment, which will be defined as *experience.*

- *Feedback* as to the results of actions taken and the relationship between performance at each chronological phase in *experience* and the subsequent result.

The instructor's role is to present content, define the experimental environmental and possibly most important, provide feedback and guidance on performance. It can be concluded that the management gaming method is more involving for the instructor and that games are not self-running ventures (Keys and Wolfe, 1990).

Gremmen and Potters (1997) sought to provide empirical evidence of the value of simulation and games by constructing an experiment to compare lecture based education with game based education in economics. Based on the Management of Learning Grid, both groups were presented with the same content and provided feedback through multiple-choice tests periodically through the term. The difference was that the game group had the opportunity to apply the content in an experimental environment. The main results are that the game group learned more about the economic model than the lecture group, as witnessed by a significantly higher increase in scores from test I to test 2, and this differential impact of educational method was rather stable over time, as evidenced by the (almost) constant gap between the two groups. Also, there was no systematic or significant positive correlation between what students stated they learned from an educational tool and what they in fact learned as measured by the multiple-choice tests.

Fortmüller (2009) viewed learning through business games in light of cognitive learning theory. Two forms of knowledge are distinguished: knowledge in the sense of "knowing about something," called *declarative* knowledge and "being able to carry out an activity," called *procedural* knowledge. Procedural knowledge can be gained only by actively carrying out and practicing the activities whose skills need to be acquired. He defined four learning objectives:

- To Be Able to Use Already-Acquired Specialized Knowledge in Specific Problem Situations
- To Be Able to Combine Activities Acquired Separately to a Systematic Sequence of Action (Accounting, Marketing, Production, Finance)
- To Be Able to Reconstruct Basic Correlations and Processes (Not predefined procedures)
- To Be Able to Assess the Interactions and Consequences of an Individual's and Others' Activities.

Business Simulations can assist in meeting these objectives. Explicitly put, the basic teaching principle of business games lies in confronting the players with the challenges with which they should learn to cope. Providing feedback during or after the game is essential to bridging gaps in knowledge and to correcting false interpretations.

The simulation/game used in the Principles of Management course online is a simplified version of the Capsim simulation that is used in the business program's capstone course. Rather than the five market segments in Capsim, the Foundation simulation has only two market segments. Hall (2008) suggests that we are likely to see more use of business simulations like Capsim (e.g. Foundation) as students and employees demand real-time, real-life education blended with entertainment.

COURSE STRUCTURE

The incentives for the business department to launch online courses are noted in the introduction. The choice of courses was governed by the potential for attracting students to the program and the willingness of faculty to participate. The Principles of

Management course was the first course in the program that provided an overview of the various management disciplines and a likely candidate for online presentation. In addition, the opportunity to add a business simulation as a discipline integration experience was attractive.

The platform for the Edinboro University Online is eCollege. eCollege provides a tool set for development and presentation of online courses and supports a variety of third party products to enhance the experience. The course syllabus was provided online and listed assignments and course objectives for each week. Two publications were assigned, one a course textbook and the second a student handbook for the business simulation (Foundation). A brief description of the tools employed in this course offering and their potential for feedback is listed in Table 1. Although the Chat room facility is available in the eCollege platform, it was not used in this course. (See Table 1. In Appendix)

The business simulation/game (Foundation) was employed in the course and provided its own tool set in addition to the simulation game activity. A description of the Foundation tool set and their potential use are listed in Table 2. (See Table 2 in Appendix)

The course structure was built around the Management of Learning Grid (Keys, 1977).

- <u>Content</u> was presented based on the textbook along with PowerPoint Chapter Notes (Shared Folders) that outlined the significant issues in each chapter.
- <u>Experience</u> was provided through Case Study examples (Threaded Discussions) and/or Team/Company assignments to define their Business Simulation Strategy Statement or develop an Organization Chart for their company. The practice and competition rounds of the business simulation further enhanced the experience through application of the content.
- <u>Feedback</u> was provided through individual grades (personal) as well as team grades (collective) on group assignments. The financial reporting in the business simulation gave the teams performance feedback on a round by round basis. Three peer reviews gave the individual feedback on their performance as a team member.

Performance assessment for the course consisted of four section tests on the textbook content and a final comprehensive test. Case Study (Threaded Discussions) grades were based on participation and understanding of the content. Individual and Team assignments related to application of the textbook concepts to the Foundation Company were included. Three Peer Reviews constituted personal feedback from the team members. An overall grade for the company performance in the six rounds (i. e. years) of the business simulation accounted for approximately a quarter of the overall grade.

A course evaluation was included to gauge the student satisfaction with our first online course offering and to provide faculty feedback for potential course improvement. A small bonus point reward was offered to promote participation.

RESULTS AND OBSERVATIONS

Fifteen students initially enrolled in the course. Two dropped during the first week while two more remained registered but did not complete all of course requirements. Of the 11 students that completed all the course requirements, 10 submitted course evaluations. The reasons cited for not completing the course were a lack computer skills, computer/internet access problems or poor time management/study skills. The final grade distribution is noted in Table 3.

Table 3. Final Grade Distribution.

Average	78.47%
Minimum	41.12%
Maximum	97.61%
Median	83.09%

A copy of the survey and results is included in Exhibit I, a summary of the key areas follows.

The demographics of the students that submitted course evaluations were:

- 70% were male and there were no international students
- Everyone expected a grade of B or higher
- 70% were fulltime students
- Only 30% had taken an online course previously

- Only 1 person had participated in a Business Simulation prior to this course

- Everyone had been a member of a group or team project prior to this class.

Three areas evaluated in the survey were Threaded Discussions, PowerPoint Chapter Notes and the Business Simulation (Foundation). A seven point scale was used. Average ratings above four for positive statements or below four for negative statements, were considered supportive.

Threaded Discussions seem to be a positive community building tool in that respondents felt it increased their ability to communicate with other students and that posts made by other students were useful. There was weak support (3.9) for the statement that they improved understanding of course material but strong support for the statement that they helped prepare for tests. The responses for including them in future classes showed 30% strongly against and 60% supporting inclusion.

The **PowerPoint Chapter Notes** seemed to be helpful in preparing for exams, understanding course material and in completing homework assignments. Surprisingly there was weak support (3.8) for frequency of use. Perhaps they were used exclusively for homework and exam preparation.

The **Business Simulation – Foundation** received supportive responses on nearly all questions. The conferencing facility of the Foundation website received the lowest ratings (2.1). Not surprising in that only one team actually used the facility and they eventually reverted back to e-Mail. The respondents found the Business Simulation challenging to use but instructional materials on the Foundation and course websites were helpful. The Simulation/Game helped integration of the various business disciplines and allowed students to understand and apply the concepts from the book. There was strong support for Team building and group decision making but the simulation provided little help in exam preparation.

The last two questions related to the overall view of the course. 90% of the respondents would take another online course and would recommend this course to others.

The comment section at the end of the survey was completed by all but one respondent and was generally supported or explained their responses to the questionnaire. Although the comments were positive, little new information was introduced.

Based on the results we observe that:

- Threaded Discussions supports community building and communication in the online course but their value in content understanding and application needs to be enhanced.
- The PowerPoint Chapter Notes were a valuable study aid particularly in test preparation.
- Although Student satisfaction was not assessed directly, it could be asserted from the last two questions, that the Students were satisfied with the experience. The opportunity for personal as well as collective feedback may be a contributing factor to Student Satisfaction. Both eCollege and Foundation provide opportunities for varied feedback (e.g. Collective, Personal, Team, Peer).
- The survey results support the assertion that The Business Simulation is an effective Team Building and Group Decision Making exercise.
- The survey suggests that the discipline integration we expected the Business simulation to provide may have taken place. The proof however would require a longitudinal study of the future performance of the students in their plan of study.
- The overall response was positive for the class and for online courses in general. A view of the distribution of individual responses supports the idea that the online instructor needs to be sensitive to the varied learning styles of the student population. Although there was a broad support for the Business Simulation, the distribution of responses for the other tools was far more disparate.

CONCLUSIONS

Student feedback is consistent with the literature in that online education improves student satisfaction and promotes collaboration and communication with faculty and students. The positive response to the Business Simulation suggests that team building, group decision making, discipline integration and application of content are all enhanced through the Simulation/Game.

Gremmen and Potters (1997) cautioned that even though simulation/gaming may be rewarding in terms of learning achievements, it may be dangerous to rely on students' own judgments in this respect. A comparison of the final course grade from the online class Principles of Management course and traditional classes taught by the instructor shows comparable results at the high end of the final class grade spectrum. This should support the assertion above but the flaw in the comparison is that the Business Simulation was not included in the traditional classes. It was introduced for this course in the online section. To validate the contribution of the Business Simulation in the online environment, a comparable study to Gremmen and Potter (1997) that compared Gaming versus Lecture group outcomes would need to provide for Online Simulation vs. Online Lecture classes. The complexity of the experimental design would be challenging but an opportunity for future study.

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Table 1: eCollege Tools, Application and Feedback Potential

Tool	Application/Use	Feedback (Collective/Personal)
e-Mail	Integrated with the University e-Mail system	Both
Shared Folders	Supplemental information (e.g. PowerPoint Notes, Simulation Debrief)	Collective
Dropbox	Assignment Submission	Personal
Threaded Discussion	Class Discussion on content, often Case Studies	Collective
Scheduling	Define the weekly course objectives and assignments	Collective
Testing Online	Multiple Choice/Short Essay tests administered and graded	Personal
Gradebook	Integrated with Dropbox, Threaded Discussion and Testing as assigned	Personal
Group/Team Assignment	Provided Group distribution lists and Student generated Threaded Discussion opportunities	Collective (Group)

Table 2. Foundation Tools, Application and Feedback Potential

Tool	Application/Use	Feedback (Collective/Personal)
e-Mail	Integrated with the University e-Mail system	Both
Student Handbook	Explanation of the simulation scenario with introductory exercises	Both
Online Manager's Guide	Strategy examples, FAQ, Rules and Suggested Tactics, Search	Collective
Financial Performance Reports	Industry – FastTrack Reports Team/Company – Annual Reports	Collective(Industry) Collective(Team)
Peer Evaluation	Team rating of the individual's performance	Personal
Conference	Team or Industry Conferencing much like the Threaded Discussion	Collective

Exhibit I.

Management 300 Online - Student Survey Results

The following questions are used to assess your experience in the course.

(1) Gender: _3__ Female __7_ Male

(2) Are you an international student? ___ Yes _10__ No

(3) What is your expected grade in this course (e.g., A, B+)? _A=2,_B=8__

(4) What is your current course load for this term?

__7__Full Time (12 or more credits)
__3__Part Time (Less than 12 credits)

(5) Have you taken online courses other than this course?

__3_ Yes
__7_ No

(6) Have you participated in Business Simulation competitions before this course?

__1_ Yes
__9_ No

(7) Have you been a member of Group or Team Projects in other courses?

_10_ Yes
__0 _No

Place an "X" in the box that best reflects your feelings toward the statement. SD indicates "Strongly Disagree," N indicates "Neutral," and SA indicates "Strongly Agree." If you are unable to provide a rating, please check the last box, where DK = "Don't Know." Please be honest in your responses.

Threaded Discussions

	1 SD	**2**	**3**	**4 N**	**5**	**6**	**7 SA**	**DK**	**Avg.**
(8) The Threaded Discussion improved my understanding of the material in the course.									3.9
(9) The Threaded Discussion increased my ability to communicate with other students in the course.									4.4
(10) The Threaded Discussion did not help me prepare for exams in the course.									3.3
(11) The Threaded Discussion was not easy to use.									3.7
(12) Threaded Discussion posts made by other students in the class were useful.									4.8
(13) I was familiar with the concept and use of Threaded Discussions prior to its use in this course.									3.6
(14) The professor should use a Threaded Discussions in future classes.									3.6

PowerPoint Chapter Notes

	1 SD	2	3	4 N	5	6	7 SA	DK	Avg.
(15) The PowerPoint Chapter Notes did not help me prepare for exams in the course.									3.0
(16) The PowerPoint Chapter Notes did not improve my understanding of the material in the course.									2.9
(17) I frequently use the PowerPoint Chapter Notes for this course.									3.8
(18) The PowerPoint Chapter Notes were helpful for completing homework assignments.									4.3

Place an "X" in the box that best reflects your feelings toward the statement. SD indicates "Strongly Disagree," N indicates "Neutral," and SA indicates "Strongly Agree." If you are unable to provide a rating, please check the last box, where DK = "Don't Know." Please be honest in your responses.

Business Simulation - Foundation

	1 SD	2	3	4 N	5	6	7 SA	DK	Avg.
(19) The Foundation simulation helped me understand the relationships of the functional areas of a business.									4.6
(20) The Foundation simulation allowed me to apply the concepts from the text.									4.5
(21) The Foundation simulation was not easy to use.									4.0
(22) The Foundation instructions provided on the **professor's web site** were clear and easy to use.									4.3
(23)The Online Managers Guide provided on the **simulation web site** was helpful in understanding the simulation.									4.9
(24) The Foundation simulation did not help me prepare for exams in the course.									4.4
(25) The Foundation simulation did not improve my understanding of the material in the course.									3.5
(26) I used the Conference facility of Foundation to communicate with my Team.									2.1
(27) My Team was an effective decision making unit.									4.2
(28) The Foundation simulation was an effective way to demonstrate a Team experience online.									5.0

(29) After this experience, would you take another online course?

_9__ Yes
_1__ No

(30) After this experience, would recommend **this** course to others?

_9__ Yes
_1__ No

THE GREEN COLLEGE: 40 YEARS OF SUSTAINABILITY

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ABSTRACT

For many years, "going green" has been an approach limited to rural areas or small groups of people living "off the grid." Now, however, the green movement is spreading to embrace a much larger group of supporters, including business planners and corporate executives. Basically, the green movement seeks to reduce waste and minimize negative human impact on the environment. One institution has been working with this goal in mind since 1970. This paper highlights how organizations are building green objectives into their visions and structures and describes the green movement at one particular educational institution, the Richard Stockton College of Jersey, called the Green College because of its exemplary efforts.

Introduction

The Richard Stockton College of New Jersey, a public liberal arts college located in the southern part of the state, has a story to tell – a green story. Going green is a relatively new phenomenon; however, Stockton, a small public liberal arts college located in the Pinelands of Southern New Jersey, has been building green objectives into its visions and structures long before it has become popular. In fact, the Richard Stockton College of New Jersey is called the Green College because of its exemplary efforts, a commitment that has sprung from a belief in doing what is environmentally right. Stockton's philosophy is reflected in the words of Donald Moore, Associate Vice President of Administration and Finance, as he states, "Stockton has been green for a long time. We just haven't taken any credit for it or wanted to draw a lot of attention to ourselves" (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

The college campus sits on 1,600 acres in the heart of the Pinelands National Reserve. The associated ecosystem requires protection and significantly allows for development. President of the Richard Stockton College of New Jersey, Herman J. Saatkamp, Jr remarked that "being located in one of the most environmentally sensitive areas in the nation, the Pinelands National Reserve, we are acutely aware of our responsibility to grow in harmony with the environment" (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1). In the midst of continuous construction, Stockton acts as a steward to the environment .

The first commitment in any new addition to the campus is the use of appropriate systems and materials while remaining true to the unspoiled environment. Stockton's building plans use alternate energy systems and sustainable designs. This commitment to being green allows for expanded educational opportunities and increased funding. Stockton's vision incorporates both sustainability and affordability. This means being a good steward to each and being sensible in its approach to construction and development (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Stockton's campus is incorporating important technology initiatives including the Geothermal Project, Aquifer Thermal Storage, and solar electricity. Stockton also has been continuously moving towards a carbon neutral campus to avoid any contribution to global warming. A new aquifer thermal energy storage system (ATES) began operation in 2008. This is the first of its kind in the United States. The technology from this system reduces the amount of energy used to cool the campus. The ATES system stores cold water in an underground aquifer in the winter and draws it back out in the summer to keep Stockton cool (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

The Sustainability Initiative at Stockton aims at three important goals. The first is to educate and empower students to help shape a more sustainable future. The second is to reduce the college's contribution to local and global environmental stresses and enhance and preserve the existing natural resources on campus. The final goal is to serve as a resource and catalyst for sustainable education and policy making in the region and across New Jersey (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

In 2006, Stockton achieved the prestigious Leadership in Energy and Environmental Design (LEED) certification from the U.S. Green Building Council for its sustainable design. Incorporated within the Sustainability Initiative includes many green initiatives that have both saved energy and decreased greenhouse gas emissions. The LEED certification serves a strong guideline to decide whether a company is being green or not (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Last year , Stockton received the 2008 Green Project of Distinction Award from Education Design Showcase. This distinction was awarded for the Housing V project which consisted of the construction of six three-story buildings on 7.05 acres. As good stewards of the pinelands, Stockton stayed true to certain goals and visions throughout the project. The design team wanted to provide a design that endeavored to protect and sustain the Pinelands. They also wanted to provide reasonably priced, attractive, well-maintained, comfortable and safe housing for students. The third goal the design team followed was to provide a learning environment and related programs that would enhance academic success and student development. The final goal was to develop a sense of community that valued diversity and strove to be inclusive of all students (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

The Housing V project incorporates geothermal heating and cooling using closed loop technology. The design also accommodates for future solar thermal heating systems. Housing V was stocked with energy efficient appliances and low-flow water fixtures throughout the building. The Housing V construction was very mindful of the environment. There was no pineland vegetation lost during the construction and any tree greater than four inches in diameter lost during construction was replaced. Much of the construction debris was recycled through sawmills and chipping mills. All the paints and sealants met the U.S. Green Building (USGB) standards for low volatile organic compound (VOC) content. The construction followed the USGB Council's LEED standards http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Stockton College has a lot of plans for the future. The college's biggest project is upon them. The new Campus Center will provide 153,000 square feet of space and be the single largest building project in Stockton's history. The project is in keeping with the U.S. Green Building Council's LEED Gold Standard in sustainable design. The Campus Center will use 25% less energy than standard construction, 40% less water usage, and low emitting adhesives, sealants, paints, and coatings. The building will also include green features such as a storm water collection system to irrigate an on-site rain garden of plant species, and a high-tech energy management system for cooling, heating, lighting, and ventilation. Additional projects that are in the midst of Stockton's future are solar energy, wind energy, and demand side management which incorporates energy consumption (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Stockton has some ongoing projects that help add to their green and sustainability initiative. The Four Mile Trail allows for walking, bicycling, and jogging through forested areas. The impact encourages healthy on-campus recreation and awareness of the Pinelands ecosystems. Stockton uses solar electricity. Stockton has installed photovoltaic panels with inverters and associated distribution lines. The impact allows for reduced demand for peak usage and the distribution cost to be eliminated for all electricity generated. Stockton has a four-day summer work week which allows for a reduction of the energy consumption on Friday by as much as 20%. Stockton continues to recycle electronics. By collecting unused computers, monitors, printers, and faxes, over eight tons can be recycled annually (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Stockton is committed to green long-term planning. The American College and University Presidents Climate Commitment is a committee that guides and selects future energy sustainability projects and preparation and planning on reduction of the carbon footprint. The Campus Energy Master Plan ensures that energy infrastructure is ready for future growth. Storm water control master planning incorporates the use of best management practices for all storm water control elements. Reforestation master planning is used to enhance the diverse ecosystems (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Stockton is very energy conscious. The college has expanded its geothermal project to many different buildings on campus. This has helped to drop the energy consumption by 25%. This project has also utilized space since there is now only one set of equipment. The campus cooling loops have increased efficiency of the air conditioning and help take advantage of peak energy usage buildings. The Fuel Cell Demonstration Project allows natural gas to generate electricity. This project has significantly reduced the college's greenhouse gas production (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

The F-wing expansion and renovation was the first LEED certified green building. This incorporates low water use, certified wood, and use of recycled materials, green housekeeping, and low emitting materials. The Housing V Project includes different energy and sustainability measures such as geothermal heating and air conditioning, renewable flooring, and energy efficient building shell. Stockton has achieved different awards and participates in different memberships. Stockton was awarded the Environmental Stewardship Award through the New Jersey Department of Environmental Protection for its water use reduction and renewable energy use. Stockton is also a member of the New Jersey Higher Education Partnership for Sustainability (NJHEPS). The mission of NJHEPS is to transfer educational communities to constantly practice sustainability (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

Other energy savers include having the washers and dryers on campus replaced with energy efficient units which significantly helps reduce water deduction, shifting from polluting gasoline engines to electric/hybrid vehicles, replacing all lighting fixtures with energy efficient lighting, and planting trees and shrubs around campus to eliminate any deforestation (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

There are also many student initiatives on campus. One initiative is Recycling PLUS which involves campus-wide pick up and collection of recyclable waste to keep toxins out of the environment. The Bicycle Loan program allows resident students to use bikes to help reduce driving on campus. There are also many student organizations that have a high concern for the environment such as Student Action Volunteers for the Environment (SAVE) and Water Watch (http://intraweb.stockton.edu/eyos/page.cfm?siteID=172&pageID=1).

The Richard Stockton College of New Jersey has clearly been ahead of its time in the green movement. In the larger societal context, "going green" has been an approach limited to rural areas or small groups of people living "off the grid." Recently the green movement has spread to embrace a much larger group of supporters, including business planners and corporate executives. "Going green is all over the news these days. It has now become more than just a feel good slogan and increasingly is becoming a key factor as businesses continue to compete in a highly competitive global environment. Companies have now begun to build their business models for growing and retooling with a green component" (Crawford, Langdon, and Morris, 2008).

The Boston Consulting Group (Roche and Munnich, 2009) advocates that companies should strategically embrace the four P's of green advantage: green planning, processes, product offerings, and promotion. In green planning, companies "embed green targets and resources into corporate strategy" (Roche and Munnich). Green processes refer to companies reducing operational waste and "encouraging others to operate in a green way." Green promotion involves developing and communicating a message on sustainability (Roche and Munnich). The concept of green products includes "determining offerings, packaging, and pricing" as well as pursuing innovations that will lead consumers toward "living greener" (Roche and Munnich).

Globally, people are very worried about the environment and are beginning to think more carefully about human impact on an increasingly fragile environment. Thus, the level of environmental consciousness is rising, leading to many people feeling they should be more socially responsible and that both industry and business should be more socially responsible as well. The Boston Consulting Group reports that 73 per cent of consumers think it is important that companies have a good environmental track record (Roche and Munnich, 2009).

Thus, companies must consider how to go green in such a way that is both environmentally and economically beneficial (Crawford, Langdon, and Morris, 2008). Since one of the key contributors to global warming is greenhouse gas emissions, companies must look at how construction and operation building costs contribute to this problem. One climate change study estimated that the built environment is responsible for up to 40 per cent of greenhouse gas emissions in the United States and that construction of a building can contribute as much as 10 to 15 times the carbon emitted by the annual operation of the same building. Specific construction contributors that negatively impact the environment include: extraction, manufacture, and transport of construction materials; construction waste; the amount of paving, and the associated loss of green spaces and natural habitat (Crawford, Langdon, and Morris, 2008). Operationally, buildings are significant consumers of energy for lighting, heating, and cooling. Reducing the need for energy and water is a key component in building a more sustainable building (Crawford, Langdon, and Morris, 2008).

Two national systems set green standards in design criteria. One system is LEED, a certification process (Crawford, Langdon, and Morris, 2008). The other system is Green Globes, a rating system. A recent study by the New Buildings Institute found that LEED-rated buildings provide a 25-30 per cent energy savings compared to their non-LEED counterparts (Crawford, Langdon, and Morris, 2008). Businesses have to consider both the initial cost of the building and long-term financial benefits. Some of the long=-term benefits related to going green include reduced energy and operating costs, improved employee well-being, and reduced insurance costs (Crawford, Langdon, and Morris, 2008).

There are additional strategies that companies can employ to become greener. For example, companies can provide incentives or assistance to employees to carpool or use public transportation. Employers can allow flexible schedules or telecommuting. Businesses can institute recycling systems and educational programs about recycling. Some companies require the use of non-toxic cleaning supplies (Crawford, Langdon, and Morris, 2008). Building designers can incorporate green spaces in landscaping plans. Technology giant Sun Microsystems plans to reduce its greenhouse gas emissions by 20 per cent by 2012 through a variety of practices, including using energy-saving technology in its computer chips and allowing thousands of its 34,400 employees to work at home (Iwata, 2008).

As the green economy expands, so do green-collar jobs. Currently the main career domains for green-collar jobs are construction, manufacturing, installing, and operations/maintenance (Crawford, Langdon, and Morris, 2008). Kate Gordan (as cited in Crawford, Langdon, and Morris, 2008), the program director for Apollo Alliance, outlines four recommendations for policymakers in building a strong local green economy. First, businesses and communities should identify environmental and economic goals and assess opportunities for achieving those goals. Second, they should enact policies and programs that will drive investment into green activity. Third, they should participate in green-collar job training partnerships and provide green pathways out of poverty. Last, they should leverage the program's success to build support for further green initiatives.

It is becoming evident that eco-aware business practices mean more than recycling. Bonnie Ram (as cited in Hottman, 2009), program director at Energetics Consulting, Inc. describes the shift saying, "It's a completely different way of looking at how you produce something, if you're only looking at the end of the line, then you're missing 90 percent of where you're spending your money." As companies analyze how they execute services or create products, they will discover areas where material consumption can be reduced or worker efficiency can be increased. Both can translate into cost savings for the company (Hottman, 2009).

There can, however, be challenges. An example of this comes from a California digital printing company in Santa Clara which produces large format wall murals, banners, vehicle wraps, and trade show graphics (Bergman, 2007). Committed to going green, the company set about converting to a digital printer that would use corn-based inks, eco-papers, and bio-vinyl material to form a green package that is biodegradable in most landfills (Bergman, 2007). The costs mounted: \$300,000 for the machine cost and higher costs for eco-friendly products and materials (Bergman, 2007). Eco-friendly inks run about twice as high as traditional inks, and vinyl and other products can cost as much as three times the price of standard materials. Passing along these costs to the customer can prompt them to shop around for cheaper rates, and businesses can never be sure what customers' reactions will be. The general perception, however, is that a green focus will become standard business practice (Bergman, 2007).

One indication of the green movement moving into the business world can be seen in investment priorities (Bucknam, 2008). Many venture capitalists are "pouring billions of dollars into clean-energy start-ups: producers of solar panels, biodiesel fuel, and even eco-friendly drywall" (Bucknam, 2008). Ken Lawler (as cited in Bucknam, 2008) , a partner at Battery Ventures in Menlo Park, calls clean energy "the biggest set of new market opportunities to come along in a long time." Data released from Dow Jones Venture Source shows that in 2007, venture investors globally invested three billion dollars in 221 companies developing clean technologies, a 43 per cent increase from 2006 (Bucknam, 2008). In the United States, solar companies were the most popular green investments. The largest investment, however, was to a California-based electric car company (Bucknam, 2008).

There is definitely growing interest in going green. A survey by IVM found 68 percent of businesses were "looking at corporate social responsibility as a way to generate new revenues by creating new products or adapting existing ones" (Mincer, 2008). This new consciousness comes from increasing social pressure for eco-friendly practices, stiffer rules by regulators, and a new sustainability vision that corporate budget developers and financial planners must pay attention to (Mincer, 2008). Some companies are hiring consulting firms to help them maximize the opportunity which the green movement provides (Mincer, 2008). These consultants will "help companies analyze their carbon foot prints, identify ways to decrease energy consumption, and identify potential tax benefits of sustainability efforts" (Mincer, 2008). Businesses are looking for advice in this new field because they realize that many employees, shareholders, and customers embrace going green (Mincer, 2008).

Leadership is critical for major corporations to change their habits and take new measures to reduce their companies' effect on the environment. To make a significant impact, turning off lights and recycling waste is not enough (http://www.ytlcommunity.com/climatechangeweek2007/shownews.asp?newsid=46784). "The movement needs to include a leadership vision – making a major commitment to fundamental change. Any environmental program embraced must be part of a strategic and comprehensive commitment. It needs to start from the executive leadership and cannot be a push from the bottom" (http://www.ytlcommunity.com/climatechangeweek2007/shownews.asp?newsid=46784). Corporate vision, strategy, and governance must all be formulated with social responsibility and environmental sustainability as key components. For businesses, the strategy "always leads back to customers and employees. How do we develop functionality and power efficiency at the same time? What's possible with smart goals or smart buildings?" (http://www.ytlcommunity.com/climatechangeweek2007/shownews.asp?newsid=46784).

According to Business Pundit (www.businesspundit.com/25-big-companies-that-are-going-green), some major corporations considered offenders in the past are changing their ways. Bank of America reports reducing paper use by 32 per cent from 2000-2005 and running an internal recycling program that recycles 30,000 tons of paper each year. The company also offers employees a $3,000 cash back reward for buying hybrid vehicles. Since 2006, General Electric has sold over 12 billion dollars of its Ecomagination products, including solar panels. Home Depot assures its customers that it will no longer sell products harvested from trees in old-growth rainforests. Dupont has lowered its emissions of airborne carcinogens and greenhouse gases as well as appointed an ex-Greenpeace leader as a board advisor. Starbucks Coffee claims that using coffee cup sleeves made of recycled paper saves 78,000 trees each year. Dell has a recycling program for computers that allow customers to return any Dell-branded product back to the company for free. Target stores have introduced an eco-clothing line. Anheuser-Busch now saves 21 million pounds of metal per year by trimming an eighth of an inch off the diameter of its beer cans. Wal-Mart aims to eventually power each of its stores using 100 per cent renewable energy sources (www.businesspundit.com/25-big-companies-that-are-going-green).

In addition, there are some companies launching innovative products or processes. Hewlett-Packard is operating "e-waste" recycling plants that shred discarded, obsolete computer products into raw materials that can be recycled. Brooks is rolling out a completely biodegradable running shoe that they claim will biodegrade in just 20 years instead of the traditional 1,000 years. Honda is working to create an infrastructure for hydrogen power. Toyota is famous for offering its Prius, the first mass-market hybrid vehicle with a 48MPG rating. Tesco, a British grocery chain, offers savings to shoppers who bring reusable shopping bags to its stores. Enterprise has promised to plant fifty million trees across America's forests. For companies with green vision and green commitment, many creative possibilities exist (www.businesspundit.com/25-big-companies-that-are-going-green).

While corporate America can be applauded for paying attention to going green, the Richard Stockton College of New Jersey can be applauded even more by already being a green frontrunner for several years. Michael Robertson (as cited in Bergman 2007), president for Virginia-based Speciality Graphic Imaging association, captures the change in corporate "greenness" as he predicts, "Today, the focus on sustainable operations is stronger than ever, but tomorrow it will be standard business practice." At the Richard Stockton College of New Jersey sustainable operations is already standard business practice.

David Weigel (as cited in Bergman 2007), vice president of marketing for Ecos Consulting, suggests that in the future, companies will have to be open-minded in order to move ahead. "While going green helps distinguish a business and set it apart in the community as a responsible organization, it is actually becoming more evident that early adopters and companies with real sustainability in mind are now edging out the competition." The Richard

Stockton College of New Jersey was an early adopter in the educational community several years ago.

Going green is becoming a key factor as businesses continue to compete in a highly competitive global environment (Crawford, Langdon, and Morris, 2008). Forward-thinking companies and institutions are looking at environmental considerations as a source of both innovation and growth (Crawford, Langdon, and Morris, 2008). Yet, the Richard Stockton College of New Jersey has successfully built and maintained sustainable practices enabling the institution to meet environmental, social, and economic green goals. In addition, the college looks ahead to future endeavors that will build on its green success and keep its visionary thinking alive.

Educational institutions have a responsibility to go green for classrooms and campuses are where the future is shaped: future goals, priorities, and ethics. Students must learn about the value of protecting the environment in order to become adults who demonstrate environmentally-friendly habits. Students must learn about designing and planning within the context of energy efficiency and environmental consciousness in order to become decision-makers who try to reduce negative human impact on the environment. Students must practice creative, transformative thinking in order to become business leaders who situate business visions and policies within a larger context of social responsibility. Richard Stockton College of New Jersey has taken this responsibility of shaping the future seriously by being a green pioneer and continuing to be a model for green innovation and commitment.

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SOCIALIZATION PROCESS AS A MODERATING VARIABLE ON TRANSFORMATIONAL LEADERSHIP'S DEVELOPMENT OF VALUE CONGRUENCE

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ABSTRACT

Perceived value congruence between the employee and their employer is associated with increased organizational commitment, reporting to work on time, overall happiness and satisfaction with the organization. Recognizing that value congruence provides several benefits, organizations would be well served to develop strategies that enable value congruence between the organization and the employees. This research seeks to determine if there is a relationship between transformational leadership and socialization process on the development of value congruence. Utilizing multivariate regression analysis this study found that, contrary to the researchers original hypothesis, informal socialization has a moderating impact on transformational leadership's ability to develop value congruence. Additionally, this research supports previous studies that suggest transformational leadership increases employee/organization value congruence.

INTRODUCTION

Organizations that are able to effectively assure employee/organization value congruency between find several benefits from the shared values between the organization and employees. Perceived value congruence between the employee and their employer is associated with increased organizational commitment, reporting to work on time, overall happiness and satisfaction with the organization (Feather, 1979; Chatman, 1991). Recognizing that value congruence provides several benefits, organizations would be well served to develop strategies that enable value congruence between the organization and the employees.

Organizational socialization is a process in which employees are exposed to and acquire the organizational values, job skills, social knowledge, attitudes, and expected behaviors necessary to perform their roles within the organization (Feldman 1989; Jones 1986; Louis 1980; Van Maanen and Schein 1979). Organizations socialize new hires by creating a series of events that may undo old values so the person is prepared to learn new ones (Schein, 1988). The implication for leaders is that they should institutionalize socialization settings if they wish to positively impact culture via building organization value congruence (Grant and Bush, 1996). Cooper-Thomas and Anderson (2002) found that a formalized socialization process greatly decreases the amount of time it takes to develop value congruence within new hires.

A transformational leader's behavior can align followers' personal values and interests with the collective interests of the group/organization (Bass, 1985). One attribute of a transformational leader that results in value congruence is idealized influence. A transformational leader serves as a role model for employees. Employees are unlikely to adopt the organization's ethical value system unless they observe management serving as a role model and practicing these ethical values (Fritz et al., 1999; Sims & Keenan, 1999).

VALUE CONGRUENCE

Individual Values

Defining the concept of values for the individual has proven to be a challenging prospect. Robbins (2003) defined values as the "basic convictions that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p. 64). In his definition, Robbins suggests that a person's behavior, or 'mode of conduct', is guided by their individual values.

In a different approach to defining individual values, Dose (1997) discussed values within the context of the work environment. Individual values "are evaluative standards relating to work or the work environment by which individuals discern what is 'right' or assess the importance of preferences" (p. 227-228). Dose's definition constructs an individual's values in the context of the working environment.

Rokeach (1973) provided a broader reaching definition; "Values are determinants of virtually all kinds of behavior that could be called social behavior – of social action, attitudes, and ideology, evaluations, moral judgments and justifications of self and others, comparisons of self with others, presentation of self to others, and attempts to influence others (p. 24). Specifically, Rokeach suggests that values determine behavior and have a significant role in the decision-making process of employees in their work environment and on how and what tasks they will perform. As employees make day-to-day decisions, their values have a direct impact on how they make these decisions. Lord and

Brown (2001) called attention to two important functions of values; 1) Because they are enduring and transcend situations, values can provide coherence and a sense of purpose to an individual's behavior; 2) because they are normative standards, values are a basis for generating behaviors that conform to the needs of groups or larger social units.

While the definitions of individual values are varied, Finegan (2000) and Senger (1971) suggest that there exist several common threads that run through most attempts to define individual values. Values are what people use to determine what is right and what is wrong and thus values serve to guide the individual's decision-making process. Individual values tend to be enduring overtime.

Organizational Values

Organizational values are not unlike individual values in that they guide the overall activities and behavior of an organization. Values are relatively enduring constructs that describe characteristics of individuals as well as organizations (Chatman, 1989). Chairman and CEO of Levis Strauss, Robert Haas, has stated, "company's values – what it stands for, what its people believe in – are crucial to its competitive success (Howard, 1990). McDonald and Gandz (1991) suggested that an organization's values impact a wide range of issues within the organization's environment. These issues include strategic decision-making, corporate ethics, operational decision-making, interpersonal conflict, quality of working relationships, career choice and progressions, and employee motivation and commitment.

Wiener (1988) suggests that the origin of organizational values can often be attributed to charismatic leaders, such as a founder, or organizational traditions. The origin of organizational values can be of critical importance. Those values rooted in tradition have survived the test of time and thus provide stable foundation of values for the organization, employees, and clients. Values that originate from a charismatic leader may be short-lived because they are only effective as long as employees directly identify with the leader (Kelman, 1961). Examples of organizational values can include loyalty, integrity, credibility, superior customer service, and diversity.

Value Congruence

The topic of value congruence between organizations and employees has been widely researched (Kemelgor, 1982; Davis, 1984; Saxton & Serpa, 1984; Shein, 1985; O'Reilly, Chatman, & Caldwell, 1991; Posner, 1992; Adkins & Russell, 1994, Jung & Avolio, 2000). Rokeach's (1973) definition of value congruence suggests that values shared by group members, particularly values concerning modes of conduct, become similar to norms in guiding members toward uniformity in behavior. Apasu, Ichikawa, and Graham, (1987) define value congruence as the degree of similarity between the employee's values and the values of the organization. When organizations and employees share similar value structures, they are said to have a high level of value congruence. The shared values of organizational members constitute an organizational value system (Wiener, 1988).

At the organizational level, shared values, between employees and the organization, are one of the main indications for a strong corporate culture (Deal and Kennedy, 1982). In the absence of these shared meanings beliefs and values, an organization will suffer from a significant lack of corporate culture. Within the existing literature, organizational values and culture have been defined independently and used interchangeably. Kerr and Slocum (1987) state: "A corporation's culture simultaneously determines and reflects the values, beliefs, and attitudes of its members." (p. 99)

Organizations that are able to effectively develop value congruency find several benefits from the shared values between the organization and employees. Chatman (1991) found that congruence between employees and organizations was associated with increased job satisfaction, organizational commitment, and reporting to work on time. Congruence of values between organizations and employees has been found to indicate overall happiness and satisfaction with the organization (Feather, 1979). Committed and loyal employees are more productive at their work than those who are less committed to their companies (Bragg, 2002). Those employees that are committed to employers are likely to be more satisfied with their jobs (Bateman & Stasser, 1984; Mowday, Porter, & Steers, 1982), are more motivated to do well (Mowday, Steers, & Porter, 1979), and are late less often (Mathieu & Zajac, 1990; Steers & Rhodes, 1978).

A congruence of values not only serves to improve employee commitment but it also can enable an organization to survive situations that organizations without value congruence could not. Knowledgeable leaders develop a cooperative spirit by instilling a culture of shared values and rely on those same values to guide the organization through periods of conflict (Kouzes & Posner, 2003).

SOCIALIZATION PROCESS

Socialization is defined as the process by which people learn the ways of a culture or society so they can effectively function within it (Rice, 1995). While early research on the socialization process focused on how children's values were developed through the socialization process with their parents and the education system, management theorists have looked to the socialization process to understand how employees adapt to their organizations. Organizational socialization is often identified as the primary process by which people adapt to new jobs and organizational roles (Chao, O'LearyKelly, Wolf, Klein, & Garnder, 1994).

In the work environment context, the socialization process serves an important role in the development of employees. Mujtaba and Sims (2006) state that socialization ensures new employees learn the accepted ways of responding to each situation and the expected ways of working with others. The socialization process establishes clear expectations as to the accepted behaviors of new hires. To perform effectively, newcomers need information that enables them to do their job, and information that will help them understand the behavioral patterns of the people with whom they work (Comer, 1989).

Cable and Parsons (2001) suggest that an effective organizational socialization process leads to an alignment between the employee's values and the organization's values. By developing a socialization process, organizations can effectively oversee and guide the development of the employee as they begin to integrate themselves into the organization's culture. Playing an active role in the socialization process enables an organization to ensure the new hire is exposed to the values promoted by the organization. An organization's stability and productivity partially depend on the way new hires carry out their tasks (Van Maanen, 1978). Ensuring that new hires understand the values and behaviors rewarded by the organization can have a direct impact on the organization's performance.

Employee socialization may be formal or informal. Formal socialization takes place during orientation meetings, training sessions, workshops, and the assignment of mentors. Informal socialization occurs when employees learn by watching their supervisors and co-workers (Mujtaba and Sims, 2006). Informal socialization takes too long and may not be very effective in large organizations (Hopkins, 1997). In their study of army recruits, Cooper-Thomas and Anderson (2002), found that a formal socialization process could be effective in developing value congruence in as little as 8 weeks. Van Maanen (1978) defined formal socialization by the degree to which the employee is segregated form the work context and the degree to which the new employee's role is emphasized and made explicit. By taking active control of the socialization process, an organization can greatly diminish the time it takes new hires to understand the organization's values. In their study of the impact of a well-managed socialization process, Walker et al. (1979) found that a well-managed process has a favorable effect on motivation, job involvement, commitment, satisfaction, and performance.

Empirical research suggests that a lack of attention to the socialization process could have an undesirable effect on sales force turnover levels among new salespeople (Johnston et al. 1987). Further, Mujtaba and Sims (2006) found empirical evidence that informal approaches to the socialization process was not as effective in developing value congruence between employees and the organization as a formalized approach.

TRANSFORMATIONAL LEADERSHIP

Building on J.M. Burn's (1978) theory of Transforming Leadership, Bernard M. Bass (1985) developed the theory of transformational leadership. According to Bass (1985), transformational leadership is seen when leaders:

- Stimulate interest among colleagues and followers to view their work form new perspectives
- Generate awareness of the mission or vision of the team and organization
- Develop colleagues and followers to higher levels of ability and potential
- Motivate colleagues and followers to look beyond their own interest toward those that will benefit the group

Transformational leadership is focused on creating a shared vision and motivating followers to sacrifice their self for the greater good of the organization. This leadership style seeks to engage the follower's creativity and loyalty thus earning a higher level of commitment and effort from the follower.

Transformational Behaviors, also known as the 4 I's (Bass, 1985):

- Idealized influence – The leader shares a vision and sense of mission with the followers. Radical innovative solutions to critical problems are proposed for handling followers' problems. The leader has the followers' respect, faith, and trust. The followers want to identify with the leader. The leader shows determination and conviction.
- Intellectual stimulation – The leader encourages new ways of looking at old methods and problems. The leader emphasizes the use of intelligence and creativity. The leader provokes rethinking and reexamination of assumptions on which possibilities, capabilities, and strategies are based.
- Individualized consideration – The leader gives personal attention to followers and makes each feel valued and important. The leader coaches and advises each follower for the followers' personal development.
- Inspirational Motivation – The leader increases the optimism and enthusiasm of followers. The leader communicates with fluency and confidence using simple language and appealing symbols and metaphors.

Creating a shared vision is critical for a transformational leader. Within the creation and realization of this shared vision, a transformational leader aligns followers' personal values and interests with the collective interests of the group/organization (Bass, 1985). Several researchers (Lord and Brown, 2001; Finegan, 2000; Senger, 1971) have suggested that while values are enduring over time, they are subject to change.

Individual consideration associated with transformational leadership enables leaders to participate in the followers' development of their values and self-concepts. Leaders that engage and develop their followers' self-concepts are expected to have a strong, positive influence on followers' personal values (Gardner and Avolio, 1998). Bass (1985) suggests that transformational leaders motivate their followers by transforming followers' personal values to support the collective goals/vision for their organization. Recognizing that transformational leaders can impact employee values, organizations should carefully consider what values they hold and how their leadership reflects those values.

Dubinsky et al. (1995) suggest that lack of exposure to leadership could account for lack of impact of transformational leadership on less tenured employees. In order for transformational leadership to be effective, the follower must see the leader as a role model. It takes time for the follower to observe and internalize the behavior of the leader before that follower can follow the leaders behavior. Additionally, transformational leadership requires the leader to develop a shared vision for the follower. It takes time to effectively communicate the vision and for the follower to accept this vision as their own.

RESEARCH QUESTION

This research seeks to determine if socialization process is a moderating variable in transformational leadership's ability to develop value congruence. Both formal socialization process and transformational leadership have been shown to result in value congruence (Mujtaba and Sims (2006); Gardner and Avolio, (1998); Bass (1985); Walker et al. (1979)). Transformational leadership results in value congruence, but the results of transformational leadership can only occur after the follower has been exposed to leadership for a significant period of time. A formal socialization process also results in value congruence, but the results can be realized in a much shorter time frame. However, most formal socialization processes are focused on socializing new employees rather than the continuous socialization of existing employees. The ability of a formal socialization process to develop value congruence in the early stages of employment may serve as a moderating variable on transformational leadership's ability to develop value congruence.

HYPOTHESES

Considering the information gleaned from the literature review, I propose the following hypotheses for this research project:

H(1): Transformational leadership will be positively related to the levels of employee value congruence.

H(2): The extent of socialization will moderate the relationship of TL and VC so that the TL will have a larger effect on VC for employees who receive larger exposure to formal socialization.

Organizational socialization is a process in which employees are exposed to and acquire the organizational values, job skills, social knowledge, attitudes, and expected behaviors necessary to perform their roles within the organization (Feldman

1989; Jones 1986; Louis 1980; Van Maanen and Schein 1979). Organizations socialize new hires by creating a series of events that may undo old values so the person is prepared to learn new ones (Schein, 1988). The implication for leaders is that they should institutionalize socialization settings if they wish to positively impact culture via building organization value congruence (Grant and Bush, 1996). Cooper-Thomas and Anderson (2002) found that a formalized socialization process greatly decreases the amount of time it takes to develop value congruence within new hires.

A transformational leader's behavior can align followers' personal values and interests with the collective interests of the group/organization (Bass, 1985). One attribute of a transformational leader that results in value congruence is idealized influence. A transformational leader serves as a role model for employees. Employees are unlikely to adopt the organization's ethical value system unless they observe management serving as a role model and practicing these ethical values (Fritz et al., 1999; Sims & Keenan, 1999).

METHODS

In order to test the moderating effect of socialization on transformational leadership's ability to develop value congruence, I collected surveys that measure employees' perceptions as it relates to 1) existing levels of value congruence between the organization and the employee, 2) existing levels of transformational leadership, and 3) levels of formal socialization process within their first year of employment. Control variables such as tenure, age, gender, job type (executive, manager, employee) and education level were also collected in this research..

Sample

The survey was built utilizing www.surveymonkey.com. An electronic survey was utilized because of the ease of distribution and low cost associated with electronic surveys. The survey instrument will be distributed via www.linkedin.com and www.facebook.com. Hair et al. (2010) suggest that a 15:1 ratio of subjects to independent variables is the minimum ratio required in a sample, thus my sample size goal was 120 respondents.

There were 105 surveys collected for this research (n=105). All of the surveys returned were completed in full and thus able to be used in the research. There were 67 contacts within the linkedin network and 105 contacts within the facebook network, resulting in a 61% response rate. The sample was comprised of 62% male and 38% female respondents. As it relates to highest level of education attained, 21.9% of respondents had a masters degree, 60% had an undergraduate degree, 13.3% had some college, and 5% listed high school. 40% of respondents had been with their current employer for 0-3 years, 27.6% had tenure of 4-6 years, 13.3% had 7-9 years, and 19% had 10+ years with their current employer. 12.4% of respondents indicated that they had an executive level position, 43.8% indicated they had a manager level position, and 43.8% indicated that they were employees.

Measures

In order to measure value congruence, items taken from Barnes' (1992) dissertation at Arizona State University were used. Specifically, Barnes (1992) utilized three questions to measure perceived value congruence. Each question utilizes a 7-point Likert-type scale ranging from "strongly agree" to "strongly disagree". In the context of this research, the measure was found to have a Cronbach's alpha of .98.

Formal socialization process was measured utilizing a 7-point Likert-type scale ranging from "strongly agree" to "strongly disagree". The questions measuring the level of formal and informal socialization were taken from Jones' (1986) scale. In the context of this research, the measure for formal socialization had a Cronbach's alpha of .32. As this reliability was unacceptable, two of the questions from the measure were dropped resulting in a Cronbach's alpha of .98. The questions measuring informal socialization had a Cronbach's alpha of .91.

Transformational leadership was measured utilizing Carless, Wearing, and Mann's (2000) Global Transformational Leadership Scale (GTL). The GTL utilizes a 5-point Likert-type scale ranging from "Rarely or never" to "Very frequently, if not always". Carless et al.'s GTL scale was tested against the Leadership Practices Instrument (Kouzes and Posner, 1990) and the Multifactor Leadership Questionnaire (Avolio, Bass, and Jung, 1995). The GTL had a Cronbach's alpha of .97.

PROCEDURE

Multivariate regression was used to test the following hypotheses:

H(1): Transformational leadership will be positively related to the levels of employee value congruence.

H(2): The extent of socialization will moderate the relationship of TL and VC so that the TL will have a larger effect on VC for employees who receive larger exposure to formal socialization.

Multivariate regression analysis will be conducted using perceived value congruence as the dependent variable, transformational leadership as the independent variable, formal socialization as the moderating variable, and the control variables listed above. As all of the survey instruments were likert-type scales, no coding was necessary.

RESULTS

Descriptive Statistics

Means and standard deviations of this analysis are provided in the Appendix, Table 1 for control, independent, and dependent variables. Role was coded through three specific designations, 1) Employee, 2) Manager, and 3) Executive. Tenure was coded as 1) 0-3 years, 2) 4-6 years, 3) 7-9 years, and 4) 10+ years. Education was coded as 1) high school, 2) some college, 3) undergraduate degree, and 4) masters degree. Gender was coded as 1) female and 2) male. Formal socialization, informal socialization, transformational leadership and value congruence were all measured utilizing a 7-point Likert type scale with 1 'being strongly disagree' and 7 'being strongly agree'.

Correlations

In order to examine the relationship among the independent, dependent and control variables, correlation analysis was performed. The results of the Pearson *r* correlation analysis are shown in the Appendix Table 2.

There was a positive and significant correlation between formal socialization and value congruence (r=.38, p<.01). There was a negative and significant correlation between informal socialization and value congruence (r=-.40, p<.01).

There was a positive and significant correlation between transformational leadership and value congruence (r=.79, p<.01).

There was a positive and significant correlation between transformational leadership and formal socialization (r=.50, p<.01). There was a negative and significant correlation between transformational leadership and informal socialization (r=-.29, p<.01). Role showed a negative and significant correlation with value congruence (r=-.22, p<.05) and a positive and significant correlation with informal socialization (r=.20, p<.05). Education had a positive and significant correlation with formal socialization (r=.22, p<.01), a positive and significant correlation with role (r=.43, p<.01), and a negative significant correlation with tenure (r=-.30, p<.01). Gender had a positive and significant correlation with role (r=.28, p<.01), a negative and significant correlation with tenure (r=-.30, p<.01) and a positive significant correlation with education (r=.26, p<.01).

Hierarchical regression analysis was conducted to test the hypotheses of this research. To protect against possible confounding effects of the control variables, role, tenure, education, and gender were first entered into the hierarchical procedure.

In the second step, transformational leadership (β = .76, t = 11.95, p =. 00) significantly contributed to the regression equation R^2=.66. The hierarchical regression analysis for transformational leadership is shown in the Appendix Table 3.

The next step in the regression analysis was to determine the interaction effect of socialization on the relationship between transformational leadership and value congruence. To perform this regression, two new variables were created in SPSS to account for the relationship between transformational leadership and socialization (FSxTL, ISxTL). These new variables were regressed separately as step 3 in the hierarchical regression analysis. Step 1 included the control variables as before. Transformational leadership was put into the regression as separate item in step 2. The new variable demonstrating the interaction effect comprised step 3.

The result of the regression test on the moderating effect of formal socialization (B = 0.01, t = -151, p = .881) indicates a slightly positive but insignificant interaction effect between transformational leadership and formal socialization on value congruence. The R^2 decreased in model three suggesting that model three explained less of the variance than that of model 2. The results showed the finding was statistically insignificant (p. = .881). These regression results are reflected in the Appendix Table 4.

The result of the regression test on the moderating effect of informal socialization (B = 0.10, t = -2.88, p = .005) indicates a slightly positive and significant interaction effect between transformational leadership and informal socialization on value congruence. The R^2 increased in model three suggesting that model three explained more of the variance than that of model 2. The results showed the finding was statistically significant (p. = .005). These regression results are reflected in the Appendix Table 5.

Hypothesis Testing Results

Transformational leadership was shown to have a significant impact on value congruence (r = .00, p<.01), therefore hypothesis one was supported.

A relationship between formal socialization and transformational leadership on value congruence was not found (r=.881, n.s.). However, there was a significant relationship between informal socialization and transformational leadership on value congruence (r=.005, p<.01). Graph 1 in the Appendix illustrates the relationship between informal socialization and transformational leadership on value congruence. The finding that informal socialization had a moderating effect on transformational leadership's development of value congruence supports the second hypothesis.

DISCUSSION

The results of this study supports previous research that suggests there is a significant relationship between transformational leadership and value congruence. A transformational leader aligns followers' personal values and interests with the collective interests of the group/organization (Bass, 1985). Gardener and Avolio (1998) suggest that transformational leaders engage and develop their followers' self-concepts and thus have a strong, positive influence on followers' personal values (Gardner and Avolio, 1998).

While there is a significant relationship between formal socialization and value congruence supporting Cooper-Thomas and Anderson (2002), formal socialization was not found to moderate transformational leadership's impact on value congruence. However, informal socialization was found to moderate transformational leadership's impact on value congruence.

Formal socialization takes place during orientation meetings, training sessions, workshops, and the assignment of mentors. Informal socialization occurs when employees learn by watching their supervisors and co-workers (Mujtaba and Sims, 2006). The fact that formal socialization is more regimented and effectively separates the employee from a majority of the organization could explain why there is no moderating effect on transformational leadership's ability to develop value congruence. In order for transformational leadership to be effective, the follower must be exposed to the leader for a long period of time (Dubinsky, et al., 1995). The structure of formal socialization prevents the employee from being effectively exposed to leadership and thus might explain why formal socialization does not moderate transformational leadership's impact on value congruence.

Informal socialization occurs when an employee is immersed in their job responsibilities from the beginning of their employment and left to learn the organization's values through observation and trail and error. While less structured than formal socialization, informal socialization does allow the employee to be immediately exposed to the behaviors of leadership. This increased exposure could explain informal socialization's moderating effect on transformational leadership and value congruence.

LIMITATIONS

One possible limitation of this research lies in the sample population. Since respondents were drawn from the social media sites facebook and linkedin, the sample may not be generalizable across other populations. Male respondents also heavily dominated the sample at 62%. This ultimately threatens the external validity of the findings of this research. Future research should attempt to use random sampling techniques.

Another limitation of the study is the measure of formal socialization. With a Cronbach's alpha of .32, this measure was not reliable. Future research should attempt to develop or utilize a measure of formal socialization that is more reliable. Additionally, as all three constructs were measured utilizing a single questionnaire, there exists the potential for common method variance. With this type of research design, the correlation between measures may be attributed to the same-source data rather than a real underlying relationship (Podsakoff & Organ, 1986). Future researchers should reduce the potential for common method variance by collecting data from multiple sources and multiple methods or collecting data from the same subjects at different times (Podsakoff & Organ, 1986).

CONCLUSION

Considering that employee/organizational value congruence can lead to an employee's overall happiness and satisfaction with the organization (Feather, 1979; Chatman, 1991), organizations should make value congruence a top strategy. The findings of this research suggest that organizations can benefit from both formal and informal socialization processes in an effort to develop value congruence. Even though this research did not find formal socialization to be a moderating variable on transformational leadership's development of value congruence, there was a significant and positive correlation between formal socialization and value congruence as previously found by Cooper-Thomas and Anderson (2002). However, if an organization has a high level of transformational leadership, the findings of this research would suggest that informal socialization would be preferable in an attempt to develop employee/organization value congruence.

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Table 1

Descriptive Statistics (N = 105)

	Mean	*Standard Deviation*
Role	1.69	0.68
Tenure	2.11	1.14
Education	2.99	0.74
Gender	1.62	0.49
Formal Socialization	4.16	2.17
Informal Socialization	4.51	1.69
Transformational Leadership	5.19	1.64
Value Congruence	5.54	1.58

a. Gender was coded 1 for female and 2 for male

Table 2

***Correlations and Internal Consistencies* (N = 105)**

Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Value Congruence								
2. Formal Socialization	.38**							
3. Informal Socialization	-.40**	-.28**						
4. Transformational Leadership	.79**	.50**	-.29**					
5. Role	-.22*	-0.02	.20*	-0.13				
6. Tenure	0.07	0.00	0.03	0.04	-0.19			
7. Education	0.04	.22*	0.04	0.10	.43**	-.30**		
8. Gender	-0.15	-0.13	0.08	-0.15	.27**	-.30**	.26**	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3

Transformational Leadership and Value Congruence (N=105)

Formal Socialization	Unstandardized Coefficients		Standardized Coefficients
	B	**Std. Error**	**ß**
Step 1			
(Constant)	6.55	1.05	
Role	-0.61	0.25	-0.27**
Tenure	0.09	0.14	0.06
Education	0.34	0.24	0.16
Gender	0.33	0.34	-0.10**
Step 2			
(Constant)	2.72	0.72	
Role	-0.28	0.16	-0.12
Tenure	0.056	0.09	0.04
Education	-0.01	0.15	-0.00
Gender	0.02	0.21	0.01
Formal Socialization	-0.06	0.08	-0.05**
Transformational Leadership	0.76	0.06	0.79

Dependent Variable: Value Congruence **Note: R^2 = .06 for Step 1. Adjusted R^2 = .66 for Step 2, *p < .05, **p < .01**

Table 4

Interaction Effect of Formal Socialization and Transformational Leadership (N=105)

Formal Socialization	**Unstandardized Coefficients**		**Standardized Coefficients**
	B	**Std. Error**	**ß**
Step 1			
(Constant)	6.55	1.05	
Role	-0.61	0.25	-0.27**
Tenure	0.09	0.14	0.06
Education	0.34	0.24	0.16
Gender	0.33	0.34	-0.10**
Step 2			
(Constant)	2.72	0.72	
Role	-0.28	0.16	-0.12**
Tenure	0.056	0.09	0.04*
Education	-0.01	0.15	-0.00**
Gender	0.02	0.21	0.01*
Formal Socialization	-0.06	0.08	-0.05**
Transformational Leadership	0.76	0.06	0.79
Step 3			
(Constant)	2.83	1.03	
Role	-0.27	0.16	-0.12
Tenure	0.06	0.09	0.04*
Education	-0.01	0.15	-0.01
Gender	0.03	0.21	0.01**
Formal Socialization	-0.10	0.32	-0.08
Transformational Leadership	0.74	0.17	0.76
FSxTL	0.01	0.06	0.05

Dependent Variable: Value Congruence

Note: R^2 = .063 for Step 1. R^2 = .639 for Step 2, R^2 for step 3 = .635 *p < .05, **p < .01

Table 5

Interaction Effect of Informal Socialization and Transformational Leadership (N=105)

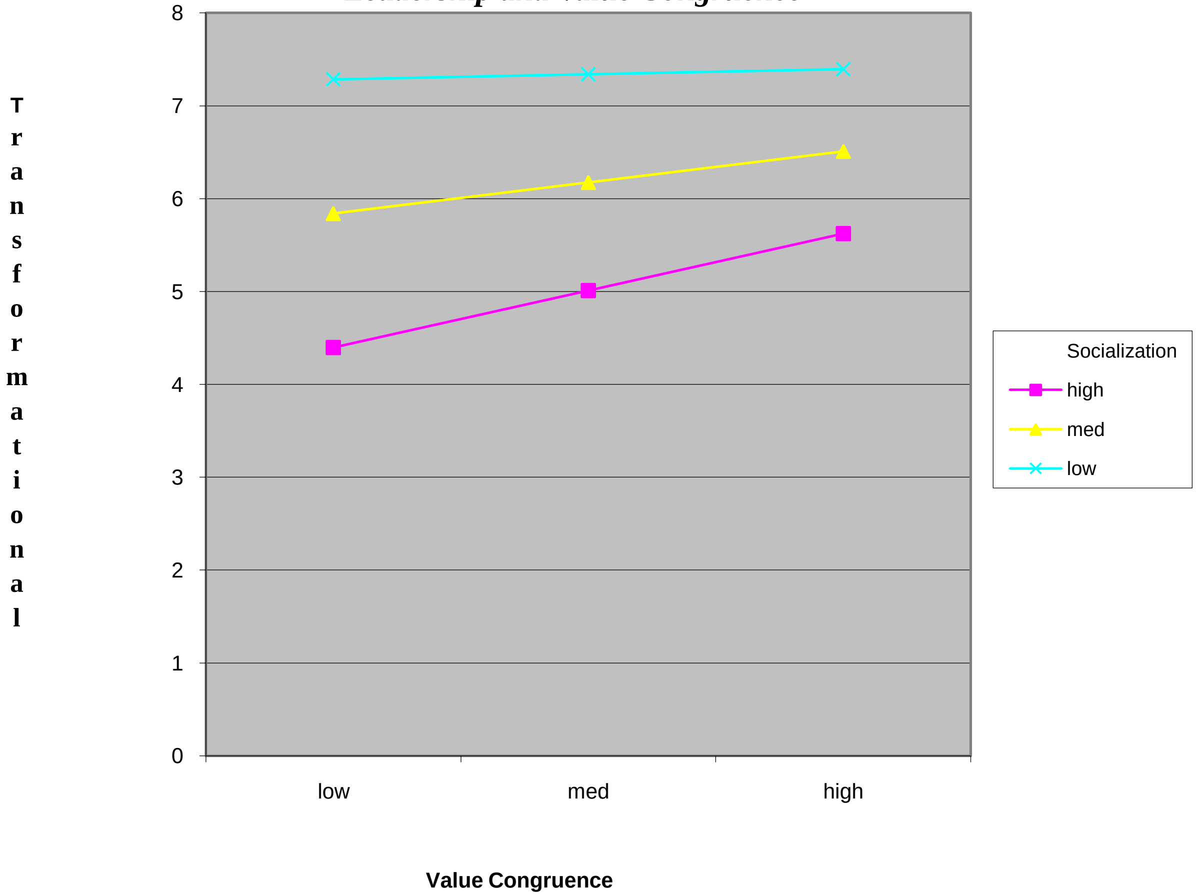
Informal Socialization	**Unstandardized Coefficients**		**Standardized Coefficients**
	B	**Std. Error**	**ß**
Step 1			
(Constant)	6.55	1.05	
Role	-0.61	0.25	-0.27**
Tenure	0.09	0.14	0.06
Education	0.34	0.24	0.16
Gender	0.33	0.34	-0.10**
Step 2			
(Constant)	3.35	0.74	
Role	-0.22	0.15	-0.10
Tenure	0.07	0.09	0.05
Education	-0.01	0.15	0.00
Gender	0.03	0.20	0.01
Informal Socialization	-0.15	0.06	-0.16
Transformational Leadership	0.70	0.06	0.73
Step 3			
(Constant)	6.18	1.21	
Role	-0.27	0.15	-0.12
Tenure	0.04	0.08	0.03
Education	-0.03	0.14	-0.02
Gender	-0.04	0.20	-0.01
Informal Socialization	-0.69	0.20	-0.74
Transformational Leadership	0.20	0.18	0.21
ISxTL	0.10	0.04	0.68

Dependent Variable: Value Congruence

Note: R^2 = .063 for Step 1. R^2 = .661 for Step 2, R^2 for step 3 = .685 *p < .05, **p < .01

Graph 1

Interaction effect of Informal Socialization on Transformational Leadership and Value Congruence



USING THE MSLQ IN A COMPUTER INFORMATION SYSTEMS COURSE: REPORT FROM A SUMMER PILOT STUDY

W. R. Eddins, York College of Pennsylvania
G. E. Strouse, York College of Pennsylvania

ABSTRACT

Faculty who constantly upgrade the pedagogy of a course do so to improve the delivery of knowledge and enhance a positive outcome, better student performance as measured by final grade. If grades do drastically improve, how will faculty know that other changes to the course did not cause the positive outcome of improved grades? This paper examines cognitive scales that can provide other indicators of a positive outcome, the acquisition of knowledge. The Motivated Strategies for Learning Questionnaire (MSLQ) is tested in a pilot study during a summer session. Findings from the pilot study of the summer session are presented and examined for lessons learned prior to a fuller implementation of the MSLQ during the fall session.

INTRODUCTION

How does a teacher know that changes to a course result in authentic learning? The authors teach a course in Computer Information Systems (CIS) named IFS305-Management Information Systems. This course has been upgraded several times over the years. For instance, we have re-engineered the course syllabus and content of tests to enhance critical thinking (Eddins 2006). More recently, changes were made to IFS305 to incorporate question-based learning techniques and collaborative learning. The recent changes resulted in what appeared to be elevated student grades in courses taught by both authors.

When we put our heads together, we found that changes to pedagogy over approximately two and a half years were statistically significant. Professor Strouse reported statistical findings for control course taught in fall 2006 (*M* = 2.84, *SD* = 0.84), and treatment course in fall 2008 (*M* = 3.38, *SD* = 0.66). The x^2 (6, N = 108) = 21.88, p < 0.00 and t(108) = 1.66, p < 0.00 tests were both statistically significant at the 0.05 level. Professor Eddins reported statistical findings for control course taught in spring 2008 (*M* = 2.74, *SD* = 0.76) and a treatment course taught in spring 2009 (*M* = 3.03, *SD* = 0.77). The x^2 (3, N = 132) = 7.82, p < 0.00 and t(132) = 2.09, p < 0.01 tests were both statistically significant at the 0.05 level.

In addition to changes in course content and approach, changes also were made to grading that incorporated a participation component in the overall grade. So, the question begs to be asked: did true learning occur? In other words, did a change occur in learning behavior that resulted in improved grades, or was the adjustment to grading responsible for the improvement in student grades? More importantly to our profession, how does one assess outcomes of course and/or curriculum modifications and measure learning behavior beyond the obvious measure of the final grade?

DISCUSSION

This section reports some of the research into cognitive scales used in sociology and psychology which are employed to indicate learning outcomes other than final grade. Next, we report the methodology for a pilot study that will examine the use of a cognitive scale in an CIS course. Finally, findings from our research are presented.

Research in cognitive scales

This paper does not provide a comprehensive survey of research in cognitive scales as that topic should be a very lengthy project. For instance, Mayer et al (Mayer 2006) report research in psychological journals from 1930 to 2005 for purpose of identifying cognitive scales that measure motivation to learn and learning strategies. Their research identifies approximately 230 cognitive measures.

From the research of Mayer et al.(2006), we learned of the Motivated Strategies and Learning Questionnaire (MSLQ) (Pintrich et al, 1993). This scale is particularly interesting for our research because it has two cognitive scales. One scale focuses on motivational strategies that students might employ and another on learning strategies. The learning strategies component is of particular interest to us.

The MSLQ also appears to be very interesting to other researchers in CIS as well. For instance, the MSLQ has been used to investigate CIS topics such as programming course performance (Bergin 2006), an introduction to computer information systems (Chen 2002), self-directed learning in an online course (Shinkareva and Benson 2007), and the use of an online student response system (Edens 2006).

Finally, the MSLQ is free for academic applications since it was developed at the University of Michigan under a grant by the federal Department of Education. It is very well researched in several academic disciplines. And, it is modular in design. That is, it can be used piece-meal to examine specific issues in a college course. For these reasons, it was selected for the present study. (Pintrich et al. 1993).

METHODOLOGY

IFS305-Management Information Systems was conducted during a summer session in 2009 and was used as the pilot study. The course catalog statement for IFS305 follows.

> "A comprehensive discussion of the role of computer based information systems in modern organizations. Integrates managerial and computer knowledge towards identifying and solving information problems. Computer literacy is extended to MIS literacy. This is a writing intensive course."

The version taught during summer 2009 was considered desirable for a pilot study because it would have fewer students than the fall or spring semesters. Since the summer course directly proceeds the regular semester, any recommendations could be applied to IFS305 during the fall.

Therefore, a study was designed and conducted during the summer version of IFS305 which employed a pre/post application of MSLQ. Components from the MSLQ were identified for the survey based upon relevant objectives of the course. The relevant objectives which were analyzed follow.

- Use of application software to analyze and solve complex business problems and situations through a series of case applications
- The application and use of collaboration and collaboration tools to support innovation and decision making

The first objective really focuses on the use of application software, specifically Excel as a Decision Support System (DSS), to demonstrate critical thinking skills. The second objective focuses on the use of software to demonstrate collaborative learning skills. Thus, the related skill components of Critical Thinking, Peer Learning, and Help Seeking were selected from the MSLQ to be used as measurements.

Next, other skills related to Bloom's taxonomy (Bloom 1956) and the components of the MSLQ were examined to determine any additional component area questions that might shed insight. See Figure 1 for illustration of the relationship between Bloom's taxonomy and the components in the MSLQ. Since the lower levels of Bloom seem to correspond to the MSLQ components of Rehearsal, Elaboration, and Organizational components; they also were included in the pre/post survey. Therefore, the full list of components from the MSLQ includes Rehearsal, Elaboration, Organization, Critical Thinking, Peer Learning, and Help Seeking.

See Figure 2 for the pre/post survey. It is based upon a Likert scale. Students were directed to answer each question with 1 to indicate that the question is not at all true of me or a 7 that the question is very true of me and with values between 1 and 7 indicating varying levels of disagreement or agreement.

The pre-survey was administered at the beginning of the course. Students were assigned four case studies using software. The first case study demonstrated the use of Excel as a DSS and the second case study demonstrated the use of Access. After the first two case studies, students were assigned to teams of three and received instruction on collaboration software and in-class demonstration of the collaboration features of Google Docs. The last two case studies were performed in teams and demonstrated more advanced features of Excel and Access. The post-survey was administered on the last day of lecture and lab.

FINDINGS

The pre/post survey was analyzed by SPSS's X^2 (Chi-Square) procedure with Wald tests for differences with the outcomes summarized in Figure 3. The Tests of Model Effects show that there is a significant difference between the pre/post MSLQ survey component responses. Figure 3 also summarizes the estimates of the pre/post differences between components.

Figure 4 summarizes the pre/post survey differences between specific MSLQ components. As can be seen, the Rehearsal, Elaboration, and Organizational MSLQ components probably are not significant. However, the pre/post survey differences of the Critical Thinking, Peer Learning, and Help Seeking MSLQ components are highly significant.

Finally, the average grade for the pilot study course taught this summer was 2.81 (SD = 0.70, N = 8).

CONCLUSION

This section draws conclusions from the statistical findings discussed above, provides recommendations for further action and/or research, and gives overall observations.

Statistical conclusions follow. It appears that student learning behavior was enhanced by the collaboration pedagogy in the pilot study. It also appears that critical thinking improved due to the use of DSS software and case studies. These statements can be made despite the fact that the average final grade of the pilot group is probably significantly lower than previous courses that were upgraded. This finding probably resulted from a change in grading to lessen the impact of participation. Finally, lower level learning behavior as theorized by Bloom did not change. This probably indicates that students in this junior level course have the ability to achieve basic knowledge in a discipline.

Recommendations for IFS305 follow. The two course objectives described in this paper probably should be revised to more clearly align them with the implicit goals of the course to enhance critical thinking and collaborative learning. We should consider an ongoing program of MSLQ surveys both for improved course delivery and outcomes assessment. Further research into demographic variables such as gender, ethnicity, and age may indicate ways to improve course delivery. Finally, regression research may provide insight into the relationship between the MSLQ components and final grade.

This research is important for several reasons including improved course delivery and enhanced student learning. In fact, Pintrich (1993) gives some examples of suggestions that could be given to individual students to improve their learning behavior based upon their answers to the MSLQ questions.Of course, outcomes assessment will be a consideration. Many accreditation organizations are asking colleges to show evidence of improvement of course delivery, particularly in the area of critical thinking. Also, employers are very interested in knowing that candidates for hire can work in groups.

In closing, the effort to provide the data for this research was significant despite the small sample. And, two of the questions had to be dropped because a couple of students did not respond to them. The survey should be automated and provided via the internet. Email could be used to inform students of the results and give them suggestions to improve their learning behavior. If the survey can be automated at a reasonable cost, other faculty and colleges might use the MSLQ.

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APPENDIX

Figure 1 - Bloom's Taxonomy and the MSLQ

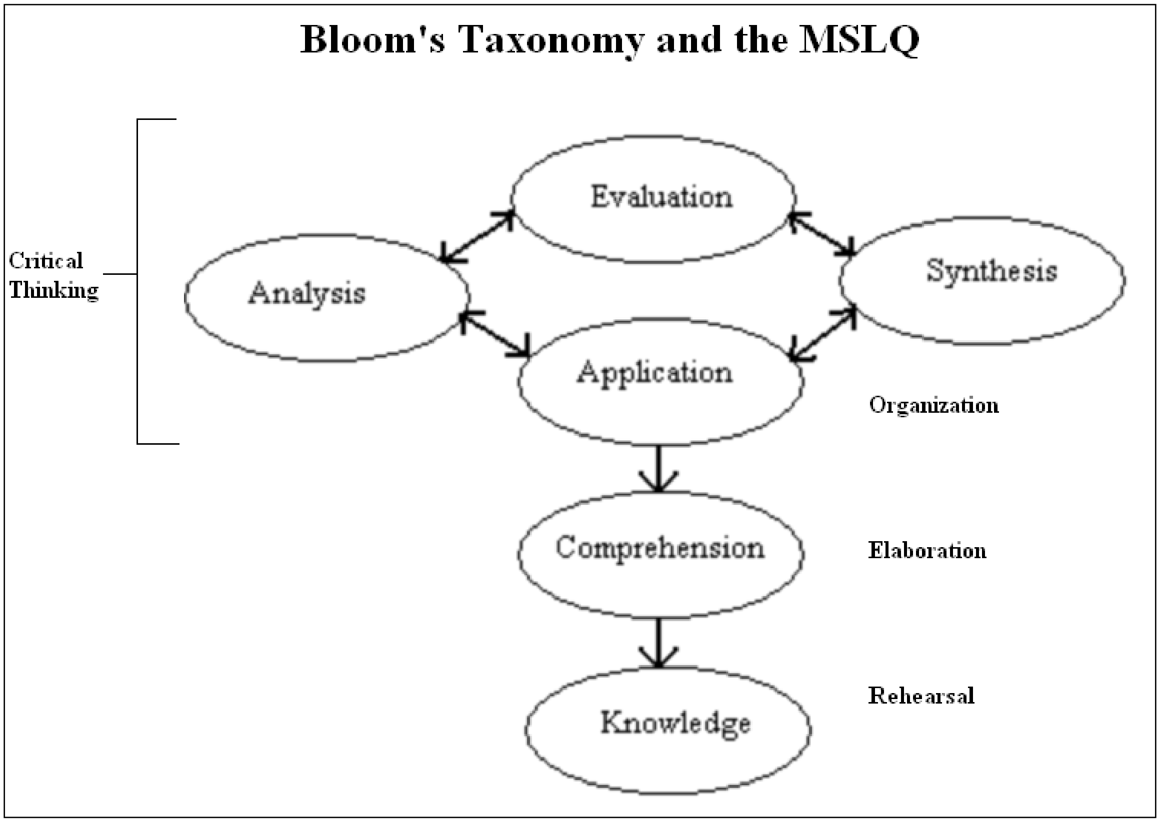


Figure 2 - The Pre/Post Survey

MSLQ Question or Statement
When I study the readings for this course, I outline the material to help me organize my thoughts.
When studying for this course, I often try to explain the material to a classmate or a friend.
I often find myself questioning things I hear or read in this course to decide if I find them convincing.
When I study for this class, I practice saying the material to myself over and over.
Even if I have trouble learning the material in this class, I try to do the work on my own, without help from anyone.
When I study for this course, I go through the readings and my class notes and try to find the most important ideas.
I try to work with other students from this class to complete the course assignments.
When studying for this class, I read my class notes and the course readings over and over again.
When a theory, interpretation, or conclusion is presented in class or the readings, I try to decide if there is good supporting evidence.
I make simple charts, diagrams, or tables to help me organize course material.
When studying for this course, I often set aside time to discuss the course material with a group of students from the class.
I treat the course material as a starting point and try to develop my own ideas about it.
When I study for this class, I pull together information form different sources, such as lectures, readings, and discussions.
I ask the instructor to clarify concepts I don't understand well.
I memorize key words to remind me of important concepts in this class.
I try to relate ideas in this subject to those in other courses whenever possible.
When I study for this course, I go over my class notes and make an outline of important concepts.
When reading for this class, I try to relate the material to what I already know.
I try to play around with ideas of my own related to what I am learning in this course.
When I study for this course, I write brief summaries of the main ideas from the readings and the concepts from the lectures.
When I can't understand the material in this course, I ask another student in this class for help.
I try to understand the material in this class by making connections between the readings and the concepts from the lectures.
Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.
I make lists of important terms for this course and memorize the lists.
I try to identify students in this class whom I can ask for help if necessary.
I try to apply ideas from course readings in other class activities such as lectures and discussion.

Figure 3 - Model Effects and Component Estimates

Tests of Model Effects

Source	Type III		
	Wald Chi-Square	df	Sig.
(Intercept)	6020.200	1	.000
ComponentPK	172.996	5	.000

Dependent Variable: Response
Model: (Intercept), ComponentPK

Parameter Estimates

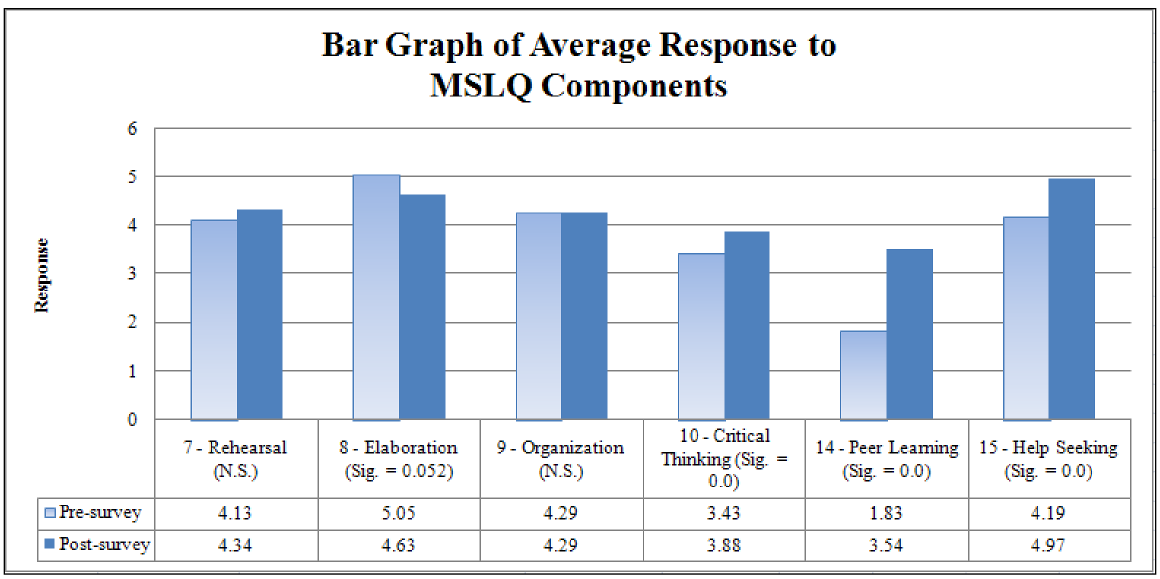
Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	4.578	.1250	4.333	4.823	1341.391	1	.000
[ComponentPK=7]	-.344	.1768	-.690	.003	3.781	1	.052
[ComponentPK=8]	.259	.1677	-.069	.588	2.392	1	.122
[ComponentPK=9]	-.286	.1909	-.661	.088	2.251	1	.134
[ComponentPK=10]	-.928	.1677	-1.257	-.599	30.628	1	.000
[ComponentPK=14]	-1.891	.1909	-2.265	-1.516	98.042	1	.000
[ComponentPK=15]	0[a]	.	.	.	.	.	.
(Scale)	1[b]						

Dependent Variable: Response
Model: (Intercept), ComponentPK

a. Set to zero because this parameter is redundant.

b. Fixed at the displayed value.

Figure 4 - Bar Graph of Responses and Components



ASSESSING THE EFFECTIVENESS OF TEACHING BUSINESS ETHICS TO UNDERGRADUATE BUSINESS ADMINISTRATION STUDENTS

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ABSTRACT

Can ethics be taught? The simple and obvious answer is that it can. The more difficult question, however, is determining the effectiveness of teaching ethics. The research of the authors is limited to determining whether teaching business ethics yields any significant difference in the ethical understanding and knowledge of business administrative students. To measure that difference, a two part ethics case analysis was administered during the Spring Semester of 2009. Four sections of two distinct Legal Environment I classes were asked to analyze the case. One class was instructed business ethics prior to the case and the other section, after the case. Simply put, is there a difference in the ethical understanding and knowledge of students who had not received business ethic instructions, as opposed to those who had received it. A detailed and thorough discussion of the comparative results is the subject of this article.

It is noted that this research is limited to a very narrow and short term result. What effect the teaching of business ethics has with respect to the conduct of business administration students in the future, long and after graduation, is unanswered and not addressed by this research.

INTRODUCTION

Ethical conduct in business is now a major and pressing topic. Since the beginning of the first decade of the new century, the list of corporations and business leaders that have been involved in wrongdoing is unbelievably long. Beginning with Enron Corporation and its collapse in 2001, ethical misconduct in business has received worldwide attention. The following is a sampling of ethical scandals, beginning of course, with Enron: WorldCom.com, Tyco, Adelphia, Arthur Anderson, Ernst and Young, ImClone, and Bank of America. Leaders in business, as well, have been ensnarled in ethical business scandals. Such people include Martha Stewart, Kenneth Lay, Jeffery Skilling, John Regas, Richard Grasso, and Bernard Madoff.

The College of Business Administration (COBA) of Clarion University of Pennsylvania has long recognized the importance of teaching business ethics to undergraduate business administration students. Such emphasis predates the above listed ethical lapses and failures of businesses and individuals. There is no doubt that the recent and continuing ethical scandals have prompted greater importance to the teaching of business ethics instruction.

The mission and core values of the College of Business Administration of Clarion University of Pennsylvania embrace the importance of ethical understanding and knowledge of its students. Additionally, the College of Business Administration is accredited by AACSB International–Association to Advance Collegiate Schools of Business–as part of the accreditation and re-accreditation process. The College of Business Administration must comply to the standards of AACSB. Specifically, those standards include business ethic instruction and the assessment thereof.

The eligibility procedures and accreditation standards for business accreditation were adopted by AACSB in April, 2003, and revised July, 2009. The accreditation standards include Standard 15: Management of Curricula. That Standard requires the use of a systematic process for curriculum management that addresses certain areas of general knowledge and skill, but not necessarily any specific courses in the curriculum. Included in the general knowledge and skill areas is the specifically mandated topic of Ethical Understanding and Reasoning Abilities. Further, Standard 15 notes that the curriculum management process with respect to management specific knowledge and skill areas will address, among other topics, Ethical and Legal Responsibilities in Organizations in Society.

While currently, COBA has no specific business ethic courses, business ethics instruction is infused across the curriculum in various courses, including BASD 240, Legal Environment I. In its efforts to comply with this accreditation standard, the Undergraduate Curriculum and Assessment Committee for the College of Business Administration has and continues to assess outcomes of learning goals and objectives. The specific goal relating to business ethics is for students to show an awareness of the ethical dimensions of business issues. There are two specific supporting objectives. Namely, the student's knowledge and ability to examine ethical issues in business and, the student's understanding of the social forces shaping the environment of business. A review and analysis of outcome assessments began in the school year of 2003-04, and continues through this date.

METHODS OF RESEARCH

In researching the question as to whether the teaching of business ethics yields any significant difference in the student's ethical understanding and knowledge, an ethics case, or prompt, was employed. The ethics case was based, in part, upon an actual event that resulted in litigation. The ethics case is the same as is used to measure the outcomes of the learning goals and objectives at the College of Business Administration pursuant to the Standard 15 of AASCB International Accreditation Standards. Each part of the ethics case addresses the student's knowledge and ability to examine ethical issues in business, and the student's understanding of the social forces shaping the environment of business.

> The ethics prompt is as follows:
>
> **Part I**
>
> Paul Bunyan is engaged in the timbering and logging trade, doing business as Bunyan Logging, a sole proprietorship. He purchases standing timber, cuts it, then brokers the sawn logs. Bunyan approached Ida Knot, a 96 year old widow, who own 100 acres of mature, marketable timber. He tendered an offer of $20,000. After several overtures, Knot accepted Bunyan's offer. Knot fully understood what she is doing. However, the timber being transacted had a value of $200,000. Bunyan knew this, Knot did not.
>
> Discuss the issues presented in this contract.
>
> **Part II**
>
> Bunyan immediately proceeded with cutting operations. While operating the skidder, Bunyan accidentally overturned into a small stream. The fuel tank emptied of 100 gallons of diesel fuel, which rapidly drifted downstream. The extent of potential pollution was uncertain. Bunyan figured the fuel would dissipate without harm or detection.
>
> Discuss the issues presented as a result of Bunyan's conduct.

In order to measure whether the teaching of business ethics has a significant impact on the student's ethical understanding and knowledge, the ethics case was presented to the students of BSAD 240, Legal Environment I. There were 2 separate classes, with two sections of each class. One class was instructed business ethics prior to the prompt, and the other class was not. The class was instructed business ethics after the prompt was administered.

In order to conduct this research, as the participation of undergraduate students was required, approval of the research was obtained by the Clarion University Institutional Review Board. Approval by the Institutional Review Board was received under exempt review for this research as the student participants' identities would not be obtained, or revealed. The responses by the students to the ethics are completely anonymous and there is no way to identify the individual students except by course and section. No extra credit or grade was given to the student participants as that would require identifying the responders. All students, however, were told to give earnest and sincere thought to their responses. Lastly, for reference purposes, the Institutional Review Board research approval number for this research is 51-08-09.

RESPONSE ASSESSMENT

In order to measure the responses of the students to the ethics prompt, a rubric was employed. This rubric is the same rubric that has been used by the College of Business Administration in its efforts to assess the outcomes of the goals and learning objectives of the Bachelor of Science and Business

Administration programs over the past several years in compliance with accreditation standards of AACSB International. Two components of students knowledge and understanding of ethics is measured in the rubric. The first is a measure of the student's knowledge and examination of ethical issues, and the second is the student's understanding of social forces impacting business milieu, that is the business environment. The responses of the students is graded with three possible outcomes: Either the response meets the objective, is above the objective, or is below the objective with each of the criteria above listed. The exact form of the rubric entitled, "Ethical Dimensions of Business Issues Rubric" is below.

RESPONSE RESULTS

As indicated previously, the ethics case was administered to two separate courses of BSAD 240, Legal Environment I, with each course having two sections. One course and its sections were instructed business ethics prior to the administration of the case prompt, while the other course and its sections were instructed business ethics after the administration of the case prompt. A total of 96 students participated in this research. The breakdown is as follows: 41 students participated in the research in the course in sections instructed business ethics; and 55 students in the course in sections who were instructed business ethics after the administration of the ethics case prompt.

As the ethics case prompt has two parts, the responses of the students to each part were measured as to each learning objective. Below are the measured results of the research:

PRE-ETHICS INSTRUCTION
ETHICAL DIMENSIONS OF BUSINESS ISSUES RUBRIC

DATE: 04/08/2009 **COURSE**: BSAD 240: M-SECTIONS **EVALUATOR**: J. EICHLIN

COMMENT	BELOW OBJECTIVE	MEETS OBJECTIVE	ABOVE OBJECTIVE	SCORE
Knowledge and examination of ethical issues	Issues not identified, or addressed improperly	Identifies issues and addresses properly, with knowledge base	Identifies issues and addresses with knowledge base in a superior manner	Total Responses 41
Part I	5	33	3	Below – 12 % Average – 81% Above – 7%
Part II	4	35	2	Below – 10% Average – 85% Above – 5%
Social forces impacting business milieu	Fails to addresses connections between individual and social standards	Identifies and addresses connections between individual and social standards	Identifies and address connection between individual and social standards in a superior manner	
Part I	8	30	3	Below – 20% Average – 73% Above – 7%
Part II	14	24	3	Below – 34% Average – 73% Above – 7%

POST-ETHICS INSTRUCTION
ETHICAL DIMENSIONS OF BUSINESS ISSUES RUBRIC

DATE: 04/08/2009 **COURSE**: BSAD 240: W-SECTIONS **EVALUATOR**: J. EICHLIN

COMMENT	BELOW OBJECTIVE	MEETS OBJECTIVE	ABOVE OBJECTIVE	SCORE
Knowledge and examination of ethical issues	Issues not identified, or addressed improperly	Identifies issues and addresses properly, with knowledge base	Identifies issues and addresses with knowledge base in a superior manner	Total Responses 55
Part I	20	34	1	Below – 37 % Average – 62% Above – 1%
Part II	24	31	0	Below – 44% Average – 56% Above – 0%
Social forces impacting business milieu	Fails to addresses connections between individual and social standards	Identifies and addresses connections between individual and social standards	Identifies and address connection between individual and social standards in a superior manner	
Part I	47	7	1	Below – 86% Average – 13% Above – 1%
Part II	36	19	0	Below – 65% Average – 35% Above – 0%

With respect to the separate learning objective measured in the rubric, knowledge and examination of ethical issues entails a general recognition and understanding of situations, conduct, and decisions that result in consequences which are either good or bad. The second learning objective, social forces impacting business milieu, entails an understanding of societal standards, such as law, rules and regulations that impact situations, conduct, and decisions in a business context.

The results of the Assessment of responses show a significant difference between the students in the BASD 240 who were instructed ethics prior to the prompt, as compared to those instructed ethics after the prompt.

Concerning the learning objective of the student's knowledge and examination of ethical issues, the comparison of the results are as follows:

With Part I of the ethics prompt, a total 63% were assessed as average or above average for those who did not receive ethics instruction prior to the prompt. This compared to 89% who were assessed as average or above average for those who had received ethics instruction prior to the prompt. The comparison indicates that with instruction as to ethics, students performed 26% better than those students who had not received ethics instruction prior to the prompt.

With respect to Part II, a more dramatic difference is revealed. Fifty-six percent scored at average or above average with no prior ethics instruction and 90% scored at a performance of average or above average, for a difference of 34%.

Concerning the learning objective component of social forces impacting business milieu, or environment, the comparison is even more dramatic. In Part I, only 14% of the responses indicated a performance of average or above average for those who had not received instruction prior to the prompt, as compared to 80% who were scored at average or above average who had received prior ethics instruction. That is a 66% improvement between the two groups. With respect to Part II, only 35% scored at average or above average in the course and section which received no prior ethics instruction, as compared to 66% of those who had received ethics instruction. That is a difference of 31%.

As these results indicate, there is a significant improvement in the students' knowledge and understanding of ethics, generally, as well as social forces which impact the business environment, after they have received ethics instruction.

CONCLUSION

The research clearly reveals that the teaching of business ethics does yield a significant difference in the ethical understanding and knowledge of students. The measured difference is significant between the two groups of students. The difference is even more pronounced with respect to the student's knowledge and understanding of the specific forces, such as law, rules and regulations, impacting the business environment. The difference is not as significant between the two groups of students with respect to their perception of ethical issues concerning that which is right and wrong.

These findings reflect the concept that students generally understand the difference between what is right and wrong. Ethics instruction, however, makes a positive impact. The instruction of specific criminal and civil remedies has a greater positive impact.

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COMPARATIVE RESULTS ON WHISTLE BLOWING POLICY: A CONTENT ANALYSIS OF CODES OF ETHICS IN GLOBAL FORTUNE 500 FIRMS FOR THE TOP AND BOTTOM 250 FIRMS

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ABSTRACT

Since the passage of the Sarbanes-Oxley Act (SOX) and continuing to the present day climate of public sentiment about corporate ethical decision making, there has been a heightened awareness of the need for protection of employees who report wrong-doing, not only among the business and legal/regulatory communities but also among stockholders and the general public. One way in which businesses can convey the importance they give to protecting whistle blowers is to stipulate policies regarding confidentiality, retaliation, and due process in their codes of ethics. The more prominent the company is the more important is the public relations need to take a clear and obvious stand on such policies.

This study is a follow-up to a preliminary examination of the on-line codes of ethics for the top half of the 2004 listing of Global Fortune 500 companies for the presence or absence of statements relating to whistle blowing policy. It represents a comparison of the top and bottom 250 companies' results of a content analysis of the full set of Fortune 500 firms' on-line codes of ethics. Three measures of whistle blowing policy have been assessed as alternate forms of protection and due process and then analyzed by demographic characteristics of the firms.

INTRODUCTION

The study of business ethics and, specifically, codes of ethics as one of the methods to enhance the ethical performance of businesses, has been an important concern since the defense industry scandals of the 1980s. The first of the codes date back to the 1940s with the Credo of Johnson & Johnson (International Labour Organization, (http://www. Itcilo .it/ english/ actrav/ telearn/ global/ilo/code/main.htm, accessed 5/23/2006). However, recent late 20th - early 21st century events have renewed and intensified the degree of interest in such codes. One only has to review the corporate accounting scandals of the last few years to appreciate the need for renewed interest in and enforcement of business ethics. Bristol-Myers Squibb was accused of "channel stuffing" or forcing wholesalers to accept more inventory than they could sell in order to get the inventory off the manufacturer's books. Tyco was investigated to determine if the company was aware of tax evasion on the part of its ex-CEO, the inappropriate use of company funds and questionable related-party transactions as well as improper accounting merger practices. Of course, the Enron debacle included ethics violations issues such as boosting profits and hiding debt through the improper use of special purpose entities and off-the-books partnerships, bribing foreign governments to win lucrative contracts abroad and manipulating local energy markets.

LITERATURE REVIEW

The International Labour Organization (ILO), in their study of corporate codes of conduct, reviewed the history of codes of conduct; the highlights of the 1996 US Department of Labor survey; International Centre for Human Rights and Democratic Development (ICHRDD) survey of 1996; and proprietary studies (Conference Board surveys of 1987 and 1991 and KPMG survey of 1996) of codes. The ILO conducted its own survey, collecting over 200 codes from multinational enterprises (MNEs) (ILO, 2002; ILO, www.itcilo.it/english/actrav/telearn/global/ilo/code/ main.htm, accessed 5/23/2006). Since only the report on the apparel industry and codes of conduct is still available (U.S. Department of Labor, 1996), this on-line summary by the ILO (www.itcilo. it/english/ actrav/ telearn/ global/ilo/code/main.htm, accessed 5/23/2006) of the other surveys is critical. Although there has been considerable variation in format for such codes including a statement of management philosophy, a credo, a set of values, statements of policies, compliance statements, or a letter from the President, CEO or Chairman of the Board of Directors (www.itcilo.it/english/ actrav/ telearn/ global/ ilo/ code/ main. htm, accessed 5/23/2006), two formats have begun to dominate. They include "aspirational" code (broad principles) and the "compliance" code (specific commitments); compliance with these codes is not mandated by government, but is a form of self-regulation (Florini, 2003). In addition to company codes, there are also industry codes; professional codes; non-governmental organizations' codes; country, economic regional association, and international organization's codes, compacts, and agreements. Variables that have been hypothesized to influence the content of codes of ethics have included: national character (Langlois and Schlegelmilch, 1990); the industry (Diller, 1999); industry and multinationality (van Tulder and Kolk, 2001); and membership in a supply chain (Hughes, 2005; Sobczak, 2006). Certainly, in recent years, corporate codes of conduct have been influenced by the Sarbanes-Oxley Act (SOX) of 2002.

Whistle blowing protections found in the surveys of codes of conduct studied by the ILO varied, but, in general, in the majority of cases, there were no formal policies protecting employees who report wrong-doing or violations (www.itcilo.it/ english/ ctrav/ telearn/ global/ ilo/ code/main.htm, accessed 5/23/2006). When it was created, SOX provided special protections for whistle blowers in specific circumstances. Under SOX, public companies are barred from dismissing, demoting or otherwise discriminating or retaliating against an employee who provides information on wrong-doing that constitutes violation of federal law. SOX also instituted procedures to address retaliation and for remedies thereto.

Many authors have addressed the issue of whistle blowing descriptively or normatively and some have tried to suggest approaches to facilitate whistle blowing (Callahan, Dworkin, Fort and Schipani, 2002; Lewis, 2006) or procedures like due process for the accused (Neuser, 2005), while others (Gundlach, Douglas and Martinko, 2003) have discussed the decision to report suspected wrongdoing from a social perspective. Still others have discussed the appropriate legal and ethical response of companies in light of the post Enron, SOX environment (Bryson, Bramnik, and Lutner, 2003; Rosenberg, 2004; Kinaga, 2006).

Scholars have begun to address the impact of SOX on corporate codes and policies as well. Protections for whistle blowers are present under SOX, but Baynes (2002) has indicated that these may not provide enough protection. In addition, SOX only covers circumstances that constitute violation of federal law, and not other common situations where an employee may decide to blow the whistle. Some reports have indicated, even in the presence of a SOX environment, a reluctance to report unethical or illegal activity (Verschoor, 2005). In particular, a survey by Spherion Corporation (www.spherion.com/press/releases/2006/Blow_the_Whistle_Snapshot.jsp, accessed 9/15/06) indicated that approximately one third of workers (34%) surveyed had witnessed unethical behavior, but that less than half (47%) would report it. Fears of reprisals, including job loss were often cited as the reason. Bevitt and Retzer (2006, p. 19) have reviewed the recommendations contained in Article 29 Working Party document of the same year from the EU concerning data protection as it relates to whistle-blowing hotlines.

> "The paper recommends the subjects of SOX complaints get told:
>
> - What the allegations are against them;
> - Who will receive any data collected;
> - How they can exercise their rights of access to the data or rectify inaccuracies.
>
> It also recommends that, although confidentiality should be ensured, anonymous reporting (arguably required by SOX) should not be encouraged and extra precautions should be taken when handling such reports."

In addition, only employers should collect the information needed to verify the allegation, delete it promptly, and make whistle-blowing voluntary. Other UK legislation also includes limiting the information gathered to facts; using the information only for investigation and not discipline; giving the accused full information on the contents of the complaint, the incident alleged to have taken place, the people to whom the evidence is to be given, and, most importantly, a reasonable time to answer.

Researchers have also started to consider other issues: whether or not variables such as country or source strategy influence the contents of codes (van Tulder and Kolk, 2001); whether or not workers' informal social learning about how the company actually responds to code violators can temper their responses (Kronzon, 2002); whether the best strategy to develop a code of conduct should be through principles or norms as opposed to rules or laws, and if that is culturally dependent or independent (Sama, 2006); and whether common codes of conduct developed by global supply chains are 100% voluntary or have some portion that is legal or quasi-legal (Sobczak, 2006).

This study looks at the extent to which codes of conduct for the largest and most prominent businesses have now been modified to include various forms of protection for informants and policies on due process.

METHODS

The methods for this study include three sets of decisions: (1) selection of sampling frame, time frame, and segmentation variables; (2) selection of content analysis as the technique, including related decisions such as selection of the employee code of ethics as the document and selection of the variables and measures to study protection for whistle blowers; and (3) selection of the hypotheses, data analytic techniques and significance tests for the hypotheses, and handling of sparse cells and/or other violations of assumptions.

The present study used the July 2004 listing of global Fortune 500 firms (www.fortune.com, July, 2004) as the sampling frame to identify the set of 500 firms for analysis of their on-line employee codes of ethics and for their size and performance, country, and industry characteristics as potential segmentation variables. The time table was critically important to the methods in terms of downloading the corporate documents, although the coding could and did take a much longer time. Since there was about a six-month time lag between the publication of the listing of firms (based on 2003 performance) and the data collection of on-line employee codes of ethics beginning in 2004 and since the process of data collection for 500 firms is naturally lengthy, some sampling frame and local history errors are unavoidable. Companies may be added and dropped for each year's list; companies may merge; the legal environment for the countries and economic regional associations, in which companies are based, may add, drop, or modify relevant legislation and regulation; and industries and other associations may also modify their codes.

To reduce such errors the researchers tried to anticipate the listing of firms from previous listings. There is a lot of consistency among the listings over time. Data collection began in spring 2004, and lasted until late fall 2004 for the full 500 firms. The data processing for content analysis took several years to complete. It was necessary to select and print the documents, make up document books for the coders, create the measures from SOX and create coding forms, train the coders, monitor the coders, enter and verify data, and to identify all coding disputes and reconcile them. Coding and data analysis were performed in two periods; preliminary results were published in 2006 on the top 250 firms (Garland, Oliver, Otte, and Ponsford, 2006). Follow-up data processing on the second 250 firms was completed in spring 2008 and this paper reports the overall results and a comparison between the two halves. The process has begun again for the 2008 listing for a future two-period comparison.

The variables proposed for segmentation of the results on protection were those normally included in Fortune's annual listing of that year's 500 firms (with a one-year time lag)—number of employees; ranking; revenue, profits, assets, and equity in millions; country; and industry. Each of these was handled as a median split.

Content analysis is a technique used in the social sciences and humanities in addition to business (Berelson, 1952; Krippendorf, 1980; Weber, 1990). Marketing academics have developed a fairly clear standard for using the technique on documents (Kassarjian, 1977; Krippendorf, 1980; Holbrook, 1977; Hughes and Garrett, 1990; and Kolbe and Burnett, 1991). It is a good choice when the unit of study is the document (an artifact produced by the firm), rather than the firm, the firm's business activity, or the buyer or seller of the firm's goods. Marketers use content analysis to identify, classify, and/or count the presence or absence of specific characteristics within the document—the researcher's specific themes. There are often more than one document and more than one coder, although single coders are sometimes used in the basic, exploratory studies. At least a pair are used in most studies so that reliability may be assessed and objectivity be enhanced. Since the data is often categorical or ordinal, non-parametric techniques like t-tests or cross-tabulations are common; and the reliability analysis is often the percentage of agreement between all possible pairs of coders across all decisions.

Why was the employee code of ethics selected as the document? There is certainly variation among companies in the web coverage they give to ethics. The employee code is based on the type of document used in prior research (a compliance code), one that is easy to define and locate, and one that clearly indicates recommended actions and prohibitions. According to the International Labour Organization (ILO), one major approach to conveying to employees and other stakeholders the ethical and behavioral environment for the firm is often a type of document called a compliance code (ILO, 2002), but it is also possible to have a statement of management philosophy, a credo, a set of values, statements of policies, compliance statements, or a letter from the President, CEO or Chairman of the Board of Directors. In their study of corporate codes of conduct, the ILO cites the Conference Board's definition of a compliance code as "…directive statements giving guidance and prohibiting certain kinds of conduct."

This was the format examined in this study. In addition, since some firms have generated a set of codes for different subsets of employees, the employee code of ethics used was the document for the broad audience, not the specialized audience—for example, only for senior financial officers or only for boards of directors. If there is any effect from this operational definition, it would likely understate, rather than overstate the level of concern with protections of informants and due process within these codes. However, it is unambiguously the same phenomenon and it would be the most transparent because all these subgroups are still employees or other representatives of the firm and need to be made aware of whistle blower protections. It would be likely to be the first document that the public examines in this category of documents. An additional advantage is that the search strategy that begins with the investor relations page(s) generally has the compliance code(s) on it and that others can easily verify it and its contents.

Advance notice of protection for whistle blowers is critical in encouraging the reporting of wrong doing. Some protection is legally embedded in SOX for whistle blowing on violations of federal law, but the presence of explicit and/or stronger safeguards conveys a firm's strength of commitment to its code. So, too, does the presence or absence of explicit language regarding the applicability of the code to every situation and to every employee affirm commitment. Confidentiality and protection from retaliation allow informants a level of comfort that should encourage forthright disclosure of ethical lapses. Finally, the presence of an explicit due process also communicates a commitment to fairness that should foster a greater willingness on the part of whistle blowers to step forward.

Three measures (yes/no/not stated) were identified to assess the strength of a firm's commitment to the protection of informants and due process, as follows:

> Is the identity of the informant kept confidential?
>
> Is there a policy of no retaliation against informants?
>
> Is there a process in place to protect the rights of an accused employee prior to judgment?

Each of these was to be classified in one of three ways: (1) "yes" or definitely true; (2) "no" or definitely false; or (3) no statement one way or another. Choice #3 would reflect either an evasion of an issue or ignorance of an issue. Because of sparse cell problems, these responses were condensed to a definite "yes" or not. Each of the three measures was separately tested; then a joint scale of any protection (at least one "yes" on any of the three), moderate protection (two or more "yes" responses), or no protection (no "yes" on any of the three) was computed and tested.

Several pairs of independent student coders were used instead of a single pair because of the length of time to perform the coding and resource constraints. The same researcher trained all coders on a short pilot (10 firms) and then reconciled differences in coding where disagreements occurred. The overall percentage of agreement before reconciliation was 87.75%.

This study proposed these three hypotheses, each in null form:

> There is no difference in the country or country grouping, industry or industry grouping, or firm characteristics of firms with on-line employee codes of ethics and of firms without on-line employee codes of ethics;
>
> There is no difference in the country or country grouping, industry or industry grouping, or firm characteristics of firms with on-line employee codes of ethics by whether or not they express commitment to protection of whistle blowers and due process.
>
> There is no difference in the top and bottom halves of firms with on-line employee codes of ethics by the by whether or not they express commitment to protection of whistle blowers and due process.

The method of data analysis chosen was cross-tabulations with a chi-square test at a level of .05 or better for significance. Whenever a test could not be conducted due to sparse cells, if a country, industry or firm characteristic could be reduced in level to enable the conduct of the test without violating the assumption of the five-in-a-cell rule, it was done. In terms of country and country groupings, the expectation was that the US based firms, the firms from the NAFTA and EU economic regional associations which have so many industrialized countries in them would have a greater level of protection. In terms of industry and industry groupings, the expectation was that financial services firms, industries that dominate the composition of the global 500 (the top five industries) collectively and individually, and retailing firms that may be more conscious of the buying public's attitudes would have a greater level of protection. Similarly, in terms of firm's characteristics, the expectation was that more visible, successful firms (by any measure of size or performance) would have a greater level of protection. Lastly, the expectation was that more prominent firms (top 250) would have stronger protection for whistle blowing than less prominent firms (bottom 250).

RESULTS

Table 1 contains the profiles of the top and bottom 250 firms subdivided into the firms without on-line employee codes of ethics and the firms with on-line employee codes of ethics. There is no significant difference by industry or country for these two types of firms; there is, however, a significant difference between these two types of firms by economic regional association grouping. A much higher percentage of NAFTA-based firms have on-line codes; similarly, much smaller percentages of on-line code firms are based in the EU and all other countries. The top five industries represented by the 500 firms are banking, motor vehicles and parts, petroleum refining, telecommunications, and food and drug stores. When more narrowly defined industries are combined, there is a substantial presence of firms in the financial services industry and a smaller but still important presence of firms in retailing. The top three countries represented by the 250 firms are USA, Japan, and Britain—all industrialized countries. Table 2 presents the size and performance characteristics of the 500 firms in the sample with the median split and means for number of employees, assets, profits and revenues indicated. All are large, successful firms, although they vary somewhat in how large and how successful.

Table 3 presents the individual results on the three measures for whistle blower protection and due process. Of companies with an on-line employee code of ethics, the typical firm has an explicitly stated policy of no retaliation against the informant (58.3%) and an explicit confidentiality policy (56.6%). Not many companies have an explicit policy of due process for the accused (4.6%). There is no significant difference between the top and bottom halves with codes of ethics on either due process or on confidentiality, although there is a difference on no retaliation; a larger percentage of firms in the bottom half have such a policy. When these individual measures are combined into a scale of strength of concern with protection, table 4 shows that there are no differences in intensity by top and bottom half; however, if the scale looks simply at whether or not there is any form of protection (two points instead of three), there is a significant difference between those that do and those that do not by size. A higher percentage of smaller firms include some policy of protection. About 70% of companies had some stated protection at the time for whistle blowers.

Table 5 shows that the third null hypothesis could only be partly rejected. Intensity in this table is based on the reduced, two-point scale (any protection/no protection). There is no difference in level of protection in the median splits on rank by revenue, number of employees, profit, or equity. However, there is a difference in level of protection in the median split using assets as a size measure. This is just another way of looking at the median split on size.

Country results show more US-based firms with any protection than non-US-based firms; there are more firms based in the top 5 countries with any protection as well. Additionally, in NAFTA-based firms, there are more companies with at least some protection of whistle blowers and fewer with no stated protection than in the EU or other economic regions. Finally, there are no significant differences by industry in each of the top five industries collectively, nor in the financial or retailing industries individually.

DISCUSSION

This content analysis of the global Fortune 500 firms has shown that there is an expressed concern with providing safeguards for whistle blowers in the on-line codes of ethics, although the strength of that concern is variable. Of course, all the firms are large, well recognized companies, but, counterintuitively, the very largest and best recognized firms tend to be somewhat less concerned with such safeguards than those who are slightly smaller. The codes of ethics in these slightly smaller firms may have a stronger public relations function in communicating the firms' intentions and aspirations to their stakeholders.

Alternatively, the cost of monitoring the compliance with the codes (when they are fuller and more detailed with more points to monitor) may have a negative impact on productivity. The technique of content analysis cannot be used to probe the reasons behind the content in the codes; future research, probably survey, should explore the reasons for the choices made in the codes.

There is also more of an interest in protecting whistle blowers among US based firms—suggesting either a cultural or a political/legal orientation in the content of these codes that differs from MNEs with other country-bases. Further research, again probably survey, should explore why the executives charged with developing the codes have chosen to specify protections.

The study has both clear limitations and clear benefits. As a content analysis, it takes much longer than a survey and is consequently less current. Content analysis cannot probe the reasons behind the phenomena, whereas an interview could. Even with procedures to enhance reliability and objectivity, there is still misclassification and miscommunication. The study only covers the largest of firms, and there are too many sparse cells to test some interesting relationships. However, it does provide an update on the earlier surveys of the content of codes of ethics. It shows a relatively high level of adoption of on-line codes in this prominent group of firms and a concern with protection of informants.

CONCLUSION

Parts of all three null hypotheses could be rejected. Firms with on-line employee codes of ethics did differ from firms without such codes by country grouping but not by industry. Firms with any stated concern with whistle blower protection were more likely to be in the lower median group than the upper median group for asset size. Firms with any stated concern with whistle blower protection were more likely than not to be US-based or NAFTA members.

Both confidentiality and a policy of no retaliation were commonly stated by firms having protections within their on-line employee codes of ethics.

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Table 1: Profile of the Sample, 2003 Global Fortune 500 Firms (July, 2004)

Industry and Country Characteristics, All Firms	**Firms with On-line Codes for Employees Base = 292**	**Firms without On-line Codes for Employees Base = 208**	**All Firms Base = 500**
Top Five Industries	164	116	280
Banking	29	29	58
Motor Vehicles and Parts	16	16	32
Petroleum Refining	14	18	32
Telecommunications	18	7	23
Food and Drug Stores	15	9	24
Firms in Financial Industry	64	65	129
Banking	29	29	58
Insurance	23	29	52
Diversified Financials	4	2	6
Trading	4	5	9
Securities	4	0	4
Retailing	28	20	48
General Merchandisers	5	7	12
Specialty Retailers	9	4	13
Food and Drug Stores	14	9	23
Top Three Countries	219	112	331
USA	157	32	189
Japan	29	53	82
Britain	23	14	37
Country Groupings	292	208	500
NAFTA	167	36	203
EU	83	80	163
All Other	42	92	134

Table 2: Median and Mean Values for Size and Performance of Firms in Sample

Size and Performance Variables,	Median, All Firms **Mean, All Firms**	Median, On-line Codes **Mean, No On-line Codes**	Median, No On-line Codes **Mean, No On-line Codes**
Number of Employees	86,689.00 (millions) **124,134.65 (millions)**	62,782.50 (millions) **150,134.99 (millions)**	49,418.00 **87,634.18**
Equity	8,289.30 (millions) **14,859.82 (millions)**	9706.40 (millions) **15618.08 (millions)**	6787.00 (millions) **13,790.20 (millions)**
Assets	34,729.05 (millions) **121,631.07 (millions)**	35,662.35 (millions) **130,273.89 (millions)**	31,859.15 (millions) **109,497.89 (millions)**
Profits	728.80 (millions) **1,906.84 (millions)**	1025.80 (millions) **2588.87 (millions)**	416.50 (millions) **944.74 (millions)**
2003 Revenues	19875.15 (millions) **36,717.74 (millions)**	24,200.50 (millions) **46,402.15 (millions)**	17,299,25 **23,122.32**

Key: Means in bold are significantly different at the .05 level of better (t-test)

Source: Size and Performance Data from Fortune’s 2004 Listing of Global Fortune 500 Firms

Table 3: Three Measures for Whistle Blowing, N = 292 with On-Line Codes of Ethics for Employees

Measures	Number of "Yes" Responses			Percent of "Yes" Responses		
	Top 250	Bottom 250	All 500	Top 250	Bottom 250	All 500
Informant identity confidential	99	76	175	56.6	67.2	60.8
No retaliation policy	102	81	183	58.3	69.8	**62.9**
Due process for accused	8	4	12	4.6	3.4	4.1
Number with on-line codes	175	117	292	59.9	40.1	100.0

Key: For variables in bold, Chi-square test is significant at .05 or better level between firms in top 250 and firms in bottom 250.

Table 4: Scale Response Characteristics for Protection for Whistle Blowing

Level of Response	Number of Firms			Percent of Firms, Base = Various		
	Top 250	Bottom 250	All 500	Top 250 with Codes	Bottom 250 with Codes	All 500 with Codes
No On-line Code	75	133	208	--	--	--
Yes On-line Code	175	117	292	100%	100%	100%
3-Point Scale						
No Protection	61	26	87	34.9	22.2	29.8
Any Protection	24	22	46	13.7	18.8	15.8
More Protection	90	69	159	51.4	59.0	54.5
Reduction to 2-Point Scale						
No Protection	**61**	**26**	**87**	**34.9**	**22.2**	**29.8**
Any Protection	**114**	**91**	**205**	**65.1**	**77.8**	**70.2**

Key: Boldface indicates a chi-square statistic significant at .05 or better.

Table 5: Comparative Profiles of Firms with Any or No Protection for Whistle Blowing in Their On-Line Codes* #

Characteristics of Firms In Relationship to Reduced Sample of 292	All 292 Firms		No Protection		Any Protection	
	#	%	#	%	#	%
Number of Firms with Codes	292	100	87	29.8	192	70.2
Rank by Revenue--Top Half of Median Split	**175**	**100**	**61**	**34.9**	**114**	**65.1**
Rank by Revenue—Bottom Half of Median Split	**117**	**100**	**26**	**22.9**	**91**	**77.8**
Number of Employees--Top Half of Median Split	158	100	48	30.4	110	69.6
Number of Employees—Bottom Half of Median Split	134	100	39	29.1	95	70.9
Profit--Top Half of Median Split	175	100	52	29.7	123	70.3
Profit—Bottom Half of Median Split	117	100	35	29.9	82	70.1
Assets--Top Half of Median Split	**149**	**100**	**59**	**39.6**	**90**	**60.4**
Assets—Bottom Half of Median Split	**143**	**100**	**28**	**19.6**	**115**	**80.4**
Equity--Top Half of Median Split	161	100	55	34.2	106	65.8
Equity—Bottom Half of Median Split	131	100	32	24.4	99	75.6
Number and Percent in USA	**157**	**100**	**13**	**8.3**	**144**	**91.7**
Number and Percent Not in USA	**135**	**100**	**74**	**54.8**	**61**	**45.2**
Number and Percent in Japan	**29**	**100**	**21**	**72.4**	**8**	**26.6**
Number and Percent Not in Japan	**263**	**100**	**66**	**25.1**	**197**	**74.9**
Number and Percent in Britain	23	100	8	34.8	15	65.2
Number and Percent Not in Britain	269	100	79	29.4	90	70.6
Number and Percent in Top 3 Countries	**209**	**100**	**42**	**20.1**	**167**	**79.9**
Number and Percent not in Top 3 Countries	**83**	**100**	**45**	**54.2**	**38**	**45.8**
Number and Percent in NAFTA	**167**	**100**	**14**	**8.4**	**153**	**91.6**
Number and Percent in EU	**75**	**100**	**39**	**52.0**	**36**	**48.0**
Number and Percent in All Other Countries	**50**	**100**	**34**	**68.0**	**16**	**32.0**
Number and Percent in Top Five Industries	91	100	33	36.3	59	63.7
Number and Percent in All Other Industries	201	100	54	26.9	147	73.1
Number and Percent in Financial Industry	64	100	25	39.1	39	60.9
Number and Percent not in Financial Industry	228	100	62	27.2	166	72.8
Number and Percent in Retailing	28	100	5	17.9	23	82.1
Number and Percent Not in Retailing	264	100	82	31.1	182	68.9

Key: *** For variables in bold, the Chi-square test is significant at .05 or better**.

INDIVIDUAL'S PERCEPTIONS OF LEADERSHIP: AN INVESTIGATION OF SHARED LEADERSHIP AND IMPLICIT LEADERSHIP THEORIES

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ABSTRACT

Shared leadership research has grown as organizations have implemented more team-based structures. The major problem underlying this construct has been a gap in the literature as to the impact of positive and negative influences on the emergence of shared leadership. Implicit leadership theories (ILT) of individuals are cognitive parameters by which individual's code others as leaders or non-leaders based on a set of "prototype" characteristics. The characteristics depicted through ILTs may facilitate or hinder the emergence of shared leadership. In order to test the relationship between facets of ILT and perceptions of shared leadership, subjects were asked to complete Epitropaki and Martin (2004) ILT scale and answer an adapted version of Ehrhart and Klein (2001) leadership preferences survey. Prototype characteristics of ILT: sensitivity, intelligence, dynamism and dedication were shown to have a positive correlation with the rating of shared leadership. Anti-prototype characteristics of ILT: tyranny and masculinity were negatively correlated.

INTRODUCTION

Organizational structures have historically been recognized through a top-down influence process in which directives flow from leader to follower (Bass, 1990; Pearce & Conger, 2003). Recently, this prototypical top-down leadership flow has come under question (Northouse, 2001; Shamir, 2007; Yukl, 2006) as alternative theories have been advanced presenting the possibility that a team-oriented (Stewart, Manz, & Sims, 1999) or relational process (Graen & Uhl-Bien, 1995) of leadership may be more effective or efficient for the organization. With extensive technological innovation coupled with corresponding availability of higher education (Li & Irby, 2008) many changes have occurred in the modern organization (Fletcher & Kaufer, 2003). Higher levels of specialization in the organization and a workforce with higher levels of education than in previous years (Barry, 1991) have challenged the typical assignment of leadership as an individual role (Ensley, Hmieleski, & Pearce, 2006). This, individual formal leader has served as the typical leadership design throughout history (Pearce & Conger, 2003) yet organizational trends lead to the question, 'should the perspective of leadership change'?

Shared leadership, as espoused by Pearce and Sims (2002), Pearce and Conger (2003), and numerous other researchers, seeks to move the notion of leadership away from an individual-oriented construct into leadership as function (Shamir, 2007). As such, the functions of leadership, in shared leadership, are invested in a more interactive, relational process engendered throughout an organization or group. Offerman and Scuderi (2007) posit that "followers have long shared leadership…whether they have received credit for it or not…the more recent awareness of tendencies…has led scholars to broaden their focus to examine how so-called followers can and do share in leadership" (p. 72). These new perspectives of leadership are realigning the view of how leadership occurs, who leads, and why leadership has higher or lower levels of effectiveness.

Implicit leadership theory (or ILT) presents a contrasting perspective on leadership. Rather than leadership as a function or process, which is part of the foundation of shared leadership theory (Seers, Keller, & Wilkerson, 2003), ILTs examine leadership as recognizable traits or characteristics (Lord & Maher, 1991). Foundational to ILT research, is the belief that individuals form cognitive schema regarding what leaders look like based on prior experiences (Epitropaki & Martin, 2005; Medvedeff & Lord, 2007), this cognitive schema then influences the characterization of individuals as leader, as they seem to fit the individual's preconceived classifications. This trait-based examination of leadership creates a prototype of a leader in the mind of followers by which future individuals are judged and coded as either leader or non-leader (Kenney, Blascovich, & Shaver, 1994).

Seers, et al. (2003) and Medvedeff and Lord (2007) have noted the strong possibility that the emergence of shared leadership will be influenced by the ways individuals construct their perception of leadership based on the cognitive schema of ILTs. If the prototype of a leader, based on the perceptions of individuals, stands as a paradox to the reality of shared leadership, it is likely that individuals will reject the sharing of leadership as being 'real leadership'. Uhl-Bien (2006) notes that alternative leadership theories, like shared leadership, "assumes that organizations are complex social entities that cannot be led through the acts and will of a single individual" (p. 106). Such relational views of leadership stand in contrast to the traditional, individual led hierarchies that have populated management literature and books for generations (Fletcher & Kaufer, 2003).

STATEMENT OF THE RESEARCH PROBLEM

One of the primary problems facing shared leadership involves possible inconsistencies between sharing leadership and an individual's inherent perceptions of what constitutes a leader or leadership. Research has shown that individuals have cognitive schema by which they implicitly evaluate others to determine their characterization as leader or non-leader (Lord & Maher, 1991). As such, individuals may have a picture of leadership based on past experiences and shared cognitions(Lord & Emrich, 2000). These experiences and cognitions, in turn, influence the potential for emergence of shared leadership based largely on prior experience and learning. Seers et al. (2003) note, "shared leadership might be particularly difficult if members believe that status hierarchies are inexorably part of human nature" (p. 91). While the influence of ILTs has been hypothesized as a potential barrier to shared leadership (Seers, et al.), empirical evidence is still needed to further this body of literature (Uhl-Bien, 2006). Thus, it is important to examine individual's perception of the shared leadership model, measuring the potential relationship between ILT and shared leadership.

PURPOSE OF THE STUDY

This study helps to illuminate the potential ways an individual's inherent cognitive schema and past experiences influence their perceptions of shared leadership. By examining shared leadership in comparison to a traditional leadership form, we are better able to understand if specific barriers exist in the ILTs held by individuals, effecting this relational form of leadership in contrast to traditional forms. Kenney, et al. (1994), have posited that only through recognition of the influence of ILTs, can an individual begin to reassess their selection schema for leadership. However, research linking ILTs as a barrier to relational leadership forms is underdeveloped. As such, this study furthers the current literature on shared leadership by providing needed empirical research on both constructs. This research presents evidence to establish whether specific items within the ILT dimensions are positively or negatively linked to the perception of shared leadership.

LITERATURE REVIEW
SHARED LEADERSHIP

Shared leadership, according to Wood (2005), describes a process in which team members, through mutual influence, disperse the leadership roles traditionally invested in a singular leader. Individuals engaging in shared leadership are called on at times to participate in the decision-making process, take on tasks traditionally invested in the formal leader, and even advise other group members on how to achieve group goals. O'Toole, Galbraith and Lawler (2003) note that theoretically, shared leadership is reproduced at various levels within an organization creating an institutionalization of leadership. The effect of this hypothetically allows more members to take initiative, accept accountability, show creativity and assume more responsibilities (O'Toole, et al.).

Given the fast-paced nature of the organization, with the growing level of specialization in organizations due to the influx of technology at all junctures, cooperative action within organizations is imperative, according to Hill (2005). Barry (1991) describes the benefit of shared leadership in that, "the distributed leadership model emphasizes the active cultivation and development of leadership abilities within all members of a team; it is assumed that each member has certain leadership qualities that will be needed by the team" (p. 34). Hill and Stephens (2003) portray this leadership design, in which work-groups function in a shared leadership context, as a more flexible and adaptive system for the new technological climate.

Pearce and Sims (2002) propose shared leadership as the leadership designs best fit for today's team-based environment. Theoretically, this model is more effective because "collective leadership…can be embedded in the dynamics of a social system and need not be constrained to acts of heroic or charismatic individual" (Hiller, Day, & Vance, 2006, p. 388). As such, the whole should be greater than merely the sum of the parts. "For groups having a complex task, or multiple tasks, there is a broader base for individuals to make…unique contributions to group goals" (Seers, et al., 2003, p. 93). Creating a more interactive and participative organization in turn allows, leadership functions to be spread out among organization members. The theoretical outcome is that leadership will be diffused into the group through relationships (Fletcher & Kaufer, 2003; Yukl, 2006).

IMPLICIT LEADERSHIP THEORY

Early in the study of ILT, Eden and Leviatan (1975) concluded from their research that leadership is in part, a construct of the follower. Yukl (2006), acknowledges this construct formation occurs because individuals hold inherent beliefs regarding the actions and characteristics of a sterotypical or prototypical leader. The designation of 'leader' is a cognitive decision that individuals make based on how well individuals fit the schematics they hold about leaders and leadership (Seers, et al., 2003). Medvedeff and Lord (2007) note, "leadership perception is a perceptual process whereby stimuli can be mapped into classifications (e.g., leader vs. nonleader) that can be treated equivalently. Leadership classification is often based on the degree of match of a target stimulus to a previously learned prototype that defines a particular leadership category" (pp. 24-25). Thus, Eden and Leviatan could note that leadership is not only in the mind of the follower, but also in the eye of the beholder, as ILTs examine what individuals perceive regarding how they view the leadership actions of others.

ILTs have been extensively researched by Lord and colleagues (Engle & Lord, 1997; Lord, Brown, & Freiberg, 1999; Lord & Maher, 1991; Medvedeff & Lord, 2007) specifically focusing on the perceptions that individuals hold about leaders. Adler (1997) notes, "based on 221 definitions of leadership from the twentieth century, Rost (1991) concluded that leadership has most frequently been seen as rational, management-oriented, male, technocratic, quantitative, cost-driven, hierarchical, short-term, pragmatic, and materialistic" (p. 174). These typical leadership ideas form a schema within individuals of what leadership should look like in action. Research indicates that many of these individual perceptions generalize across organizations and groups of individuals. Epitropaki and Martin (2005) note that implicit leadership theories create a standardized view of leader that may be incongruous with actual leaders or potential leaders in an organization. Medvedeff and Lord further describe:

Once someone has been characterized as a leader, the activated leader prototype causes followers to selectively attend to, encode, and retrieve information consistent with this categorization, and to provide consistent information when such information is not available. This type of leadership recognition process tends to be automatic, depends on exposure to the behaviors of others and on preexisting knowledge about leadership, and it closely reflects Rosch's (1978) original ideas about categorization (p. 25).

Research on ILTs created a typology of the stereotypical leader, based upon identified perceived characteristics of a leader. Phillips (1984) notes this prototype as "an abstract conception of the most representative member or most widely shared features of a given cognitive category" (p. 126). Offerman et al. (1994), recognized eight dimensions present and validated as characteristic of a leader, with six depicting a prototype nature and two serving an antiprototype form. The study of prototype categorization was furthered by Epitropaki and Martin (2004) who through further validation found that the previous measure of eight typologies showed redundancy, with two dimensions of the prototype correlating on an almost one to one measure with another dimension, and thus the multicollinear dimensions were combined and the new scale was measured and validated with the adjustments. The dimensions found are: sensitivity, intelligence, dedication, dynamism, tyranny and masculinity. Research on ILT notes that individuals who are perceived as leaders match, in the eyes of the follower, some combination of these dimensions (Epitropaki & Martin, 2005).

Seers et al. (2003) point out, the downfall of ILTs may be that individuals within an organization will too often discount the leadership efforts of individuals who seem incompatible with their leaders ideas, this may include women, minorities or even people from other low-status groups with an organization. The perception may be that if their attributes do not match the implicit theories of others they are unable to lead. As such, ILTs could potentially stand as a barrier to individuals' opportunity to lead and further, may cause problems for the emergence of shared leadership. "Shared leadership might be particularly difficult if members believe that status hierarchies are inexorably part of human nature" (Seers, et al., p. 91). Even the term *leader* itself, which Seers, et al. point out is used most often in the singular form, comes with implicit understanding that the individual, a singular term, manages *followers*, a plural term.

SIGNIFICANCE OF THE STUDY

As a non-traditional leadership approach, shared leadership presents a distinct contrast to traditional leadership depictions, which individuals may use as the basis of their ILT. This research, examining the relationship between implicit theories and shared leadership, furthers the field of research by presenting empirical data measuring the perceptions that individuals have about what leaders and leadership should look like. Researchers examining both ILT (Epitropaki & Martin, 2004) and shared leadership (Conger & Pearce, 2003) have noted for the need for further empirical research on these constructs. Finally, this research proposes an examination of two contrasting perspectives of leadership. The traditional perspective that examines leaders and leadership through traits and characteristics and the other, an alternative perspective that examines leaders and leadership through the lens of functions and processes. This research will utilize mid-career professionals from diverse educational and organizational settings to examine what perspective of leader and leadership exists in the classroom and the field.

RESEARCH QUESTIONS AND HYPOTHESES

This research examines how individuals assess the shared leadership construct based on their ILTs. The research by Seers, Keller and Wilkerson (2003) and Lord and associates (Lord & Maher, 1991; Medvedeff & Lord, 2007), suggest that individuals may implicitly hold cognitive parameters for leaders or leadership, that are inconsistent for shared leadership. As shared leadership follows a significant paradigm shift in leadership theory (Pearce & Conger, 2003), it follows that many individuals may have little cognitive experience with such a leadership construct.

Pearce and others (Pearce, 2004; Pearce & Conger, 2003; Pearce & Sims, 2000), have noted that shared leadership presents a direct contrast to the traditional hierarchical leadership structure. As such, an individual's implicit leadership theory, based on past experiences with traditional leadership may hinder the designation of an individual practicing shared leadership characteristics, as a true leader. It was, therefore, hypothesized that implicit leadership theories will influence an individual's assessment of shared leadership. Figure 1 represents the model of the influence of ILTs on the perception of shared leadership. The six specific dimensions of ILTs (sensitivity, intelligence, dedication, dynamism, tyranny and masculinity) serve as the independent variables under study. Epitropaki and Martin (2004) note that the first four dimensions of ILTs depict the prototype and the last two dimensions depict the antiprototype, which serves as the basis for the hypotheses below.

Seers, et al. (2003) note that dispersion of power is heightened in situations which members report high levels of interpersonal attraction and in situations in which group members highly rate other group members ability to contribute toward the group goals (p. 92). Distribution of leadership functions to individuals in a group or team occurs as members form trusting relationships based on ability, experience and demands of the group (Burke, Fiore, & Salas, 2003). Further, Offermann and Scuderi (2007) report that cognitive ability and emotional intelligence of individuals in a group are antecedents of shared leadership. Members that display sensitivity, intelligence, dedication and dynamism present likeable attributes that would be viewed as contributive toward group goals. If an individual judges that such characteristics contribute to group goals, an individual may rate the sharing of leadership by individuals more favorably. Individuals who hold a cognitive schema for their ideal business leader as someone who is sensitive, intelligent, dedicated and/or dynamic will find congruence with the shared leadership depiction.

H_1: Ratings of sensitivity, intelligence, dedication, and dynamism in an ideal leader are positively related to ratings of shared leadership.

When individuals seek social status or gravitate toward power, they create a barrier for leadership to be dispersed among the group (Seers, et al., 2003). Masculinity and tyranny are traits associated with traditional hierarchical forms of leadership and stand in contrast to shared leadership (Fletcher & Kaufer, 2003). Positive ratings of an individual's ideal leader in the areas of masculinity and tyranny are contrary to the shared leadership construct (Seers, et al., 2003), as the shared leadership construct is based on distributed leadership, which is not defined by demographics (Fletcher & Kaufer, 2003). A negative perception of shared leadership is expected for individuals whose cognitive schema for leaders includes those seeking to get or protect power, create barriers between leaders and those that are led, and operate from a male dominated schema. Such individuals do not depict their cognition of leader as being one who holds a collective orientation, which according to Burke, et al. (2003) serves as a framework for shared leadership.

H_2: Ratings of tyranny and masculinity in an ideal leader are negatively related to ratings of shared leadership.

Familiarity with shared leadership and other non-traditional leadership theories may influence those who have studied in the leadership field more positively than those that have not studied in the leadership field. As research by Lord and associates (Engle & Lord, 1997; Lord & Emrich, 2000; Medvedeff & Lord, 2007) has shown, individuals hold a cognitive schema of leadership, which is activated when actions follow a known pattern. Offermann and Scuderi (2007) posit that shared leadership "requires group members to be willing and able to exert and submit to lateral influence" (p. 81). Individuals unfamiliar with lateral influence in place of vertical influence will be more likely to negatively perceive this form of leadership. However, individuals whose ILTs have been redefined through education in leadership-related fields should hold a more positive perception of shared leadership based on the placement of shared leadership within their cognitive framework of a leader.

H_3: Individuals who have studied within leadership related fields are more likely to hold positive perceptions of shared leadership, than their counterparts in non-leadership fields.

Further, research has presented the possibility that regarding orientation toward others, women are more relationally oriented (Pratt, Pancer, Hunsberger, & Manchester, 1990) and more interdependent (Maddux & Brewer, 2005). As shared leadership is a relational form of leadership built on the interdependent relationships forged between individuals leading together, women would seem predisposed toward a more positive view of shared leadership than men. In research by Epitropaki and Martin (2004), males rated the anti-prototype characteristics of ILT, tyranny and masculinity, higher than their female counterparts. Due to previous research (Epitropaki & Martin, 2004) showing that male and female cognitive schemas of leadership differ, particularly on anti-prototype characteristics which are contrary to shared leadership, it is expected that women will hold a more positive perception of shared leadership. This is due in part, to the relational nature of shared leadership and its contrast to a traditional masculine or tyrannical form of leadership, sometimes associated with traditional hierarchical leadership (Fletcher & Kaufer, 2003).

H_4: Women will have more positive perceptions of shared leadership than men.

METHODS

Sample

The sample consisted of 104 individuals (46 females, 58 males). Individuals represented a broad range of ages (37.5% - 18-30 year olds, 32.7% - 31-45 year olds, 26.9% - 46-60 year olds and 2.9% - 60+) and educational levels (9% – Technical Degree, 28.8% – Bachelor's Degree, 56.7% – Master's Degree, 4.8% – Professional Degree, 1.9% – J.D., and 6.7% Doctorate Degree). The sample showed 51% of the individuals reported they had previous education in a leadership-related field. Subjects were contacted through multiple sources. Individuals taking part in this research plan were mid-career professionals who had experience working with leaders in a work setting. Requests for participation to respondents was made through the Regent University listserv, personal contact files, LinkedIn professional networking website, and Facebook – a social networking site. The sampling methodology utilized in this study was a purposive sample intended to create equal sized groups of respondents with education in leadership-related fields and those without education in leadership-related fields.

Measures

The variables in the study are ratings of shared leadership (dependent variable) and each of the six dimensions of implicit leadership theories (independent) variable, as well as the effects of age, gender, education and leadership education.

Implicit leadership theories. The ILT measure by Epitropaki and Martin (2004) is a validated and reliable survey. The design of Epitropaki and Martin (2005), asks participants to rate how characteristic each of the items are of an ideal business leader, with no specific definition given of this leader, on a 9 point Likert scale from *not at all characteristic* to *extremely characteristic*. In the initial study, reported Cronbach alphas for each subscale were: .79 for sensitivity (3 items), .81 for intelligence (4 items), .77 for dedication (3 items), .73 for dynamism (3 items), .67 for tyranny (6 items), and .78 for masculinity (2 items) (Epitropaki & Martin, 2005, p. 665).

In this sample, Cronbach alphas for the Implicit Leadership Theory scale (Epitropaki & Martin, 2004) were .84 for sensitivity, .83 for intelligence, .87 for dedication, .78 for dynamism, .93 for tyranny and .86 for masculinity. The reliability of this measurement either meets or exceeds the previously reported alphas in work by Epitropaki and Martin (Epitropaki & Martin, 2004, 2005).

Shared leadership. Ehrhart and Klein (2001), in research on preferences of various leadership styles, developed a scale to measure an individual's rating of the effectiveness for charismatic, relationship-oriented and task-oriented leaders described in the scenarios. Charismatic leaders, according to their study, exhibit high performance expectations of followers, confidence that followers can reach goals, calculated risks to oppose the status quo, and articulation of a value-based identity (p. 162). The charismatic leadership description developed by Ehrhart and Klein was used as the first leadership depiction in this research. This depiction was provided to subject matter experts who positively assessed the depiction for content validity. Charismatic leadership, with its differentiation between leaders and followers, follows a traditional hierarchal model of leadership, which stands in opposition to the relational model of shared leadership. In the original scale, Ehrhart and Klein used six questions addressing each leader type to assess their depictions. High levels of consistency were found for the charismatic leadership depiction (.90), the relationship-oriented leadership depiction (.88) and .91 for the task-oriented leadership depiction (Ehrhart & Klein, 2001, p. 164).

In order to measure the individual's rating of effectiveness for shared leadership, the Ehrhart and Klein study was adapted to measure perceived leadership effectiveness of a shared leadership model in comparison to the charismatic leadership model. A depiction of shared leadership was developed, through an analysis of the literature on shared leadership and was positively assessed by 3 professors and 2 PhD students as correctly depicting the phenomena. Individuals were provided two leadership depictions and asked to rate each leader using a 5-point Likert scale to measure responses of individuals from 1 (*little to no extent)* to 5 *(great extent)* to indicate the extent to which they believed they would (a) perform at a high level in this environment; (b) enjoy working in this environment; (c) get along with others in this environment; (d) admire others in this environment; (e) find this style of leadership compatible with their own style of work; and (f) find this style of leadership similar to their ideal style of leadership. Finally, individuals were asked to designate which leader they would prefer to work with.

Internal consistency was shown in the composite score in the measurement gauging individual's preferences for leaders (Ehrhart & Klein, 2001) in this research. The charismatic leadership depiction and the shared leadership depiction both showed very high levels of consistency in the reliability analysis of the six questions measuring leadership preferences. The charismatic leadership depiction produced a Cronbach's alpha of .94 and the shared leadership depiction produced a Cronbach's alpha of .96.

PROCEDURES

In this current research, the intention was not to understand what every individual believes about shared leadership, but to examine the perceptions of adults, 18 years of age or older (because true work experience is important to perceptions being assessed in the study). The sampling frame utilized was a purposive model of sampling, in which a specific group is deemed as important for study on the construct (Weisberg, Krosnick, & Bowen, 1996). This form of sampling focuses on the stratification of specific groupings, even above the relationship to the general population.

Respondents were contacted electronically to request participation in the study. Individuals who chose to participate answered a three-part on-line survey. The first part of the survey asked demographic questions. The second part measured the implicit leadership theories held by the individual, utilizing Epitropaki and Martin's (2004) ILT instrument. The last part of the survey measured perceptions of shared leadership and perceptions of charismatic leadership. The charismatic leadership depiction was utilized, as it includes many characteristics of ILTs and serves as a baseline to gauge the difference in preference for traditional leadership styles versus shared leadership.

After data was collected, multiple regression was performed in order to assess the relationships between the six items of ILT onto the dependent variable, rating/perception of shared leadership. The items were assessed for multicollinearity, using a correlation matrix (Table 1), and the relationship between intelligence and dedication showed a significant level of multicollinearity (.73) and thus the items were combined (Hair, Black, Babin, & Anderson, 2010). The regression analysis was used to determine the correlation between the rating of each of the five items of ILT and the perception of shared leadership. Further, examination of the control variables helped provide insight whether certain demographic groups rate items of ILTs higher and/or hold more positive perceptions of shared leadership than other demographic groups.

The demographic variables, were numerically coded for the multiple regression in order to determine if significance was found based on these categories. This coding was especially important as two of the hypotheses were based on the measurement of non-metric variables: that women will rate shared leadership more positively than men will, and that leadership students will rate shared leadership more positively than their counterparts from non-leadership related fields will. In these situations, a simple dichotomized coding scheme was developed to discriminate between the two groups.

RESULTS

In order to test Hypothesis 1 and 2, hierarchical regression analysis was utilized. In step 1, the control variables (age, gender, level of education and area of education) were entered. In step 2, the three prototypes of the ILT scale (sensitivity, intelligence/dedication, and dynamism) were entered. In step 3, the two anti-prototypes of the ILT scale (tyranny and masculinity) were entered. In the two regressions show in Table 2, the rating of effectiveness of the depictions of Leader #1 (Charismatic Leadership) and Leader #2 (Shared

Leadership) served as the dependent variables in the corresponding regression analyses.

Table 1, gives means, standard deviations and correlations found in the analysis of the leadership depictions and Table 2 shows the hierarchical regression described above. Hypothesis 1 was found to be supported as all four prototype items were found to have significant ($p <. 01$) positive correlations to the rating/perception of shared leadership. Hypothesis 2 however was only partially supported as both were found to be negatively correlated to the rating/perception of shared leadership, but only the relationship with masculinity was found to be significant ($p < .05$).

Hypothesis 3, which predicts that those educated in a leadership related field would more highly rate/perceive shared leadership than those from fields un-related to leadership is shown to be supported in Table 3. Mean ratings of the effectiveness of shared leadership for those with education in a leadership-related field was 4.01, while those without education in a leadership-related field rated the effectiveness of shared leadership 3.70. A one-way ANOVA showed an insignificant relationship ($p < .10$). This provides no support to the hypothesis that individuals with familiarity with similar concepts will be more open to this style of leader.

In order to test Hypothesis 4, a one-way ANOVA was conducted to determine if the mean rating/perceptions of shared leadership by females was significantly more positive than the ratings/perceptions of shared leadership by the males in the sample. Table 4 shows the one-way ANOVA performed on Gender Differences in the sample. Hypothesis 4 was not supported as the significance of the between groups difference was not within acceptable standards, except regarding experience with Shared Leadership ($p < .01$).

DISCUSSION

Shared leadership presents an interesting contrast to traditional leadership theories in its distribution of the leadership responsibilities within an organization. This research has shown that individuals perceive those practicing shared leadership to be as compatible, similar, admirable and effective as those practicing charismatic leadership, a more traditional leadership type. However, this relational leadership theory, while accepted in leadership literature has not experienced significant implementation in the organization (Conger & Pearce, 2003). This research has sought to establish a better understanding of how the ILTs held by individuals may serve as antecedents or barriers to the implementation and acceptance of shared leadership within an organization. The research has shown that individuals holding ILT that highly rate masculinity and tyranny are less likely to accept shared leadership as a legitimate form of leadership.

In this research study, one of the major objectives was to understand how individual's ILTs, effect the way they examine and assess the shared leadership construct. As such, it was imperative to measure differences among individuals and demographic groups. The research examined various demographic variables in order to better establish an understanding of the groups under study, which is a key characteristic of purposive nonprobability sampling (Rubin, Rubin, & Piele, 2005). Within the sample, it was recognized that women had more experience with shared leadership than their male counterparts, yet perceived the effectiveness of the charismatic leadership depiction higher on average than their perception of the effectiveness of the shared leadership depiction. While neither of the differences were significant it would be interesting to see if a significant difference would be found in a larger sample.

Another intriguing discovery in this sample was that those with education in a leadership related field had less experience with shared leadership than those who had no education in a leadership related field. Further clarification may have been needed to more adequately measure this dichotomy. Within this distinction of education, those with an education in leadership related fields were found to be older than their non leadership educated counterparts, which could have a confounding effect considering the shared leadership construct is still fairly new in the leadership literature.

Further research with a larger sample would be beneficial to examine the full impact of ILTs held by individuals, to better understand the potential link to shared leadership. Finally, research measuring the continuity between an individual's perception of shared leadership in theory and acceptance of shared leadership in practice would provide significant data, by which researchers can better understand the potential disconnect between theory and practice regarding this construct.

SCOPE AND LIMITATIONS

This research provides empirical evidence helping to illuminate how ILTs influence the perceptions individuals have of alternative forms of leadership. A purposive sample based on volunteers has been utilized for the purpose of the study, due to time and cost constraints. Replication of the study should occur, in order test more extensively the hypotheses of this study, due to the nonrandom sample enacted (Kerlinger & Lee, 2000). The use of purposive sampling in this study, while providing some limitations, allowed the grouping of individuals into simple, demographic dichotomies. Individuals with background in leadership-related studies were compared to their non-leadership educated counterparts, to see if they are more predisposed to shared leadership. The sample was thus divided with half of the sample who are or have been leadership students and half the sample as those never educated in the field of leadership.

The literature on shared leadership and ILTs is extensive; as such, this research could not cover the full gamut of either field. This study did not examine the possibility of differences in ILTs that followers have of current leaders compared to new or emerging leaders in an organization, as researched by Kenney et al. (1994). Furthermore, this research did not allow for the opportunity to measure the ILTs of individuals in a shared leadership environment versus those in a traditional leadership environment, which could provide further insight into the relationship between the two constructs. Lord and Emrich (2000) questioned the location of leadership asking, "does leadership reside in a leader, or does leadership emanate from a social system in which leader and followers interact?" (p. 552). This research is a starting point for recognizing how ILTs and shared leadership are related.

CONCLUSION

As organizations continue to be faced with increasing technological growth and specialization of members, alternatives to traditional forms of leadership present more opportunities to utilize the talents within an organization (Seers, et al., 2003). Shared leadership allows for such distribution of leadership aspects to individuals in order to be able to positively benefit the organization. This research has shown that individuals find shared leadership to be compatible with their ILTs, thus opening the door for the widening of the traditional leadership scope. With these findings, it is important to continue research on this organizational construct. As of yet, most research has only examined the construct through experimental settings, thus this research has attempted to better illuminate the perceptions of individuals toward shared leadership, as compared to traditional leadership styles.

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TABLE 1
Descriptive Statistics and Correlations for Charismatic (Leader #1) and Shared Leadership (Leader #2) depictions[a]

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
Lead. 1 Per.[b]	3.95	0.81										
Lead. 2 Per.[b]	3.86	0.94	.03									
Age	1.95	0.87	-.02	-.04								
Gender	1.44	0.49	.08	-.04	-.84							
Level of Ed.	2.98	1.03	-.19*	-.14	-.00	-.02						
Area of Ed.	1.49	0.50	-.12	-.16	-.28**	. 06	-.19					
Sensitivity	7.55	1.15	.27**	.24*	-.01	.01	-.11	.16				
Intell/Dedic.	7.40	1.01	.15	.28**	-.28**	.18	-.12	.22*	.51**		.	
Dynamism	6.89	1.31	.20*	.26**	-.04	.10	-.14	.10	.40**	.70**		
Tyranny	2.65	1.70	-.22*	-.08	-.01	.06	.05	-.00	-.50**	-.10	.04	
Masculinity	3.03	2.14	-.07	-.22*	-.07	-.02	-.02	.28**	-.13	.09	.14	.38**

[a] n=104.
[b] These variables were measured with a five-point Likert scale, all others were measured with a seven-point Likert scale.
*p < .05
**p<.01

TABLE 2

Results of Hierarchical Regression Analysis on Ratings of Leader #1 Charismatic Leadership[a]

Variable	Step 1: Controls	Step 2: Prototypes	Step 3: Antiprototypes
Constant	4.84	3.47	3.90
Controls			
Age	-.06	-.10	-.09
Gender	.08	.09	.10
Level of Educ.	-.23*	-.20*	-.19*
Area of Educ.	-.18	-.22*	-.23*
Prototypes			
Sensitivity		.28*	.20
Intell./Ded.		-.13	-.12
Dynamism		.16	.20
Antiprototype			
Tyranny			-.16
Masculinity			.06
R^2	.07	.16	.18
R^2 Change	.07	.09*	.02

[a] Estimates are standardized beta coefficients; *n*=104.
*p < .05
**p<.01

TABLE 3

Results of Hierarchical Regression Analysis on Ratings of Leader #2 Shared Leadership[a]

Variable	Step 1: Controls	Step 2: Prototypes	Step 3: Antiprototypes
Constant	4.87	2.26	2.14
Controls			
Age	-.10	-.06	-.05
Gender	-.04	-.08	-.10
Level of Educ.	-.05	-.01	-.00
Area of Educ.	-.20	-.25*	-.19
Prototypes			
Sensitivity		.13	.12
Intell./Ded.		.19	.20
Dynamism		.10	.12
Antiprototype			
Tyranny			.09
Masculinity			-.22*
R^2	.04	.16	.20
R^2 Change	.07	.12*	.04

[a] Estimates are standardized beta coefficients; *n*=104.
*p < .05
**p<.01

TABLE 4

Descriptive Statistics from one-way ANOVA of Area of Education

Variable	Mean	S.D.
Lead. 2 Perc. (S.L.)		
Leadership related field (LRF)	4.01	.92
Non leadership related field (NLRF)	3.70	.95
Lead. 1 Perc. (C.L.)		
LRF	4.04	.69
NLRF	3.85	.92
Age Range		
LRF	2.19	.83
NLRF	1.71	.85
Level of Education		
LRF	3.17	1.11
NLRF	2.78	.92

n = 53
n = 51

CORPORATE OPERATING CHARACTERISTICS AND CAPITAL STRUCTURE
- CAUSALITY TESTING IN A HETEROGENEOUS PANEL DATA

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ABSTRACT

This paper adopts a new technique, developed by Hurlin (2004), to test for Granger causality between capital structure and corporate operating characteristics including time-invariant firm-specific effects in heterogeneous panel data from five U.S. industries over the period 1980 – 2000. Previous studies addressed the issue of whether corporate operating characteristics cause changes in capital structure while our study focuses on the causal linkages between capital structure and corporate operating characteristics. For robustness, we validated the results using the mixed fixed- random (MFR) technique developed by Nair & Weinhold (2001). The results indicate that causality test is more revealing than correlation-based analyses. It is clear that capital structure theories are co-existent in different industries. The study provides ample evidence that simultaneity between corporate operating characteristics and capital structure is prevalent.

I. INTRODUCTION

A great deal of modern debate in corporate finance arose from controversy about determinants of capital structure. That is, a salient choice confronting corporate finance officials is the decision of how much debt to employ in a firm's capital structure and what percentage of earnings to pay out as dividends. The debate crystallized in several schools of thought or theories: the tradeoff theory, the free cash flow theory, and the pecking order theory.

Quantitative evidence on capital structure decision abounds. However, the dearth of robust empirical evidence and the possibility of reverse causation between the multiple determinants of capital structure have made correlation-based approaches less reliable. Our study, based on the free cash flow theory, the tradeoff theory and the pecking order theory, explores causality in capital structure determinants using average Wald statistics in heterogeneous panel data from five U.S. industries over the period of 1980 to 2000. The results from the study show that there is an overlap in most, if not all, of the variables in explaining the three dominant theories, and internal endogeneity exists between firm's financial policy and the determinants of capital structure.

This paper has two distinguishable contributions. First, it follows Hurlin's (2004) new technique of developing average Wald statistics to test for Granger causality within capital structure determinants, and between them and debt ratios, in fixed-effects heterogeneous panel data. For robustness, the paper also employed the mixed fixed-random effects (MFR) developed by Nair-Reichert and Weinhold (2001)[1]. Bevan and Danbolt (2004) found that results of traditional OLS studies may be biased owing to a failure to control for firm specific time invariant heterogeneity. Second, unlike previous studies, our study assesses feedback causality and reveals simultaneous or endogenous relations between firms' operating characteristics (the determinants of capital structure) and debt ratios. Using variables mostly used in the literature as determinants of capital structure, the results of our study present strong evidence that casts doubt on the exogeneity of debt ratios to the performance and characteristics of firms' operation.

The rest of this paper is organized as follows: Section II is the related literature review. Section III presents data and empirical models of the study. Section IV explains the methodology employed in the study. Section V discusses the causality results. Some concluding remarks are offered in Section VI.

II. RELATED LITERATURE REVIEW

There are many discussions in the literature asserting that firms' operating characteristics drive financial policy, and asset structure (tangible assets vs. intangible assets) influences firms' liquidity capacity. It has been shown by Long and Malitz (1983) and Myers (1984) that debt level depends, among other things, on the type of assets a firm holds. They found a negative correlation between borrowing and investing in intangible assets (growth through innovation), and a positive correlation of borrowing with purchases of tangible assets (capital goods). Based on this, Myers (1984) suggested that specifying debt ratios in terms of both book value as

[1] For parsimony, the MFR results are not displayed in the paper.

well as market value is important since the book value is static and does not imply potential risks. Moreover, a firm's borrowing against tangible assets has a higher liquidating capacity, and it is riskier if against intangible assets. However, the stance of static tradeoff theory in explaining capital structure of growth-oriented (dynamic), intangible asset-dependent firms, is ambiguous.[2]

The tradeoff theory asserts that a firm optimizes its borrowing at the point where the marginal value of tax shields on additional debt equals the increase in the present value of probable bankruptcy costs. As Myers (2001) indicates, the tradeoff theory is intrinsically contradictory on the tax issue as it implies that profit-maximizing firms, with excellent credit ratings, would prefer to have high debt interest tax shields, which is not always the case. As a matter of fact, studies by Myers (1984, 2001), Baskin (1989), Rajan and Zingales (1995), and Berger and di Patti (2005), among others, confirm an inverse relationship between profitability and leverage, and it is also related to agency cost hypothesis. Jensen (1986) predicts a positive correlation between profitability and leverage if the market for corporate control is effective, and a negative correlation if it is ineffective. Frank and Goyal (2007) support the trade-off theory by arguing that the most reliable factors in the leverage decisions of the publically traded American firms are median industry leverage, market-to-book ratio, tangibility, profits, log of assets, and expected inflation. By contrast, Lemmon et al (2006) find that little of the variation in leverage is captured by determinants such as size, market-to-book ratio, profitability, and other identified determinants. In stead, they suggest that variation in capital structures is primarily explained by unobserved time-invariant and stable factors.

Myers (2001) envisaged the free cash flow theory, which states that dangerously high debt levels will increase value, despite the threat of financial distress, when a firm's operating cash flow significantly exceeds its profitable investment opportunities. The free cash flow is designed for mature firms that are prone to overinvestment. This is related to the agency cost hypothesis. The financial policy that eliminates the free cash flow sheds light on the trade-off theory of capital structure that firms tradeoff between reducing potential agency problems and rising risk of financial leverage. Gompers (1995) contends that expected agency costs increase as assets become less tangible, growth options increase, and asset specificity rises. Jensen and Meckling (1976), Williamson (1988), Harris and Raviv (1991), and Berger and di Patti (2005), succinctly posited that under the agency cost hypothesis higher financial leverage eliminates agency costs but brings about financial distress (bankruptcy) and not the reverse, and exerts more pressure on managers (agents) to acquire the necessary cash flow needed to cover interest expenses.

The Pecking Order Theory states that firms, in setting their financing ordering, prefer internal finance to external finance. When firms have to use external finance, debt (lower risk securities) is preferred to equity (higher risk securities). The pecking order theory can be well related to the large firm asymmetric information hypothesis delved by Fama and Jensen (1983). While a larger, well diversified and risk-averse firm is more prepared to issue lower cost debt than smaller firms, Rajan and Zingales (1995) argue that large-value equity firms are more capable of providing useful information to outside investors that might encourage them to issue more equity than debt. Shyam-Sunder and Myers (1999) and Myers (1984) explain managers' proclivity to stay on the side of existing investors who are more informed about the stock than new investors, especially if managers acknowledge that the fixed assets (tangible assets and working capital) are overvalued by investors. As such, firms which end up issuing stock are forced to sell at lower prices because investors will downgrade those firms, resulting in a negative wealth effect. In fact, Masulius (1980, 1983) shows that, on average, stock prices fall when firms offer to exchange equity for debt. Brounen et al (2006) reported the presence of pecking-order behavior and confirmed the static tradeoff theory by highlighting the importance of a target debt ratio, tax effects, and bankruptcy costs.

Other studies primarily emphasized the influence of individual variables on capital structure. Zantout (1997) provided evidence in support of the debt-monitoring hypothesis by showing the existence of a positive relation between the debt ratio and the R&D-induced abnormal stock returns (shareholder wealth effect). Moh'd et al (1998) delved the composition of equity ownership as a determinant of overall capital structure and the dynamic adjustment of capital structure to changes in equity ownership. Forster's paper (1996) examined capital structure, business risk, and investors' returns only in agribusiness. This approach, however, is subject to the omission of

[2] Frydenberg (2003) used the dynamic GMM estimation method and found that the inclusion of dynamic, lagged debt levels diminished the significance of the other variables, as compared to the static model.

variables error and the concurrent statistical bias of the estimates.

Notwithstanding disagreement on what determines capital structure, Titman and Wessels (1988), Harris and Raviv (1991), and Song (2005) reported that there is a preponderance of evidence on the inclusion of asset structure (tangibility), firm size, non-debt tax shields, expected growth, competitive advantage (uniqueness), investment opportunity, profitability, earnings variability, bankruptcy, and industry classification. All of these variables have been employed in explaining the intricacy of capital structure theories discussed, and the explanations are incorporated with the trade-off, free cash flow, and pecking order theories of Corporate Finance[3].

As Myers (2001) emphasized, research on financing tactics confirms the importance of taxes, information differences, and agency costs. It is, however, still debatable whether these factors have causal effects on the overall levels of debt vs. equity financing. Debt ratios may vary within homogenous industries. They may be time-variant even when taxation, information differences, and agency problems are held constant. Recently, Berger and di Patti (2005) tested the corporate governance theory's prediction that leverage affects agency costs and thereby influences firm performance. They used profit efficiency (how close a firm's profits are to the benchmark of a best-practice firm facing the same exogenous conditions) and a simultaneous-equations model that accounts for reverse causality from performance to capital structure in the banking sector. However, their analysis is mainly concerned with agency cost theory in one sector and does not encompass other competing theories. Parsons and Titman (2007) discussed endogeneity problems in empirical corporate finance research. The connection between the dependent variable and the independent variables in a regression, or capital structure and determinants of capital structure in the study, could be mis-specified because of reverse causality and insufficient control for important determinants of the dependent variable. Causality tests of simultaneous equations that do not account for cross-sectional heterogeneity of individual entities (firms) have been criticized by Nair-Reichert and Weinhold (2001) and Hurlin (2004). They are also vulnerable to subjective choice of instrumental variables.[4]

III. DATA AND THE EMPIRICAL MODEL

It should be emphasized at the outset that our concern in this paper is not on whether the exogenous (policy) variables (corporate operating characteristics) are correlated with capital structure, but rather our focus is on their causal linkages. Previous studies highlighted in the section of *Related Literature Review* have addressed the issue of whether corporate operating characteristics cause changes in capital structure, either by direct comparison of the data or, at best, by regression (correlation) analysis. Yet, such analyses might be inadequate to distinguish between the cause and effect. Indeed, a high correlation found between corporate operating characteristics on the one hand and capital structure on the other is consistent with any of four alternative causal hypotheses, each with quite different policy-guiding implications. The four hypotheses can be expressed as follows:

A. Corporate operating characteristics cause changes in capital structure;

B. Capital structure causes changes in corporate operating characteristics;

C. Corporate operating characteristics and capital structure are mutually causal; and

D. These variables are causally independent.

Only Hypothesis A is consistent with the common proposition implied in previous studies in this area. However, Hypothesis B contends, quite plausibly, that corporate managers are pre-occupied with the changes in capital structure due to their profound consequences for firm’s profitability. In this case, it will be clearly inappropriate to characterize the close association (correlation) between corporate operating

[3] We omitted the market timing theory because as Frank and Goyal (2007) posit it has nothing to say about most of the factors traditionally considered in studies of corporate leverage.

[4] Nair-Reichert and Weinhold (2001) suggested using a mixed fixed random effects (MFR) to assess the extent of heterogeneity in a pane. Hurlin (2004) contended that even though heterogeneity may exist in the data generating process, Granger causality may be tested through derivation of average Wald statistics over a given time span for all units in the panel. For robustness, this paper utilizes both techniques. For brevity, the paper presents results of the Hurlin technique only because both techniques give similar results. MFR results have been used to determine the causality signs presented in Table I. MFR other results are available upon request.

characteristics and capital structure as one in which the former causes the latter.

If, alternatively, both hypotheses, A and B, are simultaneous valid as Hypothesis C contains, then evidences reported in previous correlation-based studies become potentially misleading due to the presence of simultaneous-equation bias. Finally, Hypothesis D suggests that changes in the corporate operating characteristics and capital structure are themselves caused by other factors. Of course, as Granger (1980) posits, it is possible that two variables be highly correlated, yet causally independent. Theory too suggests a number of independent factors, such as corporate culture or management philosophy that influence capital structure as well as corporate operating characteristics. For example, Lemmon et al (2006) find that little of variations in leverage are captured by previously identified capital structure determinants, such as size, market-to-book ratio, profitability, etc. They contend that the majority of the variation in leverage ratios is driven by unobserved time-invariant effects.

This paper employs Wald statistics to heterogeneous panel data from five industries, with a total of 670 companies, over the period 1980 to 2000 to test causality between capital structure and corporate operating characteristics. All the firms within the industries that meet the time span of the study are included in the sample. The data is extracted from Compustat database. The five industries in the sample of our test are *Food and Kindred Products* (SIC 2000), *Textile Mill Products* (SIC 2200), *Machinery except Electrical* (SIC 3500), *Electrical and Electronic Machinery Equipment, and Suppliers* (SIC 3600), and *Measurement, Analyzing, and Controlling Instruments* (SIC 3800). Part of our study is to test if capital structure theories are co-existent in different industries. While *Textile* is a more traditional and focused business, *Electrical and Electronic Machinery Equipment* and *Measurement Instruments* are highly growing and diversified industries; industries of *Food* and *Machinery except Electrical* are somewhere in-between, and they represent traditionally labor intensive and capital intensive business respectively.

Table 1 gives a complete list of the variables that are mostly based on information from balance sheets and income statements, and prominent in the capital structure literature. According to Song (2005) and Harris and Ravis (1991), the consensus is that, "leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size, and decreases with volatility, advertising expenditures, probability of bankruptcy, profitability, and uniqueness of the product." However, Song (2005) also points out that there are conflicting theoretical predictions on the effects of profitability on leverage. While Myers and Majluf (1984) predict a negative relationship between leverage and profitability according to the pecking order theory, Jensen (1986) predicts a positive relationship if the market for corporate control is effective. Song (2005) included asset structure, non-debt tax shields, profitability, size, expected growth, uniqueness, income variability, time dummies, and industry classification. Both DeAngelo and Masulis (1980) and Wanzenried (2002) argue for a negative relationship between non-debt tax shields and financial leverage since non-debt tax shields and debt tax shields are substitutes. The tax advantage for leverage decreases when non-debt tax shields increase. Titman and Wessels (1988) posit that factors mostly used to explain leverage include asset structure, non-debt tax shields, growth, uniqueness, industry classification, size, earnings volatility, and profitability.

As discussed in Section II, the free cash flow theory explains corporate performance and the importance of agency costs. The tradeoff theory stresses the impact of tax shields on debt costs. The pecking order theory focuses on the asymmetry of information between managers and investors. The preponderance of available empirical evidences on these theories has yielded conflicting results concerning the relevant explanatory variables in the determination of capital structure. We attempt to show that there is an overlap in most, if not all, of these variables in explaining the dominant theories.

1. The Free Cash Flow Theory

We assume higher financial leverage spurs higher performance. Because of the legal obligation to pay off interest and principle on additional debt, financial leverage effectively eliminates agency problems but also brings about financial distress. Causality relationships under the free cash flow theory can be expressed in two steps: explain how firm's performance characteristics are related to the determinants of free cash flow, and then explore causality between the determinants of free cash flow and firm's debt structure.

Free cash flow (FCF) is net earnings after investment, and thus it is a function of operating cash flow, earnings on investment, and investment opportunities. In our case, four variables serve as determinants of FCF (the expected signs are in parenthesis):

FCF = *f* (EP (+), OCF (+), GROWCAP (-), INVESTOP (-))[5]

where,

EP: earning price ratio

OCF: operating cash flow

GROWCAP: growth in capital expense

INVESTOP: investment opportunity

It is expected that operating cash flow (OCF) and earnings on investment (EP) will have a positive impact on FCF while growth in capital expense (GROWCAP) and potential investment opportunity (INVESTOP) are negatively related to FCF. Free cash flow is a consequence of firm's performance characteristics that can be further expressed by firm size (SIZE(MV), SIZE(BV)), growth in sales and assets (GSALE, GASSET), earning variability (CVEBIT), non-debt tax shield (NDSHIELD), and competitive investment advantage of the industry as general.

Causality between the determinants of free cash flow and firm's debt structure is then examined. The proxies of firm's debt structure used in the test are total debt ratio (DRATIO), long-term debt ratio (LDRATIO), and market debt ratio (MDRATIO) which is defined as total book value debt divide by the sum of book value debt and market value equity[6].

2. The Tradeoff Theory

The tradeoff theory indicates that firm's financial policy is based on the balance between the benefit and cost on additional debt, and the impact of the tradeoff is determined by both operating leverage and financial leverage. The tradeoff theory hypothesizes that a firm optimizes its borrowing on additional debt by tradeoff between marginal benefit from tax shields and marginal cost of probable bankruptcy.

Under the trade-off theory, the two important causal variables are the non-debt tax shield that implies asset structure matters, and the debt tax shield that reflects the impact of wealth on shareholders. Causality testing will elucidate the relationship between asset structure and debt structure. It also accounts for financial leverage and its impact on shareholders' wealth. This will, in turn, explain if a firm's financial policy has feedback causality with its determinants.

A firm's asset characteristics portray non-debt tax shield, while non-debt tax shield complements debt tax shield in determining additional borrowing. In our test, asset structure is explained by liquidity, tangibility and intensity, non-debt tax shield, and the relative characteristics of different industries. Liquidity is a function of cash ratio (CASHRAT) and net working capital ratio (NWCRAT). The proxies for tangibility and intensity are tangible asset ratio (ASSETSTR), and asset turnover (AT), respectively. Non-debt tax shield is defined as a ratio of tax shield on depreciation and tax loss carry forward divided by total asset. Causality testing is conducted between these variables representing asset characteristics and the debt ratios within each industry for the five industries in the sample. Comparison among different industries would reveal capital structure difference among the five industries in the sample.

The second part of the empirical model under the tradeoff theory's implied causal inferences examines the wealth impact of financial policy on shareholders' wealth. Higher financial leverage brings higher returns but also more potential risk to shareholders. The empirical test, thus, explores the causality between shareholders' wealth effect and a firm's capital structure. The variables used as determinants of wealth effect are earning-price ratio (EP), market value equity multiplier ratio (LEVERAGE), and excess value ratio (DIFMVBV). DIFMVBV is a ratio of the difference between stock price and book value per share and stock price. A firm's capital structure is explained by debt ratio, long term debt ratio, and market debt ratio. *A priori*, it is expected that asset characteristics do matter in firm's financial policy. Moreover, financial leverage does magnify wealth impact on shareholders.

3. The Pecking Order Theory

Firms prefer debt to equity when external financing is needed, and the pecking order phenomenon could be well illustrated by asymmetric information hypothesis. Thus, it is envisaged that, under the pecking order theory, larger and more diversified firms borrow more, and firms with large equity are more likely to issue debt instead of equity when need external financing to avoid conflict of interest in current shareholders.

[5] The definition of the variables is presented in Table 1.

[6] Please refer to Table 1 for detail definition of variables.

Empirically, causality test of the pecking order theory investigates the relationship between firm debt ratios and the proxies of firm size (SIZE(BV) and SIZE(MV)) and equity status (market value equity multiplier (LEVERAGE)). The *Electronic* and *Measurement Instruments* industries produce well diversified, technology-intensive products. The *Textile* industry is, however, an example of a less diversified sector. The *Food* and *Machinery* industries are somewhere in between the two, and they present traditional industries of labor-intensive and/or capital-intensive.

IV. METHODOLOGY

There are several flaws with the empirical approaches adopted by most of the papers mentioned previously. First, models estimated with time-averaged data lose dynamic information and degrees of freedom, and hence run the risk of serious omitted variable bias. Second, the contemporaneous correlation across the cross-section does not imply causation, and thus, these models may suffer endogeneity biases. In addition, these problems are hard to address satisfactorily because of the difficulty of finding instruments. Parsons and Titman (2007) argued that endogeneity was often far easier to recognize than to adequately treat. Without good instrumentation, simultaneous equation analysis is unable to capture feedback relationships between capital structure and other variables. For robustness, this study envisages causation by using heterogeneous fixed effects panel data estimation (Hurlin 2004), Nair-Reichertand Weinbold (2001). Their approaches are essentially an improvement of Holtz-Eakin et al (1988) approach which does not allow for heterogeneity. It is similar to, but simpler than, the Nair-Weinhold approach. Hurlin's approach enables practitioners to control for country-specific, time-invariant, fixed effects, and include dynamic, lagged dependent variables which can also control for omitted variable bias. The ability to lag explanatory variables may also help control for endogeneity bias; with the usual caveat that in the case where the relationship is driven by forward-looking expectations, then these expectations should be modeled within the framework of the analysis.

As Berger and di Patti (2005) posit, the diversity of the results in previous research on capital structure may have resulted from reverse causation from performance measures to capital structure. Ignoring causality directions leads to simultaneity resulting in biased and inconsistent estimates. Following Hurlin (2004), in this paper we adopt a simple Granger (1969, 1980, 2003) causality test in heterogeneous panel data models with fixed coefficients[7]. Granger (1969) posits that for each individual (firm) the variable x is causing y if we are able to better predict y using all available information than if we exclude x. Hurlin (2004) thus contends that if x and y are observed on N firms, we should be able to determine the optimal information set used to forecast y. The basic idea is to assume that there exists a minimal statistical representation common to x and y for at least a subgroup of firms. Granger (1969) causality applies to homogenous time series when N causality relationships exist and when the individual predictors of y obtained conditionally on the past values of y and x are identical. Heterogeneity exists when individual predictors of y are not the same, such as might be the case with different firms in different industries in a panel.

Hurlin (2004), Nair-Reichert and Weinhold (2001), and Holtz-Eakin et al (1988) followed a framework of a linear autoregressive data to extend the Granger-type causality tests for panel data which requires testing cross-sectional linear restrictions on the coefficients of the model. Along the same lines, in many capital structure and performance formulations, it is likely that if a causal relationship exists for an industry or a firm, it may exit for some other industries or firms. Thus, causality can be tested with more efficiency in a panel framework with NT observations. Hurlin (2004) and Hurlin and Venet (2001) incorporated Granger causality between individuals y and x, taking into account cross-sectional heterogeneity in panel data by distinguishing between heterogeneity of the causal relationship, between two variables, x and y, and the heterogeneity of the data generating process (DGP). This is done by distinguishing between heterogeneous non-causality (HENC) hypothesis and homogenous non-causality (HNC) hypothesis adopted by Holtz-Eakin et al (1988). In a two-subgroup context, HENC, there may exist a causal relationship between two variables (not necessarily with the same DGP), and another subgroup relationship between the same two variables. Hence, the test applies for heterogeneous panel data with fixed coefficients.

Following Hurlin (2004), a Granger non-causality test statistic based on averaging standard individual Wald statistics is generated. Under a very general setting, individual Wald statistics are independently

[7] For brevity, the MFR tables and discussion will not be displayed. They are available upon request. The causality signs are based on MFR results.

distributed with finite second order moments as soon as $T > 5 + 2K$, where K denotes the number of linear restrictions. For a fixed T, the Lyapunov central limit theorem is sufficient to get the distribution of the standardized average Wald statistic when N tends to infinity. The two first moments of this normal semi-asymptotic distribution are consistent with the empirical mean of the corresponding theoretical moments of the individual Wald statistic. Thus, Hurlin (2004) proposes an approximation of the first two moments of standard Wald statistics for small T sample. This is based on the exact moments of the ratio of quadratic forms in normal variables derived from the Magnus (1986) theorem for a fixed T sample, with $T > 5 + 2K$. Hurlin (2004) asserts that Monte Carlo experiments show that these formulas are excellent approximations to the true moments. Thus, an approximated standardized average Wald statistic to test the heterogeneous non-causality hypothesis (HNC) for small T and N sample is proposed. Hurlin's (2004) model is:

$$y_{it} = \alpha_i + \sum_{K=1}^{K} \gamma_i^{(K)} y_{it,t-K} + \sum_{K=1}^{K} \beta_i^{(K)} x_{i,t-K} + \varepsilon_{i,t} \qquad (1)$$

where $\varepsilon_{i,t}$ are *iid* with $E(\varepsilon_{i,t}) = 0$ and finite heterogeneous variances $E(\varepsilon_{i,t}^2) = \sigma_{\varepsilon,t}^2$. x and y, observed on T periods and N individuals (firms) are covariance stationary variables. α_i are supposed to be fixed. Lag orders K are identical for all cross-section units of the panel and the panel is balanced. Autoregressive parameters $\gamma_i^{(K)}$ of the lagged dependent variables and $\beta_i^{(K)}$ regression coefficients of the explanatory variables are different across groups. Importantly, unlike Weinhold (1999) and Nair-Reichert and Weinhold (2001), parameters $\gamma_i^{(K)}$ and $\beta_i^{(K)}$ are constant but not random. That is, the model has fixed coefficients with fixed individual effects. Also, unlike Holtz-Eakin et al (1988), Hurlin's (2004) causality is more general where non-causality may exist for $N_1 < N$ individual processes with no causality from x to y, while causality may be there for $N_1 + 1, N_1 + 2 \cdots N$. If $N_1 = 0$, then the results are homogenous and x Granger causes y for all the individuals, irrespective of the homogeneity (or lack thereof) of the data generating process. Likewise, if $N_1 > 0$, then the causality relationship is heterogeneous. To allow for the possibility of non-causality in a subgroup N_1 and possible causality in other subgroups $N_1 + 1, N_1 + 2 \cdots N$, Hurlin (2004) proposed using the average of individual Wald statistics to test the homogeneous non-causality hypothesis (HNC) for groups (industries). $i = 1, \cdots N$, such that:

$$W_{N,T} = \frac{1}{N} \sum_{i=1}^{N} W_{i,T} \qquad (2)$$

W_i are generated as summation of the F-statistic, $\frac{K}{N} \sum_{i=1}^{W} F_i$, where:

$$F_{K,df_u - df_r} = \frac{(RSS_{r,i} - RSS_{u,i})/K}{RSS_{u,i}/df_u - df_r} \qquad (3)$$

where RSS_r = restricted sum of squared residual and RSS_u = unrestricted sum of squared residuals computed from equation (1); K = number of lags or number of parameters $\beta_i^{(K)}$; df_u and df_r are the degrees of freedom of unrestricted and restricted regressions, respectively;

$df_u - df_r = T - 2K - 1$; and T = number of years.

V. CAUSALITY RESULTS

Table 2 presents descriptive statistics. The total debt ratio is quite consistent across the five industries, with a mean in the range of 51% to 55%. The textile industry on average has the highest long-term debt ratio at 25%, while the other four industries' long term debt ratio averages range from about 14% to 20%. Regarding to asset characteristics, the food and textile industries, as expected, have much higher averages in the tangible asset ratio, 57.16% and 58.77% respectively, while the measurement instruments industry has the least at 45.87%. For the ratio of non-debt tax shield, the five industries can be classified into two groups. The more traditional industries of food, textiles, and machinery have an average in the range of 41% to 51%, and the electronic and measurement industries an average of 291% and 104% respectively. The larger non-debt tax shield ratio in the electronic and measurements industries could be explained by the large variation of operating loss or gain among the firms within the industries, which is an observable characteristic of highly growing industries. The ratio of excess return measures shareholders' wealth impact. It represents the difference between market value per share and book value per share. The measurements industry, designated as a high growing sector, has the highest average of 331.91%. The textile industry, a traditional and mature sector, has the lowest average at 91.29%. The proxies for growth measures display a similar pattern where the electronic and measurements industries have significantly larger average growth rates relative to the other three industries, with the textile industry showing the lowest.

Our study is based on three main capital structure theories as discussed in Section II and III. The preponderance of available empirical evidence on these theories has yielded conflicting results concerning the relevant explanatory variables in the determination of capital structure. This paper shows that there is an overlap in most of these variables in explaining the three dominant theories. One important task of this paper is to detect whether there is internal endogeneity and, therefore, simultaneity bias within the single equation specifications implied by the three theories under investigation. The results of our study present ample evidences that support Hypothesis C specified: Corporate operating characteristics and capital structure are mutually causal. The following analyses of the causality results follow the models presented in section III. We first examine causality relations within the set variables of the respective theories in the five industries. Then we investigate causality between these variables and debt ratios.

1. The Free Cash Flow Theory

The agency cost hypothesis posits that higher leverage eliminates agency cost but brings about financial distress, and not the reverse. The higher leverage exerts more pressure on agents to acquire the necessary cash flow (liquidity) needed to cover interest expenses. Our empirical model postulates that free cash flow is a function of earning price ratio (EP), operating cash flow (OCF), growth in capital expense (GROWCAP), and investment opportunity (INVESTOP). Moreover, these determinants of free cash flows are driven by firm's operating characteristics, such as firm size (SIZE (MV) and SIZE (BV)), growth in sales and assets (GSALE and GASSET), and earning variability (CVEBIT).

Table 3 exhibits the causality summaries that are based on Wald statistics from the test while the detail Wald statistics are reported at the appendix Table 4. Table 3-I displays the causality results for the free cash flow theory. Furthermore, Section 1 of Table 3-I shows causality among free cash flow determinants while Section 2 of Table 3-I presents the causality relationship between debt structure and characteristics of free cash flow. With few exceptions, it is clear there is bidirectional causality between the determinants of free cash flow and firm's operating characteristics. Wald Statistics show that operating characteristics' variables have a feedback relationship with the determinants of free cash flow. There is bidirectional causality between the determinants of free cash flows, (earning price ratio (EP), operating cash flow (OCF), growth in capital expense (GROWCAP), and investment opportunity (INVESTOP)) and most of the firms' operating characteristic variables in all five industries. Few exceptions have been noticed. For instance, feedback between OCF and GASSET (growth in assets) only exists in the technology-oriented, growing measurements industry, but not in other four industries. There is also no feedback from OCF to GSALE for all five industries. There are exceptions for the textile industry: no feedback from INVESTOP to SIZE (BV), GASSET, Non-Debt Tax Shield (NDSHIELD) and Earning Variability (CVEBIT), and only one-way causality from GSALE to INVESTOP in the textile industry. Another exception is in the food industry, and there is no feedback from OCF, GROWCAP, and INVESTOP to SIZE (MV).

The results from Table 3-I.1 provide evidence that endogeneity abundantly exists between firm's operating characteristics and the determinants of free cash flow with few exceptions in some industries. Firm size, growth in sales and assets, non-debt tax shield, and earning variability have consistent two-way causality with the determinants of free cash flows, indicating an internal endogenous and simultaneous relation between firm's operating characteristics and its performance.

The causal relationship of the adduced free cash flow determinants with the three debt ratios are reported in the section 2 of Table 3-I. The causality results present different patterns across the five industries. Bidirectional causality between the debt ratios and the determinants of free cash flow prevails in the highly growing electronic and measurements instruments industries. Bidirectional causality is also dominant in the machinery industry, with an exception of the unidirectional causality from total debt ratio (DRATIO) to investment opportunity (INVESTOP). For the textile industry, however, there exists a unidirectional causality from the debt ratios to EP and INVESTOP (investment opportunity), and one-way causality from OCF (operating cash flow) to the debt ratios; bidirectional causality exists between the debt ratios and GROWCAP (growth in capital expenses). For the food industry, consistent bidirectional causality is observed between the debt ratios and OCF (operating cash flow) and

INVESTOP (investment opportunity), but there are a few exceptions in the other two pairs of the variables, i.e., debt ratios vs. EP and debt ratios vs. GROWCAP.

The above causality results illustrate the causal relations between the free cash flow theory and firm's financial policy. Internal endogeneity abounds between firm's operating characteristics and the determinants of free cash flow for all five industries. However, the degree of causality between debt ratios and the determinants of free cash flows may vary across the industries. Our results cast doubt on the exogeneity of debt ratios to profitability indicator implied by the free cash flow theory. The hypothesized determinants of free cash flow in our test can be specified as profitability indicators (EP, OCF, GCPEX, and INVOP) that manifest different patterns of causality with the various debt ratios. The clear bidirectional causality confirms the evidence of an endogenous relation between profitability indicators and debt ratios.

2. The Tradeoff Theory

Table 3-II reports the empirical results for the tradeoff theory. As explained in section III, the causality test under the tradeoff theory explores endogeneity of firm's debt structure through non-debt tax shield and debt tax shield. Non-debt tax shield implies asset structure matters while debt tax shield reflects wealth impacts on shareholders.

Part 1 of Table 3-II presents a matrix between the debt ratios and the hypothesized determinants of non-debt tax shield by industry, i.e., Cash Ratio (CASHRAT), NWC Ratio (NWCRAT), Tangible Asset Ratio (ASSETSTR), Asset Turnover (AT), and Non-Debt Tax Shield Ratio (NDSHIELD). Wald Statistics predominantly indicate bidirectional causality between the three debt ratios (the debt ratio, long term debt ratio, and market debt ratio) and the determinants of non-debt tax shield[8]. The food, machinery, and electronic industries present a consistent pattern of bidirectional causality for all the variables. The measurement instruments industry shows a similar consistent pattern of bidirectional causality with an exception of the unidirectional causality running from debt ratio to cash ratio, with no reverse causation. For the textile industry, bidirectional causality exists between the three debt ratios and net working capital ratio, tangible asset ratio, and non-debt tax shield (except for the unidirectional causality from market debt ratio to non-debt tax shield); while there is unidirectional causality from the debt ratios to asset turnover. Total debt ratio also exerts one-way causality on cash ratio in the textiles industry.

Existing empirical research on the tradeoff theory has generally predicted debt ratios to be exogenously dependent on tax shield and tangible and/or liquidity asset as determinants of financial leverage. However, our causality results provide clear evidence of simultaneity between the non-debt tax shield and debt ratios. The same is true for asset structure and debt ratios. As Berens and Cuny (1995) point out, the tradeoff theory provides a distorted measure of corporate tax shielding. The magnitude of non-debt tax shields and a firm's asset characteristics should be simultaneously examined to reveal how they are related to various costs of debt.

Part 2 of Table 3-II shows financial leverage tradeoff impacts on shareholders' wealth (debt tax shields). The empirical model discussed in Section III.2 investigates endogeneity between the three debt ratios and the variables measuring shareholders' wealth impacts (return on investment (EP), market value equity multiplier (LEVERAGE), and excess value (DIFMVBV)). Again, the empirical results reported in the tables present different patterns of causality across the five industries. There is a consistent pattern of bidirectional causality in the industries of machinery, electronic, and measurement instruments between debt ratios and the variables measuring shareholders' wealth impacts. In the food and textile industries, however, both bidirectional and unidirectional causality in financial leverage tradeoff exist. In both the food and textile industries, bidirectional causality prevails between total and market debt ratios and market value equity multiplier (LEVERAGE) as well as excess value (DIFMVBV); however, there is one-way causality from the three debt ratios to return on investment (EP), and long term debt ratio to all three wealth impact measurement variables, EP, LEVERAGE, and DIFMVBV[9] in the textile industry, and it shows no causality relation between long term debt ratio and excess value (DIFMVBV) in the food industry.

[8] Again, Table 3-II shows a summary of causality relation from the Wald statistics while the detail of Wald statistics are reported in appendix Table 4-II.

[9] Table 3-II.2, panel b, Textile Industry shows the summary of the causality relation between the variables. Value 1 indicates Wald Statistics is significant at 10% or below while 0 means insignificance.

Also, the results above present a strong evidence of endogeneity between the debt ratios and the variables measuring shareholders' wealth impacts. The endogenous relation is particularly consistent in faster growing and more diversified industries (Electrical, Electronic Machinery Equipment and Measurement Instruments), indicating an endogenous and simultaneous relation between a firm's financial policy and shareholders' wealth.

3. The Pecking Order Theory:

The pecking order theory focuses on the asymmetry of information between managers and investors. Firms prefer debt to equity when external financing is needed to avoid possible interest conflict among firm's stake holders. The empirical model is structured to investigate if larger and more diversified firms tend to borrow more, and if firms with large equity in their capital structure are more likely to issue debt instead of equity when asking for external financing.

Table 3-III report the causality results related to the empirical model explaining the pecking order theory. Wald Statistics demonstrate that most values are statistically significant, indicating consistent bidirectional causality between the debt ratios and the firm size and equity status across the five industries[10]. Exceptions are the one-way causality from debt ratio and long term debt ratio to size (MV) in the measurement instruments industry, and the one-way causality from long term debt ratio to market value equity multiplier in the textile industry. Causality signs based on Holtz-Eakin et al (1988) and MFR results (Nair-Reichert and Weinhold (2001)) also confirm that the debt ratios are positively related to market value equity multiplier and firm size[11]. Thus, our results illustrate consistent endogeneity and simultaneity of debt ratios vs. the firms' size and equity status across the five industries, indicating the pecking order is an observation of endogeneity among the determinants of a firm's financial policy, and larger firms tend to borrow more and larger equity holding firms prefer debt to equity when external financing is needed.

VI. CONCLUDING REMARKS

This paper adopts a new technique, developed by Hurlin (2004), to test for Granger causality between the capital structure determinants (variables) claimed by the tradeoff, free cash flow, and pecking order theories. Importantly, our study explores the causal relationships between these variables and debt ratios. To examine possible differences in financing patterns among different industries, the empirical test investigates feedback causality in a panel of five heterogeneous U.S. industries over the period 1980 to 2000. The industries are classified into growing, technology-bound industries represented by measurement instruments and electronic equipment/suppliers industries, and traditional industries exemplified by textile and food. Machinery belongs to a capital intensive industry, which can be technology oriented and/or traditional. Such classification helps in controlling for time-invariant firm-specific heterogeneity. The empirical results from this study provide ample evidence in supporting our test hypothesis that corporate operating characteristics and capital structure are mutually causal.

Causality testing of the relationship between the determinants of the free cash flow and firm's operating characteristics reveals the prevalence of feedback causality. However, feedback between the operating cash flow ratio and asset growth exists only in the technology-oriented, growing measurement instruments industry. Moreover, there is no feedback from the operating cash flow to sales growth in all five industries.

Bi-directional causality prevails between debt ratios and the determinants of free cash flow in the highly growing measurement instruments, electronic, and machinery industries, and there is consistent bidirectional causality between debt ratios and profitability across all five industries in the test. This casts doubt on the exogeneity of debt ratios to profitability indicators proclaimed by the free cash flow theory. In the traditional industries of textiles and food, there is no feedback from debt ratios to earning-price ratios. Also, debt ratios do not exhibit reverse causation with growth in capital expenses in the food industry.

The empirical results of the tradeoff theory predominantly indicate bidirectional causality between the debt ratios and the determinants of non-debt tax shields, providing clear evidence of simultaneity between the non-debt tax shield and debt ratios and asset structure and debt ratios. Moreover, for the most part, the results support the existence of feedback causality between debt ratios and debt tax shields that represents wealth impact measures on shareholders, especially in the highly growing, more diversified industries of measurement instruments

[10] The detail Wald Statistics are reported at Appendix Table 4-III.

[11] The expected signs are, however, irrelevant in the case of feedback causality or absence of causality. The Holtz-Eakin et al (1988) and MFR results are not displayed to save space.

and electronic equipment/suppliers. Testing of the pecking order theory also showed that bidirectional causality is dominant between debt ratios and equity status.

Overall, the policy implications of these results are far reaching. In general, and especially in fast growing, more diversified industries, debt ratios are simultaneously codependent on the variables hypothesized by the three dominant theories of capital structure. No fast conclusions can be made on which theory dominates. It, therefore, seems plausible that, although some generalizations about causality trends within and between industries exist, the prudent thing to do is for each firm to assess which capital structure determinants are important at a specific point in time. That may simultaneously depend on changes in existing debt and other capital structure determinants.

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Table 1
Definition of Variables

Panel A: Debt Ratios

Variables	Definitions
DRATIO	debt ratio = total debt / total assets
LDRATIO	long term debt ratio = long term debt / (total debt + total equity)
MDRTIO	market value debt ratio = total debt / (total debt + market value of equity)

Panel B: Asset Characters

Variables	Definitions	Expected Signs *to* Debt Ratios
NWCRAT	net working capital ratio = net working capital / total assets	-
CASHRAT	cash ratio = cash / current liability	
AT	asset turnover = sales / total assets	+
ASSETSTR	tangible asset ratio = (inventory + fixed assets) / total assets	+
NDSHIELD	non-debt tax shield = (depreciation + tax loss carry forward) / total assets	+

Panel C: Profitability and Earnings Volatility Measures

Variables	Definitions	Expected Signs *to* Debt Ratios
EP	earning-price ratio = net income/ market value of equity	-
OCF	operating cash flow ratio = earning before depreciation and interest after tax / total assets	+
CVEBIT	CV of EBIT = standard deviation of EBIT / mean of EBIT	-

Panel D: Shareholders' Wealth Impact Measures

Variables	Definitions	Expected Signs *to* Debt Ratios
DIFMVBV	excess value = (stock price – book price equity per share) / stock price	+
LEVERAGE	market value equity multiplier = (net income/market value equity) / (net income/total assets)	+

Panel D: Growth and Size Measures

Variables	Definitions	Expected Signs *to* Debt Ratios
GSALE	sales growth = [sales (t=0) / sales (t=-2)]**1/3 – 1	+
GASSET	asset growth = [total assets (t=0) / total assets (t=-2)]**1/3 – 1	+
GROWCAP	growth in capital expense = [capital spending (t=0) /capital spending (t=-2)]**1/3 – 1	+
INVESTOP	investment opportunity = (R & D expense + capital expense) / total assets	+
SIZE (MV)[1]	log (market value of total equity)	+
SIZE (BV)[2]	log (book value of total equity)	+

[1] Song (2005) predicted an ambiguous effect of size on leverage. If the relationship between leverage and size is a proxy for probability of bankruptcy, then size may be an inverse proxy for the probability of bankruptcy, larger sized firms are less likely to fail. Thus, larger firms may issue debt at lower costs than smaller firms. Under this scenario, size is expected to be positively related to leverage. But, if there is asymmetry of information, Rajan and Zingales (1985) postulate that larger firms tend to provide more information to outside investors, and this would increase their preferences for equity.

[2] Causality signs based on Holtz-Eakin et al (1988) and MFR results (Nair-Reichert and Weinhold (2001)) confirm the expected signs from the respective variables to total debt ratio. There expected signs are, however, irrelevant in the case of feedback causality or absence of causality. Different signs showed with reverse causation. The Holtz-Eakin et al (1988) and MFR results are not displayed to save space.

Table 2: Descriptive Statistics of Variables

	Food	Textile	Machinery	Electronic	Measurements
Debt Ratios					
Debt Ratio					
Mean	0.5472	0.5284	0.5075	0.5352	0.5501
(Obs, Std.Dev.)	(1333, 0.2222)	(503, 0.2479)	(3396, 02942)	(3884, 2.608)	(3062, 1.0494)
Long Term Debt Ratio					
Mean	0.1998	0.2515	0.1459	0.1432	0.1567
(Obs, Std.Dev.)	(1333, 0.1566)	(501, 0.1714)	(3396, 0.1565)	(3883, 0.163)	(3065, 0.5364)
Market Debt Ratio					
Mean	0.4144	0.4818	0.3849	0.3566	0.313
(Obs, Std.Dev.)	(1141, 0.2274)	(471, 0.1932)	((3157, 0.2222)	(3581, 0.2148	(2735, 0.2205)
Asset Characters					
NWC Ratio					
Mean	0.2033	0.3388	0.3457	0.3141	0.338
(Obs, Std.Dev.)	(1324, 0.2029)	(479, 0.1875)	(3381, 0.2674)	(3841, 2.608)	(3049, 0.7365)
Cash Ratio					
Mean	0.6576	0.1932	0.3921	0.4408	0.5898
(Obs, Std.Dev.)	(1171, 9.1808)	(437, 0.3270)	(2911, 1.0729)	(3346, 1.030)	(2723, 1.4416)
Asset Turnover					
Mean	1.8359	1.4978	1.2734	1.2885	1.1456
(Obs, Std.Dev.)	(1330, 1.2155)	(500, 0.5032)	(3396, 0.5405)	(3883, 0.746)	(3061, 0.5429)
Tangible Asset Ratio					
Mean	0.5716	0.5877	0.4923	0.501	0.4587
(Obs, Std.Dev.)	(1329, 0.1759)	(498, 0.1450)	(3395, 0.1610)	(3881, 0.162)	(3058,0.1696)
Non Debt Shield Ratio					
Mean	0.4119	0.5073	0.4933	2.9108	1.0397
(Obs, Std.Dev.)	(1145, 0.4437)	(427, 0.6898)	(2786, 0.8886)	(3144,126.84)	(2418, 5.4896)
Profitability and Earnings Volatility Measures					
Earning Price Ratio					
Mean	0.7485	0.0381	-0.0639	-0.1119	-0.074145
(Obs, Std.Dev.)	(1138, 23.801)	(469, 0.2542)	(3155, 1.0400)	(3580, 4.162)	(2733, 1.1377)
Operating Cash Flow					
Mean	0.1561	0.1429	0.0953	0.0932	0.0267
(Obs, Std.Dev.)	(1315, 0.0922)	(498, 0.0919)	(3387, 0.1778)	(3866, 0.575)	(3057, 0.4415)
CV EBIT					
Mean	-4.0269	-0.0301	0.3044	0.9898	0.4553
(Obs, Std.Dev.)	(1139, 146.08)	(471, 0.8084)	(3157, 1.0797)	(3580, 26.39)	(2731, 1.3349)
Shareholders' Wealth Impact Measures					
Excess Value					
Mean	2.2826	0.9129	1.5506	1.3845	3.3191
(Obs, Std.Dev.)	(1139, 21.273)	(471, 10.102)	(3157, 9.7553)	(3579,7.1244)	(2731, 29.084)
Leverage					
Mean	9.2031	2.4503	1.9215	2.0781	1.4309
(Obs, Std.Dev.)	(1138, 240.11)	(469, 1.8253)	(3154, 3.9397)	(3580, 10.67)	(2733, 2.077)

Table 2 (Continue)

	Food	Textile	Machinery	Electronic	Measurements
Growth and Size Measures					
Growth in Sales					
Mean	1.8258	0.2547	2.8566	22.1339	21.6913
(Obs, Std.Dev.)	(1097, 27.294)	(403, 5.4816)	(2685, 43.327)	(3075,583.23)	(2382, 388.55)
Growth in Assets					
Mean	4.0463	0.5096	4.3165	17.5743	10.3895
(Obs, Std.Dev.)	(1104, 53.312)	(403, 5.4816)	(2695, 67.628)	(3079, 439.2)	(2387, 149.38)
Growth in Capital					
Mean	5.133	3.5662	10.0749	46.3406	11.2307
(Obs, Std.Dev.)	(1056, 102.02)	(386, 35.71)	(2656, 183.61)	(2989,1488.7)	(2291, 135.40)
Investment Opportunity					
Mean	0.1378	0.2028	0.1913	0.2272	0.1667
(Obs, Std.Dev.)	(387, 0.1692)	(202, 0.1705)	(2743, 0.4353)	(2952, 1.187)	(2473, 0.2383)
SIZE(MV)					
Mean	5.8815	4.2306	4.2592	4.1624	3.8263
(Obs, Std.Dev.)	(1141, 2.5252)	(471, 1.6520)	(3159, 2.2563)	(3582, 2.341)	(2735, 2.3018)
SIZE (BV)					
Mean	6.1277	4.906	4.4216	4.1993	3.4414
(Obs, Std.Dev.)	(1333, 2.1437)	(503, 1.3301)	(3398, 2.2911)	(3885, 2.307)	(3065, 2.4140)

Table 3: Unidirectional and Bidirectional Causality[1]

I. Free Cash Flow Theory:

1. Characteristics of Free Cash Flows

I. a. Earnings vs. Firm Size, Operating Growth, Industrial Competitive Advantage, Non-Debt Tax Shield, and Earning Variability

	Size (MV)	Size (BV)	Growth in Sales	Growth in Assets	Non Debt Tax Shield	Earning Variability
EP (Food)	1,1	1,1	1,1	1,0	1,1	1,1
EP (Textile)	1,1	1,1	1,1	1,1	1,1	1,1
EP (Machinery)	1,1	1,1	1,1	1,1	1,1	1,1
EP (Electronic)	1,1	1,1	1,1	1,1	1,1	1,1
EP (Measurements)	1,1	1,1	1,1	1,1	1,1	1,1

I. b. Return On Investment vs. Firm Size, Operating Growth, Industrial Competitive Advantage, Non-Debt Tax Shield, and Earning Variability

	Size (MV)	Size (BV)	Growth in Sales	Growth in Assets	Non Debt Tax Shield	Earning Variability
OCF (Food)	1,0	1,1	1,0	1,0	1,1	1.1
OCF (Textile)	1,1	1,1	1,0	1,0	1,1	1.1
OCF (Machinery)	1,1	1,1	1,0	1,0	1,1	1.1
OCF (Electronic)	1,1	1,1	1,0	1,0	1,1	1.1
OCF (Measurements)	1,1	1,1	1,1	1,1	1,1	1.1

I. c. Growth in Capital Expenses vs. Firm Size, Operating Growth, Industrial Competitive Advantage, Non-Debt Tax Shield, and Earning Variability

	Size (MV)	Size (BV)	Growth in Sales	Growth in Assets	Non Debt Tax Shield	Earning Variability
GROWCAP (Food)	1,0	1,1	1,1	1,1	1,1	1,0
GROWCAP (Textile)	1,1	1,1	1,1	1,1	1,1	1.1
GROWCAP (Machinery)	1,0	1,1	1,1	1,1	1,1	1.1
GROWCAP (Electronic)	1,1	1,1	1,1	1,1	1,1	1.1
GROWCAP (Measurements)	1,1	1,1	1,1	1,1	1,1	1.1

I. d. Investment Opportunity vs. Firm Size, Operating Growth, Industrial Competitive Advantage, Non-Debt Tax Shield, and Earning Variability

	Size (MV)	Size (BV)	Growth in Sales	Growth in Assets	Non Debt Tax Shield	Earning Variability
INVESTOP (Food)	1,0	1,1	1,1	1,1	1,1	1,1
INVESTOP (Textile)	1,1	1,0	0,1	1,0	1,0	1,0
INVESTOP (Machinery)	1,1	1,1	1,1	1,1	1,1	1,1
INVESTOP (Electronic)	1,1	1,1	1,1	1,1	1,1	1,1
INVESTOP (Measurements)	1,1	1,1	1,1	1,0	1,1	1,1

[1] Value 1 indicates Wald Statistics is significant at 10% or below while 0 means insignificance. The detail of Wald Statistics is ported in Table 4 that is attached at the appendix. The value before comma indicates column variable affects correspondent row variable while the value after comma is the feedback from the row variable to the column variable.

Table 3.I. Free Cash Flow Theory (*continue)*

2. Debt Structure vs. Characteristics of Free Cash Flows:

a. Food Industry

	EP	OCF	GROWCAP	INVESTOP
DRATIO(Food)	0,1	1,1	1,0	1,1
LDRATIO (Food)	1,0	1,1	1,1	1,1
MDRTIO(Food)	1,1	1,1	1,1	1,1

b. Textile Industry

	EP	OCF	GROWCAP	INVESTOP
DRATIO(Textile)	0,1	0,1	1,1	0,1
LDRATIO (Textile)	0,1	1,0	1,1	0,1
MDRTIO(Textile)	0,1	0,1	1,1	0,1

c. Machinery Industry

	EP	OCF	GROWCAP	INVESTOP
DRATIO(Machinery)	1,1	1,1	1,1	0,1
LDRATIO (Machinery)	1,1	1,1	1,1	1,1
MDRTIO(Machinery)	1,1	1,1	1,1	1,1

d. Electronic Industry

	EP	OCF	GROWCAP	INVESTOP
DRATIO(Electronic)	1,1	1,1	1,1	1,1
LDRATIO (Electronic)	1,1	1,1	1,1	1,1
MDRTIO(Electronic)	1,1	1,1	1,1	1,1

e. Measurements Industry

	EP	OCF	GROWCAP	INVESTOP
DRATIO(Measurements)	1,1	1,1	1,1	1,1
LDRATIO (Measurements)	1,1	1,1	1,1	1,1
MDRTIO(Measurements)	1,1	1,1	1,1	1,1

Table 3, II. Tradeoff Theory:

1. Asset Characteristics Do Matter: Debt Structure vs. Determinants of Non-Debt Tax Shield

a. Food Industry

	Cash Ratio (CASHRAT)	NWC Ratio (NWCRAT)	Tangible Assets (ASSETSTR)	Asset Turnover (AT)	Non-Debt Tax Shield (NDSHIELD)
DRATIO (Food)	1,1	1,1	1,1	1,1	1,1
LDRATIO (Food)	1,1	1,1	1,1	1,1	1,1
MDRATIO (Food)	1,1	1,1	1,1	1,1	1,1

b. Textile Industry

	Cash Ratio (CASHRAT)	NWC Ratio (NWCRAT)	Tangible Assets (ASSETSTR)	Asset Turnover (AT)	Non-Debt Tax Shield (NDSHIELD)
DRATIO (Textile)	0,1	1,1	1,1	0,1	1,1
LDRATIO (Textile)	1,1	1,1	1,1	1,1	1,1
MDRATIO (Textile)	1,1	1,1	1,1	0,1	0,1

c. Machinery Industry

	Cash Ratio (CASHRAT)	NWC Ratio (NWCRAT)	Tangible Assets (ASSETSTR)	Asset Turnover (AT)	Non-Debt Tax Shield (NDSHIELD)
DRATIO (Machinery)	1,1	1,1	1,1	1,1	1,1
LDRATIO (Machinery)	1,1	1,1	1,1	1,1	1,1
MDRATIO (Machinery)	1,1	1,1	1,1	1,1	1,1

d. Electronic Industry

	Cash Ratio (CASHRAT)	NWC Ratio (NWCRAT)	Tangible Assets (ASSETSTR)	Asset Turnover (AT)	Non-Debt Tax Shield (NDSHIELD)
DRATIO (Electronic)	1,1	1,1	1,1	1,1	1,1
LDRATIO (Electronic)	1,1	1,1	1,1	1,1	1,1
MDRATIO (Electronic)	1,1	1,1	1,1	1,1	1,1

e. Measurements Industry

	Cash Ratio (CASHRAT)	NWC Ratio (NWCRAT)	Tangible Assets (ASSETSTR)	Asset Turnover (AT)	Non-Debt Tax Shield (NDSHIELD)
DRATIO (Measurements)	0,1	1,1	1,1	1,1	1,1
LDRATIO (Measurements)	1,1	1,1	1,1	1,1	1,1
MDRATIO (Measurements)	1,1	1,1	1,1	1,1	1,1

Table 3, II. Tradeoff Theory (*continue)*

2. Financial Leverage Trade-off: Debt Structure vs. Debt Tax Shield

a. Food Industry

	Return on Investment (EP)	MV Equity Multiplier (LEVERAGE)	Excess Return (DIFMVBV)
DRATIO (Food)	0,1	1,1	1,1
LDRATIO (Food)	1,0	1,1	0,0
MDRATIO (Food)	1,1	1,1	1,1

b. Textile Industry

	Return on Investment (EP)	MV Equity Multiplier (LEVERAGE)	Excess Return (DIFMVBV)
DRATIO (Textile)	0,1	1,1	1,1
LDRATIO (Textile)	0,1	0,1	0,1
MDRATIO (Textile)	0,1	1,1	1,1

c. Machinery Industry

	Return on Investment (EP)	MV Equity Multiplier (LEVERAGE)	Excess Return (DIFMVBV)
DRATIO (Machinery)	1,1	1,1	1,1
LDRATIO (Machinery)	1,1	1,1	1,1
MDRATIO (Machinery)	1,1	1,1	1,1

	Return on Investment (EP)	MV Equity Multiplier (LEVERAGE)	Excess Return (DIFMVBV)
DRATIO (Electronic)	1,1	1,1	1,1
LDRATIO (Electronic)	1,1	1,1	1,1
MDRATIO (Electronic)	1,1	1,1	1,1

c. Machinery Industry

	Return on Investment (EP)	MV Equity Multiplier (LEVERAGE)	Excess Return (DIFMVBV)
DRATIO (Machinery)	1,1	1,1	1,1
LDRATIO (Machinery)	1,1	1,1	1,1
MDRATIO (Machinery)	1,1	1,1	1,1

Table 3, III. Pecking Order Theory:

	SIZE(MV)				
	Textile	Machinery	Food	Electronic	Measurements
DRATIO	1,1	1,1	1,1	1,1	0,1
LDRATIO	1,1	1,1	1,1	1,1	0,1
MRATIO	1,1	1,1	1,1	1,1	1,1

	SIZE (BV)				
	Textile	Machinery	Food	Electronic	Measurements
DRATIO	1,1	1,1	1,1	1,1	1,1
LDRATIO	1,1	1,1	1,1	1,1	1,1
MRATIO	1,1	1,1	1,1	1,1	1,1

	MV Equity Multiplier (LEVERAGE)				
	Textile	Machinery	Food	Electronic	Measurements
DRATIO	1,1	1,1	1,1	1,1	1,1
LDRATIO	0,1	1,1	1,1	1,1	1,1
MRATIO	1,1	1,1	1,1	1,1	1,1

TEACHING PERSONAL FINANCIAL DECISION-MAKING IN TODAY'S ENVIRONMENT

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ABSTRACT

The Finance & Legal Studies Department at Bloomsburg University has offered a course in personal financial decision-making for over ten years, and five years ago modified it to make it part of general education in "Values, Ethics & Responsible Decision-Making." The course description states: "This course presents information that the student of the course will find useful when they move through life regardless of their respective career choices. The general topics covered will be personal financial planning, consumer credit insurance (health, disability, liability, home, and automobile), investing principles and sources of capital, and retirement planning and their impact upon individuals and small business owners."

INTRODUCTION

Today millions of college students are struggling with credit card debt and money management concerns while in college and after graduation. In order to prepare our students to handle their finances, Bloomsburg University and the Department of Finance and Legal Studies have set a goal of financial literacy for our student population. We have been at the forefront in this area adding a financial literacy course (Personal Financial Decisions) to our curriculum. ***Financial literacy***, as defined by the Jump$tart Coalition for Personal Financial Literacy (2007), is "…the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security …Financial literacy refers to an evolving state of competency that enables each individual to respond effectively to ever changing personal and economic circumstances." ***Economic literacy***, as defined by Meade and Sandene in *The Nation's Report Card: U.S. Economics 2006 (2007),* "…includes understanding how economics and markets work, what the benefits and costs of economic interaction and interdependence are, and that people have to make choices because resources are limited." This definition includes not only developing knowledge and skills, but also being able to use that knowledge and those skills in making decisions.

According to John E. Clow, "The focus of economic literacy is to equip the individual to deal with economic experiences using concepts traditionally found in microeconomics and macroeconomics. Financial literacy is the ability to manage one's own financial resources, which involves money management skills. Developing an understanding of various financial products, governmental interventions, and consumer markets is a part of developing financial literacy."

How does understanding economics help with personal financial literacy?

1. Provides the foundation for understanding our economic world – interest rates, prices in the market, etc.
2. Demonstrates the interrelatedness of institutions and society.
3. Defines the importance of rational decision-making and opportunity cost.
4. It's all about making choices and analyzing the costs and benefits that relate to those choices before you make them.

Based upon a 2008 report by Sally Mae ("How Undergraduate Students Use Credit Cards") finds that undergraduate credit card debt has increased by 8 percent since 2004 with the median freshmen debt increasing from $373 in 2004 to $939 in 2008. The main problem seems to be that students are using their credit cards to live well beyond their means. Undergraduates are financially illiterate and ill prepared when it comes to money management skills. Eight-four percent of undergraduates say they need more education on financial management. As a result of our aggressive stance, our freshmen enrollments have increased and we are now beginning to see an increase in our junior and senior enrollments as well.

This course presents information that the students will find useful when they move through life, regardless of their respective career choices. The general topics we cover are: personal financial planning, consumer credit including student loans, insurance (health, disability, liability, home, and automobile), investing principles and sources of capital, and retirement planning and their impact upon individuals and small business owners.

At the end of the course, students are able to describe the main components of financial planning (obtaining, planning, saving, borrowing, spending, managing risk, investing, and retirement and estate planning); prepare a cash flow statement and budget based upon financial goals; compute personal taxes and describe the relationship of taxes to financial planning; analyze factors that affect selection and use of financial services; compare types of financial institutions; compare the costs and benefits of different types of savings plan and checking accounts; analyze the major sources of consumer credit and analyze their advantages and disadvantages; determine the cost of credit by calculating interest with various interest formulas; evaluate available housing alternatives and understand the home buying process; describe the factors that affect investment decisions and identify the major types of investment alternatives.

The course utilizes a number of pedagogical approaches including lecture-discussion, student-research activity approaches, on site visits, guest speakers, and projects that require the students keep a daily spending diary, research careers, and prepare financial statements based upon their financial goals and findings. The most recent technology addition to the course has been the integration of web 2.0 tools .

Presently the department is researching the possibility of Financial Management Association (FMA) members conducting student-peer counseling, non-traditional student counseling, and aiding older adults in the preparation and maintenance of financial records such as check writing, checkbook reconciliation and financial document storage.

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AT A CROSSROADS: THE IMPACT OF INTERNATIONAL FINANCIAL REPORTING STANDARDS IN THE U.S.

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ABSTRACT

Public companies in the United States face a new challenge. As set forth in its roadmap for implementation, the Securities and Exchange Commission (SEC) is considering the potential use of financial statements prepared in accordance with international financial reporting standards (IFRS). The chief goal of these global standards is to establish a uniform system to improve comparability of companies' financial positions. For decades, Generally Accepted Accounting Principles (GAAP) has been the framework of financial statement preparation for public companies in the U.S. The movement to IFRS represents an unprecedented change in the basis of financial reporting, since IFRS would supersede GAAP. This paper examines the current status of the SEC plan and a variety of issues raised by the U.S. transition to IFRS. Some fundamental accounting differences between IFRS and GAAP, the impact of IFRS on financial statements, the benefits and costs of adoption and the obstacles to implementation of IFRS in the U.S. are among the issues discussed.

INTRODUCTION

Public companies in the United States are facing a new challenge. In November 2008, the SEC published its document "Roadmap for the Potential Use of Financial Statements Prepared in Accordance with International Financial Reporting Standards by U.S. Issuers" which established a timeline for U.S. companies to change its basis for preparation of financial statements and disclosures from U.S. Generally Accepted Accounting Principles (GAAP) to standards issued by the International Accounting Standards Board (IASB). The roadmap provides the SEC, Public Company Accounting Oversight Board (PCAOB), Financial Accounting Standards Board (FASB) and other stakeholders with an outline of the key steps required for U.S. markets to make this transition.

Since 1973, GAAP has been the framework of financial statement preparation for public companies in the U.S. The Securities and Exchange Commission (SEC) has allowed the private sector to develop and enforce these accounting standards created by the FASB and its predecessors. The shift to with International Financial Reporting Standards (IFRS) represents an unprecedented change in financial reporting, since IFRS would supersede GAAP. The chief goal of these standards is to establish a uniform global system to improve comparability of companies' financial positions across countries.

This paper examines a variety of issues raised by the U.S. transition to IFRS. First, a brief historical context of the emergence of international standards is provided, including the expected benefits of a single international reporting framework. Second, some fundamental accounting differences between IFRS and GAAP are presented to highlight distinctions between the two approaches to financial reporting. Through specific examples, the impact of these differences on financial statements prepared in the U.S. is illustrated. Finally, the potential costs of adoption and the current obstacles to implementation of IFRS in the U.S. are explored.

THE EMERGENCE OF INTERNATIONAL FINANCIAL REPORTING STANDARDS

Accounting standards enable companies to capture and report its economic transactions; they represent a structure used by managers and preparers for recording and summarizing business transactions into meaningful financial reports so that users can understand the effects of the events and the overall financial health of the reporting entity. However, accounting standards that are established in each country generally can result in differences both in the amount and manner in which firms report the same economic transactions. Variations in cultural, political, and economic characteristics are among the reasons for differences in accounting standards that lead to financial statements reporting different income and financial position, given the same economic activities (Plumlee, 2009).

Historically, a system of separate, distinct standards for each country worked relatively efficiently. But with the development of the global economy, American companies conduct business internationally, and merge with foreign firms to create international conglomerates. "A large number of U.S. companies do more than 50 percent of their business overseas" (Cohn, 2009). Even individuals are affected by the globalization of business, since they can now purchase stocks on foreign exchanges. Consequently, in terms of the financial markets, capital formation and trade, the use of different reporting standards by firms operating in different countries has grown ineffective for purposes of comparability and efficiency. Having to restate and convert accounting data from one country's system to the next is a financial reporting burden. Thus, the pressure from various stakeholders to report the same transactions consistently has led to the development of IFRS.

Prior to 1973, companies that were listed on multiple stock exchanges in different countries were required to issue multiple versions of financial reports in order to comply with each country's separate reporting guidelines. In 1973, the International Accounting Standards Committee (IASC) was formed with the mission of establishing a uniform reporting system in response to the growing desire for a single set of standards. This goal was initiated by accountants within Canada, the UK and the U.S. Through the 1990s, efforts increased to further develop the quality and application of such standards internationally. Approximately 41 international standards were developed before the IASC was replaced with the establishment of the International Accounting Standards Board (IASB) in 2001.

Several significant events have occurred in recent years which have fueled the more widespread international acceptance of IFRS. In 2002, the security market regulators of the European Union (EU) decided to require all companies whose securities are listed on an EU-regulated stock exchange to adopt IFRS by 2005. In that same year, the Sarbanes-Oxley Act was passed in the U.S. with the goals of increasing transparency of financial statements issued by publicly held companies, protecting investors and restoring investor confidence in the financial markets. Also, in 2002, the Norwalk Agreement between the FASB and IASB was established, with the goal of 'convergence' between GAAP and IFRS. In July 2007, the SEC eliminated the costly reconciliation requirement in the annual filings for Foreign Private Issuers. Previously foreign firms that listed on the U.S. security markets (non-U.S. public firms) were required to prepare form 20-F, which is a comprehensive schedule detailing the reconciling differences between their reported IFRS based financial statements and the results if GAAP were applied. In making this change, the SEC was not only encouraging more companies to list on the U.S. markets but also signaling that IFRS is a high quality set of accounting standards that is an acceptable alternative to GAAP.
Finally, in November 2008 the SEC published its 'roadmap' with a timeline for preparing financial statements in accordance with IFRS. This plan starts with the largest companies' reports for fiscal years beginning on or after December 15, 2014, provided certain milestones are met by 2011. These four milestones relate to:

1. Improvements in accounting standards.
2. Development by the IASB of an independent funding mechanism.
3. Assessment of the IFRS transition process, including the cost and acceptance by stakeholders.
4. Education and training in the U.S. (SEC, 2008).

POTENTIAL BENEFITS OF IFRS IMPLEMENTATION

Implementation of IFRS as the basis of financial reports provides several potential benefits to U.S. companies. First, it could streamline costs for firms that operate globally by reducing the costs and complexity in reporting. U.S. companies would no longer need to produce two sets of financial statements (one for U.S. and one for other capital markets) or to reconcile the reports created under two sets of standards. Companies could "achieve greater efficiency with fewer different reporting requirements across multiple jurisdictions and bring a new level of comparability for investors" (Heffes, 2008). Second, this increase in comparability is keynote in allowing users of financial statements to make better investment decisions because they will not need to translate information reported under multiple sets of standards. In other words, use of IFRS would create greater transparency of financial information for investors and allow for greater exchange of capital at a lower cost. Third, a single global set of standards would benefit preparers, investors, bankers and creditors by simplifying the learning process since they would only need to master one set of accounting standards. They will be able to review the early adopters' initial reconciliations between GAAP and IFRS and leverage that information to improve staff training. In addition, "the roadmap recognizes that many large, institutional investors are currently familiar with and use IFRS and will be motivated to educate their employees (AICPA, 2009). In short, "the adoption of a single, high-quality, and comprehensive set of accounting standards will produce transparent financial reports, and thereby, lower the cost of capital and facilitate capital formation" (Plumlee, 2009). IFRS is a desirable reporting system because it would enhance market efficiencies with improved access to financial markets, and bring a "higher degree of investor understanding and confidence than currently exists" (Heffes, 2008).

CONCEPTUAL FRAMEWORK DIFFERENCES BETWEEN FASB AND IASB

A conceptual framework forms the backdrop against which standard setters make decisions in establishing accounting standards. Although the frameworks of the FASB and IASB have many similarities, the differences bring about the disparity in standards for accounting and reporting financial results. GAAP is oriented more towards reliability of information whereas IFRS seems to place greater weight on relevance of reported values. Similarly, FASB's approach considers consistency an important attribute of financial information, whereas IASB places more emphasis on the understandability of presented information. The FASB and IASB are working jointly to develop a common conceptual framework to guide the definitions of financial statement elements (i.e. assets, liabilities, revenues, and expenses) and their recognition, measurement and reporting (Plumlee, 2009).

DIFFERENCES IN FINANCIAL STATEMENT PRESENTATION

The set of statements required by FASB and IASB is the same: they both include the income statement, balance sheet, statement of stockholders' equity, statement of cash flows and footnote disclosures. However, slight differences exist in the format and terminology of the financial information contained in these financial statements. On the income statement, there are some variations in the classification of expenses, while the balance sheet format differs in terms of order of accounts presented both within categories and among categories. For example, current assets precede long-term assets according to GAAP and current assets are presented in order of liquidity, from most to least liquid. In contrast, IFRS balance sheets list least liquid assets first, in terms of asset category and within the current asset classification.

Some variations are also revealed in the presentation of data constituting stockholders' equity. These differences do not alter the overall reflection of a firm's profitability or financial position, as they ultimately report the same information and therefore require little adjustment of interpretation to attain comparability across financial statements. However, on the Statement of Cash Flows, "the classification of cash flows among operating, financing and investing may differ between GAAP and IFRS. Initially, this may seem to be a cosmetic difference, [but] given the importance of ratios and other tools for analysis, these differences in classification will complicate comparing GAAP and IFRS prepared financial reports" (Plumlee, 2009). Finally, while GAAP requires significant footnote disclosures, because IFRS is not as prescriptive as GAAP, its footnotes require far more detailed descriptions.

SUBSTANTIVE DIFFERENCES IN REPORTED TRANSACTIONS AND EVENTS

Substantive accounting and reporting differences cause financial statement impact that affects comparability. These differences occur because of variations in classification of items, valuation of economic events, the timing of when business transactions are recognized, and philosophical approaches to financial reporting. They consequently create differences in financial statement information reported at a given point in time under GAAP versus IFRS. These differences, outlined below, represent areas of disparity between the two systems, which must be resolved before IFRS can be fully adopted in the U.S.

1. Reporting differences arise due to the variation in criteria used to classify items by IFRS versus GAAP. Since assessments are often made through application of ratio analysis, such reporting differences can significantly influence how financial statement users evaluate the firm. For example, deferred tax assets or liabilities are treated as a noncurrent item under IFRS whereas GAAP classifies these as current or noncurrent depending upon the anticipated timing of when the tax difference will reverse. In another instance, hybrid securities such as convertible bonds are treated entirely as debt under GAAP (i.e. no value is attributed to the conversion feature) whereas IFRS reports this financial instrument as part debt and part equity (using a relative value basis for the respective classifications). These discrepancies in financial reporting can lead to differing assessment of a firm's liquidity, solvency and valuations related to equity.

2. Recognition deals with the determination of when an item becomes an element of the financial statement. In other words, differences between IFRS and GAAP criteria can create a difference in the timing of when a transaction gives rise to a revenue

earned or an asset is created, and when an expense is incurred or a liability is created. Although these differences are temporary, because they ultimately reverse, they cause financial statement balance differences, which can compromise comparability of the results. For example, under IFRS, research and development expenditures are initially treated as assets, affecting the balance sheet in the year of recognition, and subsequent income statements in future years through amortization expense. Under GAAP, these expenditures are fully expensed in the income statement in the period incurred, and are not ever recognized on the balance sheet. Over the time period of amortization under IFRS, both the balance sheet and the income statement will reflect different asset and expense balances related to the same transaction than those reported in accordance with GAAP.

3. Measurement differences relate to the monetary amounts assigned to the elements of the financial statement. These differences are not temporary, but rather they create permanent variations in the reported values. For example, GAAP uses historical cost (original exchange or purchase price) as the basis to value fixed assets whereas IFRS allows the measurement of fixed assets at fair value. This difference stems from the difference in emphasis placed on reliability by FASB (because of objectivity and verifiability of historical cost) and relevance by IASB. In addition, with regard to fair value, GAAP defines its measure as the exit price of an asset (its net realizable value or the net proceeds received if the asset were sold) whereas IFRS uses the entry value (i.e. replacement cost) as the basis for fair value. Measurement differences such as these can compromise the comparability of GAAP-based versus IFRS-based financial statements.

4. In general, financial reporting differences arise because of the rules-based orientation of GAAP versus the principles-based perspective of IFRS. The rules-based nature of GAAP has caused its standards and guidelines to exceed 30,000 pages of text, while IFRS is only approximately 3,000 pages. GAAP has developed into a set of prescriptive rules and regulations to account for transactions, and those guidelines are incorporated into the body of the financial statements and through disclosure. These guidelines are often referred to as ‘bright line rules’, which set forth unambiguous criteria for accounting. In contrast, IFRS does not establish specific accounting rules in all instances, reflecting its more principles based approach to financial reporting. This difference in orientation results in some major differences between GAAP and IFRS reporting, including variation in the required footnote disclosures. For example, with regard to lease accounting, both systems broadly define a capital lease as one in which the risks and rewards of ownership are transferred to the lessee. However, FASB sets forth specific, objective and numeric criteria for the determination of whether a lease is a capital lease (resulting in the creation of an asset and related liability) or an operating lease (resulting in rent expense on the income statement). Unlike GAAP, IFRS permits professional judgment in assessing the ownership risks and rewards providing no specific rules or criteria for defining a capital lease. Consequently, IFRS statements require substantially more detailed and lengthy footnote disclosures so that financial statement users can understand and properly interpret the leasing transactions. IFRS footnotes “will necessarily expand to fill in the details formerly supplied under U.S. GAAP” (Katz, 2009). Another critical difference in rules is that GAAP allows the use of LIFO (last-in, first-out) for inventory valuation whereas IFRS does not. This distinction could significantly affect reported operating results and related income taxes, particularly because of the U.S. LIFO conformity rule. This convention requires firms that use LIFO inventory valuation for tax reporting purposes to also use it for financial accounting purposes. Unless this tax rule is modified or eliminated, shifting to IFRS would eliminate LIFO costing, which would result in a large current tax liability for companies that use the method (Hoffman, 2009).

THE COSTS OF IFRS

A survey by Accenture found that U.S. executives expect to pay more than their European counterparts did to implement IFRS. They anticipate spending between .1 to.7 percent of annual revenue to change from GAAP to global rules (Johnson, 2009). It will be more expensive because U.S. companies will have to maintain GAAP and IFRS systems simultaneously to be in compliance with the SEC's parallel reporting requirements during the transition period. In contrast to U.S. accounting standards, European countries' accounting rules were more similar to the principles-based IFRS, making its transition simpler. Some have argued that the switch to IFRS in the U.S. will be four times more costly than compliance with Sarbanes-Oxley (Johnson, 2009). The magnitude of cost is even greater because IFRS "is not just driven by government policy, it is also driven by capitalization of global markets" (Deloitte, 2008). Costs will be incurred to work through the differences between the two standards on technology infrastructure, financial reporting systems and processes, technical accounting and tax, internal controls and processes, and underlying databases to incorporate specific data to support IFRS reporting (Deloitte, 2008). Variation in "costs will stem from a company's industry, size, complexity, staffing abilities and accounting policies." [Johnson] Companies may need to "reexamine contracts and debt agreements, treasury policies, employee benefits, education and training, and communications" (Deloitte, 2008). Naturally, significant audit fees during the period of change are likely to be incurred as well (Katz, 2009).

POTENTIAL CHALLENGES OF IFRS IMPLEMENTATION

Not everyone agrees that U.S. movement towards IFRS financial reporting is in the best interest of U.S. investors. Concerns relate to the reliability of financial statements, the lack of centralization in securities market regulations, the timeline for implementation given current economic conditions, and the need for sufficient education of preparers and users of financial reports.

There is a great deal of skepticism and concern that financial statements prepared using IFRS may actually turn out to be less transparent and not of the high quality desired, thereby reducing comparability. The simple question is: will a principles-based system improve financial reporting by allowing preparers and managers to increase their application of professional judgment in creating such reports? Given the less structured guidance under IFRS, investors may not be receptive to the judgment that is the "linchpin of a principles-based system" (Katz, 2009). The unease stems from the chance that financial reporting consistency may not be realized and instead there may be a wider variety of results than currently occur under GAAP reporting. Ironically, in the long run, this could lead to IFRS becoming a more rules-based set of standards.

The lack of centralization in the current regulation of the security markets could also impede creating a set of standards producing consistent financial reports. Currently, financial statements produced by firms are filed with and regulated by the security markets where those firms are traded. To achieve the desired comparability, ultimately there should be consistent regulation of IFRS (Plumlee, 2009).

The current U.S. economy, in which there are lower earnings, lower asset values and tightened credit, makes U.S. companies reluctant to assume the costs and risks of transitioning to IFRS. Transition costs will be high since multinational firms will need to gather information, and make modifications to accounting policies, processes and control systems. In addition, firms may need to renegotiate debt and other agreements currently linked to their financial results under GAAP that change as a result of shifting to IFRS reporting basis. Many believe that now is "not the time to increase the cost of doing business" (SEC, 2008). Rather, the timeline for implementation is too accelerated; by slowing it down, the transition at a later point in time may be easier and thus less costly.

Another obstacle to IFRS is that the U.S. market is simply not prepared for the transition. IFRS implementation requires a new orientation by variety of people who will require training to deal with less detailed application guidance, such as board and audit committee members, investors, analysts, creditors, customers, and suppliers (Heffes, 2008). Further, the education of accountants, academics, and auditors must take place to ensure they possess appropriate skills and training for proper adoption and adherence to IFRS. Additionally, a concern has been voiced about the lack of sufficient IFRS education provided to accounting students, who as entry-level CPAs will need to be bi-lingual with respect to accounting standards (Heffes, 2008).

CONCLUSION

No one can argue that with the advent of global financial markets, the development of one high quality set of financial reporting standards is a laudable goal. As recently as September 2009, the G-20 leaders, embodying international economic cooperation, called for "international accounting bodies to redouble their efforts to achieve a single set of high quality, global accounting standards within the context of their independent standard setting process, and complete their convergence project by June 2011" (Lamoreaux, 2009). Multiple sound reasons compel the international accounting bodies to work towards the implementation of IFRS worldwide, and in the U.S. in particular. "The appeal of IFRS is: simplified reporting, reduced operating costs, greater transparency and comparability for investors, [and] improved access to capital" (Deloitte, 2008). However, the magnitude of the shift in the U.S. mindset for reporting under IFRS, in terms of explicit costs and the impact of new financial reporting systems on businesses and stakeholders presents a number of issues that must first be resolved, which may create detours on the roadmap to implementation.

SEC chairman **Mary L. Schapiro** has acknowledged the SEC has been focused on matters related to the economic crisis, financial regulatory reform and improvements in the agency (Millman, 2009), resulting in no recent movement toward adopting IFRS in the U.S. Although the two standard setters – FASB and IASB – have pursued a convergence agenda, many differences remain (Heffes, 2008). The impact of the financial crisis has also forced both FASB and IASB to respond to their respective political pressures keeping them from being in sync. Serious concerns persist about the costs of IFRS implementation and whether the IFRS are in fact as good as or better than GAAP (AICPA, 2009). It seems inevitable that at some point in the future, this historical trend toward convergence to a single set of global financial reporting standards will be achieved. The time line to fully develop it and the compromises it may require are yet to unfold. Implementation of IFRS in the U.S. is a complex endeavor that will be far reaching beyond just accounting and financial reporting (Heffes, 2008).

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THE RELATIONSHIP BETWEEN WINE RATING, PRICE, QUANTITY PRODUCED, AND APPELLATION AMONG 2006 CALIFORNIA CHARDONNAYS WITH SMALL PRODUCER RECOMMENDATIONS

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ABSTRACT

Wine Spectator, the leading publication of the wine industry, has stated that "price has little to do with quality." This study tests that premise by examining the market for 2006 California Chardonnays from various appellations. Using *Wine Spectator's* database of over three hundred California Chardonnays, an analysis reveals a statistically significant positive correlation between price and quality. The quantity produced and appellation was also significantly related to price. These results have strategy implications relative to promoting a particular winery within an appellation versus individual brand promotion, especially for smaller producers.

INTRODUCTION

Because of the global nature of the wine industry, there are thousands of wineries to choose from and many of those wineries have dozens of products under one label, with each product consisting of many individual years or vintages. In addition, no two vintages are the same and regional differences can amplify those differences. As a result, the consumer is forced to make choices among many brands and appellations that change in quality and quantity each year. The market has responded to this problem by producing many Publications that rate particular wines. These publications have been around for over thirty years and have developed a reputation for accurately assessing the quality of the wines they review. The experience of the publication's wine experts becomes a proxy used by many inexperienced wine consumers when making quality/price purchasing decisions.

Rao and Monroe write that many intrinsic and extrinsic cues are used by consumers to form quality perceptions (1989). Intrinsic cues are derived directly from the product. Extrinsic cues are not directly related to product performance, such as price (Olsen, 1973). When buying wine, can price be used as an accurate quality cue? If so, how strong is the relationship between price and quality? Are there other factors that influence the price of wine, such as quantity

produced and the area (appellation) the wine was produced in? Rao (2005) quoting Rao and Monroe in a 1989 study found in a review of over forty studies that "the evidence for a robust (though moderate) price-perceived quality effect appeared to be incontrovertible." These studies used many product categories. However, the relationship between objective or actual product quality across product categories is relatively low (r = .27) according to Tellis and Wernerfelt using *Consumer Reports* data (1987). Because it is hard for a consumer to determine the objective quality of a product, most consumers revert back to using price as an indicator of quality (Rao and Monroe, 1988). Rao writes that the why of the process is that it is cognitively efficient for the consumer to do so for many products (2005).

Although objective quality is hard to determine (see Curry and Riesz, 1988 for a discussion of previous research on objective quality), it is particularly so with wine. Because of the wide variety, assortment, and vintages available to consumers and the relatively low involvement with the product category, wine consumers look to publications that rate wines using various criteria. Consumers buying wine look to ratings that approximate, at least to their satisfaction, the quality of wine using such sources as *Wine Spectator*, *The Wine Advocate*, *International Wine Cellar*, and *Wine Enthusiast*, among others. Consumers often revert to quality rating publications whenever they believe it is expeditious for them to do so. This use of ratings can be found among many product categories such as automobiles (J.D. Powers and Associates), movies (Roger Ebert), consumer products (Consumer Reports), and others.

Reliability and Validity of *Wine Spectator* Ratings

In a study conducted at the Center for Hospitality Research at Cornell University (2008) Thompson et. al. compared the scores of *Wine Spectator*, *The Wine Advocate*, and *International Wine Cellar* relative to forty-four Bordeaux wine producers. The researchers found that *Wine Spectator* and *The Wine Advocate* had the highest correlation at 0.84. The lowest correlation was between *The Wine Advocate* and *International Wine Cellar*, at 0.71. Thus, a high level of correlation existed between these raters in the study. This can be interpreted to mean that, according to the authors, "One possible explanation is that wines themselves have intrinsic characteristics that raters are capturing in their scores. Further, it would be a necessity that the raters are keying off the same (or related) intrinsic characteristics of the wines." From this it is reasonable to state that over time generally accepted quality cues have evolved for the evaluation of wine and these quality cues allow for the rating of wine that has been found to be reliable and valid over time.

Shewbridge (1998) used a linear regression model to determine the consistency of ratings between two of *Wine Spectator's* editors rating the same wine. The author found that, on average, the difference was within +/- 4 or 5 points on a 100 point scale across all varietals. Then he compared the ratings of *Wine Spectator* to *The Wine Advocate* using six different varietals. Here he found California Chardonnays with a standard deviation of difference of 2.6 between the two publications. This was the lowest deviation found among the six varietals used in the scoring (the range was from 2.76 to 5.7 standard deviation of difference). Again, this study is another indicator as to the reliability and validity of *Wine Spectator* ratings in general and in particular with California Chardonnays.

HYPOTHESES

James Laube, Senior editor for *Wine Spectator* (2008) stated that price has little to do with quality. From this it can be inferred that price should not be used as a quality cue. A skeptical interpretation of this statement can be that if there was a significant and high correlation between quality and price there would be a diminished need for publications of this type. Consumers could simply buy based on price and receive the quality associated with that price. However, as previously stated, research has shown a positive correlation, although small, between quality and price across product categories. Can this correlation between price and quality be applied to the 2006 California Chardonnays *Wine Spectator* has rated? This is particularly important to consumers as Chardonnay is the most consumed white wine in the United States. Is there a positive, significant and strong correlation between 2006 California Chardonnays quality rating and price? How do other factors, such as quantity produced and appellation, affect the price of a wine in a particular year? How do all three factors influence the price of 2006 California Chardonnays? Given the above discussion of price and quality rating, this research addresses five hypotheses:

H1: There is a positive relationship between the sales price of 2006 California Chardonnay and the *Wine Spectator* quality rating.

H2: There is a negative relationship between the sales price of 2006 California chardonnay and the number of cases produced.

H3: *Wine Spectator* quality rating predicts the price of 2006 California Chardonnay.

H4: *Wine Spectator* quality rating and the number of cases produced predicts the price of 2006 California Chardonnay.

H5: *Wine Spectator* quality rating and the number of cases produced predicts the price of 2006 California Chardonnay with differences among appellations.

RESEARCH DESIGN

The Problem

The relationship between wine price, quality, quantity produced and appellation among California Chardonnays are of interest to wine experts, wineries, wine sellers, grape growers, and wine consumers. The sale price for a given wine will vary depending on the price set by the seller, the quality of the wine, the quantity produced, the appellation, marketing efforts, the state of the wine markets and the economy. The purpose of this research study is to examine the relationship between the sales price of 2006 California Chardonnays and three independent variables: the two quantitative variables, *Wine spectator* quality rating and the number of cases produced, and the qualitative variable, California wine appellations (seven levels). There are two objectives to this study. The first objective is to determine whether the data indicate that quality rating and number of cases produced are related to sales price. That is, do the data provide sufficient statistical evidence to indicate that these variables are significantly related to sales price? The second objective is to develop a prediction model relating the quality of the wine and the quantity of wine produced to the sale price and to determine whether this relationship is the same for a variety of appellations.

The Data

It has been established that there are generally accepted quality cues associated with wine that are known among wine rating publications. In addition, the major wine rating publications have been found to have a high degree of correlation between them. From this, *Wine Spectator* was chosen as the database for California Chardonnay wine scores because it is a major quality rating magazine (2.4 million subscribers, according to the magazine), has a sample size that aids in establishing the validity of the findings, and rates more wines than any other publication (201,415 as of February of 2009). In addition, *Wine Spectator* is a reliable source for a winery's suggested retail price, production data, vintage, and vineyard location (appellation). The vintage chosen was 2006 and the varietal is California Chardonnay. The 2006 offerings were chosen because most wineries had fully aged the wines produced in that year and released them to market as of the date of this article. Seven appellations (Sonoma, Other California, Bay Area/Central Coast, Mendocino Lake, Carneros, South Coast, and Napa Valley) were identified by *Wine Spectator* along with the retail price, and the number of cases produced. The data consisted of 393 total observations.

The Models

The functional relationship between price and quality, as considered in this research, is assumed linear. Therefore, the retail sales price of wine, y is used as the dependent variable. The independent variables are: *Wine Spectator* quality rating, cases produced, and appellations. Three models are suggested to explain this relationship.

Model 1 is the mean sale price, $\mathrm{E}(y)$ as a function of x_1 = quality rating. This is a first-order model for relating y to x_1 and assumes that the relationship between the sale price and the quality rating is the same for all appellations. The equation for this model is

$$\mathrm{E}(y) = \beta_0 + \beta_1 x_1$$

Model 2 is the first-order mean model of the sale price, $\mathrm{E}(y)$ as a function of x_1 = quality rating and x_2 = number of cases produced. The relationship is assumed to be the same for all appellations. This model is

$$\mathrm{E}(y) = \beta_0 + \beta_1 x_1 + \beta_2 x_2$$

Model 3 assumes that the relationship between $E(y)$ and x_1 = quality rating and x_2 = cases produced is first order but it allows for appellation differences where x_3 = Bay Area/Central Coast, x_4 = Carneros, x_5 = Other California, x_6 = Mendocino Lake, x_7 = South Coast, x_8 = Napa, and the base level used is Sonoma. Model 3 is

$$\mathrm{E}(y) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8$$

RESULTS/FINDINGS

Descriptive Statistics

The mean retail sales price of the dependent variable, 2006 Chardonnay, is \$33.65 (SD = \$18.90). The mean of the independent variable, quality (*Wine Spectator* 100 point scale), is 86.85 (SD = 3.39) while the mean of the independent variable, number of cases produced, is 23,555.34 (SD = 149,462.08). Means and standard deviations for the seven appellations are as follows: Sonoma (price M = \$40.96, SD = \$22.48; quality M = 87.49, SD = 3.47; cases M = 7665.13, SD = 27118.76). Other California (price M = \$14.62, SD = \$11.35; quality M = 83.95, SD = 3.79; cases M = 157311.65, SD = 458693.92). Bay Area/ Central Coast (price M = \$29.25, SD = \$12.72; quality M = 87.71, SD = 1.73; cases M = 11070.04, SD = 21573 .41). Mendocino Lake (price M = \$30.15, SD = \$15.63; quality M = 86.31, SD = 3.31; cases M = 11887.69, SD = 32146.52). Carneros (price M = \$34.00, SD = \$13.25; quality M = 87.76, SD = 2.87; cases M = 6228.96, SD = 14626.16). South Coast (price M = \$28.88, SD = \$10.69; quality M = 85.90, SD = 2.51; cases M = 15689.5, SD = 64744.56). Napa Valley (price M = \$34.13, SD = \$15.00; quality M = 87.08, SD = 3.45; cases M = 9669.67, SD = 16995.88).

Correlation and Regression

Before conducting analyses to address the proposed three models, Pearson correlation coefficients were performed to test the first two hypotheses. Hypothesis 1 stated that there is a positive relationship between the sales price of 2006 California Chardonnay wine and the *Wine Spectator* quality rating. Results of a Pearson correlation supported the hypothesis ($r = .56$, $p < .0001$). Hypothesis 2 predicted a negative relationship between the sales price of 2006 California Chardonnay wine and the number of cases produced. Results of a Pearson correlation confirmed the hypothesis ($r = -.17$, $p <.0008$).

Hypothesis 3 proposed that the *Wine Spectator* quality rating would predict the price of 2006 California Chardonnay wine. Model 1, a first-order regression model, was constructed to test this hypothesis. Using the SAS statistical software resulted in the following regression equation: E(y) = -233.43526 + 3.07356 x . *Wine Spectator* quality rating was significantly related to the price (F = 175.87, t = 13.26, p-value <.0001); the multiple coefficient of determination, R-square = .31indicates that Model 1 explains 31% of the variability in the retail sale prices.

Hypothesis 4 states that the *Wine Spectator* quality rating and the number of cases produced would predict the price of 2006 California Chardonnay wine. Performing the statistical analysis resulted in the following regression equation: E(y) = -217.11245 + 2.88536 x_1 – 0.00000837 x_2 . The hypothesis is accepted (F = 82.45, p-value <.0001). However, a test for the addition of the number of cases produced in Model 2 does not contribute significantly to the prediction of the retail sales price of 2006 California Chardonnay wine (t = -1.58, p-value 0.1158).

The final hypothesis, Hypothesis 5, predicted that the *Wine Spectator* quality rating and the number of cases produced predicts the retail price of 2006 California Chardonnay while allowing for appellation differences. Is Model 3 improved by the addition of the wine appellations? That is, do the data provide sufficient evidence to indicate that Model 3 is a better predictor of retail sales price than Model 2? Statistical analysis using SAS resulted in the following regression equation: E(y) = -186.93850 + 2.59879 x_1 -0.00000260 x_2 – 11.71858 x_3 - 7.15575 x_4 - 16.18915 x_5 – 7.17264 x_6 – 7.38247 x_7 -5.21328 x_8 .The hypothesis is supported (F = 27.74, p-value <.0001).; the multiple coefficient of determination, R-square = .37 indicates that Model 3 explains 37% of the variability in the retail sales price of 2006 California Chardonnay. Model 3 provides an improvement over Model 2 and entering appellations into the model provides additional information for predicting sales price. The subset of sales, quality, and cases data pertinent to the seven appellations are different. Predicted prices for 2006 California Chardonnay are consistently higher for the Napa and Sonoma appellations. Again, the number of cases produced does not contribute significantly to the prediction of sales (t = -0.49, p-value 0.6210). Although the t-test involving cases produced is non-significant, this does not necessarily indicate that cases produced should be dropped from the model. Because Model 3 is significantly better than Model 2 and Model 1, the variable cases produced is retained in the model.

Model 3 is the best model, but how well does the model predict the retail price of 2006 California Chardonnay? Although the model explains 37% of the variability in the retail sales price, statistical analysis using SAS reveals a large standard error of 14.71. Approximately 95% of the predicted sales price values will fall within two standard deviations of their actual values. This relatively large value may lead to large errors of prediction for some appellations. Large prediction intervals would indicate that the prediction equation is of little practical value in predicting wine retail sale prices. Because expert wine raters tend to overrate or underrate wines in specific price ranges, for example, very low-priced or very high-priced wines, the functional relationship between price and quality could be considered curvilinear, not linear as assumed in this research study. Under a curvilinear assumption the natural logarithm of the retail sales price might yield a better prediction equation. In addition, a log prediction model might be improved by the addition of interactions between appellation and quality and cases produced.

CONCLUSIONS

The results of the correlation analyses indicate that the retail sales price of 2006 California Chardonnay is positively correlated with the *Wine Spectator* quality rating and negatively correlated with the number of cases produced. The regression analyses results indicate that the relationships between retail wine sale prices and both quality rating and number of cases produced are different from one appellation to another. In addition, the prediction intervals are large indicating that other variables and a second-order model with interaction terms might be necessary to improve the prediction of retail sales price values.

DISCUSSION AND APPLICATION

The wine industry is made up of a few, major global players that own hundreds of brands (Constellation Brands, the largest, has a portfolio of over 200 brands in the wine, spirits and imported beer categories and reported net sales of eight hundred seventy seven million dollars for the second quarter, fiscal year 2010), intermediate sized companies with national and some international distribution, and hundreds of smaller, independent wineries. The Wine Institute reports 2,843 bonded wineries in California (2008) alone. Most of these would be considered small businesses by U. S. government standards.

The literature review has shown that when making product quality/price comparisons across product categories the relationship is weak (r=.27). This research has shown that a stronger (although moderate) relationship between product quality and price exists in 2006 California Chardonnays among various appellations (r=.56, p<.001, as shown in model 1). In addition, this research reports on the great variability between price and quality that exists. Often it is the small business that cannot realize the full value their product represents (and as a result cannot command the full price premium for their non-commodity products) because of limited marketing resources and limited distribution. Because of their limited ability to communicate their product offering outside of the local market they may not be realizing their full pricing potential (see Popkowski, Leszcyc and Rao, 1989). A strategy these high-scoring (relative to price) local producers may want to pursue is to form selling groups to market and distribute their brands. A logical organizational structure would be by appellation. The principle selling proposition could be the value their brand represents by comparing their selling price to the quality scores they have received by various wine publications.

This is a common strategy used by larger, branded producers and is reflected in the many ads appearing in wine publications. In this way smaller producers could buy advertising space more cheaply, advertise using a larger variety of media, and approach the major distributors with additional selling clout. Another strategy would be to sell direct to end-user consumers by way of the internet. This would allow smaller producers to realize the additional revenues obtained by others in the distribution channel. The smaller, premium Oregon Pinot Noir producers use these strategies by selling to, or owning, Oregon Pinot "wine clubs." Maybe it is time for the smaller, under-valued California Chardonnay wine producers to do the same.

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EXPLORING THE LINKAGE BETWEEN WORKFORCE UNIONIZATION AND EXECUTIVE COMPENSATION

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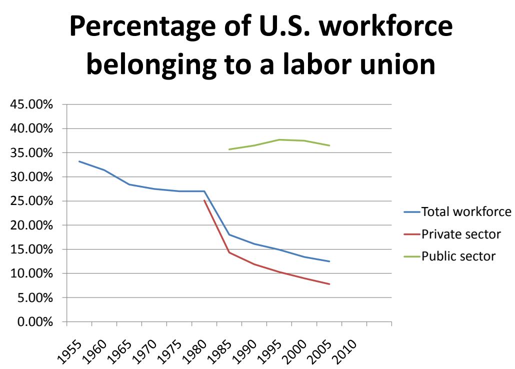
ABSTRACT

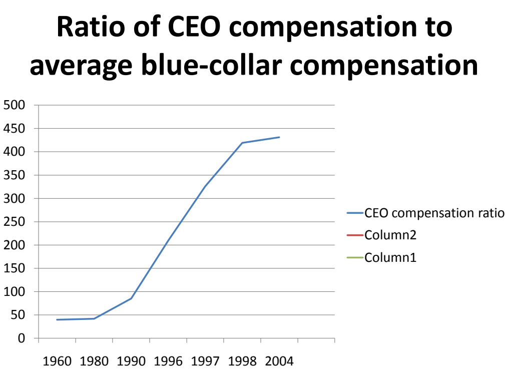
A large number of scholars and others have tracked the percentage of the American workforce that is unionized and the reasons behind the dramatic decline in this percentage over the last 30-40 years. At least as many researchers have tracked levels of executive compensation for American corporations as they have risen dramatically over the last 30-40 years. This paper looks at the extent to which the level of workforce unionization decline was a factor in the rise of executive compensation. Since correlation alone is not sufficient to establish causation a number of variables are included in the analysis including comparisons of unionized industries to nonunionized industries and comparisons within unionized industries between union and nonunion companies. This paper builds on work in both the fields of labor relations and executive compensation as well as those who have explored the interrelationship between unions and corporate governance. Its unique contribution is in the direct linkage of declining workforce unionization to the ability of corporations to raise executive compensation beyond what would be expected with stable or increasing workforce unionization.

INTRODUCTION

It is common knowledge that the level of unionization of the American workforce has fallen dramatically over the last 40 years. This trend has been researched, recorded, and reported by academics, labor leaders, executives, politicians and journalists. Private sector unionization peaked in 1954 at 39% while today less than 10% of the private sector is unionized. Public employees have helped keep the total workforce unionization rate above 10% and today 13% of the total workforce is unionized. A graph showing the rates of unionization appears below.



At the same time the compensation for top managers of publicly traded companies has risen meteorically over the same 40 years. In 1960 a CEO could expect to earn compensation that was 48 times greater than the average compensation earned by a blue collar worker. By 2004 that same CEO could expect to earn compensation 425 times greater than the average compensation earned by a blue collar worker. A graph showing the multiplier for CEO compensation compared to blue collar workers appears below. This trend has also been researched, recorded, and reported although it took much longer for the interest in this topic to catch on. Prior to 1992 there were fewer than 15 papers published per year on this topic, in 1992 there were 32 and in 1996 there were 60 (Murphy 1998).



A comparison of the timelines for these two trends shows a remarkable correlation. The steepest decline in unionization occurs from 1978-1985 while the rise of CEO compensation, which had doubled its multiplier by 1985, accelerates rapidly after 1985 and quadruples from the 1985 figure by 1998.

There exists an exhaustive body of literature on each of these trends, with a lengthy list of potential explanations for each phenomenon. Yet surprisingly there does not appear to be any literature looking at a potential relationship between them. This paper looks to fill that gap by proposing rationales for a relationship between the trends and examining possible causation.

REVIEW OF THE LITERATURE

Explaining the decline in unionization:

As previously stated there is no shortage of literature covering U.S. Labor Unions and their decline over the last 40 years. Here a small fraction of the available literature is referenced, covering the most discussed reasons for the decline in an expedited manner.

Dickens and Leonard (1985) found robust support for the effect of a decrease in the number of employees being organized and the lack of success of unions in winning NLRB elections during the period 1950-1980. They also found that economic factors were not a factor, contrary to prevailing wisdom. This lack of organizing has been attributed to the unions overlooking women (Milkman 1985), the south (Roscigno and Kimble 1995), new industries, and failing to organize the "transplant" auto factories of the American south (Muller and Welch 2002). As the number of people working in the U.S. increased these new employees, many of them women, entered occupations not already organized or completely new occupations in the nascent technology sector. Union leaders acknowledge this lack of foresight and recognize that they likely focused on their existing base at the expense of gaining new members, new occupations and new industries (Bronfenbrenner & Juravich 1998).

The Taft-Hartley Labor Act of 1947, officially known as the Labor-Management Relations Act, was passed by the U.S. Congress in 1947 over the veto of President Truman. This has long been considered a watershed event in the American labor movement. The new laws made substantial changes to the National Labor Relations Act (aka Wagner Act) of 1935 as well as nullifying parts of the Federal Anti-Injunction Act of 1932. The most important provisions of this act relative to the decline of unionization were the prohibition against closed shops and the requirement of a majority vote to establish a union shop. The courts have upheld this act against almost all challenges, establishing a legal environment seeming to favor capital over labor. A good resource for information is *Restoring the Promise of American Labor Law* (Friedman et.al. 1994).

While Taft-Hartley is a single piece of legislation, it is a part of a much larger movement. Many scholars attribute a large portion of the decline in unionization to increasingly hostile management and continuous overt efforts to keep unions out (Bronfenbrenner 1993,1997; Bronfenbrenner & Juravich 1998; Clawson and Clawson 1987, Clawson, Johnson and Schall 1982, Geoghegan 1991; Levitt 1993).

Management has been aided in its anti-union efforts by increasing globalization which shifts manufacturing jobs overseas while providing a free flow of capital across borders.

The decline in unionization isn't only about the numbers of unionized workers, it is also about the effectiveness of labor organizations. As noted by Clawson and Clawson (1999) unions were not only losing members but losing strikes. The number of striking workers which was at least 950,000 per year every year from 1969 to 1979 was never more than 500,000 workers from 1987 to 1996. More strikes were broken and the eventual settlements less favorable. Whereas the period from 1945 to 1980 saw union wage settlements that included wage increases, the settlements reached after 1980 more often included concessions on wages and benefits (Griffin et al 1990, Moody 1988: 165-91, Wrenn 1985). Unions have also lost a lot of their political clout. They remained distant from other social movements and unable to muster their own members for meaningful political engagement (Clawson & Clawson 1999).

Explaining the rise in CEO compensation:

The literature on CEO compensation includes heated and emotion laden arguments on both sides; those decrying the huge gap between the pay of CEOs and regular workers and those supporting the level of their compensation as just rewards for their labor. Here I will avoid taking sides and simply present the literature that seeks to explain the current level of CEO compensation. One of many good meta-analyses is Jarque 2008.

One of the more popular explanations for the current rapid rise in CEO compensation and its stickiness at the new highs is the theory of "Board Capture". In a publicly traded company the Board of Directors, which is picked by the CEO, is the body in charge of determining the pay package for the CEO There is a high degree of cross-pollination among the S&P firms, with CEOs sitting on the boards of other companies whose CEOs are in return on the boards of their firms (Bebchuck & Fried 2003, 2004 and Kuhnen & Zwiebel 2008). A closely related argument focuses on the use of "poison pills" in CEO contracts.

Others argue that the high level of compensation is earned, and has increased only in proportion to the market value of the firm. If a CEO is earning 400% more (measured as a multiplier of average workers' wages) it is because the firm's market value is 400% greater. A similar explanation uses the size of today's firms as the reason for the huge compensation packages. (Lucas 1978, Rosen 1981, 1982)Today's multinational firms span the globe and employ tens of thousands with billions in revenue. Many of these companies have annual revenue that exceeds the GDP of most of the world's economies (Gabaix and Landier 2008).

Ironically, one of the explanations for the more recent increases in CEO compensation appears to be an unintended consequence of efforts to tie compensation to performance. The use of stocks and stock options in the compensation package often creates a total package worth many millions, yet less than 50% of that is actual "pay", the rest is bonuses, stock, options, and other. This is very well documented by Jensen and Murphy (1990) and Murphy (1999) among others.

Three additional explanations focus on the labor market rather than the capital market. The internal labor market explanation relies on the concept that as the cream rises to the top of the organization eventually there will be only one "winner" at the top. Becoming CEO is a winner-take-all tournament. "Tournament theory" is well documented, and much argued (Thomasl 2004 and Anabtawi 2005).

The second labor market explanation is the external labor market and thus opportunity cost. The market for highly skilled human capital is robust, and as managerial skills have increased in value while becoming less firm specific and thus more portable, the pay required to attract and retain this talent had increased. (Frydman 2005). The manager has many other opportunities available and requires sufficient compensation to outweigh those opportunities that he might otherwise pursue.

The third labor market theory is the rise of "Superstar" labor markets. Long a staple in sports and entertainment, where each new record setting athlete or attendance generating star earned more than the person they replaced, this model appeared in the corporate world for CEOs. Among the earliest superstar CEOs was Lee Iacocca, more recent examples are Jack Welch and Bill Gates (Malmendier and Tate 2009).

A New Explanation for the explosive increase in CEO Compensation:

Each of the explanations for the relatively recent huge increases in CEO compensation seems plausible as a partial explanation. Yet even all added together they do not explain all of the increase or the rapidity of the increase nor the timing of the increase. I propose that another explanation is the decline of the unionization of the American workforce.

As mentioned in the introduction of the paper the correlation of the decline in workforce unionization, measured as the percentage of the nonfarm and nonconstruction wage and salary workers that are members of a union and the compensation of the S&P 500 CEOs, measured as a multiplier of the average wage of a production worker, is very high. The steepest decline in unionization is matched by the steepest rise in CEO compensation.

A recent article in the Economist (April 4, 2009) notes the relationship between the decline in unionization and the growing inequality in America between the rich and the poor. This is attributed in part to the increased acceptance of the low-tax and low-regulation regimes of the last two decades, and this acceptance was facilitated by the declining political clout of labor and the growing political clout of wealth.

How would the decline in unionization contribute to the rise of CEO compensation? The primary mechanism for this effect will be economics, with a decline in unions there is a decline in labor demands for "rents" from the corporation in the form of higher wages and benefits. Management is now able to claim a larger portion of the rents for themselves without the countervailing claims from labor, or ineffective claims. These rents ultimately become the multimillion dollar pay packages given the S&P 500 CEOs.

If the level of unionization is a factor in CEO compensation then the following Hypotheses should be true:

H1: Industries with a higher level of unionization should have lower CEO compensation than industries with a lower level of unionization.

H2: Within an industry companies that are unionized should have lower levels of CEO compensation than companies that are not unionized.

METHODOLOGY

The initial method used was to compare CEO compensation in 22 industries with the rate of unionization for those industries. The table showing the results of this comparison appears in the Appendix. The CEO compensation information came from Conference Board (2007) and the unionization rates from the Bureau of Labor Statistics (2007).

RESULTS

The results seen in Table 1 in the Appendix do not support H1, there is no consistent correlation between the level of CEO compensation and the level of workforce unionization.

H2 was not tested as sufficient data on individual firms is not yet collected.

DISCUSSION

While the initial results were surprising, and slightly discouraging, the research is not complete. There are several problems with matching the industry classifications used by Conference Board with those used by the Bureau of Labor Statistics (BLS). In particular the BLS has Utilities and Transportation in a single classification while Conference Board has two separate categories. Since the BLS reports only private sector union rates by industry and many utilities may be public sector corporations a more detailed analysis of these sectors is needed. Both industries have also been "deregulated", transportation in the 1970s and utilities in the 1990s.

Conference Board ran into a similar problem when looking at the Financial Services sector. Their unaltered chart of total compensation had Financial Services as the lowest paid industry. However when they broke out "Non-banking Financial Services" from "commercial banks" the compensation level for Non-banking Financial Services CEOs was $3 million, ranking it fifth of the 22 industries, while commercial banks remained in last place with CEO compensation of $650,000.

Significant additional data is needed to make the desired comparisons between industries over time and within industries as well.

It is worth noting that when comparing the compensation of American CEOs to CEOs in other countries the American CEOs are paid substantially more. Randall Thomas (2004) examines this pay gap from the perspective of discounting Board Capture Theory and presents four market-based theories for explaining this gap. Bruce Western (1993, 1997) examined the level of unionization in 18 different countries (Advance Capitalist Countries in the 1993 paper) and the U.S. had the lowest level[1] in 1950 and the second lowest level in every year studied thereafter (only France had lower levels). If we were to compare CEO compensation versus workforce unionization at the national level then the theory is potentially supported. Those countries with high levels of unionization have much lower levels of CEO compensation while the very high levels of CEO compensation are seen only in the U.S. with its low level of workforce unionization.

The next step for the international comparison is to look at each individual country and see what the correlation looks like.

CONCLUSION

The limited data analyzed do not support the idea that the level of unionization of U.S. workers has a direct effect on the compensation of CEOs. Since this is counter-intuitive given the strong correlation between these variable and solid theoretical support for a causal relationship much more data and analysis is needed.

It is possible that the workforce unionization is a mediating or moderating variable, and this linkage needs to be discovered. It is also possible that the causation goes in the other direction, and that it is increasing levels of CEO compensation that causes decreasing levels of unionization. This would be consistent with the scholarly work demonstrating the high level of aggressive anti-union managerial action. Further research along this line is also warranted.

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[1] Western measures unionization as union density; the percentage of all potential union members who are union members, and potential members includes all workers whether employed or not. This differs from almost all the other works cited where the unionization measure is the percentage of nonfarm and nonconstruction wage and salary workers who belong to a union. While this makes direct comparisons of the levels impossible it is still possible to compare the trends, and they are identical regardless of the union density measure used.

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APPENDIX

Table of CEO total compensation by industry (mean value for the industry), and level of workforce unionization of private wage and salary workers in that industry (if known) for 2007.

INDUSTRY	CEO Total Compensation (rounded to nearest .1 million)	%Workers in unions
Utilities*	$3.9 million	22.1
Food and Tobacco	$3.8 million	
Insurance	$3.1 million	
Construction	$3.1 million	13.9
Non-banking Financial*** Services	$3.0 million	2.0
Commodity	$2.9 million	
Lumber and Paper	$2.5 million	
Chemicals	$2.5 million	
Communications	$2.3 million	
Retail Trade**	$2.3 million	5.2
Holding Companies	$2.2 million	
Energy	$2.1 million	
Industrial and Transportation Equipment	$2.0 million	
Wholesale Trade**	$2.0 million	5.2
Transportation	$1.8 million	22.1
Other Services	$1.8 million	2.9
Real Estate	$1.7 million	
Business Services	$1.7 million	2.4
Textile and Apparel	$1.4 million	
Other manufacturing	$1.3 million	11.3
Electronic	$1.3 million	
Computer Services	$1.1 million	12.1*
Commercial Banking***	$0.7 million	2.0

*Utilities and Transportation are a single category in the Bureau of Labor Statistics data, so here I listed the same rate of unionization for each sub group. Further research is needed to determine if each subgroup has its own unionization rate.

**Retail Trade and Wholesale Trade are a single category in the Bureau of Labor Statistics data, so here I listed the same rate of unionization for each sub group. Further research is needed to determine if each subgroup has its own unionization rate.

***The original data set presented by Conference Board had a single category labeled "Financial Services" with a CEO compensation level of $0.7 million. In a note at the end of their table they described how separating this into two categories produced a dramatic change in ranking for the subgroup they labeled "Non-banking Financial Services" compared to traditional commercial banks. I chose to list the two subgroups separately and assign to each the unionization rate that BLS listed for Financial Services.

The data on CEO compensation comes from a 1997 Conference Board news release. The data on workforce unionization is from the U.S. Bureau of Labor Statistics.

WHAT IN THE WORLD ARE WE TEACHING OUR STUDENTS: HOW DO BUSINESS UNDERGRADUATES SEE CORPORATE GOALS?

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ABSTRACT

Recent U.S. business scandals and the resulting economic problems have led some to ask: Are business students taught a prudent, responsible view of what goals corporations ought to be pursuing? This study looks at which corporate goals business undergraduates hold most important and least important. It also examines the change in their views of corporate goals as they proceed from sophomore to senior status. The answers found in this study are reassuring.

INTRODUCTION

In thinking about recent business and economic problems which originated in the financial services sector of the economy, some have asked: What are business schools teaching about the proper role of top managers and the principal interests and responsibilities of corporations? Underlying this question is the suspicion that knowingly or otherwise business schools have been promoting values to students that are ultimately dysfunctional and harmful to organizations and society (Crane, 2004; Holland, 2009; Navarro, 2008). Neubaum et al. (2009: 9-13) review summarizes the major arguments.

Following this latter concern, some have said that as business faculty, we may be teaching our undergraduates some harmful business values, such as maximizing shareholder value to the implied exclusion of other corporate responsibilities with an excessive concern for short-term results rather than a more prudent longer-term orientation. Basing organizational decisions on such values, it is believed, can have a harmful effect on organizations and society (Jaskolka, 2008; Sikula, 1992).

This paper asks the question, Which corporate goals do business students believe corporations ought to emphasize and act on? I report here the results of an analysis of a survey I administered to my undergraduate students which asked their perceptions of which goals corporations ought to be pursuing.

Although there is a large body of research which studies business students' ethics (Neubaum, et al., 2009), there is isn't much research on business students' views of corporate goals except for a study by Beggs and Lane (1989). This is unfortunate given that business graduates' perceptions and values relating to corporations and their goals very likely shape their expectations about, choice of, and performance in, their corporate employer.

DATA AND ANALYSIS

I began with a set of corporate goals developed and used by Beggs and Lane (1989), which were in turn suggested by Fulmer (1978). Content analysis of the Beggs and Lane questionnaire showed that they omitted the interests of several important stakeholders: managers (question 1), pollution (8), unions (15), community, i.e., providing jobs (21), investors, i.e., stock price (23), laws and regulations (24), and the firm's reputation (25). These questions supplemented the Beggs and Lane set in this study. See the Appendix for the complete questionnaire used here. Means were computed for each question.

Sample. The resulting questionnaire was administered to several classes of sophomore, junior, and senior business undergraduates at Tiffin University during the Fall 2008 to Fall 2009 semesters, including Management of Organizations (intended for sophomores), Organizational Behavior (juniors), and Organization Theory (seniors). The great majority of the sophomores in Management of Organizations were studying business; in the other two classes the students were almost uniformly in various Business majors.

Following Hofstede's (2004) research, data gathered from foreign students, mostly mainland Chinese, were not included in this analysis. Hofstede found that foreign students held different views of corporate goals as compared to U.S. students.

There were a total of 82 usable responses in this study:

sophomores	36
juniors	20
seniors	25

Beggs and Lane (1989) in comparison used responses of 226 students.

Analysis. This study posed the following questions:

1. Which corporate goals do undergraduate business students view as most important? And least important?

2. How do these results compare to previous research by Beggs and Lane (1989)?

3. Do students' perceptions of corporate goals change as they acquire more business education?

Means and standard deviations for each questionnaire item are found in Table 1.

RESULTS

Question 1. Which corporate goals do students see as most important? A corporate goal was seen as important to the students if its mean was less than 2.00; see Table 1. Accordingly, students saw the following goals as important:

2. survival of the organization

4. producing the best products and services

5. having satisfied employees

16. having a stable organization

19. maximizing long-run profits

20. increasing sales growth.

It is striking that despite differences between schools, students, and time periods the results bear a strong similarity to Beggs and Lane's (1989). Their sample is a large public university; mine is a small private one; AACSB accreditation v. ACBSP; capstone course v. non-capstone courses; 1989 v. 2008-9.

Question 2. How do the results of the two studies compare? Surprisingly, the same goals that are important in this study are also important in Beggs and Lane's, despite the sample differences noted above. See Table 1.

In addition, two corporate goals, not studied by Beggs and Lane, were seen as important in the present study:

24. adhering to laws and regulations

25. maintaining a good reputation.

One wonders if these two goals have become prominent and have acquired increased importance given the recent developments on Wall Street and the housing market.

Which corporate goals do students see as least important? I defined goals that were seen as least important if they had a mean of close to 3.0 or greater. None of the goals in the Beggs and Lane study satisfied this requirement. My study, however, found three such least important corporate goals:

7. maximizing short term profits

9. minimizing taxes

11. maximizing dividends.

What's remarkable about the three sets of goals in Questions 1 and 2 is that they depict a relatively balanced, responsible, and modest stakeholder view of the corporation. This view shows a prudent concern for balancing the needs of various internal and external stakeholders -- employees, customers, society, government, and profits -- and with pursuing long-run rather than short-term results.

One can also regard these two sets of goals as a rough, unchangeable ethical template students have of the "proper" corporate citizen. This template may be then used to compare the actions of their employer, firms in the news, and legislation which may affect corporate welfare.

Question 3. Does class standing affect how each group sees corporate goals? That is, do sophomores, juniors, and seniors have different perceptions of corporate goals? I performed t-test comparisons for means between the different classes. The results are summarized below.

Juniors place less importance than sophomores on maximizing dividends (question 11) as a corporate goal. This difference between the means is significant at $p = 0.008$.

Seniors think that providing high rewards and benefits to workers (question 12), is more important than do juniors. This finding is significant at $p = 0.023$.

There are two differences between sophomores' and seniors' views. Compared to sophomores, seniors see creating a pleasant and friendly workplace, question 6, and providing high rewards and benefits to workers (question 12) as more important.

These inter-class differences are few and modest. It doesn't appear that there is much change in student views of corporate goals after their sophomore year. Juniors do place less importance on maximizing corporate dividends. This change may be the result of their taking one or more business courses in their sophomore year. That seniors, a group which hopes to soon begin its career, should emphasize a pleasant workplace and high rewards and benefits for workers should be no surprise.

LIMITATIONS, CONCLUSION, AND DISCUSSION

The purpose of this study was to look at which corporate goals undergraduate business students see as most and least important. The study also asked if business students change their views of such goals as they receive more undergraduate business education. Finally, the last question asked was, Have their views of corporate goals changed within the last number of years?

This study has two limitations. First, a small sample was drawn from undergraduates at a small, private school. Students at Tiffin University are very likely different in important ways from those of larger public and private schools. Nevertheless, despite differences in student aspirations, school ownership, school size, and school accreditation, the similarities in views about corporate goals between this study and Beggs and Lane's (1989) done ten years previously, are remarkable. In fact, this study may be remarkable for <u>not</u> finding different results between the two samples.

Furthermore, the results may not be generalizable to other types of colleges or universities. Samples taken at large, private, and/or very selective business schools, for example, may very likely differ.

Second, despite making inferences about the change in students' beliefs and attitudes over time, this study did not gather longitudinal data as some studies have done (Neubaum, et al., 2009). All data gathered here is cross-sectional.

Nevertheless, this study found overall that business students' views of corporate goals are established relatively early in their career in business school – i.e., by their sophomore year - and don't change much as they progress in class standing. It may be that these views are established well before then; however, the available data don't allow such an inference.

There are few major or surprising shifts in the students' views of corporate goals from their sophomore to their senior year. Taking this result, together with the comparison with the Beggs and Lane (1989) research, one can reasonably draw additional conclusions as follows.

First, undergraduate business students hold prudent, responsible, and balanced views of corporate goals. This is very reassuring. By and large, they prefer to see corporations as good citizens which respond to the varying demands that stakeholders, external and internal, place on them. These corporate goals may be seen as a template against which corporations in the news, their employer, as well as legislation concerning corporate affairs, may be compared.

Second, more education in undergraduate business schools does not seem to alter students' views of corporate goals. Students' beliefs about corporate goals appear to be unaffected by the education they receive – as well as the major business scandals of their time. A longitudinal study of related but somewhat different student beliefs found that the moral views of business students hadn't changed much between their freshman and senior years. By contrast, the moral views of non-business students in that study had undergone some "moral growth" (Sargent, 1986).

Given this stability of students' views of corporate goals over three years, where have the corporate scandals come from? If this paper's and Beggs and Lane's (1989) findings are generalizable to many or most American business undergraduates, one can ask, What happens to students' beliefs after they graduate? Is MBA education at fault? What about their first and subsequent employers?

Third, it is noteworthy that so little has changed in business undergraduates' views of corporate goals given the events in the business and economic environment of the last ten years, i.e., the dot com bubble and bust; Enron and similar corporate failures; and the recent major failures in the financial services sector which served as precursors to a serious recession. Students' views on corporate goals seem to be invariant with boom and bust economic times.

Lastly, it is surprising that there is so little research on a relatively important topic. While there is a large body of work that treats undergraduates' general and business ethics, there are few empirical works that look at business undergraduates' views of corporate goals. Studying business students' beliefs about corporate goals is important because how they view corporations and their goals has large consequences for how they will behave in their job and how they will regard business and economic developments. Legislation affecting business and popular reactions to business news, such as bankruptcies and federal bailouts, are important social concerns that are in large or small part framed by people's views about the proper goals of corporations.

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Table 1. Corporate goals, means, and standard deviations

Beggs and Lane (1989)

Corporate goal	mean	sd	mean	sd	Comparison of both studies
1. Provide high rewards and benefits for managers	2.71	0.882	NA	NA	
2. Survival	1.51	0.946	1.49	0.805	both studies; important
3. Be of service and help the community	2.68	0.980	2.61	0.825	
4. Provide the best quality products and services possible	1.45	0.834	1.86	0.893	both; important
5. Have satisfied employees	1.85	0.877	1.81	0.938	both; important
6. Create a pleasant and friendly workplace	2.20	0.974	2.07	0.928	
7. Maximize profits over the short run	3.06	1.070	2.82	0.951	one study; less important
8. Avoid polluting the environment	2.71	1.012	NA	NA	
9. Keep tax payments to a minimum	2.94	0.979	2.54	0.944	one; less important
10. Run an ethical organization	2.12	0.900	2.15	0.891	
11. Maximize dividends for shareholders	2.93	0.921	2.59	0.945	one; less important
12. Provide high rewards and benefits for workers	2.55	0.740	2.21	0.842	
13. Maximize the company's rate of growth	2.17	0.985	2.00	0.868	
14. Be a market leader in its markets	2.09	1.075	2.00	0.892	
15. Well work with its unions	2.68	1.082	NA	NA	
16. Run a stable organization	1.84	1.006	1.97	0.794	both; important
17. Be a leading innovator in its industry	2.20	0.993	2.24	0.917	
18. Be socially responsible	2.31	0.875	2.10	0.865	
19. Maximize profits over the long run	1.77	0.965	1.39	0.848	both; important
20. Increase sales growth	1.80	0.858	1.84	0.833	both; important
21. Create jobs for the community	2.33	0.922	NA	NA	
22. Maximize its market share/s	2.43	0.865	1.98	0.894	
23. Keep up the firm's stock price	2.38	0.830	NA	NA	
24. Follow all applicable laws and regulations	1.79	0.984	NA	NA	important
25. Maintain a good reputation	1.75	0.854	NA	NA	important

Note. 1. Anchors for the response scale are 1 = very or most important and 5 = not or least important

2. NA = not applicable; that is, not used in the Beggs and Lane (1989) study

Appendix

This questionnaire asks about how you see corporate goals. How important do you think each of the below goals should be for corporations?

Read the below goals and to the left of each write the number that represents your view.

Remember that no organization can give top priority to all the below goals. So only a few goals can be most important.

Write **1** = **most** important
2
3
4
5 = least important

______ 1. Provide high rewards and benefits to its managers
______ 2. Survival
______ 3. Be of service to and help the community
______ 4. Provide the best quality products and services possible
______ 5. Have satisfied employees
______ 6. Create a pleasant and friendly workplace
______ 7. Maximize profits over the short run
______ 8. Avoid polluting the environment
______ 9. Keep tax payments to a minimum
______ 10. Run an ethical organization
______ 11. Maximize dividends for shareholders
______ 12. Provide high rewards and benefits to its workers
______ 13. Maximize the company's rate of growth
______ 14. Be a market leader in its markets
______ 15. Work well with its union/s
______ 16. Run a stable organization
______ 17. Be a leading innovator in its industry
______ 18. Be socially responsible
______ 19. Maximize profits over the long run
______ 20. Increase sales growth
______ 21. Create jobs for the community
______ 22. Maximize its market share/s
______ 23. Keep up the firm's stock price
______ 24. Follow all applicable laws and regulations
______ 25. Maintain a good reputation
______ 26. [Write in] __________________________
______ 27. [Write in ____________________

IS THERE ANY LIFE LEFT IN MCGREGOR'S THEORY X/Y: A FACTORIAL STUDY OF THE CONSTRUCT

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ABSTRACT

McGregor's Theory X/Y has been seen as an important influence on management thought and practice. However, some have asked, Is Theory X/Y an outmoded set of ideas, useful for a prior era but unsuited today? This paper reviews Theory X/Y literature and several attempts to create an instrument to measure it. Learning from these prior attempts, I create a new measure of Theory X/Y beliefs. Perhaps there's new life in an old idea?

INTRODUCTION

Douglas McGregor (1957, 1960, 1966, 1967) over a number of years developed the idea that there are two opposing beliefs or philosophies a manager may hold about human beings, Theory X and Theory Y, which influence some important managerial and organizational behaviors. The Theory X manager believes that the average person:

1. has an inherent dislike of work, i.e., low motivation to work;
2. has a low need for work autonomy, i.e., little desire for additional responsibility, little work ambition, and a preference to be directed at work;
3. seeks to fulfill lower level needs at work, e.g., creature comforts and security, rather than higher level needs;
4. has low organizational commitment; and
5. has a low capacity and desire to use creativity, ingenuity, and imagination at work.

The Theory Y manager, in contrast, believes that the average person:

1. has a high motivation to work, i.e., finds work a natural and welcome activity;
2. has a relatively high need for work autonomy, i.e, they prefer to exercise self-control and self-direction;
3. seeks to fulfill higher level needs at work, e.g., self-actualization, rather than lower level needs;
4. has high organizational commitment; and
5. has a high capacity and desire to use creativity, ingenuity, and imagination at work.

McGregor believed that a manager's Theory X/Y beliefs – here termed more simply X/Y beliefs - about his/her employees have important consequences for their action and for their organization. For example, a Theory X manager may manage and lead differently, including the relative amount of participation in decision making they will allow their subordinates, than a Theory Y manager. Also, a Theory X manager may be more likely to use a task-oriented leadership style than a Theory Y manager, who may be more likely to use a person-centered leadership style. Additionally, differences exist between the X and Y manager in the nature and details of job design or redesign programs they may initiate; the relative centralization or decentralization and flattening of the department or organization; whether performance appraisal permits worker participation; the kind of culture or climate they create or encourage in their department or organization; the nature and extent of delegation they allow. However, Theory Y managers are presumably more likely to practice the above ideas and therefore to have more effective units or organizations than X managers.

Since McGregor developed these ideas in several works, Theory X/Y has made a large impression on various students of management. Peter Drucker, Robert Waterman, and Warren Bennis; management researcher Rosabeth Moss Kanter; and former Chrysler Motors president, Lynn Townsend, all gave enthusiastic praise for his ideas on the dust jacket for the re-published 1985 edition of *The Human Side of Enterprise.* Further, Theory X/Y is in part credited with supporting some modern management programs, such as increasing employee empowerment; redesign of jobs, systems, and structures to give employees more personal discretion and autonomy at work; and building organizational rewards that are fair and consistent (Schermerhorn, Hunt, and Osborn, 2004: 16). Third, it is very common to find Theory X/Y summarized in current college business texts as an example of an early and influential motivation theory in management. Last, a Google search of "Douglas McGregor Theory X-Y" returns close to half a million internet pages, a testimony to the popular appeal of his ideas.

LITERATURE REVIEW

What has research over the last 20 years uncovered about X/Y and the group or organizational effects of X/Y? Given the claimed importance of X/Y, it is surprising to find that in the last forty or so years, there aren't many studies of these ideas. Most surprising, the organizational practices that McGregor discussed and supported in his works – participation, empowerment, delegation, job design, and organizational climate or culture – have not been much studied as they may relate to X/Y.

I review below the X/Y literature with the discussion organized into three areas: (1) organizational outcomes and processes, (2) demographic characteristics, and (3) psychological traits and processes.

Organizational outcomes and processes. Several studies have found a weak or no relation between managers' holding X/Y beliefs and leadership effectiveness and managerial effectiveness or performance. Howe (1988) found no relation between holding X/Y beliefs and leadership effectiveness in the organization she studied. Finman (1973) found no relation between holding Theory Y beliefs and job performance for supervisors or their subordinates in the firm. Logozzo (1989) found no relation between holding X/Y beliefs and employee absenteeism. However, Barone (1981) did find a relation between holding X/Y beliefs and managers' X/Y orientation to leadership and organizational policies and practices.

With regard to another organizational outcome, job satisfaction, studies show conflicting results. Finman(1973) found Theory Y associated with greater job satisfaction in the firm while Howe (1988) found that managers holding X and Y beliefs had a differential effect on workers' job satisfaction. Interestingly, Ward (1990) found that of two elementary school principals, the "neutral" principal, that is, the one who was intermediate between Theory X or Theory Y beliefs, had the more "harmonious [school] atmosphere" and teachers with higher job satisfaction than the high Theory Y principal. The neutral principal was also thought of more highly by the teachers than the high Theory Y principal. Finman (1973) and Howe (1988) each studied firms while Ward (1990) studied two elementary schools.

Logozzo (1989) found a relation between managers holding X/Y beliefs and organizational commitment when he studied employees at an insurance firm. In particular, he found that holding Y beliefs was positively related to organizational commitment.

Holding X/Y beliefs has been found to be related to managers' choice of communication style with subordinates. Sager (2008) found that both X and Y managers tended to use an Impression Leaving style in talking with their workers. However, the X managers also used the Dominant communication style, while Y managers used the Supportive and Nonverbally Expressive styles.

Demographic characteristics. Greater age and education, especially a graduate degree, are related to holding Y rather than X beliefs. Sex however is not related to X/Y beliefs (Barone, 1981; Harris, 1984). These results suggest that our initial X/Y orientation is not inherited and may change throughout our life subject to experience.

Psychological processes and traits. With regard to cognitions, X and Y managers make different attributions about workers' poor work performance. Theory X managers tend to attribute poor performance to internal variables, i.e., lack of work effort, rather than to external causes and to suggest that poor performers be more closely watched than do Y managers (Summers, 1987). Interestingly, even though X managers tend to attribute poor performance to the person than to the situation, X managers don't feel it is appropriate to fire such poor performers.

There is no difference in how X or Y managers perceive unethical actions (Neuliep, 1996). That is, both groups agreed that each of the six presented scenarios featuring unethical behaviors is unethical. However, Theory X managers, to a significantly greater extent than Theory Y managers, saw certain unethical actions as effective. Theory X managers said that telling a subordinate who reports that one of the firm's products poses a danger to users to set aside their conscience; installing hidden video cameras on the shop floor to monitor workers because of quota and deadline problems; and publicly scolding a subordinate for being unprepared to present a report, were effective, although unethical, unlike Y managers. These results suggest that although both X and Y managers perceive ethical situations similarly, the X managers may be more susceptible to "bend" their behavior towards what works.

Lastly, and not surprisingly, with regard to personality traits, persons holding X beliefs also tend to be high on authoritarianism (Teleometrics International, 2009; Barone, 1981). This is an interesting finding and the relation of X/Y to other personality traits is an area that merits more investigation, especially in any test of the differential and convergent validity of the X/Y construct.

In summary, research on X/Y beliefs has not shown that holding X/Y is related to many group or organizational outcomes or processes. X/Y beliefs do appear to be related to attitudes, like job satisfaction and organizational commitment, to at least one personality trait, and to affect certain cognitive processes (making attributions about poor performance), but overall these results cannot be considered very strong. Furthermore, the mixed results for job satisfaction suggest that situational variables may be important in understanding X/Y beliefs. The results for age and education also suggest that these and other variables may moderate the effects of X/Y beliefs in organizations.

Given the poor research results obtained, despite the importance various management writers place on Theory X/Y, is it reasonable to devote more research to McGregor's ideas? The answer in this paper is yes. In the next section, I discuss one reason X/Y research may not have extended very far: Perhaps the X/Y construct has not been developed properly and validated. In other words, X/Y researchers may have been working with an inadequately developed construct and/or measure, which could very well have failed to yield significant or important effects.

CONSTRUCT AND MEASURE DEVELOPMENT

Rigorous development of a valid construct requires prior ideas about the composition of the construct, that is, its likely dimensions, facets, or sub-scales. I will use the term facets throughout. Thus, development of a valid X/Y construct requires that the researcher first specify the supposed facets of the construct, then develop questionnaire items likely to sample each facet, and finally test this composition by means of construct validation (Furr and Bacharach, 2008).

There have been three attempts to develop and validate an instrument to measure X/Y beliefs: Jacoby and Terborg (1974, 1975); Kopelman, R.F., Prottas, D.J. and Davis, A. (2008); and Sager (2008). I briefly discuss each below.

Jacoby and Terborg. They (1975: 7-8) distill their understanding of McGregor's X/Y beliefs into five general assumptions managers may hold about workers:

1. motivation to work, i.e., regarding work as inherently natural or inherently distasteful;
2. capacity and desire for autonomy at work;
3. level of need satisfaction, i.e., security and creature comforts versus greater responsibility;
4. organizational commitment; and
5. capacity for creativity, ingenuity, and imagination.

Presumably, these beliefs were woven into the resultant proprietary questionnaire, the Managerial Philosophies Scale (Jacoby and Terborg, 1975). They regard the Theory X and Theory Y scales as separate and negatively correlated, as did McGregor. Their web site [www.teleometrics.com], which offers the questionnaire for sale, provides information about the validity and reliability of their instrument.

My content analysis of their Managerial Philosophies Scale, by facets, in Table 1 shows that Jacoby and Terborg don't quite hew to their understanding of the X/Y construct: It's not clear where the trust/distrust or the reason/emotion facets fit into their scheme.

Kopelman, Prottas, and Davis. Kopelman, et al. (2008) of the three studies examined here, report the most careful attempt to develop and validate the X/Y construct, including testing its convergent and differential validity.

Despite this strength, the Kopelman, et al. study has some drawbacks. First, their instrument leans heavily toward Theory X beliefs, a failing they acknowledge: Fourteen of their seventeen questionnaire items are negatively phrased and reflect a Theory X orientation. A second failing is that, rather than beginning with a study of suggested facets or dimensions of the X/Y construct, Kopelman et al. instead selected items from Swenson (no date) and from a "test" from the Scanlon Leadership Network (no date); they do not give their rationale for these selections. In other words, they do not begin with an *a priori* statement of the facets of the X/Y construct.

Sager. Sager (2008) combined Neuliep's (1987) 12-item Theory X & Y Orientation Scale together with Jones and Pfeiffer's (1972) ten-item X-Y Scale to derive a new 17-item Theory X and Theory Y Inventory. Content analysis (Table 1) of Sager's instrument shows that his Inventory omits some of McGregor's facets and adds clarity of organizational structure and procedures.

Overall then, the above three attempts to develop a measure of the X/Y construct can be summarized by saying that they have a more or less expansive view of X/Y beliefs, as shown in Table 1 in the appendix. Jacoby and Terborg (1975) include the five core facets of X/Y beliefs and add trust-distrust and reason-emotion. In contrast, Sager (2008) does not include organizational commitment or creativity as facets but adds clarity of organization structure and procedures. In other words, it does not appear that any of the three studies have a firm idea of the boundaries of the X/Y construct. Consequently, it would be very helpful for future researchers to agree on the core facets of the X/Y construct.

Last, one thoughtful and careful review of Theory X/Y presents a generally negative view of its research prospects.

"In spite of occasional support, such as findings on participative practices in performance appraisal, McGregor's views have not fared well over the years. The idea of creating stereotypes such as X and Y to describe various managerial theories (or cosmologies) or philosophies (or ways of thinking) has not really caught on in the leadership area." (Miner, 2002: 266)

Miner faults Theory X/Y for:

1. ignoring contingency variables, especially individual differences between workers, which may moderate the effects of Theory X/Y;
2. ignoring the effects of structural variables, such as degree of centralization in the organization;
3. being founded in Maslow's need hierarchy, which has not received research support; and
4. being a "philosophy-theory … difficult if not impossible to test at some points …" (Miner, 2002: 261).

He concludes that "this was a theory for its times, more a philosophy than a theory, and is now really outdated in any scientific sense" (Miner, 2002: 266).

In summary, X/Y research results have been meager perhaps because the construct has been unevenly developed and sometimes not properly validated. The purpose of this study is to move to the creation of a valid instrument that can be confidently used in future X/Y research.

METHOD

My intent here was to develop a psychometrically sound X/Y instrument (Furr and Bacharach, 2008). Accordingly, I sought to avoid some of the mistakes of the three prior studies summarized above and to develop items based on McGregor's understanding of the facets of his construct.

I began with Trombley's (1994) instrument, her 48 item Philosophy of Management Questionnaire. I content analyzed the questionnaire and used 39 of those questions which reflect the five core facets of McGregor's understanding of Theory X/Y beliefs as given above. Data was gathered from my sophomore and junior management classes, fall 2008 to fall 2009 semesters. I did not include in the study responses from foreign students so as to avoid possible confounding with national culture. Total usable cases were 56. The resulting data was factor analyzed to yield a simpler factor structure.

RESULTS

Descriptive statistics are given in Table 2. The correlation matrix was omitted to save space. Fifteen of the respondents were sophomores; the remaining 41, juniors. Since age and education appear to influence X/Y beliefs, t-tests of means were done between the classes. Of the items included in the final instrument, only one significant mean difference appeared: Sophomores (mean = 4.05) were likely to agree more with the statement "Most employees want to be told what to do" (Q 40, V44) than juniors (mean = 3.33), the difference significant at $p = 0.042$. It was therefore thought that data from both classes could be pooled for analysis.

Unrotated principal component factor analysis yielded thirteen factors which explained 75.94% of the variance. See Table 3. Questionnaire items, i.e., variables, which loaded 0.500 or higher on a question were selected for inclusion in the final questionnaire; see the Table 4. Examination of the factors shows that they "fell" into either the Theory X or Theory Y orientation. Factors 1, 3, and 7 strongly reflect Theory Y beliefs while Factors 2 and 6, Theory X. Cronbach alpha for the final instrument is 0. 707. The resulting questionnaire is given in the Table 4.

LIMITATIONS OF THE STUDY

While attempting to be rigorous, this study has several large limitations. First, the N is small and composed entirely of students. This has at least two implications. First, a sample composed of persons with more education and/or work experience might yield slightly, or perhaps greatly, different factors. Second, the small sample size may yield factors that are not stable. While there are some differences in the research literature as to the statistically appropriate ratio of cases to variables for meaningful factor analysis, it appears that the minimum is one. This study hovers at a cases to variables ratio of one to 1.4.

Second, this investigation did not do a complete validation study, unlike Kopelman, et al. (2008) who admirably looked at the convergent and differential validity of their instrument. Parenthetically, it would be useful to investigate if X/Y beliefs are convergent with any other personality traits in addition to authoritarianism.

Last, the facets of organizational commitment and creativity, etc. are each measured by one questionnaire item. Surely both facets are more complex than that. Future research should explore somewhat each of these two facets.

CONCLUSIONS AND DISCUSSION

This study is a first step toward a meaningful program to further investigate Theory X/Y. It also provides suggestions as to the outline of a research program.

First, X/Y researchers must begin with a clearer understanding of the X/Y construct. This paper suggests some of the facets that should be considered.

Second, situational variables must be included in any X/Y study. It is clear that certain organizational variables, such as degree of centralization, will moderate the effects of X/Y and must be a part of a study.

Last, with greater age and education a person's X/Y orientation may change throughout their life. Research should consider these and other personal variables which may affect a person's X/Y score. It is naïve to assume that one can study the effect of X/Y on various organizational variables without at the same time considering various situational and personal variables.

Who knows, Theory X/Y may yet prove to have more life.

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Table 1
Content analysis of three instruments studying Theory X/Y

	Jacoby and Terborg (1975)	Kopelman, et al. (2008)	Sager (2008)	This study
Facet from McGregor				
Motivation to work	7	5	1	3
Autonomy at work	12	8	15	7
Needs – lower v. higher level	6	2	2	4
Organizational commitment	2	1	NA	1
Creativity, ingenuity, and imagination at work	1	0	NA	0
Trust v. distrust of organizational members	6	1	NA	NA
Reason v. emotion at work	2	NA	NA	NA
Clarity of organizational structure/procedures	NA	NA	4	NA
Total number of items in the scale	36	17	22	15

Note. NA means that this facet was not included in the study.

Table 2 Means and Standard Deviations

	Mean	Standard. Deviation
V25	5.64	1.086
V41	5.54	.852
V52	5.75	1.014
V14	6.07	.951
V19	5.77	.809
V35	4.98	1.087
V38	5.86	1.034
V37	5.39	.846
V9	3.79	1.275
V42	3.43	1.386
V26	4.84	1.247
V40	4.34	1.297
V44	3.89	1.155
V48	4.88	1.308
V32	3.93	1.042
V33	3.88	.935
V36	4.14	1.299
V20	5.20	1.119
V6	5.55	.893

Table 3 **Unrotated Factor Analysis, [A] Component Matrix**

	Component												
	1	2	3	4	5	6	7	8	9	10	11	12	13
V9	-.448	.515	.367	.136	.076	-.034	.228	.127	-.024	.098	.006	.058	.112
V28	-.168	.494	.222	.195	-.342	.429	-.124	-.033	.021	.071	-.072	-.194	-.080
V33	-.069	.402	.518	.272	.069	.214	-.107	-.049	-.087	-.027	-.102	.121	-.226
V39	-.495	.244	-.119	.099	-.351	-.070	.373	.070	.388	-.091	-.145	.118	.149
V42	-.150	.541	.056	-.278	.021	-.075	-.118	-.137	.216	.111	-.444	-.211	.160
V5	.055	-.158	.394	.203	-.193	.060	.474	.155	-.381	-.164	-.137	.255	.149
V8	-.108	.009	.485	.441	.006	-.227	-.171	.269	.189	-.121	.122	.236	-.348
V18	-.593	.281	.131	.180	.130	.071	.225	-.057	.222	.333	.167	.020	.107
V20	.377	.055	.237	.386	-.068	-.581	-.083	.154	.114	.067	.133	-.068	.092
V21	-.209	.489	.289	-.043	-.117	-.252	-.060	.086	-.442	.247	.204	.024	.102
V22	.450	.203	.127	.227	-.225	.099	-.386	-.378	-.018	.140	.041	.177	.261
V25	.518	.094	-.167	.300	-.291	.020	.155	.133	-.142	.380	-.044	-.150	-.202
V26	.287	.578	-.387	-.088	.124	.060	-.075	.026	-.060	.174	.104	.322	-.259
V31	.309	-.015	.343	-.244	-.162	-.287	-.182	.364	.061	.205	.202	-.211	.002
V36	.204	.409	-.552	.270	.030	.254	.014	.052	.055	.241	-.201	.052	-.226
V40	.186	.592	-.115	-.354	.122	.195	.218	.240	-.093	-.023	.115	.055	.103
V41	.596	.235	-.095	-.038	-.278	-.040	-.005	-.240	.077	.242	.041	-.092	.068
V44	.169	.540	-.265	.129	-.029	.121	.069	.171	-.138	-.372	-.057	-.366	-.007
V47	.289	-.166	.197	-.219	.171	.278	-.006	.194	.497	.056	.367	-.097	.149
V49	.194	.426	-.484	-.258	.142	-.131	.324	.179	.026	-.038	.114	.092	.089
V50	.383	.164	.226	.273	-.134	-.132	.171	-.477	-.068	-.233	-.019	-.244	.034
V52	.529	-.183	.305	.084	.100	.264	.008	.157	.229	.337	-.152	.204	.032
V6	.057	-.346	.154	.229	.379	.190	.540	-.022	-.165	-.010	.020	-.039	.207
V12	-.015	.075	.455	-.187	-.264	.320	.390	-.176	.297	-.025	-.100	.139	-.279
V14	.550	.110	-.017	.010	-.394	-.051	.020	.440	-.047	-.122	-.096	.169	.089
V17	.271	.313	.057	-.208	.262	-.055	-.268	.101	.025	-.020	-.477	.291	.269
V19	.661	-.185	-.102	.167	.270	-.005	.284	.165	.123	.233	.068	-.086	-.041
V23	-.356	.309	-.368	.211	-.032	-.371	.211	-.240	.321	.051	.092	-.005	-.101
V27	.232	.361	.295	-.124	.480	-.452	.125	-.268	-.020	.102	-.102	.162	.055
V29	.225	.167	.009	.356	.442	.354	-.217	.211	.178	-.256	.030	-.141	.170
V35	.535	.024	.177	-.273	.413	-.123	.104	-.324	-.107	-.006	.064	-.039	-.240
V38	.733	.070	-.099	.305	-.030	.076	.255	-.193	-.110	.042	.084	-.025	.049
V45	-.021	.358	-.107	.498	.325	-.314	-.032	.241	.041	-.248	-.173	-.083	-.169
V48	-.002	.526	.084	-.325	-.342	-.160	.145	.073	.056	-.150	.226	.014	.085
V15	-.358	.469	.149	.373	.199	.169	-.113	-.119	.073	.080	.244	-.073	.254
V32	-.058	.506	.377	-.353	.177	.280	-.042	.074	-.286	-.014	.151	-.167	-.202
V37	.746	.080	.126	.099	-.193	.041	-.034	-.025	.063	-.151	-.065	-.033	.201
V46	.446	.100	.439	-.340	.017	-.152	.155	.015	.316	-.183	-.212	-.212	-.184
V16	.404	.245	-.139	-.001	-.065	.110	-.123	-.247	.146	-.478	.390	.365	-.039

Extraction Method: Principal Component Analysis.
A. 13 components extracted.

Table 4

Theory X/Y Questionnaire

Question number	Variable number	Questionnaire item
1	25	Managers should set goals for employees.
2	41	Managers should strive to help employees become self-directed.
3	52	Employees should have a voice in the decisions that affect them.
4	14	The organization should provide employees with the opportunity to gain self-confidence and realize their potentials.
5	19	People need to feel a sense of achievement and competence.
6	35	People want to develop their talents and abilities to the fullest extent.
7	38	Managers should create opportunities for people to realize their full potential.
8	37	Employees can be motivated to work in the best interest of the organization.
9	9	Most people do not like to work.
10	42	When people are unproductive, it is because they are basically lazy.
11	26	Managers should closely supervise subordinates' behavior.
12	40	A main responsibility of management is to get subordinates to accept direction.
13	44	Most employees want to be told what to do.
14	48	Employees are primarily motivated by money.
15	32	Employees are happiest when they do not have to think about their jobs.
16	33	People are not naturally passive.
17	36	Employees need to be directed and controlled.
18	20	Employees can learn to direct their own activities.
19	6	Employees need something beyond enough money and a secure job.

CROSS-CULTURAL DIFFERENCES IN AMERICAN AND KOREANS' STRATEGIC DECISION-MAKING: IMPLICATIONS FOR GLOBAL LEADERS

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ABSTRACT

Culture plays an important role in people's decision-making process. Culture frames people's perception of events and guides the decision maker's response to particular phenomena. Culture affects not only people's judgment but also their strategic thinking. This study examines the impact of culture on American and Korean strategic decision-making process. Americans tend to behave in a monochromic fashion where they develop short-term relationships. Korean meanwhile are considered polychronic people who place high value on long-term interpersonal relationships. This study further discusses the cross-cultural differences between Americans and Koreans. It concludes with the implication of cultural differences for leadership in a global economy.

INTRODUCTION

Culture plays an important role in people's decision-making (Beach & Connolly, 2005). Culture frames people's perception of events and guides the decision maker's response to particular phenomena (Beach & Connolly). Thus, the cultural sphere affects not only people's judgment but also their strategic thinking (Hitt, Dacin, Tyler & Park, 1997). As Hitt et al. (1997) noted, "managerial practices are as much a function of environmental forces as they are of cultural attributes" (p. 160). The emergence of markets outside the western world and the increasing globalization of the marketplace make the concept of culture a relevant topic in leadership studies (Patterson, Dannhauser & Stone, 2007). With China and India emerging on the horizon as sleeping economic giants (Malik, 2001), the need to develop leaders with a global mindset (Friedman, 2007; Hitt, Javidan & Steers, 2007) is becoming an increasing necessity if today's organizations arre to survive in the global economy. Patterson et al. (2007) noted that as the world economy becomes more complex with increased competitiveness, "modern organizations worldwide not only demand effective, adaptable and committed leadership, but also…global leaders who are dynamic and thrive in complex environments because they possess a repertoire of qualities and skills to be effective" (p. 1). Thus, a lack of global perspective may not only hinder the ability of leaders to take advantage of emerging markets but also compromise organizational effectiveness (Patterson et al.). This paper examines the impact of cultural dimensions on American and Korean executives' decision-making process. First, the paper discusses the cross-cultural differences between Americans and Koreans. Second, the paper articulates the impact of culture on American and Koreans' strategic decision-making. The paper concludes with the implication of cultural differences for leadership in a global economy.

CONCEPTUAL FRAMEWORK

Culture manifests itself both in practices and values (Hofstede, 2001). Practices are symbols that are the changeable characteristics of culture whereas values are characteristics of culture that are framed by the social environment (Hofstede). Hofstede and Hofstede (2005) defined values as "broad tendencies to prefer certain states of affairs over others" (p. 8). Hofstede and Hofstede maintain that while cultural practices may change, values tend to remain stable over time. Yet, the increasing access to technology has reduced distance and shortened barriers between world markets and people (House, Javidan, Hanges & Dorfman, 2002). This recent development has contributed to a new era of globalization (Tomlinson, 2006), which as Friedman (2007) noted, has made the world "flat". This age of globalization is unlike any other in history; for, it is dominated by people collaborating and competing on the world stage (Friedman). As people become more and more connected with each other, they are increasingly turning the world into a global village with a global culture (Tomlinson, 2006). Understanding culture and its impacts on the decision-making process (Beach & Connolly, 2005) is becoming more than ever an increasing necessity as the world economy becomes more global and complex. For culture frames people's perception of events and guides their decision-making process (Beach & Connolly). Thus, an understanding of the decision maker's cultural frame would certainly be useful as people interact with each other. Hofstede (2001) observed "the survival of all mankind will depend to a large extent on the ability of people who think differently to act together" (p. xv.). The underlying premise is that people with different nationalities, backgrounds, and cultures must cooperate with one another if they want the world to continue to exist. It is understandably within that context that intercultural cooperation among nations and people is a prescription for the survival of our humanity.

Our lack of understanding especially our "linear economic approach" often contributes to cultural tensions (UNFPA, 2008). With an estimated world population of 9 billion people by the year 2050 (United Nations, 2007) and with more than three quarter of that population expected to live in areas outside of Europe and North America, the world will soon experience a cultural shift (Friedman, 2007). This projected growth in human population raises the prospect that the next frontier in human capital and market will be dominated by cultures other than those of the western world (Friedman, 2007). According to the United Nations, China and India alone will account for about 1/3 of that projected population. It is not surprising that China and India have received a lot attention in the American media in recent years. What do these changes imply for us living in the western world? They imply a shift in attitude and also imply an understanding and appreciation of other cultures as the world awaits the emergence of these sleeping economic giants (Malik, 2001). As Malik notes, China and India may open up economic possibilities beyond those of emerging markets in Thailand, the Philippines, and Mexico. Thus, understanding cultural distances may prove valuable to any foreign investor's success (Ghemawat, 2001).

CULTURE AND STRATEGIC DECISION-MAKING

Culture is a relative concept (Hostede & Hofstede, 2005). It is often defined in terms of norms, values, and means of communication. Defining culture only through these lenses may obscure some important elements and may contribute to value judgment by people outside the cultural experience. Swidler (1986) noted that such view of culture has been "displaced in favor of a defining culture as the publicly available symbolic forms through which people experience and express meaning" (p. 273). Yet, Levi – Strauss (1908) (as cited in Hofstede and Hofstede) argued that there are no absolute criteria to evaluate one culture with another. Instead, Culture becomes the "inherited patterns of shared meanings and common understandings [which] influences their [people's] lives, and provides the lens through which they interpret their society" (UNFPA, 2008, p.1). Consequently, culture affects the way people think and act and it frames their perception of the world they live in (Beach & Connolly, 2005). Culture also affects their decision-making process.

STRATEGIC DECISION-MAKING

Decision-making is described as a social behavior framed partly by our culture and values (Beach & Connolly, 2005). In any culture, people exert a great degree of choice over their decision-making process. Etzioni (1967) stated, "since decision-making includes an element of choice, it is the most deliberate and voluntaristic aspect of social conduct" (p. 385). People in their decision-making process can choose to be rationalist or incrementalist (Etzioni). The rationalist approaches problems by weighing all possible alternatives and choosing the best alternative based on its overall merits. Meanwhile, the incrementalist adapts his decision-making mechanism with his limited ability to collect and access information. Therefore, the incrementalist makes decision in small incremental steps. Given these two broad tenets of decision-making, the way people in eastern and western cultures make decisions may be determined by their cultural elements.

HOFSTEDE'S CULTURAL DIMENSIONS

Hofstede's (2001) cultural typology includes four dimensions of cultures: Large power distance vs. small power distance; individualism vs. collectivism; strong or weak uncertainty avoidance and masculine vs. feminine. Cultures can be described as individualistic or collectivist in one aspect and masculine or feminine in other aspects. Two countries may be similar in one cultural dimension and dissimilar in other cultural dimensions. Thus, these cultural dimensions show the following characteristics:

- large power distance vs. Small power distance determines the extent to which power is equally distributed in the society
- Individualism vs. collectivism explains the degree to which people view themselves as an individual or member of a collective or social group
- Strong and weak uncertainty avoidance measures the extent to which people view change as a threat to their cultural values
- Masculine or feminine reflects the extent to which achievement or cooperation is being emphasized in the society. It also analyzes the role of gender in the society.

Each of these dimensions of cultures provides a perspective of the impact of culture on people's strategic decision-making. The explicit and implicit link of culture and decision-making will be further evident in the discussion of Americans' and Koreans' decision-making process.

KOREAN CULTURAL DEPENDENCY PATTERN

Confucius philosophy strongly influences the cultural heritage of people in Korea (Hitt et al., 1997). In a research on strategic difference between Korean and American executives, Hitt et al. (1997) found that the Korean Confucius tendencies stress harmony and cooperation. Korean culture tends to be hierarchal placing a strong emphasis on structure and order. Koreans have a preference for formality and duty and are less concerned with individual rights. In an Asian context, Korean culture is described as "communitarianims" (Hitt et al. 1997) but unlike China and Japan, Korean communitarianism places more emphasis on hierarchical relationships (Michael, 1997). Koreans tend to exhibit polychronic behavior in their dealing with others (Michael, 1997). Michael argues that polychronic people place high value on close interpersonal relationships. Unlike their counterpart in Japan, Koreans tend to develop dyadic relationship with their subordinates. As Michael observes "empirical evidence suggests that Koreans are more likely than their American counterparts to spend time interacting with their superiors. Korean managers meanwhile "behave in a paternalistic fashion toward their subordinates, often assuming a father-figure role" (Michael, p. 49) in the relationship. The transactional nature of the boss-subordinate relationship tends to be more valuable than having power to act. These characteristics, along with the involvement of the government in the market, place South Korea high in collectivism with strong power distance in Hosfstede's cultural dimensions index.

AMERICAN CULTURAL DEPENDENCY PATTERNS

Meanwhile, Americans tend to believe in "rugged individualism" (Michael, 1997). This idea was born out of the protestant ethic of hard work and self-reliance, which has shaped early American culture. Morkbak (2009), described Americans as egalitarian, individualistic, bold, conscious of time and informal. Morkbak notes "Americans want to be dealt with as individuals; they expect all people to be treated with an equal amount of respect and deference" (CultureCross.dk). Michael argues that Americans have a "propensity to behave in a monochronic fashion" (p. 47), which means that they tend to develop short-term personal relationships. Michael further notes "the monochronic characteristic of American managers results in the formation of many network relationships that are lacking in any emotional attachment and long-term personal commitment. In Hofstede's typology of culture, the United States ranks high on individualism and masculinity and low on uncertainty avoidance. Consequently, Americans value individual achievement and they have a high tolerance for different beliefs and viewpoints.

CROSS-CULTURAL DECISION-MAKING: KOREANS AND AMERICANS

The difference in cultural attributes of Koreans and Americans are certainly reflected in their decision-making process. Americans are risk takers. They tend to make decisions very quickly for they value their time. Koreans are very formal in their business practices but unlike their American counterparts, they do not react quickly. They tend to drag on before making a decision especially in their business dealings with foreigners. Morkbak of CrossCulture.dk notes that Americans prefer process over structure. Meanwhile, De Mente (2001) described Koreans as people who value personal relationships. For instance, De Mente notes "Koreans will not- or cannot-come to an agreement until they feel comfortable with the people involved; that is, until they like and trust them." In negotiating with foreigners, De Mente further adds that Koreans might give the impression that they are "easy marks". This is a false impression for they are shrewd negotiators with a "never give up, never lose, business sense" attitude. Tung (1990) argued that a noted difference between Americans and Koreans lies in the attitude toward contract law. For North Americans, a contract is a binding agreement whereas for South Koreans, a contract is a starting point for negotiation.

IMPLICATIONS FOR GLOBAL LEADERSHIP

The increasing pace of globalization and increasing interdependence among nations necessitate that leaders develop a worldview in order to effectively position their organization in the global economy (Suutari, 2002). Having a global mindset (Hitt et al. 2007) requires leaders to develop strategic thinking, cultural awareness and cultural sensitivity (Jokinen, 2005). Paul (2000) described global mindset as a prerequisite for global leaders who are expected to lead their organizations into the future and take advantage of expanding markets. Thus, global mindset requires leaders to embrace diversity, to value multicultural teams, to emphasize process over structure and above all to develop a worldwide vision of leadership. It is within that context that global leaders will achieve success in this age of globalization.

CONCLUSION

This paper calls for leaders to develop understanding and appreciation of other people's cultures. Such understanding will position them for the cultural shift that is currently underway. Having a worldwide perspective will be vital for leadership success and above all for organizational success. In addition, having a global mindset may be the only way for global leaders to remain relevant in this age of globalization. For, the makeup of the workforce in our organizations is changing; human capital is becoming more mobile; and finally, market opportunities are emerging beyond our borders.

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MEDIATING EFFECT OF FOLLOWER COMMUNICATION APPREHENSION ON THE RELATIONSHIP BETWEEN DEMOGRAPHIC DISSIMILARITY AND LEADER-MEMBER EXCHANGE

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ABSTRACT

This study explored the mediating effect of members' self-reported communication apprehension on the relationship between demographic dissimilarity and quality of leader-follower relationships (measured by LMX). The sample consisted of 241 employed students from an east coast community college. The results of this study indicated that communication apprehension does not mediate the relationship between demographic dissimilarity and LMX. Furthermore, demographic dissimilarity has a minimal effect on LMX and communication apprehension. However, the results indicated that communication apprehension is significantly related to LMX. Implications of these results and suggestions for future research are discussed.

INTRODUCTION

Over the past 35 years, leader-member exchange (LMX) theory (Dansereau, Graen, & Haga, 1975) has evolved from a descriptive theory to a prescriptive theory for "generating more effective leadership through the development and maintenance of mature relationships" (Graen & Uhl-Bien, 1995, p. 220). Derived from social exchange and role theory, the fundamental premise behind LMX is that within organizations different types of relationships develop between leaders and subordinates (Liden, Sparrow, & Wayne, 1997). Liden et al. noted, "These relationships are characterized by the physical or mental effort, material resources, information and/or emotional support exchanged between the two parties" (p.48). Graen and Uhl-Bien suggested that LMX relationships are best described as a continuum with high quality relationships on one end and low quality relationships on the other end. Members who are engaged in high-exchange relationships with leaders establish expanded and negotiated role responsibilities not mentioned in the employment contract. In contrast, members who are engaged in low-exchange relationships with leaders mostly comply with formal role requirements (Yukl, 2006).

LMX has been found to be positively related to organizational outcome variables such as organizational commitment (Seers & Graen, 1984), organizational citizenship (Scandura, Graen, & Novak, 1986), performance appraisal (Mitchell, 1983), and career progress (Wakabayashi & Graen, 1984). Because of the potential rewards garnered from high-exchange relationships, Graen and Uhl-Bien posited that all leaders should be trained to offer the opportunity to develop high-quality relationships with all subordinates. Although the need for developing high-quality leader-member relationships may be clear, research on situational characteristics that influence these exchanges is scarce (Phillips & Bedian, 1994).

Liden et al. proposed a model of LMX development, which discusses general categories of variables, including personal characteristics of the leader and follower and interactional variables between the leader and follower that may affect their perceptions of one another and their communication. Expanding on the study of Liden et al., this study examined two variables that may impact the quality of leader-member exchange (follower communication apprehension (CA) and demographic dissimilarity of the leader and follower). These specific variables were selected because CA and demographic dissimilarity may frequently be present in the formation of LMX relationships. Although some researchers (Duchon, Green, & Tabor, 1986; Green, Anderson, & Shivers, 1996) have reported a significant relationship between demographic dissimilarity and LMX, others have reported an insignificant relationship between the two variables (McClane, 1991; Turban and Jones, 1988; Liden, Wayne, & Stillwell, 1993). Goertzen and Fritz (2004) suggested that previous research on demographic dissimilarity and LMX has produced inconclusive results. Thus, researchers have encouraged future studies to investigate this potential relationship (Bauer & Green, 1996; Liden et al., 1997; Goertzen & Fritz).

Liden et al. reported that frequency of communication has been found to be positively related to LMX. According to Cole and McCroskey (2003), individuals who experience CA in dyadic interactions, (i.e. communication related anxiety), may react with communication avoidance, communication withdrawal, and communication disruption. Furthermore, researchers report that CA increases when members of dyads are dissimilar (Williams & O'Reilly, 1998). Blau (as cited in Liden et al., 1997) suggested that dyadic communication is embedded in larger relational contexts, which may either constrain or expand exchange quality. Thus, CA may inhibit LMX formation by stopping the exchange process examined by Liden et al.

Despite the importance of communication in leader-member relationships, few researchers have focused on communication-related variables as antecedents to LMX quality (Madlock et al., 2007). Furthermore, although some studies examine LMX effects on communication style (Yrle, Hartman, & Galle, 2002), communication frequency (Kacmar, Witt, Zivnuska, & Gully, 2003; Schiemann & Graen, 1984) and supportive communication (Michael et al., 2005), only one study exists that discusses the effects of CA on LMX (Madlock et al.). In that study, Madlock et al. reported that CA is significantly related to LMX. CA is an underresearched variable in LMX research. Furthermore, CA has not been introduced as a mediating variable. Thus, the purpose of this study was to examine the combined effects of follower communication apprehension (CA) and leader-follower demographic dissimilarity on LMX. Specifically this study focused on the partial mediating effects of follower's self reported communication apprehension in the relationship between demographic dissimilarity and LMX. In this empirical study, the research hypotheses were examined using a sample of undergraduate college students from a small, community college on the east coast. A quantitative study was used to test the model of the hypothesized relationship depicted in Figure 1 as seen in the Appendix.

THEORETICAL FOUNDATION AND MODEL DEVELOPMENT

This study contributed to communication and leadership literature by addressing four major problems: (a) limited research on situational variables that affect LMX , (b) limited research on communication variables as antecedents to LMX, (c) inconclusive results in previous research on the relationship between demographic dissimilarity and LMX, (d) relatively nonexistent research on the relationship between CA and LMX, and (e) nonexistent research on CA as a mediating variable in the relationship between demographic dissimilarity and LMX. The following sections provide a brief literature review of the theoretical foundation that aided in model development.

Formation of LMX

LMX research has been organized into two categories: (a) studies analyzing relationships between LMX and organizational outcome variables and (b) studies evaluating antecedents to LMX formation (Graen & Uhl Bien, 1995). Leader-member exchange has been examined as a predictor of such organizational outcome variables as career progress (Wakabayashi & Graen, 1984), organizational commitment (Lo, Ramayah, & Hui, 2006; Seers & Graen, 1984), , performance appraisal (Mitchell, 1983), organizational citizenship behavior (Scandura et al., 1986), innovation (Basu, 1991), empowerment (Uhl-Bien & Graen, 1993), job climate (Kozlowski & Doherty, 1989), and turnover (Graen, Liden, & Hoehl, 1982). Graen and Uhl-Bien reported that high quality LMX relationships result in positive outcomes for leaders, followers, work units, and organizations.

Liden et al. (1997) reported that three types of member characteristics have been examined as antecedents to LMX including follower performance or competence, follower personality, and follower upward influence behavior (Dockery & Steiner, 1990; Deluga & Perry, 1994; Liden et al, 1993). Furthermore, characteristics of both leader and follower have been investigated as possible antecedents of LMX quality, including dependability (Graen, 1989);loyalty (Scandura & Graen, 1984); mutual trust, respect, and obligation (Liden & Graen, 1980); communication frequency (Baker & Ganster, 1985; Kacmar et al., 2003; Schiemann & Graen, 1984); communication style (Madlock et al., 2007); and demographics (Green, Anderson, & Shivers, 1996).

Graen and Uhl-Bien (1995) suggested that LMX theory encompasses three major domains (a) leader domain, (b) follower domain, and (c) relationship domain. Although Graen and Uhl-Bien recognized the importance of examining each domain, they posited a need for more research from the follower perspective. Graen and Uhl-Bien explained that, in the follower domain, the critical question is how personal characteristics of followers affect LMX quality. Furthermore, Philips and Bedian (1994) reported that it is important for leaders to be able to identify personal attributes of the follower that may influence LMX quality. Therefore, using subordinate self-report ratings, this study provides an in-depth examination of demographic dissimilarity and follower CA as well as the combined effects of these variables on LMX.

Demographic Dissimilarity and LMX

Harrison and Klein (2007) defined *demographic dissimilarity* as the "extent to which a dyad is heterogeneous with respect to demographic attributes" (p. 3). Tsui and O'Reilly (1989) used the term *relational demography* "to refer to the comparative demographic characteristics of dyads who are in a position to engage in regular interaction"

(p. 403). Harrison, Price, and Bell (1998) reported that there are two major categories of dissimilarity: surface dissimilarity and deep-level or perceived dissimilarity. Harrison et al. suggested that initial categorizations are based on surface-level demographics, but these perceptions change over time as deep-level information is obtained. Furthermore, they argued that deep-level diversity might have a stronger impact on relationships than surface-level diversity. Gerstner and Day (1997) stated, “Demographic factors may not predict LMX quality but relational demography—the extent to which individuals are similar or dissimilar—may” (p. 3).

Researchers in social psychology (e.g., Harrison, 1976) have reported a strong link between demographic similarity of dyad members and affective relationships. Bauer and Green (1996) reported that members of dyads who are similar tend to like (Tsui & O’Reilly, 1989) and trust (Mayer, Davis, & Schoorman, 1995) each other more than those who are dissimilar. Furthermore, Liden et al. (1997) explained researchers have investigated interactional variables as detriments to LMX. For instance, Diensch and Liden (1986) reported that compatibility between leader and member may affect the type of LMX relationship that forms. The results of empirical investigations have indicated that educational dissimilarity (e.g. March & Simon, 1958); gender similarity (e.g. Fairhurst, 1993; Green et al., 1996, Duffy & Ferrier, 2003) attitudinal similarity (e.g. Philips & Bedeian, 1994), perceived similarity (e.g. Murphy & Ensher, 1999), and demographic dissimilarity (e.g. Duchon et al, 1986; Green et al.) have all significantly predicted LMX.

Byrne, Clore, and Worchel (as cited in Tsui & O’Reilly, 1989) reported that people tend to be drawn toward individuals who are similar to themselves in terms of demographic characteristics, activities, and attitudes. Therefore, demographically dissimilar dyads may perceive one another as less compatible, which in turn may inhibit LMX quality (Dienesch & Liden, 1986). Tsui and O’Reilly found that greater dissimilarity in superior subordinate demographics is associated with (a) less effectiveness of subordinates perceived by supervisors, (b) less personal attraction between supervisors and subordinates, and (c) increased role ambiguity of subordinates.

However, Goertzen and Fritz (2004) reported that research on demographic dissimilarity and LMX have produced inconclusive results. For instance, studies concerning age dissimilarity and LMX have suggested that the relationship between age dissimilarity and LMX is insignificant (Graen & Cashman, 1975; Liden, Wayne, & Stillwell, 1993). Although Tsui and O’Reilly found that age dissimilarity was not related to performance ratings, they found that age dissimilarity was related to higher levels of role ambiguity between leader and follower. Therefore, Tsui and O’Reilly suggested that the individual effects of age dissimilarity should be examined more closely. Despite extensive research regarding demographic variables and LMX, little research has examined the impact of gender dissimilarity on the quality of leader-member exchange (Green et al., 1996; Duffy & Ferrier, 2003; Goertzen & Fritz, 2004). Tsui, Egan, and O’Reilly (1992) reported that individuals may categorize others based on visible demographic characteristics, such as race and gender, and Tsui, Egan, and Xin (1995) suggested that these initial perceptions and categorizations may influence the quality of future dyadic relationships. Due to inclusive results, several researchers have encouraged future studies investigating the relationship between demographic dissimilarity and LMX quality (Bauer & Green, 1996; Goertzen & Fritz). More specifically, Tsui and O’Reilly (1989) argued that researchers must examine the full impact of an individuals’ demographic profile rather than one or two variables. Likewise, they suggested that research should examine each variable’s influence separately because demographic variables may not have equal effects on LMX. Therefore, this present study examines the relationship between age, race, and gender dissimilarity and LMX.

Hypothesis 1: Age, race, and gender dissimilarity between leader and follower will be negatively related to LMX.

Demographic Dissimilarity and Communication Apprehension

Tsui and O’Reilly (1989) reported that subordinates in demographically dissimilar dyads are liked less by supervisors than individuals in demographically similar dyads. Because of this finding by Tsui and O’Reilly, Green et al. (1996) reported that demographic dissimilarity might reduce communication and lead to greater social distance between dyads. Empirical studies concerning demographic dissimilarity—such as educational dissimilarity and cultural dissimilarity (Gudykunst & Kim, 1997; Neuliep & McCroskey, 1997; Stephan & Stephan, 1985)—have suggested that, when dyads are dissimilar, communication-related anxiety increases (Richmond & McCroskey, 1998). In addition, Buss (1980) suggested that there are situational elements that may cause an increase in communication apprehension and that dissimilarity is one of these elements. Furthermore, Devito (2007) posited that, when individuals feel they have little in common with their listeners, they are more likely to feel anxious. Although cultural dissimilarity of dyad members is identified as a predictor of higher levels of CA, no studies have been conducted examining the possible effects of age, race, and gender dissimilarity on situational CA in dyadic interactions (McCroskey, personal communication, November 16, 2008). Therefore, this study examined followers' self-reported ratings of CA and demographic dissimilarity in dyadic interactions.

Hypothesis 2: Age, race, and gender dissimilarity between leader and follower will be positively related to higher levels of follower communication apprehension in dyadic interactions between leader and follower.

Communication Apprehension and LMX Quality

Communication apprehension is one of the most extensively researched variables in the field of interpersonal communication. McCroskey (1977) defined *CA* as "the fear or anxiety associated with either real or anticipated communication with another person or persons" (p. 78). Richmond (1984) expanded on McCroskey's definition by stating that "high CA people experience emotional distress during or anticipating communication, prefer to avoid communication, and are perceived by others and themselves as less competent, skilled, and successful" (p. 101).

Most communication theorists agree that both personality traits and situational aspects influence CA. Originally, CA was considered a characteristically stable personality "trait" (Beatty, Behnk, & McCallum, 1978). However, further research has indicated that a situational or "state" CA orientation also exists. Trait apprehension "is a relatively enduring, personality type orientation toward a given mode of communication across a wide variety of contexts" (McCroskey, 1982, p. 147). In contrast, state apprehension is specific to a given communication situation and may fluctuate according to the context or communication receiver (McCroskey, 1977).This study specifically examined situational CA in dyadic interactions between leader and follower.

Madlock et al. (2007) reported that CA is a significant predictor of LMX. Graen (1976) theorized that LMX quality evolves through communication. Expanding on Graen's theory, Dansereau et al. (1975) indicated that demographic characteristics of individuals may influence the communication exchange process between leaders and members, thus affecting the quality of the exchange process. The study of Madlock et al. is the only one that examines the effects of CA on LMX quality. Thus, this present study elaborated on the research of Madlock et al. by reexamining the effects of CA on LMX in supervisor-subordinate dyads.

Hypothesis 3: Higher levels of follower communication apprehension in dyadic interactions will be negatively related to LMX.

Mediating Effect of Follower CA

Because of inconsistent results concerning dissimilarity and organizational outcomes, Harrison and Klein (2007) reported that researchers have introduced possible mediating and moderating variables. Duffy and Ferrier (2003) suggested that demographic dissimilarity directly affect social dynamics (e.g., communication), which, in turn, influence a variety of organizational outcomes, including LMX. In earlier empirical research, McCroskey (1977) reported that frequency of communication with subordinates has a major impact on the leader's perceived credibility, status, and leadership ability. Furthermore, Green et al. (1996) suggested that relational demography may reduce communication and may lead to greater social distance between dyads. Gudykunst and Kim (1997) empirically reported that cultural dissimilarity leads to an increase in CA, resulting in less frequent communication. More specifically, studies investigating the effects of educational dissimilarity (Tsui & O'Reilly) and cultural dissimilarity (Gudykunst & Kim, 1997; Neuliep & McCroskey, 1997; Stephan & Stephan, 1985) have suggested that, when dyads are dissimilar, frequency of communication decreases (Tsui & O'Reilly) and communication-related anxiety increases (Richmond & McCroskey, 1998).

Graen, Dansereau, and Minami (1972) reported that the relationship quality between leader and follower could be determined through communication exchanges. Similarly, Bauer and Green (1996) stated that LMX relationships develop over time through a pattern of communication interactions. Scandura (1999) argued that discrepancies in empirical studies concerning LMX suggest that there may be other mediating variables that need to be researched further. Few researchers have focused on communication-related anxiety and LMX (Madlock et al., 2007). Furthermore, the combined effects of demographic dissimilarity and communication-related anxiety have not been fully considered. Thus, this present study examined the extent to which CA partially mediates the effect of demographic dissimilarity on LMX quality. This study not only suggested that demographic dissimilarity has a direct effect on LMX, but the model also suggested that the effect of demographic dissimilarity on LMX is partially mediated by CA. In other words, demographic dissimilarity may increase CA and that, in turn, may reduce LMX quality.

Hypothesis 4: Communication apprehension partially mediates the effects of age, race, and gender dissimilarity on LMX quality.

Control Variables

Schwab (1999) suggested that, when designing a study, researchers should watch for the influence of the third confounding variable. Specifically, Minsky (2002) posited that, when examining LMX, researchers should control for age, race, gender, LMX tenure, and education in the analysis. Furthermore, Harrison et al. (1998) reported that time may influence interactions between dyad members, and Madlock et al. (2007) noted a relationship between follower tenure working with the supervisor and LMX quality. In addition, Cogliser, Schriesheim, Scandura, and Gardner (2009) noted that, due to possible confounding effects of follower education on perceptions of LMX, education should be controlled for in LMX research. Moreover, Hooper and Martin (2008) argued that, when examining the relationship between demographic dissimilarity and LMX, researchers should control for age and gender, and Cogliser et al. suggested that subordinate's demographic characteristics (i.e., age, race, and gender) might influence interactions between supervisor and subordinate, influencing LMX quality. Finally, Jackson et al. (1995) reported that variables such as age, gender, and race are easily detected, measured, and difficult to change and are often the basis for the way individuals categorize and interact with one another. Therefore, in order to strengthen internal validity, subordinates' tenure working with their supervisors, highest level of education, age, race, and gender were controlled for in the analysis.

METHOD

Sample

Employed, undergraduate students (*N* = 260) enrolled in general education classes at an east coast community college were invited to participate in this study. Participation was voluntary and responses were anonymous and confidential. The final sample consisted of 241 useable surveys, a response rate of 93%. All participants were employed full time. The sample was 62% female and 38% male. Sixty-nine of participants were Caucasian, 13% African American, 8% Hispanic, 7% Asian, 0.8% Native American, and 2% other races. Fifty one percent of participants were under 21, 33% of participants were between 21 and 29, 7% of participants were between 30 and 39, 5% were between 40 and 50, and 3% were over 50. According to a report from the Institute on Higher Education in the state where the college is located, these sample demographics are representative of the total student population at the college. For instance, for the fall 2008 semester, the total student population was 63.5% female and 36.5% male. The student population was 56.6% Caucasian and 43.4% non-Caucasian. For age, the total student population was reported to be predominately under 21 (i.e., 45.8%) or between 21 and 29 years of age (33.2%).

Measures

Dependent Variables

In this study, LMX is the criterion or dependent variable. LMX was measured using the ELMX-7 (Scandura & Graen, 1984). The ELMX-7 is the subordinate version of the LMX-7 (i.e., questions are phrased from the subordinates' perspective). The ELMX-7 is a 7-item questionnaire. A sample question on the ELMX-7 is "I usually know how satisfied my immediate supervisor is with what I do." Responses are based on a 5-point Likert-type scale (i.e., 1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*). Scandura and Graen explained that items are summed for each participant, rendering results ranging from 7-35. Gerstner and Day (1997) reported that the LMX-7 demonstrates the highest reliability (i.e., internal consistency of .78) and largest correlations with other variables than any other LMX measure. In addition, Truckenbrodt (2000) reported that the ELMX-7 has good internal consistency, with Cronbach's alpha reported at .88. Within the study sample, Cronbach's alpha was .88.

Independent Variables

Communication apprehension. Communication apprehension was measured using the Personal Report of Communication Apprehension (PRCA-24; McCroskey, 1982). The PRCA-24 is a 24-item Likert-type scale that assesses CA in four communication contexts: public, small group, meeting, and interpersonal-dyadic. Because of the study's focus, only the six item interpersonal-dyadic subscale of the PRCA-24 was used to measure follower CA in dyadic interactions with their supervisor. Sample questions include "Ordinarily I am very tense and nervous in conversations with my supervisor" and "Ordinarily I am very calm and relaxed in conversations with my supervisor." These questions are rated on a 5- point Likert-type scale (i.e., 1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*).

McCroskey (1984) reported alpha-reliability coefficients ranging from .93-.94 for the 24-item scale. Pribyl et al. (1998) reported that the dyadic subscale of the PRCA-24 has good internal consistency, with Cronbach's alpha reported at .85. The apprehension scores are established by totaling responses to questions in each context. The interpersonal-dyadic context contains six questions with scores ranging from 6-30. McCroskey (1982) reported that scores greater than 18 indicate high apprehension and scores less than 11 indicate low apprehension. In the current study, the Cronbach's alpha for the 6-item dyadic subscale was .87.

Demographic dissimilarity. Measures of demographic variables (i.e., age, race, and gender) were obtained for both supervisors and subordinates. The subordinates answered questions regarding their own demographics and then provided demographic information on their supervisors. The demographic information provided values for determining dissimilarity scores for gender, race, and age. Gender was coded with 1 designating male and 2 designating female. Dichotomous difference scores were obtained for gender, with 0 indicating similar and 1 indicating dissimilar. Race was coded with 1 signifying White and 2 signifying non-White. Dichotomous difference scores were obtained for race dissimilarity with 0 indicating that the subordinate and supervisor were racially similar and 1 indicating they were racially dissimilar. Age for both subordinates and supervisors was measured as a categorical variable with 1 indicating under 21, 2 indicating 21-29, 3 indicating 30-39, 4 indicating 40-50, and 5 indicating over 50. For age, the dissimilarity difference score was obtained by subtracting the subordinate's categorical number from the supervisor's categorical number. For instance, 0 indicated that the subordinate and supervisor were in the same age category. The dissimilarity difference scores for age could range from 0 to 4.

Control Variables. Measures of control variables consisted of age, race, gender, highest level of education, and tenure working with the supervisor. In addition to questions on age, race, and gender discussed above, the follower answered questions about highest level of education and tenure working with supervisor. Followers' Highest level of education was measured with 1 indicating high school or GED, 2 indicating two years of college, 3 indicating graduated 4 year college, and 5 indicating graduate school. Tenure working with the supervisor was measured with 1 indicating less than 1 year, 2 indicating 1-2 years, 3 indicating 3-5 years, 4 indicating 6-10 years, and 5 indicating over 10 years.

Procedures

Permission was obtained from the institutional review board, as well as faculty members, to collect data in classrooms during the summer 2009 semester. Data were collected in 11 classes having approximately 25 students each ($N = 260$). The surveys were administered to all participants face-to-face. The survey included closed-ended questions with fixed responses, and responses were obtained to measure demographics of leader and follower dyads, demographic dissimilarity between leader and follower in the dyads, communication apprehension of follower, and LMX quality reported by the follower. In order to limit self-report bias of the single source survey, questions concerning the criterion variable were placed after questions concerning independent variables (Podsakoff & Organ, 1986). Prior to administering surveys, the researcher explained the focus of the study and provided participants with an informed-consent form. Students were told that responses to questions would not affect their standing at the college or in the class. Students were asked to record responses quickly, recording their first impressions (McCroskey, 1982).

RESULTS

Descriptive Statistics

Table 1
Descriptive Statistics (N = 241)

Variable	*M*	*SD*
1. LMX	25.6	6.23
2. Gender dissimilarity	.4	.48
3. Race dissimilarity	.3	.47
4. Age dissimilarity	2.0	1.25
5. Dyadic CA	12.8	5.54
6. Gender of follower[a]	1.6	.49
7. Race of follower[b]	1.30	.46
8. Age of follower[c]	1.77	1.01
9. Highest level of education[d]	1.67	.62
10. Tenure working with supervisor[e]	2.15	1.19

Note: a. Gender coded 1 for male and 2 for female; b. Race coded 1 for White 2 for non-white; c. Age coded 1 for under 21, 2 for 21-29, 3 for 30-39, 4 for 40-49, 5 for over 50; d. Education coded 1 for high school/GED, 2 for 2 years of college, 3 for graduated 4-year college; 5 for graduate school; e. Tenure working with supervisor coded 1 for less than a year, 2 for 1-2 years, 3 for 3-5 years, 4 for 6-10 years, and 5 for over-10 years.

Correlations

Table 2 (as seen in the appendix) presents the results of the Pearson correlations among the study variables. Internal consistencies for scale variables are reported on the diagonal.

Demographic dissimilarity and LMX. The results of correlation analyses indicate there is not a significant correlation between gender dissimilarity and LMX (r = .07, *ns*). There is also not a significant correlation between race dissimilarity and LMX (r = .04, *ns*) and age dissimilarity and LMX (r = .08, *ns*).

Demographic dissimilarity and CA. There is not a significant correlation between gender dissimilarity and CA (r = .02, *ns*) and race dissimilarity (r = .00, *ns*) and CA. However, there is a positive correlation between age dissimilarity and CA (r = .13, p < .05).

Communication apprehension and LMX. There is a negative correlation between CA and LMX (r = -.51, p < .01). This negative correlation indicates that high scores on CA indicate lower scores on LMX.

Other correlations. There is a positive correlation between tenure working with the supervisor and LMX (r = .138, p < .05). There is a positive correlation between gender of the follower and CA (r = .14, p < .05). There is a negative relationship between tenure working with the supervisor and CA (r = -.15, p < .01).

Tests of Hypotheses

Demographic dissimilarity and LMX. Hierarchal regression analysis was used to investigate the relationship between the independent variables (age, race, and gender dissimilarity) and LMX. Table 3(as seen in the appendix) shows the results of regression analysis for the independent variables (i.e., race, age, and gender dissimilarity). The control variables were entered in Step 1, explaining 6.3% of the variance. Tenure working with the supervisor and age of the follower were the only control variables that made significant unique contributions to the prediction of the dependent variable (p < .01).However, after age, race, and gender dissimilarity were entered into the model in Step 2, there was only a .3% change in the model. The change in R^2 was not significant.

Demographic dissimilarity and CA. In order to examine the relationship between CA and demographic dissimilarity, similar hierarchal regression procedures were followed. These results are shown in Table 4 in the appendix. The control variables (age, race, gender, education, and tenure working with the supervisor) were entered in Step 1, explaining 6.1% of the variance. None of the control variables made a significant unique contribution to the prediction of CA. When age, race, and gender dissimilarity were entered into the model in Step 2, change in R^2 (1.6%) was not significant. In model 2, the only variables that made a unique significant contribution to the prediction of the dependent variable were race of the follower and tenure working with the supervisor (p < .05).

CA and LMX. Hierarchal regression procedures were followed to examine the relationship between CA and LMX. In this step, CA was entered as the independent variable, and LMX was entered as the dependent variable. In order to control for possible confounding influences of extraneous variables, follower age, gender, race, highest level of education, and tenure working with the supervisor were controlled for in this procedure. Table 5 (as seen in the appendix) shows the results of regression analysis. The control variables were entered in Step 1, explaining 6.3% of the variance. Age of the follower and tenure working with the supervisor both offered unique contributions to the prediction of the dependent variable. After CA was entered into the model in Step 2, the total variance explained was 30.4%, $F(1, 233) = 80.76$, (p =.000). Age of the follower and tenure working with the supervisor continued to make significant unique contributions to the prediction of LMX. There was a 24.1% change (R^2change = .241) in the model after entering CA when controlling for potential confounding variables.

Summary

Hypothesis 1 was not supported. Age, race, and gender dissimilarity between leader and follower were not negatively related to LMX. Furthermore, because of the non-significant relationship between demographic dissimilarity and LMX, CA could not mediate the relationship between the independent and dependent variable. Therefore, Hypothesis 4 was not supported. When examining the multivariate relationship between demographic dissimilarity and LMX after controlling for follower age, race, gender, education, and tenure working with supervisor, the only variables that made a significant unique contribution to the prediction of LMX were follower age (β = -.20, t= -2.1, p = .035) and tenure working with supervisor (β = .22, t= 3.0, p = .003).

There was not a significant relationship between gender dissimilarity and CA (β= -.01, t=-.13, p=.90), race dissimilarity and CA (β *=.13, t=1.4, p=.15),* or age dissimilarity and CA (β=.12, t=1.5, p=.14). Race of the follower (β=-.20, t = -2.3, p = .02) and tenure working with the supervisor (β= -.15, t = -2.0, p = .04) were the only variables that made a significant contribution to the prediction of CA after controlling for follower age, race, gender, education, and tenure working with the supervisor. Therefore, the results of the analysis indicated that Hypothesis 2 was not supported. That is, demographic dissimilarity was not positively related to higher levels of follower CA in dyadic interactions between leader and follower. However, as with the prediction of LMX, there was a significant relationship between tenure working with the supervisor and CA.

Finally, the study examined the relationship between CA and LMX. As hypothesized, after controlling for follower age, race, gender, education, and tenure working with the supervisor, there was a significant negative relationship between CA and LMX (β = -.51, t = -9.0, p = .00). Therefore, the results of this analysis indicated that Hypothesis 3 was supported. Follower CA was negatively related to LMX.

DISCUSSION

The results of this analysis indicate that demographic dissimilarity has very little effect on LMX. Goertzen and Fritz (2004) reported that studies on demographic dissimilarity and LMX have produced inconsistent and inconclusive results. Some studies have reported no relationship between demographic dissimilarity and LMX (e.g. Basu & Green, 1995; Bauer & Green, 1996) while others have reported a negative relationship between dissimilarity and LMX (e.g., Duchon, Green, & Taber, 1986; Green et al., 1996). Due to inconsistent findings, Tsui and O'Reilly (1989) suggested that researchers should examine each demographic variable's influence separately because demographic variables may not have equal effects on LMX. However, in this present study, the individual effects of three components of demographic dissimilarity on LMX were not significant.

In contrast, tenure working with the supervisor and age of the follower were significantly related to LMX. The finding that subordinate age was significantly related to LMX relates to previous findings that age is related to organizational outcomes including job satisfaction (e.g. Hunt & Saul, 1975) organizational commitment (e.g. Saal, 1978), and retention rates (e.g. Mobley, Horner, & Hollingsworth, 1978). Zenger and Lawrence (1989) reported that employees tend to become "more satisfied with work as they grow older, regardless of their tenure, gender, occupational level, income, and education" (p.356). Harrison, Price, and Bell (1998) concluded that length of time working together weakens the effects of surface level dissimilarity. Harrison et al. suggested that initial categorizations are based on surface-level demographics, but these perceptions change over time as deep-level information is obtained. Thus, Harrison et al. argued that deep-level dissimilarity has a greater effect on relationships than surface-level dissimilarity. Although the results of this study indicate that there is not a significant relationship between surface-level or demographic dissimilarity and LMX, future research should examine the relationship between deep-level dissimilarity and LMX.

This study was the first to examine the effects of age, race, and gender dissimilarity on follower CA. Although the results of the analysis indicated that demographic dissimilarity is not a significant predictor of CA, this is still an important finding. In addition to dissimilarity, McCroskey and colleagues identified other antecedents to higher levels of situational CA including (a) degree of evaluation, (b) subordinate status, (c) degree of conspicuousness, (d) prior success and failures, (e) lack of communication skills and experience, and (f) degree of unfamiliarity with the receiver or context (McCroskey & Daly, 1987; Beatty, 1988; Richmond & McCroskey, 1998). The relationship between degree of unfamiliarity and CA is illustrated in the significant relationship between tenure working with supervisor and CA. As tenure working with supervisor increased, CA decreased. Therefore, the results of this analysis indicate that familiarity with the leader may have a more significant effect on follower CA than dissimilarity between the leader and follower. Future research should examine additional situational antecedents to CA (e.g., communication skills, experience, or subordinate status).

This study was also the first to examine the potential mediating effects of CA on the relationship between demographic dissimilarity and LMX. The results of this analysis indicate that follower CA does not partially mediate the relationship between demographic dissimilarity and LMX. Due to the nonexistent relationship between demographic dissimilarity and LMX there is no relationship to mediate. However, the results of this analysis indicate that follower CA is negatively related to LMX. This finding is consistent with results in the only other study conducted on CA and LMX (Madlock et al., 2007). Furthermore, this finding expands on Graen's (1976) theory that LMX evolves through communication exchanges. CA is an underresearched variable in leadership studies. Therefore, future research should examine the effects of CA on organizational outcome variables.

Limitations

One limitation of this study is the use of single-source ratings and the single focus on individual outcomes of the follower. Philips and Bedeian (1994) noted, “Given the demonstrated importance of follower and leader perceived similarity such variables should probably be assessed from both leaders and followers” (p. 999). In addition, Bhal (2006) reported that data collected from a single source raise concerns for common method variance. However, single-source ratings are not uncommon in LMX research. In fact, Minsky (2002) reported that, of the 100 LMX studies published before 2002, only 15 assessed LMX from both perspectives. Nevertheless, Schwab (1999) reported that threats to internal validity are introduced by single-source bias.

Another limitation of this study relates to the research design. The sampling procedure involved convenience sampling from a small east coast community college. Creswell (2003) explained that convenience sampling can limit the generalizability of a study’s findings. Furthermore, conducting a non-random sample may have introduced potential threats to internal validity. Future research should be conducted using random sampling in organizational settings.

Another limitation in this study is that participants may have been given too much information about the study, resulting in selection of socially desirable responses. The institutional review board (of the college under study) required that all participants be informed of the purpose of this study. The informed-consent form explained that the study’s purpose was to examine the effects of communication apprehension on the relationships between age, race, and gender dissimilarity and LMX. Although the survey responses remained confidential and anonymous, the information provided on the study may have resulted in a Hawthorne effect. In other words, participants may have found it socially undesirable to admit communication-related anxiety or low-quality LMX with a supervisor of a different age, race, or gender. Thus, the survey should have included a measure of social desirability, such as the Social Desirability Response Scale (Crowne-Marlowe, 1960), and controlled for social desirability during analysis.

A final limitation in this study is that because the data was cross sectional and collected at one point in time, causality cannot be confirmed. Future studies utilizing longitudinal designs may provide support for current findings.

CONCLUSION

The results of this study indicate that follower CA does not mediate the relationship between demographic dissimilarity and LMX. Furthermore, the results of these analyses reveal that demographic dissimilarity has very little effect on LMX, as well as follower CA. However, the results of the analyses support the findings by Madlock et al. (2007) that CA is negatively related to LMX. Likewise, this study’s findings indicate that tenure working with the supervisor is significantly related to follower CA and LMX. Therefore, although demographic dissimilarity appears to have a meager effect on CA, the subordinate’s familiarity with the leader may be a significant predictor of CA. Scandura and Graen (1984) suggested that organizations cannot afford to allow low-quality LMX relationships to permeate their workforce because the impact of these relationships may be seen in the bottom line. This study reveals that communication-related anxiety negatively affects LMX relationships. Devito (2007) noted that situational CA may decrease as communication experience increases. From a practical perspective, this research indicates that organizations may need to train employees, as well as leaders, on how to recognize and combat CA. Understanding how situational characteristics influence follower CA and perceptions of LMX may encourage supervisors to increase communication with new subordinates, especially during the organizational acculturation process. Future research should examine situational factors that may increase CA in leader-member dyads. In addition, future research should examine CA as an antecedent to other organizational outcome variables.

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APPENDIX

Figure 1: Proposed model: Follower communication apprehension partially mediates the relationship between demographic dissimilarity (of leader and follower) (IV) and leader-member exchange quality (DV).

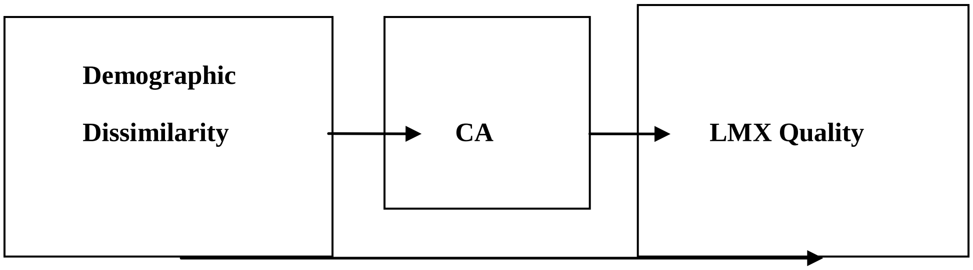

Table 2
Correlations and Internal Consistencies (N = 241)

Variable	1	2	3	4	5	6	7	8	9	10
1. LMX	—	.01	.04	.08	**-.51****	-.11	.03	-.09	.02	**.14***
2. Gender dissimilarity		—	.07	-.03	.02	**.22***	.04	-.03	-.02	-.06
3. Race dissimilarity			—	-.11	.00	-.04	**.67****	-.01	-.04	**-.17****
4. Age dissimilarity				—	**.13***	.09	-.01	**-.57****	**-.22****	-.08
5. Dyadic CA					—	**.14***	-.12	-.12	-.11	**-.15***
6. Gender of follower[a]						—	-.05	.04	-.07	-.03
7. Race of follower[b]							—	.05	.03	-.10
8. Age of follower[c]								—	**.37****	**.42****
9. Highest level of education[d]									—	**.25****
10. Tenure with supervisor[e]										—

Note.* p < .05; ** p < .01.

Table 3
Summary of Hierarchical Regression Analysis for Variables Predicting LMX (N = 241)

Variables	B	*SE* B	β
Step 1			
Gender of follower	-1.1	.82	-.10
Race of follower	.81	.87	.06
Age of follower	**-1.3**	**.46**	**-.20****
Education of follower	.40	.69	.04
Tenure with supervisor	**1.2**	**.40**	**.22****
ΔR^2=.06			
Step 2			
Gender of follower	-1.2	.86	-.10
Race of follower	.26	1.2	.02
Age of follower	**-1.2**	**.56**	**-.20***
Education of follower	.40	.70	.04
Tenure with supervisor	**1.3**	**.42**	**.22***
Gender dissimilarity	.41	.85	.03
Race dissimilarity	.80	1.2	.06
Age dissimilarity	.08	.44	.02
R^2=.07, ΔR^2 =.003			

Note: LMX is measured using the LMX-7, **p* < .05; ***p* < .01.

Table 4
Summary of Hierarchical Regression Analysis for Variables Predicting Communication Apprehension (N = 241)

Variables	B	*SE* B	β
Step 1			
Gender of follower	1.4	.73	.13
Race of follower	-1.5	.77	-.12
Age of follower	-1.5	.41	-.03
Education of follower	-.50	.62	-.10
Tenure with supervisor	-.70	.40	-.14
ΔR^2 =.06			
Step 2			
Gender of follower	1.3	.76	.11
Race of follower	**-2.4**	**1.0**	**-.20***
Age of follower	.30	.50	.05
Education of follower	-.43	.61	-.05
Tenure with supervisor	**-.75**	**.40**	**-.15***
Gender dissimilarity	-.10	.78	-.01
Race dissimilarity	1.5	1.0	.13
Age dissimilarity	.58	.40	.12
R^2=.08, ΔR^2 =.02			

Note: CA is the dependent variable. CA is measured using the PRCA-24. *p < .05; **p < .01.

Table 5
Summary of Hierarchical Regression Analysis for CA and LMX (N=241)

Variables	B	*SE* B	β
Step 1			
Gender of follower	-1.1	.82	-.10
Race of follower	.81	.87	.06
Age of follower	**-1.3**	**.46**	**-.20****
Education of follower	.40	.69	.04
Tenure with supervisor	**1.2**	**.40**	**.22****
ΔR^2 =.06			
Step 2			
Gender of follower	-.32	.71	-.03
Race of follower	-.02	.76	.00
Age of follower	**-1.3**	**.40**	**-.22****
Education of follower	.10	.60	.01
Tenure with supervisor	**.84**	**.40**	**.15***
Communication apprehension	**.57**	**.06**	**.51****
R^2 = .30; ΔR^2= .24			

*Note: *p < .05; **p < .01, CA measured by the six item dyadic subscale of the PRCA-24, LMX measured by the LMX-7.*

ERP SYSTEMS: SMALL & MEDIUM SIZED ENTERPRISES (SME) MARKET-CRITICAL SUCCESS FACTORS (CSF) TO SUCCESSFUL IMPLEMENTATIONS – ARE THEY THE SAME AS LARGE ORGANIZATIONS?

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ABSTRACT

Enterprise Resource Planning Systems (ERP) / Enterprise Systems (ES) have become the de facto management information systems standard during the past ten years for major corporations. These systems are expected to recognize significant gains in the Small and Middle-sized Enterprises (SME) also known as the Small and Middle-sized Businesses (SMB) marketplace. ERP implementations are now beginning their "Third Wave" in large-scale corporations, but contrastingly, only beginning to penetrate the SME market. Numerous studies have addressed the large-scale organizations globally. This project will discuss the current state of ERP implementation efforts, summarizing research to date on large-scale efforts, and address SMEs as possibly having a different set of critical success factors (CSF).

INTRODUCTION

In November 2007, Chinese entrepreneur and visionary, Jack Ma (CEO) executed an IPO for his company, Alibaba Group (www.alibaba.com) and raised $1.5 billion in cash and created a market capitalization of $26 billion. Alibaba is the largest B2B site in China to establish and maintain global trade and an example of an SME organization whose existence is completely a result of Internet enterprise software systems. The site is a favorite of American and European companies, both large and SME enterprises. Ma was recently quoted "we're in China today because I believe in one thing: global vision, local win… Our focus is on helping small and medium-size companies make money… we focused on product quality…" (Fannin, 2007).

From an enterprise research perspective, small and medium-sized enterprises (SMEs) are the leading segment of organizations that provide a wide variety of researchable theories and experiences. Not only are these organizations crucial to industrial economies, but also demonstrate operational qualities that promote cause and effect relationships that are proving to be enormously interesting to researchers (Katz, Aldrich, Welbourne and Williams, 2000).

In the current global economy environment, "SMEs' performance is essential for the development of any country's economy" and provide the foundation for future economic growth and prosperity with their growth into large enterprises (Abouzeedan and Busler, 2004). Statistics indicate that historically most new businesses do not survive the first five years of operations (Castrogiovanni, 1996; Monk, 2000).

There would be a very positive impact on the global economy if a higher proportion of these fledging enterprises survived and grew into global economy competitors (Monk, 2000). Part of this ability to compete and survive is based on the ability of the enterprise to create, analyze, and ultimately utilize business information systems about its operations to provide quality leadership in products, improve business processes, enhance its supply chain, and create better customer relationships (Schubert & Leimstoll, 2007).

ERP imposes its logic on the organization

Relating SME business needs to an informational systems perspective, Davenport (1998) has been widely quoted regarding the nature and purpose of Enterprise Resource Planning (ERP) systems: "An enterprise system imposes its own logic on a company's strategy, culture and organization".

The essence of the above quote is that unlike the traditional custom developed software solutions (legacy systems) that are created to precisely meet an organization's data and information needs, ERP systems are unlikely to be a perfect fit for all organizations and are quite likely to provide problems and difficulties for the adopter (Parr & Shanks, 2000; 2003).

Even considering the highly configurable nature of ERP systems (Bancroft, Seip & Spregel, 1998), the inherent data structures, programming code, and existent assumptions about business processes can impose a behavior on organizations that many management teams will find difficult to adopt (Piszczalski, M., 1997; Al-Mashari, Al-Mudimigh & Zairi, 2003). This imposition refers to the difficult process of reengineering the organization's work processes to comply with the ERP programming functionality. ERP is structured around best practices related to these work processes and many organizations try to either work around these discrepancies or modify the program codes to meet their existing work processes instead. Often this leads to severe challenges to the successful implementation of ERP systems.

The term Enterprise Systems (ES) is preferable to ERP (Davenport, 1998) to reflect the extensive nature of ERP influence on systems globally and pervasively throughout organizations. Enterprise systems have developed to a stage where they are having a much greater impact than merely the MRP I & II systems; where ERP found its genesis two decades ago (Mabert, Soni & Venkataramanan, 2001).

Without due diligence, many organizations will find the ERP software system dictating the operational aspects of the business (Bajwa, Garcia & Mooney, 2004). In some circumstances, even with appropriate due diligence, this operational dictating still occurs. Consequently, the challenge for the adopting organization is to properly choose how various processes will be implemented within the programmatic (configuration) options. Furthermore, it is critical how these options are selected to maximize the efficiencies and effectiveness of the organization (Shanks, Parr, Hu, et. al., 2000). Given these factors, issues related to user satisfaction and perceived usefulness in the ERP implementation must be considered (Zviran, Pliskin, & Levin, 2005).

A critical element of ERP systems is the configuration or parameter settings (Bancroft, Seip & Spregel, 1998) established during implementation to convert a "semi-finished" software product to an operational system for the organization (Seddon, Shanks & Wilcocks, 2003). Configuration difficulties can occur when adopters neglect or minimize the need for cross-functional project team representation (Koh, Soh, & Markus, 2000). A final element of ERP systems is customization, which is the process of writing new program code or modifying existing program code to augment the system with nonstandard features (Brehm, Heinzle, & Markus, 2001).

ERP implementation – "First/Second/Third Waves"

The "First Wave" of ERP implementation presented a fundamental transformation within a typical organization. Adoption and implementation of ERP systems experienced the "First Wave" as a far-reaching scope of business processes impact, and generated a paradigm change to businesses/organizations simply due to the magnitude of the changes. The efforts were predominately focused on the technical aspects of the implementation, i.e. software, infrastructure, basic training initiatives. However the business process changes envisioned and deemed necessary usually generated low priority. Hence, business process changes and operational enhancements were fundamentally deferred and became the major factors of the "Second Wave".

Marketers, researchers, practitioners, and software vendors coined the "Second Wave" and "Third Wave" of ERP implementations during the past eight years (see Appendix II for definitions). These characterize the time frame in the system implementation and operation, after the base system has been installed and the "go live" point has occurred, and may also refer to major updates and enhancements to the software (Stein, Hawking, & Foster, 2003).

These system activities normally include business processes such as the implementations of Customer Relationship Management (CRM) and Supply Chain Management (SCM) modules. Implementation efforts all provide value-added contributions to the ERP system and elevate the organization to the point of leveraging the system for overall operational and financial gains, i.e. ROI opportunities and value chain optimization (Hawking, McCarthy & Stein, 2004; Stein, Hawking, & Foster, 2004, 2003; Smith, & Fingar, 2003; Deloitte Consulting, 1999).

Companies were seeking efficiency benefits, higher-order effectiveness benefits, and ultimately transformation. Transformation is the ability of an organization/strategic business unit to fundamentally change how they conduct their business and associated processes (Deloitte Consulting, 1999).

CRITICAL SUCCESS FACTORS (CSFs) - INTRODUCTION AND DESCRIPTION

The CSFs utilized were originally identified in 2001 (Somers & Nelson) and are extensively referenced in ERP literature. These CSFs are indicative of predictions of success in large-scale ERP implementations. A widely accepted definition in academic and professional arenas of CSFs in ERP implementations is: "those few critical areas where things must go right for the business to flourish" (Rockhart, 1979).

In a case study of fourteen SME organizations in Ireland adopting ERP, researchers concluded that ERP implementations would be more attractive to both users and vendors/consultants because the project duration and costs should be significantly less; consequently CSFs should be easier to attain (Adam & O'Doherty, 2000).

The basis of this paper will draw on the findings of previous studies conducted by ERP researchers addressing CSFs. These studies created the collective basis for implementation success in large-scale organizations (Bulkeley, 1996; Davenport, 1998a; Bingi, Sharma, & Godla, 1999; Esteves, & Pastor, 1999; Markus & Tanis, 2000; Ross & Vitale, 2000; Shang, & Seddon, 2000; Davenport, 2000; Umble, & Umble, 2002; Holland & Light, 1999; Weston, 2001; Ahituv, Neumann & Zviran, 2002; Sumner, 1999; Nah, Lau & Kuang, 2001; Parr & Shanks, 1999; Parr, Shanks & Darke, 2003; Sarker & Lee, 2003; Huang, Hung, Chen & Ku, 2004; Plant & Willcocks, 2007).

As stated, a great deal of research has been done on CSFs for large enterprises. SME organizations possess unique characteristics vs. large enterprises that may lead to a different set of CSFs or a reevaluation of the ranked importance of these within SMEs. SMEs are certainly more challenged than large enterprises to various constraints such as financial resource limitations, inability to maintain large support groups for systems, the inability to attract and sustain long-term its best talent in the implementation process (financial, operational, support, and IT professionals) due to competitive pressures and resources to sustain world-class IT infrastructures, among others.

Other organizations, for any number of existing legitimate managerial reasons: financial, personnel, infrastructure resource limitations, etc. have not considered adoption of a new or upgraded system (Adam and O'Doherty, 2000). It is important to note that simply having an accounting information system (AIS) is not the equivalent of implementing a true ERP for the enterprise. AIS is typically a component, module, or subsystem of a complete ERP system.

ERP systems are typically resident (hosted) on the enterprise organization's computer systems in large-scale operations, but SMEs have other viable options. Not only are SMEs able to host their own ERP systems, but they may also choose to utilize an Application Service Provider (ASP) as an outsourced business function (Fortune & Aldrich, 2003). Firms essentially rent the ERP and the service is provided via the Internet (Yen, David & Chang, 2002). ASPs bypass the normal restrictions to implementing these systems: cost, in-house expertise, computer systems infrastructure limitations, etc. The researchers make a critical point: "a firm's size and age may no longer prevent it from enjoying access to up-to-date technology" (Fortune and Aldrich, 2003).

There are numerous factors affecting successful implementation of ERP programs into any organization. These have not been fully identified and described for the SME market, although many studies have addressed these factors for the larger scale market. A recent research effort (Argyropoulou, Ioannou, & Prastacos, 2007) specifically addressing SME implementations, reported that these organizations were much more likely not to use a structured methodology for implementation. Further, the study reported that SMEs were not familiar or were unsophisticated with techniques such as business process reengineering (BPR) and change management.

THEORETICAL RATIONALIZATION

Mabert et al. (2003) suggested an apparent tendency in the early research efforts related to ERP systems, indicating it was anecdotal, and many of the publications were typically based on a minimum of case studies. Infancy reports on ERP systems were inconsistent and possibly suggested unsupportable perspectives.

Research considerations

Mabert et al. propose the need for substantive rigor in ERP research. In an attempt to support research rigor Barnes, Buckland & Brancheau (1992) suggest that researchers assemble cumulative knowledge by developing and constructing on prior research. Benbasat & Zmud (1999) argue that applicability is insufficient to substantively improve research relevance. Topic selection, article's purpose and article's readability should be paramount. Davenport and Markus (1999) in response to Benbasat & Zmud, propose that research efforts must utilize the objective for elevated rigor and relevance, and these are both achievable goals. Considering the above discussion factors, it is essential to achieve both rigor and relevance by building on previous research in a systematic manner.

A number of researchers and publications have indicated the need for further research in the area of SME and ERP implementations (Bernroider & Koch, 2001; Huin et. al., 2003; Jacobs & Bendoly, 2003; Mabert et. al., 2003; Muscatello et. al., 2003, Sun et. al, 2005). SMEs are significantly dissimilar vs. large enterprises (Lee and Oakes, 1995; Ghobadian and Gallear, 1996). "Many SMEs are implementing ERPs, the relevant question would be, what factors may influence ERP implementation success in SMEs, and why? " (Snider, da Silveira, & Balakrishnan, 2009). Snider et. al. add, "to the best of our knowledge, only Muscatello et al. (2003) and Loh and Koh (2004) have specifically tackled this challenge, even though the former focused on subsidiaries of larger firms, and while the latter used interviews as support for findings, the listed CSFs appeared to be mainly based on their literature review."

Further Snider et. al. indicated that their study could not directly compare the CSFs identified in prior studies formulated on large-scale organizations and the CSFs they generated in their study on SMEs. This was a result of only a case study group of five Canadian organizations, surmised as an insufficient number of company results compared to large studies of large organizations. They concluded with the following: "future research could involve a survey study that includes both large organizations and SMEs. This would allow a statistically valid comparison of CSFs between both types of organizations."

A research study of Irish organizations including SMEs (Adam & O'Doherty, 2000) was characterized with a focus on implementation partnership and duration. Their conclusion: "thus, it appears there is a need and opportunity for new studies focused on the success factors of ERP implementation at SMEs." Similarly, a national Swiss survey related to ERP implementation in SME organizations (Equey & Fragniere, 2008) generated the following conclusion: "we, unfortunately, notice that the academic literature dedicated to ERP systems and SMEs essentially focuses on critical success factors and not on satisfaction….We observed that the knowledge regarding ERP systems is quite weak among SMEs."

The adoption of ERP systems in SMEs suggest other issues need to be explored (Buonanno et. al., 2005): "to what extent SMEs informational needs are different with respect to large companies? Are SME peculiarities a real obstacle to ERP adoption? Is it possible to identify a relationship between organizational change and ERP adoption in companies of different size?"

Research indicates, "SMEs lack the competence to understand how ERP can be applied to support their processes" (Juell-Skielse, 2006). The Swedish Agency for Economic and Regional Growth (Karlsson Lättman & Meurke, 2004) suggest that SMEs possess a lack of understanding to focus upon how information systems promote business benefits. Further SMEs are likely to address the technical aspects of implementation rather than the business aspects of information systems. This competence deficiency leads SMEs to become more dependent on ERP consulting firms. Additionally, consulting firms whose market is SME organizations, tend to be small companies themselves where ERP competence development is generally accomplished during problem solving for clients. This factor suggests that they rely on old knowledge and old installations and are not able to generate new extended ERP knowledge.

ERP implementation considerations

Business understanding must be emphasized as well as the ability to configure packaged systems rather than programming skills (Stratman & Roth, 2002). Various ERP implementation questions naturally emanate from these precepts. Do ERP consultants understand the importance of the critical success factors? Do the implementation methods include activities for managing the critical success factors and are the individual consultants competent to perform these activities? How can SMEs increase their understanding for how ERP can improve business? SMEs typically have a technical focus on information systems; subsequently they are also reluctant to participate in competence development activities that are not tailored to their own company (Juell-Skielse, 2006).

The citations identified in this section highlight a number of issues: 1) is there sufficient rigor and relevance in SME ERP research, 2) are SMEs significantly dissimilar than large organizations that their CSFs would be different, 3) can implementation success be predicted for SMEs using the same CSFs as large organizations, 4) does the deductive approach to identification of CSFs (as many of the SME publications and studies have attempted, reviewing prior research efforts and qualitative studies) provide meaningful SME CSFs, 5) do the presumed SME based existing constraints related to: IT competency, HR and financial limitations, lack of BPR understanding, etc. pose a significant challenge to managing CSFs and ultimately a successful implementation?

ERP implementation – historical perspective

The majority of ERP systems were implemented in the mid to late 1990's to the current day and generally were done to: 1) overcome the millennium date problem (often known as the Y2K initiative), 2) resolve issues of disparate systems within the organization, 3) resolve poor quality/visibility of information, 4) resolve lack of business processes and/or systems not integrated, 5) replace obsolete systems, 6) assist in integrating acquisitions, and 7) resolve issues of lack of support for organizational growth (Deloitte, 1999; Plant & Wilcocks, 2007).

Too often, these ERP solutions also were viewed by a majority of enterprises as a panacea for their organizational ills. Many of these implementations were failures (at one point in the late 1990's, the failure rate was approaching 70% by some professional estimates) for any number of reasons, while some implementations were limited successes. There were many implications to the management of these organizations and they also had a profound effect on the accounting functions and financial and managerial reporting efforts. An example of this was the Hershey Foods ERP implementation where the company was almost forced to declare bankruptcy due to disrupted product sales, even though there was an overwhelming supply of inventory on hand, that could not be shipped due to supply chain management systems issues.

ERP implementation – critical success factors

Critical Success Factors (CSF) have been defined as "those characteristics, conditions or variables that, when properly sustained, maintained, or managed, can have a significant impact on the success of a firm competing in a particular industry" (Leidecker & Bruno, 1987). The CSF model has emerged from the business oriented management community and has been utilized to identify and set priorities for business requirements and information systems (IS) (Flynn & Arce, 1997).

To develop this concept further, Somers and Nelson (2001) assert that CSF must be considered "situated exemplars that help extend the boundaries of process improvement, and whose effect is much richer if viewed within the context of their importance in each stage of the implementation process" (DaSilva & Rahimi, 2007). Somers and Nelson contributed their CSF summary in 2001, and these are generally viewed and referenced by other researchers as the most comprehensive for large-scale organizations.

Project implementation efforts and delineated success factors can be segregated into ten specific strategic and tactical factors. Researchers assert that both strategic and tactical factors are essential for successful project implementation when considering a project's life cycle. Their steps included conceptualization, planning, execution and termination (Slevin & Pinto, 1987). Other researchers created their CSF model by essentially customizing the Slevin and Pinto approach, maintaining the strategic/tactical factor structure, but progressed the model further to be specific to ERP projects (Holland & Light, 1999).

Loh & Koh hypothesized that SMEs and the attendant CSFs for successful ERP implementation success are the result of the identification and management of critical elements at each phase of the project. The researchers attempted to determine CSFs by using a deductive process searching all available literature and then applying these CSFs to phases using a process theory model. Their work started with Somers and Nelson's twenty-two CSFs. Through a deductive process, they condensed the set to their ten CSFs. They attempted to substantiate these ten CSFs with interviews of eight SME organizations in the U.K., in various stages of ERP implementation. They concluded that these critical elements must be linked to the constituents at each of these phases (Loh & Koh, 2004).

Many research projects have established similarities among these critical success factors as they relate to large-scale global organizations during the past ten years. When reviewing the ERP research literature performed to date, Nah, Zuckweiler, and Lau (2003) reported five critical success factors in a study of CIO perceptions: top management support, existence of a strong project champion, ERP teamwork and composition, project management, and change management program and culture.

In contrast, Nah and Delgado (2006) report that there are seven categories of critical success factors: business plan and vision, change management, communication, ERP team composition, skills and compensation, management support and championship, project management, and system analysis, selection and technical implementation (Nah & Delgado, 2006).

Umble, Haft, and Umble (2003) emphasized the selection of software products relative to the structuring of CSF. Sarker and Lee (2003) approached CSF from the social enabler perspective. They suggested that elements such as strong leadership, effective and positive communications, and a well-structured implementation team were crucial to implementation success.

This paper places its focus on the evolutionary process from Somers and Nelson's (2001) original twenty-two CSFs to the condensed Loh and Koh (2004) resulting ten CSFs. The Somers study established the original base of CSFs. Other subsequent studies compressed and condensed these into a more manageable group of between five and ten CSFs, depending on the group studied or a particular purpose unique to that study. Since this effort is specifically looking at the CSFs in SME ERP implementation and their relevance to these smaller organizations, and also looking to contrast and compare the difference between large-scale organizations and SMEs, these two CSF pronouncements are utilized.

Loh and Koh (2004) have essentially synthesized the other work into a realistic and manageable grouping through their deductive work. The only available data for comparative and predictive statistical analysis emanates from the Somers and Nelson (2001) effort. This was the only frequently referenced study that used a quantitative approach. The overwhelming majority of other CSF efforts were structured as case studies of a few organizations or were deductive efforts from prior peer-reviewed publications.

Frequently identified critical success factors
The following are the Critical Success Factors (CSFs) most typically identified at this stage of ERP implementation research:

1. Project champion
2. Project management
3. Business plan and vision
4. Top management support
5. Effective communication
6. ERP teamwork and composition
7. BPR and minimum customization
8. Change management program and culture
9. Software development, testing and troubleshooting
10. Monitoring and evaluation of performance

Executive and operational managements have been dramatically impacted during the past twenty years by rapid growth of information technology, not only with ubiquitous local processing power brought about through client-server technology, but the dissemination of information within organizations. Information, both financial and operational statistics and metrics, and information shared by multiple concurrent users in diverse organizational subunits have transformed the nature of accounting and informational control.

ERP systems have taken a more dramatic role than originally envisioned in the early 1990s. Organizations are rapidly being tested and asked to respond with qualified and well-trained professionals utilizing complex information systems (ERP) to meet not only the daily informational and operational needs, but also an ever-expanding governmental compliance initiative. Consequently, managements are facing an increasingly dedicated technological environment with significant challenges.

SUMMARY

Culture, communications, planning, training, and management commitments were the most essential considerations under the original Somers and Nelson study, but as other researchers have taken CSFs to greater understanding in large organizations, we have learned that they can be compressed into a smaller set. Notwithstanding budgeting and funding parameters, organizations need to be realistic in the costs associated with these endeavors, but must also exhibit patience once in the rollout. The process is complex and fragile, and can easily be destroyed leading to massive losses of capital investments and human capital. Organizations would be prudent to utilize both a process theory approach along with consulting/internally generated implementation programs for success.

Once into the process, implementation team members (including the project champion, members of the executive administration, the actual project team, and the areas of the organization being impacted by the ERP implementation) must be fully committed to the process. It is imperative that problems be immediately addressed and hopefully solved. All problems within the system, either procedural, process related, programmatic, systematic or human, have ripple effects through the organization. Nothing in ERP implementations, particularly related to existing or potentially modified business processes or e.g. setup/configuration parameters are without some degree of consequence.

Many ERP implementations failed or were denied full benefits because of seemingly innocuous issues that later became full-blown crises. It is vital that there be the establishment of Knowledge Management Systems to share knowledge learned to enhance success, both from prior implementations and issues identified or resolved in the organization's current efforts.

Finally, the organization must recognize at the start of the process, that they are adapting to the software product and environment, which was developed via a cross section of industry "best practices". Modifications are allowable, but they should not be made to circumvent sound business practices. Large financial and organizational benefits can accrue from this implementation, but it must be managed with the utmost professionalism and recognized that this is only the start of the process. Upgrades and updates in the future are critical and must be considered before starting.

The above summarize the most essential CSFs as identified by at least ten researchers, exploring various aspects of CSFs as related to large organizations. Very little however, is known about the process as experienced by the SME organizations.

Certainly SMEs have numerous constraints that are more acute than in the large organizations. These can be related to technical competencies, existing infrastructures, financial and human resources, sufficiently experienced human resources that can be dedicated completely to the ERP implementation effort, just to identify the more readily apparent and accepted constraints. The SME marketplace (estimated as > 84,000 U.S. organizations) is significantly larger in absolute numbers of potential implementations than large organizations. But given the constraints listed above, they potentially have different sets of CSFs than large organizations and any attempts to extrapolate a set for SMEs may be inaccurate.

For example, a large organization probably does not have considerable infrastructure problems, and presupposing no budgetary limitations, can certainly change networks components, add servers, improve communication capabilities etc. SMEs may not have these resources and may find that with technical competency limitations, their best alternative may be outsourcing and have their system hosted by an ASP provider. This is one of many possibilities.

Finally, the ASP platform holds some significant benefits to the SME as an operational base given typical constraints. Researchers and professionals agree that there may be some significant movement to ASP hosting in the future for SME ERP implementations. Again, the literature identifies the ASP possibilities and benefits, but little is known regarding actual implementations and if the CSFs are similar or different to SMEs in general and large-scale organization implementations.

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MOVING STUDENTS FROM A STATIC TO A DYNAMIC UNDERSTANDING OF ACCOUNTING IN THE BASIC FINANCIAL MANAGEMENT COURSE USING SPREADSHEETS

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ABSTRACT

The basic managerial finance course depends heavily on accounting. Students generally enter this course with little more than a rudimentary understanding of accounting and little or no understanding of the dynamics of the income statement and balance sheet. Present textbooks do not provide enough review of accounting for the needs of the course. Further, students have little understanding of depreciation and cash flow or of the changes in the income statement and balance sheet over time as financial decisions are implemented. This paper presents a methodology of review, introduction of accounting relationships and testing to provide students the background to understand managerial finance concepts. The review is designed around spreadsheet modeling, providing a review of the required forecasting and analysis necessary for the paper in the course. Students develop a comprehensive approach using spreadsheets for analyzing a firm's financial condition and modeling the effect of managerial and environmental effects.

INTRODUCTION

Entering students in managerial finance need both a review of accounting and a deeper understanding of the relationships between the income statement and balance sheet in order to fully understand the outcomes of financial decisions. This requires both a dynamic understanding of the relationships between the income statement and balance sheet and the effect of financial decisions over time on financial statements. In addition, students generally have a great deal of difficulty with the concept of depreciation, cash flow, and other accounting tools ("T" accounts, cash budgets, ratios, sources and uses statements, forecasting, etc.). This paper presents methodology to supplement the textbook approach, build a linkage between the various statements and tools, and prepare students for forecasting and financial modeling using spreadsheets.

Traditional textbooks tend to provide examples in the text part of the book which link together various statements and tools, but in the problem sections they tend to provide examples that are merely pieces of the entire process. Students as a result do not get to struggle through the entire process. With only pieces of the process, they fail to understand how the various tools are used to round out their understanding of the accounting ramifications of financial decisions.

The methodology presented in the paper provides a review of basic terms, the mathematics of the basic statements, the relationships between the basic statements, the relationship of depreciation and cash flow, and an understanding of the various tools that provide insight into the effects of financial decision making. Finally, students develop a forecasting model.

This methodology is presented through spreadsheet modeling, an important skill necessary for all careers in business. By using linking across various worksheets, with each worksheet representing either a statement (income, balance sheet, cash budget) or a tool (sources and uses, ratios, etc.), good programming skills are reinforced (e.g., use a separate spreadsheet for each statement or tool, use if statements to check totals such as balance sheets balancing, build error checking into the model from the start, etc.).

The purpose of these spreadsheet exercises is for students to see the entire picture of an accounting system and how various statements link together. In a sense, they are building an automated accounting system, first, across the statements, and then, once forecasting is introduced, across time. By using the same numbers for the entire exercise, students begin to see how different tools reflect the reality of the firm from different approaches and for different users of information. For example, the needs of shareholders differ from the needs of bondholders, tax authorizes and managers. Various tools provide different insights.

This approach also introduces financial modeling, using again the same firm data, and brings together the concept of potential growth rates for firms under different funding assumptions (internal, sustainable and beyond sustainable) and provides graphical evidence of trade-offs between growth and financing approaches.

THE OUTLINE AND REQUIREMENTS OF THE COURSE

Financial management courses generally follow the same basic outlines, with most textbooks showing little change (with the exception of the CAPM, agency cost and option theory) over the past forty years. An outline of a typical course is presented in Figure 1. The oval encloses the area of the course involved in this paper.

This course is a "W" or Writing course. It requires 10 pages of revised prose. The paper is standardized across the curriculum and includes:

- Downloading 5 years of accounting data for a Fortune 500 company (assigned by instructor).
- A forecast of three years of future income statements and balance sheets for the company, with assumptions and defense of their results.
- Ratios and graphs of ratios for all years to support their arguments.

The approach suggested provides a spreadsheet model that is directly applicable to the required paper. The general outline of the accounting review is provided in Figure 2, which relates the additional work of the accounting review with the textbook approach.

REVIEW OF BASIS ACCOUNTING TERMS AND RELATIONSHIPS

Students entering this course generally have had at least a one semester lag since their last accounting course. Hence a review of basis terms and relationships is required. On the first day, a quiz on the order of the income statement and balance sheet is given, as shown in Figure 3. This is followed by homework detailing the relationship of the income statement and balance sheet, with particular attention to depreciation. "T-accounts" are reviewed as a method to "slow down the action" and understand the flow of an accounting transaction. Students then are given spreadsheet homework on adding numbers to the accounting statements, using formulas and links to carry out all the calculations, and to further reinforce the relationships between statements.

Figure 4 shows an example of a homework problem students first do on a spreadsheet. They are then quizzed on a similar example in class.

AN INTEGRATED PROBLEM

Students often have problems in accounting (and then finance) since they rarely can see the entire picture of an accounting system. An integrated problem is introduced that takes a firm from an idea to a working firm, and then to forecasting the future of the firm. At each step more complexity is added, as are additional tools. The initial two exercises are shown in Figure 5. Then in Figure 6, two end-of-the-year set of statements are developed. Note, the spreadsheet is now configured to allow forecasting of future years by copying entire columns and merely adding assumptions as to future sales or future sales growth. This use of spreadsheets moves the students to seeing the future of the company as tied to the past, future sales and managerial decision making on how to handle different areas (A/R, A/P, inventory, etc.) and how to build this into their modeling.

Students are also required to build cash "T-accounts" to reinforce the flow of cash through the firm over time. Figure 7 shows the changes in cash for the firm based on the income statement and balance sheet. Note again, linking is used.

This approach is used for a variety of additional tools such as the sources and uses statement, ratios (and graphs of ratios), cash budgets and finally forecasting of future years for the firm. For each additional tool, a lecture, spreadsheet homework and a quiz are used to reinforce the tool. Good spreadsheet modeling is stressed and is part of the grade for homework. By the end of the accounting session, students have the structure for their paper spreadsheet work.

CONCLUSION

Students need both a review of basic accounting concepts and an introduction to cash flow and financial tools in a dynamic setting. Spreadsheets provide an easy way to demonstrate the flow of cash through a firm, and the relationships between income statements and balance sheets, tools and over time via forecasting. Students generally enter the basic finance course with little more than a rudimentary understanding of accounting and little understanding of the cash flow implications of depreciation. By providing a well-integrated set of numbers and exercises, students can build a complete "cycle" (i.e., a basic income statement and balance sheet, through all the analytical tools such as cash budgets, ratios, sources and uses, etc. on to forecasting of the future). Students then can develop a comprehensive approach in a spreadsheet format for analyzing a firm's financial condition and model the effect of managerial and environmental effects.

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Figure 1

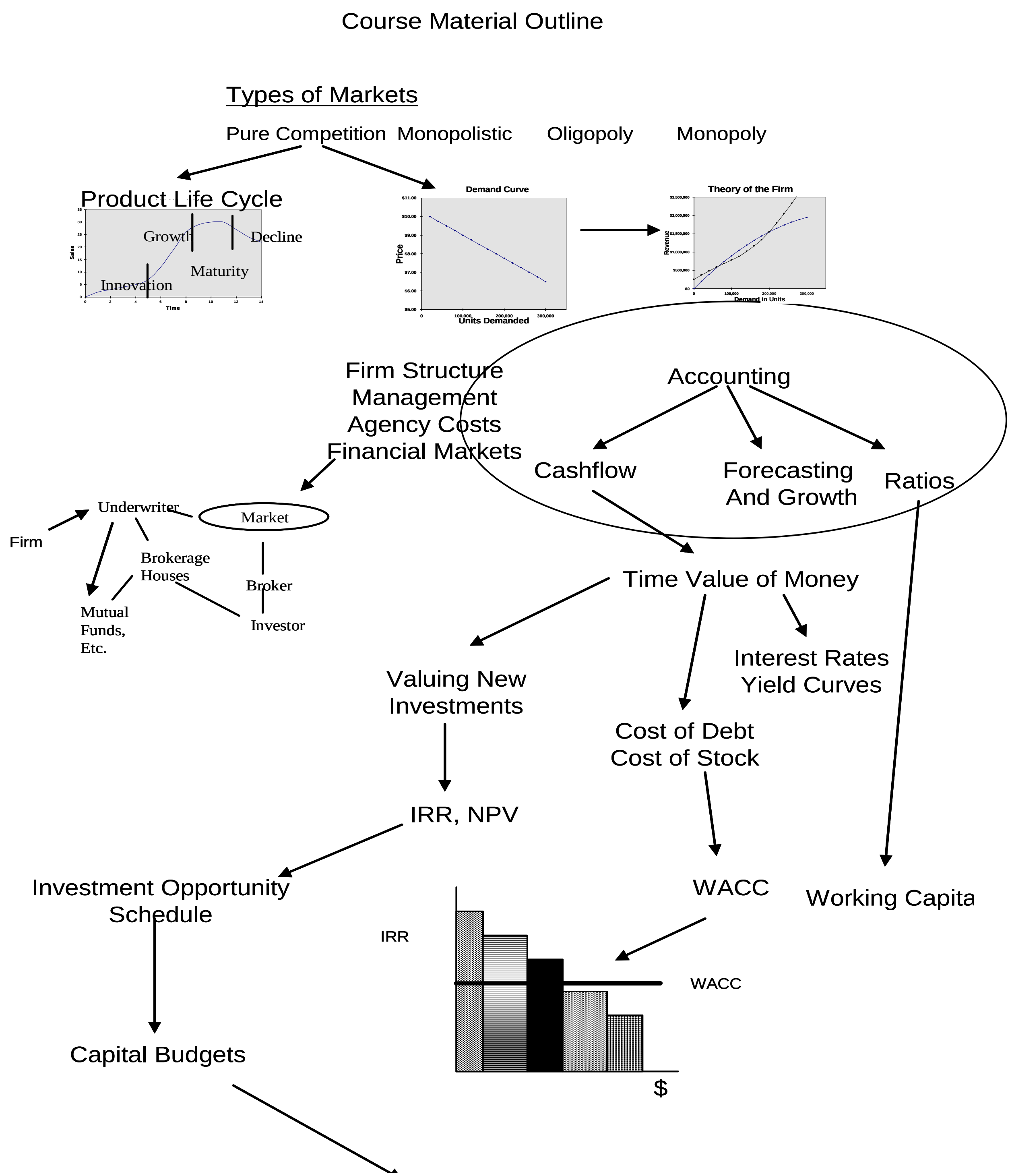
Course Material Outline
Types of Markets
Pure Competition
Monopolistic
Oligopoly
Monopoly
Product Life Cycle
Growth
Decline
Maturity
Innovation
Time
Demand Curve
Price
Units Demanded
Theory of the Firm
Revenue
Demand in Units
Firm Structure
Management
Agency Costs
Financial Markets
Accounting
Cashflow
Forecasting
And Growth
Ratios
Underwriter
Market
Firm
Brokerage
Houses
Broker
Mutual
Funds,
Etc.
Investor
Time Value of Money
Valuing New
Investments
Interest Rates
Yield Curves
Cost of Debt
Cost of Stock
IRR, NPV
Investment Opportunity
Schedule
WACC
Working Capita
IRR
WACC
$
Capital Budgets

Figure 2
General Outline of Course

Book *	Additional Work
1. Chapter 1 – Introduction	Basic Accounting
2. Chapter 2 – Financial Statements	Linking of Income Statement and Balance Sheet Statements over time
3. Chapter 3 – Cash flow and Financial Statements	Linking Statements Sources and Uses Ratios and Graphs
4. Chapter 4 – Long Term Financial Planning and Growth	ForecastingSpreadsheet model of growth and stock price estimates

*Presently using Ross, Westerfield, and Jordan *Fundamentals of Corporate Finance,* 9th Edition.

Figure 3

Arrange the following items into an income statement and balance sheet in the normal order.

Retained Earnings	Labor Expense
Interest Expense	Common Stock
Long Term Debt	Taxes
Accounts Payable	Sales
Depreciation	Overhead
Accumulated Depreciation	Total Assets
Current Assets	After Tax Income
Taxable Income	Net Fixed Assets
Accounts Receivable	Short Term Debt
Cash	Current Liabilities
Gross Fixed Assets	Total Liabilities and Net Worth
Inventory	EBIT
Cost of Goods Sold	Gross Profit

Figure 4

Arrange the following items into an income statement and balance sheet in the normal order.

Accounts payable	$31,000	Interest	$4,500
Accounts Receivable	$36,000	Inventory	$42,000
Accumulated Depreciation	$45,000	Labor Expense	$12,000
After Tax Income		Long Term Debt	$50,000
Cash	$24,000	Net Fixed Assets	
Common Stock	$36,000	Overhead	$8,000
Cost of Goods Sold	$62,000	Retained Earnings	$27,000
Current Assets		Sales	$100,000
Current Liabilities		Short Term Debt	$25,000
Depreciation	$6,000	Taxable Income	
EBIT		Taxes	35%
Gross Fixed Assets	$112,000	Total Assets	
Gross Profit		Total Liabilities and Net Worth	

Answer

Income Statement			Balance Sheet			
Sales	$100,000		Cash	$24,000	Accounts payable	$31,000
COGS	$62,000		A/R	$36,000	Short Term Debt	$25,000
Gross Profit	$38,000		Inventory	$42,000	Current Liabilities	$56,000
Labor Expense	$12,000		Current Assets	$102,000	Long Term Debt	$50,000
Overhead	$8,000		GFA	$112,000	Common Stock	$36,000
Depreciation	$6,000		Accumulated Depr	$45,000	Retained Earnings	$27,000
EBIT	$12,000		Net Fixed Assets	$67,000	TL&NW	$169,000
Interest	$4,500		Total Assets	$169,000		
Taxable Income	$7,500					
Taxes	$2,625					
After Tax Income	$4,875					

Income Statement				Balance Sheet		
Sales	100000		Cash	24000	Accounts payable	31000
COGS	62000		A/R	36000	Short Term Debt	25000
Gross Profit	=C9-C10		Inventory	42000	Current Liabilities	=H9+H10
Labor Expense	12000		Current Assets	=SUM(F9:F11)	Long Term Debt	50000
Overhead	8000		Gross Fixed Assets	112000	Common Stock	36000
Depreciation	6000		Accumulated Depr	45000	Retained Earnings	27000
EBIT	=C11-SUM(C12:C14)		Net Fixed Assets	=F13-F14	TL&NW	=SUM(H11:H14)
Interest	4500		Total Assets	=F12+F15		
Taxable Income	=C15-C16					
Taxes	=0.35*C17					
After Tax Income	=C17-C18					

Figure 5

Assume you have started a new company on the first day of 2010. You raise $300,000 from family and friends, and borrow $200,000 from the bank on a ten-year, 6% note, with 10% of the original principle due each year (on the morning of Dec. 31.) Your company sells only for cash, and holds no inventory. All labor and materials are paid for at delivery. Properly label all accounts.

Show the balance sheet for Jan. 1, 2010.

Answer

	Question 1
	1/1/2010
Cash	$500,000
GFA	$0
Acc. Depr.	$0
NFA	$0
TA	$500,000
Debt	$200,000
CS	$300,000
RE	$0
NW&TL	$500,000

1. On Jan 2, 2007 you buy a machine for $350,000. It has a five-year life, and is depreciated straight-line. Show the balance sheet for Jan. 2, 2010.

	Question 2
	1/2/2010
Cash	$150,000
GFA	$350,000
Acc. Depr.	$0
NFA	$350,000
TA	$500,000
Debt	$200,000
CS	$300,000
RE	$0
NW&TL	$500,000

Figure 6

Your sales for the 2010 are $1,200,000 and for 2011 they are $2,500,000. Cost of goods sold is 34% of sales, and labor is 38% of sales. Taxes are at 34%. Investors are paid 25% of earnings as dividends. Show the income statement and balance sheet for 2010 and 2011. Assume debt repayments are made on the morning of Dec. 31 of each year. Show details on GFA and Accumulated Depreciation. What is the cash flow available for each year?

	2010	2011
Income	$1,200,000	$2,500,000
COGS	$408,000	$850,000
Labor	$456,000	$950,000
Depr	$70,000	$70,000
EBIT	$266,000	$630,000
Int.	$12,000	$10,800
Taxable	$254,000	$619,200
Taxes	$86,360	$210,528
ATI	$167,640	$408,672
Div.	$41,910	$102,168
Contri. To RE	$125,730	$306,504
Cashflow	$237,640	$478,672
Cash	$325,730	$682,234
GFA	$350,000	$350,000
Acc. Depr.	$70,000	$140,000
NFA	$280,000	$210,000
TA	$605,730	$892,234
Debt	$180,000	$160,000
CS	$300,000	$300,000
RE	$125,730	$432,234
NW&TL	$605,730	$892,234

	2010	2011
Income	1200000	2500000
COGS	=0.34*D6	=0.34*E6
Labor	=0.38*D6	=0.38*E6
Depr	=D21/5	70000
EBIT	=D6-D7-D8-D9	=E6-E7-E8-E9
Int.	=0.06*200000	=0.06*D26
Taxable	=D10-D11	=E10-E11
Taxes	=0.34*D12	=0.34*E12
ATI	=D12-D13	=E12-E13
Div.	=0.25*D14	=0.25*E14
Contri. To RE	=0.75*D14	=0.75*E14
Cashflow	=D14+D9	=E14+E9
Cash	=D24-D23	=E24-E23
GFA	350000	=D21
Acc. Depr.	=D9	=D22+E9
NFA	=D21-D22	=E21-E22
TA	=D29	=E29
Debt	180000	=D26-20000
CS	300000	=D27
RE	=0.75*D14	=D28+0.75*E14
NW&TL	=SUM(D26:D28)	=SUM(E26:E28)

Figure 7

	Cash "T"		
	2010		
Account	Debit		Credit
CS	$300,000		
Debt	$200,000		
Machine			$350,000
Sales	$1,200,000		
COGS			$408,000
Labor			$456,000
Int.			$12,000
Taxes			$86,360
Debt			$20,000
Dividends			$41,910
	$1,700,000		$1,374,270
	2011		
Net Cash - 2010	$325,730		
Sales	$2,500,000		
COGS			$850,000
Labor			$950,000
Int.			$10,800
Taxes			$210,528
Debt			$20,000
Dividends			$102,168
	$2,825,730		$2,143,496
Net Cash - 2011	$682,234		

		2010	
		Cash "T"	
Account	Debit		Credit
CS	100000		
Debt	40000		
Machine			75000
Sales	200000		
COGS			='Ques 3'!D7
Labor			='Ques 3'!D8
Int.			='Ques 3'!D11
Taxes			='Ques 3'!D13
Debt			4000
Dividends			='Ques 3'!D14*0.5
	=SUM(B6:B15)		=SUM(D6:D15)
Net Cash - 2010	=B16-D16		
Sales	250000		
COGS			='Ques 3'!E7
Labor			='Ques 3'!E8
Int.			='Ques 3'!E11
Taxes			='Ques 3'!E13
Debt			4000
Dividends			=0.5*'Ques 3'!E14
	=SUM(B18:B25)		=SUM(D18:D25)
Net Cash - 2011	=B26-D26		

IS THERE A BUSINESS CASE FOR SUSTAINIBILITY?
(CAN WE GET THERE FROM HERE???)

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ABSTRACT

The purpose of this paper is to examine the question, "Is there a business case for sustainability"? The author will first define the term "business case" and subsequently examine definitions of sustainability. The author will trace the history and efficacy of societal, political and legal efforts at moving businesses towards a particular type of behavior. A brief overview will then be presented on current thinking as it relates to sustainability and finally, the author will offer his own conclusions and recommendations.

INTRODUCTION

The term business case simply means that an economic argument is made (i.e., a profit motive) which entices a business to engage in some type of activity. A simple example might be that a business case was made for McDonald's to invest in drive through windows at their restaurants because over the long run, the economic investment would ultimately return a profit to the enterprise.

In today's current parlance, the term sustainability is somewhat amorphous and finding a consensus definition a rather elusive task. One researcher's suggestion is rather specific. He wrote, "Sustainability – which natural scientists define as the capacity of healthy ecosystems to continue functioning indefinitely – has become a clarion call for business" (Unruh, 2008, p. 111), points up two issues. The first, is the definition proffered, suggesting the system aspect of sustainability; the second issue, that there is indeed a clarion call for business to respond. Both of these issues capture much of the debate, namely is sustainability a system problem and if so, is it the concern of business? Put even more directly, should any business be concerned with anything beyond profits?

One popular notion is that sustainability speaks to the so-called triple-bottom-line (TBL). One definition, "The **triple bottom line** (abbreviated as "**TBL**" or "**3BL**", and also known as "**people, planet, profit**") captures an expanded spectrum of values and criteria for measuring organizational (and societal) success: economic, ecological and social", (Wikepedia, 2009) suggests an even greater and detailed expanse than just the opaque word "system". Subscribers to this belief hold that businesses be held accountable to the TBL standard and advocate that making an economic profit is simply not enough, but that measures of environmental and societal impact, both positive and negative, must enter into the summative calculus before assigning a final net worth to a business' activities.

Before delving any further into the current state of sustainability efforts, a brief history of a few examples of how successfully accommodations have been made at balancing business and societal needs may provide an interesting backdrop against which one can then examine the current topic. The first example is the coal mining industry. Since the early twentieth century coal mining was both a source of great economic wealth and a source of great danger to those who physically worked in the coal mines. Explosions, cave-ins and flooding, were but a few of the constant threats to a coal miner's very survival. Death and injury were common place and were widely seen at best as something unavoidable and at its worst, seen by the coal mine owners as nothing more than a small inconvenience and quite simply, a minimal cost of doing business. This was especially so in the early days of coal mining when there were little if any laws to protect the workers, nor work rules and incentives to protect the workers via union led/union negotiated work conditions. Quite simply, the coal miner worked as an individual who assumed all risk; with no available protections or recourse should he be injured or killed on the job. Just as surely, there were no economic incentives or disincentives for the coal mine owners to protect the coal miners. There was no "business case" to protect workers. If a miner was injured or killed, replacing him was a simple matter of hiring the next readily-available able-bodied worker, many whom were only too eager to earn a modest wage in spite of any risk.

It is instructive to note that while the first legislative action by Congress in 1910 created the U.S. Bureau of Mines, it was another 31 years until any new and meaningful legislation was again passed (see endnote for a complete and detailed review of legislative history). Yet during the first twenty years of the U.S. Bureau of Mines' existence, the average number of fatalities hovered steadily at around 2,340 per year, only dropping off to an average of 1,250 for the final decade of 1931 -1940. To be fair, the absolute number of fatalities as well as the rate of fatalities has since fallen steadily, especially since the enactment of the 1977 Mine Safety and Health Act. However to this day, mining remains one of the most dangerous occupations with a rate of 24.8 fatalities per 100,000 employed, second only to the category described as agriculture, forestry, fishing and hunting with a fatality rate of 27.3 per 100,00 employed (U.S. Bureau of Labor Statistics 2008).

The obvious point here is simply that mining safety only improved because of the legislative imperative. Indeed, even with the unionization of mine workers in 1890, it was not until 1969 that health and safety guarantees were secured through the collective bargaining process (citation –UMWA website).

A second example of societal concern in the past sixty plus years has been the environment. Once again we can trace the path of legislation and the compliance rate of business. One might suggest that strict enforcement of laws and severe financial penalties would be an even more powerful appeal to business to become good stewards of the environment more so than any simple moral or ethical appeal. Yet once again, the evidence seems to suggest that for many industries and businesses, fines are simply a cost of doing business and compliance is borne out of economic necessity and not some corporate conscience. The most recent annual EPA report indicates only a slight drop in the number of criminal cases initiated over the last four years, ranging from a high of 425 cases in FY 04 to a low of 305 in FY 06, rebounding upward again in FY 08 to 319. In fairness, there is strong data which suggests the effectiveness EPA enforcement has indeed reduced pollution overall, however that is not the same as reducing the frequency and magnitude of violations. Moreover, one only need recall the ever growing list on single event/single violation environmental disasters such as the Exxon Valdez oil tanker spill in Alaska or the Chernobyl Nuclear reactor meltdown to realize that even one violation can have years long and catastrophic consequences to the environment.

The third and final example of business social responsibility is in the area of Equal Opportunity/Equal Rights. The United States has passed a progression of laws over the past sixty plus years, beginning with the Fair Labor Standards Act of 1938, Equal Pay Act of 1963, Civil Rights Act of 1964, Age Discrimination Act of 1967, American's With Disabilities Act of 1990 and the recently amended (2208) Family and Medical Leave Act of 1993. These laws and others all represent a broad cross section of important societal issues which either proscribe or prohibit certain behaviors by businesses.

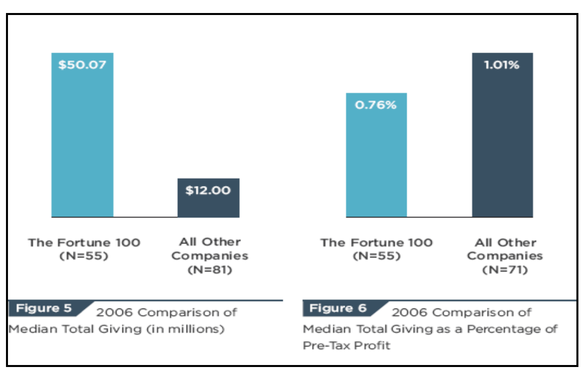
Once again however, a cursory review of recent compliance statistics by the primary federal enforcement agency, The Equal Employment Opportunity Commission (EEOC) indicates a rather constant and disappointing track record on the part of business in the U.S. A summary of age, race and gender discrimination complaints in the table below highlight the persistence of the problem.

Table 1

Year	**FY 2003**	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**
Sex Discrimination Receipts	24,362	24,249	23,094	23,247	24,826	28,372
Age Discrimination Receipts	19,124	17,837	16,585	16,548	19,103	24,582
Race Discrimination Receipts	28,526	27,696	26,740	27,238	30,510	33,937

Naturally, the argument will be made that dangerous coal mining practices and race discrimination are red herrings and that the contemporary problem of sustainability is somehow different or unique. But is it really? What is the logic of sustainability? Should businesses be measured against the triple bottom line? Klaus Leisinger (2007) reports that one study, the so-called holy grail, found that "socially responsible companies perform better financially" (Kelly cited in Leinsinger, 2007, p. 13). However, such findings do not indicate causation, simply correlation. Indeed, one might hope and suspect a more financially stable, if not successful company would indeed behave with a greater sense of social responsibility. However, one recent report on corporate philanthropy indicates another intriguing result.

Figure 2



As indicated in Figure 1 above, (www.corporatephilantrhopy.org) the more profitable a company, the smaller the percentage of giving. Stated more simply, as the Fortune 100 companies become more successful, there seems to be an absolute amount of dollar giving beyond which companies will not give. This is not intended as an indictment of corporate philanthropy or Fortune 100 companies, but the facts do speak for themselves.

Another dimension of sustainability is of course the environment. Most recently there has been much discussion of global warming and various proposals to reduce carbon emissions. One of the more interesting proposals is to implement a government regulated, free-market inspired system of "cap and trade" as a way to put an economic value on emitting greenhouse gases. Ostensibly, once a system of quotas or permissions to emit greenhouses gases has been granted to various business and industries, these carbon credits could traded and priced like any other commodity, the reasoning then suggests that companies would have an economic incentive to pollute less. This system is no less controversial than many of the competing and conflicting claims about the effect of greenhouse gases and global warming. Vaclav Klaus, the President of the Czech Republic and former economics professor made the following comment on cap and trade. "As a person who spent almost 50 years of his life in a communist country, I know how crazy it is to introduce schemes like cap and trade and similar ideas, how devastating and damaging for the economy all those ideas really are". (Thompson, 2009, March 9, p. r4)

Under one cap and trade scenario, as reported by Joseph Rago (2009, March 28, p. A9) select energy companies who potentially stand to benefit from a President Obama backed proposal would actually be in a rather interesting position, "Lobbying the government to tax your products is generally not taught in business school". Indeed, seeking out taxes is not normal behavior for any business. Another interesting issue regarding cap and trade is "leakage… investment and jobs are driven to nations that have looser or nonexistent climate regimes and therefore lower costs". (Cap and Trade, 2009, March 30, p.A22). Stated simply, do we in the United States take it on faith that the rest of the world will help us keep the playing field level? And who will monitor that playing field? The United Nations, the G-8 or G-20 or perhaps the EU? Hardly.

On a different environmental front are the alternative energy models. The well known newspaper columnist George Will recently wrote about a Spanish economics professor's research into windmills. The professor, Gabriel Calzada , found that for each newly created wind industry job, 2.2 other jobs are lost. Moreover, these eco-jobs typically receive subsidies ranging from $752,000 up t0 $1.4 million per job! (Will, 2009, June 28). In the automobile industry we have seen a variety attempts at developing green vehicles – hybrid, all-electric, clean diesel, hydrogen, to name a few. Yet not one vehicle has been offered to the consumer that offers a cost-effective proposition. The relatively popular Toyota Prius is widely touted as an eco-friendly vehicle, but consumers pay a price premium of at least $2,000.00 in order to feel good about themselves and the environment. But from a purely economic perceptive, given the current price levels of gasoline, it is not at all an attractive investment.

The point here is not to offer up a menu of anecdotal stories and selected studies with very narrow results, extracted from very esoteric settings and peculiar populations to attempt to prove a particular point. I will stipulate that for every study that indicates an energy cost savings there is likely one that would contradict such a finding. The basic question remains, is there a business case for sustainability? Stated as the null hypothesis, there is no business case for sustainability. Every researcher knows that having stated the null hypothesis you then gather evidence to accept or reject the null hypothesis. I suggest that there is no evidence to reject the null hypothesis, for if there were, would we not already have companies which are never fined for polluting the environment or never fined for racial discrimination or already have wind and solar energy fueled factories. If there were a business case for sustainability would we not see companies welcomed into cities and towns for the bounty that would flow from their triple bottom line?

I think that in order to get to a point where we as a society truly enjoy a triple bottom line it must come from the individual. We as a society cannot rely nor trust the goodwill and benevolence of a handful of corporate custodians. The needs and desires for companies which are friendly to the environment and friendly to society will come about only when they are compelled to do so through meaningful and powerful laws and even more importantly through powerful intent. By powerful intent, I mean that society's outrage and society's power will bring to heel any corporate miscreant in a swift and deliberate fashion. Consumers can immediately vote on the environmental policy of any company at any moment by simply using their wallet. Consumers can immediately vote on the social policies of a company by choosing their place of employment. Consumers rule the business world and not the other way around.

If businesses are not sustainable, don't blame them – they are only playing the game on a field that we designed and a game which we ultimately referee.

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1910 Public Law 61-179. Bureau of Mines created in the Department of the Interior. Federal safety and health role limited to research and investigation.

1941 Public Law 77-49. Right of entry given to Federal inspectors to make annual or other inspections and investigations in coal mines to obtain information. No safety or health regulations mandated.

1947 Public Law 80-328. First Federal safety standards adopted for bituminous coal and lignite mines. Provision for Federal inspectors to notify the mine operator and State mine agency of violations. No enforcement provisions. Expired after one year.

1952 Public Law 82-552. Federal Coal Mine Safety Act. Emphasis on preventing major disasters. Annual inspections required at underground coal mines. Mandatory safety standards for underground coal mines, with more stringent standards for "gassy" mines.

Federal inspectors given authority to issue orders of withdrawal in situations of imminent danger as well as notices of violation. Also mandated orders of withdrawal where less serious violations were not properly corrected.

Enforcement of Federal standards by State inspectors allowed under State plan system. Anthracite mines covered, all surface coal mines exempted, along with all mines employing fewer than 15.

1961 Public Law 87-300. Authorized study of causes and prevention of injuries and health hazards in metal and nonmetal (non-coal) mines. Federal officials given right of entry to collect information.

1966 Public Law 89-376. Extended coverage of 1952 law to small underground coal mines. Provided for orders of withdrawal in cases of repeated unwarrantable failures to comply with standards. Education and training programs expanded.

1966 Public Law 89-577. Federal Metal and Nonmetallic Mine Safety Act of 1966. Set up procedures for developing safety and health standards for metal and nonmetal mines. Standards could be advisory or mandatory. One annual inspection required for underground mines. Federal inspectors given authority to issue notices of violation and orders of withdrawal.

Enforcement of Federal standards by State inspectors allowed under State plan system. Education and training programs expanded.

1969 Public Law 91-173. Federal Coal Mine Health and Safety Act of 1969. Enforcement powers in coal mines increased vastly. Surface mines covered. Four annual inspections required for each underground coal mine. Stricter standards for gassy mines abolished, but additional inspections required in these mines. Miners given right to request a Federal inspection. State enforcement plans discontinued.

Mandatory fines for all violations. Criminal penalties for knowing and willful violations.

Safety standards for all coal mines strengthened, and health standards adopted. Procedures incorporated for developing new health and safety standards. Training grant program instituted. Benefits provided to miners disabled by black lung disease.

1973 Mining Enforcement and Safety Administration (MESA) created as a new Interior Department agency by administrative action. The new agency assumed safety and health enforcement functions formerly carried out by the Bureau of Mines.

1977 Public Law 95-164. Federal Mine Safety and Health Act of 1977. Placed coal mines, metal and nonmetal mines under a single law, with enforcement provisions similar to 1969 Act. (Separate safety and health standards were retained.) Moved enforcement agency to Department of Labor, renamed it Mine Safety and Health Administration (MSHA).

Requirement for four annual inspections at all underground mines, two at all surface mines. Advisory standards for metal and nonmetal mines eliminated. State enforcement plans in metal and nonmetal sector discontinued.

Provisions for mandatory miner training. Mine rescue teams required for all underground mines. Increased involvement of miners and their representatives in health and safety activities.

2006 Public Law 109-236. Mine Improvement and New Emergency Response Act (MINER Act). Amended Mine Act to require mine-specific emergency response plans in underground coal mines; new regulations regarding mine rescue teams and sealing of abandoned areas; prompt notification of mine accidents; and enhanced civil penalties.

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A CROSS-INDUSTRY EXAMINATION OF CONVENER ROLES IN INDUSTRY-SPECIFIC COLLABORATIVE STANDARDIZATION EFFORTS

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ABSTRACT

Vertical standards define data dictionaries and formalize business processes for specific industries, as opposed to the cross-industry system connectivity provided by horizontal standards like most other IT standards. The technical development and subsequent diffusion of vertical standards within their home industries has been the subject of recent research. This emerging body of work suggests that vertical standards must solve linked dilemmas in their development and diffusion, and that the participation of the same users which will eventually adopt the vertical standard may be the answer to these dilemmas. At the same time, development processes which are open to all willing participants may result in the fragmentation of the standardization effort, leading to increased competition and uncertainty, and slowing the diffusion of a single dominant standard. The speed of market-led solutions has often been compared to the comprehensiveness of formal committee standards, but no definitive winner has been declared. We explore the relationship between the influence type and intervention mode of conveners in a formal standardization process, the origin of a standard, its collaborative environment, and its effect on the relative success of vertical standards across industries. We find that vertical standards are, in fact, led by users and include vendor participation, that competing and overlapping standardization efforts are converging on a single preferred solution for the industry, and that some efforts are being abandoned without a replacement in their wake, signaling the uneven nature of vertical standardization efforts across industries.

INTRODUCTION

Firms seeking to streamline the exchange of transactional data across organizational boundaries are turning more and more frequently towards vertical standards. Vertical standards use industry-specific data dictionaries and formats, and codify business processes in consistent forms unique to the industries for which they are developed (Markus et al. 2003). The syntax, document validation procedures, and parsing rules with which to build the data dictionaries and forms are rooted in, and implemented with, the eXtensible Markup Language (XML). XML permits industry members to develop markup tags that form the basis for consistent and meaningful data exchange between firms. XML-based vertical standards address two common drawbacks of previous data standards technologies: over-specified rigidity or a lack of consistent parameter requirements that dilute the power of the standard (Hills 2000). The flexibility and extensibility of XML means that new data elements and changing business processes may be added to the standard as needed, but the formality of XML documents means that, once agreed upon, vertical standards can only be processed correctly if they adhere in full to the final published standard (Hills 2000). These two capabilities mean that vertical standards are not single monolithic specifications, but rather modular families of changing standards that fit together to add business functionality as demanded by the members of the industry.

Vertical standards require considerable prior interorganizational negotiation of business processes implemented with the standard; they are complex and abstract innovations that require substantial expertise, create interorganizational dependencies, are subject to network externalities (Katz & Shapiro 1994), and require a critical mass (Markus 1987) of users to be efficient. As such, they are classified as complex networked technologies, just like EDI (Lyytinen & Damsgaard 2001).

Prior research has identified the rise of a developer-as-user paradigm (Nickerson & Muehlen 2003) in the development of vertical standards that assumes technical and administrative work will be guided by the same organizations that will eventually adopt the vertical standards produced. It has also been hypothesized that industry-based committees and consortia, which typically lack enforcement power, will fare better than standards-developing organizations (SDOs) with formal authority in providing the leadership needed to achieve coordination to create vertical standards and promote their diffusion (Markus et al. 2003, Nickerson & Muehlen 2003). Using Wood & Gray's (1991) classification of convener influence types and intervention modes, we explore the relationships between successful modes of collaboration, the origin of standards, and the collaborative nature of their development environment. We seek to contribute to the growing literature on vertical standards by shedding light on whether XML-based standardization in individual industries is, in fact, an effort led by the eventual adopters of the standard, or on the degree to which supply-side competing interests have taken over those processes.

THEORETICAL BACKGROUND

Information technology standards play an important role in the expansion of markets, system compatibility, reduction of transaction costs, and the modularization of large systems composed of smaller subsystems (David & Greenstein 1990). IT equipment manufacturers can make their products compatible or incompatible with existing standards, thereby choosing to compete either within or between standards (Besen & Farrell 1994). In the past decade, a new breed of standards focusing on industry-specific data formats and business processes has emerged. These vertical standards (Markus et al. 2003) require extensive expertise, considerable interorganizational coordination, and are subject to network effects. Vertical standards are important to organizations because they are much less expensive to develop, much more flexible, and are not dependent on third-party network and service providers, in contrast to previous data exchange technologies like EDI (Hwang et al. 1993). In addition, vertical standards permit the flexible and scalable development of modular product and service descriptions that help enable end-to-end computing, streamline business processes, and formalize data structures and definitions necessary for successful e-commerce (Braa et al. 2005). Another important characteristic of vertical standards is that technical development is led by the eventual adopters of the standards (Nickerson & Muehlen 2003), often in collaboration with IT vendors, a marked change from existing vendor-led models of IT standardization (Markus et al. 2006, Nickerson & Muehlen 2003).

Dominant standards may emerge in several ways. They can become the preferred industry solution due to their sponsorship or adoption by a dominant industry member thus becoming the *de facto* industry standard, or they can be formally established by government or regulatory agencies with enforcement powers, a category of standards known as *de jure* (David & Greenstein 1990). In addition, standards may be developed by active participation of a subset of all members of an industry, perhaps in collaboration with IT vendors, and established as the industry standard by *consensus* (David & Greenstein 1990). This general structure is being echoed in the development of electronic commerce-related standards (Graham et al. 1996, 2003).

Standardization mechanisms for vertical standards described in the literature so far include free-market coordination, industry-based consortia, and recognized third-party standardization committees (Boh et al. 2007, Nelson et al. 2005, Zhao et al. 2005) collectively known as standards-developing organizations (SDOs). Existing IT standardization research has variously shown that market-based solutions are generally faster (Krechmer 2000) and technically superior than SDO efforts (Funk & Methe 2001), but that SDOs are much likelier to achieve greater coordination (Farrell & Saloner 1988), and that consortia can offer the advantages of both (Greenstein 1992). The emerging body of research on vertical standards has concentrated on either the development processes that lead to standardization (Nelson et al. 2005, Zhao et al. 2005), or on the diffusion of the resulting vertical standards across industries (Beck & Weitzel 2005, Wareham et al. 2005). It has also been suggested that vertical standardization and diffusion processes are two collective action dilemmas, and that solving one may still fail to solve the other (Markus et al. 2006). Firms participating in standardization processes must avoid the fragmentation needed to address diverging or conflicting needs in the market, possibly leading to standardization failure. On the other hand, a standard that is too general for the needs of the industry may have trouble diffusing successfully.

Solving the participation problem requires the identification of the proper stakeholders in the process, which may result in an impractically long list (de Vries et al. 2003). By identifying stakeholders by their level of power, legitimacy, or urgency (Mitchell et al. 1997) in the process, one can narrow the list to the crucial participants in the effort. This approach has been extended beyond the identification of individual stakeholders in an organization and modified to apply to organizational stakeholders in an interorganizational domain (Wood & Gray 1991). The role of conveners, organizations in a position of leadership in a collaborative effort, includes establishing, providing legitimacy, and guiding collaborative standardization (Wood & Gray 1991), either through the weight of their market positions, the help of enforceable rules or legislation, or via the position of leadership in the effort the convener holds. Convener behavior is expected to vary according to their type of influence (formal or informal) and intervention (responsive or proactive) modes (Wood & Gray 1991), and different kinds of standardization efforts may be expected to exhibit different combinations of influence and intervention to ensure success. Convener influence may be formal, such as that of a government agency in charge of regulating an industry, or informal, as in the type of influence exerted by most industry consortia, which collectively possess the highest levels of expertise and credibility in an industry, but lack enforcement power with consortium members. Similarly, a convener may find itself in a position of leadership due to its own initiative and recognition of either a market opportunity or an industry need (proactive), or at the request of other industry members who perceive the convener as being the most appropriate candidate to lead the standardization effort (responsive).

Lastly, the status and structure of markets offering products and services competing and/or complementing vertical standards may encourage or inhibit the fragmentation of vertical standards development in an industry (Wareham et al. 2005), placing vertical standards in collaborative, complementary, or competing relationships with other vertical standards. For our purposes, we define collaborative standards as modules "independently and asynchronously produced before they are assembled into a whole" (Benkler 2002) and whose development is conducted completely within the sphere of influence of its convener. Complementary standards are those which extend the functionality of other vertical standards, but whose development is not necessarily under the control of the convener of the target vertical standard, at least initially. These standards may later come to be assimilated into the target vertical standard itself. Vertical standards in competing relationships face challenges to their primacy in the industry from emerging or existing rival specifications.

The promise of vertical standards lies in their ability to formally codify business processes and define data structures unique to the individual industries for which they are developed. The participation of the eventual adopters in the development processes associated with vertical standards is crucial to these collaborative development efforts. We report preliminary findings of an effort to identify the relationship between conveners in a standardization effort and its results. This work is part of a larger program of research on the development and assimilation of vertical standards by organizations across industries. The rest of the paper explains how our data was collected, some preliminary findings based on that data, and the implications of these preliminary findings for industry practitioners and for ongoing research on vertical standards.

THE ROLE OF THE CONVENER IN STANDARDIZATION EFFORTS

We consulted the XML Cover Pages website (XML.CoverPages.org) to identify industry-specific XML standardization efforts. The Cover Pages are a reference collection of XML-based standards and vocabularies maintained by the Organization for the Advancement of Structured Information Standards (OASIS-Open.org) aimed at promoting the development and use of standards-based solutions. OASIS was founded in 1993 as an independent mechanism to drive "the global development, convergence and adoption of e-busines standards" (Updegrove 2003), and is widely recognized as one of the leading SDOs in the area of electronic business-related standards. While the Cover Pages website is not an exhaustive catalog of XML applications, it does contain a suitable cross-sectional sample of vertical standards with which to conduct exploratory research such as the present effort. Using the descriptions of the vertical standards found in the Cover Pages entries, and at the target websites listed in these descriptions, 109 industry standards were classified as an industry *de facto*, *de jure*, or consensus standard, as previously described. Another variable summarized whether the vertical standard was an integral part of a larger system of standards that collaborated towards a common objective in a single industry, faced competition from another standard in the same functionality space, or provided enhanced functionality to a standard already in place as an external complement. Lastly, the standard was classified according to the influence type and mode of intervention of its convener, as identified in either the primary Cover Pages entry or related target links. Thus, standards were tagged as being led by a convener with formal or informal influence in its development, adoption, and diffusion sphere, and whether its leadership position was the result of proactive initiative or as a response to a request from industry members.

Our data set included 24 vertical standards which had "disappeared" for various reasons, and were classified into three types: assimilated, discontinued, and vanished. Assimilated vertical standards were standards which were either complementary to or in competition with other standards and were later merged with the efforts of the other standard. Discontinued standards were those specifications whose development work was stopped, and whose intellectual property was simply abandoned. Finally, vanished standards simply ceased operations, without apparent explanation and without further traces after a certain date. The classification of assimilated and discontinued vertical standards was made possible either via information available at its website, or through a search of industry websites and publications that provided clues as to their status. In the case of vanished standards, we followed up with individuals listed as contacts in the last website, publication, or press release available during our search. With the exception of one email address, all emails to vanished standard contacts were returned as undeliverable, and further searches for additional contact information proved fruitless.

THE USER-AS-DEVELOPER PARADIGM OF VERTICAL STANDARDS

Analysis of our data reveals several interesting facts and trends. The majority of standards reviewed appear to be consortium-led consensus standards. In addition, the greatest grouping of standards appear to be collaborative standards, not competing or complementary. As for influence type, the largest group is of informal conveners, and the intervention mode is overwhelmingly proactive. Taken together, this seems to indicate that vertical standards are, in fact, being developed on a volunteer basis (as evidenced by the convener's informal influence) by members of the home industry the vertical standards are expected to serve, as has been anticipated since the release of the XML specification. The critical role of the potential adopters of a standard in its development, the developer-as-user paradigm (Nickerson & Muehlen 2003), is evident in our preliminary results.

Also, the preponderance of consensus and collaborative standards shows that vertical standards are indeed participatory efforts resulting in modular, incremental improvements to a single standard for individual industries. Further, the proactive nature of the intervention mode for the convener shows an awareness by industry members that coordination is the most effective way to arrive at a standard that will meet the industry's business needs, while ensuring the highest level of diffusion after the technical work is completed for the final modular standards. The strong presence of collaborative consensus standards led by responsive conveners with informal authority indicates that development processes are owned primarily by industry members, and have not been taken over by IT vendors. Efforts led by IT vendors often splinter into rival factions (Greenstein 1992), and vertical standards success depends on the participation of principal stakeholders in a single effort (Markus et al. 2006). It also shows that standardization processes appear to be open to participation by any industry member interested in making that investment, and that standardization is being reached by general agreement of participating industry members, keeping actual business needs rather than existing product lines, market share, or other considerations in mind. Our data does not, however, show the extent to which IT vendors *may* be the leading providers of technical expertise, project management leadership, or domain knowledge in each effort. This kind of information would need to be obtained via a survey of the members of each of the individual standards-developing member organizations identified via the Cover Pages and may be a good avenue for further research. While these results are not altogether unexpected, it does provide some quantifiable evidence that XML-based vertical standards are developing along a minimalist rather than a structuralist path (Libicki et al. 2000). Minimalist approaches pursue simpler standards, with faster adoption by the user community, and continued development of the original specification. By contrast, structuralist approaches target comprehensive standards delivered in finished form to the adopting community. Successful vertical standards, it appears, begin small and grow over time to encompass all necessary business and data requirements in their home industry.

Our results also show very little competition between standards in a single industry, supporting previous research (Nelson et al. 2005), but competition is evident between standards aimed at the same target audience, as is the case with a couple of standards for mathematics (MML & OpenMath) and finance (FAML & FPML).

We found evidence of convergence in vertical standards development efforts, with 9.17% of vertical standards (10) having been assimilated by other standards. In all cases we were able to document, the ownership of all intellectual property for standards no longer current was transferred to the target vertical standard. The mergers have led to various results, including the creation of new branding for the joint standards, the retention and strengthening of the name for the assimilating standard, and even the dissolution of the parent organization for the standard which was assimilated. Convergence in standards-development efforts and in the adoption behaviors of business partners has been hypothesized to reduce the firm's risk of adopting the "wrong" standard and being orphaned as a dominant standard emerges (Mendoza et al. 2005). Convergence has also been hypothesized to increase the legitimacy of a vertical standard in an industry and lead to its assimilation (Mendoza et al. 2005).

An additional 2.75% (3) of efforts have been discontinued and completely replaced by a different standard. The information we were able to gather does not indicate a merger, but rather a complete discontinuation of efforts on behalf of the standard, and its total replacement by a different one. We were not able to ascertain why the efforts were abandoned, but this effect provides additional evidence for a movement of convergence in the development of vertical standards in individual industries.

Lastly, 10.09% of all documented standards in our sample have simply vanished from the record. There appears to be no indication that these standards have merged, and no information was available for any of them to indicate they have been replaced by anything else. All attempts to communicate with the people last listed as the primary contact for the effort failed, and with a single exception, all email returned as invalid. This single exception, however, also proved a dead end since there was no response from the individual listed. It is inappropriate to speculate as to the reason for the disappearance of these standards, so it is not possible to draw further conclusions from their absence.

CONCLUSIONS

The development of XML-based vertical standards appears to be progressing as expected, with user organizations taking the lead on the coordination and promulgation of a specification within their home industries. Vertical standards are being developed in a collaborative manner, with open participation to industry members, and resulting in consensus-driven modular efforts rather than in a single, large, finished product, a minimalist approach (Libicki et al. 2000) to the creation of vertical standards. The proactive role of most conveners shows an awareness by industry participants in the importance of collaboration in the successful development and diffusion of the resulting standards, giving rise to a strong developer-as-user (Nickerson & Muehlen 2003) philosophy of development and diffusion.

While IT vendors and system integrators participate in the development process for vertical standards, the extent to which they provide the bulk of leadership in these processes is unclear from our preliminary analysis. While most consortia provide the opportunity to participate in the administrative and technical development of its standards, they also attempt to keep the resulting standards independent of any particular vendor's platform or existing product line. Research cites the inability of any participant in the development process to appropriate the results or be able to extract rents from its use, a crucial element to the success of a standardization effort (Benkler 2002).

There also appears very little overlap between vertical standards, which minimizes competition, reduces uncertainty, and provides added legitimacy to a recognized effort (Funk & Methe 2001). Competition between standards that do overlap is evident, lending support to previous work (Nelson et al. 2005).

The path of unsuccessful standards also indicates that convergence is taking place whenever overlaps exist, but that a number of efforts are being abandoned without a substitute in its place. This may be an indication of the uneven density and topology of different industries and the inadequate level of collaboration resulting from that. Previous work has shown that network topology and density has a significant effect on diffusion processes (Weitzel et al. 2006).

Based on these preliminary results, practitioners may benefit from the knowledge that, in general, participation in industry consortia or SDOs is perhaps the most effective way to leverage the company's resources, share the cost of standards development, and diffuse the resulting standards effectively throughout the industry (Chiesa et al. 2002).

For researchers interested in the development and diffusion of vertical standards, the role of IT vendors in consortia and SDOs would prove a fruitful avenue of work. We do not yet understand the leadership role and influence of IT vendors and systems integrators on the eventual success of vertical standards. Understanding the effect of network density and topology on the development and diffusion of these unique technologies would also help us predict their chances of success across industries. As IT vendors participate more actively in standardization efforts, they may seek to leverage previous work in different industries to maximize their returns on new ventures or to avoid being late in a market when a dominant standard emerges (Nickerson & Muehlen 2003). This may lead to convergence in the development of business processes supported by vertical standards (Graham et al. 1996, 2003) and benefit other companies by allowing them to participate more easily (Quelin 2001) in industry activities. However, collaboration between end-user organizations in individual industries may prevent large-scale convergence across industries (Graham et al. 1996, 2003), making the role of IT vendors and other suppliers an important one to understand. Longitudinal research and case studies on efforts that have been assimilated, discontinued, or simply vanished would add to the small body of work on the failure of vertical standardization efforts (Gogan 2005, Wareham et al. 2005).

As with any research effort, there are substantial limitations to the present study. First and foremost, the results described here are preliminary, and the overall effort is exploratory. Our sample is small and our data is based on self-reported information, which may mask the true nature of collaboration in the industries we have examined. We cannot easily verify the completeness or accuracy of the information these organizations make available, which makes the generalization of any of our findings less robust.

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ENGAGING STUDENTS ONLINE: BEST PRACTICES FOR LEGAL ENVIRONMENT OF BUSINESS COURSES

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ABSTRACT

Online legal environment of business courses are becoming more common, yet neither every course, nor every professor is suited for online delivery. This paper examines the nature of legal environment of business courses and discusses how the author attempts to remain true to that nature in his traditional legal environment of business course. The paper then explores online courses and asks whether the author's traditional course can be successfully transformed into online delivery for summer school.

INTRODUCTION

How does a professor convey 47 chapters and 850 pages of a legal environment of business textbook online? How does (s)he maintain uniformity of coverage between a four-month traditional course and a one-month online summer course? How does (s)he translate a traditional teaching style that depends heavily on student participation into online teaching? Those questions are explored in this paper, which traces one professor's attempts to develop an online legal environment of business course for summer school.

In the paper, we first explore the nature of legal environment of business courses. We then discuss how the author attempts to remain true to that nature in his traditional legal environment of business courses while simultaneously meeting the particular needs of his university and his students. We next explore the literature of online legal courses and online courses in general. Only then do we ask whether the author's traditional legal environment of business course can be successfully transformed into online delivery.

THE NATURE OF LEGAL ENVIRONMENT OF BUSINESS COURSES

Legal courses have been part of the business-school curriculum since the beginning (Morgan, 2003; Tanner, Keaty, & Major, 2004). According to the chronology supplied by Tanner, Keaty, & Major (2004), business law was added to Wharton's curriculum two years after the school's 1881 founding as the first business school. Law was added to CPA exam in 1896, and William Spenser authored the first business law text in 1939.

In 1959, the Gordon-Howell and Pierson reports urged a shift away from the black-letter-rule approach that had previously characterized legal learning in business schools and toward an overall legal environment of business approach. The American Assembly of Collegiate Schools of Business (AACSB) replaced its substantive business law course requirement with a legal environment requirement in 1969. The 1970's saw a debate between teaching law as a liberal art by emphasizing public policy and teaching it as such specific substantive subjects as contracts, torts, etc. According to Tanner, Keaty, and Major, this chronology evolved into the modern legal environment of business course. Legal environment was now sometimes used as an introductory course, with substantive business law being taught in advanced courses.

Tanner, Keaty, and Major's paper urged a return to substantive law teaching. The authors believed that ethical scandals could often be better characterized as lack-of-legal-knowledge scandals. In support of this position, the authors surveyed nearly 1000 alumni of one business school and found that 75% wanted more law in the business-school curriculum. That same survey identified substantive law topics that lacked coverage as the UCC articles on sales and warranties, negotiable instruments, and secured transactions, product liability, creditor protections, bankruptcy, trusts & estates, and insurance. The authors urged that these topics be given equal coverage to the consensus topics of property, contracts, business organizations, and agency and employment law in the introductory course.

Tanner, Keaty, and Major did not advocate abandoning legal environment of business courses, for they noted that legal environment courses should teach how to avoid legal troubles by understanding the overall environment in which business must operate. Instead, the authors advocated more law courses to teach the full breadth of business-related law.

Like Tanner, Keaty, and Major, Morgan (2003) noted the long history of legal courses in business schools, adding that law was one of the mandated business studies specified by Joseph Wharton's grant to create the first business school. After citing numerous references on the importance of law to the business curriculum, Morgan argued that law had been given second-tier status in business schools, with generally one required legal studies course and some electives. He concluded that there was a disjunction between legal faculty and other faculty because legal faculty did not teach in ways that showed the interrelationship of law to other business disciplines.

Morgan recalled the Gordon and Howell report of 1959, which had advocated adding public law content to legal courses. Public law was to consist of topics like antitrust, employment law, securities law, and consumer protection. Morgan also recalled the Pierson report of same year, which had advocated a political-science approach to business law. Morgan believed that the response to those reports had been a "two-legged stool" for legal environment courses that included only private law and public law without developmental law. He defined developmental law as socioeconomic, political, and technological developments that affected the interrelationships between law and business. Morgan advocated an interdisciplinary approach to legal teaching that would add developmental law to the course.

Even with the accounting discipline, there was debate on how legal business courses should be taught. Law and accounting have had an especially close relationship stemming from the inclusion of law on CPA exams since 1896 (Prentice, 2001; Kocakulah, Austill, & Long, 2008). Prentice (2001) believed accounting to be a learned profession, not merely a technical one, and advocated broadening accountants' perspectives through non-accounting courses. He saw law as interwoven into all business transactions and advocated legal education for all business students, especially accountants. He argued that because accountants had to operate under legal constraints and liability exposure, they needed legal knowledge to do their jobs, shape their environments, recognize ethical concerns, and apply reasoning and critical thinking skills to problem solving. His paper concluded by quoting another author that an accounting education should teach students to be accountants, not just teach accounting itself.

Kocakulah, Austill, & Long (2008) found three categories of legal course approaches in undergraduate business schools: traditional, legal environment, and basic. The traditional approach focused on substantive law topics like contracts. The legal environment approach focused on the interplay of judicial, legislative, and regulatory laws with businesses. Finally, the basic approach focused on legal rights and other socio-political concepts. Reporting results of a 1990 survey, Kocakulah et al (1995) found that accounting chairs preferred traditional law courses. By 2005, that preference had changed according to the updated survey that Kocakulah, Austill, & Long (2008) reported. That survey found that chairs now preferred legal environment or at least were evenly divided.

However, Kocakulah, Austill, & Long (2008) also argued that accounting students' legal education was not as strong as their other accounting education and advocated more traditional law subjects. In particular, they cited Buchanan's (1983) "basis approach" which blended traditional business law with legal environment and suggested it as a compromise. Kocakulah, Austill, & Long believed that it weakens CPA exam topic coverage, but acknowledged that 51% of chairs agreed that CPA students could take a proprietary preparation course before their CPA exams to supplement topics not covered in legal courses. Kocakulah, Austill, & Long also acknowledged that pass rates in CPA exams were increasing. As such, the authors did not criticize legal environment courses; they just wanted more substantive law taught to accounting students.

Law courses were also needed for budding entrepreneurs according to Thomas & Usry (1991). These authors conducted a random survey of 1000 Virginia businesspeople with a 21% response rate and concluded that entrepreneurs lacked time and money and therefore needed to acquire a working legal knowledge to be successful in their entrepreneurial ventures. Thomas & Usry found that those traditional legal course topics like antitrust and securities law were less important to entrepreneurs and small businesspeople than less-traditional topics like mortgages, leases, and collections.

Rosen (2002) found an even broader use for legal courses by looking at the number of law school graduates that become successful businesspeople. Rosen reported results of a 1979 study that found that 32% of CEO's with graduate degrees had JD's while 30% had MBA's. Obviously, this study was done before the vast expansion of business schools in the 1980's, but the point about the interplay between law and business at the upper management level remains valid. Rosen surveyed highly successful executives who were law school graduates. Those executives listed leadership and communication skills as the most important skills for business success. Rosen's analysis suggested that law courses contribute to managerial effectiveness by furthering analytic skills, problem solving, professionalism, and ethical recognition.

MacDonald & Ramaglia (2005) urged a liberal arts approach to teaching legal courses in business schools. They noted that the Carnegie Foundation had defined liberal arts to include humanities, social and natural sciences, and the arts. The authors argued that liberal arts fostered critical thinking, social, communication and lifelong learning skills, in addition to the skills of the specific subject matter of the specific discipline being taught. MacDonald & Ramaglia believed each of those skills to be the same skills needed for success in business. MacDonald and Ramaglia thus urged a broadening of the business curriculum to discuss the historical and social connections with business topics and to require related research, reflection and communication. In particular, the authors discussed the value of this approach, and particularly its historical component, to explaining the concepts of international business law. Since MacDonald and Ramaglia focused on international law, they delved into ancient and medieval history to explain the origins and interrelations of legal transactions. They argued that understanding the context of transactions was sometimes more important than understanding the details of the transactions themselves.

Reinsch & Wambsganss (1994) focused on the differences between introductory and advanced legal business courses. The authors studied 272 students in four sections of the introductory legal environment course and two sections of the advanced law of commercial transactions course. Accounting students were required to take commercial transactions, whereas other students could take commercial law and then take commercial transactions as a subsequent course. The study's variable was just whether each professor awarded 10% of the course grade for participation or 0% of the course grade for participation. The authors controlled for variations in individual GPA levels before interpreting their results. Reinsch & Wambsganss found that class participation did not affect the test scores of individual students in any of sections of either course. However, they also found that those sections of the introductory legal environment courses that encouraged student participation had significantly higher overall test scores than those sections that did not. This overall difference between sections did not occur in the advanced law of commercial transactions course. In interpreting their results, Reinsch & Wambsganss noted the less technical nature of the introductory legal environment course, compared to the more technical nature of the advanced commercial transactions course.

Blackburn & Niedzwiedz (1981) studied the relationship between teaching methods and student success rates in legal business courses. The paper was written at a time when enrollments in business law classes were rapidly increasing and when alternatives had to be considered to the then-common small discussion classes of 30 or less students and the then-common case study approach to teaching. The debate was whether lectures or other large-class alternatives were better suited for legal business courses. Previous empirical research had found better student success rates from focusing on things known as student behavioral objectives, distributed practice and immediate feedback of results. The distributed practice moniker referred to breaking up learning and interspersing rest periods between tasks. Yet Blackburn's & Niedzwiedz's study of 643 Ohio State undergraduates found that teaching methods mattered little in student performance. Instead the true variable according to Blackburn & Niedzwiedz was the individual talents and motivations of the students themselves.

THE AUTHOR'S TRADITIONAL LEGAL ENVIRONMENT COURSE

In developing a syllabus for his own traditional legal environment of business course, this author drew upon the above sources, yet adapted to the specific needs of his university and his students. His legal environment course was to be taught to juniors and seniors at a public access university. The course would be required for all business students in a 1000-student department, and the author would be the only professor teaching the course in most semesters. The course would serve as a prerequisite for some accounting and management electives, but would be the only legal course which most of the business school students would take. The course syllabus was also being developed in the midst of initial AACSB accreditation for the business school, in the midst of the business school's efforts to better integrate its curriculum, and in the midst of increasing numbers of the business school's accounting students who desired to take the CPA exam, and in the midst of the business school's budding entrepreneurship initiatives.

This author therefore had to develop a syllabus that would simultaneously provide both the broad interdisciplinary understanding of business law urged by Morgan (2003) and the specific substantive competence urged by Tanner, Keaty, & Major (2004). To support the accounting department in particular, his syllabus would have to both broaden students' perspectives of accounting interaction with other business specialties as urged by Prentice (2001) and provide students with a firm grounding in substantive legal rules as urged by Kocakulah, Austill, & Long (2008). The syllabus would have to incorporate the entrepreneurial and upper management perspectives urged respectively by Thomas & Usry (1991) and by Rosen (2002). Finally, it would have to utilize the liberal arts approach urged by MacDonald & Ramaglia (2005) and do all of the above in a single semester.

This author's solution was to teach the course by utilizing 47 entire chapters and over 850 pages of textbook material. While this coverage could provide both context and technical proficiency, its sheer volume presented a challenge. Publisher's representatives indicated that all other professors with whom they were acquainted covered about half that amount of material in a semester. To organize the large amount of material to be covered, this author employed a historical approach like MacDonald & Ramaglia (2005). For this author, the historical approach allowed material to be organized into four modules, roughly paralleling the historical development of American law. Thus, the varied topics of property law would come first, those of contracts second, and those of legal protections like consumer law third. The final module of the course could then focus on business relationships like forms of organization, investor protection, banking, etc. The course would be taught from the manager's perspective, not the lawyer's perspective and would introduce the terms, concepts, practical applications, and tips for avoiding legal problems which managers would need to know.

Since this author's course was to be an introductory contextual one, the student participation urged by Reinsch & Wambsganss (1994) would be key, both to student test performance and to maintaining the peer support needed to keep students going willingly through large amounts of material. Ten percent of each student's grade would come from their prompt attendance at classes and another ten per cent from their level of participation. Half of that amount would be from a semester-long team project to relate the legal terms and concepts learned in each module to the broader entrepreneurial and managerial topics in areas of comprehensive marketing plans, operating plans, human resource plans, insurance plans, and financial plans. The other half would come from each student's evaluation on five key points which the students themselves would help to develop: punctuality of persons and work, appearance, courtesy to peers, professional contributions, and teamwork. Since the course was to be taught in both lecture classrooms and smaller classrooms, a modified Socratic teaching method would be adopted. Tests would be short-answer contextual ones. The approach worked, with well over 90% of students rating it approvingly in terms of importance of material and effectiveness of teaching.

The next step would be to transform the traditional semester-long course into a traditional summer course. Traditional summer courses were to be taught for twenty days over a one-month period. After some trepidation, the author decided that maintaining uniformity of coverage between semester-long courses and summer courses was critical. Given time out for testing and administrative tasks, that meant each of the four modules of the traditional course would have to be covered in less than 4 ½ days. That time constraint meant that summer students would need to prepare and discuss roughly four chapters and 50 pages of text each day, plus work on their team project to maintain consistency of coverage with the semester-long course. Peer support and strong participation requirements became even more crucial for the traditional summer course than they had been for the traditional semester-long course. Yet, again, the approach worked. Both student performances and student satisfaction were high. With this course history, it would be important that any online summer course for legal environment of business continue the same standards.

THE NATURE OF ONLINE LEGAL COURSES

Whether traditional professors like it or not, online teaching is becoming increasingly popular. Foster (2005) reported that Texas was even considering a bill to allow graduates of online law schools to sit for the bar exam. That measure was unlikely to pass, for Foster noted that the current stance of the American Bar Association was that online law schools could not be accredited. However, the ABA did permit online courses from face-to-face law schools. Those courses could not be taken by first-year students but could total 12 credits of the 80 credits required for law school graduation. Nevertheless, the literature of online legal business courses is still somewhat limited.

Reid & Weber (2008) explored the use of online tools for students in face-to-face courses and reviewed a number of proprietary tools for integrating online learning into traditional courses. These authors noted that the Association to Advance Collegiate Schools of Business (AACSB) urged ethical training in business schools through individual student engagement. Reid and Weber believed that technology-enabled active learning tools were effective in both legal and ethical learning. Reid & Weber defined ethics as applying ethical values to business behavior and argued that ethical learning required active, engaged learning between both students and teachers and students and other students. They discussed the limitation of textbook cases (mostly appellate cases) in learning ethics and urged the use of online tools for supplementing such cases.

Fang (2009) was a law school librarian who had been asked to find a way to allow professors to share audio and video lectures online within a tight budget. The paper was written after Adobe Flash and Web 2.0 had matured in 2006, prompting sites like YouTube, which in turn prompted high resolution, low cost recording technology. The law library built its own secure hosting site using this free software. At the time of the paper, 400 hours of recorded lectures from virtually all faculty members had been recorded and used by students.

With the paucity of literature specific to online legal courses, we turn our attention to a sampling of the courses themselves. The following syllabi were reviewed simply through a Google search for online legal environment of business and business law courses. Wegman (2009) taught entirely online, including exams. The course covered 20 chapters in UCC sales, agency, accountant liability, and intellectual property. Within the six weeks of the course, there were two exams and nine short quizzes. Exams were individualized from a test bank with 70% multiple choice and 30% essay. Estabrook (2009) notes in the syllabus that the online course tends to be more difficult for students and require more study time. Estabrook requires online participation for 10% of grade and tests appear to be essay oriented. This online course is a second law course for students and covers ten chapters in property, bailments, sales, and commercial paper, emphasizing the UCC. Kabler (2009) covered 25 chapters and 21 chapters respectively of two textbooks through 10 module topics, 3 exams and 3 quizzes.

With limited online legal literature available, we next look at broader online literature. A study by Lam (2009) found no significant differences in overall student performance between web-based and traditional classroom courses when the legal subject matter was technical. Lam further found that gender bias of traditional classroom performance was neutralized in web-based courses. He acknowledged that web-based courses had advantages and disadvantages. Advantages included giving individual students the power to focus on and revisit those web pages where they needed the most time and providing ready accessibility of material to students without the good listening skills needed for traditional classrooms. Disadvantages included the need for good reading skills, self-discipline, and comfort with isolation for web-based success.

Lam then cited Sitzmann et al (2006) to differentiate between declarative knowledge (terms, concepts, etc.) and procedural knowledge (how to perform a task). Lam also cited three studies—Priluck (2004), Scheines et al (2005), and Friday et al (2006)—that concluded that there was no difference in performance in declarative knowledge courses either. Lam, however, cited a number of previous studies, each of which favoring web-based courses over traditional courses, or vice versa. Accordingly, Lam concluded from his own work that there was no difference in student performance between students who took traditional classes and students who took on-line classes. However, Lam did note that students had different satisfaction ratings for traditional and online courses, but he still concluded that those satisfaction and personal preference ratings had no effect on the actual performance of those students. In a well balanced conclusion, Lam found that traditional courses triumphed in perception, group projects, and satisfaction. At the same time, web-based courses helped students with problem-solving because the whole web-based format required a step-by-step application by students.

Davies & Graff (2005) studied 1122 undergraduates and found that greater online interaction did not significantly affect grades of those who passed the course, but that those who failed did interact less frequently. Groves & O'Donoghue (2009) conducted a limited study of 30 students in an undergraduate sports program. Here an online seminar was used by professors after face-to-face meetings with and among students. Groves and O'Donoghue found that online participation was problematical and recommended blending online learning with traditional learning for best results. Groves and O'Donoghue cited Downing (2001) to emphasize that that successful online teaching depended on sound pedagogy rather than just a reliance on online technology itself. Groves and O'Donoghue then cited a number of authors in support of online learning broadening student participation by appealing to the less talkative and those preferring to think before speaking, but also a number of other authors about the difficulty of online participation and slackers. The authors surmised that there were differing success rates in motivating extrinsically and intrinsically motivated students and that deep learning might not have happened because online students exhibited only the surface learning to get extensive extrinsic rewards needed for online participation points. Groves and O'Donoghue cautioned against blending learning in larger classes.

Scagnoli, Buki, & Johnson (2009) conducted a qualitative study of four experienced social science teachers to see what was transferred back into traditional classroom from online classrooms. The authors cited a number of studies with findings that traditional instructors who began online teaching acquired a number of new skills for their traditional classrooms. The qualitative study of Scagnoli, Buki, & Johnson attempted to show how and what instructors transferred back to their traditional classrooms. Results were mixed, with some instructors maintaining clear distinctions between their two types of teaching. However, those instructors who cross-coordinated liked the online opportunities for students to see each others' written work via discussion boards and team wiki writing projects. As with previous studies, Scagnoli, Buki, & Johnson found that those professors who were more likely to transfer online methods back to traditional classrooms did so when course subject matter was the same and when that professor's teaching style was more of a facilitator for student learning activities than an authoritative lecturer.

Scagnoli, Buki, & Johnson identified four stages of instruction: presentation, guidance, practice, and assessment. Where online tools were incorporated back to the traditional classroom, the common ones under presentation included using the same online presentations and incorporating student comments into lectures. The common ones under guidance were discussion forums. The common ones under practice were submitting assignments and peer reviews online. Finally, few common ones under assessments were found; professors did not incorporate tools like online evaluation rubrics back into their traditional classrooms. Scagnoli, Buki, & Johnson thus concluded that their study contradicted previous studies in finding that technical mastery of online teaching did not automatically translate back into cross-pollination of that professor's traditional courses.

We next turn to online techniques themselves. In a heavily cited paper of twelve years ago, Webster, J. & Hackley, P. (1997) noted that schools of business were one developer of "technology-mediated distance education" and focused on management communications, education and information systems. They noted that schools of business were motivated both by cost-sharing across locations and by opportunities for students to use technologies that businesses would be having them use in their jobs. Webster & Hackley examined technology, instructors, courses, and student characteristics to gauge influences on distance learning. They concluded that technology should be both reliable and rich. That is, it should be able to convey multiple cues to the speaker's meaning.

Webster and Hackley observed that even half-second delays in transmissions interrupted classes as professors would cut off students unintentionally. They then proposed a number of hypotheses linking effectiveness to the extent that the media could mimic face-to-face communication. Webster and Hackley concluded that instructors should be positive about the media used and should encourage students to interact with one another and with the instructor to overcome remoteness. They observed that students often felt intimidated by going on-camera and examined a number of hypotheses on the effects of attitudes toward technology. Webster and Hackley studied mainly graduate-level courses with enrollments from 4 to 36. These courses were delivered through teleconferencing with students in 1-3 classrooms. Wester and Hackley found that professors felt a need to "play to camera" but also appeared distracted because they were looking at monitors for student clues rather than looking at the camera and also because those professors were worrying about monitoring the technology while lecturing. Webster and Hackley concluded that media richness, student comfort with self images on screen, instructor control over technology, positive attitudes and interactive teaching were the keys to online teaching success.

Carnevale & Olsen (2003) found that successful online programs had originally been more career-oriented, targeting working adults. However, a growing number of traditional students were now taking more online courses for convenience and flexibility. Carnevale & Olsen cited the University of Phoenix as an example of blending online and traditional courses and recommended the university's "keep it simple" approach to online technology; the University of Phoenix uses textbooks in its online courses. However, the authors noted that media players for online lectures now work because of widespread broadband access. Carnevale & Olsen recommended that each university target specific industries in which they have expertise and overcome technical hurdles by building technical and administrative support structures before asking faculty to teach online. Nevertheless, the National Education Association's citation of student belonging and community was still seen as the biggest online challenge.

Another hurdle was instructor time. A study by Worley & Tesdall (2009) showed 20% more time and effort required for instructors to teach online than to teach the same course traditionally. These authors were from Indiana University-Purdue University and Minnesota State and based their survey on a two-semester study of their own courses. They did note however that past similar studies by other authors yielded inconsistent results.

Hrastinski (2008) found that most studies of online participation measured quantity rather than quality of encounters. Hrastinski therefore proposed a quality-based definition of online participation that included "doing, communicating, thinking, feeling, and belonging." Lam, W. (2004) reported on online discussion forum experiences in a totally online MBA program. This author had observed those forums in over 50 online classrooms of 5-30 students each and advised assigning students to introduce themselves in depth, maintaining constant instructor presence by giving specific discussion assignments, requiring specific checks and postings, monitoring and guiding discussions but assigning students to lead them, organizing discussions on topic, summarizing results and relating them to usable skills, and trying to personalize, engage, and congratulate students online.

THE NON-REPLICABILITY OF THE AUTHOR'S TRADITIONAL COURSE

After careful consideration, this author decided that his legal environment of business course could not be successfully converted into an online summer format at this time. One factor was the sheer volume of material to be covered. The online syllabi of Wegman (2009) and Estabrook (2009) were representative of normal online material coverage and indicate that most online courses cover fewer topics than this author's syllabus. Lam (2009) concluded that there was no difference in student performance between students that took online courses and those that took traditional courses, but Groves and O'Donoghue (2009) cited Downing (2001) to emphasize that that successful online teaching depended on sound pedagogy rather than just a reliance on online technology itself. In this author's case, there was a traditional course pedagogy that was working well, and so the goal was to try to replicate it as closely as possible in the online summer course. Student engagement was key to this professor's teaching style.

Webster & Hackley (1997) emphasized the need for rich technology in the online teaching of courses, technology that would provide both the students and the professor with multiple clues as to the meaning of whomever was speaking at that time. Webster & Hackley observed that even half-second delays in transmissions interrupted classes as professors would cut off students unintentionally and diminish media richness. Carnevale & Olsen (2003) emphasized that the simplicity of online media was often the key to successful online courses. With these factors in mind, this author worked with his university's online support team to try to find an effective way to transfer his course into online summer delivery. After reviewing this author's syllabus and working with him for a month, that team also concluded that the volume of material to be covered would preclude effective online instruction in a summer course.

For this author, however, the biggest difficulties with transferring his traditional legal environment of business course to an online summer course were identified in a certification course required by his university before teaching online courses. That certification course, known as the Certification Program for Online Instruction (CPOI) focused on asynchronous instruction. Asynchronous instruction allowed different online students in the same course to access classes at different times. This allowance was very helpful to students whose work and personal schedules do not allow them to make traditional class times. However, it meant that online instruction had to be formatted in a highly structured sequential manner. Each student had to be able to progress through the material in the same order, no matter when (s)he accessed that particular class. That sequential pathway worked for step-by-step problem-solving courses. It did not work well for courses like legal environment of business which were more contextual and which required constantly relating topics under discussion to other topics that might or might not have been introduced yet. This author's teaching approach for legal environment of business required a more global perspective, being able to ensure that students had seen the overall picture before filling in the details. Sequential teaching, on the other hand, taught details in a set order.

This author thus explored synchronous teaching possibilities. Synchronous teaching requires all students to be online at the same time as the professors. Practicing lawyers use it extensively in their continuing education courses, and business people use similar technology in remote business conferencing. However, as Webster & Hackley (1997) noted, the key is to have technology that is both rich and reliable. An exploration of the technologies available to the author's university and affordable to the author's students showed that frequent buffering and delays would significantly hamper synchronous online instruction. Much of the student engagement required for an introductory contextual course would be lost. Yet all was not lost from this author's unsuccessful efforts to transfer his legal environment course to online delivery. Scagnoli, Buki, & Johnson (2009) thus concluded that technical mastery of online teaching did not automatically translate back into cross-pollination of that professor's traditional courses. In this author's case, he did find a useful addition to his traditional course. Using Fang's (2009) idea of an online video library of lectures, this author was able to cover a class that he needed to miss to attend an academic conference. As technology continues to advance, this author continues to hope that he will be able to find a way to effectively transfer his full course to online delivery while retaining all of the student engagement needed.

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TIME VALUE OF WRITING: EFFECTIVE LEARNING AND EFFICIENT ASSESSMENT

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ABSTRACT

Commonly, business professors object legitimately to the use of writing assignments in their classrooms because of the expenditure of time on assigning and grading, not to mention the disappointments of substandard responses. Business classes are not writing classes, after all. Yet, in the new age of rapid digital communications and e-commerce, precise writing remains a significant skill set for our graduates. This paper asserts that we should take advantage of the opportunities presented by a writing-intensive business course design. Similar to the determination of the time value of money, the valuation of writing is not static or immediately apparent. Because writing assignments address the concerns of each educational stakeholder, including students, professors, college administrators, and eventual employers, we suggest that judicious use of graded and ungraded writing tasks, efficient grading, and electronic record-keeping can yield potentially more effective and efficient deliverables for each stakeholder.

INTRODUCTION

Our internet-dominated age with its combined hyper-speed circulations of information and capital generates exciting new opportunities and challenges for business educators. Perhaps no one at the university is better situated to understand how the information and commercial practices on the internet combine to create the current climate of transparency and accountability that permeates both the business and academic worlds. The old, isolated sage-on-the-stage approach of higher education no longer seems viable when multiple stakeholders demand measurable returns on their investments in education.

In this variously labeled age of access or of fast capital, premium value accrues from the establishment and maintenance of relationships rather than on the accumulation of property (Rifkin, 2001; Agger, 1989). Each relationship carries with it a high stakes demand for mutual accountability. In higher education, we are accountable to our students, their potential future employers, and university administrators. The result is often a chaotic environment as professors contemplate how to align their learning objectives, with classroom activities, assignments, feedback and grading, measurable learning outcomes, data collection, and program report writing. Professors can no longer claim that scholarship and teaching exhaust their professional obligations.

While it may seem counter-intuitive, we argue that the use of writing tasks, fraught as they are with an investment of time up-front to develop prompts, assessment tools, and feedback strategies, may actually help to deliver surprisingly efficient returns for the full range of stakeholders in business education. The use of writing activities is analogous to a time-value of money in which an initial investment in integrating writing into teaching, learning, and assessment strategies will provide not only a means for today's students to learn requisite content and skills, but also a means to fulfill the institutional demands for assessment and produce graduates who satisfy employer needs. This process begins with understanding our current traditional-age students, who comprise the so-called millennial generation and who have grown up as consumers in the digital age, already cognizant of the value of active participation in the establishment and maintenance of networks or relationships.

MILLENNIAL STUDENT PROFILE

The Millennial Generation (known also as generation Y or the net generation) includes those individuals who were born in the 1980's and into the 1990's. This generation represents the traditional-age students currently entering and matriculating through college. Although each individual is different, millennial students share some common characteristics. Drawing on research by Howe and Strauss (2007) and Oblinger and Oblinger (2005), the millennial characteristics most relevant to this discussion are listed below.

- **Technologically literate:** This generation of students has enjoyed extensive access to and use of various technologies. They are constantly e-mailing, instant messaging, texting, tweeting, and gaming. As such, millennials possess great facility with computers and can learn new technologies with little instruction. They commonly use the internet to search for various information and rely on it as a primary resource.
- **Connected and social:** With the use of such portable devices as cell phones, laptops, and iPods, these young people are constantly connected to each other and the world. As they move between activities, they easily use communication technologies to remain in contact

with friends and family. Because of their constant connectedness, they are inclined to seek activities that involve social interaction and seem more open and inclusive than previous generations. Millennials' social nature suggests that they may have a tendency to work in teams and prefer peer-to-peer interaction in the learning process.

- **Multi-taskers:** Millennial students are prolific multi-taskers. They move swiftly between one activity and another and often join in multiple tasks at once. These students are accustomed to the fast pace of communication. They send and receive information very quickly which has fostered a sense of immediacy. They place high value on quick communication. Millennials expect to receive an instantaneous response to their inquiries and desire prompt feedback on their assignments.
- **Structured:** From being carted to one activity after another, these students have experienced high levels of structure in their daily routine and are achievement-oriented. They also tend to prefer having schedules, rules, and guidelines to dealing with uncertainty and want to know what they need to do and by when.
- **Predisposed to learning visually and by doing:** From their constant use of various technologies and visual media, these learners interact much more so with image-rich representations than they do with text. When tackling a new assignment, these students tend to favor examples of assignments (a visual representation) over lengthy, textual instructions. Moreover, these students learn from doing. They want to be actively engaged in the learning process and experience high levels of interactivity.

TIME-VALUE OF WRITING

Research suggests that effective undergraduate education includes significant student-student interaction, student-teacher interaction, use of active learning strategies, cooperative learning and prompt feedback (Chickering & Gamson, 1987). Moreover, using such active learning strategies as class discussion, simulations, peer teaching, and small group work (Bonwell & Eison, 1991) can produce such outcomes as knowledge acquisition, cognitive development, communication skills, interpersonal skills, and educational attainment (Pascarella & Terenzini, 1991; Astin, 1984). Writing, in particular, enables students to use and develop critical thinking and communication skills while learning course concepts (McLeod, 2001).

Keeping in mind the attributes of the millennial learner and the demands for accountability in the age of access, professors should develop appropriate learning activities for this newer generation which will include the integration of active learning strategies, particularly writing, into the curriculum and recognize its tremendous value. This concept underlies the application of the analogy to the time value of money concept. The time value of money suggests that if you let money sit (uninvested), it will lose its value over time; however, if you invest it wisely, the money generally will accrue a greater future value. As with learning, an initial investment in writing as part of teaching, learning, and assessment increases the future value of learning. In fact, this investment can lead to addressing the needs of such stakeholders as the student, professor, administration, and employer for what might be considered compounded outcomes in terms of efficiency and quality assurances for each stakeholder. To explore this concept more, the authors present a holistic approach to course design followed by a more specific assignment-based approach to facilitate learning for two specific learning objectives in a business curriculum. These approaches also address certain learning activities and assessments which link to other stakeholder needs for each learning objective.

HOLISTIC APPROACH TO LEARNING MAPPING PROGRAM OBJECTIVES TO COURSE DESIGN

The holistic approach to learning includes several different learning strategies that incorporate writing and are used throughout an entire course to achieve a particular learning objective. In this example, the learning objective is developing students' ability to work effectively in teams. By integrating writing into their repertoire of learning strategies, professors can appeal to the millennial learner and foster development of business students' teaming skills while addressing other stakeholder needs.

Stakeholder Needs. As the professor considers and selects learning objectives, course content, teaching and learning strategies, and assessment tools, careful planning must take place to identify key stakeholders and decide how to address their needs as listed in Table 1 of the Appendix. This example highlights a learning objective already chosen by the academic program: effectively work in teams. To address this objective, the student stands as the first and most important stakeholder to consider. As previously outlined, millennial students need structure and prompt feedback in the learning process and are inclined to learn from group work (including high levels of interaction) and hands-on activities. The entire course design will focus on providing such active learning strategies as group work, writing assignments, and simulations, among others, to appeal to millennial students' learning styles and facilitate learning knowledge and skills.

At the same time, the professors' role in the educational process is to assure that the planning and implementation of the course design promotes learning. Professors hold a responsibility to enable students to learn and provide evidence that learning has taken place. This evidence may be needed for demonstrating effective teaching as part of the tenure and promotion processes. More broadly, data may be required by administration for such tasks as allocating resources to successful programs and for demonstrating accountability through institutional reporting requirements.

Beyond the needs of the students, professors, and administration, the educational process should produce graduates who are ready to embark on their professional career or graduate school. In business, employers want productive team members. Carefully constructed assignments particularly designed to develop teaming skills can help serve this need.

Assignments. Several group and individual writing assignments form the foundation for learning teaming skills in a Senior Capstone Course in Strategic Management at a small, public, liberal arts university. Initially, the course begins as the professor briefly expounds on research and a model for effective team work. Students consider this material in order to provide a base for developing their own written policy on teamwork. Once the class discusses what makes an effective team process and norms for group member behavior, the students (in small groups) develop their own norms to which all members will be held accountable. They also articulate a disciplinary process to follow for any members who do not behave as indicated by the policy. The ideas developed in small groups as a written assignment are then collected and aggregated into a single team policy by the professor. The class conducts a final review of the team policy and approves it for use throughout the remainder of the semester.

During the semester, these students also develop in-class and out-of-class group papers and presentations on assigned articles and cases. Both the papers and presentations provide opportunities for students to deepen their understanding of the material while working together to discuss prominent issues and synthesize the material. As for presentations, students also integrate writing by analyzing and synthesizing information into the textual and visual components of PowerPoint slides they produce to support the presentation.

This course also uses the Business Strategy Game (BSG) simulation to learn more about decision-making particularly as it relates to implementing strategy involving the key business functions. The students work in groups of three to make their decisions. Elements of this simulation are integrated into such written assignments as in-class exercises on refining mission and strategies at various levels; an individual case study on BSG simulation results that uses group analysis for its foundation; and a final presentation supplemented with a written handout in response to assigned questions. This simulation requires students to work very closely with each other for several assignments and to think critically as groups produce written insights about various aspects of the simulation.

The course uses numerous group assignments beyond the aforementioned examples and culminates with a narrative peer evaluation. This assignment requires students not only to rate their group members (on a scale of 1 to 50), but also to apply the team policy and justify why each member deserves the rating in accordance with the stated policy. The exercise provides insight into how well the students understand effective team work as expressed in the narrative they write.

Feedback/Assessment. Such assignments as the team policy, papers, presentations, simulations, and peer evaluations provide a means by which students learn teaming skills and faculty can document such learning. As a result, faculty can generate data for reporting outcomes to administration and hopefully, prepare students for the job market. As demonstrated in Figures 1-4 of the Appendix, developing various assessment tools can help in this regard.

An initial investment in creating several rubrics for evaluating assignments can serve many purposes and have a greater future value. Appropriate assessment tools can simultaneously give feedback to students as well as generate data for course and institutional assessment. While the millennial profile describes a need for immediacy and structure, rubrics can address both traits. Providing a rubric to students for the given assignment clarifies expectations and enumerates the value of each graded element in the assignment. Though the rubric provides a structure for evaluating the assignment, it also provides a quick way to offer feedback especially if automated. Using such systems as Waypoint Outcomes to automate rubrics enables faculty members to provide detailed feedback via e-mail as soon as the paper has been graded. This functionality avoids the delays encountered when waiting for the next class period and may allow students to more quickly use the information to work on other assignments.

Student scores on these rubrics can be culled and converted to assessment data. These data can inform faculty members about student achievement of learning goals and where to improve courses while providing administration with the program's achievement of particular learning goals. The rubric for evaluating the narrative peer evaluation generates data that indicates how well students applied the team policy. These data are reported to administration on the program's annual report for student learning outcomes. Although these data and reports are important to administration and other external agencies like accrediting bodies, the telling outcomes of assigning and assessing writing will hopefully be exhibited by rates of employment and promotion.

Future Value. For students, the future value of these learning activities includes not only the development of teaming skills through various assignments, but also the development of content knowledge, communication skills, and critical thinking skills. Beyond that, value accrues to other stakeholders as faculty can prove and students can show that these activities have enabled knowledge acquisition and skill development.

HOLISTIC LEARNING: MAPPING LEARNING OBJECTIVES TO ASSIGNMENT DESIGN

As indicated in Table 2, the holistic approach to learning can also be applied to single writing assignments with the same mandate to consider the needs of multiple stakeholders. The traditional proposal assignment in business writing is easily adapted to meet a number of program, class, and university learning objectives. When students complete their proposals, they generate tangible evidence of newly acquired knowledge and skills that can be easily quantified for multiple assessment purposes as demanded by each stakeholder. The example below starts with the program objective that students demonstrate understanding of a contemporary issue facing the 21st-century business manager, in this case, corporate citizenship as an important public relations and marketing opportunity, especially for multinational organizations.

Stakeholder Needs. As always, the consideration of stakeholder needs in academic environments begins with the students. Taking into consideration the millennial generation profile characteristics of sociality, requirement of frequent assurance, and achievement-orientation, professors might consider turning the proposal assignment into a group project with periodic drafting of specific sections that get posted onto an electronic course software for formative assessment and feedback. In order to help students connect the task to real-world achievement, the proposal could be the result of a plausible simulation for documents of its kind.

In the proposal assignment example highlighted here, a unique opportunity exists to merge the needs of professors, administrators, and employers as all three stakeholders require the generation of qualitative and quantitative data to demonstrate that learning has taken place. At Lock Haven University, the general education program ensures reinforcement of core competencies through the use of skills overlays attached to upper division courses. In this example, the core competencies of information literacy (IL), Writing Emphasis (WE), and Multicultural Competence (MC) can be effectively measured even as the performance itself—the production of a proposal—indicates understanding and application of the original learning objective concerning corporate citizenship.

Proposal Assignment. In Figure 5 of the Appendix, a fictional call for proposals from a multinational corporation, asks for consultants to develop projects to improve the corporate citizen image of the corporation in an area where it operates. This simulation asks students to research contemporary examples of poor corporate citizenship practices, to consider plausible activities to raise awareness and bring executives face-to-face with local citizens, to develop marketing plans for the project, and to create a budget for all aspects of the proposal. In the process, they work together to demonstrate their research skills (IL); represent their writing skills in a number of different formats and writing situations including one-page executive summaries, proposal and budget narratives, memos of agreement, and promotional materials (WE); and consider how best to establish communications across socioeconomic and geographic divides with their project activities that bring executives face-to-face with community members (MC). Because the project divides into seven different sections, some calling for accountants, some for public relations, some for activities coordination, and some for digital graphic design, students can take responsibility for areas that best suit their majors and skill sets with each member of a "consultant team" taking responsibility for editing and the final proposal.

Feedback/Assessment. One of the signature features of the corporate citizenship proposal is the continuous feedback loop established among team members and the professor as the project evolves. Each group member reviews working drafts of sections and appends them to an online threaded discussion. From there, the professor can monitor progress and offer comments. This peer and instructor formative assessment enables a broad range of instructive opportunities for each member of the group and at times, opportunities to share best practices or troubleshoot potential obstacles with other groups.

It is with summative assessment, however, that the project can be used to satisfy the demands of university and employer stakeholders for quantitative measures. Figure 6 of the Appendix is the writing rubric used to assess completed proposals. Significantly, this rubric customizes the university's standard WE rubric to meet the unique demands of professional business writing, including especially a visual component to the "style" trait. This example demonstrates how other administrative assessment instruments can be used both to provide useful feedback for students, while simultaneously generating performance data for program and university needs.

Future Value. As with all writing assignments, the corporate citizenship proposal requires considerable initial investment in the development of materials, assessment instruments, continuous feedback opportunities, and alignments with wider and wider concentric circles of stakeholder interests. Yet, the compounded interest of this investment emerges for students, who now have a tangible document to demonstrate successful team participation as well as a template for future proposal opportunities. For professors, the opportunity opens to demonstrate effective teaching and to provide administrators and employers with assurances of quality, skilled graduates across a broad spectrum of relevant competencies. In the age of access and of fast capital and thus of accountability, the initial investment of time returns with greater efficiencies as assessment data is generated in the real time of production and can be easily converted into whatever form it needs to take to meet institutional needs.

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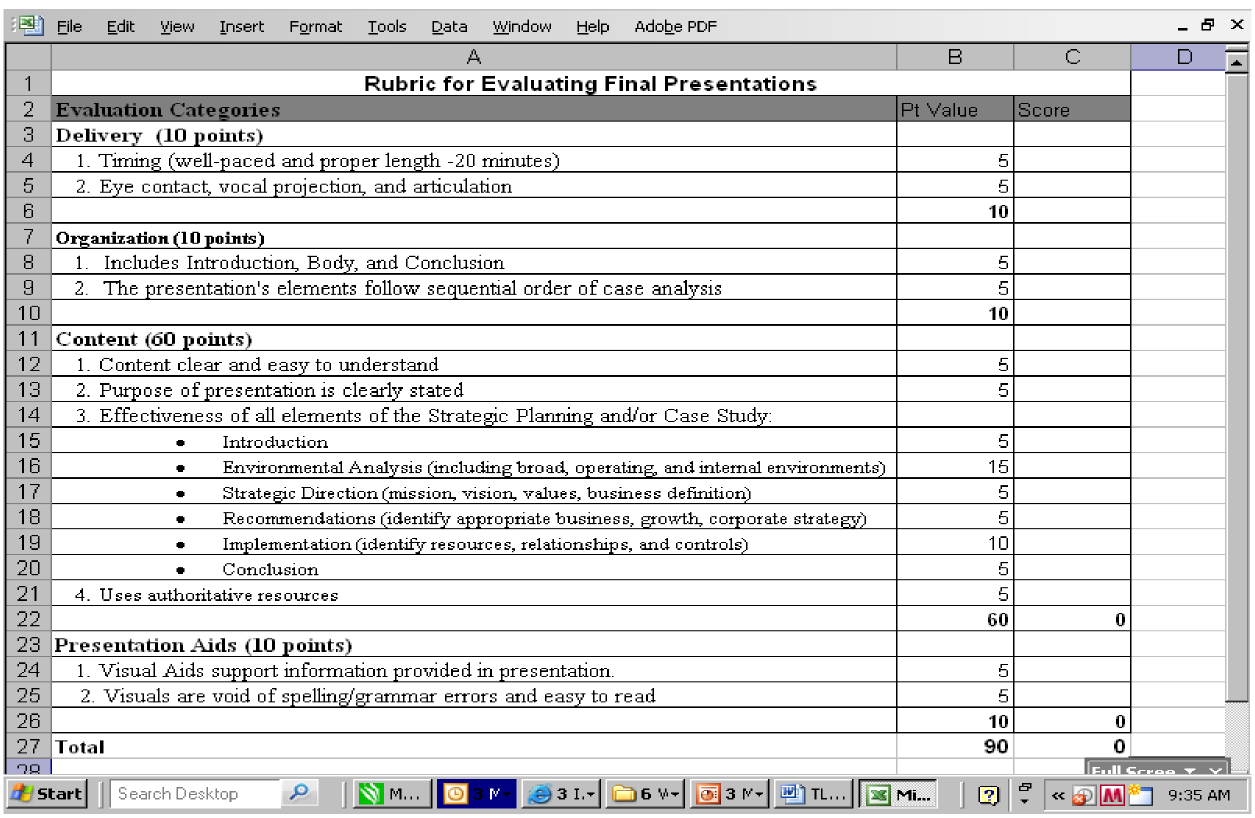
Table 1

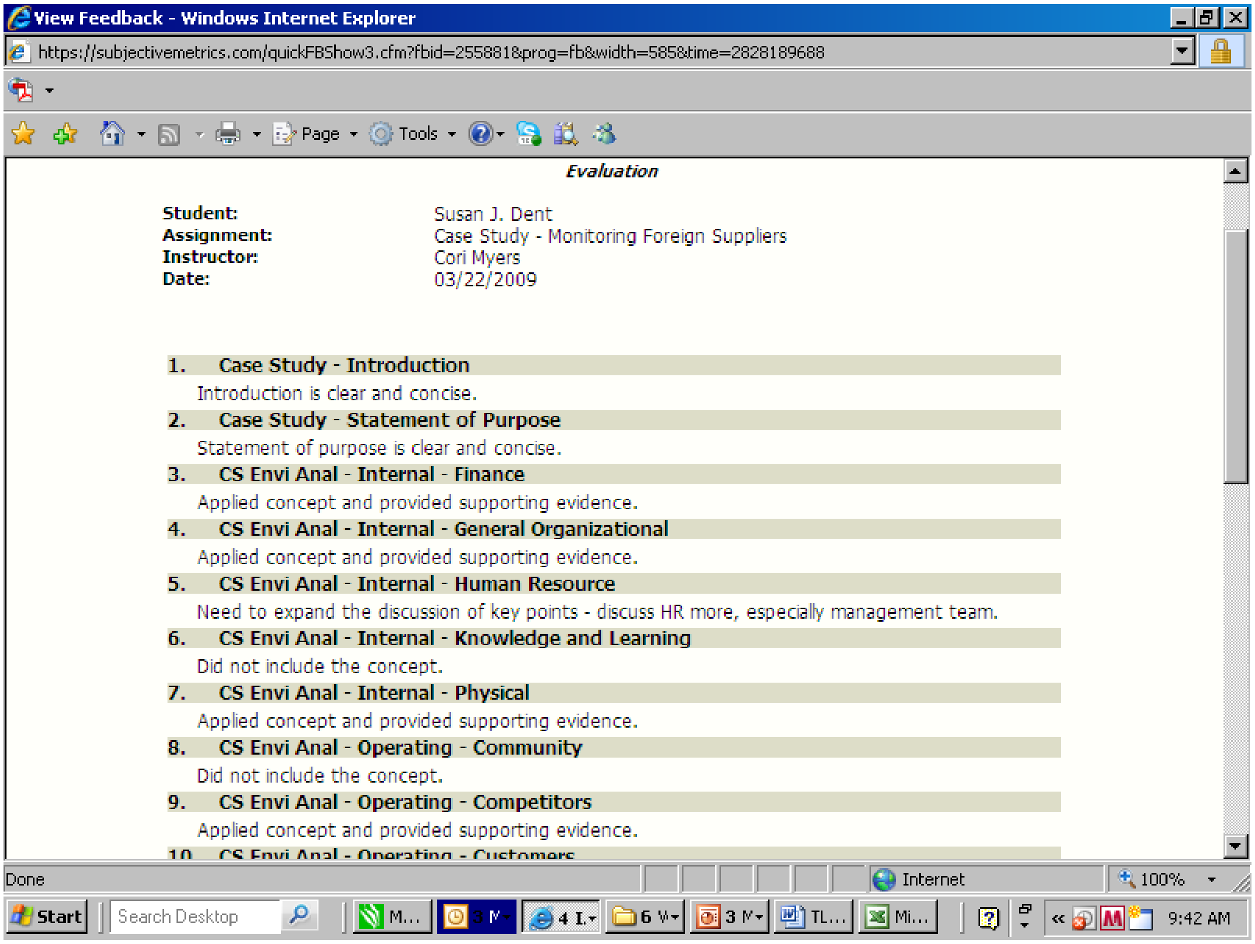
Stakeholder	Stakeholder Need	Assignment	Feedback/ Assessment	Future Value
Student	Social, team-oriented, visual, structured, learn by doing	Team policy, Group papers and presentations, simulation, peer evaluations	Group discussion, rubrics, written comments, and other electronic grading	Compounded Outcomes
Professor	Teach teaming skills	Develop skills + content/communi cation	Converting results to Assessment Data	
Administration	Evidence of teaming skills	Generate data for reporting	Annual Report	
Employer	Productive team member	Prepare students for job	Employment and Promotion	

Figure 1



	A	B	C
1	Rubric for Evaluating Final Presentations		
2	Evaluation Categories	Pt Value	Score
3	Delivery (10 points)		
4	1. Timing (well-paced and proper length -20 minutes)	5	
5	2. Eye contact, vocal projection, and articulation	5	
6		10	
7	Organization (10 points)		
8	1. Includes Introduction, Body, and Conclusion	5	
9	2. The presentation's elements follow sequential order of case analysis	5	
10		10	
11	Content (60 points)		
12	1. Content clear and easy to understand	5	
13	2. Purpose of presentation is clearly stated	5	
14	3. Effectiveness of all elements of the Strategic Planning and/or Case Study:		
15	• Introduction	5	
16	• Environmental Analysis (including broad, operating, and internal environments)	15	
17	• Strategic Direction (mission, vision, values, business definition)	5	
18	• Recommendations (identify appropriate business, growth, corporate strategy)	5	
19	• Implementation (identify resources, relationships, and controls)	10	
20	• Conclusion	5	
21	4. Uses authoritative resources	5	
22		60	0
23	Presentation Aids (10 points)		
24	1. Visual Aids support information provided in presentation.	5	
25	2. Visuals are void of spelling/grammar errors and easy to read	5	
26		10	0
27	Total	90	0

Figure 2



Evaluation

Student:	Susan J. Dent
Assignment:	Case Study - Monitoring Foreign Suppliers
Instructor:	Cori Myers
Date:	03/22/2009

1. Case Study - Introduction
Introduction is clear and concise.

2. Case Study - Statement of Purpose
Statement of purpose is clear and concise.

3. CS Envi Anal - Internal - Finance
Applied concept and provided supporting evidence.

4. CS Envi Anal - Internal - General Organizational
Applied concept and provided supporting evidence.

5. CS Envi Anal - Internal - Human Resource
Need to expand the discussion of key points - discuss HR more, especially management team.

6. CS Envi Anal - Internal - Knowledge and Learning
Did not include the concept.

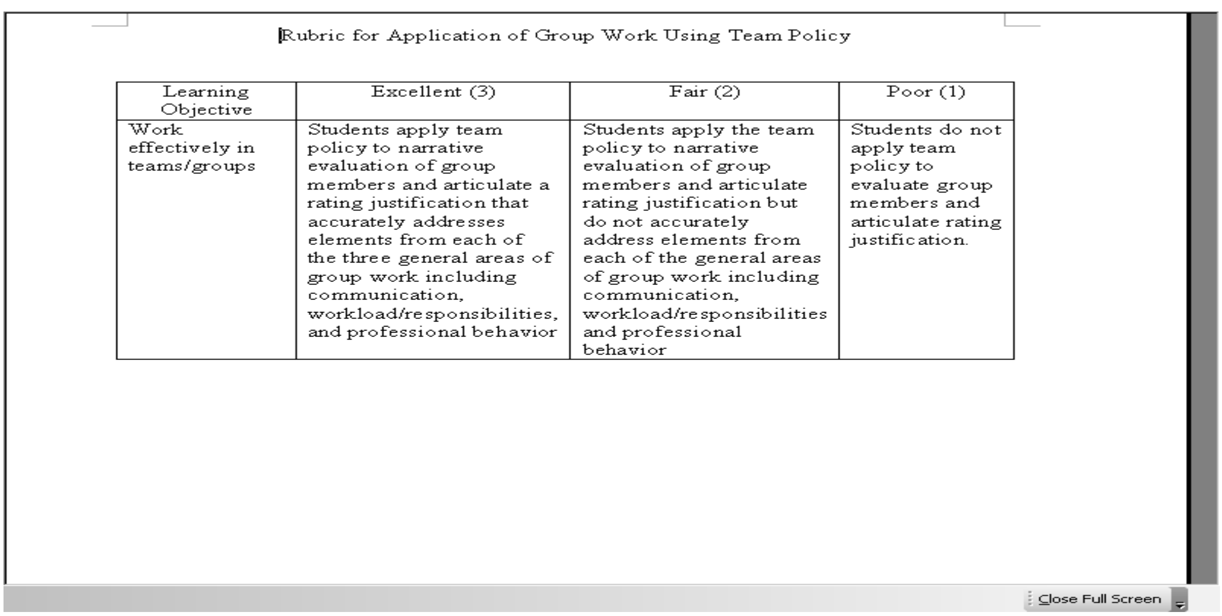
7. CS Envi Anal - Internal - Physical
Applied concept and provided supporting evidence.

8. CS Envi Anal - Operating - Community
Did not include the concept.

9. CS Envi Anal - Operating - Competitors
Applied concept and provided supporting evidence.

10. CS Envi Anal - Operating - Customers

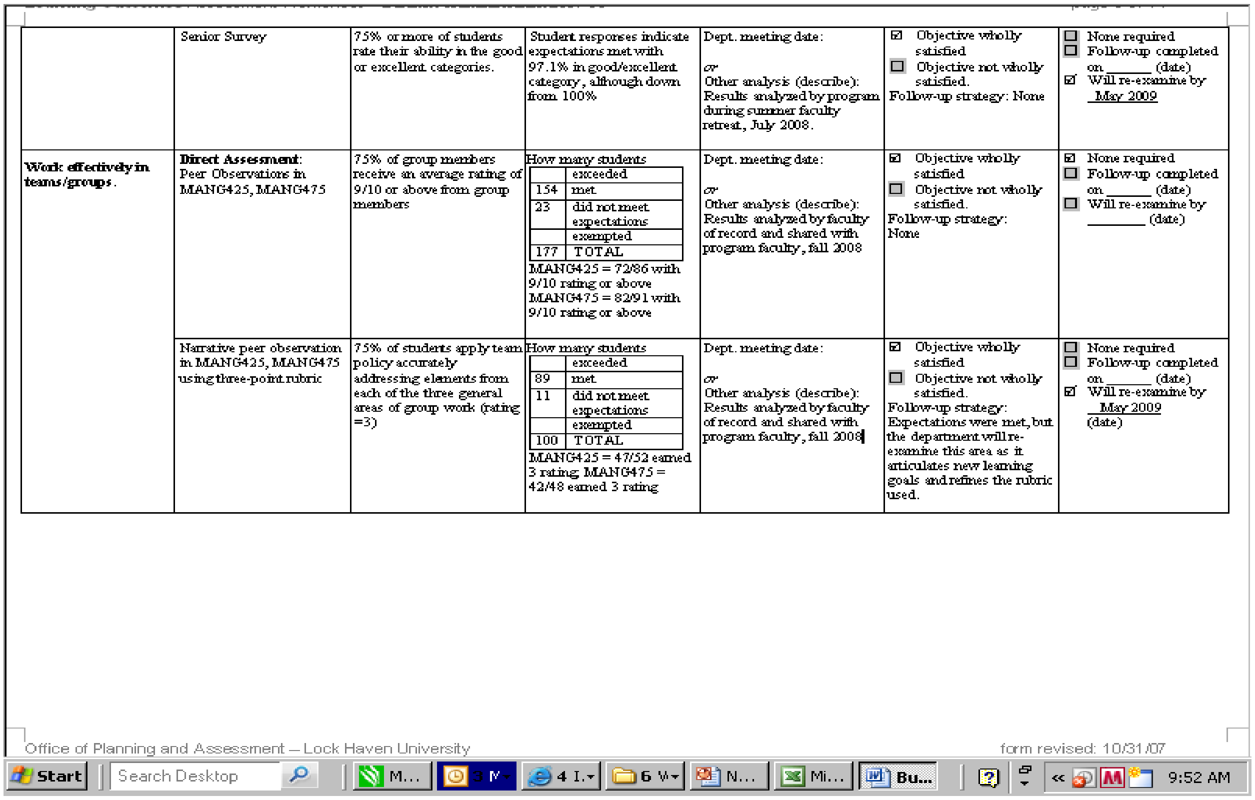
Figure 3



Rubric for Application of Group Work Using Team Policy

Learning Objective	Excellent (3)	Fair (2)	Poor (1)
Work effectively in teams/groups	Students apply team policy to narrative evaluation of group members and articulate a rating justification that accurately addresses elements from each of the three general areas of group work including communication, workload/responsibilities, and professional behavior	Students apply the team policy to narrative evaluation of group members and articulate rating justification but do not accurately address elements from each of the general areas of group work including communication, workload/responsibilities and professional behavior	Students do not apply team policy to evaluate group members and articulate rating justification.

Figure 4



	Senior Survey	75% or more of students rate their ability in the good or excellent categories.	Student responses indicate expectations met with 97.1% in good/excellent category, although down from 100%	Dept. meeting date: *or* Other analysis (describe): Results analyzed by program during summer faculty retreat, July 2008.	☑ Objective wholly satisfied ☐ Objective not wholly satisfied. Follow-up strategy: None	☐ None required ☐ Follow-up completed on _______ (date) ☑ Will re-examine by May 2009
Work effectively in teams/groups.	**Direct Assessment:** Peer Observations in MANG425, MANG475	75% of group members receive an average rating of 9/10 or above from group members	How many students _ exceeded 154 met 23 did not meet expectations _ exempted 177 TOTAL MANG425 = 72/86 with 9/10 rating or above MANG475 = 82/91 with 9/10 rating or above	Dept. meeting date: *or* Other analysis (describe): Results analyzed by faculty of record and shared with program faculty, fall 2008	☑ Objective wholly satisfied ☐ Objective not wholly satisfied. Follow-up strategy: None	☑ None required ☐ Follow-up completed on _______ (date) ☐ Will re-examine by _________ (date)
	Narrative peer observation in MANG425, MANG475 using three-point rubric	75% of students apply team policy accurately addressing elements from each of the three general areas of group work (rating =3)	How many students _ exceeded 89 met 11 did not meet expectations _ exempted 100 TOTAL MANG425 = 47/52 earned 3 rating MANG475 = 42/48 earned 3 rating	Dept. meeting date: *or* Other analysis (describe): Results analyzed by faculty of record and shared with program faculty, fall 2008	☑ Objective wholly satisfied ☐ Objective not wholly satisfied. Follow-up strategy: Expectations were met, but the department will re-examine this area as it articulates new learning goals and refines the rubric used.	☐ None required ☐ Follow-up completed on _______ (date) ☑ Will re-examine by May 2009 (date)

Office of Planning and Assessment – Lock Haven University

form revised: 10/31/07

Table 2

Stakeholder	Stakeholder Need	Assignment	Feedback/ Assessment	Future Value
Student	Social, Assurance, Achievement	Voluntary Refugees Proposal	Threaded discussion; Writing Rubric; Workshop	Compounded Outcomes
Professor	Teach corporate citizenship	Monitor, facilitate development	Results to Assessment Data (WE)	
Administration	Skilled, responsible alumni	Data to assure skill; responsibility	Annual Report	
Employer	Diplomatic employees	Review skills of potential employees	Employment, Promotion, Branding	

Figure 5

REQUEST FOR PROPOSALS TO DEVELOP CORPORATE CITIZEN PROGRAM

A multi-billion dollar multinational corporation, XYZ requests proposals to enhance our corporate citizenship image. Special consideration will be given to proposals that provide community awareness training and can be used as a model for our other sites.

PROPOSAL GUIDELINES.

This rfp encourages image consulting firms to develop innovative programs that fulfill two functions:

1. Train our employees to be more sensitive to the communities where they work
2. Develop a plan in collaboration with our employees to enhance our corporate citizenship efforts.

Proposed programs must address issues specific to a community where we do business and contain the following:

I. Executive Summary: In one-page, provide an overview of your organization, the community issue, as well as your approach to raise awareness among our employees and to work with them to address the problem. Please include projected outcomes and total cost.

II. Need Statement: Describe the community issue. Please provide quantitative and qualitative evidence as appropriate to detail how the problem affects any or all of the following: human rights, standard of living, health, access to resources, and/or community pride. Be sure to describe what is currently happening and preview a more productive corporate and community partnership.

III. Proposed Project: Please provide a detailed description of your proposed project. All descriptions should include:

- Project overview
- List and description of activities
- List of projected outcomes of the project and who will be responsible to make sure that they are met
- Timetable for completion of each stage of the project
- Evaluation procedures

IV. Organization Description: Provide a short overview of your organization's history, mission statement, number of employees and titles to be assigned to the proposed program, and special qualifications or skills that recommend you to solve the proposed problem

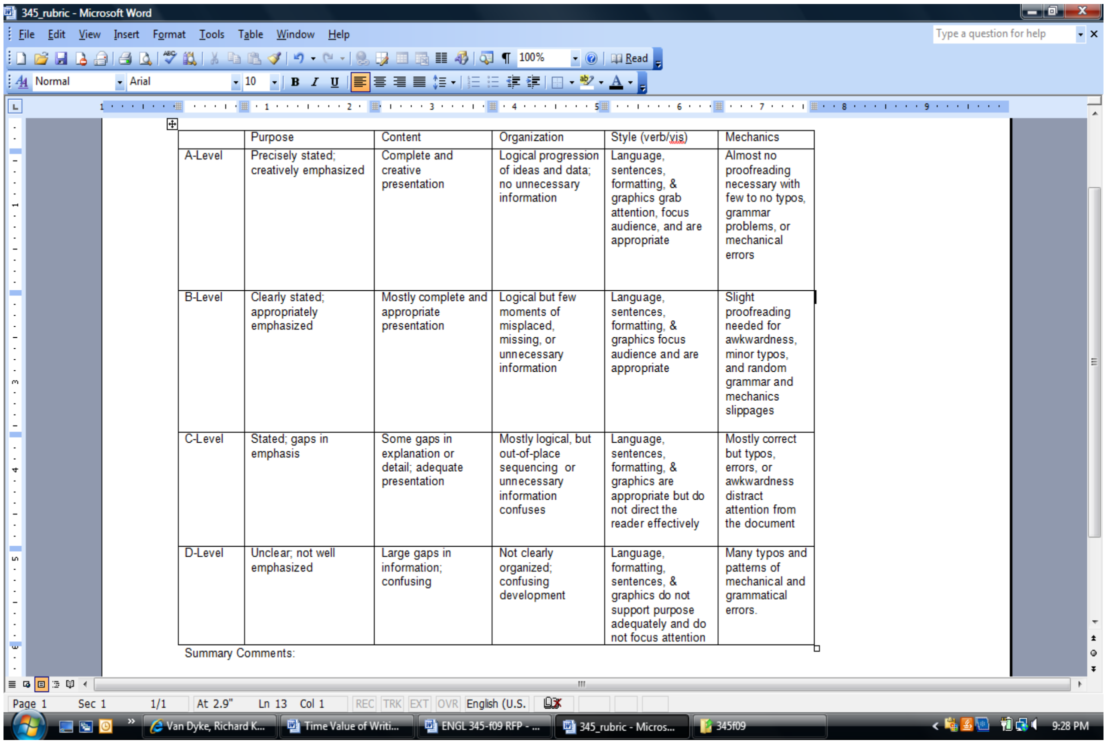
V. Promotional Strategies: The long-term success of projects require careful attention to advertising and promotion. Please detail your marketing plans, including intended audiences, promotional formats, and media sources.

VI. Project Budget: Budgets should include personnel costs (salary and no more than 15% fringe), travel expenses, materials costs, site rentals, and technology costs. We anticipate that we will be the sole funder of this project so do not require a revenue section.

VII. Attachments: Please include the following attachments:

- Memorandum of agreement with partnering organization
- Short bios of all personnel involved in the project
- Bibliography of any outside source material used in the preparation of this proposal
- Sample of advertising materials for local community members and international corporate audiences

Figure 6



	Purpose	Content	Organization	Style (verb/vis)	Mechanics
A-Level	Precisely stated; creatively emphasized	Complete and creative presentation	Logical progression of ideas and data; no unnecessary information	Language, sentences, formatting, & graphics grab attention, focus audience, and are appropriate	Almost no proofreading necessary with few to no typos, grammar problems, or mechanical errors
B-Level	Clearly stated; appropriately emphasized	Mostly complete and appropriate presentation	Logical but few moments of misplaced, missing, or unnecessary information	Language, sentences, formatting, & graphics focus audience and are appropriate	Slight proofreading needed for awkwardness, minor typos, and random grammar and mechanics slippages
C-Level	Stated; gaps in emphasis	Some gaps in explanation or detail; adequate presentation	Mostly logical, but out-of-place sequencing or unnecessary information confuses	Language, sentences, formatting, & graphics are appropriate but do not direct the reader effectively	Mostly correct but typos, errors, or awkwardness distract attention from the document
D-Level	Unclear; not well emphasized	Large gaps in information; confusing	Not clearly organized; confusing development	Language, formatting, sentences, & graphics do not support purpose adequately and do not focus attention	Many typos and patterns of mechanical and grammatical errors.

Summary Comments:

COSMOPOLITANISM: A KEY COMPETENCY IN INTERNATIONAL COLLABORATIONS

Miguel R. Olivas-Luján, Clarion U. of Pennsylvania & Tecnológico de Monterrey
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Sergio M. Madero Gómez, Tecnológico de Monterrey
Janet F. Stewart, Clarion U. of Pennsylvania

ABSTRACT

Cosmopolitanism is the notion that *all people are part of a single collective that should be nurtured*. There is ample documentation in International Management that technical competencies are often insufficient to succeed in cross-cultural assignments (Adler & Gundersen 2008, Ferraro 2006). In the recent past, several constructs have emerged in the International Management literature that attempt to describe the competencies that, in addition to technical competencies, are needed to succeed in cross-cultural endeavors. Among these constructs we found a Global Mindset (Gupta & Govindarajan 2002; Kedia & Mukherji 1999), Cultural Intelligence (Earley & Mosakowski 2004), and Cosmopolitanism (Olivas-Luján, Harzing & McCoy 2004; Kleingeld & Brown 2002).

This contribution is composed by three distinct sections: (a) definition and overview of Cosmopolitanism and related constructs, (b) report of our empirical tests on a Likert-scale measure of Cosmopolitanism using 1,156 responses, and (c) report of post-hoc comparisons with a US sample and suggestions for future research. The second section includes our findings on the 14-item measure that we have been testing, as well as its correlates with demographic characteristics and correlates to other values (Rokeach & Ball-Rokeach 1989; Murphy et al 2007). The final section highlights how our understanding of this construct can increase intercultural communication and cooperation.

INTRODUCTION

A construct that has not received enough attention in the cross-cultural management literature is Cosmopolitanism; it has been defined as a mindset that all people are a part of a single collective that should be nurtured. (Olivas-Luján, Harzing & McCoy 2004; p. 215). There is ample documentation in International Management that technical competencies (whether they relate to a functional business area like marketing, finance, accounting, or personnel supervision or to entirely different areas like engineering or health-related disciplines) are often insufficient to succeed in cross-cultural assignments. While technical competencies are of course required, much anecdotal evidence has been compiled to support the idea that the ability to work with individuals from different cultures is often a crucial determinant of success (Adler & Gundersen 2008; Ferraro 2006).

In the recent past, several constructs have emerged in the International Management literature that attempt to describe the competencies that are needed –in addition to technical competencies—to succeed in cross-cultural endeavors. Among these constructs we have found a Global Mindset (Gupta & Govindarajan 2002; Kedia & Mukherji 1999), Cultural Intelligence (Earley & Mosakowski 2004), and Cosmopolitanism (Olivas-Luján et al. 2004; Kleingeld & Brown 2002). An excellent review of constructs in the literature that also refer to this ability to interact with individuals from other cultures can be found in Levy, Beechler, Taylor & Boyacigiller (2007).

One of constructs reported by Levy and her colleagues was "cosmopolitanism and the attitudinal stances associated with cosmopolitanism, serve as an underlying theme of the cultural approach to global mindset" (2007; p.239). They believe cosmopolitanism is not a cultural approach with intrinsic value but rather a state of mind focusing towards the extrinsic or outside (i.e., collaborating global with local and familiar with foreign) and openness (i.e., willingness to explore alternate systems of thinking/meaning and change paradigms accordingly). This paper also acknowledges that, "although most writers do not mention the construct… cosmopolitanism should be viewed as one of the major conceptual dimensions of global mindset represented in the literature.

Earlier research by Olivas-Luján, Harzing, and McCoy (2004) posited that "Provincialism" would be the absence of cosmopolitanism or an opposite extreme of a continuum. In this paper, we argue that Cosmopolitanism is the "happy medium" that achieves the balance between ethnocentrism (the view that the "in-group" is superior to any other groups) and xenophilia (the view that "out-groups" are actually superior to the "in-group"). As Levy and colleagues offer: "Cosmopolitanism brings an open, non-judgmental stance to the perception of information, thus enabling individuals to be open to and acquire information from a variety of sources and arenas without regard to its national or cultural origin" (2007; p. 245). This competency may well be the essence of the "global mindset" or of "cultural intelligence" as it permits managers to avoid on one hand the "not invented here" syndrome and on the other a pathologic country-of-origin effect that welcomes foreign viewpoints as superior to local ones simply because they are perceived as belonging to a purportedly more advanced civilization. In Mexico's folk terms this is often called *malinchismo*, based upon the legend and historical accounts of *Malintzin*, an Aztec woman who purportedly was instrumental in Hernán Cortés' conquest of the Mexican indigenous empire.

Values

Values are commonly accepted to be the gut-level beliefs that people use to ascertain what is right and wrong, what is good and bad, what is normal and abnormal. According to Kluckhohn (1951) and Rokeach (1979), individuals value program not only during the first 20 years of life, but throughout their lives because of changes in society and in the environment. Research on socialization by Kluckhohn (1951, 1962) and moral development by Kohlberg (1970) indicate that while immediate family is the most important source of values during the first five years, school, media, church, friends, and organizations become increasingly influential. Environmental factors including social, economic, and political factors have an undeniable impact on one's value programming. Understanding values is important in that they are a primary underlying factor which determines attitudes and behavior. (Kluckhohn 1951; Rokeach 1973; Connor and Becker, 2003) A personal value system has been defined as "a relatively permanent perceptual framework which shapes and influences the general nature of an individual's behavior" (England 1967, p. 54.).

Rokeach's paradigm is measured through the Rokeach Value Survey (RVS) which consists of 18 terminal and 18 instrumental values. The terminal values are: A comfortable life, An exciting life, Sense of accomplishment, World peace, World of beauty, Equality, Family security, Freedom, Health, Inner harmony, Mature love, National security, Pleasure, Salvation, Self-respect, Social recognition, True friendship, Wisdom. The instrumental values are: Ambitious, Broadminded, Capable, Clean, Courageous, Forgiving, Helpful, Honest, Imaginative, Independent, Intellectual, Logical, Loving, Loyal, Obedient, Polite, Responsible, Self-controlled. This paradigm does not pretend to be exhaustive but has been seminal to the development of other conceptualizations of values such as Schwartz's (1992) and Hofstede's (1980, 2001).

A major purpose of this research was to explore the interrelationships between RVS values and cosmopolitanism. Rokeach (1973, 1979) and Rokeach and Ball-Rokeach (1989) related that values should impact attitudes and both impact behavior. Since no known studies have explored the relationship between cosmopolitan attitudes and values, we developed exploratory hypotheses for relationships between cross-cultural values and the cosmopolitan scores and the overall mean score for the cosmopolitan attitude scale (heretofore Cosmo). We developed the following hypotheses based on the definitions of Cosmopolitanism and the values from the Rokeach paradigm:

H1: Cosmopolitanism will be positively related with the terminal values *a world at peace, a world of beauty, equality, social recognition,* and *salvation*.

H2: Cosmopolitanism will be negatively related with the terminal values *a comfortable life, family security, inner harmony, mature love,* and *pleasure*.

H3: Cosmopolitanism will be positively related with the instrumental values *courageous, honest, loyal, polite,* and *responsible.*

H4: Cosmopolitanism will be negatively related with the instrumental values *ambitious, broadminded, capable, imaginative, intellectual, logical,* and *obedient*.

METHOD

This analysis is part of a larger data collection effort. In 2006, 2007, and 2008 we surveyed working adults and working adult university students in major cities in Argentina (N = 1,198), Brazil (N = 184), Colombia (N = 213), Cyprus (N = 133), Greece (N = 242), Hong Kong (N = 314), Mexico (N = 1,156), and the USA (N = 300). Of the sample, 1,982 were 18 to 25 years of age, 445 were 26 to 30, 500 were 31 to 39, 322 were 40 to 45, 223 were 46 to 50 and 272 were 51 or more years old. Within the sample, 778 were managers and 2,966 were non-managers, and 1,870 males and 1,874 females, for a total sample size of 3,744. From this sample, we selected the Mexican respondents for the current study, in an effort to keep the analyses simpler.

Although a variety of instruments have been used in value research, such as the Allport Vernon Lindzey Study of Values (Allport, Vernon & Lindzey, 1960), Chinese Value Survey (Bond, 1994), Schwartz Value

Survey (Schwartz & Bilsky, 1987, 1990), England's Personal Values Questionnaire (England, 1967), and Hofstede's Value Survey Module (1980), we employed the Rokeach Value Survey (RVS). The RVS is short, easy to translate, and has shown its reliability and validity in numerous cross-cultural research studies in the past 30 years (Connor & Becker, 2003; Murphy et al., 2006).

Instructions to those taking the RVS are standard with each respondent asked to order the values "in order of importance (from one most important to eighteen least important) to you, as guiding principles in your life" (Obot 1988 p. 367; Rokeach 1986; and Rokeach & Ball-Rokeach (1989). Reliability for the RVS was established through test-retest reliability for each of the 18 terminal values considered separately. Reliability from seven weeks to eighteen months later ranged from a low of .51 for *a sense of accomplishment* to a high of .88 for *salvation*, and employing a 14-16 month test interval, median reliability was .69 for terminal values (Rokeach and Ball-Rokeach, 1989).

We explored the level of cosmopolitanism using the cosmopolitanism scale developed by Olivas-Luján, Harzing and McCoy (2004). This scale is composed by 14 items (Figure 1) using a Likert scale from Strongly Agree on one end to Strongly Disagree on the other end. The instrument allows us to measure mean respondents for each attitude and a total mean score. The instrument's reliability was tested and re-verified in our research study and exhibited a Cronbach's alpha coefficient of 0.75.

READ 1	I like reading in other languages just for pleasure
MOVIES2	I prefer foreign movies to domestic ones
MUSIC3	I prefer music from abroad rather than from my country
POLITIC4	I have good knowledge of international politics
RELIG5	I know about religions other than my own
GEOGR6	I have good knowledge about the world's geography
FRIENDS7	I have many friends who were born in other countries
FOOD8	I enjoy trying food from different countries
IINTERA9	I am uncomfortable interacting with people from different cultures
CITIZ10	I consider myself a citizen of the world, not just a citizen of my own country
WORK11	Assuming there are not legal/financial/language constraints, I would like to work or live in countries other than my home country, at least for a while
FLUEN12	If I could speak another language fluently, I would not mind using it as often as my native language
TRAV13	I would rather travel inside my country than abroad
DANG14	Some culture may be dangerous

Figure 1 Items for the Cosmopolitanism Scale (Olivas-Luján, Harzing & McCoy 2004).

RESULTS

We tested the hypotheses for this cosmopolitanism study using the 1,156 respondents from Mexico; results are shown on Tables 1 and 2 (all tables can be located in the Appendix).

We accepted H1 and rejected the null hypothesis because cosmopolitanism was positively related with the terminal values *a world at peace, equality, social recognition*, and *salvation* for respondents from Mexico, but *a world of beauty* showed no relationship with cosmopolitan attitudes.

We could only partially accept H2 because cosmopolitanism was negatively related with the terminal values *family security, inner harmony,* and *mature love*, but *a world of beauty* and *pleasure* were not related.

We accepted H3 because cosmopolitanism was positively related with the instrumental values *courageous, honest, loyal,* and *responsible* but *polite* showed no relationship with cosmopolitanism.

H4 proposed that cosmopolitanism would be negatively related with the instrumental values *ambitious, broadminded, capable, imaginative,* *intellectual*, *logical*, and *obedient*. We accepted the hypothesis as 5 of the 7 values (*ambitious*, *broadminded*, *capable*, *imaginative*, and *intellectual* were negatively related with cosmopolitanism but *logical* and *obedient* showed no relationship with cosmopolitanism.

DISCUSSION

Our primary purpose was to explore the inter-relationships between cosmopolitan attitudes and values. Most of our hypotheses were generally supported.

Respondents' Values and Cosmopolitan Attitudes

The correlations between terminal values and the cosmopolitan scale indicated that *a world at peace*, *equality*, *social recognition*, and *salvation* are positively related with cosmopolitanism, but *a world of beauty* showed no relationship. Intuitively, one can expect that most of these values would be positively related to the notion that all man and women of the world are part of a collective that ought to be nurtured, but it is somewhat puzzling that *a world of beauty* did not show a statistically significant correlation.

On the other hand, cosmopolitanism was negatively related with the terminal values *family security, inner harmony,* and *mature love,* but *a world of beauty* and *pleasure* were not related to cosmopolitanism.

For instrumental values, cosmopolitanism was positively related with the instrumental values *courageous*, *honest*, *loyal,* and *responsible* but *polite* showed no relationship with cosmopolitanism.

Finally, the instrumental values *ambitious*, *broadminded*, *capable*, *imaginative*, and *intellectual* were negatively related with cosmopolitanism but *logical* and *obedient* showed no relationship with cosmopolitanism.

Summary

In sum, the terminal values *a world at peace*, *equality*, *social recognition*, and *salvation* and instrumental values *courageous*, *honest*, *loyal,* and *responsible* were positively related with cosmopolitanism. On the other hand, the level of cosmopolitanism was negatively related with the terminal values *family security*, *inner harmony*, and *mature love* and the instrumental values *ambitious*, *broadminded*, *capable*, *imaginative*, and *intellectual* were negatively related with level of cosmopolitanism.

Our respondents from Mexico had an outward cosmopolitan value and attitude structure, as exhibited by the relationship between level of cosmopolitanism and *a world at peace* or seeing the world free from war conflict and terrorism. There was no relationship with *national security* which might signify a concern for war, conflict and terrorism in their home land.

The positive relationships between being treated equally (*equality*), being recognized by their peers (*social recognition*), being saved and having eternal lives (*salvation*), being willing to stand up for their beliefs (*courageous*), being sincere and truthful (*honest*), being dedicated to their co-workers and organizations (*loyal*) and being dependable and reliable (*responsible*) with level of cosmopolitanism also indicated an outward focus toward the world, instead of being focused toward their homelands.

On the other hand, the negative relationships between level of cosmopolitanism and taking care of their families (*family security*), having inner peace, sexual and spiritual intimacy (*mature love)* and being dedicated and hard working (*ambitious*), being open minded (*broadminded*), being competent and effective (*capable*) being daring and creative (*imaginative*) and being intelligent and reflective (*intellectual*) seem to focus on their families at home.

The researchers are aware that many of the respondents from Mexico have traveled around the world, including frequent interaction with the USA. This gives them an open mind concerning working and living in another country, showing their focus outwardly, but they have an inward focus, in that, they work and live in other countries to benefit their families and extended families at home.

Additional, Post-Hoc Analyses

In order to further understand the research results, we factor analyzed the 14 items for the Cosmopolitanism scale (see Table 3 in the Appendix). The first factor seemed to encompass *Cross-Cultural Knowledge* (I like reading in other languages: Read1; I have good knowledge of international politics: Politi4; I know about religions other than my own: Relig5; I have good knowledge about the world's geography: Geogr6; and I have many friends from different countries: Friends7).

We called the second factor *Cross-Cultural Experimentation*, since it encompassed food, world citizenship, working and living in a foreign country, and speaking other languages.

The third factor we called *Cross-Cultural Modern Communication* as it encompassed foreign movies and music. And the final factor encompassed *Negatives Attitudes towards Other Cultures* because it included the attitudes I am uncomfortable interacting with people from different countries, I would rather travel in my country than abroad, and some cultures may be dangerous. The overall scale score (Cosmo) was the average of the four factor scores.

The outward focus of our respondents is also shown in their generally positive cosmopolitan attitudes (Table 4). They were comfortable reading in other languages, they preferred foreign movies and music, they had good knowledge about international politics, they had good knowledge of the world's geography, they had friends who were born in other countries, they enjoyed food from other countries, they considered themselves citizens of the world, they would like to work and live in another country, if they could speak another language they would like to use it as much as their native language, they would rather travel abroad then at home, and they did not feel uncomfortable interacting with people from different cultures. Finally, they only very slightly agreed that some other cultures might be dangerous.

Thus far in this study, we had analyzed the data regarding the respondents from Mexico only. However, we do believe future research utilizing the additional data collected from this study, may shed alternative perspectives on cosmopolitanism values and attitudes. Specifically, we are interested in comparing cosmopolitanism values and attitude structure between the respondents from Mexico with those respondents from the other countries (i.e., US, Brazil, Columbia, Argentina, Hong Kong, Greece and Cyprus) surveyed.

As a preliminary analysis, we compared cosmopolitanism between Mexico (N=1,156) and the US (N=300), two different cultures that are very proximate to each other and interact with increasing frequency. The means and standard deviations and inter-correlations for cosmopolitanism for the Mexico and US samples are shown in Table 5.

With country as the independent variable and values as the dependent variables, we explored value differences between the Mexico and US using a Kruskal-Wallis ANOVA, finding 11 of 18 terminal and 13 of 18 instrumental value differences (Table 6).

We then explored cross cultural differences in the level of cosmopolitanism by conducting an ANOVA with country as the independent variable and cosmopolitan attitudes as the dependent variables. The main effect for 2 countries X 14 cosmopolitan items was significant, using Rao's R(98, 23,340) = 40.864 ($p < .0001$).

When we conducted repeated ANOVA F tests for cross cultural differences, we found cross-cultural differences for 13 of 14 cosmopolitanism attitudes (Table 4).

We next explored the factor structure of the 14 cosmopolitanism attitudes, finding four identically significant factors for the US (Table 7) and for Mexico (Table 3); this is a positive sign that the Cosmopolitanism scale measures similar latent constructs across these two countries. Factor 1, consisted of the cosmopolitanism attitudes Read1, Politic4, Relig5, Geogr6 and Friends7, and suggested that this factor signified *Cross-cultural Knowledge.* Factor 2, consisted of the cosmopolitanism attitudes Food8, Citiz10, Work11, and Fluen12, seeming to signify *Cross-cultural Experimentation*. Factor 3, consisted of the cosmopolitanism attitudes Movies2 and Music3, suggesting this factor was *Cross-cultural Communication*. Factor 4 consisted of Intera9, Trav13, and Dang14, which seemed to signify *Negative Attitudes towards Other Cultures*.

Using repeated ANOVA F tests we found statistically significant cross-cultural differences between the four factors (Table 8). Factor scores were based on the average item scores (labeled as Cosmo) and a factor score for the average of the four factor scores was calculated (labeled as Cosmo1) also showed statistically significant differences using ANOVA F tests (Table 8).

We then compared the four factorial dimensions and overall scale score for Mexico as compared to the US (Table 8). The overall score for the US (Cosmo) was .27 for the US and .81 for Mexico, which was statistically significant (ANOVA F {DF=5, 2351} = 141, $p < .0001$).

Three factor dimensions were positive for the respondents: *Cross-Cultural Experimentation* (1.29) ($F = 431$, $p < .0001$), *Cross-Cultural Modern Communication* (1.86) ($F = 67$, $p < .0001$), and *Cross-Cultural Knowledge* (.361) ($F = 23$, $p < .0001$).

The respondents showed a negative relationship with *Negative Attitudes towards Other Cultures* dimension (-.28) ($F =57$, $p < .0001$), suggesting they had positive attitudes towards other cultures. Finally, their level of cosmopolitanism scores were over double (.81) the US scores (.27). The factorial dimensions also back up our earlier inference that respondents from Mexico might have strong cross-cultural knowledge and travel experience or friends from other cultures, leading to their desiring to work and live abroad, but with the intent of taking care of their families at home.

Conclusion

Ultimately, it was determined that the preliminary study indicated the cosmopolitanism scale adequately distinguished between the two very different cultures in the US and Mexico when comparing the relationships between the Cosmopolitanism scale and the RVS measure (see Table 6). US respondents probably answered the cosmopolitanism scale using their individualistic value structures while Mexican respondents answered with their collective value structures, in consistency with previous findings (e.g., Hofstede 2001).

Since there is still data to be analyzed, we believe additional analysis between the countries is warranted and very well could advance our understanding of cosmopolitanism.

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Table 1 Correlations between Cosmopolitanism and Terminal Values

Terminal Values	Read 1	Movie 2	Music 3	Politic 4	Relig 5	Geogr 6	Frien 7	Food 8	Intern 9	Citiz 10	Work 11	Fluen 12	Trav 13	Dang 14	Know	Experim	Comm	Attit	Cosmo
1.Comfort Life			-.05			-.07													
2.Exciting life	-.05					-.07					-.06		.05				-.05		
3.Accomplish		.06		-.05				.05	-.08										
4.World Peace		.05	.05			.06					.06	.10	-.08					.07	.06
5.World Beauty	-.07	.07		-.05	-.07		-.07		-.05		.06		-.08		-.05	-.05	-.09		
6.Equality									-.09		.07	.08	-.08						.06
7.Fam Security		-.05		.08		.05	.06					-.05	.07				.07		-.06
8.Freedom	-.07			-.08						.07							-.07		
9.Health	.05		.06		.06	.05	.09	.06	.06						.05	.05	.09		
10.IHarmony					-.05						-.07								-.06
11.Mat love									.08			-.07							-.05
12.NSecurity				.06			.05		-.07				-.05						
13.Pleasure			-.05		.09														
14.Salvation		-.05			-.09						.06								.05
15.Self-respect	.09		.08		.05						-.08				.05	.05	.06	.05	
16.Recognition	.05	-.07	-.05	.05						.08		.05	.05					-.07	.07
17.TFriendship									.07										
18.Wisdom	.05										-.05								

Note. Correlations are statistically significant at $p < .05$. $N = 1,156$

Table 2 Correlations between Cosmopolitanism and Instrumental Values

Instrumental Values	Read 1	Movie 2	Music 3	Politic 4	Relig 5	Geogr 6	Frien 7	Food 8	Intern 9	Citiz 10	Work 11	Fluen 12	Trav 13	Dang 14	Know	Experim	Comm	Attit	Cosmo
1. Ambitious		-.04					-.06		-.07		-.07			-.04	-.05	-.05			-.04
2. Broadminded		.08		-.05		-.07	-.05	-.06		-.07	-.04			.06			-.07		-.07
3. Capable											-.07	-.05	.06						-.05
4. Clean				.06	.04							-.04	-.06				.04		
5. Courageous					-.04			.04				.07	-.04	-.05					.05
6. Forgiving		.06			-.04				-.05			.04						.05	
7. Helpful		.06				-.06			-.04	-.04	.05	.04					-.05	.04	
8. Honest	.09								.06		.06		-.04				.04		.04
9. Imaginative	-.09	.04	-.06		-.06	-.10	-.08	-.07		-.08					-.09	-.09	-.10		-.07
10. Independent		-.05	-.06			.05	.04			.06							.04	-.07	
11. Intellectual					-.04			-.10			-.08	-.09			-.05	-.05			-.10
12. Logical	-.04		-.06	-.04						.06		-.06		-.04	-.05	-.05	-.05	-.04	
13. Loving		-.04				.05					.04								
14. Loyal					.05	.04		.05				.08			.05	.05	.04		.07
15. Obedient		-.06		.04			.08		-.04	.05				.05			.06		
16. Polite											.08		-.05						
17. Responsible			.07	.07	.08	.09	.11		.05		.04		.05	.07	.13	.13	.12	.06	.05
18. Self-control			.04							.06		-.04							

Note. All correlations greater than .10 are statistically significant at p < .05 or less. N = 1,156.

***Table 3* Cosmopolitanism Items Factor Structure**

Factor Structure	Factor 1	Factor 2	Factor 3	Factor 4
READ1 (I like reading in other languages just for pleasure)	.46			
POLITIC4 (I have good knowledge of international politics)	.69			
RELIG5 (I know about religions other than my own)	.67			
GEOGR6 (I have good knowledge about the world's geography)	.70***			
FRIENDS7 (I have many friends who were born in other countries)	.63			
FOOD8 (I enjoy trying food from different countries)		.43		
CITIZ10 (I consider myself a citizen of the world, not just a citizen of my own country)		.50		
WORK11 (Assuming there are not legal, financial, language constraints, I would like to work or live in countries other than my home country, at least for a while)		.76***		
FLUEN12 (If I could speak another language fluently, I would not mind using it as often as my native language)		.75***		
MOVIES2 (I prefer foreign movies to domestic ones)			.81***	
MUSIC3 (I prefer music from abroad rather than from my country)			.68	
IINTERA9 (I am uncomfortable interacting with people from different cultures)				.63
TRAV13 (I would rather travel inside my country than abroad)				.70***
DANG14 (Some culture may be dangerous)				.53

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Factor 1 seems to be measuring cross cultural knowledge

Factor 2 seems to be measuring cross cultural experimentation (food, world citizenship, work/live, language)

Factor 3 seems to be measuring cross cultural modern communication

Factor 4 seems to measure negative attitudes towards other cultures

Table 3 Differences in Cosmopolitanism US and Mexico Respondents, Item Analysis

Strongly Agree = 3 Agree = 2 Slightly Agree = 1 **Neither Agree or Disagree = 0** **Slightly Disagree = -1 Disagree = -2 Strongly Disagree = -3**	US N = 300	Mexico N = 1,156	ANOVA F (df= 2, 2354)
READ1 (I like reading in other languages just for pleasure)	1.7 A	.68 SA	101.3***
MOVIES2 (I prefer foreign movies to domestic ones)	1.3 SA	1.8 A	40.00***
MUSIC3 (I prefer music from abroad rather than from my country)	1.2 SA	.77 SA	58.29***
POLITIC4 (I have good knowledge of international politics)	.27 SA	.23 SA	
RELIG5 (I know about religions other than my own)	.21 SA	-.28 SD	23*
GEOGR6 (I have good knowledge about the world's geography)	-1.2 SD	.71 SA	56.69***
FRIENDS7 (I have many friends who were born in other countries)	-.87 SD	.21 SA	74.32***
FOOD8 (I enjoy trying food from different countries)	-1.1 SD	2.0 A	147.1***
IINTERA9 (I am uncomfortable interacting with people from different cultures)	1.2 SA	-.71 SD	79.67***
CITIZ10 (I consider myself a citizen of the world, not just a citizen of my own country)	.76 SA	1.2 SA	17.50***
WORK11 (Assuming there are not legal, financial/language constraints, I would like to work or live in countries other than my home country, at least for a while)	-.56 SD	2.2 A	110.93***
FLUEN12 (If I could speak another language fluently, I would not mind using it as often as my native language)	-.21 SD	2.23 A	88.01***
TRAV13 (I would rather travel inside my country than abroad)	.28 SA	-.26 SD	47.72***
DANG14 (Some culture may be dangerous)	-.68 SD	.14 SA	17.58***

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 5 Means, Standard Deviations and Correlations for Cosmopolitanism Items

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
READ 1	4.1	2.1	1		.											
MOVIES 2	2.8	1.9	0.21	1												
MUSIC 3	3.9	2	0.33	0.41	1											
POLITIC 4	4.3	1.9	0.32	0.11	0.22	1										
RELIG 5	4.5	1.9	0.31	0.14	0.27	0.46	1									
GEOGR 6	3.8	1.9	0.14	0.1	0.13	0.48	0.36	1								
FRIENDS 7	4.7	2.1	0.33	0.1	0.21	0.33	0.32	0.32	1							
FOOD 8	2.9	2.1	0.07	0.1	0.05	0.09	0.07	0.23	0.23	1						
IINTERA 9	5.2	2.1	0.05	-0.04	0.04	0	0.04	-0.14	-0.05	-0.28	1					
CITIZ 10	3.3	2	0.15	0.1	0.12	0.16	0.14	0.2	0.18	0.22	-0.12	1				
WORK 11	2.5	2	0.08	0.16	0.12	0.06	0.05	0.19	0.15	0.35	-0.23	0.28	1			
FLUEN 12	2.7	2	0.15	0.18	0.14	0.08	0.07	0.13	0.11	0.31	-0.2	0.22	0.5	1		
TRAV 13	4.2	2.1	-0.07	-0.13	-0.11	0.05	0	0	-0.1	-0.21	0.19	-0.08	-0.23	-0.16	1	
DANG 14	4.1	2.1	-0.1	0.05	0	0	0	0.06	0	0.08	0.07	0	0.08	0.05	0.04	1

Correlations are significant at $p < 0.05$ or less.

Table 6 Differences in Terminal and Instrumental Values US and Mexico

Terminal Values	US N = 300	Mexico N = 1,156	ANOVA H-value
Comfortable Life	5	3	
An exciting life	13	14	
A sense of accomplishment	8	12	42***
World at Peace	17	10	72***
World of Beauty	18	18	21**
Equality	16	13	30**
Family Security	2	2	
Freedom	6	9	16*
Health	4	1	66***
Inner harmony	10	4	41***
Mature love	9	8	
National security	15	17	28**
Pleasure	11	11	
Salvation	12	15	
Self-respect	1	5	45***
Social recognition	14	16	7*
True friendship	3	6	42***
Wisdom	7	7	
Instrumental Values			
Ambitious	10	2	33***
Broadminded	12	12	
Capable	7	6	
Clean	17	9	73***
Courage	13	11	
Forgiving	11	18	32***
Helpful	6	14	58***
Honest	2	1	7*
Imaginative	16	17	4*
Independent	3	10	33***
Intellectual	5	3	8*
Logical	14	13	
Loving	4	8	9*
Loyal	8	7	
Obedient	18	15	33***
Polite	15	16	6*
Responsible	1	4	18**
Self-controlled	9	5	4*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7 Cosmopolitanism Attitudes Factor Structures US Responses

Factor Structure	Factor 1	Factor 2	Factor 3	Factor 4
READ1 (I like reading in other languages just for pleasure)	.46			.
POLITIC4 (I have good knowledge of international politics)	.69			
RELIG5 (I know about religions other than my own)	.67			
GEOGR6 (I have good knowledge about the world's geography)	.70***			
FRIENDS7 (I have many friends who were born in other countries)	.63			
FOOD8 (I enjoy trying food from different countries)		.43		
CITIZ10 (I consider myself a citizen of the world, not just a citizen of my own country)		.50		
WORK11 (Assuming there are not legal, financial, language constraints, I would like to work or live in countries other than my home country, at least for a while)		.76***		
FLUEN12 (If I could speak another language fluently, I would not mind using it as often as my native language)		.75***		
MOVIES2 (I prefer foreign movies to domestic ones)			.81***	
MUSIC3 (I prefer music from abroad rather than from my country)			.68***	
IINTERA9 (I am uncomfortable interacting with people from different cultures)				.63
TRAV13 (I would rather travel inside my country than abroad)				.70***
DANG14 (Some culture may be dangerous)				.53

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Factor 1 seems to be measuring cross cultural knowledge

Factor 2 seems to be measuring cross cultural experimentation (food, world citizenship, work/live, language)

Factor 3 seems to be measuring cross cultural modern communication

Factor 4 seems to measure negative predispositions towards other cultures

Table 8 Differences in Cosmopolitanism for Factors Comparing US and Mexico Samples

Strongly Agree = 3 Agree = 2 Slightly Agree = 1 **Neither Agree or Disagree = 0** **Slightly Disagree = -1 Disagree = -2 Strongly Disagree = -3**	US N = 300	Mexico N = 1,156	ANOVA F (df= 2, 2351)
Cross-cultural Experimentation	-.43	1.29	431***
Cross-cultural Knowledge	-.011	.361	23***
Modern communication	1.25	1.86	67***
Negative attitudes towards other cultures	.26	-.28	57***
Cosmopolitan Scale Combined Means (COSMO)	.27	.81	141***

$* p < 0.05$, $** p < 0.01$, $*** p < 0.001$

PERFORMANCE MEASUREMENT IN MEDICAL TRANSCRIPTION

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ABSTRACT

Two aspects of quality are critical in health care information, namely the accuracy of information and the timeliness of information. The accuracy of medical records including information about the patient, the diagnoses, the treatments, and procedures is obviously critical. Timeliness is also crucial. Medical records need to be available on a timely basis and must be on hand with the medical practitioner so that the health professional can make accurate analyses and diagnoses and provide appropriate health care. Thus the recording and transcription of medical records are critical functions in the health industry.

In this paper we examine the timeliness of the transcription process, as measured by Turn-Around Time (TAT). We investigate and provide some answers to the following issues and questions. Are there any TAT standards? If so, what are the standards? Are these standards, if any, being met? Why or why not? If not, what are providers doing to improve TAT. We also explore the impact of new technologies such as Speech Recognition Technology (SRT) and other technology on the medical transcription industry.

INTRODUCTION

This paper examines quality management and performance measurement in the medical transcription industry. Quality management and performance measurement are critical functions in the medical transcription industry because of the nature of the transcription work which can have serious medical implications. Medical transcription generally involves the conversion of recorded voice data that are made by physicians and other health care professionals into medical reports, correspondence, and other administrative record in the form of hard documents (paper) or in digital form.

Two aspects of quality management and performance measurement are crucial in health medical records. One is the accuracy of the records and the other is the timeliness of the record. The accuracy of medical records including information about the patient, the diagnoses, the treatments, and procedures is obviously critical in the transcription process. The other crucial aspect is the timeliness of the transcription process. Medical records need to be available on a timely basis and must be on hand with the medical practitioner so that the practitioner can make accurate analysis and diagnoses and provide appropriate health care. This is particularly true in emergency cases or when medical issues require immediate treatment or when the need for procedures is time-critical.

In this paper we examine the timeliness of the transcription process. Specifically, we explore the Turn-Around Time (TAT) for medical transcription - the elapsed time between the completion of dictation to the delivery of the transcribed document. The transcribed document/output is generally in the form of a paper document or stored in digital form. We investigate and provide some answers to the following issues and questions. Are there any TAT standards? If so, what are the standards? Who makes the standards? Are these standards, if any being met? Why or why not? If not, what are providers doing to improve TAT.

We also explore the impact of new technologies such as Speech Recognition Technology (SRT) and other electronic data capture technology on TAT and on the future of the medical transcription industry. Finally, we note the implications of the trend towards the move towards the widespread adoption of electronic health records (EHR) and the recent law providing for incentives and disincentives to adoption of EHR as provided by the 2009 American Recovery and Reinvestment Act (ARRA).

METHODOLOGY AND DATA SOURCES

This paper analyzed the results of the work of the Joint Task Force on Standards Development (JTFSD) which was created by the American Health Information Association (AHIMA) and the Medical Transcription Industry Association (MTIA). In particular we analyzed the results of a survey conducted by JTFSD which were reported in a white paper in 2007. We further supplemented the analysis of this paper and attempted to validate and cross check the results obtained by the Task Force by conducting secondary research on available performance measurements and the current environment of the medical transcription industry.

The JTFSD survey consisted of two parts. One part was sent to Health Information Management (HIM) managers and the second was sent to Medical Transcription Service Operators (MTSO) and Medical Transcriptionists (MTs). Most of the respondents consisted mainly of Medical Records Director/Manager/ Supervisor (52%) and Medical Transcription Director/Manager/Supervisor (30%). Other respondents had the following titles: Transcription Professionals (6%), Health Information Services Director/Manager (5%), Other Director (5%), and Product Specialist (1%). The survey covered several major transcribed document categories or types, namely: history and physical examinations; operative reports; inpatient progress notes, consultation reports, radiology reports, and discharge summaries.

RESULTS

Are there any TAT Standards?

There are currently no standards or benchmarks regarding the timeliness of the delivery of transcription documents. The marketplace and contractual arrangements between clients and providers determine the turnaround time for transcription services. While there are no specific industry standards regarding TAT, there are organizations that evaluate health care providers that provide indirect standards on the timeliness of medical records. These accrediting organizations provide standards for accreditation that include the quality and timeliness of medical records documentation. The oldest and largest accrediting body in health care is The Joint Commission which evaluates and accredits more than 17,000 health care organizations and programs in the United States. For example, as part of its standards for accreditation and certification, The Joint Commission sets forth in section IM.6.30 regarding operative or high-risk procedures that "An operative progress note is entered in the medical record immediately after the procedure…The completed operative report is authenticated by the licensed independent practitioner and made available in the medical record as soon as possible after the procedure [underscoring provided]." While the standard does not set a specific timeline regarding the availability of medical records, it does convey the urgency of having medical records as soon as possible. The Joint Commission also specifies as one of its patient safety goals to "measure and assess, and if appropriate, take action to improve the timeliness of reporting, and the timeliness of receipt by the responsible caregiver, of critical test results and values [underscoring provided]."

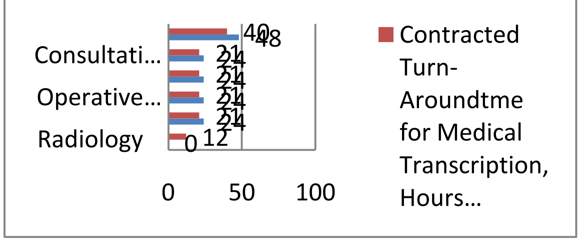
Two other industry organizations that are concerned with transcription TAT standards are the AHIMA and the MTIA. In fact, a major rationale for the JTFSD survey which was conducted as a joint effort by these two organizations was to provide a baseline study which can be used to "establish standard TATs."

[1] The lower TAT hours reported by MT/MTSOs

Turn-Around Time (TAT)

Figure 1 shows the Turn-Around Time (TAT) contracted or expected by HIM managers for different reports, including consultation records, progress notes, operative notes, history and physical reports, discharge summaries, and radiology reports.

Figure 1
TAT by HIMs and MTSOs, Hours



Data Source: Joint Task Force on Standards Development (JTFSD, 2008)

Contracted or expected TAT applies both to in-house HIM employees and to outsourced jobs (to MTs or MTSOs). With the exception of discharge summaries, the TAT that are contracted or expected by HIM managers is typically within twenty four (24) hours. For discharge summaries, the TAT is 48 hours.

The corresponding TAT contracted hours reported by MT/MTSOs is also shown in Figure 1. MT/MTSO providers indicate contracted time of 21 hours for most records, 3 hours lower than those reported by HIM managers. MT/MTSOs also report lower TAT hours for discharge summaries (40 hours) relative to those reported by HIM managers (48 hours). The fastest TAT was reported by MT/MTSOs for the transcription of radiology records which are expected to be transcribed within 12 hours.

To summarize, the TAT for transcribing reports varied from 12 hours (radiology reports) to 48 hours at the longest (discharge summaries), but most records are expected/contracted to be completed within 24 hours.

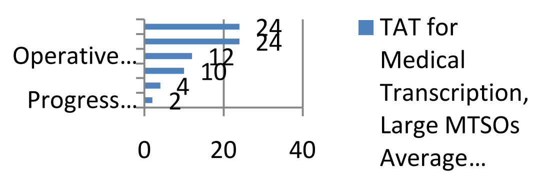
A comparison of the data reveals that the contracted/expected hours reported by HIM managers and MT/MTSOs are very similar. The lower TAT hours reported by MT/MTSOs

[1] The similarity of the TAT hours reported should not be surprising. In fact, the numbers should be

suggests that MTSOs try to maintain a competitive advantage relative to in-house transcribers by providing faster TAT. Alternatively, the data suggests that MT/MTSOs are <u>expected</u> to provide a faster turnaround time relative to in-house HIM transcribers.

The above information was based on a general survey of HIM and MTs/MTSOs managers. Additional information from four large MTSOs was also obtained by AHIMA and is shown in Figure 2.

Figure 2
TAT for Large MTSOs , Average Hours



Data Source: JTFSD, 2008

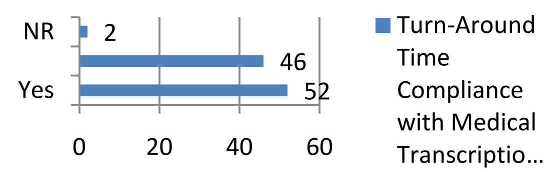
The information obtained from large MTSOs indicates that large MTSOs are generally expected or contracted to provide faster TAT. In the case of radiology reports, for example, large MTSOs are expected to transmit the transcribed reports within 4 hours (reported mode) as opposed to 12 hours for the industry as a whole. Similarly, operative reports, history and physical reports are expected to be transcribed within 12 hours and 10 hours respectively, about 12 hours faster than the average TAT of 21-24 hours. The faster TAT of large MTSOs suggests that large MTSOS are more efficient relative to smaller providers. Alternatively, this can mean that the large MTSOs deal with large HIM clients who have substantial market power in dictating faster TAT.[2]

How do the results of the survey compare with the perception in the marketplace? There appears to be a substantial gap between the survey results and market perceptions. For example, a Congressional Budget Office study on Health Information Technology (March 2008) describes the process of handwriting, dictation and transcribing notes into a chart as taking "typically at least a week." This gap in TAT survey results and market perceptions can perhaps be explained partially by the significant proportion of non-compliance with TAT as found in the survey and discussed below.

<u>TAT Compliance</u>

Figures 3 and 4 show the extent of compliance with contracted or expected TAT from the point of view of HIM managers and from MT/MTSOs respectively.

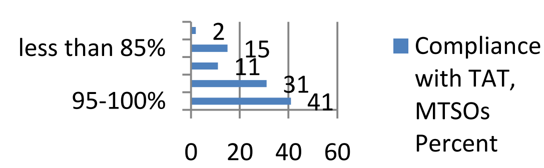
Figure 3
Turn-Around Time Compliance with TAT, HIM, Percent



Data Source: JTFSD, 2008

Figure 3 shows that majority of HIM managers (52%) report that transcription providers or employees (for in-house transcribers) comply with the expected or contracted TAT. However, a significant proportion (46%) reports that providers or employees do not meet the expected TAT.

Figure 4
Compliance with TAT, MTSOs Percent



Data Source: JTFSD, 2008

On the other hand, 41% of MTs and MTSOs report that they are within the compliance of contracted TAT at least 95% of the time while 72% report compliance with TAT at least 90% of the time.

Comparing the responses of the two groups (HIMs and transcription providers), the data suggests that compliance with TAT of at least 95% of the time is a fully acceptable standard for full compliance with TAT. The lower compliance level of "at least 90% of

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expected to be identical if all transcription is outsourced to MTs and MTSOs.

[2] The survey also found a very wide range of TAT for large MTSOs. For most reports, the contracted TAT indicated by these large MTSOs range from 4 hours to 48 hours, rather than industry average of 21-24 hours. The large variability of transcription contracts for large MTSOs suggests that large MTSOs are able to define their contractual terms more precisely.

the time" is acceptable to some HIM and not acceptable to other HIMs. Finally, a compliance level "lower than 90% of the time" is not acceptable at all.

Reasons for Non-Compliance

Various reasons are provided for non-compliance with TAT. Figures 5 and 6 show the reasons for non-compliance as reported by HIM managers and MTs and MTSOs respectively. The reasons for non-compliance include work volume changes, staffing needs, transcription anomalies, new technology implementation, and TAT expectation changes. The results show that the reasons for non-compliance are very similar for both groups (HIM and MTSO's). For HIMs, 84% report that staffing needs, work volume change, and transcription anomalies are the most common reasons for non-compliance.

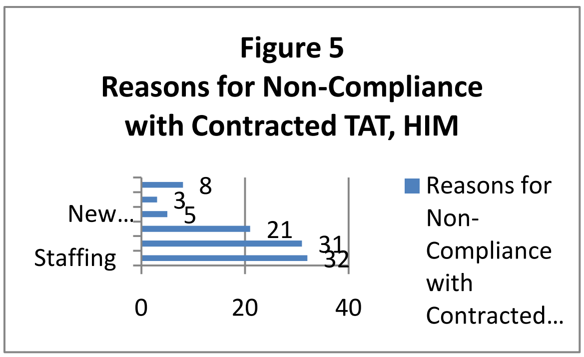


Figure 5
Reasons for Non-Compliance with Contracted TAT, HIM

Data Source: JTFSD, 2008

Staffing needs, work volume changes, and transcription anomalies are the same reasons cited by 80% of MT/MTSOs for non-compliance. They were reported by MT/MTSOs in similar proportions as those reported by HIM managers.

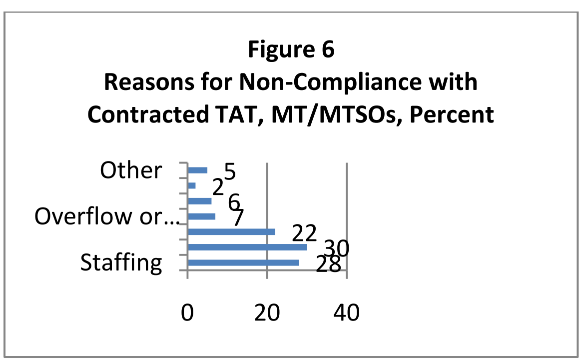


Figure 6
Reasons for Non-Compliance with Contracted TAT, MT/MTSOs, Percent

Data Source: JTFSD, 2008

Action Steps to Improve TAT performance

To address non-compliance with TAT, HIM managers reported several action steps undertaken to improve performance. These steps include adding transcription and support staff, implementing new technology, re-engineering workflow, and outsourcing. Figure 7 shows that the most common way of dealing with non-compliance is by outsourcing (29%), followed by adding transcription and support staff (21%).

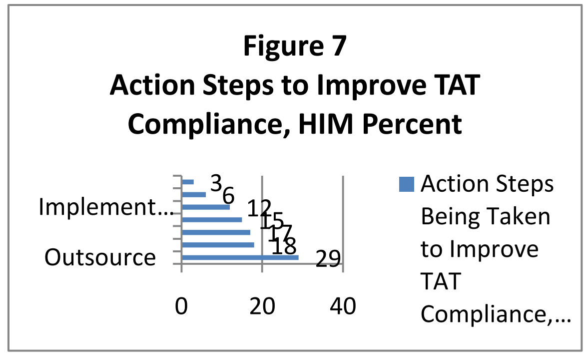


Figure 7
Action Steps to Improve TAT Compliance, HIM Percent

Data Source: JTFSD, 2008

Technology implementation and improvement in electronic technology, administrative technology, process or workflow comprise the rest. Specifically, to improve compliance, HIM managers are taking steps to implement speech recognition technology (SRT) and administrative technology including recording and transmission technology (35%). HIM managers also report action steps to redesign and improve process and workflow (30%).

MTs and MTSOs report that the most common way of dealing with non-compliance is by adding the number of transcription staff and editors (60%).

Usage of Speech Recognition Technology (SRT)

One of the action steps reported by HIMs in improving TAT performance is implementing or improving SRT. Figure 8 shows that majority of HIMs and MTSOs do not use SRT. Fifty six percent (56%) of HIM and 64% of MTSOs reported not using SRT. The percentage of HIMs and MTSOs who reported using an SRT system were 44% and 36 % respectively.

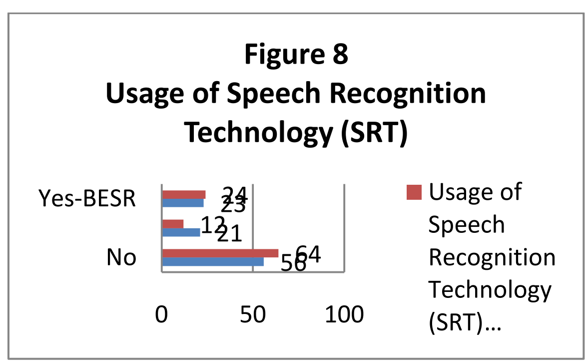


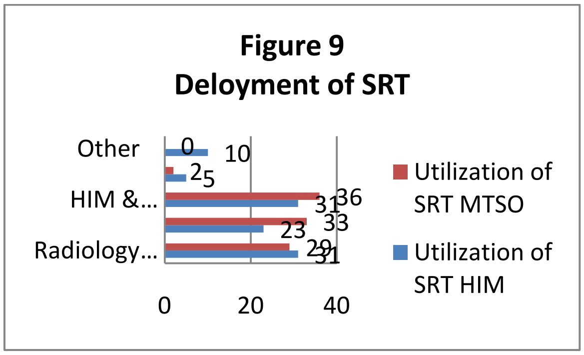
Figure 8
Usage of Speech Recognition Technology (SRT)

Data Source: JTFSD, 2008

What type of SRT is employed? SRT consist of two types, namely, front-end SRT (FESR) and back-end SRT (BESR). Users of front-end SRT dictate into a microphone-computer and the spoken words are recorded, and then converted to text in a word processing application in real time. This effectively eliminates the need for a transcriptionist. Back-end SRT separates voice capture (recording) from SRT processing. Information is initially recorded or dictated. At a later time, the recording is processed by an SRT software which produces a text document. A speech recognition editor must then listen to the voice file and proofread the text output.

SRT is used primarily at the back-end. Among HIMs and MTSOs, 23% and 24% report using BESR, respectively. FESR usage is less with HIMs reporting 21% and MTSOs 12%.

Where is SRT deployed? Figure 9 shows that SRT is used in various areas or functions including, HIM, Radiology, and ER. SRTs are used mainly in these first two areas, which together comprise of 85% and 100% of the use of SRT.



Data Source: JTFSD, 2008

The use of SRT has the potential to improve TAT. In the case of back-end SRT, transcription is facilitated by the availability of a draft output document produced by the SRT software. The process of transcription proceeds to the editing stage rather than producing a new document.[3]

With respect to front-end SRT, the transcription process is totally eliminated. However, SRT technology has not advanced far enough to simulate the complexities and nuances of human voice and speech patterns. This is common to both types. Also, according to Association of Healthcare Data Integrity (AHIDA), one limitation of front-end SRT is that it takes considerably longer time to effectively use front-end SRT than it does to simply dictate.

Trends and Prospects on Emerging Technology on Transcription process and TAT

Developments in the medical health record management show a trend towards an increase in the adoption of electronic health record systems. As of 2006, it is estimated that about 12 % of physicians and 11% of hospitals have some form of EHR or health IT (CBO, May 2008). Adoption of EHR technology is being hastened by the increase in the certification of EHR products and the recognition by the U.S. government of the need to digitize medical records and the importance of certification of EHR products.

To achieve the goal of digitizing medical records, the U.S. Department of Health and Human Services (HHS) awarded in 2005 the Certification Commission for Health Information Technology (CCHIT) a contract to develop, create prototypes for, and evaluate the certification criteria and inspection process for EHRs. In February 2009, the Congress approved the American Recovery and Reinvestment Act (ARRA) aimed at stimulating the nation's economy which included a multi-year series of incentive payments to providers and hospitals that use certified EHR technology. The total amount of payments has been projected at $34 billion. As of 2009, more than 200 systems/products have been certified by CCHIT in ambulatory care alone representing more than 75% of the total market for EHR products. By 2019, the CBO estimates that as a result of the ARRA provisions, 90% of physicians and 70% of hospitals will have adopted EMR (CBO, March 2009).

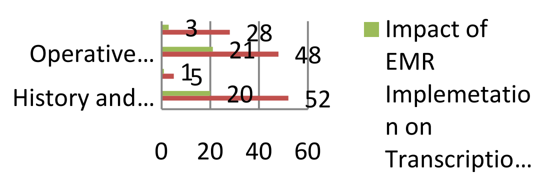
What is the implication of this increased adoption of EHR or electronic medical records (EMR) on the medical transcription (MT) industry? The MT industry appears quite optimistic about the prospects of MT even in the presence of such increasing adoption of EMR. One leading MT company sees that "growth in transcription is outstripping the ability of U.S. based professionals to meet the demand. Volumes continue to climb despite new speech, voice and automated systems" (McGill, SPI, 2007). Likewise, the Joint Task Force finds that "the use of dictation and transcription technologies… continues to be prevalent, if not expanding, as a significant source in the electronic environment. The Joint Task Force also concludes that "Medical transcription…is currently the dominant and

[3] The Association of Healthcare Data Integrity (AHIDA) points out however, that using SRT-draft document "often makes it more challenging to identify errors…. It is more common in SRT editing for the brain to be "tricked" into thinking that the eye has seen what the ear has heard"

preferred method of creating narrative documentation in the U.S. healthcare system and is likely to remain a critical practice for at least 10 years."

There is limited reliable statistical information on the prospects of MT but the scant evidence suggests that the increased adoption of EMR poses a serious threat to the viability of the MT industry. Anecdotal evidence and a few rigorous studies indicate that implementation of EMR can drastically reduce transcription costs or in some cases fully eliminate the need for medical transcription. For example, a publication by the American Medical Association (AMA), Amednews, (Dolan, 2008) reports that a large gastroenterologists practice that sees about 180 patients a day eliminated its transcription on day one of implementation of EMR for their surgery center. Similarly, a study by Lagrew and others (2008) found that the implementation of EMR in a hospital with about 268 monthly discharges reduced transcription rates dramatically by a magnitude of 57% to 88%. Specifically, the hospital reduced history and physical transcription rates by 62%, consultations by 76%, operative notes by 57%, and discharge summaries by 88%. Figure 10 shows the decline on transcription rates after three quarters EMR implementation. The figure shows that discharge summaries declined from 28 percent to 3 percent, operative notes from 48% to 21%, history and physicals from 52% to 20% and consultation notes from 5% to 1%. [4]

Figure 10
Impact of EMR on Transcription, Percent



Data Source: Adapted from Lagrew Jr DC, Stutman HR, & Sicaeros L. (2008).

Another study of five ambulatory offices within the University of Rochester Medical Center (Grieger et al 2007) found that EMR implementation reduced transcription rates from 37% to 100%.

SUMMARY AND CONCLUSIONS

In this paper we examined the timeliness of the transcription process. Timeliness is a critical dimension of quality management in health care. Accurate medical records need to be available on a timely basis with the medical professional so that the practitioner can make accurate analysis and diagnoses and thus provide appropriate health care. This is particularly salient in emergency cases or when medical issues require immediate treatment or when procedures are time-critical.

In this paper, we explored the timeliness of the transcription process as measured by TAT. Specifically, we investigated the following issues and questions concerning TAT in medical transcription. Are there any TAT standards? If so, what are the standards? Who makes the standards? Are these standards, if any being met? Why or why not? If not, what are providers doing to improve TAT. We also explored the impact of new technologies such as Speech Recognition Technology (SRT) and other electronic data capture technology on the future of the medical transcription industry. The results of our paper are summarized below:

- TAT is determined by the market as a contractual arrangement between health care providers and organizations and professional transcribers. While there are no explicit standards for TAT, there are accrediting organizations that provide standards on the quality and timelines of medical records documentation.
- TAT varies, depending on the type of report and depending on the size of the organization. It ranges from 4 hours to 48 hours. However, most reports are expected to be transcribed within 21-24 hours. For large MTSO organizations, the contracted or expected TAT is about 12 hours shorter. There appears to be a gap between the survey results and marketplace perceptions which view TAT as much longer, at least a week, according to the CBO.
- Fifty two percent (52%) of HIMs report full compliance with TAT while 41% of MTs/MTSOs report compliance 95% of the time. This data indicates substantial room for compliance with TAT. Staffing needs, work volume change, and transcription anomalies are the most common reasons for non-compliance (84%). These are the same reasons cited by 80% of MT/MTSOs for non-compliance.

[4] Some of the transcription costs have already been reduced by previous legacy EMR systems. For instance, consultation notes were already reduced to 5 per 100 discharges by the prior EMR system. It is virtually eliminated by the new more extensive EMR implementation.

- The most common way of dealing with non-compliance by HIMs is by outsourcing (29%), followed by adding transcription and support staff (29%). Technology implementation and improvement in electronic technology, administrative technology, process or workflow are also important. MTs and MTSOs report that the most common way of dealing with non-compliance is by adding the number of transcription staff and editors (60%).
- The use of SRT has the potential to improve TAT but the technology has not advanced far enough to fully simulate the complexities of human speech patterns. The most common type of SRT used by the industry is back-end SRT (BESR).
- The environment of MT involves the increasing use of EHR. This prospect is partly a result of government initiatives providing for incentives and disincentives to EHR use and improved certification process of EHR technology. This increasing use of EHR poses a very serious threat to the viability of the MT industry. Anecdotal evidence and a few rigorous studies indicate that implementation of EMR can drastically reduce transcription costs or in some cases fully eliminate the need for medical transcription. In the long run, the transcription process as it is now being practiced may become obsolete as more medical records become directly digitized by clinicians and other professional health providers. Transcription will remain important in those areas requiring complex narratives and those medical processes that may not allow effective direct input by clinicians (such as in operative procedures). But the role of transcription may be relegated to narrower and more limited scope.

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AACSB ACCREDITATION AND MARKET DOMINANCE

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Robert Kachur, Richard Stockton College of New Jersey

ABSTRACT

AACSB-accredited schools dominate the national universities reported in *US News and World Report's* America's Best Colleges. This represents a strong cartel-like organization, but differs from the monopoly position of the ABA, which recently had to pay a fine for anti-trust. These differences include voluntary status of business accreditation, competition, and internal rules of accreditation.

INTRODUCTION

This paper will discuss the various types of accreditation that concerns business schools and contrasts the effects of those accreditation agencies with other areas of study such as law and teaching. Secondly, the authors present how one business accreditation agency dominates the marketplace for national PhD granting institutions and how competing business accreditation agencies affect them.

Market dominance can created from several methods – efficiency for example. Yet one method of securing market dominance is a cartel. A cartel as defined:

> Organization of a few independent producers for the purpose of improving the profitability of the firms involved (*see* oligopoly). This usually involves some restriction of output, control of price, and allocation of market shares. Members of a cartel generally maintain their separate identities and financial independence while engaging in cooperative policies. Cartels can either be domestic (e.g., the historical example of the German IG Farben) or international (e.g., OPEC). Because cartels restrict competition and result in higher prices for consumers, they are outlawed in some countries. The only industry operating in the U.S. with a blanket exemption from the antitrust laws is major league baseball, but several U.S. firms have been given permission to participate in international cartels (Encyclopedia Britannica, 2008.)

TYPES OF ACCREDITATION

Accreditation in higher education is a "process of self- and peer-review to ensure that the institution meets and maintains good quality academic standards" according to Espiritu (2007) For business schools there are two types of accreditation (Hardin & Strocks, 1995).

Regional Accreditation

The first type of accreditation is called regional accreditation. Regional accreditation is not just for the business school, but involves the entire institution. Only institutions with regional accreditation can receive federal funds. Loss of accreditation prevents even student loans from being made, and thus represents a life or death situation for the institutions involved. This power is rarely used, for the same reason as the NCAA has only used the death penalty for SMU. Primarily, the agencies will put a school on probation and generally only for financial reasons decline to accredit an institution.

This enormous power was the source of some controversy in the last few years. The Secretary of Education tried to force the accrediting bodies to become more active in the quality of the member institutions. Margaret Spellings' Commission on the Future of Higher Education decried the lack of clear, comparative measures of academic success. The full effect of this movement has just started and shows no signs of abating (Scobey, 2009).

The Department of Education has delegated the authority to coordinate the accreditation process nationally to Council of Higher Education Accreditation (CHEA). As shown in the table 1, the country is divided into six regions, each with an accrediting body to evaluate the schools within their geographic region (Espiritu, 2007).

Table 1: Regional Accrediting Agencies

Accrediting Agency	Region
Middle States	Delaware, the District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Puerto Rico, and the U.S. Virgin Islands
New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
North Central	Arizona, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, West Virginia, Wisconsin, Wyoming, including schools of the Navajo Nation
Northwest	Alaska, Idaho, Montana, Nevada, Oregon, Utah, and Washington
Southern	Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia
Western	California, Hawaii, the United States territories of Guam and American Samoa, the Republic of Palau, the Federated States of Micronesia, the Commonwealth of the Northern Marianna Islands, and the Republic of the Marshall Islands

Most schools are single-location institutions or have all their locations within one region, with the exception of some online or for-profit institutions, such as Capella University. Each institution must be accredited within the region in which they operate and cannot attempt to be accredited by the regional accrediting body of their choice (Elearners.com)

While similar, each of the regional accrediting bodies has its own requirements. Of particular note, the North Central regional accrediting agency uses the Malcombe Baldridge Award process as a model. This process uses quality improvement process as the basis for their accreditation. The standards used to conduct these evaluations vary but in general they assess: the institution's mission, goals and objectives, resources and resource allocation, student admission requirements, student support services and the quality of the faculty and educational offerings.

Area Specific Accreditation

The second type of accreditation is area specific. We will discuss three specific areas of knowledge: legal education, teacher education and business.

An interesting case arose recently concerning both the regional accreditation and law accreditation. According to inside Highereducation (2007):

> "The online only Concord School of Law -- which has managed to grow without ABA recognition -- announced a merger with Kaplan University…Kaplan University is regionally accredited (which Concord is not), the merger will make Concord students eligible for federal student loans and to defer repaying their past student loans when enrolled. Officials say that they believe law school's efforts will eventually change attitudes about distance legal education.

The ABA is treating this as a variance to the rules, as they do not allow anyone to graduate from a school completely on-line. Hadfield (2008) discusses legal barriers to innovation and economic costs associated with professional control over the legal marketplace. Currently, at least 42 states permit only graduates of ABA accredited schools to sit for their licensing examinations (Reuben, 1994).

Control of the production of new entrants to the market is a clear effect of cartel-like behavior. The American Bar Association (ABA) was sued on anti-trust grounds for limiting the ability of individuals to take the bar exam to those who graduated from ABA-accredited schools. The ABA agreed to pay a $185,000 fine for violating a 1996 court order that settled the anti-trust suit (Sniffen, 2007).

There are several accrediting agencies for teaching. The principal accrediting agencies for teaching include the National Council for the Accreditation of Teacher Education (NCATE) and Teacher Education Accreditation Council (TEAC). Many states have required schools to be accredited by one of the agencies in order to continue to enroll students. Thus, for teacher education, similar to the cartel-like behavior of legal education, the area specific accreditation organizations have the same life or death force as the regional accrediting agencies.

BUSINESS AREA ACCREDITATION

Several accrediting agency for business exist, but the major one is the Association for the Advancement of Collegiate Schools of Business (AACSB). The other organizations provide competition. Additionally, unlike regional accreditation and the previously mentioned areas, business accreditation is voluntary. This voluntary nature contrasts with the requirements of schools to be accredited by the ABA in order for their students to sit for the bar exam. Not having accreditation may affect the institution's images, but will not force its closure.

AACSB

In 1916, the AACSB was founded 17 leading business schools, whose goal was to enhance the quality of education at the university level. They created standards for the teaching and research of business and agreed among themselves to maintain these standards (Trapnell, 2007). These original 17 schools produce PhDs in business disciplines and are noted in *USN&WR* listing of national universities.

Table 2: Founding members of AACSB

Private Institution	Public Institution
Columbia University	The Ohio State University
Cornell University	University of California at Berkeley
Dartmouth College	University of Illinois
Harvard University	University of Nebraska
New York University	University of Pittsburgh
Northwestern University	University of Texas
Tulane University	University of Wisconsin
University of Chicago	
University of Pennsylvania	
Yale University	

For many years only "top tier business programs at research-oriented universities" could meet AACSB standards (Tullis and Varney 2007). Originally, these were the Ivy League and Big Ten types of schools, but by the early 1990's about 260 such programs existed. Approximately 900 other schools, whose mission was teaching, were not AACSB accredited. These schools were effectively barred from accreditation by the AACSB research standards according to Henninnger (1998)

The dominance by the AACSB is noted by the *USN&WR's* listing of national universities. National universities "offer a wide-range of undergraduate majors, as well as master's and doctoral degrees" according to *USN&WR*. These are based on categories developed by the Carnegie Foundation for the Advancement of Teaching in 2006.

As shown in table 3, 217 of the 262 national universities listed in the *USN&WR* 2008 roster had AACSB accreditation. Thus, AACSB represents 82% of their target market to control the production of new faculty to teach business. The actual dominance is actually higher.

Six of the remaining 45 institutions did not have any business programs. One can hardly expect that a school that does not have a degree program in the business area to go for a voluntary accreditation.

Six institutions taught only bachelors of business programs, and twenty-eight had only MS or MBA programs. Schools who grant only a BBA and MBA have limited reasons for accreditation. One of the major reasons for accreditation is that many employers only reimburse students for attending accredited schools. The national universities are well known to employers and are not tuition-driven. The schools with doctoral programs have incentives to join an accreditation organization so that their students can obtain jobs after graduation. This is clear cartel-like behavior.

This data further demonstrates the market domination of AACSB. Only six of the national universities had alternative accreditations, which represents only 2.3% of the market. Of this six, only two had both a doctoral degree program and chose an alternate accreditation agency, which represents only 0.8% of the national university market.

The AACSB offers a separate accreditation specifically for accounting to those institutions that are already AACSB accredited in business. They have additional requirements beyond the business accreditation. One can choose to get the separate accounting accreditation or not, but if an institution chooses to go for the additional accreditation in accounting, both must be accredited at the same time.

The separate accounting accreditation bears directly on the issue of dominance. In 1974, the American Institute of Certified Public Accountants (AICPA) created a Board on Standards for Programs and Schools of Professional Accounting to prepare a proposal for accrediting accounting programs. This board included representatives of AICPA, the

American Accounting Association (AAA), AACSB, and the National Association of State Boards of Accountancy (NASBA) (Van Whye 2007).

These members had conflicts among themselves. For example, AACSB did not want a rival accrediting organization. They were willing to accept other conditions to maintain their grip over the production of new PhD's as "business school deans were "unwilling to relinquish their authority over accounting programs." Further, AACSB wanted more "rigorous quantified research from faculty and to place less emphasis on practice and professionalism than the AICPA." (Van Wyhe, 2007).

This contrasted with others. AICPA wanted a five-year program similar to law school, while the AAA preferred four-year programs and MBA programs in addition. Thus, in 1977, the board issued a final report with the following points:

[1] "Professional" education necessarily involved graduate education
[2] Education of liberal arts of two years/ three plus years of advanced professional study
[3] Professional study involved traditional accounting subjects, and ethics
[4] Stressed realism through case studies and practical matters
[5] At least 50% of the faculty should have the CPA certificate
[6] Evaluate "theoretical, applied and educational-oriented studies
[7] Accounting programs that were distinct and autonomous from business colleges' (Van Wyhe, 2007)

Table 3
2008 National Universities not AACSB-accredited

USN &WR Quartile	School	Highest Bus. Deg	Accreditation
1	Princeton	M Fin	
1	Cal Tech	none	
1	Brown	none	
1	Johns Hopkins	MBA	
1	Tufts	none	
1	UC San Diego	MBA	
1	UC Santa Barbara	MBA	
1	Yeshiva	BBA	
1	Worcester Polytech	MBA	
2	Stevens Inst of Tech	MBA	
2	Colorado School of Mines	MS	
2	UC Santa Cruz	BBA	
2	SUNY Col of Environment	MS	
2	SUNY Stony Brook	MBA	
2	Illinois Inst of Tech	PHD	
2	Missouri Rolla	BBA	
2	Catholic	none	
3	Adelphi	MBA	
3	Andrews	MBA	
3	Biola	MBA	ACBSP
3	Florida Inst of Tech	MBA	
3	George Fox	DOM	
3	New School	MS	
3	Pacific U	MBA	
3	Polytechnic	MBA	
3	Seton Hall	MBA	
3	St Mary's [Minn]	MA/MS	
3	Trinity International	none	
3	U of La Verne	MBA	
3	U of Maryland Baltimore County	BBA	
3	U of St Thomas	MBA	ACBSP
4	Florida A&M	MBA	
4	Golden Gate	MBA	
4	Immaculata	BBA	
4	Nova Southeastern	PHD	IACBE
4	Oral Roberts	MBA	
4	South Dakota State	none	
4	Spalding	MBA	
4	TAMU Kingsville	MBA	IACBE
4	Texas Woman's	MBA	
4	Trevecca Nazarene	MBA	
4	U of Bridgeport	MBA	ACBSP
UR	Regent University	MBA	
UR	Union Institute and University	BS	
UR	Wilmington College	DBA	IACBE

"Many accounting department chairs did not believe that accreditation was likely to improve accounting education. They did believe that accreditation would result in an increased demand for PhD's and aggravate the existing shortages of faculty" according to Campbell and Williamson (1983). The creation of artificial shortages of faculty is a clear effect of cartel-like behavior.

Further, NASBA could use the power of each state to turn AACSB dominance into the same antitrust situation of the ABA. For example, some states have created the 150 hour rule, mandating that each candidate for the CPA exam must have a minimum of 150 hours of college credit just to be eligible to take the CPA qualifying exam. Some states have considered treating graduates of non-accredited institutions differently than from accredited schools. Yet they have included all accrediting agencies not just AACSB to date.

ACBSP

A second organization was started in 1988 based on those schools with a teaching mission. The Association of Collegiate Business Schools and Programs (ACSBP) is more accessible to "regional state and small private schools" according to Tullis and Varney (2007). They further note that two-year institutions represent over half of the members of ACBSP. The ACBSP website describes themselves as follows:

> The association had its beginning in Kansas City, Missouri, April, 28, 1988, when representatives of over 150 business schools and programs met to consider possible alternatives for external accreditation of their business programs. It was decided at this meeting that a study group should explore the feasibility of establishing a second accrediting body whose mission would be to promote teaching and learning, and thus to improve the quality of education in business schools and programs. The study group completed its work in twelve months and presented its findings to the ACBSP membership on May 12, 1989. The membership voted to make ACBSP a permanent body and encouraged the newly formed board to pursue its stated mission in a vigorous yet systematic fashion. Hence, ACBSP, a new accrediting organization for business schools and programs was created, with its primary emphasis directed toward fostering excellence in teaching. In August of 1992, ACBSP was recognized by the U.S. Department of Education as a specialized accreditation agency for business education. That recognition continued through April, 1996, when the Department of Education changed its policies to recognize only those agencies that impacted the distribution of federal funding. To fill the resulting void for a national body to recognize accrediting agencies, the Council for Higher Education (CHEA) was created in 1996. The CHEA-recognized scope of accreditation is: Degree programs in business and business-related fields at the associate, baccalaureate, and graduate levels. At its meeting on January 22, 2001, the CHEA Board of Directors reviewed the recommendations of the CHEA Committee on Recognition regarding the recommendation and recognized the Association of Collegiate Business Schools and Programs.

IACBE

In 1997 some of the founders of ACSBP set up a third accrediting organization, the International Assembly for Collegiate Business Education (IACBE). The IACBE describe themselves on their website as follows:

> The International Assembly for Collegiate Business Education (IACBE) was founded in 1997 in response to the expressed needs of presidents, chief academic officers, and business deans and chairs who wanted an accreditation process that was mission-based and outcomes driven. At that time, the majority of the four-year colleges and universities in the United States with business programs were not recognized by the existing business accrediting bodies. Similarly, hundreds of internationally-based institutions were unable to obtain specialized accreditation.

EFFECTS OF OTHER BUSINESS ACCREDITING ORGANIZATIONS

Mission

The major effect of such competitive organizations was to force the AACSB to change their accreditation standards. Just three years after the founding of ACSBP, the AACSB changed their focus from primarily research to mission-based orientations and thus AACSB warded off the competition for four-year institutions (Tullis & Varney, 2007).

The major PhD granting institutions had incentives to join a classic cartel to limit competition of creating new faculty, but the future marketplace was not secure. Teaching schools had already begun to vote with their feet by joining the other accreditation efforts. This was further supported by the anti-trust actions against the ABA.

While the AACSB dominates the national university market, there are only about 300 schools in that marketplace. In contrast, there are about 4500 other colleges in the US and just about all of them teach business in some manner. Losing out to a significant percentage of these schools would undermine AACSB's capacity to control even the supply of new faculty. A good example of this is the Pennsylvania state supported regional institutions listed in the following table.

Table 4
Pennsylvania Non-PhD granting State Supported Schools and their Business Accreditation

Name	**USN&WR Quartile**	**Location**	**Accrediting Agency**
Arcadia	1	Suburb	ACBSP
Millersville	2	Rural	ACBSP
Shippensburg	2	Rural	AACSB
West Chester	2	Suburb	AACSB
Bloomsburg	2	Rural	AACSB
Clarion	3	Rural	AACSB
E Stroudsburg	3	Suburb	none
Mansfield	3	Rural	none
Slippery Rock	3	Rural	none
California U	4	Rural	none
Cheney	4	Suburb	none
Edinboro	4	Rural	ACBSP
Kutztown	4	Rural	none
Lock Haven	4	Rural	none

Another major effect is focus of institutions that may apply for accreditation. With the national university market mature, AACSB is focusing on international schools and reaching out to the master's granting institutions. These are the areas where the other two accrediting agencies have their markets. Thus, while outside the scope of this article, the marketplace will see increasing amounts of competition.

Qualified Faculty

One standard that changed concerned the definition of qualified faculty. To enforce these accreditation standards, AACSB originally required all schools to hire only faculty with PhD's from schools that were members (AACSB International). The newer standards allow for academically qualified faculty who hold PhDs outside their field and for those without doctoral training but having substantial specialized training in their field supplemented by current research (Casile & Davis-Blake, 2002).

According to the AACSB website, there are now six ways that a faculty member can be considered academically qualified. Each of these has specific additional requirements, primarily publishing peer-reviewed articles within the last five years.

1. A doctoral degree in the area in which the individual teaches.
2. A doctoral degree in a business field, but primary teaching responsibility in a business field that is not the area of academic preparation.
3. A doctoral degree outside of business, but primary teaching responsibilities that incorporate the area of academic preparation.
4. A doctoral degree outside of business and primary teaching responsibilities that do not incorporate the area of academic preparation.
5. A specialized graduate degree in taxation.
6. Substantial specialized coursework in the field of primary teaching responsibilities, but no research doctoral degree.

Interestingly enough, AACSB has allowed the faculty who primarily teach law to have the JD degree instead of the PhD. The cartel effect of the ABA extends their control the creation of new layers and minimizes any competition.

CONCLUSION

There are two types of accreditation, regional accreditation and area specific accreditation. All institutions are accredited by the regional accrediting agency in the region in which their campus resides. Failure to receive regional accreditation means that the institution cannot receive federal funds, including student financial aid. Thus, this is a life or death decision for the institution.

The second type of accreditation is specific to the area of teaching. The authors discussed three specific areas – teaching law, teaching education, and teaching business. Teaching law is controlled by the ABA, which has been subject to anti-trust violations for their cartel-like behavior.

There are two major accrediting agencies for teaching education. This provides some competition, as opposed to the ABA. Yet, the states have mandated that schools that teach education must be accredited. Thus, the decision still has life or death consequences similar to the regional accreditation. In contrast, business accreditation is voluntary.

There are several accrediting agencies for teaching business. The primary agency is the AACSB, which was founded in 1917. Originally, only the heavy research institutions such as the Ivy League or Big Ten schools could apply. There were incentives for the doctoral granting institutions to obtain AASCB accreditation, as cartel like behavior to limit competition. Thus, AACSB accredited institutions dominated the national universities noted by US news and World Report as shown in table 5.

Table 5
National University Highest Business Degree Offered and Types of Accreditation

Highest business degree offered and accreditation	Number	Percentage
AACSB accredited institutions	217	82.8
Other accredited doctoral programs	2	0.8
Non-accredited doctoral programs	2	0.8
Other accredited masters programs	4	1.5
Non-accredited masters programs	25	9.5
Other accredited bachelor's programs	0	0.0
Non-accredited bachelor's programs	6	2.3
No business programs	6	2.3
TOTAL	262	100.0

Yet, while AACSB dominates the national university market with 82% of the institutions, they are not the cartel such as the ABA for three major reasons. First, there are other accrediting agencies. While these agencies are noted primarily for their existence, they do provide some competition in the doctoral market. There may be some marketing issues for not being AACSB accredited, but unlike teaching law or education that does not shut down the institution.

Yet, their primary competition caused the second reason – they forced AACSB to change their accrediting rules. The major rule change is the way in which faculty are determined to be academically qualified. Originally, the rules were similar to the way the ABA conducted their accreditation. That is to say, the original rules stated that all faculty must have a doctoral degree from an AACSB accredited institution. Thus, the accrediting agency controlled the supply of new faculty. There are now six different ways in which faculty can be determined to be academically qualified, including a method without having a doctoral degree at all.

The third reason is the major difference between business and other areas. While there are about 300 doctoral granting institutions that teach business, that market is puny compared to the thousands of programs that teach business at the bachelor's or master's degree level. Here the competitions by other accrediting agencies come into major focus. If the competing agencies can gain a significant level of penetration in this larger market, they could change the requirements for teaching business. This potential power alone has neutralized the dominance of AACSB at the national university level.

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WORKAHOLIC TENDENCIES AND USE OF SMART PHONES

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ABSTRACT

The intersection of work and technology has a number of implications, and researchers have suggested that work addiction and technology addiction are both closely aligned and mutually reinforcing. This study in particular is concerned with people using smart phones for work connectivity. As part of a larger study on use of this technology, the current exploration uses responses to an online survey to show that perfectionism is an indicator for behavior that conceptually matches that expected of work addiction – both in general terms and use of the smart phone technology.

INTRODUCTION

There are various opinions on how technology impacts work and the employees doing that work. Bradley, Erickson, Stephenson & Williams(2000) challenge the idea that advancements in technology are inevitable, as well as the assumption that science and technology adoptions are always positive. Other writers consistently cite technology as a major change that nearly all employees must deal with, also citing both good and not so good outcomes. Some important factors about changes in technology have been summarized by Green (2004; 2006) to include the following:

- Technology and the organizational changes that accompany technology enhancements often contribute to work intensification, a source of strain on employees differentiated from simply the number of hours worked.
- Productivity increases from technology can be seen among employees who work outside the usual time and place of employment, who may see an opportunity cost in not using available technology for off-site, off-hours, and job-related activities.
- If employees have a need or desire that can be filled through more intense working, we might also expect that availability of technology would facilitate added intensity with or without organization-based encouragement.
- Individual differences also play a role when examining links between technology change and work intensification

In this study, I focus on one particular individual difference, the tendency toward excess work, also referred to as workaholism or work addiction. These are people believed to be drawn to work intensification, as well as to longer working hours. They are also people who would welcome the opportunity to carry work into other times and places. These individuals may be willing to assume the strain that comes along with these habits, but they can also be carriers of strain, as they influence expectations and the general culture of the work environment. For all these reasons, this is an important group to consider as jobs become more and more dependent on technology.

As part of a larger study on adoption of smart phones for work place connectivity, a measure of perfectionism was incorporated and then compared to behavior expectations based on literature on workaholism. Results support the use of perfectionism as an indicator of workaholism. The nature of relationships explored in this study has implications for future research, as well as for management in organizations concerned with employee well-being in the face of changing work situations.

PERSPECTIVES ON WORKAHOLISM

A high proportion of articles about workaholism has included the lament that there is lack of agreement on definition and measurement of the construct, which hinders new research. A pattern has developed in prominence of certain aspects and more frequently used measures, but there is still wide variation in approaches to study of this phenomenon. Earliest use of the term workaholic is commonly attributed to Oates (1968), who positioned it as a negative identity parallel to alcoholism. The topic of workaholism was later popularized by Machlowitz' observations of New York City employees who trekked to their offices in spite of intense weather and blackout conditions (1980). In Machlowitz' view, there was a strong positive element to workaholic tendencies. She believed those who loved their work would be very happy and productive in their long hours devoted to the job.

This difference in perspective continues. On the one side are researchers who identify anyone who works long hours as a workaholic, moving then to categorizations that can include both positive and negative manifestations. This was shown in an integration of the extant literature by Scott, Moore &

Miceli (1997). On the other side are those who reserve the term as equivalent to work addiction which, initially, was primarily used among therapists concerned with detrimental impact to the individuals even if they were benefitting the organization (e.g., Robinson, 1989). Porter (1996) emphasized this addiction perspective, additionally highlighting that the addiction pattern means there is harm done to the organization, as well as to the workaholic employee, thus bringing closer together the interests of therapists treating the individuals with those of managers running the organizations.

As we moved into the new millennium, attention gravitated more to the addiction viewpoint. This move shouldn't be seen, necessarily, as indicative of new agreement on definition of workaholism. It's likely a combination of other factors. One, people who work long hours have come to be viewed differently during this time of increased attention to work-life effectiveness. With only 24 hours in the day, more hours at work equates to less with family. In the face of claims that respite from the job can impact retention, firm reputation, productivity, quality of work, creativity and customer service (e.g., Cutterbuck, 2004), it's harder to sustain arguments promoting longer working hours. It would seem that even those who love the work and are highly productive can benefit from occasionally breaking out of their workaholic habits.

This leads to a second factor, which is the tendency of researchers to focus on negative phenomenon, possibly believing there to be more substance to explore on that side of the picture. Despite attention this decade to positive psychology (e.g., Selig & Csikszentmihalyi, 2000; Seligman, Steen, Park & Peterson, 2005), research attention is still more likely to focus on the 'darker side.' Saying workaholism can be positive does not lead most researchers to added discussion in the same way that saying it is a negative leads to questions like, "how and why does that happen?" or "what should we do about it?"

Figure 1 offers a graphic representation of these divergent perspectives. The left-hand side of the diagram covers the viewpoint that workaholic behavior can have positive outcomes, positing that the greater than average attention to work can help the organization meet its goals and objectives, create a positive organizational culture of high achievement, and constitute a sustainable working situation. The right hand edge (shaded in green) is the traditional domain of the counselors and therapists, although organizational researchers have also recognized the compulsive nature of workaholism that can contribute to health problems, interfere with personal relationships and eliminate other life interests (Mudrack, 2004; Schaufeli, Taris & Bakker, 2008). This was traditionally considered to be exploitative in that it was damaging to the individual but of benefit to the organization. As research has built on the organizational benefits of having healthy, well-adjusted employees, these interests have pulled together some. However, tight economic conditions, increased competition and over-attention to short-term outcomes creates a context that challenges this focus on employee well-being.

Notice that the initiating box in the figure is labeled "Long Hours OR Workaholic Behavior," rather than "Long Hours." This is an important distinction. In many cases, discussion of positive outcomes has been based on a starting point of long hours – people who work more time than their colleagues or what is considered typical from some standpoint. Starting from that definition, it is somewhat intuitive that some people may flourish on a particular work schedule while others struggle. Recent studies, (e.g., McMillan, Brady, O'Driscoll & Marsh, 2002) have shown that measures of workaholism do not correspond to hours alone. Porter (2001) offered the idea that many people work long hours for a specific period of time (special project, early career need to establish oneself), but those who are not workaholics can ***dis***continue that behavior when the need passes. This would distort any one-time measure of positive or negative outcomes compared to hours worked. As Ron Burke posed in the title of one journal article: "It's not how hard you work but how you work hard" (Burke, 1999).

From an addiction perspective, the long hours would be considered symptomatic of a greater problem, not the problems itself. Using the terminology "Workaholic Behavior" is not without problems, as it requires some type of agreement on what that means, including value judgments on work time that incorporates social norms and may be influenced by differences in national culture (Golden, 2006). However, there is increasing recognition that hours alone are not definitive of workaholism (McMillan, et al, 2002; Mudrack, 2004; Schaufeli, Taris & Bakker, 2008). This study approaches the topic from the perspective of workaholic behaviors being a broader concept than simply working long hours and, therefore, is positioned on the right side of Figure 1, putting aside the debate represented by the left.

The two most well-known measures of workaholism reinforce the idea that the construct is more complex than the number of hours worked. On the counseling side, Robinson and Post (1994) validated Robinson's Work Addiction Risk Test (WART), which contains items about being impatient with waiting for others, always in a hurry, losing one's temper, forgetting personal or social commitments, feeling guilty about separating from work, feeling upset over mistakes, self-imposing pressure, and others. This identifies a number of personal tendencies that tap into why someone might be working all the time, rather than simply counting the number of hours worked.

In organizational research, the most frequently applied measure is from Spence and Robbins (1992). They measured subjects' work involvement, feeling driven, and work enjoyment. Each combination of high and low on the various aspect identified a different manifestation. For example those high on work involvement and high on work enjoyment were labeled "work enthusiasts." These are the people who would most likely be able to work long hours and have positive outcomes. Those who enjoy work, but are relatively low on feeling driven AND work involvement, were considered "relaxed workers." The combination that matched with the conceptualization of addiction to work and has become a standard for researchers – to use, adapt, or refute – is that of being high on involvement, high on feeling driven, but low on work enjoyment. Spence & Robbins (1992) called these people "workaholics" (p. 170).

One remaining weakness in these measures is that they are all self-reports. Porter (1996) describes characteristics of an addiction pattern, paralleling alcoholism and workaholism. Her characteristics, which have been upheld by views of others since then, include:

- Identity issues – work may be a means of downplaying other aspects of identity (e.g., less favorable situations at home) or simply the singular source of self-esteem, or feeling positive about one's self-concept. The focus on work situations to uphold a positive identity heightens the importance of external reinforcements like raises, promotions and other public recognition.
- Rigidity in thinking – Inflexibility of thought might manifest as either a high need to control (work process, people, information, etc.), or perfectionism which involves setting standards for self and others that can never be met but which fuel the need for more and more work as if they could.
- Progressive nature of condition and withdrawal – progression equates to an increased tolerance. Good feelings from any accomplishment are short-lived, and another higher goal takes over. This combines with perfectionism to ensure tomorrow will require even more work than today. There is no respite through success. In fact, attempts (self or outside initiated) to separate from work will cause true anxiety. It is a threat to identity, as well as a reduction in accustomed activation level, both of which can lead to physical reactions. These psychological and physical reactions parallel withdrawal symptoms in other addictions.
- Excess – the workaholic, like other addicted individuals, will choose to continue the chosen behavior even when it requires neglect of other things that our society believes should be important for general well-being. These would include attention to personal health and the boost to well-being through satisfying relationships with family and friends and other interests in life besides work. This aspect is definitional with respect to workaholism, as it represents the personal drive toward excess (rather than from external demands) and singular attention to work at the sacrifice of any other interests or relationships.
- Denial – people in a pattern of addiction often view any distress among others as being "their" problem. For workaholics, there is strong societal support for hard work and being a good provider for the family. Additionally, organizations do often proffer rewards based on 'face-time' or to the employees whose constant connection to the job seems to relay dedication to work. The workaholic uses these external supports to justify excess work and continue denial of addictive behavior. It is for this reason that self-reports are not ideal as the sole source of information in research on workaholism.

Some researchers emphasize that business cannot thrive in a society where family is relegated to such lesser importance than work (e.g., Humbert and Lewis, 2008), and with employees who are so single-dimensional as to damage their well-being (Green, 2008). Porter's (1996) focus on the characteristics of addiction added attention to the more direct behavioral impact to the organization. While it may appear that the workaholic is striving toward organizational goals and objectives, accomplishment of which will give fleeting reinforcement to identity, a choice to do so with less work will likely be ignored or even sabotaged to protect the need for excess work. Efficiency may be sacrificed for the addiction. The culture will likely become one of low trust due to the workaholic's need to control and perfectionist tendencies. If the workaholic is a manager, perfectionism and high control creates an extremely difficult situation for subordinates; there is no true delegation or opportunity for others to develop. This short-circuits sustainability of the organization's high performance. Workaholic behavior, therefore, is identified as more than just long hours; it includes a variety of activities that are detrimental to interpersonal relations in the organization, as well s to the individual's well-being,

One empirical test of the interpersonal dimension (Porter, 2001) surveyed 297 employees in a high-tech environment. Respondents were more likely to perceive situations that contribute to stress reactions when they worked alongside a perfectionist, showing the negative impact of select individuals on the culture of the organization. By further contrasting perfectionism to joy in working (utilizing Spence & Robbins, 1992, work enjoyment scale), perfectionism was suggested as a reasonably proxy for workaholic tendencies. The current study adopts the addiction view of workaholism and uses measurement of perfectionism among survey respondents to approximate the existence of workaholic tendencies. Note, the terms workaholism and work addiction will be used interchangeably in discussion from this point, and perfectionism proposed as an indicator for this pattern of excess.

THE IMPACT OF TECHNOLOGY

One aspect that has changed in recent years is the increasing availability of technology that can either be labor-saving or an enabler of workaholic behavior. The age-old image of a workaholic included a bulging briefcase of papers carried along for vacations or any other time away from the office. Fax machines allowed some release from paper bulk, as important documents could be supplied as needed. Personal computers further alleviated the need to carry paper files and, and cell phones facilitated keeping in touch from nearly any location. As internet access increased, there was another leap forward in ability to work from off-site locations. Most recently, all these capabilities – phone, internet, schedule maintenance, email and document transfer – have been combined into small handheld devices generally referred to as smart phones and available from multiple companies.

Technology as a contributing factor to workaholism has been acknowledged for some time. Parallel thinking has been shown in articles about addiction to technology (e.g., Kakababadse , Kouzmin & Kakabadse, 2000; Weil & Rosen, 1998). A recent study (Stanford, 2007 indicates that as many as 1 in every 8 workers might show signs of addiction to technology. Added to that estimate, Glovin (2007) summarized estimates on technology use, including a statement that 8 of 10 jobs were already based on some type of technology. It's unlikely technology use will decline, so the importance of addressing those employees who have addictive tendencies in their use of technology is with us to stay.

The coming together of workaholism and addiction to technology suggests a compounding problem. While the workaholic can utilize technology to indulge the drive toward excess, the "techno-addict" can link use of technology to work responsibilities, providing an excuse if there are complaints by friends and family. This mutually reinforcing condition indicates that as work requires more and more use of technology, the addiction pattern is one organizations should understand and be on the lookout for (Porter & Kakabadse, 2006).

Previously there was mention of recent moves to hand-held technology, which has increased the ability for 24/7 connectivity. The survey reported here was an investigation of use of hand-held devices or smart phones. Some results from the overall survey are reported to serve as context. Further comparisons explore whether or not there are differences when comparing the measure of perfectionism (a strong indicator of workaholism) to work-related use of their smart phone. The overall goal is to confirm that perfectionism is a reasonable abbreviated representation for workaholic tendencies and that these tendencies carry over to reported use of subjects smart phones for business purposes. General expectations include:

1. Perfectionism will not correspond to demographics such as age, race, gender or education (following the pervasive evidence that workaholism is an individual tendency).
2. Perfectionism will correspond to both working more hours and using their smart phones for work more time (aligning perfectionism with longer hours as a symptom of workaholism).
3. Perfectionism will correspond to reports that subjects work in a high pressure organizational culture (reporting of external demands as possible support for excess, which might be a real situation as predicted through attraction-selection-attrition [Schneider, 1987], indicating movement toward a workaholic culture [Schaef & Fassel, 1988], or it might be the individuals' self-protective mechanism as described above).
4. Perfectionism will correspond to belief the technology increases subjects' work performance

(linking belief in need to use technology with work outcomes).

Additionally, two other aspects of work-life interface are explored without specific expectation as to the direction of the relationship:

A. Will perfectionists be more or less inclined to say they would prefer segmentation between work and other activities?
B. Will perfectionists be more or less inclined to let their technology intrude on personal time and space by leaving their smart phones on at all hours?

Existing literature on segmentation tells us that some people prefer to have clear boundaries between work and other activities, while others prefer permeable boundaries (Ashforth, Kreiner & Fugate, 2000; Kreiner, 2006; Perlow, 1998). It is unclear, however, how this might relate to workaholic tendencies, or to perfectionism as a characteristic of workaholism. The difference might related to directionality – whether one is thinking of work interference with family or family interference with work when considering boundaries (Carlson, Kacmar & Williams, 2000). If boundaries are thought of as keeping work from interfering with family, a workaholic might feel that permeable boundaries are preferable, realizing the tendency to consistently carryover work into time traditionally identified for home, family and other involvements. Conversely, boundaries that keep family from interfering with work could be the workaholic's preference. Strong boundaries don't necessarily mean that there is much time set aside for family and other activities. A workaholic might identify very little time to be away from work and, at the same time, want strong boundaries so work time can be totally devoted to work.

The practice of turning off one's connectivity might be a symbolic gesture indicating desire to separate home time from work time. However, use of smart phones for personal reasons, instead of or in addition to business reasons might negate this action as an indicator of separating from work. There has been little work done to date on the intersection of workaholism with new technology, and none found specifically looking at the segmentation versus integration preference, so this is a very simplistic exploration to consider potentials for future research.

SAMPLE

An online survey was administered in two waves. The first was targeted to university alumni and yielded 312 usable responses (response rate of 12.5%); the second was a panel of college graduates accessed through the survey software provider, which secured another 315 respondents. As a combined sample of 627 people, subjects ranged in age from twenty to seventy-three, with an average age of thirty-eight (median age of thirty-six). Figure 2 depicts the sample by generation and shows that nearly half would be considered members of GenX.

These individuals were primarily mid-level employees, as shown in figure 3. Proportionally, top level employees were 14% of the sample, senior level 15%, mid-level 42%, emerging level 18%, and there were 5% consultants plus 6% academics. Respondents were also spread across a wide variety of job functions, shown in Table 1. Industry identification for subjects' companies was also diverse, but 60% fell within the categories of (1) professional, scientific and technical services; (2), educational services, (3) Finance & insurance, (4) Healthcare and social assistance, (5) manufacturing, and (6) retail trade.

About half the subjects worked in either small organizations (<100 employees) or large organizations (20,000 or more employees), with the other half distributed across the mid-range, as shown in Figure 4. About one third of the companies represented were identified by subjects as being local in scope of operations, about one third identified as multinational, and the remaining one third split between regional and national companies (see Figure 5). Fifty-seven percent reported that they work in the company headquarters.

Of the total sample, 271 (43%) said they were currently users of smart phones, with nearly 40% of the others saying they were thinking of becoming a user in the next 6-12 months – good news for the smart phone industry. The percentage of users was consistent across the Baby Boomer, GenX and Millennial generations (together 99% of the sample). In analysis, when looking at general work hours, the total sample is used; when examination relates to smart phone usage, subject pool is restricted to the 271 current users.

MEASURES AND ANALYSIS

There are three scales used in this study, all taken from or adapted from earlier research. Perfectionism is used here as a proxy for workaholism, on the basis of being one strong characteristic of work addiction. This four item scale was first used in Greenberger, Porter, Miceli and Strasser (1991); in this study $\alpha = .80$. Sample items include "Most people are not as aware as I am of the need for detail" and "I have a higher sense of responsibility than most people I know." Responses were on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Segmentation Preference – wanting clear boundaries between work and non-work – is a four item scale from Kreiner (2006). Sample items are: "I don't like to have to think about work while I'm at home" and I don't like work issues creeping into my home life." In this study α = .85; responses were, again, on a 5 point response scale, although Kreiner originally used a 7 point scale.

The third scale was to indicate the perception of a Pressure Organizational Culture, the employee's interpretation that their organization was high-pressure in having expectations that the job be prioritized at all times. Samples items include "I am expected to be accessible any day, any time" and "People in my company can reserve time for other life interests without feeling that their jobs are at risk" (reverse coded). These items were developed in the spirit of a scale for norms of time at work used in Major, Klein and Ehrhart (2002), all wording adapted to reference staying connected to work as opposed to their work referencing hours spent on the job site. This was an eight item scale; α = .72 in the current study. Other items used in analysis are single item responses relating to time or personal attitudes and will be provided as applicable in discussion of results.

Correlation analysis was the primary basis of comparison of perfectionism to the other variables. To further explore the difference between high and low perfectionism, the mid-range scale scores were removed to run ANOVA comparison of means on the high and low groups.

Scales scores 4.00 – 5.00	136 respondents	Labeled as high on perfectionism
Scale scores 3.00 – 3.75	*330 respondents*	*Dropped from analysis of means*
Scale scores 1.00 – 2.75	136 respondents	Labeled as low on perfectionism

There was no difference between the comparison of means and the initial correlations in terms of which results were statistically significant. In very few cases the significance level shifted slightly, but in no cases did a result shift from statistically significant to non-significant, using $p< .05$ as the cut-off for statistical significance. For ease of discussion, results are discussed here from the correlation analysis to represent significant and non-significant outcomes.

RESULTS

There were no significant results in comparing perfectionism to demographics of age, gender or education. Perfectionism seems, therefore, to be an individual tendency, in line with the predominance of research on workaholism. This does not substantiate perfectionism as a proxy for workaholism but show one basic similarity and is supportive of the first expectation for this study. The survey did include an item to identify race. However, 80% of the respondents were White/Caucasian, 6% Black/African-American, 6% Asian, and the remainder spread across other response categories. This did not provide a basis for comparison of responses by race.

Although not stated in the expectations, a post hoc analysis was run comparing perfectionism to company information, as well as function and responsibility level. There were no significant results on company size, scope of operations (local, national, etc.), or whether the subject was working in the headquarters location. Perfectionism does correlate to responsibility level ($p < .01$). Without a basis for judging causation, it's possible that being promoted to higher levels contributes to one becoming a perfectionist. However it may also be that perfectionist tendencies help one get promoted, suggestive of organizational rewards in support of workaholic behavior.

As shown in Table 2, Perfectionism is stronger among those who say they often work more than 50 hours per week, as well as those who say they often work more than 60 hours per week. There is also a positive and significant relationship to average daily hours use of their smart phone, as well as the proportion of that use they say is business rather than personal. This upholds the second expectation of this study that perfectionism does align with longer hours and use of the technology explained as for business purposes – both following the patterns conceptually assigned to workaholic behavior.

An additional post hoc comparison was added to look at reports of hours change, comparing hours worked before using a smart phone and those worked after beginning use. There was no significant relationship between perfectionism and change in hours (which across the sample was an overall increase). This would suggest that the perfectionists were already working more hours prior to beginning use of their smart phone and continue to do so by a similar margin after beginning use.

Although, as noted above from the post-hoc analysis, perfectionist were no more likely to be found in a certain size company, scope of operations, or the headquarters, perfectionism did positively relate to subjects' perceptions that they were working in a pressure organizational culture ($r = .175$; $p<.01$). This upholds expectation number 3, although causation is certainly not established. Perhaps perfectionists gravitate to or over time are more successful in a high pressure organization. The other possibility is that perfectionist are projecting their own high self-demands onto the organization.

The fourth expectation of this study was that perfectionists would believe that technology increased their performance. The survey question asked, "How does use of the device impact your job performance?" with responses options of: "Greatly enhances job performance," "moderately enhances job performance," "no impact," or "interferes with performance." There was a significant relationship between positive impact to job performance and perfectionism at the $p<.01$ level. Based on a self-reports, there is no way to determine whether this is a real performance improvement, but the perception does uphold the expectation of individuals' assigning credit for higher performance to technology use. Additional items were explored post hoc related to general attitudes about technology. Perfectionism was positive related ($p<01$) to each of the following statements (5 point response scale with 5 as strongly agree):

- In today's business world, being "connected" 24/7 is important for most jobs.
- I always enjoy having and using the latest technology.
- People who dislike constant connectivity are "old fogies."
- Advances in technology improve our lives.

These items do not necessarily have connection to the expectations of this study but support a general attraction to technology use that corresponds to perfectionism. Along with the result that they believe the smart phones positively impact their performance, it does suggest a prominent "pro-tech" perspective among perfectionists.

Further exploration targeted the relationship between perfectionism and preference for segmentation of work and non-work activities. In comparison of the two scales, the results were not significant. On the indirect suggestion of overlap, leaving the phone on during time at home was also non-significant, when compared to perfectionism. It is worth noting here that two thirds of the respondents that used smarts phones said they *never* turn them off, another 16% said their phone were off only while they slept. Therefore, time with the phone off did not have adequate variation to make good comparisons.

DISCUSSION

The results of this study are only meaningful when considered in light of the basis for expectations. Workaholism is an individual behavior pattern, not accounted for by demographics. It generally corresponds to longer working hours. Denial that there might be a problem in the behavior would increase the tendency to claim organizational demands require this excess. Any excess that involves use of technology would also be justified by assurances that the technology is necessary for increasing performance. In this study, perfectionism – one characteristic of workaholism – is proposed as an abbreviated indicator of the workaholic pattern. Results indicate this is a reasonable proposition. That is not to say that every perfectionist is a full-scale workaholic, but workaholics will typically have perfectionist tendencies and/or the similar rigid-thinking manifestation of high need to control.

One problem with identifying workaholism in practice is that the *activity* of work is usually assumed to be a good thing, without adequate consideration of whether the results could be obtained with lesser or more efficient activity. The current focus on perfectionism is not to discount other aspects of a full addiction pattern but, rather, to offer managers a simpler signal for behavior that justifies a closer look. There is a difference between high standards and impossible standards, between pushing for high performance and blocking others development by creating a culture in which there is little chance of success. A high level tendency toward perfectionism is more easily understood as something that can go to unhealthy extremes, and it doesn't carry the 'baggage' of historical debate over good and bad workaholics.

These results might also serve to define some new directions for research on workaholism and other topics. Particularly in the case of the exploration into segmentation preference, there are still unanswered questions. In this sample, 60% of the total respondents scored from 4.00 to 5.00 on the scale for preferring segmentation – a surprisingly high result. That could have restricted the range enough to impact the lack of relationship to perfectionism and, as originally stated, it is difficult to predict whether workaholics/perfectionist would say they do or do not want segmentation. Further investigation of this relationship might be useful to research on a variety of topics related to work-life effectiveness and be important for informing managers on policy decisions.

Another area for further research would be the correspondence between perfectionism and attraction to technology. While previous studies proposed a tendency for addiction-level involvement in work and technology to be mutually reinforcing, this brings to question the personal characteristics of people who are most attracted to technology, whether it be the early adopters or simply those who more readily accept it as the inevitable way of the future. The reverse question—what are the characteristics that correspond to technology resistance?—could be very important, if technology use is involved, as Golden (2006) says, in 8 out of 10 current jobs. What personal development would help resisters shift their attitudes? What can we offer to bring people across the digital gap beyond simple access?

The results reported here are one small part of a larger study and suffer from some of the limitation common to other research on workaholism. First and foremost, the information is all self-reported and subject to the distortions of denial. One interesting result was that 49% of the sample users said they believe they get carried away with use of their smart phones, but only 29% said they had ever been told by others that they've gotten carried away with use of it. There was non-significant result in comparing perfectionism with personal belief that they get carried away, but a significant relationship ($p<.05$), suggesting perfectionists were more likely than others to have been told by others that they do. This is one post hoc comparison result that slipped to non-significance when comparing means of the high and low perfectionist groups, but it does hint at the idea that perfectionists are hearing from others that their behavior with technology is a problem while they are no more likely to see a problem themselves than are the non-perfectionists. In other words, a hint of denial. Additional limitations are involved in use of single-item measures and potential self-selection bias of data collection about technology use that is administered only through an online survey.

In spite of these limitations and its exploratory nature, this study does offer some additional insight to perfectionism as a characteristic of workaholism, the possibilities of using perfectionism as an abbreviated proxy in research on work addiction and as a signal for managers to consider a deeper look at the outcomes of employee behaviors on the job.

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Table 1: Job Functions As Represented In Sample

Job function category	No.	%	Cum %
operations	76	12	12
accounting	73	12	24
finance	48	8	32
customer service	48	8	40
IT or MIS	42	7	47
sales	41	6	53
marketing	28	4	57
legal	28	4	61
human resource management	23	4	65
product development	21	3	68
business development	18	3	71
supply chain management	7	1	72
other	173	28	100
TOTAL	627	100	

Table 2: Correlations Of Time At Work And Using Smart Phone Correlated With Perfectionism.

Item	Related to Perfectionism
How many hours per day do you average active use of the device?	.157*
What percentage of your use is business rather than personal?	.176**
I often work more than 50 hours per week. (5 point scale; 5 is strongly agree)	.162**
I often work more than 60 hours per week. (5 point scale; 5 is strongly agree)	.148**

* (p<.05) ** (p < .01)

Figure 1: Divergent Perspectives in the Study of Workaholism

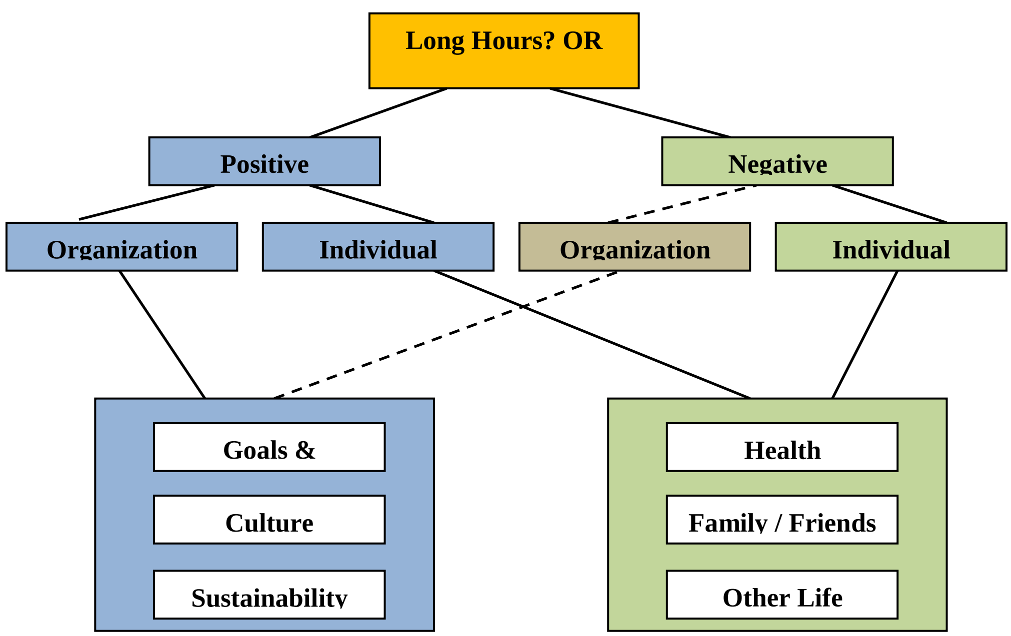


Figure 2: Subjects in Generational Categories

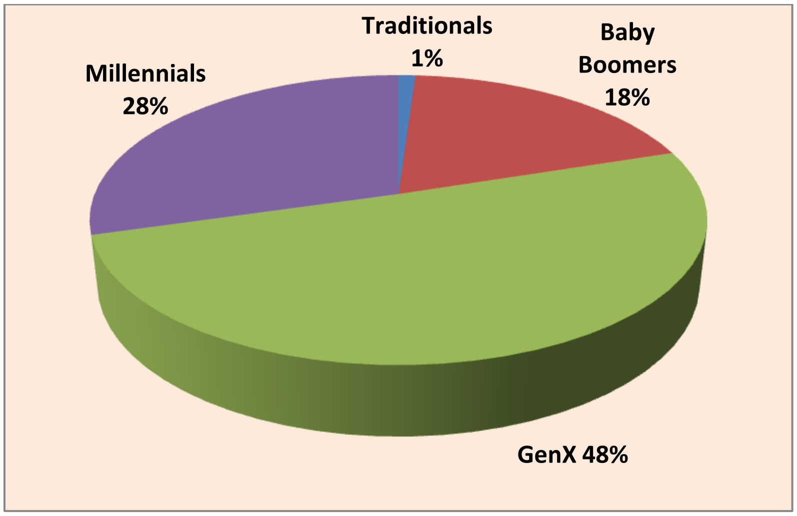


Figure 3: Breakdown of Sample by Level in Organization

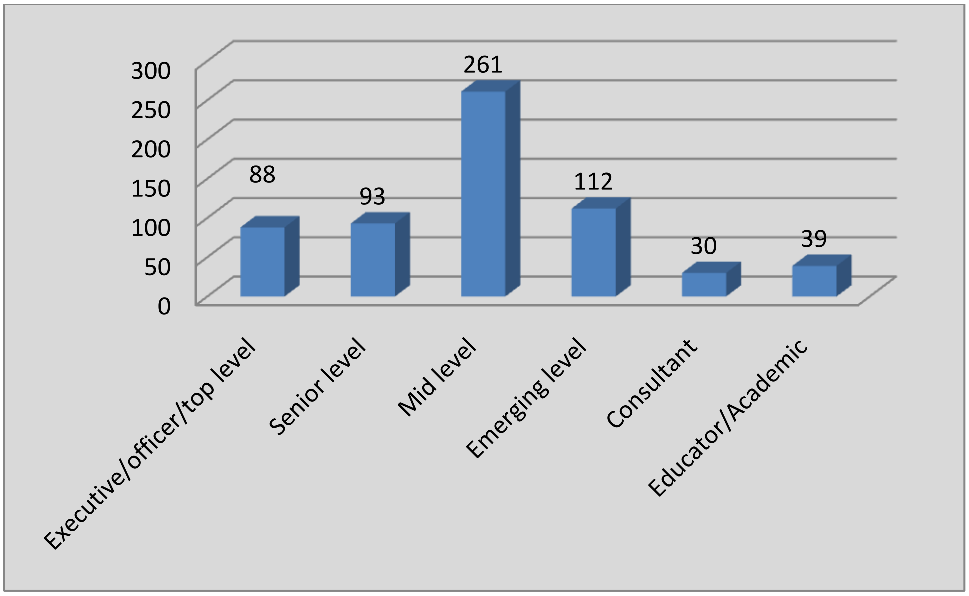


Figure 4: Subjects' Company Size as Number of Employees

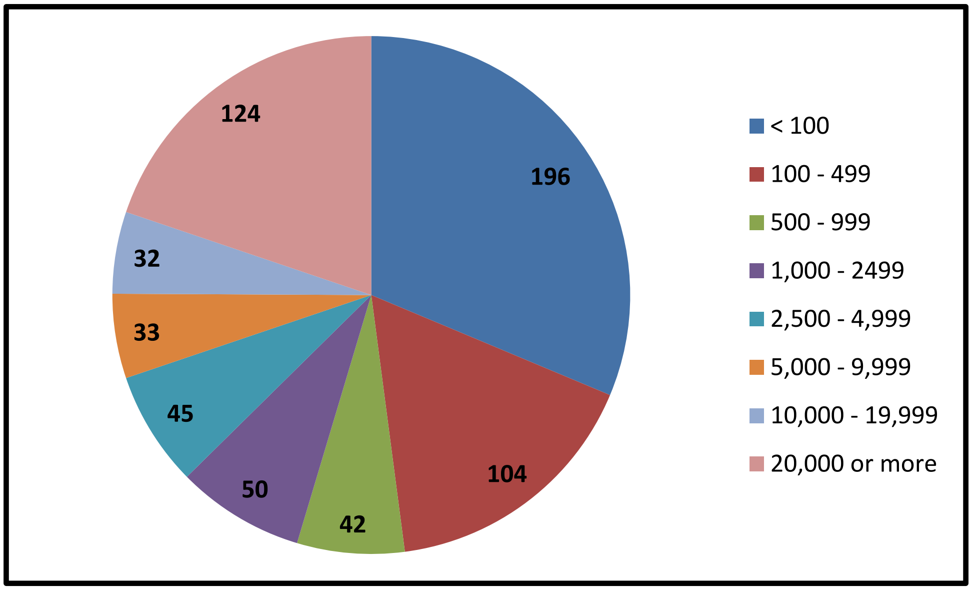
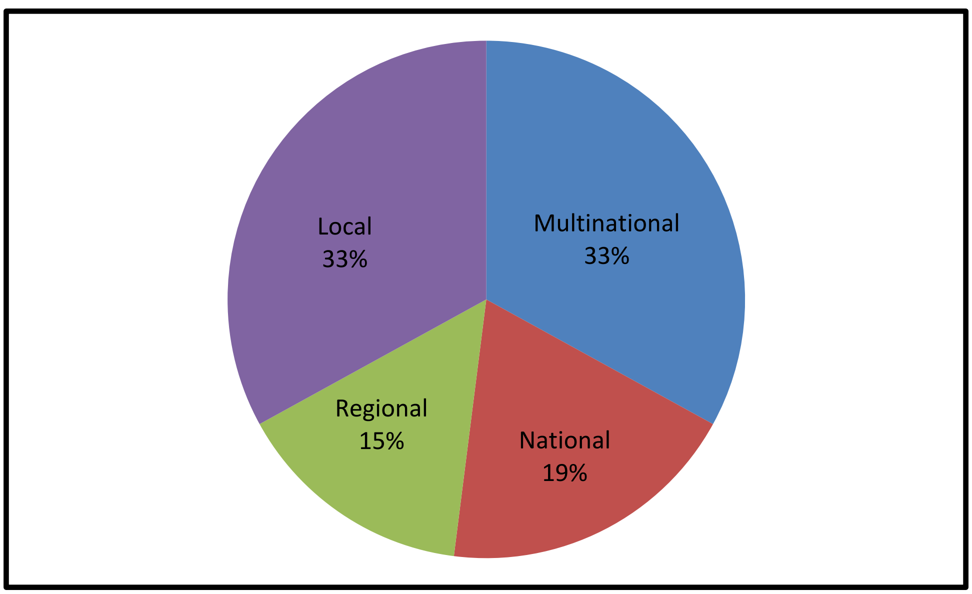


Figure 5: Subjects' Company Scope of operations



CREATIVITY NECESSITATES A CHANGED ORGANIZATIONAL DESIGN

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ABSTRACT

Creativity is often regarded as an organization's acme of insuperable competitive advantage. Hence, many organizations have the edict to introduce creativity but, in doing so, change must occur to many extant design elements: Human Resources, Climate, Management, Strategy, Planning, the Learning Organization, and Assessments. Additionally, new directions for future research are proposed. These include potential organizational challenges such as resistance from employees, increased time and costs for creativity paired with unimplemented projects, or increased costs of failed projects if increased risk taking occurs. A final area of future research can focus on examining if competitors will copy creativity systems, for in the past, competitors sometimes copied those who were first to market their products or services. Perhaps, competitors will study their competitors' creativity systems and begin copying in that area, too.

CREATIVITY NECESSITATES A CHANGED ORGANIZATIONAL DESIGN

"Does anyone know what it means to manage the human imagination?" posed Peters to a Microsoft audience. Peters answered, "I don't know what it means to manage the human imagination either, but I do know that imagination is the main source of value in the new economy." (1994b, p.12) Imagination exists both at the individual level as well as at the organizational level; the latter has more power due to collectiveness. Yet, "in many organizations, there has been a massive failure of collective imagination." (Hamel, 2002, p.11)

If imagination is the main source of value and if a "massive failure of collective imagination" has been diagnosed, then one might wonder, "What is the cure?" Hamel prognosticates, "Companies fail to create the future not because they fail to predict it but because they fail to imagine it. It is curiosity and creativity they lack, not perspicuity." (2002, pp. 123-124)

Organizations can choose to incorporate the voice of creativity into strategic intent (Hamel & Prahalad, 1989) that can summon to organizational members Cahn and Styne's lyrics, "Come out, come out, wherever you are (come out, come out)." And, if individual creativity does, truly, "come out," then many design elements or their functions must change. Specific design elements to be examined include: Human Resources, Climate, Management, Strategy, Planning, the Learning Organization, and Assessments.

The impact of creativity on Human Resources will first be examined. The functions within the actual Human Resource function are changing to support creativity. However, Human Resources is not changing elementally since creativity is not integrated into it. The impact of integrating creativity into Climate, Strategy, the Learning Organization, and Assessments will be examined. In these cases, the design elements change because of the integration of creativity into their processes and structures. These design elements are actually more creative themselves as they acquire creative traits. Finally, the design element of management will be examined from a perspective of both the impact of creativity on that element, as well as the impact of integrating creativity into that element. The structure, management, must be changed to better support employees; however, managers are also going through a transformative process to be more creative as they participate in training.

BACKGROUND

Styles of Creativity

To employees and managers, the summoning of creativity is inclusive since "creativity is a *natural* part of being human. It is not reserved for those people with some sort of special gift. This suggests that creativity exists in all people (at different levels and various styles.)" (Isaksen, 1994, p. 4) To determine one's level, a question might be, "How creative am I?" and to determine the particular style, a question might be, "How am I creative?" (1994, p. 79) Since organizations are composed of people, and all people are creative, then it follows that all organizations are creative. Assessments can assist with the determination of an individual's degree or style. Next, an examination of an assessment of individual style will be explored. At the end of this paper, an examination of an organization's level will be explored.

KAI

Kirton Adaption-Innovation (KAI) Inventory is commonly used to determine individuals' preferred "cognitive style that affects problem identification and solution, decision making, and creativity…. The Kirton Adaption-Innovation Inventory (KAI) is a 32-item measure of cognitive style that locates individuals on a continuum, one end of which is labeled adaptive and the other innovative." (Kirton, Bailey, et. al, 1991, p. 445) Additionally, Hayward and Evert elaborate, "The inventory yields scores between 32 and 160, where a higher score indicates greater innovations. The theoretical mean is 96…." (1983, p. 339)

Individuals whose scores are on the continuum end of Adaptors tend to "prefer well-established structural situations and favor the security of operating within the prevailing paradigm. They generally initiate and support changes that are within the enveloping paradigm, and they aim to combine creativity and continuity, efficiency, and reliability." (Kirton, Bailey, et al, 1991, p. 446) Adaptor style individuals tend to express their creativity by "refining existing process and methods but keeping within accepted guidelines." (Hayward & Evert, 1983, p. 339)

From an organization's viewpoint, Adaptors are often regarded as "disciplined, makes goals, precise, reliable, dependable." (Isaksen, Dorval, & Treffinger, 1994, pp. 88-89)

Individuals whose scores are on the continuum end of Innovators tend to "prefer change that is radical rather than evolutionary. They may be unaware of, or simply ignore, the restraints from traditional boundaries of the prevailing paradigm and in doing so may challenge the established methods, procedures, and customs, and may perhaps bring about a significant alteration in the system itself. Innovators prefer less structured situations and tend to be impatient of existing constraints." (Kirton, Bailey, et al, 1991, p. 446)

Innovative style individuals tend to express creativity by trying "new and often untried processes and methods, probably breaking accepted guidelines." (Hayward & Evert, 1983, p. 339) From an organization's viewpoint, Innovators are often regarded as "undisciplined, questions or disregards rules, unique, visionary, ingenious." (Isaksen, Dorval, & Treffinger, 1994, p. 88-89)

The actual criteria utilized to determine an Adaptor or Innovator cognitive style is based upon three subcategories—Originality, Efficiency, and Rule Conformity. Originality focuses on the level of uniqueness or newness. Efficiency focuses on the level of spontaneity. Rule Conformity focuses in the degree of breaking the rules in order to try something new. (Isaksen, Dorval, & Treffinger, 1994)

When examining the characteristics of the Adaptor and Innovator style, it is important to note that one style is not necessarily more or less creative or better than another. These are simply styles. What is important is for the individual to be aligned in occupational tasks that capitalize upon the particular cognitive style's strengths. If that is not the case, an individual's creative strength is not utilized and as a result of the mismatch, "a final outcome was for the individual to leave or want to leave the organization." (Kirton, Bailey, et al, 1991, p. 446)

Difference between Creativity and Innovation

Creativity and Innovation are sometimes used interchangeably but each has a different meaning. Amabile, Conti, Coon, Lazenby, and Herron explain, "we define creativity as the production of novel and useful ideas in any domain. We define innovation as the successful implementation of creative ideas within an organization. Creativity is the seed of all innovation…" (1996, p. 1155) So, an ordered process can exist of creativity being followed by innovation.

Even though these two activities can coalesce, creativity is sometimes unaccompanied. If so, the result may be a successful, and perhaps fun, exercise of producing a novel but worthless idea. Levitt confirms, "Ideas are useless unless used. The proof of their value is their implementation. Until then they are in limbo." (2002, p. 144) Additionally, the very act of creating inert ideas can have a negative effect upon the company for time is invested for idea generation, and the focus is diverted away from other work activities.

In order to properly progress to the stage of innovation, one needs to know how to and must want to innovate. Levitt discounts the ability of those who are creative to have the ability to implement. "Often the worst thing a company can do…is put innovation into the hands of 'creative types'," argues Levitt, "those compulsive idea generators whose distaste for the mundane realities of organizational life renders them incapable of executing any real project." (2002, p. 137) On occasion, the creative type can succeed in innovation but typically when using a structured creative problem solving methodology such as Synectics, Creative Problem Solving (CPS), or Compression Planning. Additionally, the noncreative types may not always succeed when organizational support, dedicated follow through, and action tracking tools are lacking.

Human Resources

Now that styles of creativity, style measurements, creativity, and innovation have been discussed, the impact of creativity on human resources will be examined. Although this design element remains constant, the functions change to accommodate creativity. In order to succeed in the auspicious endeavor of recruiting creative workers, it is essential to understand and recognize creative characteristics, as well as how to recruit creative types.

Identifying the Creative Type

Since the attire of a creative type applicant does not typically include a t-shirt announcing "I am Creative," a recruiter may need to observe key, perhaps hidden, characteristics. In addition to not starkly announcing one's creativity, an applicant may actually try to hide any visible signs of creativity. Sark describes the change that creative people sometimes experience, "We all started out creatively free. Remember the sandbox? All you needed were bare toes in warm sand and maybe a good bucket…At school, things may have changed…The chairs were in rows, and tree trunks were to be colored brown, not purple. If you lived in a world of purple tree trunks, you probably learned to hide it." (1991, p.1) So, applicants may hide creativity if they feel that the exposure of creativity would decrease the likelihood of obtaining the job.

The creative type is often identified by key traits and life experiences. Often, the creative type has a sense of optimism, a higher education, a thirst for knowledge, and a passion for ideas. Additionally, the creative type may appear to be mild mannered in first impressions and self-confident. This type may also be adept at spanning organizational boundaries which is helpful when it is time to sell one's ideas to others. Many of these qualities coincide with ambiguous, unknown, and novel experiences that tend to attract the creative type. (Davenport, Prusak, & Wilson, 2003)

Additionally, the creative types seem to exhibit perpetual mettle. Barron and Harrington, Brophy, Walberg and Stariha assert that creative types "tend to be independent-following their own ideas and their own interests without being overly concerned about socially imposed expectations for certain kinds of behavior or how others will view them." (as cited in Mumford, 2000, p.317) Perhaps the other characteristics of having self-confidence and a passion for ideas are contributing factors.

Another evident characteristic of creative people is intrinsic motivation. Typically, for the creative type, this quality stems from high interest, curiosity, enjoyment. Intrinsic motivation determines what one can do and what one will do. (Amabile, 1997). At this point, a differentiation should be made in regard to the creation process and the innovation process. It seems that this commonly evidenced quality on intrinsic motivation pertains most often to the creation process, rather than to the innovation process.

In addition to being attentive to personality traits of creative people, Human Resources can also be attentive to activities and interests of creative people. Gruber expounds,

> "…creative people appear skilled at integrating a variety of activities and interest around their work. This integration of multiple activities, in fact, seems to be an endemic characteristic of highly creative individuals who organize their loves around networks of related enterprises. These networks of interrelated activities appear to contribute to creative work in a number of different ways providing a source of identity and a set of diverse but related concepts for use in problem solving, while allowing people to shift their focus to other related projects when they encounter an impasse." (as quoted in Mumford, 2000, pp. 317-318)

Gruber's notion of integrated networks seems to exist not only in one's personal life (hobbies and interests) but also in one's career. Thus, the creative type may have been a multitasker at a particular company or may have made career changes to many companies. Davenport, Prusak, and Wilson share the example of Dave Clarke who "recently joined the not-for-profit world after working in the chemical and automotive industries, moving from WL Gore to General Motors to the American Red Cross." Relating Clarke's pattern to creative types, the authors feel that "maybe this is part of their value—like honey bees, they pollinate new ideas across industries and companies." (2003, p. 64) So, evidence of the "job hopping" itinerant may actually be a tell-tale sign of strong creative types.

The vastness and interconnections of experiences of the creative types can be the ingredients of the fuel for creative thought. Policastro and Tweny contend that "these implicit associational connections—threads of experience—are used by creative people in their work allowing an intuitive identification of relevant material and likely outcomes." (as cited in

Mumford, 2000, p.318) Accordingly, it appears that through the creation of vast and varied personal and job experiences, creative people now have more available tools.

Additionally, from a physiological perspective, Santiago Ramon y Cajal, father of neuroanatomy, deduced that the number of interconnections between neurons determines brainpower. (as cited in Wenger, 1996) Wenger feels that within the brain, axons, dendrites, and glial cells provide electrochemical connections between neurons. They will keep growing as long as we keep learning. Perhaps the interconnections from varied job and life experiences combined with the physiological neuroanatomic interconnections from learning experiences are the very fuel for creative thinking.

Besides personality traits and varied personal job and learning experiences, the creative type also displays the propensity for incorporating quiet, alone, or incubation time. Thus, Gick and Lockhart and Zuckerman and Ole found that "creative people planned time away to think and allow ideas to percolate." (as cited in Mumford, 2000, p.318) For some, percolation time is incorporated into job; for others percolation time is manifested in resume gaps when the applicant took time off to "find himself."

Human Resource Weakness: Not recruiting creative employees

Despite the realization of the strategic benefits of bringing in the creative types, some feel that recruiters are chary of doing so and instead prefer to hire minions who demonstrate perfection. Peters observes,

> "Whom do we hire? The person with the perfect grade-point average, who didn't miss a day of class in kindergarten, elementary school, or junior high. Perfect folks. Blemishless. And unspeakably dull. Never a hair out of place, never done a thing wrong. But they haven't done much interesting, either. Curious? I doubt it." (1994b, p. 200)

So, why are curiosity, novelty, and independence usurped by conformity and perfection on a recruiter's checklist? Perhaps the reason is due to a staid dogma that shows no sign of mutability or perhaps the reason is due to ignorance. To assist with inflexible recruiting attitudes, training can be a solution and will later be discussed. To assist with ignorance, providing knowledge on how to attract the creative type is a solution and will next be discussed.

Impact of Creativity on Human Resources

The knowledge of recruiters to identify the signs of the creative type is only part of the hiring solution. The actual recruiting or prospecting is the other part and is well worth the effort such that organizations can be nourished by imaginative sustenance. Drucker supports this by stating, "We can demand that people show up at work on time, especially in this problematic economic period. But we cannot demand, ever, that people bring passion along, or exuberance, or imagination. We must attract the special worker, then tap into his or her curiosity." (1992, p. 101)

Like Drucker, Peters recognizes the importance of recruiting the imaginative type. He instructs, "Hire a few genuine off-the-wall sorts—collect some weirdoes. Curious and the occasional gap on the resume are not enough. We need some real kooks. If we want original products, they're likely to come from original people." (1994b, p. 202) With having demonstrated the need for this kind of person, the shift now is to find this type of person.

To lead to the discovery of recruiting strategy, an analogy will be made. Peters compares the change agent type to Lead Frogs (in the genre of Leap Frogs). He explains,

> "Troll through the ranks for would-be revolutionaries—people who have long been itching to make things happen. (Or who are already harboring success stories that they're afraid to go public with…for fear of the Old Guard's wrath.) Given half a chance, these extant or prospective Lead Frogs will *leap* over the Fortress of Inertia and mark out a visible path which others can follow." (Peters, 2003, p. 213)

It is fitting to apply this definition of Lead Frogs (change agents) to the creative type.

A practical idea Peters shares is to "Host an 'Idea Fair,' a 'Bragfest,' an internal 'trade show'." In other words: a public and well-publicized occasion during which the 'Lead Frogs' jump out of their pond and demonstrate their Weird Wares. Result: Other freaks are inspired to show their true colors." (2003, p. 213) Perhaps the existing Lead Frogs of the organization can also attend to provide brief screening interviews. In addition to saving interview notes from the screening interview, the interviewer may also want to photograph some of the "wares" that the applicant frogs may have brought along. This can be kept in the applicant frog's file such that a decision can be made for proactive hiring for anticipated positions or for actual openings at another date. In addition to evaluating frog's "weird wares," an evaluation of positional expertise is imperative.

A final practical idea shared by Peters is to host monthly seminars and "…invite a Genuine Freak from within your company to lead each seminar. Again: Freaks attract Freaks. (Flypaper, remember!)" (2003, p. 213) This idea had a two-fold benefit. First, the activity can attract the creative type. Second the activity can foster an increased level of learning in the organization.

CLIMATE

In order for creativity to survive in an organization, it must have the proper climate and management. One might think of this visually as creativity being expressed as a plant, climate being expressed as the soil, and the action of watering and fertilizing as being an action performed by management. A progressed discussion of climate, followed by management will be made.

Impact of Integrating Creativity into Climate

The definition of climate proposed by Ekvall includes "attitudes, feelings and behavior patterns which characterise life within the organisation." (as cited in Isaksen & Lauer, 2002, p. 74) Furthermore, these attitudes, feelings, and behaviors have a unique context for individuals. Isaksen and Laure describe, "Psychological climate is the cognitive appraisal by an individual of environmental attributes in terms of the acquired meaning and personal values to the individual." (2002, p. 74) Important to note is that an organization's culture differs from climate. Ekvall further explains, culture as the "the values, beliefs, history, traditions, etc. reflecting the deeper foundations of the organization" while climate is the "recurring patterns which characterize life in the organization as perceived by individuals." (as cited in Isaksen, Dorval, & Treffinger, 1994, p. 115)

Ekvall describes nine key areas of organizational climate. These include (a) Challenge—degree that employees feel engaged to contribute to organization's goals, (b) Freedom—degree of autonomy employees have to take initiatives, (c) Dynamism and liveliness—degree of energy and vitality such that new things occur frequently, (d) Trust and openness—degree to which employees feel comfortable in sharing ideas and feelings, (e) Idea time—degree to which employees have extra time to generate new or expanded idea, (f) Playfulness and humor—degree to which the atmosphere is filled with levity and laughter, (g) Conflicts—degree to which employees feel interpersonal tension (one wants this area to be low), (h) Idea Support—degree to which ideas are protected to allow for incubation, (i) Debates—degree to which an exchange of intellectual viewpoints exists with other ideas or rules. (as cited in Isaksen, Dorval, & Treffinger, 1994)

Several of Ekvall's areas have been echoed by other zealots promoting the merits of maximizing organizational climate. One of the coined areas is leisure; this aligns with Ekvall's area of idea time. Leisure is a necessity because "all intellectual improvement arises in leisure." (Furnham, 1993, p. 1) Leisure is the dyad of action oriented thinking that leads to the creation of fruitious ideas as well as to their implantation. Thus, if organizations want to transgress the "single silver bullet" mentality, they need to incorporate leisure as part of the core workday. Lawson recommends that "…resources that are not fully committed to immediate organizational output are not only valuable, but often essential." (2001, p.1)

Surprise

Next, surprise correlates to Ekvall's element of dynamism. The inclusion of surprise does not have to be planned within culture for "complexity theory suggests that much surprise is inevitable because it is part of the natural order of things and cannot be avoided, eliminated, or controlled." (McDaniel, Jordan, & Fleeman, 2003, p. 266). Although the appearance of surprise is inevitable, its types vary. McDaniel, Jordan and Fleeman state, "Definitions of surprise range from 'an attack made without warning' to 'a taking unawares.' When we are surprised, we are struck with wonder or amazement, or are impressed forcibly through unexpectedness or unusualness." (p. 267).

The acceptance of surprise helps one to plan the effective use of surprise. Thus,

"the question cannot be, 'How can I keep this from happening?' Rather, the question becomes, 'Can I make creative use of what is happening?' " (McDaniel, Jordan, & Fleeman, 2003, p. 272).

So surprise is viewed in a positive way such that the result of "handling" what surprise brings actually results in a creative expression or response of some type.

Weick and Sutcliffe warn that the "management goal in the face of potential surprise is to create more reliable and predictable organizations through quality control, planning, and standardization and/or to manage the unexpected in ways that reduce potential damage." (as cited in McDaniel, Jordan, & Fleeman, 2003, p. 266). This attempt to create a rational cincture around the organization in attempt to block out surprise is inane. The infiltration of surprise is precisely how breakthrough success occurs.

Building upon the idea that surprise may spur success, Peters proposes the necessity to encourage perpetual surprise. He elaborates,

> "If surprise = success, could we build a SURPRISE FACTORY—i.e., an organization that keeps producing surprises? If we could, then, scientifically speaking, it would certainly honor the principles of randomness and chance variation. Surprise *is* predictable …So to inculcate surprise is to inculcate unpredictability. To inculcate unpredictability is to honor rule-breaking (all surprises, by definition, break the rules), humor, naps, curiosity, eccentricity. To a large extent (entirely?), surprise can't be organized or planned for. To steal a line from management expert, Henry Mintzberg, it's about wildflowers growing in abandoned lots, not tightly controlled greenhouses. " (1994a, p. 103)

Rule Breaking

Next, rule breaking correlates to Ekvall's element of freedom. Some feel that through the questioning or potential breaking of rules, one can make more strategic discoveries. Hall states, "Great ideas shake the world. They deny precedent and redefine the world. An idea has to break rules to be wicked good. If it doesn't, it's been done before." (1995, p. 71)

Some rules are meritorious and others have exceeded functional expiration dates. VonOech explains the process of the Aslan Phenomenon:

> "(a) We make rules based on reasons, (b) We follow these rules, (c) Time passes, and things change, (d) The original reasons for the generation of these rules may no longer exist, but because the rules are still in place, we continue to follow them." (1983, p. 61)

To assess if rules are needed or current, VonOech recommends, "Go after your sacred cows. Periodically inspect your ideas and beliefs to see if they are contributing to your thinking effectiveness." (1983, p. 65) Peters also proposes an exercise for assessment:

> "Every two years, have a team of outsiders and insiders develop a list of 10 statements that summarize 'how we do things around here' (based on interviews with insiders, customers, vendors, etc.); then develop a plan for attacking each of the 10 core beliefs." (1994b, p. 189)

Risk Taking and Mistakes

Next, risk taking correlates to Ekvall's elements of freedom and trust. When employees have the courage to take risks and perhaps make mistakes, new discoveries and breakthroughs can occur. James Joyce affirms, "A man's errors are his portals of discovery." (http://www.quotationspage.com) The portals of discovery can lead to new ideas or revisions of existing ideas.

Humor

Next, humor correlates to Ekvall's element of playfullness. VonOech claims that the benefit is to enhance creativity. It does so by helping people to combine ideas not necessarily associated with each other. (1983) Humor also helps people to be more creative since endorphins are released and creativity is enhanced by a relaxed state. This is confirmed by Kaufman, Ray, and Goleman who states that the "…relationship between thinking and feelings, between mind and body are critical to unleashing creativity. Tensions that constrict the flow of ideas through the mind are analogous to tensions that constrict the flow of blood through the muscles of the body." (1993, p. 27) The authors believe that relaxation helps the mind to be more receptive to novel ideas.

MANAGEMENT

Management is an instrumental construct to support the creative person and management is also a changed construct as creativity is integrated into this design element. It appears that management can offer support to creative individuals by (a) providing appropriate responsibilities, (b) encouraging ideas, (c) championing ideas, (d) buffering, and (e) ensuring follow though. Each of these activities will be further discussed.

Impact of Creativity on Management

To enhance the earlier discussed characteristics of the creative types, managers can provide responsibilities that foster variety, freedom, and self direction. To promote variety, managers can offer job rotation or multitasking opportunities. To promote freedom in an organization's environment, Peters notes "... it thrives best when individuals are left alone to be different, creative, and disobedient." (1994b, p. 55) Hamel and Prahalad share a somewhat different view as they note the importance of freeing yet also monitoring the creative spirit as they state, "Creativity is unbridled, but not uncontrolled." (1989, p. 67)

Managers need to encourage employees to create ideas. Peters recommends the ordinance, "Do/make something great" (1994b, p. 216) as a stimulus for creativity. Additionally, encouragement can be fostered as managers function less as directors and more as enablers. Hence, when speaking of managers' role in the creative process, Higgins and Morgan state, "Their role is a curious one: creative thinking by nature is not something one can command or exhort; their primary role is one of facilitator or enabler." (2000, p. 122)

Once managers have encouraged ideas, they are instrumental in championing ideas. Championing means offering a buttress for still feeble, incubating ideas and championing from employees who might badger. It also means promoting the creative ideas to others in the organization. Mike Koelker, creative director at Foote, Cone, and Belding discusses the difficulty that creative employees may have. He comments, "without exception, the people in the account group and creative department who I find the most brilliant will have the hardest time fitting into…the agency structure." He has therefore chosen to champion the ideas of the brilliant. (as cited in Peters, 1994b, p. 203) Summing up the importance of championing, Peters affirms, "All freaks need guardians." (2003, p. 214)

Additionally, managers need to provide a type of buffering to creative employees especially to support their characteristics of intrinsic motivation. Amabile notes,

> "extraneous events—particularly events inducing external performance pressure—may reduce the intrinsic motivation and curiosity needed for creative work. As a result, the use of strategies intended to buffer people from extraneous demands may prove useful, particularly when they are being asked to generate new ideas." (as cited in Mumford, 2000, p.319)

To support buffering, managers can establish a work area that can be adjusted if quietness is needed for incubation time. Also, administrative help can be provided to assist with removing administrative distractions (people or tasks). Buffering can be used to protect the slack time of employees. Lawson claims, "…to sustain high levels of innovation, slack resources must not be constantly threatened." (2001, p.126) This can easily be accomplished, if when planning work schedules, managers "…design in slack, understand thinking as work." (Lawson, 2001, p.133)

Managers also have the responsibility to ensure that follow through occurs on creative ideas so that the innovation process occurs. In fact, without follow through, "creativity is not the miraculous road to business growth and affluence that it is so abundantly claimed these days…for the front line manager, it may be more of a millstone, than a milestone." (Levitt, 2002, p. 137) Although follow through must occur, the driver of the follow through process may or may not be the original creator of the idea. When speaking of those who generate ideas, Levitt claims, "They mistake an idea for a great painting with the great painting itself….Ideation and innovation are not synonymous" (Levitt, 2002, p. 138) If the creators are capable of only imagining the painting but not actually painting, then the manager can assign the painting to others to ensure follow through.

STRATEGY

The impact of integrating creativity is significant. Before that discussion is made, a review of the current issues within strategy will be discussed that include imitation, process domination, dullness, and innovation dearth. Each shall be further examined.

Strategy Problems

In terms of imitation, Williamson notes, "…the majority of companies are pursuing strategies that are becoming ever closer to those of their competitors." (as cited in Schoenberg, 2003, p. 96). The danger in the prolific filching of competitors' strategies is that using and "assessing the current tactical advantages of known competitors will not help you understand the resolution, stamina, and inventiveness of potential competitors." (Hamel & Prahalad, 1989, p. 64) Copying does not give an organization a competitive edge. Peters portends, "… the company that wants to stay at the top of its market and command those premium prices can't just copy the copycats by improving its old products, no matter how creative they might once have been… If you want to continue to command the heights, you need to keep on creating and overturning." (1994b, p. 248)

Next, process domination is problematic for organizational strategy. According to McLagan, "The danger is that an obsession with process will create a myopia that discourages people from testing assumptions and engaging in breakthrough thinking." (1991, p. 33) So, organizations may have a ligature to the Aslan Phenomenon that was earlier discussed in climate. This myopia may see only existing rules and assumptions and although the original reasons for generating them are no longer valid, organizations may still follow the original strategies. Additionally, within the area of process domination, "…most still hold the view that innovation is a rather dangerous diversion from the real work of wringing the last ounce of efficiency out of our core business process. Innovation is fine so long as it doesn't disrupt a company's finely honed operational model." (Hamel, 2002, p. 25)

Next, prosaic strategy is problematic. Peters views it that "we are afloat, awash, adrift in Sea of Sameness." (2003, p. 85) Yet, organizations often work diligently to achieve banality in business creation or strategy creation. Peters shares,

> "What stuns me is how hard people work to launch something new only to create a business that is so, well, ordinary…The passion is missing. So is the soul. The new place does not make you say 'Wow' or 'Great' or make you want to change your life. You don't fall in love." (1994b, p. 242)

His question "…can you explain, in 25 words or less, what is absolutely special about it, what will make people not say 'Nice'—but 'Zounds!' or 'Holy moly!'" (1994b, pp. 242-243) is meritorious when evaluating the specialness of strategy.

The final problematic area of strategy is innovation dearth. Perhaps this is due to the importance assigned to operations vs. innovation. Hamel notes,

> "…A hundred years on from Frederick Taylor, innovation is still regarded as a specialized function (the purview of R&D or product development), rather than a corporation-wide capability. In most companies, the forces of perpetuation still beat the forces of innovation to a pulp in any contest. As change becomes less predictable, companies will pay an ever-escalating price for their lopsided love of instrumentalism." (2002, p. 25)

Impact of Integrating Creativity into Strategy

As creativity is integrated into strategy, the design element is changed. Creativity is disseminated leaving its essence in general innovation, business concept innovation, continued innovation, crafting, and application. Each shall be further discussed.

Hamel and Prahalad contend that "The goal of strategic intent is to fold the future back into the present." (1989, p. 66) This folding process can involve vision and innovation. Hamel shares,

> "One CEO put it to me this way: 'I used to spend most of my time worrying about the *how*— how we did things, how we operated, how efficient we were. Now I spend much of my time worrying about the *what*— what opportunities to pursue, what partnerships to form, what technologies to back, what experiments to start.'… Inventing new ways—that's the key to thriving in the age of revolution." (2002, p. 15)

Innovation as a key to survival is a key realized by others. A management consultant confirms the belief in the Harvard Business Review "the only sustainable competitive advantage comes from out-innovating the competition." (Moore, 1993, p. 75)

As creativity is integrated into strategy, Business Concept Innovation may result. Hamel describes this as a way "…to build a business model so unlike what has come before the traditional competitors are left scrambling. When it's most effective, business concept innovation leaves competitors in a gut-wrenching quandary." (2002, p. 72) The quandary is experienced because of the looming, innovative competitive advantage that is initially protected from imitation because of its novelty. Business concept innovation is successful for it is not a proactive competitive ploy but is instead a proactive jettison of sameness. Hence, Hamel claims, "Business concept innovation is not a way of positioning *against* competitors, but of going *around* them. It's based on *avoidance*, *not* attack. So, perhaps the key thought is, "*what is not different is not strategic."* (Hamel, 2002, p. 72)

As creativity is integrated into strategy, continued innovation can occur. It becomes a way of life. It appears that "…the trick for my company (for any sensible company!) is to keep topping itself—so any 'stolen' secrets are secrets to *yesterday's* success." (Peters, 1994a, p. 15) The continuous process is affirmed by Hamel who states, "Today a company must be capable of reinventing its strategy, not just once a decade or once a generation in the midst of a crisis when it trades out one CEO for another, but continuously year after year." (2002, p. 12) As innovation becomes continuous, it must also become anchored. Gordon and Morse speak of the importance of this anchoring process into an organization's structure. Before an innovative idea can be of any value to a highly coordinated company, the changes resulting from the implementation of the idea must be understood and incorporated into the coordinative structure…." (1968, p. 38). Hamel sums up the anchoring process of innovation as he purports the idea of "making innovation a systematic capability." (2002, p. 26)

When creativity is integrated, planned innovative breakthroughs can result and so can unplanned strategies. Mintzberg explains, "Strategies need not be deliberate—they can also emerge." (1987, p. 68) The emerging strategy may often originate with leisure. Additionally, creativity can be crafted. The involvement and intimacy is different from planning of strategy. Mintzberg describes,

> "Now imagine someone *crafting* strategy…Craft evokes traditional skill, dedication, perfection through the mastery of detail. What springs to mind is not so much thinking and reason as involvement, a feeling of intimacy and harmony with the materials at hand, developed through long experience and commitment. Formulation and implementation merge into a fluid process of learning through which creative strategies evolve." (1987, p. 66)

And, similar to purely evolved strategy, crafted strategy can contain unplanned elements. That is, the potter can have an initial plan of crafting but can adjust spontaneously through the process.

Last, the integration of creativity into strategy can produce strategic innovation in the marketplace. The realization has come to many, including Charlie Prather at DuPont. Prather shares,

> "In my work at DuPont, I have come to realize that the application of creativity to solving business problems is the last largely unexplored frontier available for competitive advantage. Everyone already practices cost reduction, continuous improvement, and improved work practices. Not everyone is applying creative thinking to solving real business problems, or to discovering and then taking advantage of real business opportunities." (Isaksen, Dorval, & Treffinger, 1994, p. ix)

One way to apply creativity to real business models is by spanning boundaries. Schoenberg encourages organizations to reexamine who is the customer, what does the organization offer and how can it deliver in an innovative way. This type of applied innovation has been seen when automobile sales include the car, insurance, and maintenance. (2003, pp. 95-100) It has also been seen when PC sales include the PC, extended warranty, and internet service.

PLANNING

Traditional planning does not foster break through ideas. Supporting this premise, Dartmouth's Quinn states, "the annual planning process was rarely…the source of radical…departures into entirely different product/market realms." (as cited in Peters, 1994a, p. l68) Formal planning without creativity is bounded. Mintzberg claims, "Planning by its very nature, defines and preserves categories. Creativity by its very nature, creates categories, or rearranges established ones. This is why formal planning can neither provide creativity nor deal with it when it emerges by other means." (Mintzberg, 1994, p. 299)

In addition to traditional planning being staid, it can also be painful. Consider Hall's definition and description of planning,

> "I call it Braindraining. It works like this. Humans sit in a room. One of them says, 'Ready, set create!' With that, they desperately try to suck solutions from their heads. They squint, grind their teeth, and sweat profusely, all in hopes of squeezing a few angry pellets of ideas from their straining craniums. In short, they use their minds as mere reference libraries. This SUCK method of creativity will shrivel your brain like a prune in the desert sun. It's not good for you." (1995, p. 5)

If the traditional planning models are staid and painful and result in rearranging categories, then improved models that integrate creativity are needed.

Impact of Integrating Creativity into Planning

Several models of planning can be utilized that have creativity integrated within them. These include Storyboards, Compression Planning, and Creative Problem Solving (CPS). Each planning model will be further discussed. Each model utilizes the skills of a facilitator to plan and conduct the planning session. Hence, within the text, a discussion will be shared on the preparation for a CPS session since it is a complex model.

Storyboards

Storyboards can be used as a more creative type of approach to planning. Storyboards originated when Disney utilized them in 1928 to assist with cartoon animation. Michael Vance joined Disney in 1960 and introduced the use of storyboards for planning purposes. Materials for this type of planning include the storyboard, note cards, push pins, and markers. Roles include the leaders, the scribe, and the participants. Typically two phases are involved. In the first, divergent thinking is dominant as members brainstorm. In the second, convergent thinking is involved and the usability of each idea is evaluated. This type of planning technique offers flexibility and adaptability for many diverse organizational needs. (Higgins, 1995)

Compression Planning

A second type of creative planning approach is Compression Planning that was developed by Jerry McNellis and, currently, no other company provides compression planning using storyboards. His belief is that through this approach, one can gain novel ideas in the planning process in a compressed time frame compared to a traditional planning time frame. The process is very focused and incorporates both divergent thinking (many novel ideas) and convergent thinking (subset of refined ideas). An action plan is also developed that includes task, responsibilities, and due dates. (McNellis, 2009)

The thoroughness and timed process steps are influential in creating strategic plans in record time for in traditional planning sessions, "many strategy sessions begin with a definition of the problem without a clear statement of the goal, wish or challenge." (2003, p. 9) However, in Compression Planning, initial steps involve a review of background information that would then be followed by the defined problem or wish that is the focus for the session. Typically the focus of the session is done in the preparation stage with the sponsor and the facilitator. Idea Generation and Action Planning are next completed. In contrast to Compression Planning's ability to analyze assistors and resistors, Hughes criticizes the ability of traditional planning to do so. He states that they lack the action of selecting an alternative "… without considering an action plan that identifies those who will support or resist some of the actions." (2003, p. 9)

Creative Problem Solving (CPS)

A third type of creative approach to planning is Creative Problem Solving (CPS). This particular approach (using upper case letters) is different from the activity of creative problem solving (lower case letters). CPS is a process developed by Dr. Sid Parnes and Dr. Alex Osborn. The most general levels include Understanding the Problem (discovering the problem), Data Finding (gathering information), Problem Finding (selecting a specific problem statement for the session), Generating Ideas, and Planning for Action (evaluating alternatives and creating a follow through plan). (Isaksen, Dorval, & Treffinger, 1994)

All of the above phases involve divergent and convergent thinking. Each stage uses a variety of creative thinking tools to assist in both styles of thinking. Participating in both types of thinking is crucial as Drucker confirms, "Successful innovators use both the right and left sides of their brains." (2002, p. 102)

Often, participants of CPS session only have expectations of doing Idea Generation. However, other stages are just as important to ensure completion. Fredericksen, Getzels, and Csikszenntmihalyi share that "creative problems tend to be ill-defined or poorly structured." (as cited in Mumford, 2000, p.315) The Understanding the Problem Stage can often be the most laborious. Gordan and Morse have observed that "the more complex the problem, the more difficult to define." (1966, p. 38) Within this stage, Davidson and Finke note that the act of redefinition or restructuring of a problem "…may permit sudden insight where the solution is apparent once the problem has been defined correctly." (as cited in Mumford, 2000, p.315)

To also assist with Problem Finding, Sherwood discusses a process of "unlearning." He feels that after a group has tentatively identified a problem or opportunity, a group can discuss what they know about the opportunity. Next, they can challenge any assumptions about the identified opportunity and determine how the assumptions might be different. (2000) This process can assist in selecting the exact opportunity to be targeted for solving.

Data Finding and Problem Finding can provide vital information for the Idea Generation stage which is a quite important stage. Mumford asserts, "With rapid changes in technology and global competition, the success of many organizations has become progressively more dependent on their ability to bring innovative products to market. Ultimately, however, innovation depends on the generation of creative, new ideas." (2000, p. 313) So creative ideas must be generated to support the particular defined problem or opportunity statement. Drucker confirms this step as being vital to support the identified opportunity as he states, "Once you've identified an attractive opportunity, you still need a leap of imagination to arrive at the right response-call it 'functional inspiration'." (2002, p. 95)

Planning for Action is the actual predecessor stage for the act of innovation—the carrying out of the creative idea to support the problem or opportunity. Mumford applies Guilford's conception of creative problem solving --- the attribute of fluency (speed), flexibility (ability to switch), and originality (novelty) --- to the implementation step of creative problem solving. He states, "…in our attempts to understand creativity—one recognizes that there may be as much creativity in making an idea real as there is in the initial generation of the idea." (2001, pp. 269, 274)

Creative Problem Solving Facilitation

In terms of CPS preparation, facilitators can participate in four steps of a Task Appraisal Model. One step is Personal Orientation. The facilitator would examine key people factors such as the people involved, conflicts among members, levels of ownership, and problem solving expertise. Another stage is Situational Outlook. The facilitator would assess the climate and priorities of the task. Another stage is Desired Outcomes. The facilitator would understand the client's desired goal, the degree of novelty, and the resolution timeframe. A final stage is CPS Methodology. The facilitator would determine if CPS is the best problem solving methodology, if another should be used, or if a combination should be used. Also, anticipated CPS tools could be identified. (Isaksen, Dorval, & Treffinger, 1994)

Several writers share opinions for facilitators to consider when engaged in the Personal Orientation stage of selecting the participating group members. Mumford and Connely stress the importance of including group members with applicable functional expertise as they purport, "In technical areas, problem solvers need to have enough knowledge and domain experience to choose fruitful mental models to develop, identify useful chance combinations that can lead to solutions, and change current creations into alternate procedures and products." (as cited in Brophy, 1998, p. 125)

Last, when selecting group members, Brophy informs, "most persons show a stable preference for either innovation or adaptation, and only a minority are inclined to both activities." (1998, p. 129) Typically, "a majority of persons do not alternate between divergent and convergent thought easily unless they reach an advanced stage of cognitive development."

(p. 125) A recommendation is that group members be rotated in and out of various stages of the CPS process depending upon their divergent or convergent skills.

THE LEARNING ORGANIZATION

Several aspects are important to the success of a learning organization. First, a type of natural learning must exist that encompasses reflective thought, discovery, and surprise. Second, training must span the needs of managers, employees, and human resources. Third, the hands-on aspect of learning must also be included. Each of these areas will be further discussed.

Impact of Integrating Creativity into the Learning Organization

In terms of learning models, Argyris and Schon discuss the Single-Loop level as being in the most adaptive style end of the adaptive-generative continuum of learning; it involves the actions of Observe, Decide, and Do. Moving closer to the generative style of learning, the Double-Loop level includes the actions of Observe, Think, Decide, and Do. Finally, moving still closer to the generative style of the continuum, the Tripe-Loop level involves the phases of Decide, Do, Observe, Reflect, and Think. (as cited in Eskildsen, Dahlgaard, & Anders, 1999) A discussion will now be made on the element of reflective thought that has been added to the Triple-Loop phase of generative learning.

Reflective Thought as Part of Triple-Loop Learning

Eskildsen, Dahlgaard, and Anders claim that "creativity is highly generative by nature and the basis for the 'think' phase…" (1999, p. 526) However, in order to support the generative aspect of creativity in the Triple-Loop learning level, time for reflection must be allowed. David Garvin notes, "there must be time for reflection and analysis…Learning is difficult when employees are harried or rushed; it tends to be driven not by the pressure of the moment." (as cited in Lawson, 2001, p.131) Lawson notes that organizations need to "…reexamine the importance of time in organizational work—and to recognize that all organizational resources cannot be committed to immediate output efforts if we are to have time to pay attention, think, and benefit from the knowledge gained." (2001, p.1) A recommendation is that organizations include a task for "reflective time" when preparing a Project Management resource and task plan in order to protect this valuable activity from being over scheduled.

Exploration as Part of Triple-Loop Learning

Exploratory learning is important because "most of life is ambiguous…the number of things that can be thought about in a logical manner is small, and an overemphasis on the logical method can inhibit your thinking." (VonOech, 1983, p. 40) One needs to think creatively, to test different assumptions, and to explore novel ideas as supplements or replacements. VonOech further discusses this exploration process "… you try various approaches, first one, then another, often not getting anywhere. You use crazy, foolish, and impractical ideas as stepping stones to practical new ideas. You break the rules occasionally, and explore for ideas in unusual places." (p. 6)

However, exploratory thinking is often discouraged in school and may continue into the workplace. Neil Postman shares, "Children enter school as question marks and leave as periods." (as cited in VonOech, 1983, p. 23) Change must occur within organizations such that exploration is utilized, and the result is that employees enter as question marks and stay as ideas. Through the "staying as ideas," organizations will receive the most benefit. Gell-Mann confirms, "learning and thinking in general exemplify complex adaptive systems at work, and perhaps the highest expression of Earth of that kind of skill is human creative thinking" (as cited in McDaniel, Jordan, & Fleeman, 2003, p. 272).

Surprise as Part of Triple-Loop Learning

Although time for exploration can be planned, time for surprise cannot. What seems to be of importance is the acceptance of surprise and the utilization of the response to surprise such that organizational learning can occur. McDaniel, Jordan, and Fleeman conclude, "It is the embracing of surprise rather than the avoidance of surprise that opens a door for creativity and learning in organizations, allowing surprise to become a gift from an uncertain world." (2003, p. 272). The learning response from the element of surprise is viewed to be the most significant as Baskin states, "Learning from surprise involves people throughout the organization building on each other so that the most significant learning occurs at the level of the organization itself." (as cited in McDaniel, Jordan, & Fleeman, 2003, p. 273).

Training

In order for the learning organization to integrate creativity, it must produce knowledge from multiple sources such that people within the organization understand how to generate and support creative ideas. Mumford confirms, "Knowledge is not static…self study programs, conference attendance, visits to other sites, external courses, and sponsored technical monitoring as well as traditional classroom training" (2000, p.321) provide value. In terms of management training, Wood recognizes this need and sees it being partially fulfilled through training for managers. He states,

> "It is a constant source of amazement to me that organizations will introduce a program and then sit back and expect ideas to flow and supervisors to encourage them. It is important that supervisors are trained in how they can encourage ideas, which means they must know how to develop ideas from their group." (2003, p. 25)

Scratchley and Hakstian recommend starting with a battery such as Innovative and Divergent Elaboration Aptitude (IDEA) to assess divergent skills, personality traits, and openness. Next, rather than providing generic creativity training to managers, organizations can provide personalized training. If a manager had low divergent thinking skills, the organization could enhance the skills by providing creativity training in idea generation. Prescreening to assess needs would just make the training more relevant. (2000) In addition to using training to assist managers in becoming more creative, training can be used to assist managers to better manage creative employees.

Employee Training

General creativity training can be provided, as well as general CPS training. Brophy highlights the benefit, "People with differing abilities can be trained to perform each part of CPS better and to alternate between the different kinds of needed thought." (1998, p. 136) Additionally, Brophy notes that through training, people also gain the benefit of appreciating others' skills and inclinations.

In order to ensure follow through, training that helps employees to improve in gaining idea support and the actual implementation of ideas is key. Thus, a recommendation is for actual sales training, not to sell a product or service, but rather to sell an idea. A trainer can select tenets from various consultative selling approaches such as Miller Heiman's Conceptual Selling, Mike Bosworth's Solution Selling, or Neil Rackman's Spin Selling and tailor those concepts to the selling of ideas. For example, Heiman's advice of gaining idea support at different levels ties into the idea proposed by Davenport, Prusak, and Wilson who speak of those who are most successful in gaining idea support "…build marketing campaigns, find early adopters, and work to persuade other leaders and managers to "put some skin in the game." (2003, p. 60)

Also, within Bosworth's Vision Process Model, the tenets of understanding the client's issues and impacts as well as co-formulating a vision correlate to Davenport, Prusak, and Wilson's recognition that "the most successful idea practitioners are able to gear ideas to the issues executives care about and express them in terms of the key themes—such as innovation, efficiency, or effectiveness—that executives stress in their rhetoric." (2003, p. 60) Hence, training to sell ideas to executives can be part of the creativity training process.

Last, common to all of the above consultative selling approaches, is the premise that the seller must be able to build a business case to cost justify value, mitigate risks, and propose a timeline. In terms of selling an idea, Levitt recommends that "…the responsible procedure is to include at least some minimal indication of what is involved in terms of costs, risks, manpower, time, and perhaps even specific people who ought to carry it through." (2002, p. 141)

Human Resources Training

Several types of creativity training may occur to assist human resources with supporting the creativity endeavor of an organization. First, human resources can be trained in understanding the importance of creativity in terms of the value it brings to an organization. (Actually, this topic is also beneficial to employees and managers.) Second, in addition to understanding the theoretical qualities of the creative types, perhaps some live creative types can be invited to participate in the training so that human resources can recognize them by sight. Perhaps human resources can be trained how to create an environment that encourages risk taking in the sense that applicants feel safe to discuss the purple tree trunks they created that were mentioned by Sark earlier in this paper. After all, the applicant may not only have created purple tree trunks, but may also have created turquoise tulips, yellow rain, and pink crags. Perhaps the applicant may be able to replicate that sense of golden originality, again, in terms of generating propitious ideas for this organization.

Hands on Training

Creativity training and sharing of knowledge are beneficial but are not sufficient for the learning organization. VonOech claims, "…knowledge alone won't make a person creative!" (1983, p. 6). Additionally, hands-on opportunities are needed for the creative person to test drive and modify his idea. Bellmann and Schafeer criticize the over balance of companies providing training that focuses on "…the study of cases and other real life problems. But we realized that changing people's behavior is less about intellectual learning than it is about blasting them loose from nearly impossible, self-imposed and often company rewarded boundaries." (2001, p. 32) The authors discuss Siemens as being a company that combines creative ideas and piloting. In that case, the creative types needed to solicit a company coach and collaborate with Siemens' managers whose departments might be impacted by the piloting.

ASSESSMENTS

Organizations may already have in place various types of tools to assess personalities, team effectiveness, and organizational effectiveness. With the introduction of creativity, an organization may also want to include a type of creativity assessment. Several types of assessment are utilized to assess creativity within an organization. The three types to be discussed include the CIQ (Climate for Innovative Questionnaire), the SOQ (Situational Outlook Questionnaire), and KEYS: Assessing the Climate for Creativity.

Impact of Integrating Creativity into Assessments

Earlier a discussion was made in reference to key areas of organization climate as defined by Ekvall. Based upon those areas, Ekvall developed the Swedish CIQ to measure people's perception of the work environment. Specific areas of measurement included: challenge, freedom, dynamism, trust. Idea time, play/humor, conflicts, idea support, debates, and risk taking. He used the results to classify organizations as innovative, average or stagnated. (Isaksen, Dorval, & Treffinger, 1994)

An English version of the CIQ, called SOQ was developed by the Creative Problem Solving Group from Buffalo, NY. The questionnaire measured nine areas to determine the level of creativity for teams. The areas included: interpersonal dynamics, energy and motivation, openness, leadership, focus, trust, and diversity of skills. The questionnaire consists of fifty questions, in addition to three short answer questions in which students can share their perceptions of climate. (Isaksen & Lauer, 2002)

When employed at the Center for Creative Leadership, Dr. Amabile developed KEYS: Assessing the Climate for Creativity. The questionnaire is designed to measure perceived stimulants and obstacles to creativity in the work environments. The questionnaire consists of seventy-eight questions— sixty-six are on work environment, and twelve are on work performance in terms of creativity and productivity. Categories include: encouragement of creativity, autonomy or freedom, resources, pressures, organizational impediments to creativity. (Amabile, Conti, Coon, Lazenby, & Herron, 1996).

Earlier, it had been discussed that intrinsic motivation is one of the characteristics of the creative type. However, the work environment can be an impediment. Higgins and Morgan support this by sharing, "Creativity is inherently a quality possessed by an individual, but environment and context are key influences in developing or inhibiting it." (2000, p. 125) Last, Amabile, agrees, stating that the work environment "… can make the difference between the production of new, useful ideas for innovative business growth and the continuance of old, progressive, less useful routines." (1997, p. 91)

CONCLUSION

Peters claims that "victory will go to the highly imaginative and those least fettered by conventional notions of what an organization has to be." (1994b, p. 155) A highly imaginative organization can be cultivated by integrating and supporting creativity. In doing so, the design elements of Human Resources, Climate, Management, Strategy, Planning, the Learning Organization, and Assessments will need to change.

As changes to these structures occur, future research can focus on identifying new challenges that occur within the organization such as potential resistance from some workers, potential increased time and costs for creativity paired with unimplemented projects, or potential increased costs of failed projects if increased risk taking occurs. A final area of future research can focus on examining if competitors will copy creativity systems. In the past, competitors sometimes copied those who were first to market their products or services. Perhaps, competitors will study their competitors' creativity systems and begin copying in that area, too.

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THE CREDIT CARD ACCOUNTABILITY, RESPONSIBILITY AND DISCLOSURE ACT OF 2009 AND ITS IMPLICATIONS

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ABSTRACT

The Credit Card Accountability, Responsibility and Disclosure Act of 2009 (also known as the Credit CARD Act of 2009) was signed into law on May 22, 2009 after several years of hearings and debate. As stated in the "Fact Sheet" issued by the White House on that date, the law was intended to end "the days of unfair rate hikes and hidden fees."The law does not put any limit on usurious interest rates, and most of its provisions were scheduled to take effect nine months after its enactment, creating a space for banks and other card issuing institutions to make last minute rate and fee adjustments which would be precluded once the law went into effect. This paper briefly examines the background of credit card de-regulation in America since 1978, the case for a return to regulation that has emerged, and then turns to an examination of the new law: its elements, strengths and weaknesses as seen by its advocates and its critics. It discusses the impact of the new law on the access of consumers to reasonable and affordable credit, and the ability of business to rebuild consumer sales, which have increasingly relied on consumer access to easy credit. It examines the impact of the new law on people under the age of 21, its encouragement of greater financial literacy, and possible further legislative or regulatory steps that may be taken as a result of the law's reporting requirements and the Credit Card Safety Rating Commission Study provided for in Title VI, Section 602 of the Act.

INTRODUCTION: BACKGROUND OF THE CREDIT CARD ACT OF 2009

Federal Preemption of State Usury Law Unleashes Credit Card Rates and Fees

In a unanimous1978 opinion written by Justice William Brennan, the Supreme Court decided the case of *Marquette National Bank of Minneapolis v. First of Omaha Service Corp Et. Al. 439 U.S.299 (1978)* which held that "it was legal for nationally chartered banks to export more costly terms of their cards to states where the laws regarding interest rates restricted such practices. The card issuer need only follow the law of the state in which its credit card operations are located." (Samaad, 1998)

As summarized in the *Syllabus* of the Court's decision, Justice Brennan noted that Congress in enacting the National Bank Act of 1864 intended to facilitate a "national banking system" whose interstate nature was fully recognized, and there was no intention to exempt interstate loans from the reach of the predecessor of 12 U.S.C. 85 (439 U.S. 299, at 313-318). Though the "exportation" of interest rates . . . may impair the ability of States to maintain effective usury laws, such impairment has always been implicit in the National Bank Act and any correction of that situation would have to be achieved legislatively. (439 U.S. 299, at 318-319).

The court's holding was applied to interest rates and late fees as well, and encouraged banks to move their credit card issuing services to states with high or no interest rate caps. Disclosure of these rates was thought to be a sufficient protection as "some economists said usury caps were a waste of time" because the required disclosure of interest rates in the federal Truth in Lending Act would encourage borrowers to look for the lowest rates. (Samaad, 1998) But such disclosure was in fact insufficient to encourage many consumers to shop rationally for credit, particularly given the emergence of massive national television advertising and direct mailing of "pre-approved" credit cards that followed this decision. One of the lessons of this case is that when the law sets default settings that require consumers or the general public to be well informed on complex financial topics and act affirmatively to ensure their own best interests, the result is likely to be the mess modern consumer credit has become. (Morgenson, 2008; Thaler and Sunstein, 2008)

As a result of the *Marquette* decision, interest rates caps in most states settled into a range of 18% to 24%, and some states had no caps at all. For a time one exception was the state of Arkansas, whose "state constitution has kept a tight lid on interest rates for more than 125 years. Amendment 60 to the constitution, approved in 1982, caps interest rates at 5 percent above the federal discount rate. Because of this, Arkansas banks offer some of the lowest credit card rates in the country. . . Every time banks and businesses tried to change the amendment, consumers voted them down." (Lazarony, 2002) That defense of lower rates fell to the Gramm-Leach-Bliley Financial Modernization Act of 1999 which had a section that "allows state-chartered banks to charge interest rates equal to those charged by other banks operating in their state." (Lazarony, 2002)

Credit Card Marketing and Consumer Debt

[1] The wide-spread marketing and use of credit cards with confusing and hidden terms, high rates of interest and hidden fees became a major profit center for American banks, and a major headache for many American consumers. "According to Cardtrak.com …the median balance among the approximately 53 million households carrying general-use credit card debt from month to month is about $6,700, up from $5,900 five years ago. And with the economy slowing and unemployment rising, growing numbers of card holders are unable to keep up with their payments." (Birnbaum, 2008) In 2008, the average credit card balance rose to $8,565. (Morgenson, 2008) Thaler and Sunstein suggest: "And these figures are probably too low because they are generally self-reported. Using Federal Reserve data, some researchers suggest that American households may have an average credit debt of $12,000. At typical interest rates of 18 percent per year, that translates into more than $2,000 a year in interest payments alone." (Thaler and Sunstein, 2008, 142)

Freed of any serious legal restrictions on rates and terms, banks and other credit card issuers disregarded ethical self-restraint as well in their pursuit of their meticulously targeted markets for consumer credit. (Plunkett, 2009) Robert Audi points out that ethical marketing includes considerations of "what is being marketed . . . to whom [and] for how much" and "in what representational manner is it marketed?" (Audi, 2009, 49) While marketing is "promotional representation, and . . . its typical purpose is to sell for a profit," it is unethical when it relies on insincerity, deception , manipulation, misrepresentation, or the creation of desire for unhealthy products or for products or services beyond the ability of the consumer to pay for them whether they are desirable or not. (Audi, 2009, 51-56).

[1] See the literature on the bankruptcy act revisions of 2005 in "The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005" which took a very different approach to what is meant by consumer protection than the new credit card reform act. See: Roxanne DeLaurell and Robert Rouse, "The Bankruptcy Reform Act of 2005: A New Landscape," CPA Journal, November, 2006, retrieved on-line at: http://www.nysscpa.org/cpajournal/2006/1106/essentials/p36.htm

The inability of the states to enforce usury laws on credit card issuers was just one result of the bi-partisan deregulation mantra of the 1980s and 1990s that continued into the first years of the new century.

Applying Audi's criteria to the credit card market, consider the following examples of abuse:

- "Consumers have shown far more caution in taking on credit card debt than issuers used in marketing and extending credit… From 1999 through 2007, creditor marketing and credit extension increased about twice as fast as credit card debt taken on by consumers." (Plunkett, 2009, 5)
- "Issuers encourage the least sophisticated and riskiest households to run up unsustainable debt." (Plunkett, 2009, 7)
- While ordinary interest rates fell to single digits, credit card interest rates rose from 17.7%% in 2005 to 19.1% in 2007.
- Between 1994 and 2007 average late fees rose from $13 to $35, and fees for exceeding credit limits rose from $11 to $26 a month.
- Lenders focus not on consumer loans being repaid, "but on the loan as a perpetual earning asset," according to Julie L. Williams, Chief Counsel of the Comptroller of the Currency in March of 2005.
- Credit cards were specifically marketed to teenagers, college students and seniors with ads that "make debt sound desirable and risk free."
- Ad campaigns promoted the idea of "Live Richly, Life Take Visa" (Citibank) or "Priceless" (MasterCard) to "Eliminate negative feelings about indebtedness." (Morgensen, 2008)

All this occurred at a time when consumers often had little choice but to use these easy to obtain high rate cards to get by as the boom economy for the very rich did not trickle down to the majority of Americans during this era. (Ehrenreich, 2001; Silva and Epstein, 2005; Garfinkle, 2006; Cowen, 2007) Evidence of this dependence includes the census bureau's report that in 2004 there were 1.4 billion credit cards held by 164 million cardholders, an average of 8.5 cards per card holder, while 115 million of them carried balances from month to month (Sunstein and Thaler, 142) Sometimes credit cards were used to handle unexpected medical expenses for those without health insurance. As Professor Thorne noted during the debate just before the CARD Act was adopted:

> "We need to be honest and transparent about the core objective of the banks with

> this potential expansion in fees. They want to maintain credit card lending as one of the most profitable arms of their industry. Historically, they've done it off the backs of the lower income and financially vulnerable – those who carry a balance or who might be less financially stable and therefore more likely to miss a payment. . . . The shift toward more fees for everyone isn't about fairness. The lending industry wants an increased profit margin . . . Don't blame the revolver who has been making his or her minimum payment for years but has now lost a job or gotten sick and has therefore fallen behind on payments." (Thorne, 2009)

Credit card companies often took advantage of their poorest potential card customers, hoping for higher fees and late charges. "Sub-prime customers haven't just encountered high-cost offers of credit, but deceptive marketing practices. In 2000, Providian was required to pay more than $300 million in restitution to its sub-prime cardholders for unfair and deceptive practices. Cross Country Bank . . . has advertised on late-night and daytime television when more unemployed potential sub-prime customers are more likely to be watching television." (Plunkett, 2009, 11.) Often these cards were coupled with high fees for subprime mortgages or refinancing. (Tully, 2009) The net effect was to drive many consumers into bankruptcy, where the law has been rewritten to favor banks and card issuers over consumers. (Morgenson, 2008) "In particular, the new rules require that consumers with a certain level of income pay back at least part of their outstanding debts, whereas in the past the entire amount might have been liquidated." (Bucks, Kennickell, Mach and Moore, 2009, A2)

Real wages have declined in the hour-glass economy and many Americans struggle to make ends meet. See the interactive table "U.S. Family Income Mobility and Inequality, 1994-2004" at the Federal Reserve Bank of Boston web site, http://www.bos.frb.org/economic/dynamicdata/module2/index.htm . In the face of this reality, credit card companies failed to respond to their ethical obligations as socially responsible institutions. Audi makes a salient point in discussing environmental externalities that applies here as well: "A manufacturer can at least *try* to make the same profits by selling something less objectionable instead or by marketing the product to a selected audience and with appropriate cautions on its use." (Audi, 2000, 56) Likewise, the credit card companies could have easily made reasonable profits without taking advantage of their captive market by imposing excessive fees and rates while simultaneously manipulating their customers to go into foreseeably unsustainable debt.

The Pew Safe Credit Cards Project, prepared by the non-profit Pew Charitable Trust, released its report on credit cards abuses in 2009 (Pew, 2009) and noted on its web site when the report was released:

> Credit card companies have powers unique in the world of retail lending. After a consumer has agreed to the terms of a credit card account and used the card to make purchases or obtain cash advances, the card issuer may lawfully rewrite the agreement or demand a higher rate of interest, even on funds previously advanced. In a one-year period between 2007 and 2008, issuers used these powers to raise interest rates on nearly one quarter of cardholder accounts. These added charges are not reflected in the advertised annual interest rate, which is the key price point consumers use when choosing credit cards. By rewriting agreements, and by giving themselves broad contractual rights to impose fees and rate increases automatically—practices that the Federal Reserve and other regulators have called "unfair and deceptive"—credit card issuers have rapidly expanded their businesses and billed cardholders tens of billions of dollars more per year. http://www.pewtrusts.org/our_work_report_detail.aspx?id=50550&category=616

An explanation for these phenomena lies in a combination of factors, including:

(1.) The belief that the market is perfectly rational and efficient (ignoring evidence to the contrary as anomalies), and the related mistaken assumption that what has worked in the recent past will continue to work indefinitely in the future. Housing prices will only go up, the stock market will continue to rise, consumers will continue to be able draw money out of their homes to pay down their bills, and banks will continue to be able to off-load securitized debt obligations indefinitely or, at least, long enough for current employees to make their bonuses and commissions. (Fox, 2009).

(2.) The behavioral excuses that people use when allowing themselves to engage in unethical conduct that Robert Hoyk and Paul Hersey have identified, including "Obedience to Authority," "Small Steps," "Faceless Victims," "Tyranny of Goals," "Money," "Enacting a Role," "Everybody Does It," and "We Didn't Hurt them That Bad." (Hoyk and Hersey, 2008)

(3.) An apparent incorporation of the belief that greed really is good, and that the highest financial profit for the firm (and for yourself) is the only goal of business.

With the bursting of the subprime mortgage bubble and the financial collapse at the end of 2008, these beliefs and excuses fell away. A return to rational regulation based on encouraging but also supporting personal responsibility – what might be called "soft paternalism" or "libertarian paternalism" -- became necessary, and credit card reform became a priority component of this agenda for the new administration. (Thaler and Sunstein, 2008; Orbach, 2009, 571)

LEGISLATION TAKES FORM IN 2009

With the election of a new Congress and Administration in November of 2008, and continued economic distress for many Americans, support for credit card reform became too great to be resisted. The banking industry suggested that Congress wait until new Federal Reserve final rules adopted in December, 2008 went into effect in July of 2010 before adopting any new requirements, but consumers wanted more protections and to accelerate the adoption of the new requirements. (Schatz, 2009) The final legislation did not address all proposals for reform, and it did not incorporate Justice Brennan's suggestion in *Marquette* of the option of adopting a federal usury law. It did take many important steps to address the concerns of cardholders, and placed a great deal of emphasis on disclosure and enhancing reflective consumer choice. This paper is not the place to address a detailed legislative history of the law which was finally enacted on May 22, 2009, but the documentation is available on many government and other web sites, and reflects the participation in the legislative hearings and lobbying of all players: government regulators, consumer groups, and credit card issuers.[2]

Content of the New Law

When President Obama signed the CARD Act, Public Law No. 111-24, into law on May 22, 2009, he stated: "With this new law, consumers will have the strong and reliable protection they deserve. We will continue to press for reform that is built on transparency, accountability, and mutual responsibility – values fundamental to the new foundation we seek to build for our economy." In short, he recognized that this law was just a first step in addressing not only problems with credit cards, but the broader problems of financial reform and consumer protection of which credit cards were only one part. Listing the elements of the new law, he added:

> Every card company will have to post its credit card agreements online, and we'll monitor those agreements to see if new protections are needed. Consumers will have more time to understand their statements as well: Companies will have to mail them 21 days before payment is due, not 14. And this law ends the practice of shifting payment dates. This always used to bug me -- when you'd get like -- suddenly it was due on the 19th when it had been the 31st.
>
> Lastly, among many other provisions, there will be no more sudden charges -- changes to terms and conditions. We require at least 45 days notice if the credit card company is going to change terms and conditions. (Obama, 2009)

Additional elements of the new law include the following requirements: (1.) Forms and statements sent to consumers would have to be in plain language and in plain sight. (2.) Unfair rate increases are banned, including prohibitions on raising interest rates on existing balances, and barring retroactive rate increases based on "any time, any reason" or "universal default" language. (3.) Contract terms must be clear and stable for the entire first year; promotional rates must be clearly disclosed and last at least six months. (4.) "Late Fee Traps" are barred, and consumers must have 21 days from day of mailing to pay, while weekend deadlines, changed due dates, and middle-of-the-day payment deadlines are also barred. (5.) Excess payments must be applied to the highest, not the lowest, interest rate balance first, and "double-cycle" billing to raise interest charges is banned. (6.) Over-the-limit fees must be affirmatively opted into by consumers. (7.) Subprime,

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[2] See the Thomas Site at the Library of Congress for the complete legislative history: http://thomas.loc.gov/cgi-bin/bdquery/z?d111:HR00627:@@@S|/bss/111search.html| ; see also the White House site: http://www.whitehouse.gov/blog/A-New-Era-for-Credit-Cards; and http://www.opencongress.org/bill/111-s414/text .

low-limit card fees are restricted, while fees on Gift and Stored Value cards must be disclosed, with limits placed on inactivity fees. (This list is a based on the summary of the legislation on the White House web page, and a review of the final text of the bill.)

Adapting and adopting one of Thaler and Sunstein's key suggestions built on the insights of behavioral finance and their "libertarian paternalist" approach to regulation which they call "RECAP: Record, Evaluate, and Compare Alternative Prices," (Thaler and Sunstein, 2008, 93), the new law requires that consumers be given clear disclosures in both their printed and on-line statements each month of how long it will take to pay-off the existing balance if they only make the minimum payment each month, and in addition, how much they will pay to pay, with the total interest paid, if they paid off the existing balance in 36 months. This information is intended to "nudge" consumers into comparative card shopping for better interest rate and fee terms, as well as to make greater effort to pay off rather than carry existing balances at the high rate of interest many cards still carry.[3]

The new law also requires an annual report to Congress on regulatory enforcement of its provisions, and directs regulators to seek public input on trends in the credit card market that may potentially require new regulations or disclosure requirements. College students and young adults under 21 are required to have a co-signer unless they provide "financial information indicating an independent means of repaying any obligation arising from the proposed extension of credit," or have taken a "certified financial literacy or financial education course designed for young consumers." Title III, Section 301, amending Section 127(c) of the Truth in Lending Act (15 U.S.C. 1637(c)) by adding at the end subsection (8)(B). Young consumers are also protected from prescreened credit offers unless they affirmatively opt-into them between the ages of 18 and 21. Title III, Section 303 of the CARD Act.

Indicating the authors of the law have no intention of making it the last word on the subject, Section 602 of the CARD Act calls for a Credit Card Safety Rating System Commission Study, to ascertain "the amount of risk to cardholders that results from credit card practices and terms in credit card agreements that are either not well understood by consumers, or at not easily understood, or could have an adverse financial effect on consumers, other than interest rates, periodic fees, or rewards." The Comptroller General of the United States is charged with establishing this commission, and to investigate whether to establish a five-star rating system to "reflect the relative safety of card terms, marketing and customer service practices and product features." The result may be recommendations to Congress for further legislation, and a study of "the effects of such system" on affordability and availability of credit if it were adopted.

Congress has thus set itself up for future "nudges" in this area, and this was wise, since banks are already taking advantage of the time-lag built into the new law to raise fees and make other changes to their customers' accounts that will be restricted or prohibited once the law goes into effect. (Wallack, 2009; Lieber, 2009;Davis, 2009) In response to the banks efforts at locking in higher rates and fees before that deadline, many proposals for additional legislation are already under consideration. These include House passed legislation (H.R. 3639) which would move up the effective date of the CARD Act; and proposed H.R. 3904.IH and S.1799, which would require an opt-in to overdraft coverage (and related fees) and cap the number and limit the size of overdraft fees to "make them proportional to the amount overdrawn." (Jones, 2009)

Limits of the New Legislation

Like much U.S. financial and consumer legislation, the CARD Act focuses on disclosure and education, providing consumers more information, and making the industry more accountable because its terms and conditions are required to be on their web sites, where consumer groups can review them and bring concerns more rapidly to the attention of regulators. There remain a number of problems with this approach. First, not every consumer has the time, patience or insight to make effective use of this information, even if clearly and carefully presented and made available on the web. A parallel to clear scheduling and curriculum requirements being ignored repeatedly by college students comes to mind. If people obtaining a college education have trouble following clear instructions, a majority of

[3] Sunstein was confirmed as head of the White House Office of Information and Regulatory Affairs on September 10, 2009 by a vote of 57 to 40 in the U.S. Senate, over the opposition of some conservative organizations but with the support of prominent libertarians such as Illya Somin. Peter Schmidt, "Cass Sunstein Is Confirmed to top Regulatory Post Despite Attacks on his Writings," Chronicle of Higher Education E-Update, September 11, 2009.

Americans falling behind on their credit payments may need more than a “nudge” to catch-on and catch-up. They may need a reversal of some the limitations imposed on them by the 2005 bankruptcy act revisions.

Second, there ought to be a federal usury law, or a restoration of the right of states to set their own usury laws. The new law does nothing to stop double-digit interest rates being offered even when interest rates for mortgages and equity loans are in the low single digits. As Gail Hillebrand of *Consumers Union* pointed out just before the law was enacted, “the legislation doesn’t restrict how much the banks can charge. It only restricts when the bank has to decide how much to charge.” (Hillebrand, 2009) The power of the lobbying efforts of the American Bankers Association on this issue meant that, according to Senator Christopher Dodd, an interest rate cap was a non-starter in the legislation. (Bergman & de Granados, 2009) But if the economy continues to deteriorate, and homeowners out of work find their interest rates unsustainable, the dynamics of this issue may change. Perhaps a federal rate of 18%, with an opt-out provision allowing states to enforce a lower (but not higher) rate on state-licensed institutions, would be a reasonable compromise. Consumers would then have a choice (*libertarian*, as viewed through the behavioral finance lens of Thaler and Sunstein) of paying the higher rate at a national bank if it enabled them to get more credit, or to take comfort in knowing quite clearly that if they get a card from a state bank, the rate cannot be above the state usury limit (*paternalism* at the state level). This would have the salutary effect of permitting a degree of experimentation among the states, reducing abusive interest rates, and marginally discouraging excessive reliance on credit debt to cover the gaps caused by the radically unequal salaries paid to workers, as opposed to upper managers and CEOs as a result of thirty years of misguided deregulation.

Credit Unions provide a successful model for this modest proposal under current law. (Bubb and Kaufman, 2009) Federal law imposes an 18% interest rate cap on credit cards issued by federally chartered credit unions, and requires that state chartered credit unions comply with lower state usury laws, if any. (Jones and Stauffer, 2009) Thus, this suggestion would not be a radical change in existing law, and it would encourage market-based competition among competing state and federal institutions. Allowing federally chartered banks to issue cards at higher rates would help preserve access to credit for those who did not qualify for cards issued at the lower rates, addressing one of the criticisms frequently made by those who oppose reasonable consumer protection legislation.

Third the statute does not eliminate or at least reduce the 1.8 to 3 percent interchange fees paid by merchants to card issuers whenever a sale is made, and it does not address debit cards, which are increasingly replacing credit cards in common use. “Mintel data show that debit cards account for 58% of all card transactions, and 80% of consumers in January reported an increase in debit-card ownership and use.” (Bulik, 2009; Martin, 2009a; Norris, 2009) The protections of the CARD Act need to be extended to debit cards, where fees and abuses continue to abound. (Martin, 2009b; New York Times Editorial, 2009) Consumers remain unprotected from fraudulent payments made with debit cards, since the Truth-in-Lending Act applies to credit cards, but not to debit cards. This is one reason banks want you to use debit cards, and why consumers should avoid using them if they are unsure of the amount of cash in their account, as automatic or “courtesy” overdrafts lead to huge and duplicative fees under current law. Consumers concerned with the possibility of a dispute with their vendor when they make a purchase also have greater protection when they charge the payment on a credit card than when they pay for it with a debit card. The Federal Reserve announced November 12, 2009 that they would bar banks from imposing overdraft fees on debit cards without first getting prior consent from consumers, but Senator Dodd stated that more needs to be done when promoting his legislation calling for a new Consumer Financial Protection Agency (CFPA). (Braithwaite, 2009)

Fourth, the CARD Act fails to specify the criteria for “certified” financial literacy classes that would enable adults under 21 to obtain a credit card on their own. Would the typical college freshman class in “Personal Financial Decisions” satisfy this requirement? Would an on-line course offered by a card-issuing bank satisfy the requirement? Just as with the abusive credit counseling schemes fostered by the 2005 bankruptcy act revisions, this gap in the law is a potential opportunity for colleges seeking to encourage enrollment in the appropriate classes, and a potential can-of-worms if the certification process opens the door to more abuses.

CONCLUSION

Like any new law, the CARD Act of 2009 will need to be interpreted, by regulatory agencies, by consumers, by bankers and ultimately by the Courts. It is not perfect, but it is a major step forward.

Legislation is always an opportunity for compromise, potentially confusing language and loophole mining, as the lawyers for the banks seek to conceive of new products, services, fees and requirements not covered or precluded by the law. The law anticipates this by calling for monitoring and recommendations for further legislation and rulemaking from time to time. Whether in the future Congress and the White House will be so congruent in their objectives remains to be seen, which is why a case for more traditional restrictive regulations, adopted when the opportunity arises and enforced thereafter by an independent judiciary, retains considerable force.[4]

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[4] The author would like to thank the research assistance of his graduate assistants in the MBA Program at Bloomsburg University in preparing this article: Zhijian Li (Summer, 2009) and Matthew Stroup (Fall, 2009).

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DOES EXPERIENTIAL LEARNING IMPACT SMALL BUSINESS CONTINGENCY PLANNING?

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ABSTRACT

This paper examines whether small businesses that had experienced a disaster subsequently implemented new contingency plans or revised existing plans in preparation for potential future disasters. A survey was mailed to 800 small businesses in the United States that had experienced a disaster and received a loan from the Small Business Administration to assist in their recovery efforts. The survey results revealed that the majority of respondents to the survey did not have a recovery plan prior to their "disaster experience" and that the experience provided little impetus for most respondents to subsequently implement or update contingency plans.

INTRODUCTION

Since the tragedies encountered in New York on September 11th, and the fires, hurricanes and tornadoes that pummeled other areas of the country, the terms contingency planning and disaster recovery are all too familiar to American businesses and individuals alike. Before September 11th many businesses did not have contingency plans in place, especially small businesses. The Small Business Administration's Office of Advocacy estimates that in 2008 small businesses with less than 500 employees accounted 99.9% of the approximately 29.6 million businesses in the United States. Their 2006 statistics revealed that there were approximately six million small businesses with employees and that 90% of those firms had fewer than 20 employees. A summary of small businesses in the United States, by number of employees is summarized in Chart 1 (see Exhibits).

In 2008, Office Depot conducted a survey of 5,000 small business professionals. The results of the survey revealed that 40% of the respondents are unprepared for a potential disaster. Since human resources and capital are limited, the small business owner's capability to implement, maintain and test contingency plans on a continual basis is a challenge at best. These limitations make small business disaster recovery efforts more difficult, and potentially less efficient, than those of their large business counterparts. A 2009 survey of 700 small and mid-sized businesses in North America, which was conducted by Agility Recovery Solutions and Hughes Marketing Group, revealed that 83% of the survey participants have some type of contingency plan. However, 90% of the smaller companies surveyed (those with less than 100 employees) spend less than one day per month preparing and/or maintaining their contingency plans. Twenty-two percent indicated that they did not maintain their plans at all. As per Ken Allen, executive director of the Partnership for Public Warning, "…It's a tough call as to what's worse – not having a plan or not testing and updating it regularly…A company can have a great plan, but unless it's relevant, it's of little value."

It has been stated that concern about potential crises is usually only generated once a business actually experiences a disaster (Spillan and Hough, 2003). The purpose of this study was to determine if an actual disaster experience, which presumably creates a sense of urgency, would compel small businesses to implement and maintain business contingency plans to assist in future encounters with disaster. The premise of experience impacting future behavior is known as experiential learning.

EDUCATION VERSUS EXPERIENTIAL LEARNING

Contingency Planning Education

Much research has been conducted on whether individuals in different settings will gain more insight from education or "real life experience". In the area of contingency planning, education is twofold. There is education about risk analysis and assessment, and there is education about risk preparedness, better known as contingency planning.

Risk Analysis/Assessment

Risk analysis involves identifying the potential risks a company could encounter. Once these risks are identified, the company can then assess them, or determine which risks pose the greatest threat, and therefore, which should be addressed in a contingency plan. Williams (2002) discusses the use of a "risk register" where all potential risks that are identified are logged, so that they can be addressed individually or categorized. An example of such a register is included in Exhibit 2. This log can be created through the efforts of all company employees, like in a brainstorming session, since each may have a different perspective on potential threats and plans to protect them or to recover from them in the event of disaster.

Risk Preparedness/ Contingency Planning

Small business owners have some degree of knowledge about the potential for disaster occurrences. If not experienced firsthand, this knowledge is easily obtained from the various media sources; television, radio, newspapers and of course, the internet. There is a tremendous difference, however, between being knowledgeable about disasters and identifying those potential disaster risks which can be detrimental to an individual small business. It is the risk assessment process which will enable an organization to plan for and ultimately recover from disaster.

The Random House Webster's College Dictionary defines disaster as "a calamitous event, especially one occurring suddenly and causing great loss of life, damage or hardship…" This definition is intentionally nondescript since disasters can take many different forms, and result in different levels of losses. There are natural disasters like tornadoes, tsunamis, fires and floods. There are also disasters like that which occurred on September 11th, which was the result of terrorism, sabotage, and intentional destruction. When most people think of disaster, they focus on natural disasters and those associated with terrorism. These are also the types of disasters that are covered by the press, since they are the most newsworthy. Yet there are other kinds of disasters that impact businesses on a daily basis, like power failure, equipment failure, hardware and software failure, and security and control failure.

In actuality, the majority of disasters that occur are not extremely catastrophic in nature, but still very damaging. According to the Institute for Crisis Management (ICM), more than half of all crises that impact large and small organizations are caused by management. Additionally, only 31% of all crises encountered are sudden in nature. The majority of crises, 69%, are referred to as "smoldering." That is, they are small problems which fester more and more with the passage of time. The end result is that these smoldering crises turn into major crisis events (Sapriel, 2003).

The ICM survey also revealed that crises caused by employees were up to 31%, while crises caused by outside sources were only 18%. Many times disgruntled employees initiate crises like system failures and viruses to sabotage their employers.

It is essential that small businesses identify the potential risks to their specific businesses. Some risks are relative to the location of the business, like natural disasters. Other risks are dependent upon requirements of the specific industry. Finally, there are risks associated with employees and client bases. Once these risks have been identified, they should be prioritized. Lastly, a plan should be developed to enable a recovery that is as quick and efficient as possible.

Despite their knowledge about disasters, American small businesses, in general, are not adequately prepared to deal with them. Communications experts agree that information can develop awareness, but that it cannot effectively persuade individuals to perform desired behavior (Hovland, 1965).

Hypothesis

While knowledge about potential disaster is valuable, it is my opinion that small businesses that have actually experienced disaster will have a greater impetus to implement and maintain a contingency/disaster recovery plan.

Experiential Learning

The premise for the hypothesis that businesses that have experienced disaster will be more inclined to develop plans than those who have not, is based on the theory of experiential learning. We're all familiar with the saying, "Experience is the best teacher." The assertion, of course, is that individuals learn best by actually living through an event or performing a task, as opposed to educating themselves by reading about the encounters of others.

David Kolb created a model portraying this process in his book entitled, Experiential Learning. The basis for this model is that an individual encounters a situation or performs some act and then observes what the impact is. The individual then reflects upon the results or outcome of the situation and uses this information to develop concepts to prepare for future occurrences. This knowledge is then utilized when encountering future incidents (See graphic, Exhibit 3).

Therefore, based upon this theory, when businesses encounter disasters of any type, they should learn from the experience and properly plan for future crises. The disaster experience should enable them to better identify potential risks or areas of exposure and how to better protect their interests. The experience should also help them to identify those things which could be recovered and to assess the difficulty associated with such a recovery. Finally, all of these insights should then be utilized to develop a formal contingency plan in preparation for future potential disasters.

METHODOLOGY

Sample

One way to determine if experiential learning had an impact on the decision to implement and maintain contingency plans was to conduct a survey of small businesses that had encountered a disaster experience. A listing was obtained from the Small Business Administration (SBA) of all small businesses in the United States that had obtained SBA loans to assist them in recovering from disaster. The SBA provided a listing of nearly 16,000 small businesses that had obtained loans over the last few years. A sample of 800 businesses that had received the highest loan amounts in the years 2002 to 2003 were selected from the population.

Data Collection

The survey, which was mailed to the sample of loan recipients, was broken down into several components: general information about the company size and state of operation, information about the year and type of disaster, contingency planning information as to existence of contingency plans pre- and post-disaster, testing and development of contingency plans and data back-up and storage. To ensure anonymity, the respondents did not provide identifying information on the questionnaires and returned completed questionnaires in postage paid return envelopes which were provided. The purpose of anonymity was to encourage more forthcoming responses. The difficulty with the anonymous responses was that the reminder postcards then had to be sent to all survey recipients, since there was no way of determining which recipients had already responded.

Survey Response

Of the 800 surveys mailed to the SBA loan recipients, 106 responses were received and 25 were returned as undeliverable. There was an initial mailing to the 800 selected small businesses, followed by a "reminder postcard" to encourage more responses. An overall 13% response rate was achieved, with 10% achieved through the initial mailing of the questionnaires and an incremental 3% through the mailing of the reminder postcards.

RESULTS

Response Rate

The response rate for the survey, although respectable, was lower than anticipated. There are several reasons for this. While these small business owners were recipients of loans after they encountered a disaster, subsequent natural disasters occurred shortly after the mailing of the surveys. These included hurricanes, floods and fires. For some of the recipients, the disaster for which they received their loan was an initial occurrence. For others, it represented the second or third disaster encountered. Some of these businesses may have succumbed to the disaster, resulting in their dissolution. Another factor that must be considered is time constraints. Time constraints for small business owners limit their availability to respond to "non-essential" correspondence. Lastly, unfamiliarity with the source of the survey may have played a factor. It should be understood that, while the SBA provided the list of companies that had received loans, they indicated that they could not participate in conducting the survey or analyzing the results received. The use of the SBA name was only permissible in so far as to identify the source of loan recipient names and addresses, which are public record. Therefore, the survey recipients did not receive any encouragement to complete the survey by the SBA.

The most responses, approximately 23%, were received from New York. There are several possible reasons for that. Firstly, 25% of the 800 companies included in the sample were from New York, based on the selection criteria of largest loans requested from the SBA in the 2002-2003 timeframe. This is probably due to the fact that the time frame for the loan requests followed closely after the World Trade Center attack. It is also possible that there was a larger response from New York since this research was being conducted by the City University of New York, a recognizable institution to most New Yorkers.

Nonetheless, the results were very telling. The general information gathered from the respondents to the survey revealed that approximately 66% had annual reported sales of $3 million or less. More than 57% of the responding businesses had less than 20 employees. The majority of the respondents, approximately 83%, has been in business for more than 10 years. These results are depicted in Exhibits 4 and 5.

Most of the respondents, more than 60%, encountered natural disasters, while 38% were victims of terrorism and approximately 2% experienced equipment failure. One hundred percent of the terrorism respondents were victims of the 9/11 disaster (See Exhibit 6).

Impact of the Disaster Experience

The basis for this study was to determine if the experience of a disaster would propel small business owners into the reflection, conceptualization, and testing outlined by Kolb, or more simply stated, to learn from their experience and implement or update contingency and disaster recovery plans. The results of this survey revealed that experiential learning does have an impact on contingency planning in the small business arena, but to a limited extent. An analysis of data revealed that 83% of the respondents did not have a disaster recovery plan prior to their disaster experience. Nearly 31% of that number was represented by businesses with nine or less employees, and nearly 69% having sales of less than $3 million. Of the total 83% that did not have plans prior to disaster, 65% indicated that they did not implement a plan after the disaster. It should be noted that several respondents indicated that this was not the first disaster they had experienced, and that they still have not yet implemented a plan. Of the approximately 17% of respondents that reported that they did have a plan, 16% indicate that their plans were informal.

The responses received for the final two questions in the planning section of the questionnaire were very informative. An inquiry was made as to why respondents had not yet implemented a contingency/recovery plan, even after experiencing disaster. The subsequent question was whether or not the survey participants ever considered using a service that provides a "hot site." A hot site is an offsite disaster recovery service which businesses under contract can use in the event of a disaster. A full-service hot-site would have back ups of client data and software, in addition to required computers, networks, desks, phones, fax machines, etc.

The objective of the two questions was to determine how familiar the respondents were with contingency planning options. The most common reason cited for not planning was uncertainty about how to develop a plan. To confirm this uncertainty, more than 93% of the respondents indicated that they were not familiar with the purpose of a "hot site". These results were anticipated. Naturally, if the respondents were familiar with the importance of contingency planning and available planning options, they would have already implemented a plan.

Impact of Relative Company Size

While the surveys were only sent to small businesses, the size varied from businesses with less than $1 million in reported annual sales and fewer than 10 employees, to businesses with more than forty employees and annual reported sales exceeding $10 million. It has been suggested that the size of the business dictates dedication to disaster recovery and contingency planning. The reasoning behind this theory, of course, is that the larger the business, the greater the financial and human resources available to dedicate to such planning.

The results of this survey did reveal that the larger of the small businesses did have plans. This is evidenced in Exhibits 7 and 8. Thirty three per cent of the responding firms reported $4 million or more in sales. Of that total, 26% had a plan. Of the remaining 67% of respondents with sales less than $4 million, only 11% had a plan. Likewise, of the 29 firms with 40 or more employees, 32% had a recovery plan. Of the 77 firms with less than 40 employees, only 13% had a recovery plan.

Ninety-five percent of the respondents, with both annual sales of less than one million and between one and nine employees, indicated that they did not have a plan pre-disaster. More than half of those respondents, approximately 55%, reported that they still did not have a plan post-disaster.

The "Small Business" Impact

As previously indicated, the majority of small businesses in the U.S. and the majority of respondents to this survey have less than 20 employees. The fewer the employees, the more day to day responsibilities each employee is responsible for. Therefore, assigning the task of establishing a business contingency plan becomes a challenge. Since employees are required to meet deadlines and productivity objectives and goals, contingency planning is not a priority. As with all matters in small business, all tasks not handled by the employees must be attended to by the owners. As per the U.S. Census 2002 Survey of Business Owners, 49% of small business owners reported working more than 40 hours per week, while nearly 20% reported managing or working an average of 60 or more hours per week. At that point, working overtime to plan for contingencies doesn't seem to warrant the dedication of additional hours. The only other avenue for small business owners is to assign the responsibility to an outside individual or company. This would require the use of excess funds, which is usually earmarked for business growth and expansion and for providing employees with benefits to compete with big business.

Plan Cost, Downtime and Recovery Cost

At the time of the survey, 38% of the respondents indicated that their businesses were still not completely up and running. Approximately one-half of the disasters experienced by respondents occurred 3-4 years prior to the survey, or in the years 2000-2001. Of those respondents, 50% indicated that they had not fully recovered at the time of this survey. Forty-five percent occurred in 2002-2003. Approximately 29% of those businesses had not recovered at the time of this survey.

In response to the question of what took the most time to recover, the most frequent responses were the restoration of the building site and the recovery of lost customers. The cost to recover was quite high, especially for those firms without a contingency plan. As evidenced by Exhibit 9, more than 75% of the survey respondents reported that it cost them more than $250,000 to recover. Over 29% of the respondents reported that it cost them over $1 million to recover! These figures were higher than anticipated, considering that the annual sales for almost 70% of the respondents were $3 million or less.

Recovery time and cost would have been substantially reduced if these businesses would have implemented a contingency plan. In comparing the recovery of firms with and without plans, the survey revealed that 55% of those with plans recovered within one month. Forty-eight percent of those without a plan had not fully recovered at the time of the survey. This is displayed in Exhibit 10.

Plan Testing

According to the Federal Energy Management Agency (FEMA), once a plan is developed, it is necessary to evaluate it, at least annually, to ensure that it is efficient and effective. Naturally, the most effective test would be a full scale test. That would involve the creation of a mock disaster, whereby all company employees adhere to the devised plan to determine how effective it would be in a real disaster. Since such a test would be time consuming and therefore, costly, modified testing could be utilized. This would include table top drills and walkthroughs of the various components of the plan. Again, the intention of the recovery plan is to minimize downtime. An ineffective plan cannot expedite recovery efforts.

Exhibit 11 offers a view of the types of contingency plans the survey respondents had in place at the time of the survey. Nearly 46% of the respondents ultimately had some type of plan in place after their disaster experience, with the majority relying on their CPAs for assistance with plan development. Unfortunately, 69% of all respondents with plans also reported that they never formally test them. Only 19% test their plans on an annual basis. As previously indicated, a plan that is not tested and maintained cannot efficiently reduce downtime.

Computers, Backup and Vital Records Maintenance

Nearly 80% of the respondents reported that they have computer networks. Naturally, a great deal of reliance is placed on the software and data files stored on these systems. While it is not necessary to back up all files, it is necessary to determine which should be backed up. All records, whether hard copy or computerized, should be categorized by degree of importance. This evaluation process should be conducted by all employees, since certain files may be essential to some and not others. Those files which are deemed to be vital should be backed up, with one copy retained on site and another copy stored offsite (Chastang 2000).

Although the majority of respondents indicated that they do not have any type of contingency plan in place, more than 60% of the respondents indicated that they back up their computers on a daily basis. The most common backup procedure is backing up on disk, approximately 60%, with 39% using tape backup. The survey results also revealed, however, that more than half the respondents keep their backups in their office! Depending upon the type of disaster encountered, these backups could be of little or no value. Ideally, small businesses should retain two hard copy backups and two computer file backups (disk or tape) for all vital records. One set should be retained onsite in the event of a hardware, software or electrical failure. The other set should be stored offsite in the event the worksite is destroyed.

Similarly, when asked where important documents are kept, 67% of respondents indicated that they keep insurance policies, loan documents, etc. in the office. More than 37% of the respondents indicated that they have hard copies of contact information stored in their offices, while over 25% reported that they do not have hard copies at all. Again, two copies of these documents should be made. One should be stored in the office and another offsite.

Terrorism vs. Natural Disaster

A comparison was made of the businesses that experienced a natural disaster versus terrorism to determine if the type of disaster experienced impacted planning and recovery efforts. There were minimal variations in the area of planning. The analysis revealed that approximately 81% of the natural disaster respondents had no plan prior to disaster, compared with 85% of the terrorism respondents. After the experience, 51% of the natural disaster respondents still had no plan, compared to 53% of the terrorism respondents.

A substantial difference was noted in the area of recovery. Nearly 58% of the terrorism respondents had not yet recovered at the time of this survey, compared to only an estimated 27% of the natural disaster respondents.

DISCUSSION

The results of this survey, as well as those conducted by others, revealed that small businesses are not very well prepared for disaster. There is great difficulty in assigning importance to planning for the possibility of an occurrence. For most small businesses there is a struggle for the allocation of limited funds. There is the constant competition with ,larger businesses for qualified employees and for work. While maintaining competitive advantage is worthy of expenditure, planning is only advantageous if something happens.

This study revealed that even the experience of a major catastrophe, for the most part, did not create a sense of urgency for these small businesses to plan. When asked why they don't have plans, the majority of respondents indicated that they do not know what to do. Apparently, the experience has taught them what can go wrong, and since the majority of reported crises were natural disasters and terrorism, that sometimes disaster cannot be averted. This is where the focus of contingency planning must be stressed.

An Understanding of Risk Exposure

One of the major difficulties in promoting contingency planning to those that have encountered a disaster experience, is their doubt that a disaster of such magnitude could reoccur (Kelly and Stark, 2002). Another difficulty is the sense of frustration created by the experience of a major disaster, like natural disasters or terrorism. In these instances, whole cities are impacted, and in many instances, without warning. It's extremely difficult, if not impossible in some cases, for individual businesses to fully prepare for catastrophes of such magnitude. Unfortunately, this negates the importance of and therefore, the perceived need for planning. What these businesses fail to realize is their susceptibility to other types of incidents, even on a smaller scale, that would still require recovery. This is where risk assessment is essential. It is more important to focus on the potential risks that could individually affect a small business. As per Brislen (2005), it is necessary for businesses to focus on disasters that can potentially impact their individual business and its ability to serve its customers, not disasters that will paralyze an entire city. If an individual business is impacted by a disaster while competition remains unscathed, the end result is lost revenues. Loss of business was cited by respondents to this survey as the second most difficult to recover, after restoring their workplace. An increased awareness about risk assessment and statistics about more common types of potential crises must be emphasized to the small business niche.

Time to Reflect

Sometimes experiential learning is not successful because the individuals involved are so busy dealing with the immediate situation at hand that they don't have the time to fully process the experience into their knowledge base (Johnson 2005). In terms of disaster recovery, this is very believable. The majority of the respondents to this survey had to deal with the sudden impact of a natural disaster or terrorist attack and then try as quickly as possible to get their businesses up and running again. This is very difficult for businesses that are not prepared to do so. As stated earlier, 38% of the businesses surveyed were not yet up and running at the time of the survey, a few years after the occurrence of the disaster.

After Action Reviews

The U.S. army is very committed to experiential learning. It is their belief that while a classroom education is beneficial, learning must take place while performing daily responsibilities (Johnson 2005). Johnson (2005) reports that the army uses After Action Reviews (AARs) to extract lessons from experiences as they occur. These AARs are then stored in a database, where they may be accessed by others. The capability to decipher the important lessons and learn from them is something that must be taught and learned over time. The United States Army as well as many major corporations provide training to enable employees to learn the most from their experiences.

Honey and Mumford (1986) indicated that one of the most important parts of the experiential learning cycle was the reflection component. That is, where the individual digests what has just occurred and mentally notes how to deal with this in the future. In the case of untrained small business owners and employees, this reflection mode may be too rushed. It can be argued that the reflection mode is skipped completely and instantly replaced by a "recovery mode," since the ultimate goal is to get the business up and running again as quickly as possible.

Ideally, it is best to focus on each phase of the experiential learning cycle. Honey and Mumford (1989) recommend taking it a step further. They recommend utilizing a learning log where the individuals record the impact of the experience as it occurs. This will assist in the reflection mode, where individuals will begin to conceptualize what happened and how they would handle this situation if it occurs again in the future. While this is extremely beneficial, it is time consuming and probably not very realistic in a small business environment.

Mandatory Planning

It seems that small and large businesses, alike, need a push to "encourage" them to implement and update contingency and recovery plans. This is being done for larger businesses. The document retention requirements of the Sarbanes Oxley Act of 2002 (SOX) have prompted publicly traded companies into investigating retention and storage options, a large part of contingency planning. There are additional mandates that have been outlined by the Securities and Exchange Commission (SEC), requiring members to establish plans for emergency preparedness. These rules outline the requirements to be addressed by such plans. The SEC is also requiring members to designate two emergency contact people from their firms.

At this point, non-public firms are not yet required to adhere to SOX, and the established SEC requirements are not realistic for small businesses. Therefore, there are no mandated planning requirements for small businesses. Since small businesses are such a large contributor to the American economy, it is not unrealistic to think that some type of mandate could be addressed in the future. Unfortunately, this would result in additional costs that many small businesses cannot afford. According to the SBA, small firms with fewer than 20 employees annually spend 45 percent more per employee to comply with federal regulations, four and a half times as much per employee to comply with environmental regulations and 67% more on tax compliance than do larger businesses. Planning assistance from federal, state, and local authorities, as proposed by Schimberg (2005), is a good recommendation to improve the current state of small business contingency planning. Additionally, funding and tax incentives for planning efforts would provide needed motivation.

CONCLUSION

This research has revealed telling details about small business contingency planning. Apparently, a combination of education and experience is needed to foster more productive contingency planning efforts. There is still a major lack of preparedness, despite reported experiences with major disasters. The majority of business owners surveyed admit that they lack the knowledge necessary to implement a plan. Small businesses must learn how to prepare a realistic risk assessment for their individual businesses and investigate suitable contingency planning options. While computer security is only part of contingency planning, it is apparent that back up storage and testing is an area that is sorely in need of examination. The same can be said for vital document storage.

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Exhibit 1

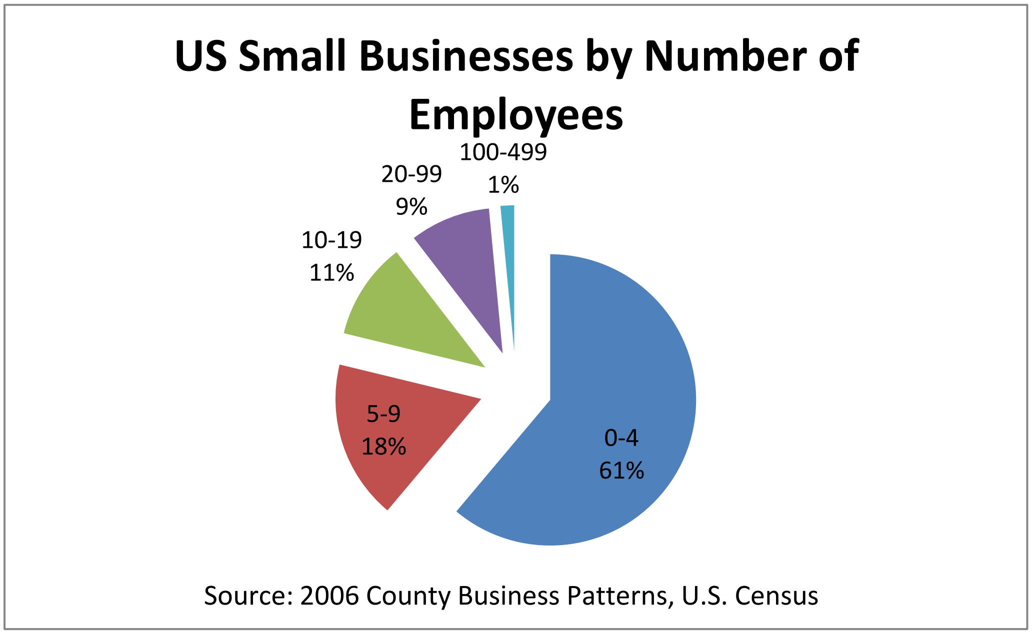


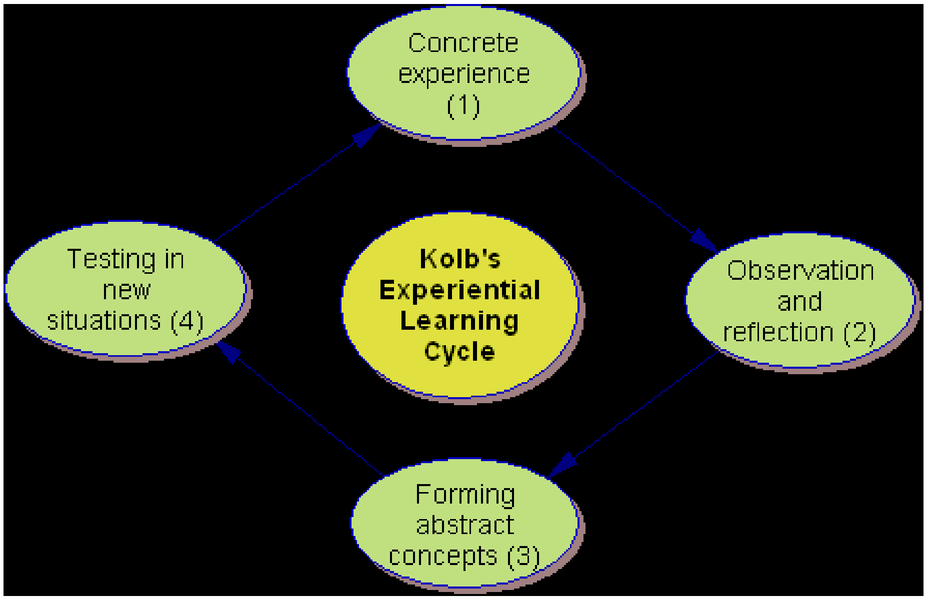
Exhibit 2

Risk Register

Risk Description	Potential Impact	Likelihood of Occurrence	Prior Occurrence	Impact on Operation	Priority	Actions to Prevent	Cost to Prevent	Contingency Plan Actions	Actions Post Event, with plan	Estimated Recovery Cost with plan	Estimated Recovery Cost no plan
Hurricane	Close down	5	2 times	4	5	N/A	N/A	Computer backup, offsite storage of data, essential documents	Damage assessment, restoration	$200,000	$500,000
Computer virus											
Terrorist Attack											
Flooding											
Power Outage											
Sabotage											

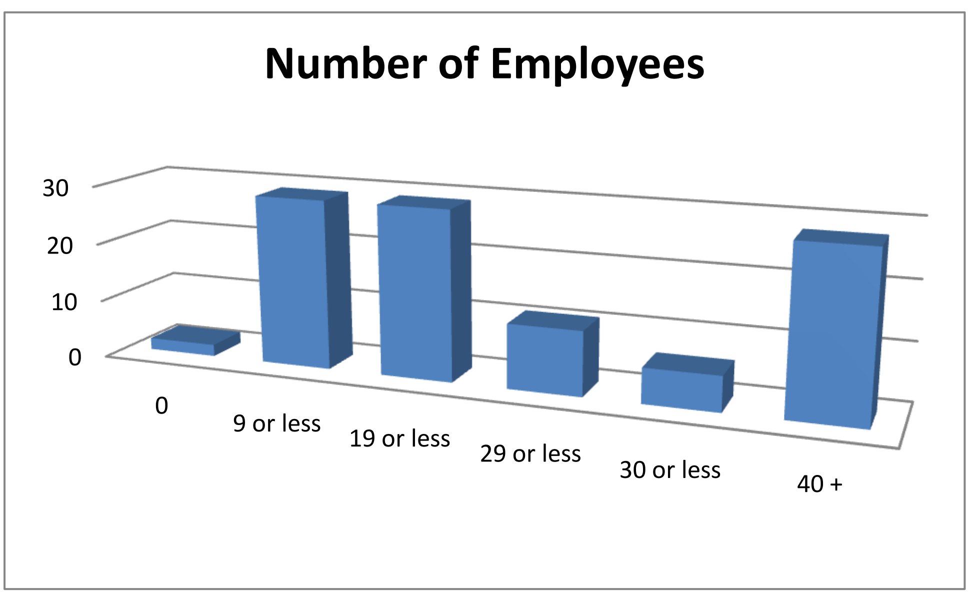
Scale
5 = High, 1 = Low

Exhibit 3



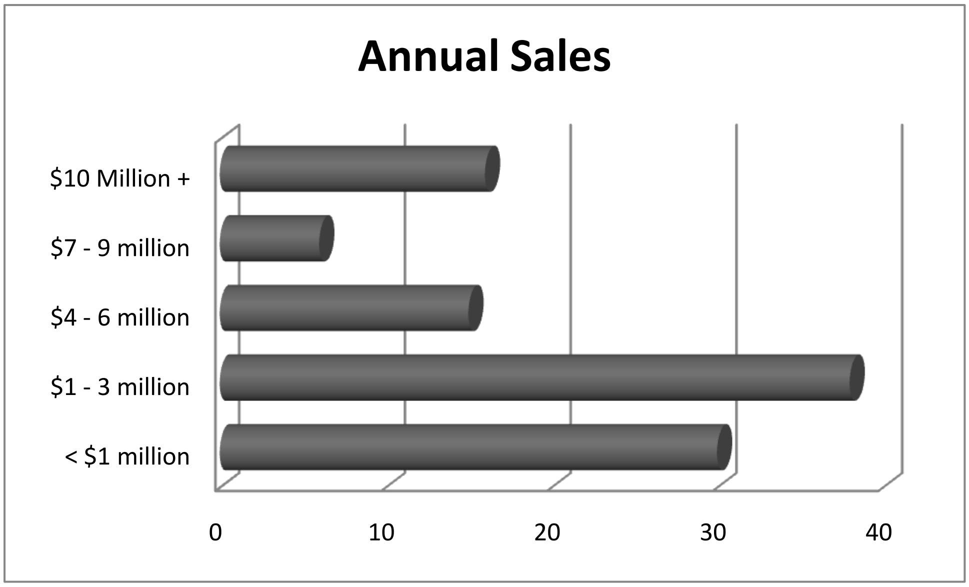
Kolb's Experiential Learning Cycle

Exhibit 4



Number of Employees in Respondent Firms

Exhibit 5



Annual Sales of Respondent Firms

Exhibit 6

Types of Disasters Experienced by Survey Respondents

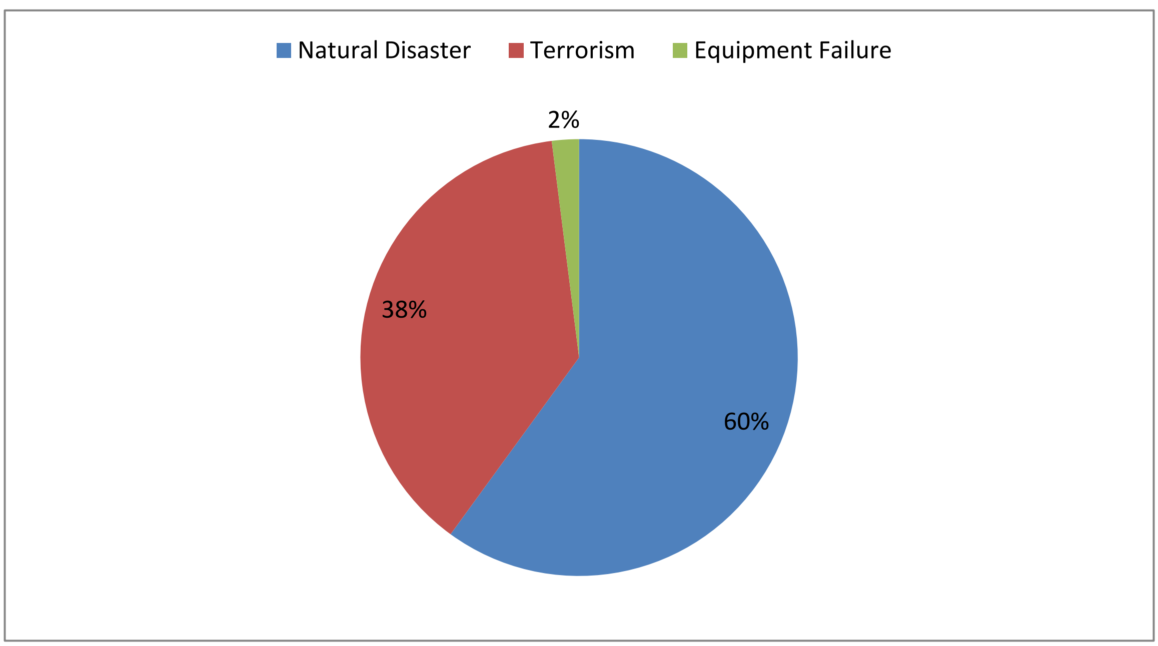


Exhibit 7

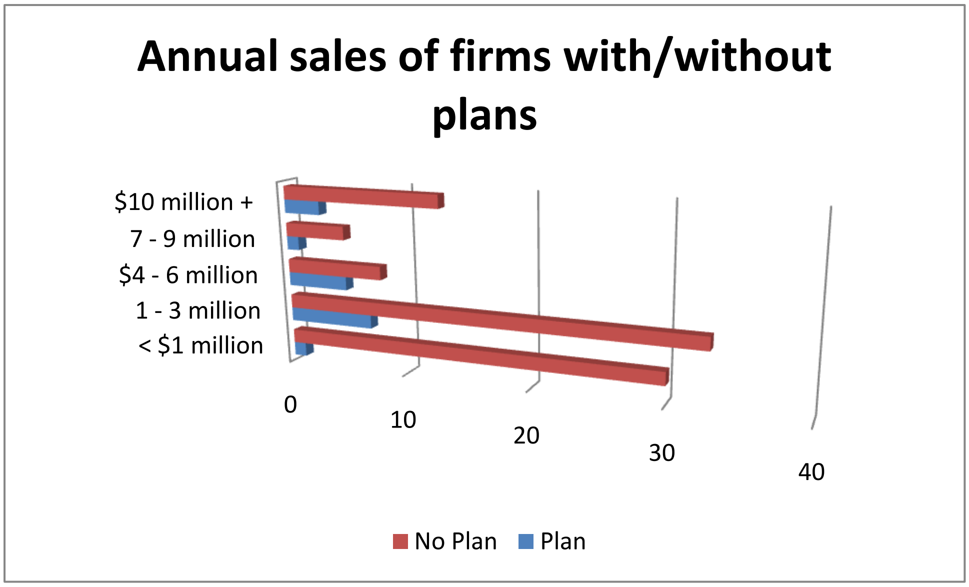


Exhibit 8

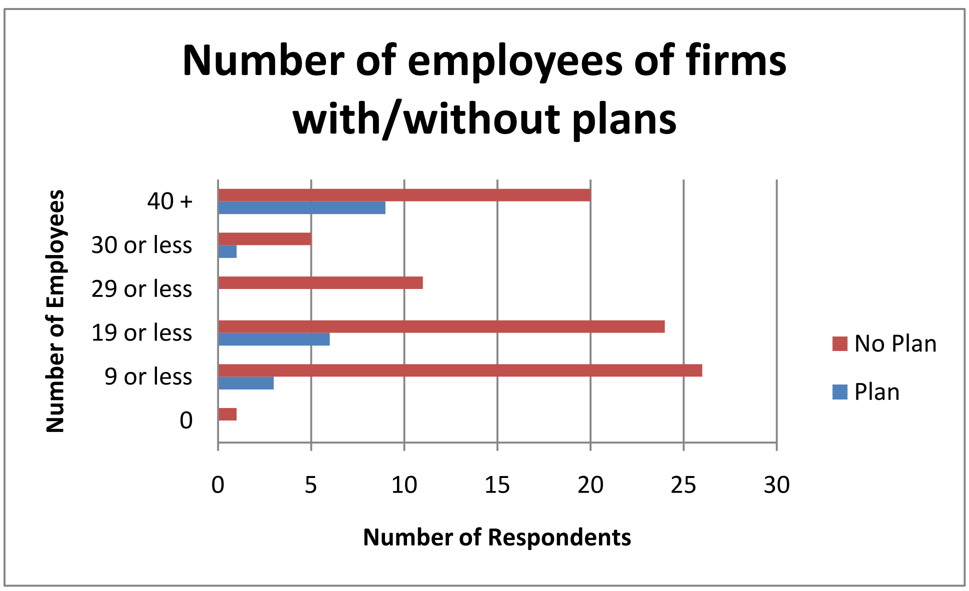


Exhibit 9

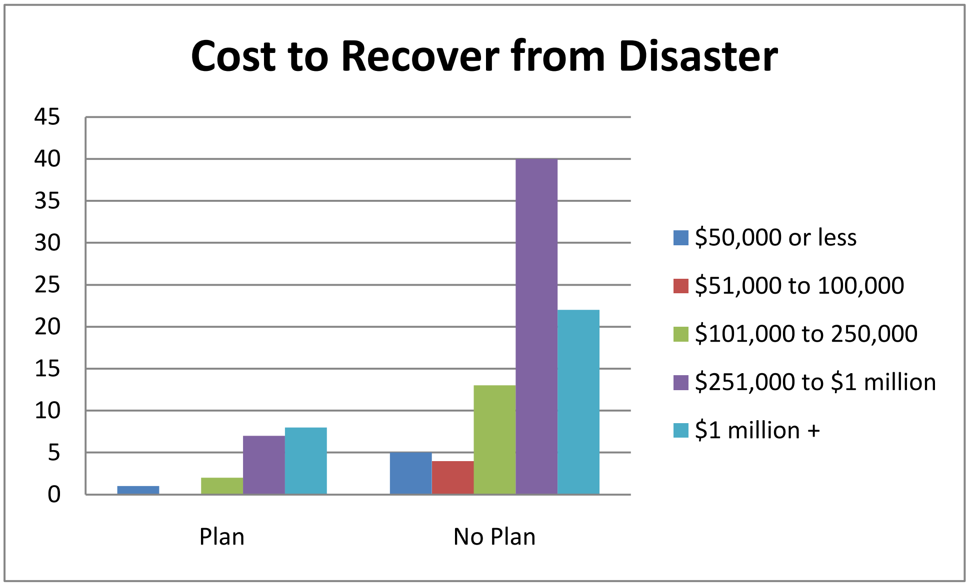
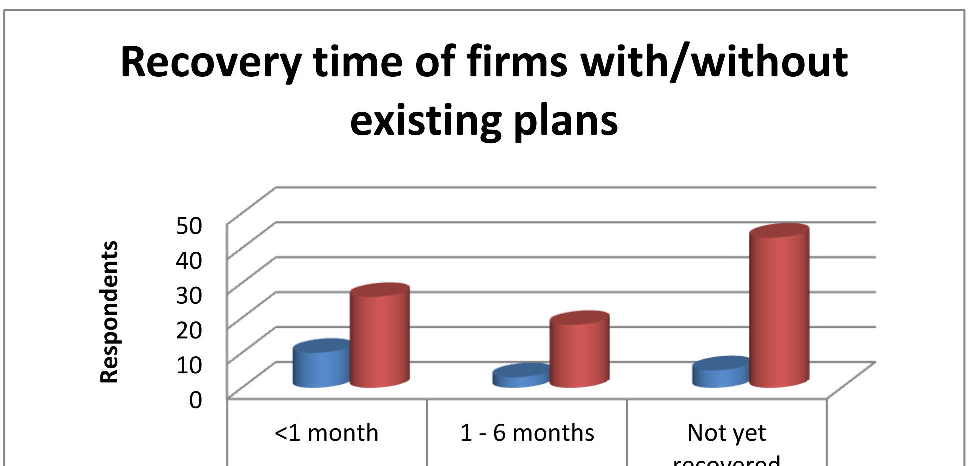
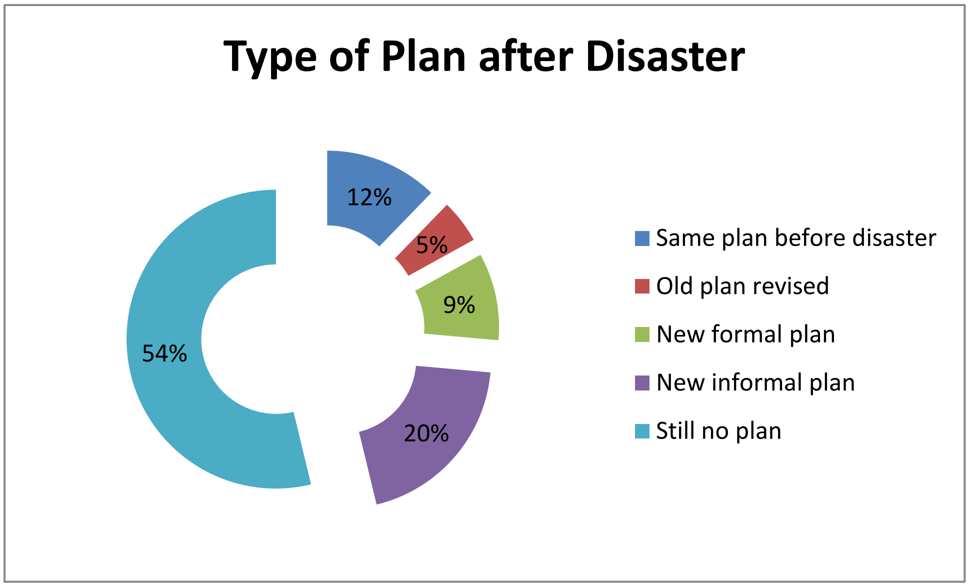


Exhibit 10



	<1 month	1 - 6 months	Not yet recovered
Plan	10	3	5
No Plan	26	18	43

Exhibit 11


Type of Plan after Disaster
12%
5%
9%
20%
54%
Same plan before disaster
Old plan revised
New formal plan
New informal plan
Still no plan

OCCUPATIONAL HEALTH IN THE REFINERIES

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Abstract

Occupational Health is a field which is growing rapidly all over the world. Its objectives have gradually broadened from dealing mainly with occupational hazards causing accidents and occupational diseases to include all kinds of factors at work or related to working conditions that may cause or contribute to disease or deviation from health. The paper attempted to assess the impact of industrial pollution on the worker's health and to analyze the nature of health hazard on population having different nature of job assignment and age groups. With this objective this paper presents a case study of the Digboi Refinery of Assam, situated in north-eastern region of India. The based on secondary data like information relating to the size of population, work structure, quantum of production and release of effluents.

INTRODUCTION

Oil refineries are industrial factories that refine and process crude oil into various petroleum products, including gasoline, heating oil, diesel, and kerosene. The majority of oil refining factories are very large complexes with many adjoining buildings and far-reaching piping to transport fluids between structures. Oil refinery workers are critical to the nation's economy. In a country dependent on petroleum, these workers perform vital jobs to keep the nation running smoothly. Though over the last few decades the world has made significant progress in various in various fields but still today we can't think of a single day with-out the use of oil & it's related products. So the oil that is processed by the refinery workers are certainly helping the development of every nation but what is its impact on those workers. It is not unknown fact that oil and the energy it supplies, though provide multiple benefits to human societies but at each stage in its life cycle from exploration to use carries hazards for humans, wildlife and environmental systems, which has harmful impact on the health of the people and most adversely affected are the workers working in those industries. Oil refineries emit about 100 chemicals everyday. The refining process exposes workers to petroleum, its by-products (e.g. benzene) and the chemical used in the refining process. Pollutant chemicals can be toxic to human beings that adversely affect the health and safety of the refinery workers through chronic illness (e.g. leukemia) associated with exposure to petroleum and its by-products (e.g. benzene). This process also lead to release of hazardous materials, exposure to harmful chemicals and accidents which, in turn, leads to chronic lung diseases, leukemia, mental disturbance, neoplasm etc. Solvents and petroleum hydrocarbon components can cause aspiration pneumonia and rumen dysfunction, while certain petroleum additives can cause methemogolobinemia. In addition to death and injury, workmen in the oil and gas industry also suffer from a variety of dermatological hazards, most commonly contact dermatitis and acne. Other conditions include kerototic facial and neck lesions, neoplastic change of the skin from exposure to oil and sunlight, and acquired perforating disease and calcinosis of the hands and fingers. The large extent of gases such as Sulphur dioxide (SO_2), Carbon Monoxide (CO), Hydrogen Sulphide (H_2S) and other oxides of nitrogen, as well as, the particulates containing partially burnt hydrocarbons and metals emitted by oil industries are potentially hazardous to human health and vegetation growth.

To investigate possible effects of refinery effluent on workers health, it is essential to have full-fledged and accurate environmental health impact assessment, occupational and environmental cohert studies. With this objective in mind this present paper has selected the Digbi refinery of Assam, India as a case study, which may help us to give a general overview of occupational health of workers in other refineries.

Assam is a major producer of crude oil, exploited by the Assam Oil Company Ltd., and natural gas in India and is the second place in the world (after Titusville in the United States) where petroleum was discovered. Asia's first successful mechanically drilled oil well was drilled in Makum (Assam) way back in 1867. Most of the oilfields are located in the Upper Assam region. Assam has four oil refineries located in Guwahati, Digboi, Golaghat (Numaligarh) and Bongaigaon with a total capacity of 7 Million metric tonnes (7.7 million short tons) per annum.

Digboi is known as the Oil City of Assam where the first oil well in Asia was drilled. It can proudly boast of two unique features- a hundred year old extent oil field and the world's oldest operating oil refinery. Digboi refinery was commissioned in December 1901 and supplanted as the earlier small refinery unit at Margherita. It has undergone a transition from being an age old refinery to one with state of the art technology comparable to any modern refinery over hundred years. Digboi is now the head quarter of Assam Oil Corporation Ltd.

Today with its modern technology and facilities, Digboi refinery produces major petroleum products like fuels, wax, bitumen, and range of some speciality products. Recently, the refinery recorded crude capacity of 0.65 million tones, as per the official sources. There are about 2272 workers including 2099 male and 172 female working in the Digboi refinery. Out of the total workers there are 371 officers (355 males & 16 females) and 1900 non-officers (1744 males & 156 females).

OBJECTIVES:

1.) To assess the impact of industrial pollution on the workers.
2.) To find out the extent of the industrial pollution on different sections of the industrial population.
3.) To analyse the nature of health hazard on population having different nature of job assignment.

METHODOLOGY

This study is based on secondary data like information relating to the size of population, work structure, quantum of production and consequent release of effluents. The whole population (i.e. the reported cases of the workers taken from the two medical centers) has been divided into various strata on the basis of nature of work performed and the age group of the workers. This study has covered a period of five years, April 2003 - March 2008. In order to elicit relevant informations from secondary data and to test three hypotheses series showing average no. of environmental diseases and non-environmental diseases in various departments and various age groups were carried out. Further, departments were categorized into two types, departments directly attached to production and general departments. These two categories were compared on the basis of arithmetic mean and standard deviation. Apart from these techniques, for testing hypotheses no-1 & 2, the present study has also considered non- parametric tests like Chi-square test and Z-test. The whole analysis was on the basis of all reported cases and as such no sampling technique was made use of.

ANALYSIS OF THE DATA

The diseases suffered by the workers of the refinery are mostly of longer duration which happens gradually as the workers go on working over the years within the refinery with the daily inhalation of the harmful gases like benzene, naptha, sulphur oxides, nitrogen oxides, carbon oxides, hydrogen, hydrogen sulphide, lead, hydrocarbons, chlorine, cast iron, coal, coke, ammonia, suspended and respirable particulate matter, petroleum wastes, oily and bio sludge etc emitted while production and also due to intolerable noise level exposure at the work place. The diseases that are caused mainly due to the pollutants emitted from the industries are termed as environmental diseases and the other diseases are termed as non-environmental diseases.

On the basis of the objectives collection of secondary data was made for the study i.e., in the Digboi Refinery of Assam in order to know the health condition of the workers working in the Digboi Refinery in terms of three hypotheses:

Hypothesis I: There is no variation with regard to suffering of diseases across the type of duties performed by the workers.

Hypothesis II: There is no variation with regard to suffering of diseases across the age groups of the workers.

Hypothesis III: There is no variation between mortality rate of Digboi Refinery workers and that of the state.

It is reflected from the collection of data that there are mainly 50 departments in Digboi Refinery. Out of these 50 departments, 15 are production related departments and 35 are general departments.

Testing of hypotheses: Hypothesis I

To know the reported cases of diseases in various departments of Digboi Refinery, a series has been prepared. Table 3.1 represents the distribution of workers working in production related departments along with the reported cases of diseases.

Table 1: Distribution of the workers in production related departments w/reported cases of diseases, Digboi Refinery, 2008 (In numbers and %)

PRD*	RCD[1]	TW[2]	PRCDTW[3]
1	17	49	34.69
2	40	125	32
3	9	18	50
4	8	16	50
5	9	17	52.94
6	12	25	48
7	15	34	44.12
8	20	44	45.45
9	4	8	50
10	6	12	50
11	14	49	28.57
12	13	46	28.26
13	9	18	50
14	3	6	50
15	7	14	50
TOTAL	186	481	38.67

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.
* PRD- Production Related Departments, RCD[1] - Reported Cases of Diseases, TW[2] - Total Workers, PRCDTW[3] - % of Reported Cases of Diseases to Total Workers

Table 2 represents the distribution of workers working in general departments along with the reported cases of diseases

Table 2: Distribution of the workers in general departments with reported cases of diseases, Digboi Refinery, 2008 (In numbers and percentages)

GD**	RCD[1]	TW[2]	PRCDTW[3]
1	9	21	42.86
2	7	20	35
3	19	65	29.23
4	9	38	23.68
5	1	4	25
6	9	20	45
7	4	23	17.39
8	41	127	32.28
9	37	114	32.46
10	22	57	38.6
11	13	55	23.64
12	16	42	38.1
13	7	26	26.92
14	2	10	20
15	5	30	16.67
16	33	139	23.76
17	10	22	45.45
18	2	6	33.33
19	6	29	20.69
20	8	36	22.22
21	1	4	25
22	7	18	38.89
23	7	16	43.75
24	3	18	16.67
25	1	6	16.67
26	4	11	36.36
27	2	6	33.33
28	3	7	42.86
29	6	16	37.5
30	1	5	20
31	2	7	28.57
32	2	5	40
33	1	5	20
34	1	3	33.33
35	1	3	33.33
TOTAL	**302**	**1014**	**29.76**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.
**GD - General Departments, RCD[1] - Reported Cases of Diseases, TW[2] - Total Workers, PRCDTW[3] - Percentage of Reported Cases of Diseases to Total Workers

Table 1 show 15 departments that are related to production along with the total workers, reported cases of diseases and the percentage of reported cases of diseases to total workers. On the other hand, Table 2 shows 35 general departments along with the same information. It is obvious that the workers working in the production related departments are more prone to diseases as compared to that of the workers of general departments and this has been proved by the above two tables where the mean obtained from Table 1 (38.67%) is much higher than that obtained from Table 2 (29.76%). This reveals that the health condition of the workers working in the production related departments are of more concern than that of the general departments.

But in Table 1, we find that in department 2, the percentage of reported cases of diseases (32%) is much lesser than that of the other departments. This is because of the reason that in this department, most of the workers belong to younger age group as compared to other departments. Again we see that departments 1, 7 and 8 also have lesser percentage of reported cases of diseases (34.69%, 44.12%, and 45.45% respectively) but here the reason is not the same as that of the department 2. Here, the reason is that the offices of the concerned departments are located at a distance from the place of actual production. Regarding all other departments of this Table, the percentage of reported cases of diseases is more than 45%.

To test the significance of the reported cases of diseases among the workers according to their respective departments, Z-test has been carried out. For this purpose, a table is prepared by combining the data of Table 1 and 2.

Table 3 represents the combined value of Table 1 and Table 2 to calculate the Z-test value. If the calculated value of Z-test is found to be greater than the tabulated value i.e. 1.96, then we can infer that the reported cases of diseases among the workers are significant in their respective departments.

Table 3: Total reported cases of diseases among the workers according to their departments, Digboi Refinery, 2008 (In numbers and percentages)

Departments	RCD[1]	TW[2]	PRCDTW[3]
Production Related Departments	186	481	38.67
General Departments	302	1014	29.76
TOTAL	**488**	**1495**	**32.64**
Z-test= 3.33			

Source: Adapted from Table 3.1 and Table 3.2
Notes: - RCD[1] - Reported Cases of Diseases, TW[2] - Total Workers, PRCDTW[3] - Percentage of Reported Cases of Diseases to Total Workers

It is clear from the table 3 above that there are 488 reported cases of disease in the Digboi Refinery out of 1495 total workers constituting nearly 32.64 percent of the total reported cases of diseases to the total workers. From that, 186 reported cases are from the production related departments out of 481 total workers constituting nearly 38.67 percent of the reported cases of diseases to the total workers and the rest i.e. 302 reported cases are from the general departments out of 1014 total workers constituting nearly 29.76 percent of the reported cases of diseases to the total workers.

As it is observed from the Table 3, calculated value of Z-test (Z-test=3.3) of reported cases of diseases among the workers according to their departments is higher than the tabulated value of Z-test (1.96). Thus we can conclude that there is a significantly higher reported case of diseases among the workers of Digboi Refinery. Table 1 reveals a higher reported cases of diseases among the workers of production related departments (38.67% of the total workers) than the workers of general departments (29.74% of the total workers).

In order to find out the pattern of diseases among the registered cases of diseases of the workers of Digboi Refinery, a comparison of the workers according to their respective departments is carried out consequently. Table 4 shows the production related departments with the environmental and non-environmental diseases suffered by the workers of Digboi Refinery.

Table 4 shows production related departments along with the environmental and non-environmental diseases of the workers. On the other hand, Table 5 shows general departments along with the environmental and non-environmental diseases. It is obvious that the number of environmental diseases as compared to the non-environmental diseases should be higher in the production related departments than that of the general departments which is revealed from the above two tables. The percentage rate of environmental diseases is also higher than that of the non-environmental diseases especially in the production related departments than that of the general departments. Again, in the general departments, the number and percentage of environmental diseases to non-environmental diseases is also higher.

It is revealed from the Table 4 that only 4 out of 15 production related departments have the environmental diseases percentage lower than the non-environmental diseases percentage while the remaining other 11 departments have the environmental diseases percentage higher than the non-environmental diseases percentage. These 4 departments are department 1, 2, 7 and 8.

The reason behind this is that in department 1, only the quality of the products produced are checked while department 2 is meant only for the dispatch of those products. But this is not the cause for departments 7 and 8. In department 7, materials required for production are kept while in department 8, oil is refined for the purpose of production.

Regarding the general departments of Table 5, the percentage of environmental diseases is also more than the percentage of non-environmental diseases. This is because the general departments are suited nearby the refinery area within a range of 5 km. So, the workers of general departments are also affected by the pollutants that are emitted from the refinery but the percentage is lesser than the production related departments.

To test the significance of Null Hypothesis I i.e. there is no variation with regard to suffering of diseases across the type of duties performed by the workers; χ^2-test has been carried out. For this purpose, a table is prepared by combining the data of Table 4 and 5.

Table 6 represents the combined value of Table 4 and Table 5 to calculate the χ^2-test value. If the calculated value of χ^2-test is found to be higher than the critical value, then we can reject our null hypothesis I and accept that there is a variation with regard to suffering of diseases across the type of duties performed by the workers. Contrary to that if it is revealed that the calculated value of the χ^2 test is smaller than the critical value of χ^2 then we can accept our null hypothesis I.

It is clear from the table 6 above that there are 510 numbers of environmental diseases and 292 numbers of non-environmental diseases suffered by the workers in the Digboi Refinery out of 802 total diseases constituting nearly 63.59 percent of the total environmental diseases and 36.41 percent of the total non-environmental diseases. From that, 240 numbers of environmental diseases constituting nearly 47.06 percent and 105 numbers of non-environmental diseases constituting nearly 52.94 percent are suffered by the workers of production related departments while 270 numbers of environmental diseases constituting nearly 35.96 percent and 187 numbers of non-environmental diseases constituting nearly 64.04 percent are suffered by the workers of general departments.

As it is observed from table 6 that the calculated value of χ^2 (χ^2 = 9.33, d.f. 1) of environmental and non-environmental diseases among the workers in production related departments is higher than the tabulated value of χ^2 at 5% level of significance. Thus we can conclude by rejecting the Null Hypothesis I that there is a variation with regard to suffering of diseases across the type of duties performed by the workers in Digboi Refinery.

It is clear from the tables that workers of production related departments are affected more by environmental diseases (69.57%) as compared to the workers of the general departments (59.08%) and contrary to that the workers of general departments are affected more by non-environmental diseases (40.92%) as compared to the workers of the production related departments (30.43%). It is also observed from the figure that the workers of general departments are affected more by environmental diseases (59.08%) than the non-environmental diseases (40.92%)

Hypothesis II

In order to find out the distribution of workers in various departments of Digboi Refinery according to their age, a series showing the reported cases of workers of various departments according to their age has been prepared. Table 7 shows the reported cases of workers of production related departments along with the age.

Table 7 shows the reported cases of workers of 15 production related departments along with the age groups varying from below 40 to above 50 years. On the other hand, Table 8 shows the reported cases of workers of 35 general departments along with the age groups starting from below 40 to above 50 years. It is obvious that with the increase in age, number of diseases among the workers also increases.

But it is depicted from Table 7 that the number of reported cases of the workers in the age group above 50 years is less. This is because the workers of this age group are not allowed to work in the production related departments as these departments are more risky and prone to higher level of pollution as compared to the general departments. Only those workers who are found to be healthier than others and with lesser number of diseases are allowed to work in those departments. Again, in the same age groups of the Table 8, the number of reported cases of the workers is less. This is because the workers belonging to the age group above 50 years usually prefer to take voluntary retirement before the actual date of retirement. Table 9 represents the combined value of Table 7 and Table 8.

It is clear from the table 9 that there are 488 reported cases of diseases in the Digboi Refinery out of 1495 total workers constituting nearly 32.64 percent of the total reported cases of diseases to the total workers. From that, 78 reported cases are from the below 40 age group out of 298 total workers constituting nearly 26.17 percent of the reported cases of diseases to the total workers and 274 reported cases are from 40 – 50 age group out of 699 total workers constituting nearly 39.20 percent of the reported cases of diseases to the total workers and the rest i.e. 136 reported cases are from above 50 age group out of 498 total workers constituting nearly 27.31 percent of the reported cases of diseases to the total workers.

Thus, we can conclude that there is a significantly higher reported case of disease among the workers of Digboi Refinery especially in the age group 40 – 50 years (39.20%) followed by the age group above 50 years (27.31%) and the age group below 40 years (26.17%).

In order to find out the pattern of diseases among the registered cases of diseases of the workers of Digboi Refinery, another comparison of the workers according to their age is carried out consequently. Table 10 shows the disease pattern of the workers of production related departments along with their age.

Table 11 shows the disease pattern of the workers of general departments of Digboi Refinery along with their age.

Table 10 shows the disease pattern of workers of 15 production related departments along with the age groups varying from below 40 to above 50 years. On the other hand, Table 11 shows the disease pattern of workers of 35 general departments along with the age groups starting from below 40 to above 50 years.

To test the significance of Null Hypothesis II i.e. there is no variation with regard to suffering of diseases across the age groups of the workers; χ^2-test has been carried out. For this purpose, a table is prepared by combining the data of Table 10 and 11

Table 12 represents the combined value of Table 10 and Table 11 to calculate the χ^2-test value. If the calculated value of χ^2-test is found to be higher than the critical value, then we can reject our null hypothesis II and accept that there is a variation with regard to suffering of diseases across the age groups of the workers. Contrary to that if it is revealed that the calculated value of the χ^2 test is smaller than the critical value of χ^2 than we can accept our null hypothesis II.

It is clear from the table 12 above that the workers belonging to the age group 40-50 years are more affected by environmental diseases comprising of 69.57% followed by the workers belonging to the age group above 50 and below 40 years that accounted for 57.38% and 56.67% respectively. So far as the non-environmental diseases are concerned, workers belonging to the age group below 40 years (43.33%) are more affected followed by the workers in the age group above 50 years (42.62%) and between the age group 40-50 years (30.43%).

As it is observed from table 12 that the calculated value of χ^2 (χ^2 = 13.21, d.f. 2) of age groups among the workers in Digboi Refinery is higher than the tabulated value of χ^2 at 5% level of significance. Thus we can conclude by rejecting the Null Hypothesis II that there is a variation with regard to suffering of diseases across the age groups of the workers in Digboi Refinery.

It is clear from the table that the workers of age group of 40-50 years are affected more by environmental diseases (69.57%) as compared to the workers of the age groups below 40 years (56.67%) and above 50 years (57.38%) and contrary to that the workers of age group below 40 years are affected more by non-environmental diseases (43.33%) as compared to the workers of the age groups above 50 years (42.62%) and between 40-50 years (30.43%).

Hypothesis III

In order to find out the mortality rate among the workers of Digboi Refinery, a comparison of the mortality rate of Digboi Refinery workers with that of Assam is carried out consequently. Table 3.13 shows the comparison among the Digboi Refinery workers' mortality rates with that of Assam's mortality rates for a period of five years i.e., from the year 2003 to 2007.

It is clear from the table 3.13 above that the rates of mortality among the Digboi Refinery workers was less during the first two years while Assam experienced a high mortality rates during those years. But this mortality rates has increased significantly over the years in Digboi Refinery while Assam's mortality rates has decreased slowly over the years. Thus we can conclude by rejecting the Null Hypothesis III and accepting the reality there is a variation between the mortality rate of Digboi Refinery workers and that of Assam.

Thus, from the above discussion it is evident that the health condition of the workers irrespective of their concerned departments and age groups are poor and there exists increase in mortality rate in Digboi Refinery, despite of the various steps taken by the authorities of Digboi Refinery to curb the pollution level and all around greenery in the Digboi town. This shows the rigorousness of the pollution that still exists in the refinery with its deteriorating impact on the health condition of the workers working in the refinery. These two concepts are of utmost concern for the authority as well as the workers working in the Digboi Refinery.

FINDINGS OF THE STUDY

It has been found from the study that the workers of the Digboi refinery are worstly affected by various health related complications related to the pollutants emitted from the refinery. From the study it has been found that the workers of Digboi refinery are exposed to hazardous effluents like benzene, naptha, oxides of sulphur, nitrogen and carbon, lead, hydrocarbons, petroleum wastes, bio sludge etc which has had resulted in severe health problems.

In order to find out the influence of the effluents on the health condition of the workers the present study considered the reported cases of diseases registered in the Indian Oil Corporation Ltd. (Assam Oil Division) Hospital, Digboi. This study revealed that the workers engaged in the production related departments are more affected than that of the workers in the general departments of Digboi Refinery. The reason revealed is that the workers in the production related departments are exposed to various chemicals and hazardous wastes which make them susceptible to severe diseases. It is also revealed from the study that among the workers of general departments the severity of diseases is considerably lower than that of the workers engaged in the production related departments.

For estimating the severity of consequences of effluents generated from the concerned refinery, a comparison between the workers engaged in production related departments and general departments was carried out on the basis of environmental and non-environmental disease pattern. The analysis of the study revealed that the workers engaged in the production related departments as well as the general are highly vulnerable to environmental diseases as compared to non-environmental diseases. Nevertheless, the sufferance of environmental diseases is found to be higher amongst the production department workers than that of the workers engaged in general departments. So far as the workers of the general departments are concerned the workers were found to be suffering more from environmental diseases than that of non-environmental diseases. The higher occurrence of environmental diseases among the general department workers than that of non-environmental diseases can be largely attributed to the fact that despite its various initiatives to tackle environmental deterioration Digboi refinery failed to reduce the harmful impact of effluents generated from it.

The age-wise comparison of the disease pattern revealed that the workers in the age group 40-50 years are more susceptible to various diseases related to the exposure to various chemicals and hazardous gases than that of the workers belonging to the age groups below 40 years and above 50 years. It is also found that the workers in the age group 40-50 years are more affected by environmental diseases than that of non-environmental diseases as a majority of the workers in this age group are engaged in production related departments. The workers of the age groups below 40 years and above 50 years are not allowed to work in the production related departments as these departments are more risky and prone to higher level of pollution as compared to the general departments. Only those workers who are found to be healthier than others and with lesser number of diseases are allowed to work in those departments. But in the general departments, the workers of the age group above 50 years usually prefer to take voluntary retirement before their actual date of retirement.

In order to find out the vulnerability of the workers to effluent related diseases and ultimately a comparison between the in-service mortality rate patterns of the workers of Digboi refinery with that of the mortality rate pattern of the Assam as a whole was made. It is revealed from the comparison analysis that the condition is very alarming. The study pointed out that the workers of Digboi refinery are experiencing a high level of in-service deaths from the diseases. This makes the situation all the more serious than the State of Assam which is experiencing a decline in the mortality rate on the one hand and on the contrary to that, in Digboi refinery the incidence of in-service deaths is showing an increasing trend.

Thus, from the findings of the study it has been clear that despite their notion and efforts to combat the environmental pollution within the refinery and reducing the occupational health hazards among the refinery workers which are the burning issues of today's world, there is a dearth in the efforts. This is a matter of great concern and the need of the hour for both the refinery authority as well as the government at all levels.

Any improvement in the efforts for enhancing environmental quality within the refinery workplace and outside and apprehending the occupational health condition of its workers is the pre-requisite for raising the notion of sustainable development. There is no confusion that if refinery has to continue their productions generation of effluents is obvious, but proper disposal and safe handling is most essential. Such notion will not only help in the reduction of occupational hazards and environmental degradation but also will enhance the production capacity of the refineries in a sustainable manner.

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Table 4: Production related departments showing the environmental and non-environmental diseases of the workers, Digboi Refinery, 2008

Production Departments	Environmental diseases		Non-environmental diseases	
	Number	**Percentage**	**Number**	**Percentage**
1	21	8.75	10	9.52
2	50	20.83	22	20.95
3	10	4.17	3	2.86
4	16	6.67	7	6.67
5	12	5	4	3.81
6	14	5.83	6	5.71
7	15	6.25	10	9.52
8	25	10.42	15	14.29
9	6	2.5	2	1.9
10	9	3.75	3	2.86
11	19	7.92	7	6.67
12	18	7.5	7	6.67
13	13	5.42	5	4.76
14	3	1.25	1	0.95
15	9	3.75	3	2.86
TOTAL	**240**	**100**	**105**	**100**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi

Table 5: General departments showing the environmental and non-environmental diseases of the workers, Digboi Refinery, 2008

General Departments	Environmental diseases		Non-environmental diseases	
	Number	**Percentage**	**Number**	**Percentage**
1	11	4.07	8	4.28
2	6	2.22	3	1.6
3	19	7.04	14	7.49
4	7	2.59	4	2.14
5	1	0.37	1	0.53
6	7	2.59	4	2.14
7	4	1.48	3	1.6
8	37	13.7	32	17.11
9	28	10.37	21	11.23
10	18	6.67	12	6.42
11	11	4.07	7	3.74
12	16	5.93	11	5.88
13	7	2.59	5	2.67
14	4	1.48	3	1.6
15	3	1.11	1	0.53
16	28	10.37	19	10.16
17	9	3.33	5	2.67
18	3	1.11	1	0.53
19	5	1.85	3	1.6
20	5	1.85	3	1.6
21	1	0.37	1	0.53
22	8	2.96	5	2.67
23	7	2.59	4	2.14
24	2	0.74	1	0.53
25	1	0.37	1	0.53
26	3	1.11	2	1.07
27	4	1.48	2	1.07
28	4	1.48	2	1.07
29	4	1.48	3	1.6
30	1	0.37	1	0.53
31	1	0.37	1	0.53
32	2	0.74	1	0.53
33	1	0.37	1	0.53
34	1	0.37	1	0.53
35	1	0.37	1	0.53
TOTAL	**270**	**100**	**187**	**100**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.

Table 6: Total number of environmental and non-environmental diseases among the workers according to the departments, Digboi Refinery, 2008

Departments	ED¥	Percentage	NEDΨ	Percentage	TOTAL
PRD[1]	240	69.57	105	30.43	345
GD[2]	270	59.08	187	40.92	457
TOTAL	**510**	**63.59**	**292**	**36.41**	**802**

χ^2 value = 9.33**, d.f 1

Source: Adapted from Table 3.4 and Table 3.5
ED¥ - Environmental Diseases, NEDΨ – Non-Environmental Diseases
** represented 5% level of significance

Table 7: Age wise distribution of reported cases of workers of production related departments, Digboi Refinery, 2008

	Age Groups			
PRD*	**Below 40**	**40 – 50**	**Above 50**	**Total**
1	3	12	2	17
2	13	24	3	40
3	1	8	0	9
4	0	3	5	8
5	2	3	4	9
6	7	4	1	12
7	1	12	2	15
8	2	13	5	20
9	0	3	1	4
10	0	4	2	6
11	2	8	4	14
12	2	7	4	13
13	1	7	1	9
14	0	3	0	3
15	3	4	0	7
TOTAL	**37**	**115**	**34**	**186**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.

*PRD- Production Related Departments

Table 8: Age wise distribution of reported cases of workers of general departments, Digboi Refinery, 2008

	Age Groups			
GD**	**Below 40**	**40 – 50**	**Above 50**	**TOTAL**
1	0	5	4	9
2	1	3	3	7
3	1	11	7	19
4	5	1	3	9
5	0	1	0	1
6	0	6	3	9
7	0	4	0	4
8	5	20	16	41
9	5	17	15	37
10	3	12	7	22
11	0	9	4	13
12	2	8	6	16
13	0	4	3	7
14	1	3	1	5
15	0	0	2	2
16	10	12	11	33
17	2	7	1	10
18	0	1	1	2
19	2	2	2	6
20	3	4	1	8
21	0	1	0	1
22	0	5	2	7
23	2	5	0	7
24	0	2	1	3
25	0	1	0	1
26	1	2	1	4
27	0	0	2	2
28	0	1	2	3
29	1	5	0	6
30	0	1	0	1
31	0	2	0	2
32	0	2	0	2
33	0	1	0	1
34	0	1	0	1
35	0	0	1	1
TOTAL	**44**	**159**	**99**	**302**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.
**GD: General Departments

Table 9: Total reported cases of diseases among the workers according to their age groups, Digboi Refinery, 2008

Departments	RCD[1]	TW[2]
Below 40 Years	78	298
40 – 50 Years	274	699
Above 50 Years	136	498
TOTAL	**488**	**1495**

Source: Adapted from Table 3.7 and Table 3.8
Notes: RCD[1] - Reported Cases of Diseases, TW[2] - Total Workers

Table 10: Age wise distribution of disease pattern of workers of production related departments, Digboi Refinery, 2008

	Below 40 Years		40 - 50 Years		Above50 Years		Total	
Departments	**ED***	**NED****	**ED***	**NED****	**ED***	**NED****	**ED***	**NED****
1	2	2	12	5	4	1	18	8
2	0	4	0	9	0	2	36	15
3	1	1	2	5	0	0	3	6
4	0	0	6	3	10	3	6	6
5	1	2	6	3	8	2	5	7
6	6	3	6	3	2	1	4	7
7	1	1	10	5	4	1	5	7
8	1	2	15	6	10	3	6	11
9	0	0	6	3	2	1	8	4
10	0	0	6	3	4	1	10	4
11	1	1	15	6	8	2	24	9
12	1	1	10	4	8	2	19	7
13	1	1	10	4	2	1	13	6
14	0	0	6	3	0	0	6	3
15	1	2	6	3	0	0	7	5
Total	**26**	**20**	**146**	**65**	**68**	**20**	**240**	**105**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.
Notes: ED* - Environmental Diseases, NED** – Non-Environmental Diseases

Table 11: Age wise distribution of disease pattern of workers of general departments, Digboi Refinery, 2008

	Below 40 Years		40 - 50 Years		Above 50 Years		Total	
Departments	**ED***	**NED****	**ED***	**NED****	**ED***	**NED****	**ED***	**NED****
1	0	0	5	1	4	4	9	5
2	1	1	3	1	3	3	7	5
3	1	1	10	4	7	7	18	12
4	3	2	1	1	3	3	7	6
5	0	0	1	1	0	0	1	1
6	0	0	6	2	3	3	9	5
7	0	0	4	1	0	0	4	1
8	3	2	14	8	17	18	34	28
9	3	2	15	6	16	17	34	25
10	1	1	11	5	7	8	19	14
11	0	0	8	3	4	4	12	7
12	0	0	8	3	6	6	14	9
13	0	0	4	1	3	3	7	4
14	1	1	2	1	1	1	4	3
15	5	0	0	0	2	2	7	2
16	1	3	11	5	12	13	24	21
17	0	1	6	2	1	1	7	4
18	1	0	1	1	1	1	3	2
19	3	1	2	1	2	2	7	4
20	0	2	4	1	1	1	5	4
21	0	0	1	1	0	0	1	1
22	0	0	4	1	3	3	7	4
23	0	0	4	1	0	0	4	1
24	0	0	2	1	1	1	3	2
25	1	0	1	1	0	0	2	1
26	0	1	2	1	1	1	3	3
27	0	0	0	0	2	2	2	2
28	1	0	1	1	2	2	4	3
29	0	1	4	1	0	0	4	2
30	0	0	1	1	0	0	1	1
31	0	0	2	1	0	0	2	1
32	0	0	2	1	0	0	2	1
33	0	0	1	1	0	0	1	1
34	0	0	1	1	0	0	1	1
35	0	0	0	0	1	1	1	1
Total	**25**	**19**	**142**	**61**	**103**	**107**	**270**	**187**

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.
ED* - Environmental Diseases, NED** – Non-Environmental Diseases

Table 12: Pattern of diseases among the workers according to the age groups, Digboi Refinery, 2008

Age Groups	ED¥	Percentage (%)	NEDΨ	Percentage (%)	Total
Below 40	51	56.67	39	43.33	90
40-50	288	69.57	126	30.43	414
Above 50	171	57.38	127	42.62	298
Total	**510**	**63.59**	**292**	**36.41**	**802**

χ^2 –VALUE= 13.21**, d.f.=2

Source: Adapted from Table 3.9 and Table 3.10
ED¥ - Environmental Diseases, NEDΨ – Non-Environmental Diseases
** represented 5% level of significance

Table 13: Comparison of mortality rates of the Digboi Refinery workers with that of Assam (2003 – 07) (In numbers and percentages)

Year	Mortality rate			
	Digboi refinery			Assam
	No. of In-Service Death	Total Employees	Rate	Rate
2003	9	2262	3.97%	9.10%
2004	7	2142	3.26%	8.80%
2005	16	2176	7.35%	8.70%
2006	14	2385	7.13%	8.70%
2007	18	2413	7.46%	8.60%

Source: Occupational Health Centre, Indian Oil Corporation Limited (Assam Oil Division), Digboi.

ENHANCING THE UNDERGRADUATE ACCOUNTING CURRICULUM TO AUGMENT CORE COMPETENCIES

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ABSTRACT

A review of recent literature reveals concerns regarding the under-representation of certain skill sets in the four year accounting curriculum. Following the AICPA's admonition to constantly monitor existing course offerings for content and relevance, the authors designed a senior level accounting elective around AICPA core competencies and the suggestions for accounting curriculum improvement contained in the literature. Course modules, content, and modes of delivery are explained.

INTRODUCTION

With the ever-changing economic environment – from the years of double-digit portfolio returns to the current confusion caused by massive bankruptcies and economic chaos – academic accountants have tried to ensure that undergraduate accounting curricula not only teaches standard accounting practices but also covers the contemporary issues that are surfacing in the accounting profession. Most academics agree on the basics. Guided by the core competencies proffered by the American Institute of Certified Public Accountants (AICPA) and regional and professional accreditation standards, quality undergraduate programs have certain courses and topic coverage in common: financial accounting, managerial accounting, tax accounting, auditing, and law. But contemporary issues and changing demands in the accounting profession have caused accounting professors to analyze and re-analyze their course offerings and content and to question if and how they can possibly address all the accounting issues and economic factors of which emerging accountants need to be aware.

An EBSCO host search for 2000-2009 peer-reviewed full-text journal articles on accounting curricula concerns revealed 66 articles that discussed how to meet AICPA core competencies while addressing contemporary accounting issues. This paper will a) briefly address the AICPA core competencies, b) describe selected concerns raised in the 66 articles, and c) explain how a south-central PA private liberal arts college addresses these concerns in its accounting program.

AICPA Core Competencies

According to the AICPA website, The AICPA Core Competency Framework for Entry into the Accounting Profession "lays the foundation for progressive curriculum change." [1] The Framework includes three distinct areas of competency: functional, personal, and broad business perspective competencies.

Functional Competency

Decision Modeling
Risk Analysis
Measurement
Reporting
Research

Personal Competency

Professional Demeanor
Problem Solving / Decision Making
Interaction
Leadership
Communication
Project Management

Broad Business Perspective Competency

Strategic/Critical Thinking
Industry/Sector Perspectives
International/Global Perspectives
Legal/Regulatory Perspectives
Resource Management
Marketing/Client Focus

Each competency area also encourages the leveraging of technology to develop and enhance that area of competency. AICPA President Barry Melancon stated, "… I urge all educators to embrace the future promise of the profession, exercise their powerful influence and utilize the Framework to critically evaluate curricula and teaching methods in place to effectively develop incoming professionals as valued

[1] Endorsement by AICPA Board of Directors. www.aicpa.org/edu/boardof.htm

business advisors."[2] Based on this encouragement to continually evaluate accounting course offerings, various authors have made suggestions on how accounting undergraduate education can be improved.

Accounting Curricula Concerns Raised in Recent Literature

An analysis of 66 articles published from Jan 2000 to May 2009 on issues pertaining to accounting curricula revealed concerns about topics and skills that should be addressed in the undergraduate accounting programs but that are either ignored or underrepresented in coverage. The following issues were of greatest concern. A listing of selected articles by topic is included in Appendix I.

International Financial Reporting Standards (IFRS):_ The broad business perspective aspect of the AICPA core competencies encourages accounting students to acquire an international/global perspective on their profession. With the latest SEC discussions of the pros and cons of allowing or requiring domestic companies to use IFRS in financial reporting, it has become obvious that accounting graduates need to understand both the generally accepted accounting principles (GAAP) and the IFRS methods of accounting for standard business transactions. Whereas at one time it was considered acceptable to offer one course, possibly an elective course, on international accounting, it now becomes important for GAAP and IFRS to be taught in tandem. One recent article "Incorporating IFRS Into the Accounting Curriculum" illustrates why integrating IFRS into the accounting curriculum is essential and provides references to numerous print and online teaching resources.

Fraud and Forensic Accounting: The risk analysis component of the AICPA's functional competency requirement implies that accounting students must consider the impact of fraud on the accuracy and quality of reported financial transactions. Unfortunately, the financial press is replete with examples of fraudulent financial reporting and cases of fraud perpetrated by financial executives. Additionally, more fraud related questions are appearing on the Uniform CPA exam. Many accounting educators believe that undergraduate accounting students need to become much more aware of and adept at forensic accounting and fraud auditing skills. For students to be adequately prepared for careers in accounting, they must be educated in the basic elements of fraud prevention, detection, and investigation. The Association of Certified Fraud Examiners (ACFE) supports this need and provides print and film resources for academic accountants to use in their classrooms as well as financial assistance for accounting faculty to become certified fraud examiners.

Ethics: The AICPA's personal competency requirement incorporates problem solving and decision making as well as leadership skills. As many decisions hinge on ethical considerations and exemplary leadership incorporates the role modeling of ethical conduct, it is not surprising that educators feel a greater emphasis should be placed on ethics education in accounting. Most states now require CPAs to take continuing professional education credits in ethics for license renewal, so it is only natural that professors feel ethics education now needs to be stressed in undergraduate accounting programs. As business becomes more global, incorporating differing values and cultural mores, students with a strong moral compass will be more likely to avoid the pitfalls of ethical violations, a core competency emphasized in the broad business perspectives area of competency.

Leadership and Personal Skills: Beyond the need to implement ethical decisions is the need for accountants to provide leadership to the companies they serve, including their clients' boards of directors. Whether the accountant is an inside professional – CFO, Controller, or Director of Internal Audit – or an outside professional employed by a CPA firm, leadership skills encourage sound decision making and solidify positive working relationships. The AICPA emphasizes these skills as attributes of personal competency. In the article "Integrating Leadership Experiences into the Accounting Curriculum" listed in Appendix I the authors describe and map the components of a team-based leadership assignment they have successfully implemented in their courses. Other authors identify time management skills, understanding of organizational culture, job search and interviewing skills, and teamwork as essential to the career success of accountants. Service learning is also advocated.

Research, Information Literacy, and Communication: Several authors emphasized the need for accounting students to be research literate. Although it was once thought that research skills were more appropriately developed at the graduate level, changes in the profession and changes in online research technology now suggest that information literacy and research skills can and should be

[2] Ibid.

developed within the undergraduate curriculum. Professors also suggest that the more relevant the information literacy exercises are to the student's major, the more the student will value the course. Inherent in research and information literacy is the conveyance of information gleaned in either a written or oral format; consequently, oral and written communication skills become essential. The act of conducting accounting research and reporting it to others addresses all three of the AICPA core competencies: functional, personal, and broad business perspectives.

One Sample Curriculum

Other topics were also mentioned in the 66 articles referred to above, but the fore-mentioned topics were the most prevalent. Recognizing the importance of each of these topical areas begs the question: how can we possibly include all these topics in our four-year undergraduate accounting programs? One solution is to offer a course that introduces students to several of these topics in modular form. What follows is the approach taken by an ACBSP-accredited private liberal arts college in south-central Pennsylvania.

The accounting core curriculum at this institution requires one semester of both financial accounting and managerial accounting, followed by three semesters of intermediate financial accounting. Students then take auditing and advanced accounting in addition to two semesters of law and one semester of federal taxation. Each accounting major is then required to select a minimum of two accounting electives from the following courses: advanced managerial accounting, advanced federal taxation, financial fraud, international accounting, and special topics.

Each of the accounting electives does a fair job of incorporating the AICPA core competencies, but three of the elective courses also do a particularly good job of addressing the contemporary accounting concerns raised by the authors discussed above. The 3-unit International Accounting course addresses IFRS and international accounting issues beyond those addressed in tandem with GAAP accounting in the required financial accounting courses.

The 3-unit Introduction to Financial Fraud course teaches students about the behavioral as well as the financial aspects of fraud prevention, detection, and investigation. The unique structure of the Special Topics course is what we would like to emphasize here: the modular design and the incorporation of contemporary curricular concerns such as ethics, leadership and personal skills, research, information literacy, and communication into a senior level accounting course.

Special Topics

Special Topics is a unique course offered within the accounting curriculum. Besides covering various accounting subjects not covered in other accounting classes (e.g., accounting for governmental units and not-for-profit firms, bankruptcy, and estates and trusts, etc.), students have the opportunity to explore other contemporary accounting topics while developing some of the AICPA core competencies illustrated above through four integrated modules. These four modules and their relation to the competencies will be discussed in turn.

Ethics and Accounting Fraud: To encourage students to conduct research on real firms and to enhance the students' understanding of fraudulent financial reporting, the course requires a series of research and reporting assignments. Based on one of the required texts, *Business Fairy Tales: Grim Realities of Fictitious Financial Reporting* (Jackson 2006), each student is assigned one of the companies discussed in the book (e.g., Sensormatic, Rite Aid, etc.) and asked to prepare a classroom presentation. For each company, the book provides background information about the fictitious reporting schemes the company engaged in, as well as the warning signals that could have been found within the financial statements or footnotes. To supplement this information, students are asked to conduct online research to find financial statements for the period of time that their assigned company engaged in the fraudulent reporting. The purpose of including this exercise is two-fold: first, it provides them with experience in researching financial statements; and second, it allows them to have a concrete example for themselves and the rest of the class for presenting both the fraud scheme and the related warning signals.

This task enhances various skills with respect to many of the AICPA competencies. First, it enhances their understanding of fraud and forensic accounting by exposing them to many different fictitious reporting schemes. Second, students are given the opportunity to learn how to spot such schemes as they occur, which is invaluable in forensic accounting and fraud auditing. Third, students have the opportunity to develop skills in researching financial statements online and retrieving company-specific as well as industry-specific data. Lastly, students develop communication skills by explaining and presenting their findings to the class.

Consequently, this one module addresses all three AICPA areas of competency: functional, personal, and broad business perspectives.

Contemporary Issues-Lean Accounting: One purpose behind the special topics course is for students to learn about contemporary accounting subjects they might not necessarily read about in a textbook. Lean accounting is a perfect example. In a nutshell, lean accounting borrows ideas from lean manufacturing but applies the ideas to a company's accounting department. Application of lean principles to accounting is a relatively new concept but has been met with some degree of success. To enhance the students' understanding of this topic, a second text is required for the course: *Real Numbers: Management Accounting in a Lean Organization* (Cunningham and Fiume 2003). The students work in pairs and each pair is assigned a different theme of lean accounting covered in the book. Each pair presents the assigned theme to the class and leads a class discussion on the strengths and weaknesses of the lean accounting concept and the complexity of implementing a lean system. In one particular semester, a nationally-known expert on lean accounting came to speak to the class about putting lean accounting into practice. The presentation was well received and generated a lot of questions from the students.

With respect to the AICPA competencies, students have the opportunity to research an accounting topic they have not been exposed to before. In addition, they are encouraged to engage in critical thinking with respect to what they have learned. For example, much of the discussion within the class goes beyond the book, such as under which conditions lean accounting might not be practical, as well as potential problems with its application that the authors of the book may not have addressed. In addition, by working and presenting in groups of two, teamwork competencies and effective communication skills become essential. Again, all three AICPA endorsed competencies are addressed along with the admonition to faculty to critically evaluate and subsequently broaden and deepen course content as changes in the profession develop.

Effective Business Communication: AICPA personal competencies emphasize the importance of communication skills, both written and oral. To assist students in developing these skills so they are ready to communicate effectively once they enter the business world, the course includes not only numerous graded written assignments but also a guest lecturer from the school's English department. During one particular visit the head of the college's writing program engaged the class in both lecture and experiential exercises on writing business reports, memos, and emails. The presentation also addressed proper business tone, clarity and succinctness, the importance of proper usage, and ways to appropriately deliver disappointing news. Hearing this information from someone from the English department adds an element of cross-curricular education as well as an enhanced note of credibility.

Accounting Research: The final module in the class is an accounting research project. Students are given the freedom to choose a contemporary topic in accounting that they find interesting.[3] Once they select a topic, they research accounting articles in academic journals and/or trade publications. By accessing databases of articles, students learn to discern the relevancy, strengths, and weaknesses of each source. Finally, they prepare both a paper and a presentation to summarize the topic, including an analysis of the articles they have read and a discussion of why this topic is important to the accounting profession.

Similar to the other presentation tasks, the accounting research presentation requires students to hone their communication skills. Additionally, students need to effectively apply written communication skills. But what makes this module stand out the most is the opportunity each student has to research topics they find personally interesting. Furthermore, they apply critical thinking skills and develop their information literacy skills by providing their own thoughts and opinions on the selected topics and articles. Finally, they have to apply time management skills. Unlike the other modules which are introduced sequentially throughout the course, the final paper and presentation (due at the end of the semester) require significant planning and preparation outside of class over a period of approximately half the semester. In effect, the students need to work on their paper and presentation during the remainder of the semester while remaining current with the other topics being covered during the course lectures. As a result of the requirements of this research module, once again all three AICPA core competency areas are addressed.

Conclusions

With the ever-expanding breadth of topics relevant to accounting, it seems almost impossible to fully

[3] Topics chosen by students included auditor independence, fair-value accounting, internal controls, and opportunities for accounting firms during economic downturns.

prepare graduating accounting majors with the complete array of skills needed in the profession. However, with the implementation of modular topics such as those discussed above, accounting students are able to enhance their ethical understanding, leadership and personal skills, and their research, information literacy, and communication skills as suggested by the authors of recent literature addressing accounting curricula concerns. Additionally, professors are able to modify course content and topics for relevance and contemporary application while still holding to AICPA core competencies. Augmented by their study of traditional accounting courses, the students who complete the Special Topics course are well prepared to enter the accounting profession.

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AN APPRAISAL AND COMPENSATION FRAMEWORK FOR ASSESSING THE SHORT- AND LONG-TERM IMPACT ON GAS RIGHTS LEASING IN THE MARCELLUS ZONE: A RESEARCH IN PROGRESS

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ABSTRACT

This paper is a research in progress. The twofold purpose of this research is to determine, from a land surface owner's point of view, (a) the short-and long-term surface land property value implications of gas-related activities such as drilling, production, transportation, and transmission of natural gas off property, right-of-ways, and their potential environmental contamination (Baen, 1996); and (b) past and current appraisal and compensation gas rights leasing practices in the Marcellus Zone as well as other Shale locations that utilize horizontal drilling and hydrofacing technologies such as the *Barnett Shale* of Texas, *Fayettville Shale* of north central Arkansas, and the *Haynesville Shale* of northwestern Louisiana. The resultant framework is aimed at helping landowners, potential leasors, lease holders, exploration entities, planners, real estate professionals, government agencies, and other concerned parties gain a better understanding of the short and long term impacts of gas-related activities on property valuation and at informing and influencing gas rights leasing practice.

INTRODUCTION

Underneath the Commonwealth of Pennsylvania lies a vein of hard shale known as the Marcellus formation. This hard rock may contain as much as 500 Trillion Cubic Feet of natural gas (Engelder, Geology.com/artivcles/Marcellus-shale.shtml). New methods of extracting the gas from this formation were developed and employed in Texas in the Barnett Play and in Hanyesville in Louisiana. These methods, which involve horizontal drilling and hydraulic fracturing to release the gas within, have proven to be the key to tapping this massive natural gas deposit in a manner that is economically viable. The proximity of the Marcellus formation to the large urban centers of the Mid-Atlantic and the Northeastern states provides distinct advantages over gas that must be transmitted thousands of miles from the southern Gulf states.

In the haste of seeking and signing lease, bonus and royalty agreements, the long-term impact of gas exploration has been overlooked. Serious surface estate valuation issues, including the potential devaluing issues that are will remain post the initial exploration of gas on a particular property, must be taken into consideration before leasing and exploration operations commence.

PURPOSE OF RESEARCH

The purpose of this research is to provide landholders, potential leasors, lease holders, and exploration entities an appraisal and compensation framework for assessing the short- and long-term impact of gas-related surface damages and other devaluing considerations on property values post drilling. We believe that a framework that helps the various stakeholders consider a wide range of factors and issues for appropriate reimbursement and compensation is needed prior to entering into any agreement on their land to acquire, develop and/or lease mineral holding.

PRIOR RESEARCH

Research in this area is limited. Most of the research has been conducted using the experience of Texas, Louisiana and Oklahoma gas and oil fields. John Baen, the leading researcher in this area, has established that most oil and gas activities have had serious long-term value implications on property valuations. In Baen's (1996) article dealing with "Oil and Gas Mineral Rights in Land Appraisals", he puts a value on surface and subsurface issues surrounding drilling, primarily in the Barnett Shale play in Texas and other Gulf Coast areas. Research was also conducted by Williams (1991), who looked at oil and gas activities and their relationship to the salability of property with oil and gas leases in place. Recently, Newell and Eves (2007) wrote about "The Role of US farmland in Real Estate Portfolios". Since so little has been written on this subject, and almost no research has been conducted on the long-term issues surrounding the development of the Marcellus in Pennsylvania the authors has had to look at issues surrounding contaminated real estate and research conducted by Bruce Weber (1997) on property valuations.

SUBSURFACE COMPENSATION

For the most part, compensation of land owners for their mineral rights in Pennsylvania has followed the same pattern that is prevalent elsewhere in the US: upfront bonus money and a royalty agreement. The upfront bonus compensation has consisted of cone time payments ranging from $5/acre to over $3,000/acre. Royalty agreements have ranged from 12 ½% (the PA State minimum) to over 20%, with the average being between 15 and 20% on wellhead production. Early on in this play, landholders were presented with extremely low offers, $5 to $50 per acre (Lease info denoted). When real exploration activities took off in early 2008 and when gas prices rose to over $16/dekatherm, offers have exceeded $3,000 per acre. But even today as gas prices flirt with $3/decatherm exploitive "Landmen" have been offering $0 bonus money and 12 ½% royalty agreements. This is a clear case of Sellers (of mineral Rights) beware! On the other end, more reputable entities have taken a different approach to "renting" mineral rights. In one recent transaction, a nationally known entity offered over $350 per acre in the first year and additional payments of $300 per acre over the next four years as the play is proven to be economically viable. Additionally, they have offered a 20% royalty on wellhead production.

SURFACE COMPENSATION

Whether or not a landowner has ownership of the subsurface rights, surface owners need to be compensated for damage caused by surface operations to get at subsurface minerals. While the advancements in drilling technology has substantially reduced the necessity to drill a vertical well, spaced out over 40 acre parcels, well pad placement is of extreme importance to surface rights holders. The advent of horizontal drilling techniques will allow for a substantial reduction in the area of land required for drilling. For example on a 360 acre parcel of land, approximately ½ square mile of land, horizontal drilling will cause long-term surface disruption of over 30 acres, while horizontal drilling will disrupt less than 5.5 acres of land, or 2% using modern drilling techniques. Since horizontal drilling is the only economically viable method in the Marcellus area, it is anticipated that land disruption due to vertical drilling will be minimized (Baen, 2004). However, it must be noted that surface disruption will still occur in the form of access roads, barriers constructed around well sites and associated infrastructure, pipeline construction and electrical line installation.

TABLE 1

Gas-Related Operations Affecting Surface Value

- Access Roads
- Electrical Lines
- Pipeline Construction
- Barriers / Fencing around well head
- Compression Tanks – Physical and Noise Potential
- Tanks – Separation, drying tanks
- Agricultural Income – Other hay, hunting, etc.
- Potential or Perceived Stigmas
  - Pollution, physical and aesthetic
  - Well Water Contamination
  - Air and Noise Pollution
  - Changes in Physical Features – Aesthetes
- Other Long term issues:
  - Abandonment of site
  - Storage of gas from other sites
  - Storage of waste water from fracing

Current compensation practices being offered in the Marcellus play include paying for the use of land to drill and the disruption of surface rights. Since most surface estate holders are also subsurface estate holders, exploration companies negotiate the drilling of any wells up front and it is included in the lease for the mineral rights. Additional compensation is offered to surface estate holders are as shown in the table below.

TABLE 2
Additional Compensation
to Surface Estate Holders

LIST ITEMS AND PAYMENT RANGE

Pad Site:	$5,000 to $25,000
Well on Site:	Up to an additional 1% of royalty
Gathering Line Right of Way Easement:	$10 to $25 per linear foot.
Transmission Line Right of Way:	$10 to $25 per linear foot.
Use of Water for Fracing:	$ Gallon or Flat Fee

Once a well is proven, subsurface infrastructure like gathering and transmission lines need to be installed to get gas production to the market. This again is a major motivating factor on the part of the estate holder since they do not get paid their royalty until the gas is sold in the market.

FACTORS FOR CONSIDERATION

The long term devaluing factors to be considered post the development and drilling of well sites in the Marcellus include the following:

Road Access – Exploration companies are used to dealing with drilling in Texas and other southern states. In the Marcellus zone, frost and cold weather are facts of life. Access roads must be built to a much higher standard than the industry norm. In order to handle heavy loads, yet limited traffic, road bases must be constructed below the frost line which is between 36 and 44 inches, dependent upon the location. This makes these roads much more permanent than the industry norm.

Drilling site equipment – The quality of the gas being extracted in Pennsylvania varies greatly. Therefore, the treatment of that gas in terms of the removal of other components vary widely. Gas in Western Pennsylvania, for example, is considered "wet." This requires tanks that separate other gases out from the methane prior to transmission to the market. These tanks remain on the site for the life of the economic viability of the well. In some cases where the pressure from the well is low, compressor units are required to transmit the gas into the pipelines. These require electrical service to the site accompanied by the installation of compressor housing. Additionally, as with any electrical compressor, a low level of noise will be present during operation. These facilities are normally enclosed by fencing or other barriers, which, depending on its location, could be a serious detriment to the aesthetics of a parcel of land.

Reduction in Income – Rural economies are driven by farming. The removal of a 5 acre parcel from farm production must be taken into consideration. The income derived from farming activity on the parcel must be factored into any negotiation. Additional revenue is generated from rending surface lands to hunters which may also be restricted due to dangers from stray bullets. Such and other sources of income must be taken into consideration.

Pollution and Environmental Damage –Great amounts of attention has been given to the limited number of environmental incidents in the Marcellus Play. In December of 2008, a well blew up in Susquehanna County, Pennsylvania due to gas infiltration into a domestic water supply. Additionally, other cases of wells being contaminated have been noted throughout Pennsylvania. The reality is that while the dangers of environmental damage are limited, which is due in great part to the permitting, licensing and monitoring functions established by the Commonwealth of Pennsylvania and the various water quality agencies, it is still a distinct possibility and hence, must be taken into consideration. The greater question is what happens 10 years from now after a well is abandoned? Who is responsible? Who pays from remediation? Leases must take this into consideration. When damages occur, compensation and responsibility must be denoted and a long term remediation plan must be developed.

CONCLUSION

The development of the Marcellus Play in Pennsylvania and New York, while having immense possibilities of altering the economic landscape of this area, will also have long-term impacts on the parcels of land that are being developed today. Sadly, however, few landowners, leasors, planners and real estate professionals have a comprehensive and substantive understanding of the potential impact gas-related activities will have on property values. The post development reality of diminished property values and the implication to landholders in terms of income, usage and environmental factors must be considered in any valuation. To help remedy this situation, this research in progress presented factors and issues that are vital to a much needed appraisal and compensation framework for assessing the short- and long-term impact on gas rights leasing in the Marcellus Zone.

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XBRL: WHAT FUTURE BUSINESS LEADERS NEED TO KNOW

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ABSTRACT

All businesses must prepare reports for their current or potential stakeholders.   The eXtensible Business Reporting Language or XBRL is now a required reporting language for the 500 largest companies for Securities and Exchange Commission (SEC) filings, and for Federal Deposit Insurance Corporation (FDIC) reports.   In addition to required reporting, XBRL is likely to become the lingua franca of business-to-business transactions, for example how financial information is shared among trading partners. This paper discusses XBRL, focusing on what professors, students, and future leaders in business, economics, and technology need to know about XBRL. It also contains suggestions for how to integrate knowledge about XBRL in business curriculum.

INTRODUCTION

All businesses must prepare reports for their current or potential stakeholders.   The eXtensible Business Reporting Language or XBRL is now a required reporting language for the 500 largest companies for Securities and Exchange Commission (SEC) filings, and for Federal Deposit Insurance Corporation (FDIC) reports.   In addition to required reporting, XBRL is likely to become the *lingua franca* of business-to-business transactions, for example how financial information is shared among trading partners.

This paper discusses XBRL, focusing on what professors, students, and future leaders in business, economics, and technology need to know about XBRL. It also contains suggestions for how to integrate knowledge about XBRL in business curriculum.

WHAT IS XBRL?

What XBRL is not

The eXtensible Business Reporting Language or XBRL is *not* a computer program. It is not a programming language.

What XBRL is

XBRL is an interactive computer reporting language. It is based on XML (eXtensible Markup Language), which is itself a subset of SMGL (Standard General Markup Language). XML uses standard tags to identify the meaning, context and structure of data, much like HTML has standard tags to markup a document so it can be published and viewed in a web browser. XBRL has standard sets of definitions, called taxonomies, which enable the automatic extraction and exchange of business data. Reports in XBRL format may be processed by software for viewing and analysis.

While HTML provides a set of pre-defined tags which describe how content appears in a Web-browser (e.g., the font and color of text), XML provides tags that give information on meaning and content in the business and accounting environment.

Example of XBRL Tags

XBRL may be easier to understand by examining an illustration of HTML tags. As an example, the word "NABET" can be presented in bold and red. Figure 1 shows how the word appears in a web browser. Figure 2 shows the HTML code that makes the word appear bold and red, including the code "<strong>" and" <font color=#ff0000>."

In an additional example, Figure 3 demonstrates the asset portion of the balance sheet for FedEx's latest 10K available at http://www.sec.gov/Archives/edgar/data/1048911/000095012309044076/c90231e10vq.htm.

The information presented on FedEx's balance sheet was generated through a series of processes illustrated in Figure 4. Figure 4 provides an overview of the steps involved in creating and publishing an XBRL filing.

The first step is the creation of an instant document from the company's financial reports. An instant document is a document containing marked up data known as tagged data for a particular business. Instant documents can be created in various ways. The most elementary way would be to compose the instant document by tagging data via the markup process by writing the appropriate code in a word processing program such as Notepad. However, a more efficient and effective method to create an instant document would be to utilize one of the many XBRL software programs available to tag data and create the code. Phillips, Bahmanziari, and Colvard (2008) analyzed submissions to the SEC from various companies in regard to the XBRL software programs used to create instant documents. Some of the more popular tagging software programs listed in order of popularity were Dragon Tag, EDGAR Online I-Metrics, CoreFiling Ltd, Fujitsu Interstage XWand, and Tagezee.

An instant document contains two unique but interacting sections of information. First is the document context section, which is followed by the item/business fact section. The document context section relates to how information is reported with regard to the appropriate XBRL taxonomy.

According to the XBRL.US (2009):

a taxonomy is a description and classification system for concepts; an XBRL taxonomy is a particular way to describe and classify reporting concepts. XBRL represents each concept as an element with a name. XBRL taxonomies are electronic, machine-readable "dictionaries" consisting of many linked files containing thousands of elements linked to each other. The taxonomy contains human-readable labels such as financial statement line item captions, definitions, and applicable authoritative references for each element.

XBRL taxonomies are classified into several specific and distinct areas. In our example, FedEx Corporation would use the XBRL US GAAP taxonomy. The US GAAP taxonomy provides details of various financial statement elements and categories.

Namespace declarations make up the first major component of the document context section. According to White (2008) “namespaces are unique identifiers that are used by XML-enabled software to identify where elements come from” (p.9). An excerpt of the document context section of FedEx Corporation instant document will help to provide some clarity in how items are related as illustrated in figure 5.

For example, the following line of code: xmlns:us-gaap=http://xbrl.us/us-gaap/2009-01-31; starts with xmlns which is a key word in XML for declaring a namespace. Following the xmlns is the namespace, a link to the xbrl.us website which hosts the US-GAAP core taxonomy. Located within the taxonomy are the definitions of the US-GAAP elements. These taxonomies enable the automatic extraction and exchange of business data through a standard set of definitions based on the United States Generally Accepted Accounting Principles. Figure 6 shows the US-GAAP core taxonomy for current assets available at http://xbrl.us/taxonomies/Pages/US-GAAP2009.aspx# located under the “Commercial and Industrial Taxonomy.”

The second main area of an instant document, the item/business fact section, determines how data are tagged and disseminated. Continuing with the example, the items shown in Figure 7 are from the Item/business fact section of the FedEx Corporation instant document (see http://www.sec.gov/Archives/edgar/data/1048911/000095012309044076/fdx-20090831.xml) . The total current assets for August, 2009, and May 31, 2009, were $6,388 million and $7,116 million, respectively.

In the related XBRL document, the code from above (Figure 7) will render the following output for total current assets.

After the creation of the instant document, the next step in the process is to use a software application to test how the instant document will appear as an XBRL web filing. Once the instant document contains the appropriate tagged data, the document should be validated for completeness and accuracy. Popular software used in this step is Dragon View. Dragon View takes the instant document and incorporates the XBRL Taxonomy Schema database to render an XBRL compatible document. The free interactive financial reporting program on the SEC website has the capacity to test how the interactive data will appear on the SEC website. The financial reporting program and other pertinent information is available at http://www.sec.gov/spotlight/xbrl/viewers.shtml.

After testing and validating the instant document, the final step in the process is to upload the instant document to the SEC database. The SEC website will take the instant document and render an XBRL compatible document capable of being viewed through a web browser. In the example, FedEx Corporation would then upload their document onto the SEC website. After completion of the above steps, the document is hosted on the SEC website and is available for viewing via web browsers from interested users which compose the final two processes in Figure 4.

WHY XBRL IS IMPORTANT

XBRL is important from the perspective of law, finance, management, financial analysis, and auditing.

Legal Perspective

The foundation for investing is the information that investors rely upon. Reliability is what allows an investor (whether working for her or on behalf of others) to make informed decisions.

Financial data historically have been produced for analysts and investors with some level of knowledge of the industry, some sophistication. Now, however, financial data, once in annual reports or buried in a detailed prospectus will be available to all in XBRL format (see exhibit 9). The potential for misunderstanding and misinterpreting the data may well increase, and the potential harm to prospective investors may well increase exponentially.

This potential increases exposure on corporate directors and officers (Razin, 2009). Perhaps to mitigate this potential exposure, the SEC has been somewhat kind to companies in the implementation of XBRL by providing a phase in period. The largest firms (with a global market cap over US$5 billion) began the adoption process in summer 2009, and all companies reporting through the SEC must conclude the conversion by the end of 2011.

The SEC has also provided some protections for companies from the liability associated with this new method of providing data and limited a company's liability for the first 24 months after beginning the use of XBRL, but ending for all on October 31, 2014 (Rule 406T). Further, the officer certification rules have also been limited for this same 24-month time period. This liability limitation is as follows:

Officer certification requirements under Rules 13a-14 and under 15d-14 of the Exchange Act for XBRL filings.

Liability provisions of Sections 11 and 12 of the Securities Act, Section 18 of the Exchange Act and Section 34(b) of the Investment Company Act deem that XRBL filings are "not-filed."

Any errors that are discovered in the filings, made in good faith and promptly corrected will produce no liability for officers, directors or the company.

The key to any limitation on liability is to "promptly" report the error and correct it. The rules do provide a requirement that the error was made in "good faith" and does define prompt (Rule 11, Regulation S-T).

The question: what is prompt? The regulation provides a "safe-harbor" for companies based upon the assumption the correction was prompt. This safe harbor requires the correction be made within 24 hours or by 9:30am the next business day, whichever is later (Rule 11, Regulation S-T). Otherwise, the act also provides a definition for "promptly" that based upon its vagueness should probably be avoided "as soon as reasonably practicable under the facts and circumstances at the time."

However, failure to tag data by a company would produce potential liability, and the SEC could bring an action against the filer under 13(a) of the Exchange Act, despite a good faith effort, where the filer does not promptly correct the error. However, the SEC would not be able to bring an action under Sections 17(a)(2) and (3) against a filer if along with a Securities Act registration statement the filer submits an interactive data file, if the data fail to comply with a good faith effort but the filer acted negligently (RIN 3235-AJ71, p. 86).

As one author puts it, "At a time when investor confidence is at historic lows, what company wants to issue a press release that begins with 'oops' and face even the appearance or (sic) of incompetence, negligence or worse?" (Razin, 2009). In reviewing the regulation, the authors did not find a requirement that a company must notify the public of the change to the previous data filed after promptly correcting them. However, in the sense of full disclosure and the potential liability for faulty information, it seems that a prudent company would nevertheless notify the public of the corrections.

While the SEC is not requiring filers to involve third parties, such as auditors or consultants, in the creation of their interactive data filings, nonetheless, it seems that given the issue of investor confidence, as well as the potential liability for officers, directors and the company, the auditor or consultant would be almost essential unless there is in-house expertise on such things.

The key for managers, officers and directors is "good faith" in this transition. What should happen is three-fold: ensure internal or external XBRL experts are available to help with preparing and tagging the data; ensure that a protocol is in place so that due diligence is performed before the data leave the possession of the company and are "filed;" and, finally have a protocol for "correcting" any data that need it, preferably within the "safe-harbor" time frame.

Financial Perspective

Organizations, wanting to extract capital from lenders and investors, provide financial information, in the form of financial statements, to these lenders and investors who want to know as much as possible about the organizations before parting with their hard earned capital. The internet has enabled organizations to easily disseminate their financial information. As discussed previously, to assist with internet presentation of financial information for users, the SEC mandates XBRL-formatted corporate reports for the capital markets (Chandler, 2008, Schwartz, 2008). Therefore, CIOs and CFOs not familiar with XBRL will need to be educated quickly.

Moreover, XBRL has emerged as the global financial language with the globalization of the capital markets (Chandler, 2008). The use of XBRL provides two functions associated with the financial statement information. First, the use of XBRL allows users with different computer platforms, languages, and statement structures easier access to information. It speeds the collection and transmission of data and improves the accuracy through the use of the tags' identification of information. Second, XBRL allows the analyses of financial data in interactive forms (RR Donnally, 2009). Special software can recognize the identification tags and organize in powerful presentation models to facilitate decision making. The SEC makes this code available in an open source format which allows users to view a greater variety of information presentation forms (Blake, 2009).

As investors and lenders use these enhanced capabilities offered by XBRL, they will expect information to be in this format. Since financial statements are necessary to acquire capital, even the companies not required to submit financial statements in XBRL will follow suit so that their information can be viewed with the same enhanced capabilities. Software exists that make tagging in XBRL as simple as using Microsoft Excel™ or Word™ (Schwartz, 2008).

Management Perspective

XBRL is more than a SEC financial reporting format. It is a key tool for reducing or eliminating the wide range of internal manual processes necessary for operations and management. Companies are already benefiting from reduced costs and reporting risk related to standardization and simplification with XBRL. It is designed to economically enable standardization of the entire business reporting supply chain. XBRL tags can be applied earlier in the supply chain to gain control of and streamline internal processes that drive data aggregation from source applications to end reporting, and achieve compliance with the SEC mandate along the way.

Information related to customers, products, properties and fixed assets, and other key business process performance metrics can be continuously updated or consolidated more effectively using XBRL. XBRL can also be useful in enhancing other internal corporate compliance, risk management and performance processes, not to mention compliance with the SEC mandate. CEOs can easily benchmark their firms' performances against their competitors.

With the advancement of integrated systems, those where an organization is linked by computers to customers and suppliers, the need for information exchange is critical. With different computer platforms, the need for a common language is imperative. XBRL provides an enterprise and supply chain platform for articulating business information which can be efficiently delivered via Web service (Willis, 2008).

Analysis Perspective

As discussed previously, XBRL is a specialized software language for the financial reporting industry. Rather than treat financial data as a block of text, as one might currently find in a standard regulatory filing such as an annual report, XBRL provides an identifying tag for each item of individual datum in the report. For example, when financial data are reported in an XBRL format, each item on a company balance sheet has its own identifying tag which is computer readable. Because XBRL is computer readable, XBRL enables fully automated processing of business and financial data which, in turn, increases the speed, efficiency, and reliability of financial reporting and analysis. XBRL's two main benefits include single-format filing and ease of corporate comparisons (Bagranoff, Simkin, & Strand, 2007).

According to Delott (2009),"One of the great benefits of XBRL is that it allows analysts and other stakeholders to shift focus from more monotonous and error-prone activities, such as keypunching voluminous amounts of financial data into financial models, to more value-added activities, such as analyzing data and benchmarking financial metrics and disclosures across companies and industries" (p. 8). However, this readily available financial information has major implications for Certified Public Accountants, the preparers of these financial statements, as well as future accountants. XBRL issues need to be addressed both in continuing professional education and in the university setting.

Some of the major implications of XBRL for accountants are listed:

Provides greater transparency

- Permits automatic and reliable exchange of financial information across different formats and technologies
- Does not require a change to existing accounting standards or disclosure requirements
- Eliminates the need to re-enter financial data for different users
- Lowers the cost of the preparation and distribution of financial statements
- Improves investor- and analyst- access to information
- Allows accountants to consolidate and scrutinize internal data for financial reporting purposes
- Allows CEOs and CFOs to deliver more transparent information (Bagranoff, Simkin, & Strand, 2007).

Finally, the use of XBRL by companies and the availability of information to the SEC in this format may well allow the SEC to be more diligent in its investigatory role, and may also be a new tool for analysts to uncover suspicious trading and accounting patterns (Wutowksi, 2008).

Auditing Perspective

As set forth by Garbellotto in his Institute of Internal Auditors Research Foundation (IIARF) document (2009):

The implications of implementing XBRL from an internal audit perspective result from (1) migrating from a manual to automated process for key activities, (2) a more efficient access to integrated companywide data, (3) the abstraction of business rules and controls which can be applied universally across many software applications and (4) a lower cost environment.

XBRL enables the definition of a broader set of control monitoring which would otherwise be constrained by software-specific limitations. These broader control monitoring capabilities are shareable and executable across the whole corporate information system. This efficiency provides for the potential of 100% testing for audit applications contrasted with present day sampling techniques.

XBRL also facilitates a continuous auditing and monitoring approach because of the shift from manual to automated processes based on standardized business rules. The ability to connect corporate resources (business transaction rules, internal policies, entities, risks, internal control guidelines, etc.) to specific data definitions enables an auditor to access these for each of the data points thus facilitating the conduct of an audit.

Organizations may face three types of risk when using XBRL for financial reporting: risk of errors, control issues and assurance issues. The risk of reporting errors is related to the accurate mapping of business information to tags, and to the use of appropriate taxonomies. An effective internal control structure is paramount in providing accurate mapping tags to ensure that data are retrieved correctly. This can be especially critical because data are streamed in real time and automated.

XBRL control risks pertain to the use of appropriate taxonomies, tagging of data, and the integrity of the tagged data. Ensuring that a client used the appropriate taxonomy in the creation of their financial reports is a major audit and control issue. Auditors need to be familiar with the different taxonomies in existence and ensure the correct one is being used. Tagging requires a thorough knowledge of the taxonomies used as well as the report requirements. Auditors need to examine the approval process which describes how financial statements should be created from tagged data for inclusion on websites, etc.

To manage assurance issues, auditors should use multiple validation tools to determine the quality of the data in an XBRL report, not just rely on the preparer's tool for validation. Other control procedures include reviewing policies and procedures describing how XBRL statements are generated while reviewing procedures describing how statements are generated on a real time basis.

Presently the SEC rules do not include any type of audit or assurance requirement for financial statements and financial statement schedules in XBRL format provided as an exhibit to a registrant's periodic reports or registration statements. The external auditor is not required to apply auditing standards set forth in AU sections 550,711, or 722 to the XBRL exhibits and is not required to read the XBRL files and consider whether the financial statements or XBRL exhibit require adjustment.

IMPLICATIONS FOR TEACHING ACCOUNTING

Within a few years XBRL will be commonplace in most if not all of the largest public accounting firms and private industries. Currently, many organizations rely on external providers to format and submit their information in XBRL. Potential employers will be looking for new accounting graduates that have this skill set to replace external providers that format and submit their information in XBRL.

Implications for Teaching Financial Accounting

At a minimum, XBRL needs to be introduced and discussed in financial accounting classes. Students need to be aware of XBRL and its role in the financial and accounting arenas. Better would be the inclusion of a XBRL content section in which students learn about XBRL, how it functions, and what it accomplishes. Optimally, students might have instruction and practice in using XBRL. Within a few years, graduating accounting majors may need the skills necessary to structure accounting information in XBRL.

Financial accounting texts typically cover the chart of accounts at or near the beginning. For example, Warren et al. (2009) cover it in chapter 2, a mere 53 pages into the book. Perhaps XBRL could be introduced at that point. For example, figure 10 shows the GAAP taxonomy for deferred revenue, a topic typically covered within the first month of an introductory accounting course. Professors could further discuss XBRL when discussing accounting systems (chapter 5 in the Warren text). In more advanced classes, professors could discuss XBRL along with SEC filings. Instructors may wish to see Gangolly, et al. for another approach to incorporating systems in accounting courses.

Implications for Teaching Managerial Accounting

As in financial accounting, as a minimum, XBRL needs to be introduced and discussed in management accounting classes. However, since introductory managerial accounting generally follows introductory financial accounting, only a cursory discussion on internal uses is needed in addition to the level presented in the financial accounting class. For accounting majors, more in depth studies of XBRL should be included to teach how it functions and what it accomplishes. Before students graduate, they should have instruction and practice in using XBRL.

Managerial and cost accounting texts discuss data elements at the beginning (see, for example, Horngren et al, Chapter 2). Professors can use these discussions to note the need for consistent nomenclature and the need to tag data so that they can be used in managerial decision making. Managerial accounting texts also discuss the value chain at the beginning (Hongren et al., p.6). Professors can discuss the importance of XBRL for other fields that use managerial accounting, such as marketing.

For example, figure 11 shows the taxonomy for inventory. In teaching how to value inventory items, professors in managerial accounting classes can discuss the need to tag data. Professors may also cover what managerial accounting students need to know if their company uses the built-in/deeply embedded approach (Garbellotto, 2009, p. 17).

Implications for Teaching AIS

The implications of XBRL in relationship to teaching Accounting Information Systems courses are broad and sweeping. AIS students not only need a working knowledge of XBRL but also need a thorough understanding of the underlying theories and implications of markup languages in relation to the financial markets. The starting point for understanding how XBRL works would be to first introduce students to the basic concept of HTML. At this point students would gain awareness for the processes involved in writing code and facilitate an understanding of how tags and codes work. The development of a classroom portfolio created in HTML would be the next logical step. The HTML portfolio would help organize students work for the class while at the same time, provide a real application to provide a concrete example of the usefulness of HTML.

From HTML, an introduction into XML would be appropriate for students. Tribunella and Tribunella (2006) created a case study for students which takes financial statement data from Excel and shows the steps needed to turn the information into an XML document. This project would be an excellent project to incorporate into an AIS course. Finally, students could be introduced to XBRL by taking financial statements and converting them into an instance document. From that point, students could view their instant document as explained in this paper to create an XBRL filing.

Most favorably, by incorporating HTML, XML, and XBRL through theory and practical examples into an Accounting Information Systems course, students should develop a working knowledge of markup languages. Accounting majors upon graduation will have one more skill necessary to compete in an increasing complicated accounting arena.

Implications for Teaching Auditing

A review of auditing texts (e.g., Louwers, et al., 2008) does not reveal a discussion of XBRL. Until texts incorporate XBRL, professors will need to incorporate XBRL in their lectures. For example, Figure 12 shows the taxonomy for auditor's report. Professors can use this taxonomy to discuss XBRL during the discussion of the auditor's report. Professor can also weave XBRL in their lectures during the discussion of SEC filings, particularly 10K filings, and during their discussion of subsequent events and auditors responsibility for issued audit reports.

Some questions instructors may wish to consider are: What are the auditors' responsibilities for "furnished" XBRL financial statements? What will the auditors' responsibilities be for "audited" XBRL financial statements? What are the implications for understanding internal controls? General systems controls? Application controls? What are the auditors' responsibilities for restatements? Errors? Validation programs?

Instructors may also wish to see Kogan et al. (1999) for another approach to teaching auditing using systems.

Implications for library and library databases

In today's fast-paced, technology-driven world, the desire for expediency has prompted business students to place a premium on information that can be found quickly and easily. One new method of streamlining information in the business and accounting field is to incorporate XBRL standards. However, anytime there is a change in reporting data, a systemic change must take place for librarians. XBRL will affect the way individuals search for and access information.

Tagging data is one means of organizing data and making it easily accessible for consumers. Accordingly, information specialists such as librarians need to be keenly aware of the organization of this tagged data so they can readily access and instruct individuals how to find this invaluable information. Since librarians are intricately connected to the delivery of data, they will ultimately be affected by the adoption of this new format. Librarians will need to understand the tags and work with information vendors (databases) to assure that data are being organized and disseminated appropriately.

What implications will XBRL have for students at institutions of higher education and business accreditation? The Association to Advance Collegiate Schools of Business (AACSB) is an international organization founded in 1916 to accredit schools of business worldwide. The accreditation process is a non-governmental, voluntary, review of educational institutions and programs. Part of the review consists of institutional accreditation, throughout the colleges of the university. Part of that review includes an assessment of library resources, instruction, and services. XBRL will have a systemic influence on the way librarians find, use, and instruct business students how to locate data in this new format.

Furthermore, according to Sullivan (2007) of the BRASS Business Reference in Academic Libraries Committee, information literacy instruction has always had an important role in AACSB accreditation. Information literacy is a set of skills and knowledge that affords students with the ability to find, evaluate, and use the information effectively. This process also includes knowing how to filter information that is not needed. Information literacy skills are the tools librarians provide to help students successfully search for information in the present and future. The Information Literacy Competency Standards for Higher Education Standard one, Performance Indicator two states that "the information literate student identifies a variety of types and formats of potential sources for information" (p.8).

XBRL is a new format of a potential information source for students and should have instruction from librarians. The outcome for this measure includes "knowing how information is formally and informally produced, organized, and disseminated" (p.8). In order to meet this performance outcome, it is necessary for librarians to instruct business students how XBRL is produced, why it is produced the way that it is, how it is organized, and the ways that it can be disseminated and located.

Ultimately, librarians will be forced to instruct business students on the intricate nature of XBRL tags so they can better use library databases and understand financial statements. Business reporting data include but are not limited to financial statements, financial information, non-financial information, general ledger transactions and regulatory filings. The way information is disseminated will change, thus presenting librarians with a new method of searching for and utilizing information. Thus, librarians will be greatly affected by the new XBRL language and need to remain at the forefront of its instruction. By doing so, they will be able to assist students in higher education institutions how to properly utilize the new reporting language effectively. The new XBRL reporting format will change the way business librarians instruct students because AACSB accreditation and ACRL Information Literacy Standards require the information literate business students to be able to find, synthesize, and utilize new formats in a productive method.

CONCLUSION

This paper discussed XBRL, focusing on what professors, students, and future leaders in business, economics, and technology need to know about XBRL. It also detailed suggestions for how to integrate knowledge about XBRL in business curriculum. Integrating XBRL language into various aspects of the business curriculum through library instruction, financial accounting, managerial accounting, etcetera, will help ensure literacy of the important concepts of XBRL. Moreover, doing so will better prepare graduates for the changing nature of business reporting.

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Figure 1

Figure 2

TMPbvwyqabja - Notepad

File Edit Format View Help

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
<title>Untitled Document</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
</head>

<body>

<p> </p>
<p><strong><font color="#FF0000">NABET</font></strong></p>
</body>
</html>
```

Figure 3

FEDEX CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(IN MILLIONS)

	August 31, 2009 (Unaudited)	May 31, 2009
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 1,789	$ 2,292
Receivables, less allowances of $155 and $196	3,410	3,391
Spare parts, supplies and fuel, less allowances of $164 and $175	372	367
Deferred income taxes	510	511
Prepaid expenses and other	307	555
Total current assets	6,388	7,116
PROPERTY AND EQUIPMENT, AT COST	29,484	29,260
Less accumulated depreciation and amortization	15,946	15,843
Net property and equipment	13,538	13,417
OTHER LONG-TERM ASSETS		
Goodwill	2,233	2,229
Pension assets	263	311
Other assets	1,435	1,171
Total other long-term assets	3,931	3,711
	$ 23,857	$ 24,244

The accompanying notes are an integral part of these condensed consolidated financial statements.

Figure 4

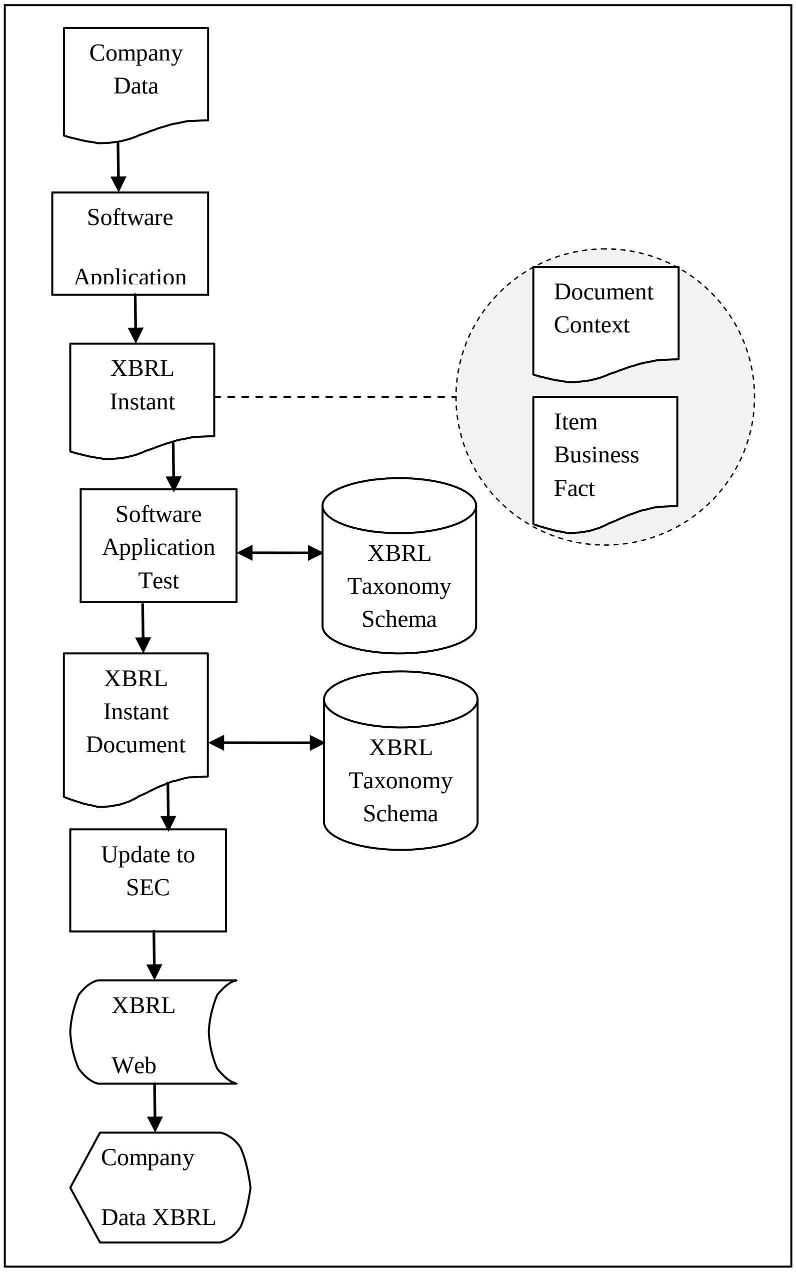

Company Data
Software Application
XBRL Instant
Document Context
Item Business Fact
Software Application Test
XBRL Taxonomy Schema
XBRL Instant Document
XBRL Taxonomy Schema
Update to SEC
XBRL Web
Company Data XBRL

Figure 5

```
xmlns:dei="http://xbrl.us/dei/2009-01-31"><?xml  version="1.0"  encoding="UTF-8"
    ?>
- <!-- EDGARizerX:  Instance document generated by EDGARizerX, version 3.1.0.0 -
    ->
<xbrl
xmlns=http://www.xbrl.org/2003/instance
xmlns:link=http://www.xbrl.org/2003/linkbase
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xbrli="http://www.xbrl.org/2003/instance"
xmlns:asi=http://fedex.com/20090917
xmlns:xbrldi="http://xbrl.org/2006/xbrldi"
        xmlns:iso4217=http://www.xbrl.org/2003/iso4217
xmlns:us-gaap="http://xbrl.us/us-gaap/2009-01-31"
xmlns:fdx=http://fedex.com/20090831
<link:schemaRef xlink:type="simple" xlink:href="fdx-20090831.xsd" />
<context id="c00000"><entity>
<identifier scheme="http://www.sec.gov/CIK">0001048911</identifier>
    </entity><period>
```

Figure 6

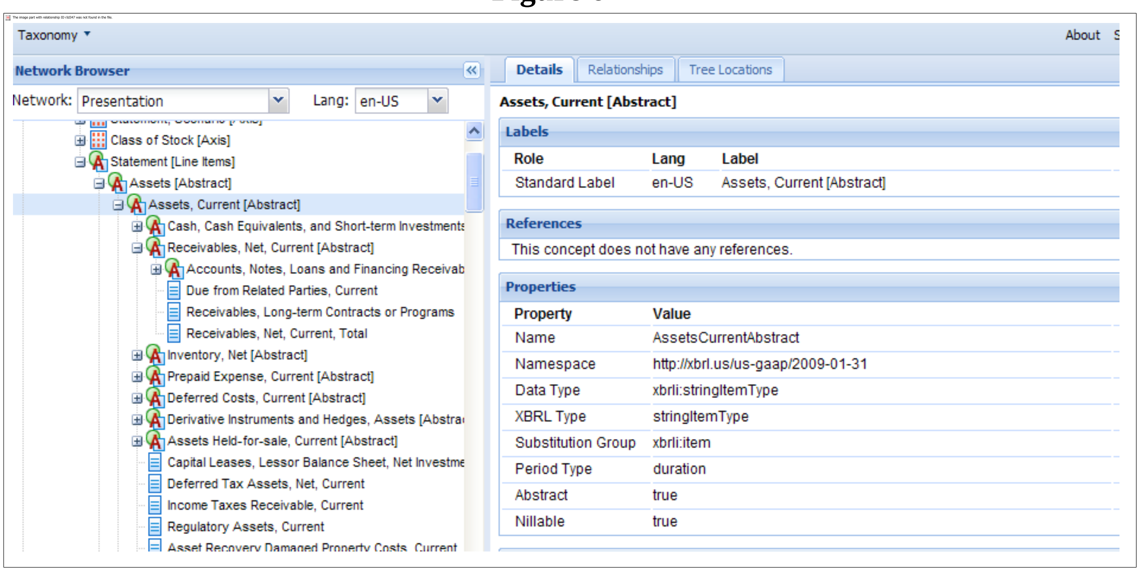


Figure 7

```
<!-- Total current assets  -->
 <us-gaap:AssetsCurrent unitRef="u000" decimals="-6" contextRef="c00001">6388000000</us-gaap:AssetsCurrent>
 <!-- Total current assets -->
 <us-gaap:AssetsCurrent unitRef="u000" decimals="-6" contextRef="c00004">7116000000</us-gaap:AssetsCurrent>
```

Figure 8

FEDEX CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(IN MILLIONS)

	August 31, 2009 (Unaudited)	May 31, 2009
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 1,789	$ 2,292
Receivables, less allowances of $155 and $196	3,410	3,391
Spare parts, supplies and fuel, less allowances of $164 and $175	372	367
Deferred income taxes	510	511
Prepaid expenses and other	307	555
Total current assets	6,388	7,116
PROPERTY AND EQUIPMENT, AT COST	29,484	29,260
Less accumulated depreciation and amortization	15,946	15,843

Figure 9

The SEC wrote (see, http://www.sec.gov/spotlight/xbrl/financial-statements.shtml)

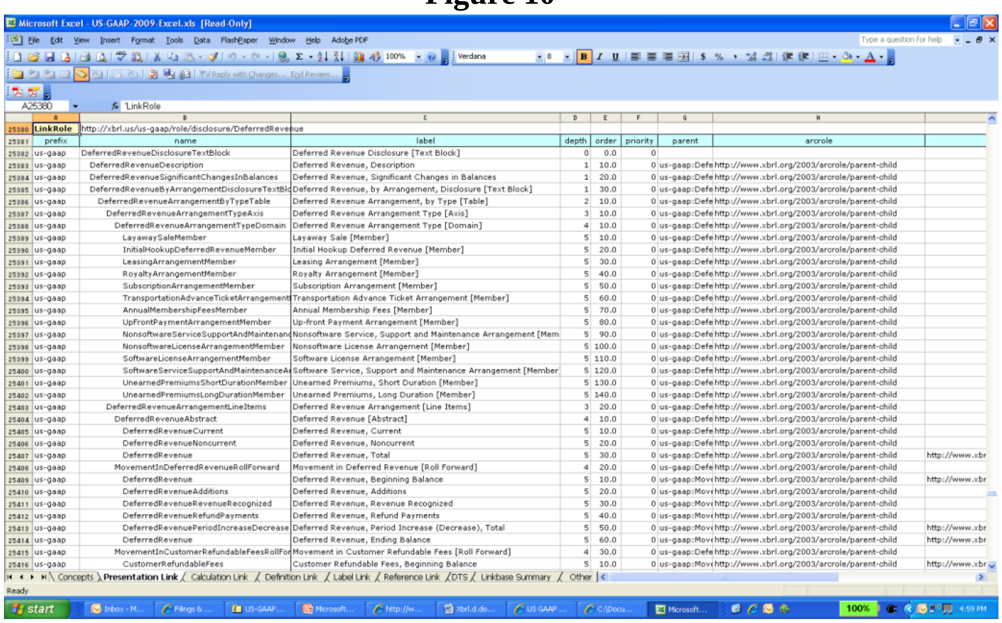
On January 30, 2009, the Commission issued rules requiring companies to provide financial statement information in the XBRL interactive data format. Read the Commission's official release.

The rules apply to domestic and foreign companies using U.S. GAAP on a phase-in schedule and will eventually apply to foreign private issuers using International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

The rules require companies' primary financial statements, notes, and financial statement schedules to be provided in XBRL, along with some company identifier information. The rules supplement, but do not replace or change, disclosure using the traditional electronic filing formats in ASCII or HTML. Companies will submit XBRL filings alongside their traditional ASCII- or HTML-formatted filings.

XBRL filings are subject to limited liability within 24 months of the time the filer first is required to submit interactive data files. The limited liability provision terminates entirely as of October 31, 2014.

Figure 10



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25384	us-gaap	DeferredRevenueSignificantChangesInBalances	Deferred Revenue, Significant Changes in Balances	1	20.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
25385	us-gaap	DeferredRevenueByArrangementDisclosureTextBlo	Deferred Revenue, by Arrangement, Disclosure [Text Block]	1	30.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
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25388	us-gaap	DeferredRevenueArrangementTypeDomain	Deferred Revenue Arrangement Type [Domain]	4	10.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
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25393	us-gaap	SubscriptionArrangementMember	Subscription Arrangement [Member]	5	50.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
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25405	us-gaap	DeferredRevenueCurrent	Deferred Revenue, Current	5	10.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
25406	us-gaap	DeferredRevenueNoncurrent	Deferred Revenue, Noncurrent	5	20.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
25407	us-gaap	DeferredRevenue	Deferred Revenue, Total	5	30.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	http://www.xbr
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25410	us-gaap	DeferredRevenueAdditions	Deferred Revenue, Additions	5	20.0	0	us-gaap:Mov	http://www.xbrl.org/2003/arcrole/parent-child	
25411	us-gaap	DeferredRevenueRevenueRecognized	Deferred Revenue, Revenue Recognized	5	30.0	0	us-gaap:Mov	http://www.xbrl.org/2003/arcrole/parent-child	
25412	us-gaap	DeferredRevenueRefundPayments	Deferred Revenue, Refund Payments	5	40.0	0	us-gaap:Mov	http://www.xbrl.org/2003/arcrole/parent-child	
25413	us-gaap	DeferredRevenuePeriodIncreaseDecrease	Deferred Revenue, Period Increase (Decrease), Total	5	50.0	0	us-gaap:Mov	http://www.xbrl.org/2003/arcrole/parent-child	http://www.xbr
25414	us-gaap	DeferredRevenue	Deferred Revenue, Ending Balance	5	60.0	0	us-gaap:Mov	http://www.xbrl.org/2003/arcrole/parent-child	http://www.xbr
25415	us-gaap	MovementInCustomerRefundableFeesRollFor	Movement in Customer Refundable Fees [Roll Forward]	4	30.0	0	us-gaap:Defe	http://www.xbrl.org/2003/arcrole/parent-child	
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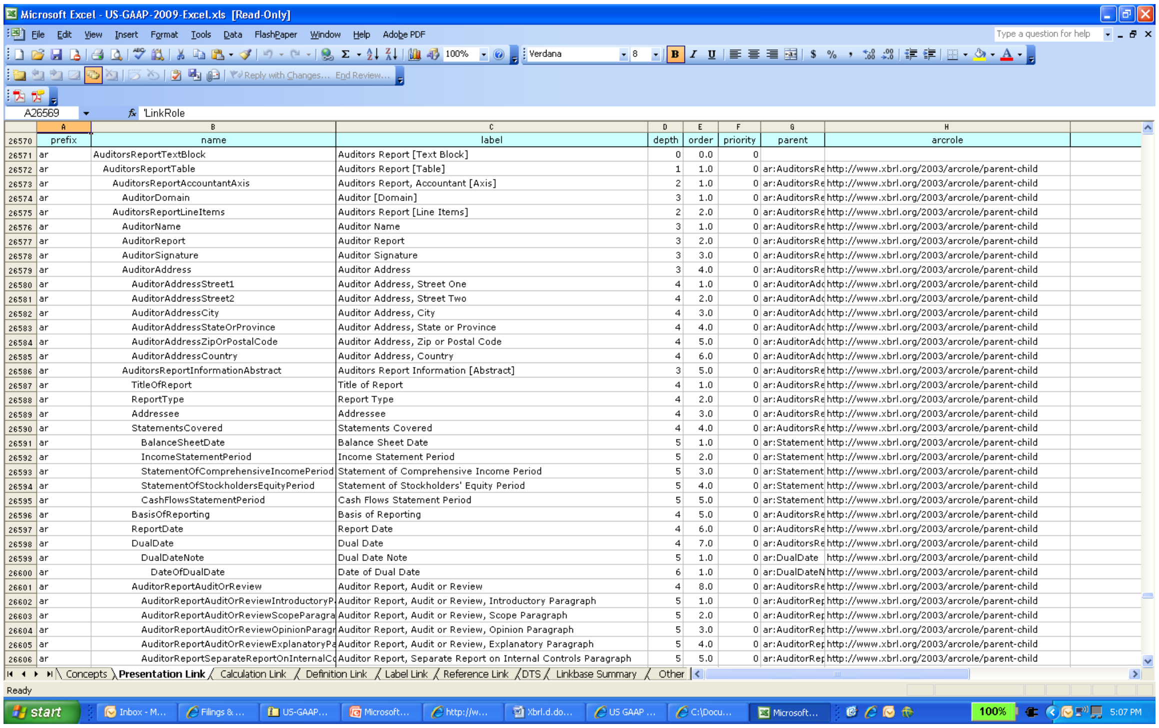
Figure 11



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26577	ar	AuditorReport	Auditor Report	3	2.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
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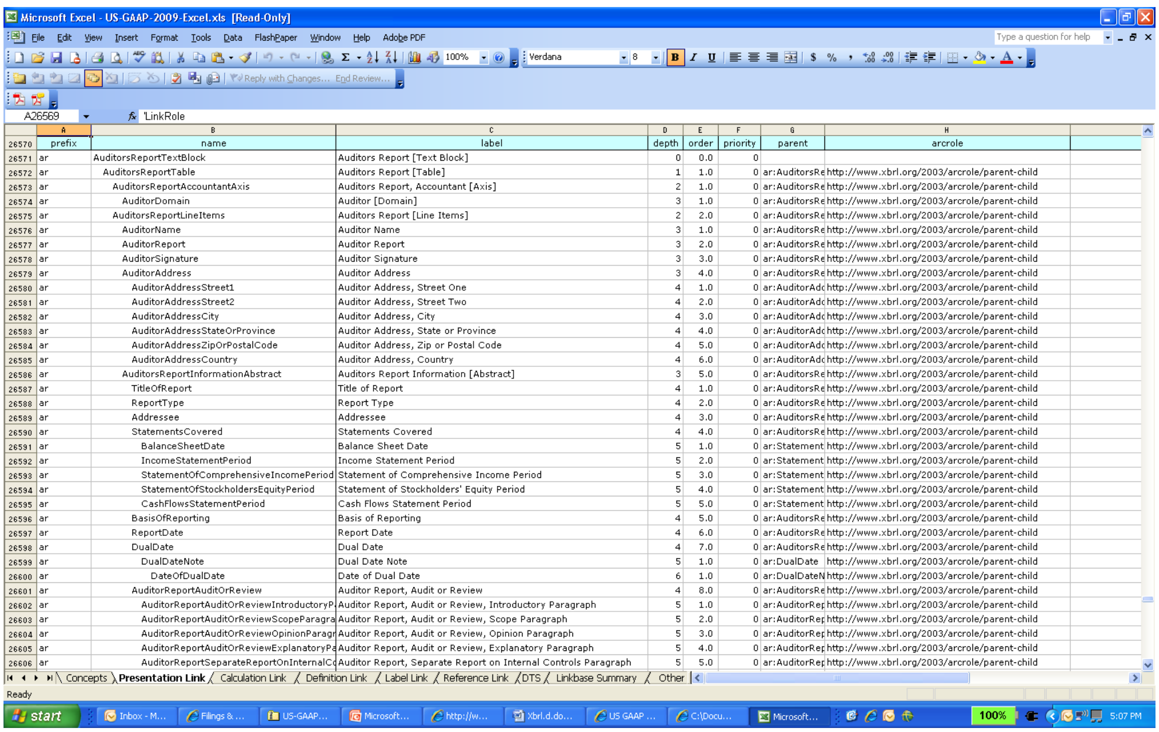
26603	ar	AuditorReportAuditOrReviewScopeParagra	Auditor Report, Audit or Review, Scope Paragraph	5	2.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26604	ar	AuditorReportAuditOrReviewOpinionParagr	Auditor Report, Audit or Review, Opinion Paragraph	5	3.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26605	ar	AuditorReportAuditOrReviewExplanatoryPa	Auditor Report, Audit or Review, Explanatory Paragraph	5	4.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26606	ar	AuditorReportSeparateReportOnInternalC	Auditor Report, Separate Report on Internal Controls Paragraph	5	5.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child

Figure 12



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26574	ar	AuditorDomain	Auditor [Domain]	3	1.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
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26577	ar	AuditorReport	Auditor Report	3	2.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
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26579	ar	AuditorAddress	Auditor Address	3	4.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
26580	ar	AuditorAddressStreet1	Auditor Address, Street One	4	1.0	0	ar:AuditorAdc	http://www.xbrl.org/2003/arcrole/parent-child
26581	ar	AuditorAddressStreet2	Auditor Address, Street Two	4	2.0	0	ar:AuditorAdc	http://www.xbrl.org/2003/arcrole/parent-child
26582	ar	AuditorAddressCity	Auditor Address, City	4	3.0	0	ar:AuditorAdc	http://www.xbrl.org/2003/arcrole/parent-child
26583	ar	AuditorAddressStateOrProvince	Auditor Address, State or Province	4	4.0	0	ar:AuditorAdc	http://www.xbrl.org/2003/arcrole/parent-child
26584	ar	AuditorAddressZipOrPostalCode	Auditor Address, Zip or Postal Code	4	5.0	0	ar:AuditorAdc	http://www.xbrl.org/2003/arcrole/parent-child
26585	ar	AuditorAddressCountry	Auditor Address, Country	4	6.0	0	ar:AuditorAdc	http://www.xbrl.org/2003/arcrole/parent-child
26586	ar	AuditorsReportInformationAbstract	Auditors Report Information [Abstract]	3	5.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
26587	ar	TitleOfReport	Title of Report	4	1.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
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26589	ar	Addressee	Addressee	4	3.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
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26593	ar	StatementOfComprehensiveIncomePeriod	Statement of Comprehensive Income Period	5	3.0	0	ar:Statement	http://www.xbrl.org/2003/arcrole/parent-child
26594	ar	StatementOfStockholdersEquityPeriod	Statement of Stockholders' Equity Period	5	4.0	0	ar:Statement	http://www.xbrl.org/2003/arcrole/parent-child
26595	ar	CashFlowsStatementPeriod	Cash Flows Statement Period	5	5.0	0	ar:Statement	http://www.xbrl.org/2003/arcrole/parent-child
26596	ar	BasisOfReporting	Basis of Reporting	4	5.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
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26600	ar	DateOfDualDate	Date of Dual Date	6	1.0	0	ar:DualDateN	http://www.xbrl.org/2003/arcrole/parent-child
26601	ar	AuditorReportAuditOrReview	Auditor Report, Audit or Review	4	8.0	0	ar:AuditorsRe	http://www.xbrl.org/2003/arcrole/parent-child
26602	ar	AuditorReportAuditOrReviewIntroductoryP	Auditor Report, Audit or Review, Introductory Paragraph	5	1.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26603	ar	AuditorReportAuditOrReviewScopeParagra	Auditor Report, Audit or Review, Scope Paragraph	5	2.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26604	ar	AuditorReportAuditOrReviewOpinionParagr	Auditor Report, Audit or Review, Opinion Paragraph	5	3.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26605	ar	AuditorReportAuditOrReviewExplanatoryPa	Auditor Report, Audit or Review, Explanatory Paragraph	5	4.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child
26606	ar	AuditorReportSeparateReportOnInternalC	Auditor Report, Separate Report on Internal Controls Paragraph	5	5.0	0	ar:AuditorRep	http://www.xbrl.org/2003/arcrole/parent-child

A CASE STUDY OF FITTING QUEUEING LINE MODELS WITH POISSON ARRIVAL PROCESSES AND EXPONENTIAL SERVICE TIME DISTRIBUTIONS

Edward J. Sullivan, Lebanon Valley College
Lauren Throne, Lebanon Valley College

ABSTRACT

In this case study, queueing line models are fitted for a college café. Using a Poisson arrival process and an exponential distribution to describe service time, the operating characteristics for one and two-channel systems are estimated. In addition, an economic analysis is performed to determine the more efficient system. While the two-channel system does reduce the waiting time significantly, the authors find that, economically, the one-channel system is more efficient.

INTRODUCTION

Located on the campus of Lebanon Valley College, Cup O' Joe is a café that serves over 5,000 customers per month. Besides offering coffee, lattes, and espressos, Cup O' Joe serves a variety of other beverages, snacks, and sandwiches. In this case study, queuing line models are fitted for this business using survey data. Goodness-of-fit tests are applied to the customer arrival process, and it is determined that the customer arrival rate is described as a Poisson process. Given an exponential distribution to describe service time, the operating characteristics for one and two-channel systems are estimated. Further, an economic analysis is performed to determine the more efficient system. While the two-channel system does reduce the waiting time significantly, the authors find that, economically, the one-channel system is more efficient.

DATA COLLECTION

The goal for the collection of the data was to find the average time between arrivals, the average service time, and the average sale amount per customer, which are the basis for determining the operating characteristics of the system. For each observation period, the dates and starting and ending times were noted. At the end of each observation, the total observation time was divided by the number of customers who ordered within the period to calculate the average time between arrivals.

Next, the time that the customer placed an order (which, for the majority of the customers was the same time that the customer arrived into the system) and the time that the customer received the order and left the coffee bar were recorded. From these observations, the time it took to fill each customer's order was calculated. By adding each fill time together, the total time spent filling customer orders was determined. In order to find the average service time per customer during each observation period, the total fill time was divided by the number of customers who received service.

To find the average sale amount per customer, each order was recorded using four categories: prepared drinks (consisting of coffees, teas, hot chocolates, and smoothies), bottled drinks, sandwiches, and snacks (primarily baked goods, fruits, and yogurts). The price for each of the four categories was computed by averaging the items that fell into each category. For each observation period, the total of the number of orders in each category is multiplied by the appropriate category price. Summing these values, the total sales revenue for the observation period was found. Dividing the total sales amount by the number of customers within the period yielded the average sales revenue per customer.

The three averages that were computed during each observation period (the average time between arrivals, the average service time, and the average sale amount per customer) were used to calculate the *sample* hourly average arrival time, the *sample* hourly average service time, and the *sample* hourly cost of waiting. For example, the survey data consisted of twenty-one, one-hour observation periods. Hence, the sample average arrival time was calculated by summing the twenty-one, average arrival times and dividing that total by twenty-one. Thus, these three sample values were used to calculate the operating characteristics for the one and two-channel queuing systems and the variable cost of operating each system. More specifically, for Cup O' Joe, the mean arrival rate per hour (lambda) is 14.56, the mean service rate per hour (mu) is 56.54, and the hourly cost of waiting is $2.56.

GOODNESS-OF FIT TESTING

Before calculating the operating characteristics for Cup O' Joe, it was necessary to test whether the customer arrivals approximated a Poisson process. A Poisson process is characterized by two important properties. First, the probability of an arrival is the same for any two intervals of equal length. Second, the arrival in any interval is independent of the arrival in any other interval. In order to test whether the arrivals at Cup O' Joe fit these criteria, three goodness-of-fit tests were applied.

The first test determined whether the cumulative arrival of customers was a stationary. As seen in Figure 1 in the Appendix, this graph plots the cumulative arrival of customers over time. If a straight line were drawn to connect the beginning and ending observations, a stationary process would not reveal any visible pattern of deviations around the line. Indeed, the data conform well to the straight line and are consistent with a stationary Poisson process.

The second goodness-of-fit test examined the stationarity of interarrival times for customers. Here, the interarrival times of customers were plotted in serial order. Graphically, this test looks for the presence of cyclic patterns around the mean interarrival time of 246 seconds. As the data demonstrate in Figure 2 in the Appendix, no cyclic pattern is apparent, and this absence is consistent with a Poisson process.

The final goodness-of-fit test determined if the interarrival times of customers (Xn, Xn-1) are independent of each other. If the process is Poisson, then the arrival times of Xn and Xn-1 should be independent of each other. Graphically, independence implies that it should be impossible to approximate the data by a straight line or any other curve. As is seen in Figure 3, this is indeed the case. Statistically, the correlation coefficient between these times should be zero; the sample correlation coefficient is -0.06. Performing a t-test on these data indicates that the hypothesis that the correlation coefficient equals zero cannot be rejected at the 1% level of significance. In sum, the results of the three goodness-of-fit tests indicate that customer arrivals at Cup O' Joe are consistent with a Poisson process.

OPERATING CHARACTERISTICS

Having established that customer arrivals could be modeled as a Poisson process, the operating characteristics for Cup O' Joe were then calculated assuming that service time was described by an exponential distribution. Such an assumption is entirely reasonable given the nature of this business and further supported by our empirical observations. Using the sample data, the standard operating characteristics for an M/M/1 and M/M/2 for Cup O' Joe were calculated.[1] The M/M/k represents the standard three part code used to describe a queueing system. Here, the M/M denotes arrival and service processes for a queueing system that has Markov distributions that are Poisson and exponential. In this case, the "k" represents the number of servers in the system.

As is seen in Table 1, located in the Appendix, a comparison of the M/M/1 and M/M/2 systems yields the expected results. For example, moving from one service channel to two reduces the average number of customers waiting in line dramatically from 0.09 customers to 0.004 customers. Similarly, the average time spent waiting in line falls in half if another server is added.

As the calculations reveal, a two-channel queueing system delivers faster service for customers. From an economic perspective, however, the question arises: which system is more cost effective? In order to address this question, the hourly total variable cost of running a one and two-channel system was estimated using the equation:

$$TVC = Cw \times L + Cs \times k.$$

Here, TVC denotes total variable cost per hour. Cw reflects the cost of customer waiting; this cost was estimated by calculating the average sale per person which is \$2.56. The variable "L" denotes the average number of customers in the system and its values are from the operating characteristics in Table 1. The variable "Cs" is the hourly cost of hiring servers who are paid minimum wage and are without benefits. Finally, the variable "k" represents the number of channels or servers. Hence, a k = 1 system is a one-channel system. The TVC for each system is:

M/M/1 System: \$8.04 = \$2.56 x 0.3496 + \$7.15 x 1

M/M/2 System: \$14.97 = \$2.56 x 0.2635 + \$7.15 x 2.

As the calculations reveal, from an economic perspective, the k = 1 system is considerably more efficient. Put differently, the lower number of customers in the system offered by a two-channel system is more than offset by the cost of hiring an extra server.

CONCLUSIONS

Using sample survey data, two queuing systems were fitted to Cup O' Joe. As the goodness-of-fit tests

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[1] The operating characteristic equations are readily found in most textbooks in management science or operations research. See, for example, chapter 14 in Anderson, *et al* (2004).

indicate, the customer arrival process at this business is well-approximated by a Poisson process. Given this Poisson process and assuming exponential service time, the operating characteristics for M/M/1 and M/M/2 models were calculated. Although the M/M/2 model is more efficient in terms of lower service and waiting times, the data indicate that the M/M/1 model is more economically efficient because of its lower cost.

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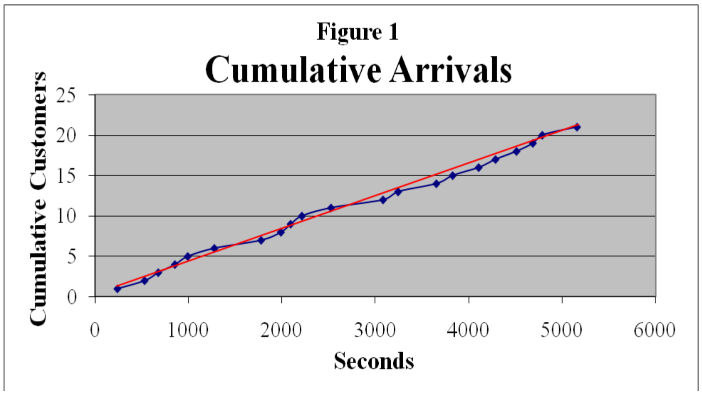
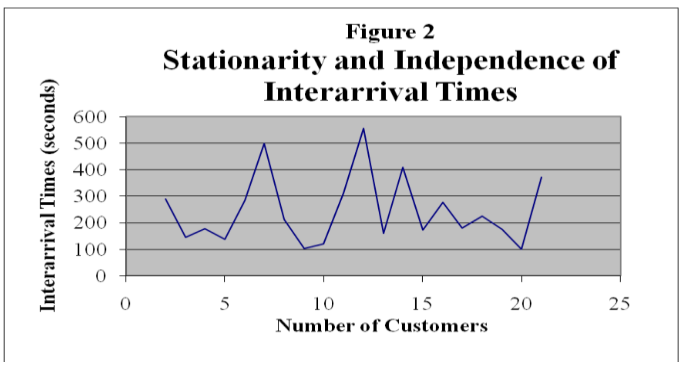
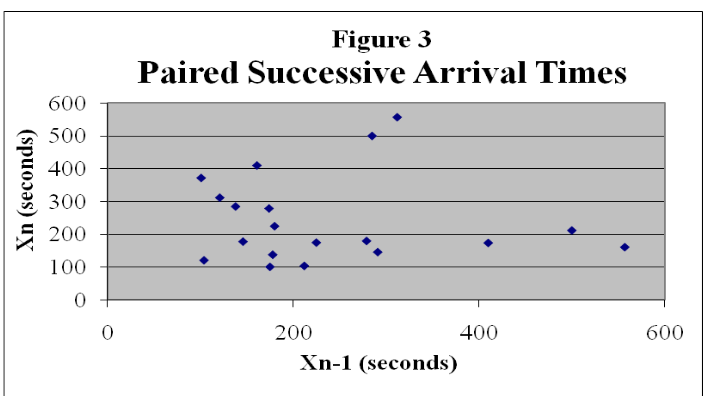
Appendix

Table 1 **Operating Characteristics**	**M/M/1**	**M/M/2**
Probability of No Customers in System	0.7409	0.7706
Average Number of Customers Waiting in Line	0.0906	0.0044
Average Number of Customers in System	0.3496	0.2635
Average Time a Customer Spends Waiting in Line	0.0062 hrs	0.0003 hrs
Average Time a Customer Spends in System	0.0239 hrs	0.0180 hrs
Probability That an Arriving Customer Must Wait	0.2591	0.0297







IS THE FEDERAL INCOME TAX CODE UNCONSTITUTIONALLY VAGUE?

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ABSTRACT

Taxes are the price of living in a civilized society and no one disputes the right of the federal government to tax income. However, the federal tax code may have become so complicated that it is unconstitutionally vague. A law is unconstitutionally vague when a person of ordinary intelligence cannot determine what is required of him or her. Most, but not all of the laws that have been declared unconstitutionally vague are criminal in nature. There is also a presumption that laws are constitutional and that presumption can only be rebutted by clear and convincing evidence. Further, there is a compelling state interest in upholding the tax code to provide funds for national defense, public health, public safety and infrastructure. Such a compelling state interest is always considered when individual rights are burdened. Never the less, there is a broad and deep body of evidence that the tax code is so complex that it is unconstitutionally vague.

INTRODUCTION

The issue addressed in this article is not whether the government has the right to tax, but whether it has the right to make the tax code as complex as it is. No competent jurist can doubt the right of the federal government to tax income under the 16th Amendment. Further, taxes are the cost of living in a civilized society. But do these two bedrock principals mean there are no limits as to the nature of the tax code Congress can enact? The answer is no.

A law is unconstitutionally vague when an individual of ordinary intelligence cannot determine what is required of him or her. The two principal hurtles to finding a law unconstitutionally vague are (i) the standard of proof is very high, and (ii) most cases of unconstitutional vagueness spring from criminal law.

Due process requires fundamental fairness and decency in both the law and the operation of the law. The government may not act in a manner that is arbitrary, capricious, or unreasonable.[1] Due process includes notice of what the law demands. The tax code is so complex that few, if any, people know what the law demands in all situations.

The Supreme Court has, on occasion, held a statute void and unconstitutional because it is so vague that people of ordinary intelligence don't understand how to conform their behavior to the requirements of the law. The issue of vagueness arises in the tax code because many people claim it is so complicated they cannot understand it. Arthur C. Clark famously said, "Any sufficiently advanced technology is indistinguishable from magic."[2] Likewise, any law that is sufficiently complex can be made vague to the point where it cannot be understood.

LEGAL ANALYSIS

History

The concept of due process pre-dates the Constitution of the United States and elements of due process can be traced back to the Code of Hammurabi when laws were reduced to writing so that everyone would understand their rights and duties.[3] Due process was also codified in chapter 39 of the Magna Carta, in which King John promised that ''[n]o free man shall be taken or imprisoned or disseized (deprived of property)… except by the lawful judgment of his peers or by the law of the land."[4] Due process was

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[1] Reed, Lee O., Peter J. Shedd, Jere W. Morehead, Marisa Anne Pagnattaro. 2008. *The Legal and Regulatory Environment of Business, 14th Ed.* McGraw-Hill Irwin. Boston. p176.

[2] Rothstein, Edward. 2008. "For Clarke, Issues of Faith, but Tackled Scientifically," New York Times. March 20. http://www.nytimes.com/2008/03/20/books/20clar.html. Arthur C. Clarke was a 20th century science fiction writer and futurist who was credited with conceiving communications satellites.

[3] Hammurabi. 2500BC. Code of Hammurabi. Translated by L. W. King, published *The Eleventh Edition of the Encyclopedia Britannica*, 1910 by the Rev. Claude Hermann Walter Johns, M.A. Litt.D. Commentary from Charles F. Horne, Ph.D. (1915).

[4] McKechnie, W. 1914. *Magna Carta--A Commentary on the Great Charter of King John* 375-95 (Glasgow, 2d rev. ed. 1914). The chapter became chapter 29 in the Third Reissue of Henry III in 1225. Id. at 504, and see 139-59. As expanded, it read: "No free man shall be taken or imprisoned or deprived of his freehold or his liberties or free customs, or outlawed or exiled, or in any manner destroyed, nor shall we come upon him or send against him, except by a legal judgment of his peers or by the law of the land." See also J. Holt, Magna Carta 226-29 (Cambridge: 1965). The 1225 reissue also added to chapter 29 the language of chapter 40 of the original text: "To no one will we sell, to no one will we deny

first incorporated into the Constitution of the United States in the Fifth Amendment which states that, "No person shall be deprived of life, liberty, or property, without due process of law…"

So what process is due? "Due Process… embodies a system of rights based on moral principles so deeply imbedded in the traditions and feelings of our people as to be deemed fundamental to a civilized society as conceived by our whole history. Due Process is that which comports with the deepest notions of what is fair and right and just."[5] The content of due process is "a historical product."[6] Among other things, due process requires notice of the crime one is accused of, the right to present and cross examine witnesses and to submit evidence. None of these rights are meaningful, if a person cannot understand the law under which his or her conduct is being judged.

Rationale for the Void for Vagueness Doctrine

The void for vagueness doctrine advances four underlying policies. First, it encourages the government to clearly distinguish conduct that is lawful from that which is unlawful.[7, 8] Due process means, among other things, that individuals must be given adequate notice of their legal obligations so they can govern their behavior accordingly. A statute cannot be so vague that men or women of ordinary intelligence must guess at its meaning.[9] When individuals are left uncertain by the wording of an imprecise statute, the law becomes a standardless trap for the unwary.[10] Many prominent individuals have claimed they failed to pay taxes because the code was so complex, they didn't understand their duty.[11]

The second policy advanced by, the void for vagueness doctrine is to curb the arbitrary and discriminatory enforcement of criminal statutes.

or delay right or justice." This 1225 reissue became the standard text thereafter.

[5] Solesbee v. Balkcom, 339 U.S. 9, 16 (1950) (Justice Frankfurter dissenting). Due process is violated if a practice or rule "offends some principle of justice so rooted in the traditions and conscience of our people as to be ranked as fundamental." Also see Snyder v. Massachusetts, 291 U.S. 97, 105 (1934).

[6] Jackman v. Rosenbaum Co., 260 U.S. 22, 31 (1922).

[7] Jordan v. De George, 341 U.S. 223 (1951): "The essential purpose of the "void for vagueness" doctrine is to warn individuals of the criminal consequences of their conduct. Williams v. United States, 341 U.S. 97, decided April 23, 1951; Screws v. United States, 325 U.S. 91, 103-104 (1945). This Court has repeatedly stated that criminal statutes which fail to give due notice that an act has been made criminal before it is done are unconstitutional deprivations of due process of law. Lanzetta v. New Jersey, 306 U.S. 451 (1939); United States v. Cohen Grocery Co., 255 U.S. 81 (1921).

[8] United States v. Lanier, 520 U.S. 259, 266 (1997). The Supreme Court holds such statutes unconstitutional and void for vagueness on due process grounds. See, e.g., City of Chicago v. Morales, 527 U.S. 41, 51 (1999) (rejecting criminal statute as unconstitutionally vague); Kolender v. Lawson, 461 U.S. 352, 357-61 (1983) (invalidating penal statute on vagueness grounds).

[9] United States v. Lanier, 520 U.S. 259, 266 (1997) "The Fifth Amendment prohibits punishment pursuant to a statute so vague that "men of common intelligence must necessarily guess at its meaning and differ as to its application." quoting Connally v. General Construction Co. 269 U. S. 385, 391 (1926).

[10] Papachristou v. City of Jacksonville, 405 U.S. 156, 92 S. Ct. 839, 31 L. Ed. 2d 110 (1972). The Supreme Court struck down an ordinance that prohibited "loafing," "strolling," or "wandering around from place to place" because such activity comprises an innocuous part of nearly everyone's life. The Court concluded that the ordinance did not provide society with adequate warning as to what type of conduct might be subject to prosecution.

[11] Leading politicians claim they don't understand the tax law. The Treasury Secretary Timothy Geithner said the didn't know he was supposed to pay taxes for 2001, 2002, 2003 and 2004 even though his employer grossed up his salary for the amount of the taxes. ___ 2009. "Timothy Geithner's Tax Problems," The Washington Post. Jan.19 A18. The Chairman of the House Ways and Means Committee, Charles Rangle, who oversees tax policy, claimed he didn't know rent income was taxable. Lee, Christopher. 2008. "Rangle Says He Didn't Know of Loan Terms," The Washington Post. Sept.6 A03. Health and Human Services Secretary designee Tom Daschle withdrew his nomination because he claimed he didn't understand the taxes due and owing. Epstein, Keith. 2009. "Daschle, Too, Has Tax Problems." *Business Week*. Jan.30. The replacement nominee for the position of the Secretary of Health and Human Services admitted underpaying taxes. ___. 2009. "US health secretary nominee Sebelius admits tax errors," Guardian News and Media Limited. Apr.1. The nominee for the position of US Trade Representative Ron Kirk said he underpaid taxes because of a variety of mistakes. Shear, Michael D. 2009. "Tax Problems Surface for Trade Rep. Nominee Kirk," *Washington Post*. March 2.

Laws must be understood both by persons who are required to obey them and by those charged with the duty of enforcing them. Adam Smith wrote, “The tax each individual is bound to pay ought to be certain and not arbitrary… The quantity to be paid ought to be clear and plain to the contributor, and to every other person. Where it otherwise, every person subject to the tax is put more or less in the power of the tax-gatherers.”[12]

Statutes that do not carefully outline procedures by which police officers may perform an investigation, conduct a search, or make an arrest confer wide discretion upon each officer to act as he or she sees fit. Precisely worded statutes are intended to confine an officer's activities to the letter of the law. In the context of taxes, IRS agents are police officers.[13] Vagueness is condemned where it results in government by the whim of whoever applies vague statutory language to the facts.[14]

The third, policy reason for the void for vagueness doctrine is that it discourages judges from attempting to apply sloppily worded laws. Like the rest of society, judges often struggle with poorly worded legislation. Even respected judges have difficulty interpreting and applying tax law.[15] "A law fails to meet the requirements of the due process clause if it... leaves judges and jurors free to decide, without any legally fixed standards, what is prohibited and what is not in each particular case." A statute of this kind is also constitutionally objectionable on the ground that it delegates legislative power to courts and juries.[16]

The fourth reason for the void for vagueness doctrine is to avoid encroachment on freedoms guaranteed by the Bill of Rights. Because vague laws cause uncertainty in the minds of average citizens, some citizens will inevitably decline to undertake risky behavior that might land them in jail or subject them to penalties and interest for underpayment of taxes. “A statute is unconstitutionally vague if it compels “a person of average intelligence to guess… as to its meaning.”[17] “The principal rationale for the unconstitutional vagueness… in tax cases has been the due process concept of providing the taxpayer with fair notice of his or her legal duty.”[18]

Standard of Review

Courts presume laws are constitutional and only rule them unconstitutional under extraordinary circumstances. The complexity of the tax code might constitute an extraordinary circumstance. While the tax code might also be unconstitutional on other grounds, this discussion is limited to a Fifth Amendment due process analysis.[19] The Fifth

[12] Smith, Adam. 1789. *The Wealth of Nations*. (Edwin Cannan, ed., Modern Amer. Lib., NY. 1937.) bk V, ch II, pt. II at 778 (Maxim II).

[13] Shuttlesworth v Birmingham (1965) 382 US 87, 90 "Government by the moment to moment opinions of a policeman on his beat" is constitutionally unsatisfactory.

[14] Shuttlesworth v Birmingham (1965) 382 US 87, 92.

[15] Rebecca K. Crown Income Charitable Fund v. Commissioner 8 F.3d. 571, 576 (7th Cir 1993). Richard A. Posner, a highly respected author, academic and Chief Circuit Judge opined that, in technical areas of tax laws, “We generalist judges should be loath to lay down the law on the question without the Treasury’s view.” Also see Hand. 1947. “Eulogy of Thomas Walter Swan,” 57 Yale L.J. 167, 169 (1947). No less an authority than Judge Learned Hand once said, "In my own case the words of such an act as the Income Tax, for example, merely dance before my eyes in a meaningless procession: cross-reference to cross-reference, exception upon exception-couched in abstract terms that offer no handle to seize hold of-leave my mind only a confused sense of something vitally important, but successfully concealed… which it is my duty to extract, but which is within my power, if at all, only after the most inordinate expenditure of time.

[16] Giaccio v Pennsylvania (1965) 382 US 399, 402-403.

[17] Trembly, 480 A.2d. at 1365. Also see Bourque v. Dettore 589 A.2d 815, 822-23 (R.I. 1991). "A statute which either forbids or requires the doing of an act in terms so vague that men of common intelligence must necessarily guess at its meaning and differ as to its application violates the first essential of due process of law." Lanzetta v New Jersey (1939) 306 US 451, 453; Connally v General Constr Co (1925) 269 US 385, 391; In re Newbern (1960) 53 C2d 786, 350 P2d 116.

[18] Yamaguchi, Colleen S. 1986. “Uncertainty in The Law: An Uncertain Defense in Criminal Tax Prosecution,” 39 *The Tax Lawyer* 399 (1986).

[19] Most of the complexity of the tax code comes from social engineering. The tax code is festooned with deductions to promote home ownership, credits for child care, retirement savings, deductions for retirement savings, to encourage one kind of business and discourage others, and so forth. Every deduction and every credit represents an expenditure from the Treasury of the United States.

But Article I Section 9 of the Constitution states, “No Money shall be drawn from the Treasury, Amendment to the Constitution provides that no person will be deprived of life, liberty, or property, without due process of law.

When evaluating the constitutionality of a law, the Court first looks to see whether the law burdens a fundamental right. A fundamental right is one articulated in the Bill of Rights or one that is deeply rooted in American history and traditions.[20]

Where the right burdened is not a fundamental right, for example the right to a driver's license, to a building permit or the like, the court applies a rational basis test. The rational basis test says that if the law is rationally related to a legitimate government purpose, then the law is valid.[21]

If the court concludes a fundamental right is burdened, it applies strict scrutiny. Under the strict scrutiny test, the court inquires into whether there is a compelling state interest. If a law is subject to strict scrutiny and no compelling state interest is found, the law may be struck down as unconstitutional. In this context, the phrase state interest means government interest.[22]

Rights Burdened

Are any rights burdened by the tax code? Payment of taxes due and owing is not a legally recognizable burden. Taxes are the price of living in a civilized society, so mere payment of taxes impairs no right. Treating different taxpayers differently in terms of deductions, credits and phase outs does not, per se, burden fundamental rights to either due process or equal protection. Then what rights are burdened by the tax code?

Most people would agree that the tax code is so complicated, they don't understand it. Missteps in trying to comply with the tax code can result in substantial penalties.

Section 7201 of the Code provides that "any person who willfully attempts in any manner to evade or defeat any tax imposed by this title or the payment thereof, shall, in addition to other penalties provided by law, be guilty of a felony…" A taxpayer convicted of criminal fraud is subject to fine of up to $100,000 ($500,000 in the case of a corporation) or imprisonment of up to five years…"[23] Vague laws may trap the innocent by not providing a fair warning.[24] Therefore, vague laws, such as the tax code, burden the fundamental right to liberty, through imprisonment, and burden the right to property through avoidable fines, penalties and interest.

The fundamental rights of liberty and property are also burdened if the code is so vague that those charged with enforcing the laws have no standard for judging whether taxpayer conduct was within or outside of the bounds of the law. When the law is so

but in Consequence of Appropriations made by Law; and a regular Statement and Account of the Receipts and Expenditures of all public Money shall be published from time to time." Tax deductions and credits are bypassing this Constitutional requirement. Deductions and credits may be passed into law, but Section 9 requires an accounting for public receipts and expenditures. This is not being done.

The fact that the tax code violates Article I Section 9 of the Constitution adds additional weight to the side of the individual against the government in the balancing of interests. Arguably, if all social engineering were removed from the tax code, the remaining law would be Constitutional. However, the courts must evaluate the law as it is and not as they would like it to be.

[20] Snyder v. Commonwealth of Massachusetts 291 U.S. 97 (1934) .

[21] United States v. Carolene Products Co., 304 U.S. 144 (1938)

[22] Mauro, Tony. Illustrated Great Decisions of the Supreme Court. Washington D.C.: CQ Press, 2000. p.37-38. Also see Sherbert v. Verner, 374 U.S. 398 (1963).

[23] Smith, Ephraim P, Phillip J. Harmelink, James R. Hasselback. 2008. *2009 CCH Federal Taxation Comprehensive Topics*, CCH. Chicago. p2-57, paragraph 2365.

[24] Grayned v. City of Rockford, 408 U.S. 104, 108-09 (1972) "It is a basic principle of due process that an enactment is void for vagueness if its prohibitions are not clearly defined. Vague laws offend several important values. First, because we assume that a man is free to steer between lawful and unlawful conduct, we insist that laws give the person of ordinary intelligence a reasonable opportunity to know what is prohibited, so that he may act accordingly. Vague laws may trap the innocent by not providing a fair warning. Second, if arbitrary and discriminatory enforcement is to be prevented, laws must provide explicit standards for those who apply them. A vague law impermissibly delegates basic policy matters to policemen, judges, and juries for resolution on an ad hoc and subjective basis, with the attendant dangers of arbitrary and discriminatory application."

vague it doesn't provide standards to those charged with enforcing the law, it can be unconstitutional.[25]

On the other hand, individual rights are not absolute. They must be balanced against legitimate state interests. The Fifth Amendment acknowledges this when it says "No person… shall be deprived of life, liberty or property without due process of law."[26]

Compelling Government Interest

The government must raise taxes to provide for defense, public health, public safety, and infrastructure. The 16th Amendment to the Constitution authorizes the income tax and no one questions the right of the United States to levy taxes and raise revenue. On the surface that would seem to provide the compelling state interest needed to uphold the constitutionality of the tax code.

Limits on Government Interest

Can the Congress write a law of unlimited complexity as long as it serves a compelling state interest? For example, can Congress write a law in Latin or Cuneiform? There are at least two limits on the laws Congress can enact.

First, a statute touching fundamental rights must be narrowly drawn to achieve the government's interest.[27] In other words, a law cannot be unnecessarily broad.[28] It must be surgical in its nature to protect the government's interest while providing the minimum invasion of fundamental rights.

Second, the statute must provide notice of the burdens and benefits of the law. The vagueness doctrine precludes the enforcement of "a statute which either forbids or requires the doing of an act in terms so vague that men of common intelligence must necessarily guess at its meaning and differ as to its application."[29]

Complexity is the functional equivalent of vagueness because it burdens due process in exactly the same way as vagueness. The tax code is so complex that neither citizens, nor those charged with enforcing the law, IRS employees, can determine what the law requires on a reliable and consistent basis.

Due process is a restraint on legislative, executive and judicial powers. Congress cannot make any process 'due process of law' by its mere will."[30] All persons within the territory of the United States are entitled to due process protection, including corporations.[31]

Narrow Construction

In addressing the issue of whether the tax code is narrowly drawn to raise revenue for the government, consider the words of the 16th Amendment to the Constitution of the United States:

> "The Congress shall have power to lay and collect taxes on incomes, from whatever source derived, without apportionment among the several States, and without regard to any census or enumeration."

Does levying and collecting of income taxes give rise to complexity, or does the social engineering built into the income tax code give rise to the complexity? The tax code is festooned with deductions, refundable credits, non-refundable credits, phase outs, schedules, worksheets, brackets, basis in property, and terms whose definitions differ from place to place in the tax code, instructions and forms that refer to other instructions and forms that refer to yet other instructions and forms. The code also includes the Alternative minimum tax which is a completely separate tax system with its own deductions, schedules, worksheets, and property basis, forms, schedules, worksheets and instructions. In short, the tax code is not narrowly draw to affect

[25] Grayned v. City of Rockford, 408 U.S. 104, 108-09 (1972)

[26] US Constitution, Fifth Amendment.

[27] Cantwell v Connecticut (1940) 310 US 296, 311. "Statutes must be "narrowly drawn to define and punish specific conduct as constituting a clear and present danger to a substantial interest of the State." Also see Elfbrandt v Russell (1966) 34 *US Law Week* 4347, 4349; Zwickler v. Koota, 389 U.S. 241, 250 (1967), quoting NAACP v. Alabama, 377 U.S. 288, 307 (1964).

[28] Aptheker v Secretary of State (1964) 378 US 500, 508. A governmental purpose to control or prevent activities constitutionally subject to state regulation "may not be achieved by means which sweep unnecessarily broadly and thereby invade the area of protected freedoms."

[29] United States v. Lanier, 520 U.S. 259, 266 (1997).

[30] Murray's Lessee v. Hoboken Land and Improvement Co. 59 U.S. (18 How.) 272, 276 (1856). Also see Trustees of Dartmouth College v. Woodward, 17 U.S. (4 Wheat.) 518-82 (1819). And Chief Justice Shaw's opinion in Jones v. Robbins, 74 Mass. (8 Gray) 329 (1857).

[31] Sinking Fund Cases, 99 U.S. 700, 719 (1879).

the legitimate state interest of levying and collecting taxes. It has become an instrument of social engineering; an artifice to reward or discourage behavior; and a means to bestow favors on those with strong lobbies or voting blocks.

The tax code burdens the fundamental rights of liberty and property because complexity coupled with tax sanctions chills taxpayer action in claiming credits and deductions legally due the taxpayer. A chilling effect occurs when legitimate speech or conduct is self-censored by fear of penalization. Vagueness in the tax code can also have a chilling effect on challenging the findings of the Internal Revenue Service. It is hard for citizens of ordinary intelligence to understand their rights. This may have the effect of depriving taxpayers of due process.

Counter Argument

The counter argument is that the tax code does not burden fundamental rights and that it is more akin to economic regulation. Laws that regulate the economy are scrutinized less closely than laws that regulate individual behavior. Laws that impose civil or administrative penalties may be drafted with less clarity than laws imposing criminal sanctions. [32]

The social engineering that provides preferences to some taxpayers through, deductions, credits and so forth and denies them to others through phase outs and limits is arguably economic regulation of a sort. Unfortunately, this economic regulation is inextricably bound up with the revenue raising aspect of the tax code and its penal nature. As Edward Gibbon noted so long ago, "Tax… obtained by the seizure of property can rarely be extorted by any other means than those of corporal punishments."[33]

Seizure of property and criminal prosecution, two tools routinely used by the Internal Revenue Service, clearly result in deprivation of liberty and property, and thus may burden those two fundamental rights when the contours of the law are vague. Therefore, on balance, the standard of strict scrutiny should be applied to the income tax code. But even under strict scrutiny, further analysis is required because of the state's compelling interest in raising tax revenue.

Standard of Proof

The standard of proof for unconstitutional vagueness is very high. There is a strong presumption that laws enacted by the legislature are constitutional. Distinguishing between unconstitutional vagueness and ordinary ambiguity is often difficult.[34] The burden is on the plaintiff to show a law is unconstitutionally vague, and if there are any circumstances in which the statute is not vague, it will not be held unconstitutional.[35] Furthermore, a law may be constitutional as applied in one matter and may violate the constitution when applied to another.[36] A statute must also be judged by its effect[37] and whether it provides adequate notice.[38] This leads directly to the question of how one proves vagueness. Evidence must be clear and convincing. Courts will not act without facts in the record.[39] The next section discusses a body of evidence which could be used to build a record upon which the courts can act.

FACTUAL ANALYSIS

Critique of the Tax Law Complexity

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32 __. 2009. "Void for Vagueness Doctrine," American Law Encyclopedia, Vol. 10. http://law.jrank.org/pages/11152/Void-Vagueness-Doctrine.html

33 Gibbon, Edward. 1788. *Decline and Fall of the Roman Empire*. Heritage Press. John B. Bury, Ed. (republished 1946) p.493.

34 LaFave, W. and A. Scott. 1972. *Criminal Law* § 10, at 74. "There is no exact borderline which can be drawn between a statute which is merely ambiguous and one which is unconstitutionally vague."

35 Commonwealth v. Henry's Drywall Co., 366 Mass. 539 , 542-544 at 542 (1974). "In this sphere the burden is on the plaintiffs to make factual showings that the statute is irrational in its operation, and it has been our frequently stated rule that such a statute will not be set aside as a denial of due process `if any state of facts reasonably may be conceived to justify it."

36 Watson v. Buck 313 US 387 (1941)

37 Waddey v. Waddey, 290 NY 251, 49 NE 2d. 8 (1943). "A statute is constitutional or unconstitutional in accordance with the way in which it operates and the effect that it has." Also see Davis v. Mills 194 US 451, 457. "Constitution is intended to preserve practical and substantial rights, not to maintain theories."

38 Wright v Georgia (1963) 373 US 284. "Appellants do not find it necessary to contend that the statute is so vague as to be unconstitutional on its face. It is clearly unconstitutional as applied in this particular proceeding because it does not give appellants adequate notice that the conduct in which they engaged is prohibited (if, indeed, it is prohibited).

39 Alabama State Federation of Labor, Local Union No. 103, Branch Brotherhood of Carpenters and Joiners of America v. McAdory, 325 US 450 (1945).

The tax law has been criticized as ambiguous, inscrutable,[40] too complicated for a layman,[41] a "black box",[42] loopy, obtuse, baffling, contradictory legalese,[43] a jigsaw puzzle,[44] complex, specialized, and esoteric,[45] almost incomprehensible, a rat's nest,[46] that rarely bears any relationship to common sense.[47] Richard M. Lipton, Chair, American Bar Association Section on Taxation said "Even the most sophisticated tax advisers find it difficult to decipher tax laws in their current state." The American Institute of Certified Public Accountants and the Tax Executives Institute concur in this view.[48] A Google search of "federal tax complexity" yielded 461,000 results as of June 20, 2009. But complaints about tax law complexity probably aren't a sufficient basis for courts to rule the tax code unconstitutionally vague.

IRS Comments on Tax Complexity

So what does the IRS say about the tax code? IRS Tax Advocate Lee R. Monks said tax complexity is the cause of most taxpayer problems with the IRS.[49] Robert Kobel, an experienced senior Public Affairs Officer for the IRS Brooklyn District reported that Schedule D confused him.[50] The Treasury Inspector General filed a report concluding the Alternative Vehicle Credit was so complex it was difficult to administer.[51] Nina Olson, the National Taxpayer Advocate at the IRS, reported to Congress that "Complexity is still the number one problem facing tax payers."[52] Jerome Kurtz, former IRS Commissioner, said "A taxpaying public that doesn't understand the law is a taxpaying public that can't comply with the law."[53] Are IRS criticisms of the tax code sufficient to render it unconstitutionally vague on due process grounds? Probably not.

The Burden of Compliance as a Measure of Complexity

The tax code has grown so large, it is difficult to measure its size, but at last count is was more than 3.7 million words.[54] There were 833 Tax Forms and 289 sets of instructions for those forms posted on the IRS website as of June, 2009.

Consider the complexity of Form 1040. It requests 87 data elements to compute taxes, uses conjunctions like "and," and "or" 18 times, uses logical operators like "if," "otherwise" and "qualifying" 21 times, uses 28 exemptions, deductions and credits, requires 20 calculations like add, subtract and multiply, it references 22 schedules, and directs the taxpayer to instructions 36 times in addition to referencing 32 forms and the Alternative Minimum Tax which has all the complexity of an independent tax system with its own credits, deductions, add-backs, property basis, and tax rates.

But there are many other layers of complexity as well. Form 1040 refers to Schedules A, B, EZ-C, D, and Form 1099. These forms refer to other forms, schedules and worksheets. For example, Schedule A references 8 other forms, schedules and worksheets,

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[40] Buckley, William F. 2008. "State of the Union: Not So Good," *National Review*. Jan.30. p.62-63

[41] MacDonald, Elizabeth M and Susan Berger. 1993. "How Congress does its taxes," *Money Magazine* Apr. Vol 22. Iss.4 p.96. Quoting an assistant to Rep. Mel Hancock (R-Mo.).

[42] Goolsbee Austan. 2004. "Turbotax Revolution" from *The Crisis in Tax Administration*. Arron, Henry J. and Joel Selmrod, Eds. Brookings Institution Press, Washington.

[43] Lalli, Frank. 1996. "Here's Your Chance To Help Replace the Income Tax With A Fairer System," *Money Magazine*. May. Vol.25 Iss.5 p.13.

[44] Houston Textile Co. v. Commissioner 173 F.2d. 464 (5th Cir. 149).

[45] Ryesky, Kenneth H. 2004. "Tax Simplification: So Necessary and So Elusive," *Pierce Law Review*. Vol.2 No.2 pp93-106.

[46] MacDonald, Elizabeth M and Susan Berger. 1993. "How Congress does its taxes," Money Magazine Apr. Vol 22. Iss.4 p.96. Quoting Clay Shaw US House of Representatives, member of committee that writes tax laws.

[47] Cohen v. US 995 F.2d. 205, 209. (Fed.Cir 1993).

[48] McMillion, Rhonda. 2001. "Make It Simple: ABA urges congressional action to make federal tax laws easier to understand," *ABA Journal*. Aug. p82.

[49] ___ 1997. "Tax Report: Tax-Law Complexity and Poor IRS Service Draw Fire from an IRS Official," *Wall Street Journal*. Feb.1 p1.

[50] ___ 1998. "Tax Schedule D for Dammit!" *Newsday*. Feb.13. (Long Island, NY) A4. Schedule D of Form 1040 is used to combine long and short term capital gains and losses.

[51] ___ 2008. "The Complexity of the Law Makes Administering the Alternative Motor Vehicle Credit Difficult," Treasury Inspector General for Tax Administration Office of Audit, May 6. Rpt.No.2008-30-107.

[52] Olson, Nina E. 2009. "We Still Need a Simpler Tax Code," *Wall Street Journal*. Apr.10. A13.

[53] ___ 1987. "Asides: Tax Revision," *Wall Street Journal*. Editorial. Mar.3.

[54] Olson, Nina E. 2009. "We Still Need a Simpler Tax Code," *Wall Street Journal*. Apr.10. A13.

Schedule B references 5 other forms, schedules and worksheets, Schedule EZ-C references 12 other forms, schedules and worksheets, and Schedule D references 19 other forms, schedules and worksheets. The tax code has made something as simple as reporting dividends complex. Form 1099-Div refers to instructions for schedules A, B and D, a worksheet for schedule D and instructions for 8 other forms.

Taxpayers spend 7.8 billion hours each year complying with filing requirements. That is the equivalent of 3.8 million full time workers. Compliance costs for individuals and businesses in 2006, the most recent year for which data is available, was $193 billion or about 14% of the amount collected.[55] From the point of view of companies, tax compliance is a dead weight loss. But is the cost and expense of complying with the law sufficient to render it unconstitutionally vague? Probably not.

Standards

A law may be held unconstitutionally vague if reasonably intelligent people must guess at its meaning. But what is the yardstick for measuring who is a reasonably intelligent person? We expect people to understand that a red light means stop 100% of the time, to understand that a stop sign mean stop 100% of the time, and to not drink and drive 100% of the time. Some may elect to not obey these laws, but we expect all to understand them. Is anyone who understands the law on red lights, stop signs and drinking and driving reasonably intelligent? If so, then these people should be used as the standard for testing whether the tax code is unconstitutionally vague.

On the other hand, there are laws we don't expect people of ordinary intelligence to understand such as securities laws, bankruptcy, telecommunications laws, and laws governing the pharmaceutical and nuclear industries. The difference between traffic laws and laws governing specific industries is that everyone has direct contact with traffic laws. In contrast, people choose to engage in securities transactions, bankruptcy, telecommunications, pharmaceutical development or nuclear power operations. People have no choice when it comes to tax law. Everyone is impacted. Everyone must pay taxes due. People cannot opt out of taxation. When a law touches everyone, everyone should understand it.

[55] Olson, Nina E. 2009. "We Still Need a Simpler Tax Code," *Wall Street Journal*. Apr.10. A13.

According to the US Census Bureau, 84.5% of the US population has graduated from high school.[56] Arguably, anyone who graduates from high school should be reasonably intelligent, although one might be reasonably intelligent and not be a high school graduate. For argument's sake, say all high school graduates and half of non-graduates are reasonably intelligent in terms of knowing what the law requires. That would set our benchmark of reasonably intelligent people at 92.3% of the population. But what does actual behavior say?

Since tax preparation is expensive, we might expect only 7.7% of taxpayers, those who are not reasonably intelligent, to seek help filing their taxes. However, for 2006, the most recent year for which the IRS has published statistics, 62.8% of taxpayers paid a professional to complete their tax return or bought tax preparation software.[57] This is far higher than expected if 92.3% of taxpayers understood the tax code. These data provide some evidence that the majority of reasonably intelligent taxpayers don't understand the tax code.

A counter argument is that the tax law is perfectly clear to one trained in taxes, or the law, or accounting. The question that flows from that is whether a challenge for unconstitutional vagueness will fail if some people understand the tax code? But note the language of the cases; a statute will fail for unconstitutional vagueness if people of ordinary intelligence do not know what is required. Ordinary people are the benchmark, not experts.

Complexity as Measured By Taxpayer Errors

Another indication of whether the tax code is so complex that people of ordinary intelligence do not know what is expected of them is to analyze taxpayer errors. For the tax year 2008, the IRS identified 5.4 million errors on 11.4 million returns for a taxpayer error rate of 47.4%.[58]

About 8 million people a year for three years filed unnecessary tax returns and collectively spent $390

[56] ___ 2009. "Table 225 Educational Attainment by State," The 2009 Statistical Abstract: The National Data Book, US Census Bureau.

[57] __ 2007 "Tax Year 2006 Taxpayer Usage Study IRS Report Number 16," Internal Revenue Service US Department of Treasury http://www.irs.gov/taxstats/article/0,,id=184856,00.html

[58] ___ 2009. "Interim Results of 2009 Filing Season," Treasury Inspector General for Tax Administration Office of Audit, Mar.30 Rpt.No.2009-40-058

million and 75 million hours per year on these returns because they didn't understand who must file and whether they were entitled to a tax refund. The taxpayer effort on these returns was equal to 37,500 full time employees. The IRS spent $11 million processing these unnecessary returns.[59]

Approximately 5.7 million of 80.0 million electronically submitted returns were rejected by the IRS giving an error rate of 7.15% on tax software. Of those, 4.5 million electronic returns were subsequently corrected and resubmitted. That means 1.2 million or 22.2% of electronically submitted returns with initial errors could not be processed.[60, 61]

In 2005, 56% of Partnership and 57% of S-Corp returns examined required adjustments. IRS adjustments mean taxpayers did not know what was required of them.[62]

An estimated 64% of 13.9 million eligible businesses, or about 8.9 million, did not claim the telephone excise tax rebate because of complexity.[63] About $4 billion of over collected telephone excise taxes may never be refunded because taxpayers do not understand the credit.[64] About 105,000 taxpayers failed to claim about $209 million of motor vehicle donation deductions they could have claimed because of complexity.[65]

Of a sample of 84 claims for carry back loss refunds, 50% had errors. The Treasury attributed this to unclear instructions.[66]

A survey of 2,244 taxpayers indicated that 66% of taxpayers got at least one question wrong on a survey of six common areas: (i) gain on sale of a home, (ii) claiming a dependent, (iii) education savings, (iv) capital gains, (v) alternative minimum tax and (vi) retirement savings.[67] IRS audits found that taxpayers repeatedly make errors computing (i) taxable social security, (ii) claiming standard deductions and (iii) claiming the Earned Income Credit.[68]

Overall, the error rate among taxpayers seems far higher than one might expect if 92.3% of taxpayers understood the tax code and only 7.7% didn't understand it. This taxpayer error rate provides clear evidence that taxpayers of ordinary intelligence do not understand what the law requires.

Professional Tax Preparers and Complexity

If ordinary taxpayers have a high error rate, what about professional tax preparers? If anyone can understand the tax code it should be them.

Over the period 1988 to 1997 Money Magazine asked 286 professionals to prepare tax returns for a hypothetical family. The overall error rate on these

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59 ___ 2007. "Evaluation of the Characteristics of Unnecessarily Filed Individual Income Tax Returns," Treasury Inspector General for Tax Administration Office of Audit, Aug.17 Rpt.No.2007-40-130

60 ___ 2007. "Screening Electronically Filed Returns for Errors Provides a Significant Benefit and Does Not Appear to be a Barrier to Electronic Filing," Treasury Inspector General for Tax Administration Office of Audit, May.25 Rpt.No.2007-40-079

61 __ 2007. "Internal Revenue Service - 2007 Filing Season Statistic - Table 13" for the weeks ending 12/29/2006 and 12/28/2007" IRS report provided pursuant to Freedom of Information Act request.

62 ___ 2006. "Filing Characteristics and Examination Results for Partnerships and S Corporations," Treasury Inspector General for Tax Administration Office of Audit, Aug.28 Rpt.No.2006-40-114

63 ___ 2008. "The Telephone Excise Tax Refund Was Not Claimed on Business Tax Returns Primarily Because of the Perceived Work and Expense Involved to Do So," Treasury Inspector General for Tax Administration Office of Audit, Sept.17 Rpt.No.2008-30-175

64 ___ 2008. "Although Strong Efforts Were Made, A Significant Amount of the Telephone Tax Over collected form Individual Taxpayers May Never Be Refunded," Treasury Inspector General for Tax Administration Office of Audit, Sept.26 Rpt.No.2008-30-178

65 ___ 2007. "Improved Procedures Are Needed to Identify Noncompliance With Reporting Requirements for Contributions of Motor Vehicles," Treasury Inspector General for Tax Administration Office of Audit, Sept.17 Rpt.No.2007-30-171

66 ___ 2008. "Processing of Carry back Loss Claims Needs to be Improved to Ensure Taxpayers Receive Accurate Refunds," Treasury Inspector General for Tax Administration Office of Audit, Feb 21, Rpt.No.2008-40-062

67 Bonacum, Leslie and Neil Allen. 2003. "CCH Complete Tax Survey Suggests Taxpayers Confused by Tax Code Complexity," CCH Press News. www.cch.com
/press/news/2005/20050316t.asp

68 ___ 2007. "Opportunities Exist to Help Seniors and Many Other Taxpayers That Repeatedly Make Mistakes on Their Individual Income Tax Returns," Treasury Inspector General for Tax Administration Office of Audit, May 31 Rpt.No.2007-30-075

returns was 94.3%.[69, 70, 71] An IRS sample of 28 professionally prepared returns found 17 or 60.7% contained significant errors.[72]

A Money Magazine survey of 50 tax preparers, of which 19 were CPAs and 12 were enrolled agents (tax professionals who have either worked as Internal Revenue Service agents for at least five years or passed a tough IRS test) where asked 10 questions on topics like where the top tax brackets started, whether additional taxes could be paid over time, or how municipal bonds were taxed. None of the 50 preparers got all 10 questions correct and only 34 got half the questions right.[73]

US Senators were surveyed as to whether they prepared their own return and whether returns had errors. Of the 45 Senators who responded only two (4.4%) prepared their own tax returns and these were error free. However, of the 43 Senators who used professional tax preparers, 8 or 18.6% reported that the IRS found errors in their returns.[74]

The weighted average error rate for 362 professional tax preparers discussed above was 83.1%. The high rate of errors among professional taxpayers provides clear and convincing evidence that the tax code is so complex, not even experienced professionals understand it. This alone provides sufficient evidence that the tax code, through its complexity, is unconstitutionally vague in violation of due process.

What Standard Should We Hold the IRS to?

As the police charged with enforcing the law, we should expect them to be correct 100% of the time, but can we expect any human endeavor to be correct all the time?

We expect planes, trains and elevators to deliver us safely 99.999% of the time. If planes, trains and elevators didn't exceed this standard there would be a public outcry followed by a litigation storm.

Suppose we allow the IRS an error rate 1,000 times higher than planes, trains and elevators. Then if the IRS understood the tax code well enough to apply it in a fair and impartial manner, we would expect their error rate to be less than 1%.

Complexity as Measured by IRS Volunteer Income Tax Assistance Program Errors

To help taxpayers comply with the law, the Internal Revenue Service has developed a network of volunteers to assist taxpayers at no cost. This program is called VITA, the Volunteer Income Tax Assistance program. VITA volunteers principally assist with simple personal returns and rarely do business returns. Do IRS sanctioned volunteers do any better that professional tax preparers?

Over the 222 VITA prepared tax returns sampled by the Treasury Department Inspector General for Tax Administration Office of Audit; it found a weighted average 36% of returns had errors. This is far higher than the expected error rate of 7.7% based on the foregoing estimate of reasonably intelligent people, and far, far higher than the 1% error rate we would expect from authorized agents of the IRS. An error rate of 36% among those sanctioned by the Internal Revenue Service to prepare returns ought to be proof positive that the tax code is so complex that neither a person of ordinary intelligence, nor IRS sanctioned preparers understand the law.

Complexity as Measured by Internal Revenue Service Employees

The error rate for tax law information provided by IRS employees at Taxpayer Assistance Centers was 49% for 2002, 30% for 2003, 33% for 2004 and 34% for 2005 according to Treasury Department audits.[75]

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[69] Tritch, T. and Lohse, D. 1992. "Tax payers, start worrying!" *Money.* March, Vol. 21 Issue 3, p88,

[70] Tritch, Teresa and Roberta Kirwan. 1993. "Keep an eye on your tax pro," *Money*. March, Vol. 22 Issue 3, p98.

[71] Tritch, Teresa. 1997. "Why your tax return could cost you a bundle," Money. March, Vol. 26 Issue 3, p80.

[72] ___ 2008. "Most Tax Returns Prepared by a Limited Sample of Unenrolled Preparers Contained Significant Errors," Treasury Inspector General for Tax Administration Office of Audit, Sept.3 Rpt.No.2008-40-171. Enrolled tax preparers are those who have worked for the IRS at least five years or taken a comprehensive tax examination. Everyone else who prepares tax returns, including Certified Public Accountants are classified as unenrolled preparers.

[73] Tritch, Teresa and Kirsten Chancellor. 1994. "Odds are, your tax preparer doesn't grasp the new law." *Money*. March, Vol. 23 Issue 3, p151.

[74] ___. 2009. "Survey of Senators Tax Preparation and Errors," Polotico.com Feb.11. www.politico.com/news/stories/0209/18512.html

[75] ___ 2009 Treasury Department Inspector General for Tax Administration Office of Audit,

In January 2004 Treasury Inspector General for Tax Administration anonymously visited 34 Taxpayer Assistance Centers (TAC) and found a 20% error rate.

Former IRS Commissioner Charles O. Rossoti said, "Fundamentally we are attempting the impossible. We are expecting our employees and managers to be trained in areas that are far too broad to ever succeed, and our manuals and training courses, are therefore unmanageable in scope and complexity."[76] If the IRS Commissioner thinks the areas are too complex for his employees, trained and equipped with specialized manuals, then how can the ordinary citizen reasonably intelligent citizens expect to understand what the law requires?

A Treasury Department Audit in 2006 tested 200 cases and found Taxpayer Assistance Centers incorrectly applied tax law in 15% of cases (29 of 200) and had no idea of what the law was in 13% of cases (26 of 200). Summarizing, Taxpayer Assistance Centers were not able to give taxpayers the correct answer in 28% of the time.[77]

Over the period January 2007 through July 2008, a sample of 4,457 encounters with taxpayers at Taxpayer Assistance Centers was evaluated and in 1,326 instances IRS employees provided incorrect information for an error rate of 29.8%.[78] But an internal audit of Taxpayer Assistance Centers over the period October 1, 2007 to March 8, 2008 estimated the error rate at 40% on 2.6 million taxpayer contacts.[79]

These data provide proof positive that the tax code is so complex that neither taxpayers of ordinary intelligence nor Internal Revenue Service employees understand it. But, IRS errors go far beyond giving incorrect tax advice.

About 5.1% of taxpayers were sent incorrect CP2000 notices. These notices are used to advise taxpayers the IRS plans to change their tax return and assess additional tax if necessary. About 243,345 tax payers were over assessed because of these errors and 97,340 were under assessed because of errors. About 24% of taxpayers who called the IRS to get an explanation of the CP2000 notice received information that was incorrect. The Treasury concluded the complexity of the CP2000 notice is probably why some taxpayers did not question the information provided, even when the information was incorrect. [80] This is an example of the chilling effect that complexity can have on taxpayers and so complexity effectively extinguishes taxpayers' rights to due process.

Tax examiners incorrectly computed the Alternative Minimum Tax (AMT) for 5.7% of 52 tax returns identified by computer as having a discrepancy.[81] Installment payments of estate tax are so complex it has not been computerized. The IRS incorrectly calculated interest on estate taxes 16% of the time on a sample of 99 estates.[82] Of 11,615 penalties appeals, 3,656 penalties were levied in error or about 31%.[83]

Even the IRS admits that tax code is so complex it is difficult to administer. The Treasury Inspector

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Rpt.No.2009-40-058 Mar.30 2009; Rpt.No.2008-40-177 Sept.18 2008; Rpt.No.2007-40-137 Aug.27 2007; Rpt.No.2007-40-130 Aug.17 2007; Rpt.No.2007-40-072 Apr.17 2007; Rpt.No.2006-40-125 Aug.31 2007; Rpt.No.2006-40-104 Nov. 2006.

[76] ___ 2004. "IRS 'Free' Advice Often Wrong," *Today Magazine*. April. Published by the Society for the Advancement of Education. pp.14-15.

[77] ___ 2006. "Customer Service at Taxpayer Assistance Centers Showed Improvement During the 2006 Filing Season," Treasury Inspector General for Tax Administration Office of Audit, Aug.31 Rpt.No.2006-40-125

[78] ___ 2008. "Field Assistance – Tax Law Trend Report(s)" January 2007 to July 2008. Prepared by the IRS based on NQRS data. Provided by the IRS National Freedom of Information Act Office. December, 2008.

[79] ___ 2008. "Interim Results of the 2008 Filing Season," Treasury Inspector General for Tax Administration Office of Audit, Mar.31 Rpt.No.2008-40-100

[80] ___ 2008. "Most Automated Underreported Program Notices Are Correct; However, Additional Oversight is Needed," Treasury Inspector General for Tax Administration Office of Audit, Sept.25 Rpt.No.2008-40-180

[81] ___ 2008. "Procedures Were Not Always Followed When Resolving Alternative Minimum Tax Discrepancies," Treasury Inspector General for Tax Administration Office of Audit, July 30.17 Rpt.No.2008-40-146

[82] ___ 2007. "Opportunities Exist to Improve Manual Interest Calculations on Estate Tax Returns," Treasury Inspector General for Tax Administration Office of Audit, Aug.30 Rpt.No.2007-30-163

[83] ___ 2007. "The Office of Appeals Needs to Improve the Monitoring of Its Campus Operations Quality," Treasury Inspector General for Tax Administration Office of Audit, Aug.27 Rpt.No.2007-10-071

General filed a report concluding the Alternative Vehicle Credit was so complex it was difficult to administer.[84] The law disallowing hobby losses, IRC Sec.183, is so vague the IRS potentially lost $1.9 billion of taxes.[85]

The agency charged with administering the tax code should understand and implement it correctly 100% of the time, but even if a 1% error rate is allowed, the data show the IRS error rate is substantially higher than one would expect if the IRS understood the tax code. This is proof positive that the tax code is so complex that neither a person of ordinary intelligence nor those charged with enforcing the law can understand it. Hence, the tax code is unconstitutional on due process grounds.

Complexity as Measured by the Judiciary

If ordinary citizens, tax professionals and even IRS employees fail to grasp the tax code, what about the judiciary, arguably among the smartest people in the land?

Richard A. Posner, a highly respected author, academic and Chief Circuit Judge opined that, in technical areas of tax law, "we generalist judges should be loath to lay down the law on (a) question without the Treasury's view."[86] In other words, tax law is so complicated, judges must defer to the Treasury Department. This gives the Treasury Department and its agent, the Internal Revenue Service, unparalleled power to apply the law in an ad hoc manner. One of the tests of whether a law is Constitutional is whether it provides sufficient guidance to limit an agency's power. Judge Posner seems to conclude the law does not give adequate guidance.

No less a legal authority than Judge Learned Hand once said, "In my own case the words of… the Income Tax (code)… merely dance before my eyes in a meaningless procession: cross-reference to cross-reference, exception upon exception; couched in abstract terms that offer no handle to seize hold of; (it) leave(s in) my mind only a confused sense of something vitally important, but successfully concealed… which it is my duty to extract, but which is within my power, if at all, only after the most inordinate expenditure of time."[87] If the most intelligent and learned judges in the land don't understand the tax code, how can the reasonably intelligent citizen hope to understand it?

FORM OF RELIEF

As Chief Justice John Roberts, Jr. once stated, "Courts should be like umpires, applying the rules of others…"[88] But what if the Congress has lost the ability to reform the tax code and bring it into line with the constitutional standard of clarity? Many politicians have called for tax simplification and each attempt at simplification has made the tax code longer and more complex. If the federal tax code is unconstitutionally vague, what should the courts require?

Courts should not get into the minutia of tax rates, tax brackets, deductions and credits. Nor should courts determine how heavily the hand of taxes weighs on citizens and businesses. Those are political questions. But this doesn't mean the courts can't provide broad guidance.

Much of the complexity in the tax code is the result of social engineering, not raising tax revenue. While Article I, Section 8 of the Constitution authorizes Congress to promote the general welfare, nothing in the Constitution suggests that the tax code should be the exclusive tool for that purpose. One bright line the court might draw is to purge the tax code of social engineering and strictly limit it to raising tax revenue. Social goals can be addressed through other legislation and direct payments rather than tax deductions, credits and so forth. Removing social engineering would simplify the tax code dramatically.

The court should provide an objective standard for the tax code that approximates the understanding of people of ordinary intelligence. For example, the tax return might limited to one page, or it might be limited to the length of a credit card application

[84] ___ 2008. "The Complexity of the Law Makes Administering the Alternative Motor Vehicle Credit Difficult," Treasury Inspector General for Tax Administration Office of Audit, May 6. Rpt.No.2008-30-107

[85] ___ 2007. "Significant Challenges Exist in Determining Whether Taxpayers With Schedule C Losses Are Engaged in Tax Abuse," Treasury Inspector General for Tax Administration Office of Audit, Sept.7 Rpt.No.2007-30-173

[86] Rebecca K. Crown Income Charitable Fund v. Commissioner 8 F.3d. 571, 576 (7th Cir 1993).

[87] Mutual Benefit Life Insurance Company v. Commissioner of Internal Revenue 488 F.2d 1101 (1974) quoting Judge Learned Hand from the Eulogy of Thomas Walter.

[88] Mauro, Tony. 2009. "For the Supreme Court, Tradition Is on Tap at Inaugural" *Legal Times*. January 05.

which is often half a page. The tax code itself might be limited to, for example, the length of the Constitution of the United States, including Amendments, which is about two dozen pages. The court might require a common set of thresholds across all types of deductions and for all types of credits. The court might limit or eliminate references to other forms or worksheets. The court might eliminate alternative computations, as for example computation of the ordinary tax and the Alternative Minimum Tax. The court might also limit the number of logic branches in the tax form and in the tax code by eliminating conditions like "If line 1 is greater than line 2 then…" The court might also limit the ability of the Treasury Department and Internal Revenue Service to add complexity by limiting all rules and interpretations to some definite length such as the length of the Constitution of the United States. As the need for new regulations arose, the Treasury and IRS should be constrained to edit out less important rules to remain within the prescribed limit.

As stated previously, taxes are the cost of living in a civilized society, so simply voiding the tax code as unconstitutional would be neither productive nor wise. The court might order the Congress to reform the tax code along the lines suggested above within a reasonable period of time, for example two years. The court might also appoint a special master to work with Congress to fashion a Constitutionally acceptable tax code. And if the Congress refused or failed to act within the prescribed time, the Court should enjoin tax collection pursuant to the offending tax code and instead substitute a tax code designed by the special master until such time as Congress acts.

CONCLUSION

In summary, there is a substantial argument that the tax code is so complex that it is unconstitutionally vague. The test of vagueness is whether an ordinary citizen understands what the law prohibits or encourages. Laws are entitled to a strong presumption of constitutionality. However, this presumption can be rebutted. The standard for proving vagueness is very high. Never the less there is clear and convincing evidence that the tax law is so complex that people of ordinary intelligence no longer understand the behavior that is prohibited, encouraged or burdened. Further, those charged with implementing the tax code, the IRS, does not fully understand it and therefore the IRS is left to apply tax law in an error prone, ad hoc manner. Even judges admit the tax code is very nearly beyond understanding.

In the light of previous law, and the weight of the evidence, a thoughtful and courageous would find the tax code unconstitutionally vague. Rather than terminate the tax law's operation immediately, the courts should allow Congress a limited time to conform the code to judicial standards. The court could appoint a Special Master to work with Congress to revise the code. If Congress failed to act after some definite period, perhaps two years, the court could strike down the existing tax code as unconstitutional and empower the Special Master to implement a substitute tax code until Congress acts.

Court guidelines for a revised tax code should include a ban on social engineering, a strict and short limit on the length of the tax code and Treasury or IRS interpretive regulations, a limit or ban on supplemental worksheets and supporting forms, elimination of alternative calculations, and a strict and short limit on the length of a tax return.

Such reforms would restore confidence in the tax system, eliminate much of the dead loss cost of compliance with the code and might even generate more revenue for the government.

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INNOVATION IN TEACHING TECHNIQUES: EXPERIENTIAL LEARNING ASSIGNMENTS USING NEWS MEDIA

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ABSTRACT

Experiential learning is one of the oldest teaching/learning techniques in human history, and its effectiveness as a practical pedagogy is well documented in research literature. Using contemporary media sources such as The Wall Street Journal, The New York Times, or Internet news services, students can be given reading, research and writing assignments that reinforce course material, while also requiring their research of authoritative literature to support their outcomes. Because the media changes daily, students are offered unlimited opportunity to encounter unstructured problems and investigate possible solutions and to propose a best possible outcome.

INTRODUCTION

Experiential learning is one of the oldest teaching/learning techniques in human history, and its effectiveness as a practical pedagogy is well documented in research literature. As educators face students with significantly different learning styles from those encountered just a few years earlier, the challenge of engaging students in active learning requires increasingly more innovative approaches.

Industry leaders, critical of contemporary business education as failing to properly prepare students, cite the need for new business entrants to have the flexibility in application of knowledge to solve unstructured problems. Effective learning for business students must inculcate a capacity for inquiry, logical and critical analysis, communication skills, global perspective and moral values (Williams, 1993). Business education, in particular, lends itself to experiential learning through simulations, internships, and co-op learning with industry partners. Moreover, the concept of Service Learning, once the benchmark of the social and behavioral science curricula, has increasingly become part of the business education approach to experiential learning. Such modes of learning offer excellent practice of critical thinking and communication skills, along with a generous dose of exposure to reality for business students. Unfortunately, each of these approaches to experiential learning generally requires a semester-long commitment, thereby pre-empting some other learning activities that may be equally important to the business education.

In a model introduced by David A. Kolb and Ronald Fry, experiential learning is described as a continuous process that integrates (1) contemporary experience, (2) observation and collection of data from the experience, (3) analysis of the data and formulation of conclusions, and (4) application of the conclusions in new situations. (Cooper, 1975) The model explains how use of experiential assignments, in whatever format they are presented, aids students in better understanding theoretical concepts in their specific field of study.

In order to maximize the benefit of experiential learning, assignments should build on previous experiences and learning encounters, reinforcing knowledge already mastered (Kolb and Kolb, 2005). Experiential learning assignments offering unstructured problems that depend on utility of pre-existing knowledge applied in new ways helps to expand the critical thinking skills of future business leaders. This approach addresses the need for students to master problem solving skills rather than merely searching for existing solutions. It forces them to frame questions and identify innovative options for solving problems introduced with limited structure and incomplete data, an essential exercise for today's business students (Zlotkowski, 1996).

SHORT FORM EXPERIENTIAL LEARNING ASSIGNMENTS

Through an innovative teaching technique with broad relevance in business courses students are actively engaged in contemporary applications of theoretical concepts. The assignments described in this paper integrate research projects requiring students to familiarize themselves with the official literature of their field without consuming great amounts of in-class time. Such projects can be conducted as group assignments, may incorporate a brief report-writing component, and can include an in-class reflection on the research outcomes.

Using contemporary media sources such as The Wall Street Journal, The New York Times, or Internet news services, students can be given reading, research and writing assignments that reinforce course material, while also requiring their research of authoritative literature to support their outcomes. Because the media changes daily, students are offered unlimited opportunity to encounter unstructured problems and investigate possible solutions and to propose a best possible outcome.

Assignments can be adapted to accommodate class size, student learning preferences, and course time constraints. The important common thread in the assignments described here is the use of news media to introduce contemporary real world issues into the student assignments, coupled with use of relevant course-related research tools. Assignments can be formatted for individual efforts or cooperative group endeavors. They can be designed to measure a variety of desired outcomes including quantitative reasoning, written and/or oral communication skills, and cooperative learning.

GROUP PROJECTS WITH SLIDE SHOW RESULTS

One example of contemporary experiential learning assignments relies on groups working to interpret a news article and to apply appropriate authoritative literature to the problems identified. The results are then summarized in a slide show that can be submitted online and published for classmates to review. This format accomplishes the following specific learning goals:

1. Cooperative learning – students must work within group dynamics and share the workload for reading and interpreting the assigned article and then researching related literature.
2. Written communications – the slide show must be developed using proper grammatical structure to inform unfamiliar viewers in language they can readily understand.
3. Problem solving – the article offers open ended questions that require the students to interpret and agree on the salient points, then research the issues in the appropriate authoritative literature and summarize the application of their findings.
4. Critical Thinking – creative approaches to summary analysis of the salient points requires creativity in formulating ideas and investigating possible solutions.

By limiting the number of slides allowed in each assignment and creating groups of reasonable size, this assignment format can be used in larger classes without overtly increasing the grading load for the instructor. Nonetheless, it offers an equally rich experience for students as other experiential formats that might otherwise be used.

Individual Writing Assignments

In smaller, more advanced classes the written assignment for individuals may be preferred. The assignment follows much the same format as that described above, but students are required to work individually and to develop a written essay that satisfies the same criteria as the group slide show: (a) summary of the article assigned, (b) identification of salient points in the article, (c) research of authoritative literature for appropriate guidance in resolving the identified issues, and (d) summary analysis for the application of concepts identified through research to the unstructured problem(s) identified in the article.

Allowing students to work individually and requiring the results in formal essays reinforces critical thinking and communication skills. Reserving this technique for upper level classes allows an emphasis on the important communication skills necessary in the complex business environment. By encouraging concise writing and proper presentation including citations of referenced works, instructors can expect less time consuming work in grading the papers and providing timely feedback.

STUDENT FEEDBACK

Surveys of students engaged in the various experiential learning modalities have provided positive feedback. In accounting classes using the news media assignments, students consistently returned a median score of 5.0 on a five point scale acknowledging the assignments as “a good way to learn how to apply accounting and auditing principles.” Students also claimed to have become more critical readers of news media and believe they are better prepared for research in their field.

Students expressed particular favor for the use of contemporary real world approaches to learning afforded through the use of contemporary business related news articles. Several comments from students reported an increased awareness and an appetite for reading news articles about business developments on an increased basis.

Samples have been very small and the results cannot be considered entirely conclusive, though the early results are most encouraging. Continued study of the learning preferences of students and the value added through the use of the short-form experiential exercises should yield more conclusive evidence in the near future.

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DOES THE INTERNAL RATE OF RETURN CALCULATION REQUIRE A REINVESTMENT RATE ASSUMPTION?—THERE IS STILL NO CONSENSUS

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Abstract

In financial management and related courses, professors teach various capital budgeting methods, including payback period, net present value (NPV) and internal rate of return (IRR). Many textbooks state that the IRR calculation implicitly assumes interim cash flows are reinvested at the IRR. Thus, as an example, if a project has a 25 percent IRR, the calculation implicitly assumes interim cash flows are reinvested at 25 percent, until the end of the project. In contrast, many textbooks state that the NPV method assumes interim cash flows are reinvested at the firm's risk-adjusted weighted average cost of capital. Many argue that the reinvestment assumption implicit to the NPV calculation is more realistic than the assumption used for the IRR calculation, because the cost of capital is less than the IRR for a favorable project. However, a thorough review of the textbooks used by professors teaching capital budgeting techniques finds that some textbooks state *there is no reinvestment rate assumption made in IRR calculations* while many others are silent about the assumption. In addition, there are scholarly articles that argue that the IRR calculation does not require a reinvestment assumption. For example, Keef and Roush (2001) term it the "*fallacious* reinvestment assumption." The lack of consistency among the textbooks and scholarly literature on such a basic finance concept that is taught to so many students is troubling, because it produces confusion. This paper summarizes our findings from current textbooks used in a range of disciplines, revealing the stark inconsistency in the use of this assumption for IRR calculations.

INTRODUCTION

Suppose there were two first grade classes in an elementary school, with one teacher instructing the students that 2+2=4, while across the hall the second teacher was instructing the students that 2+2=5. It wouldn't be long before the incompetence of the second teacher was discovered by parents and administrators. When it comes to the presentation of basic material in the classroom, we expect our teachers and their supporting pedagogy to be correct and void of ambiguity.

In the field of financial management, there are few things more fundamental and ubiquitous than the net present value (NPV) and internal rate of return (IRR) calculations. Both are germane to capital budgeting practices used by today's corporate managers. These concepts are taught to thousands and thousands of students in finance, accounting, and economics courses, and not just to business students but also to engineering students. While the cash flows and discount factors required for these calculations involve case-by-case judgment calls, the intrinsic calculations themselves *should not be arbitrary*. We should expect that professors and textbooks are uniform in the underlying steps and the need for assumptions in the calculation. This does not imply that the pedagogical materials must be identical or that professors need to use the same methods to present the concepts; instead, we argue that the underlying steps and the need for assumptions should be consistent. *Our research finds that this is not the case*. Based on the inconsistencies we've uncovered in current, well-known textbooks, the following fictitious vignette illustrates what could be happening on campuses across the country:

> At a certain prestigious university Professor Black is teaching his investments class. He is instructing his students how to calculate the yield to maturity of a bond. As he keys the required inputs into his calculator, he carefully explains to his students that the calculation *assumes that the interest payments the bond makes during its lifetime will be reinvested at the yield to maturity*.
>
> Across the hall, Professor White is teaching her corporate finance class. She is instructing her students how to calculate the internal rate of return of a capital project. As she keys the required inputs into her calculator, she carefully explains to her students that the calculation *assumes that the cash flows from the project during its lifetime will be reinvested at the internal rate of return*.
>
> Across the campus in the engineering college, Professor Gray is teaching his engineering economics class. He is instructing his students how to calculate the internal rate of return of a capital project. As he keys the required inputs into his calculator, he carefully explains to his students that the calculation *makes no assumption whatsoever about reinvestment of the cash flows from the project during its lifetime*.

> Can they all be right? If not, how many of them are wrong?

The inconsistency we have uncovered occurs with regards to IRR in capital budgeting. So why are we comparing two professors teaching IRR in finance and engineering courses to an investments professor who is teaching yield to maturity (YTM)? Although IRR is applied to capital budgeting and YTM is applied to investment analysis, the IRR and YTM calculations are mathematically identical calculations (see Webster, 2003). Thus, the IRR and the YTM are opposite sides of the same coin. The main difference is that YTM is a measure of return to the providers of debt financing outside the firm, while IRR is a measure of a project's total return inside the firm, which is paid out to the firm's providers of capital, including shareholders, or reinvested in the firm. A corporation's cash flows derive from the projects it invests in and are the source of return for its providers of capital. Webster (2003) uses the YTM concept as a way to introduce the IRR concept. He remarks (p. 520) that "the methodology for determining the yield to maturity on a bond is the same as that used for calculating the internal rate of return."

Our paper is arranged in the following order. In the next section, we discuss key pieces of literature that reveal the inconsistency in the usage of the reinvestment assumption and show what several scholars have said about this topic. In the third section, we present our research methodology. In the fourth section, we discuss our research findings and present some analysis of the data. In the fifth section, we include a discussion, and then we end with our conclusions and recommendations for future research.

INCONSISTENCY IN THE LITERATURE

Our research follows nearly 10 years after the publication of "Discounted Cash Flow Methods and the Fallacious Reinvestment Assumption: A Review of Recent Texts," by Keef and Roush (2001). Their research examined the reinvestment assumption used by contemporary textbooks to explain the conflict between NPV and IRR calculations. The research methodology they used 10 years ago is similar to that used in our paper. The primary goal of this research is to see how the textbooks compare today versus 10 years ago, to extend the investigation to additional disciplines, and to answer the question: Is the use of the reinvestment assumption as conflicted today as it was 10 years ago? In the methodology section, we discuss similarities between our approach and that of Keef and Roush. Regardless of the theoretical stance someone takes on reinvestment, the fact remains: there continues to be an inconsistency in the textbooks, reference books and literature concerning the reinvestment assumption.

One of the earliest papers to clearly reject the reinvestment rate assumption is titled "The Internal Rate of Return and the Reinvestment Fallacy" by Keane (1979). He states "…it is desirable to clarify…issues which are constant sources of confusion," one being that "…neither the IRR nor the NPV method contains any implicit assumptions about the reinvestment rates available for the intermediate cash flows" (p. 49). The debate regarding the validity of the assumption revolves around the conflict that can emerge between the NPV and IRR methods. When looking at the NPV profiles of two projects, the Fisher rate (see Dudley, 1972) is the discount rate where the profiles intersect and NPVs are equal. At discount rates below the Fisher rate, one project's NPV will be higher, while the other project's IRR will be higher. This "conflict" leaves it up to the analyst to decide whether to use the NPV or IRR method to decide the ranking between the two projects. Some argue that the different reinvestment assumptions for NPV versus IRR create this conflict. Yet, Keane's position is that there are other factors to explain this, and he is dismissive of the reinvestment assumption argument. There are others who long ago have shown that there is no implicit reinvestment assumption when calculating IRR (see Alchian, 1955; Beidleman, 1984; Doenges, 1972; Dorfman, 1981; and Dudley, 1972).

The teaching of the reinvestment assumption is not new. As far back as *Corporation Finance*, Schwartz (1964, p. 200) states, "the implicit assumption of the internal rate-of-return formulation is that the fund throw-off over the life of the project can be reinvested at the same rate as that earned by the initial project." Trusting that professors taught what was in their books, this indicates that Dr. Schwartz was teaching students at Lehigh University about the reinvestment assumption nearly half a century ago. Ironically, another Lehigh professor, Carl R. Beidleman, wrote in an article some 20 years later (1984, p. 128) that "the mere suggestion that the models attributed *any* return to the cash flows after release has led to errors in texts and in teaching DCF capital budgeting since its inception." Yet, not only do textbooks today continue to use the reinvestment assumption, but they are not presenting, or even alluding to, the debate that can be found in scholarly articles. For example, in their most recent update to their popular *Fundamentals of Financial Management* textbook, Brigham and Houston (2009, p. 346) state "The NPV calculation is based on the assumption that cash inflows can be reinvested at the project's risk-adjusted WACC, whereas the IRR calculation is based on the assumption that cash flows can be reinvested at the IRR."

The apparent inconsistency, if not confusion, about the importance of making a reinvestment assumption is summarized succinctly by Bierman and Smidt (1993). They acknowledge that "it is frequently claimed that the IRR method assumes reinvestment at the IRR" (p. 92). They believe this claim is "inexact." They argue that the IRR calculation can be computed without making any assumption about reinvestment…and that is correct. When finance professors teach IRR to students, they don't typically consider how the cash flows will be utilized. They could be used to pay dividends; they could be used to invest in new projects; they could be used to purchase financial assets. Yet, Bierman and Smidt go on to say that the cost of the cash used for a project and the value of the cash produced "are necessary to decide if an investment is acceptable." Thus, they make the distinction between the mathematical calculation of IRR and the subsequent use of IRR to make a decision about whether to accept or reject a project. They fall into a different "camp" than others we have read because they are clearly not making a reinvestment assumption that the values of cash produced equal the IRR. Instead, they recognize that some sort of reinvestment assumption would have to be made in some instances in order to value the cash produced and to make a decision about a project. It is not surprising to us to find a more thorough and nuanced discussion of the reinvestment assumption in a capital budgeting textbook than what is typically found in more general finance textbooks that devote less space to any one topic.

A student learning IRR for the first time could be totally confused if they were reading *Engineering Economy* by Sullivan, Wicks and Koelling (2009). The authors assume the reinvestment assumption for NPV calculations, but say that the IRR method "is not limited by this common assumption." They even go on to footnote the Bierman and Smidt (1993) reference that we cited earlier in our paper, which makes it clear that there is no need for a reinvestment assumption when calculating IRR. After making it clear to the reader (likely an unsuspecting engineering student who is seeing material on capital budgeting for the first and only time) that IRR doesn't require a reinvestment assumption, in a later section of the book the authors state "the reinvestment assumption of the IRR method may not be valid in an engineering economy study" (p. 217). They then give an example of a project with an IRR of 42.4 percent and a cost of capital of 20 percent, and observe that "it may not be possible for the firm to reinvest net cash proceeds from the project at much more than 20 percent." In order to solve this problem (and the multiple IRR problem), the authors introduce the external rate of return (ERR) method, which is identical to the MIRR method taught in many finance books. Thus, within the same chapter of this textbook, an engineering student is taught that the IRR calculation doesn't require a reinvestment assumption, but then is taught the ERR method as a remedy to this unrealistic (reinvestment) assumption. How are students supposed to understand capital budgeting with that sort of exposé? The nuance that a student is left to grasp is that IRR does not require any explicit reinvestment assumption in order to calculate IRR. However, as observed by Bierman and Smidt (p. 60), "one might need to know the reinvestment rates to compare alternatives."

While some scholars in academia might believe that the debate over the use of the reinvestment rate assumption for IRR calculations is long over, a quick check of the practitioner literature shows that some in industry are still grappling with the issue. For example, Kelleher and MacCormack (2004), consultants with McKinsey & Company, encourage managers to "avoid using IRR entirely or at least make adjustments for the measure's most dangerous assumption: that interim cash flows will be reinvested at the same high rates of return" (p. 16). They say that this flawed reinvestment assumption "can lead to major capital budgeting distortions" (p. 17). The simple way for practitioners to avoid the problems with IRR is to discontinue its use. However, as long as those in industry perpetuate its use and business professors continue to teach it, it's highly unlikely that financial managers will abandon its use and solely rely on the NPV methodology. In fact, Graham and Harvey (1999) surveyed Fortune 500 companies and found that the IRR method is the leading evaluation technique among 12 alternatives.

RESEARCH METHODOLOGY

Keef and Roush (2001) examined texts in only two areas: management accounting and finance. They applied several constraints to their search: (1) "they were clearly undergraduate texts"; (2) "the texts contained a copyright date of 1995 or later"; (3) "they were available in a New Zealand library." They also rejected books if they did not "explicitly discuss the NPV versus IRR conflict." We were just as interested to see if MBA textbooks were using the reinvestment assumption as undergraduate texts, so we did not limit ourselves to undergraduate books. Below we discuss the copyright date and, of course, we did not limit our search to a New Zealand library because our schools are in the United States. As for the NPV versus IRR conflict, we did not limit our search in that regard either.

Of course, capital budgeting concepts are taught in other courses and not just business courses. For instance, we wonder how many finance professors are aware of the extensive teaching and writing from the engineers on capital budgeting. One unique contribution of our research is that we looked at more disciplines than Keef and Roush in order to obtain a broader sense about the continued use of the reinvestment assumption. McDaniel, McCarty, and Jessell (1988) noted that “many texts in financial management, real estate, engineering economy, etc., state that DCF methods have implicit reinvestment assumptions.” The areas we researched were: (1) financial management/managerial finance, (2) corporate finance, (3) capital budgeting, (4) financial and/or managerial accounting, (5) engineering economics, (6) managerial economics, and (7) real estate finance. Our goal was to find at least 10 textbooks in each discipline to raise the confidence level of the statistical testing discussed later in the paper. We decided to look at the financial management and the corporate finance textbooks as two distinct categories, because corporate finance books often contain more advanced material. It is more likely that an MBA corporate finance textbook, or even an undergraduate-level corporate finance text, would discuss the reinvestment assumption than an introductory financial management text. You would expect that books with more basic treatment of finance principles would be more likely to sidestep the reinvestment rate assumption topic to avoid confusing students.

Textbooks in each of the disciplines were located at the libraries or ordered through the Interlibrary Loan systems at Kutztown University of Pennsylvania, the Pennsylvania State University and Ursinus College. Also, there were other ways to obtain access to the books; for example, we teach finance courses at our respective schools and have various textbooks sent to us by publishers for our review. Keef and Roush (2001) uncovered a dramatic inconsistency among finance and managerial finance textbooks, so we were interested to see if the textbooks today are any more uniform on the reinvestment assumption. Their sample included 48 books with a copyright date of 1999 or earlier, 11 books with a copyright of 2000, and just one book with a copyright date of 2001. Their paper was submitted in May 2000 for review, thus explaining why the majority of books had earlier copyrights. Evidently, as the paper went through the review and editing phase prior to publication, this gave the authors time to update their list of books with more current textbooks. Because we wanted to see what the textbooks since the Keef and Roush paper were using as assumptions, we limited our research to books with copyright dates after 2000.

We reviewed each textbook to see first if it presented the NPV and IRR concepts; if so, we then checked for an explicit mention of the reinvestment rate assumption, as it pertains to these calculations. We had two research assistants helping us with this project.[1] In order to obtain consistent information on each textbook, we used a common checklist for screening the books, shown in Appendix A. We categorized the findings into (1) “yes,” the text discusses and uses the reinvestment assumption, (2) “no,” the text discusses the assumption, but does not use it, and (3) the text is “silent” about the reinvestment rate assumption. If a book was silent about the assumption, we made no assumptions as to why. An author could leave out the assumption because he does not believe it is necessary or a decision has been made to exclude it from the book for brevity reasons. Here we deviate from the approach taken by Keef and Roush (p. 111) as they “assume that silence on the reinvestment assumption is an act of commission rather than an act of omission.” They make the argument that “it is not necessary to deny a false proposition.”[2] It is our belief that an author could agree with the assumption, but decide to exclude it from his book and leave it for discussion in more advanced textbooks. Thus, we did not make an absolute assumption that silence was an act of commission or omission.

RESEARCH FINDINGS AND ANALYSIS

We examined a total of 63 textbooks across seven disciplines, with the breakdown shown in Table 1. Most of the books (21) are finance books, with roughly half of them covering financial management and the other half covering corporate finance. The complete list of books by discipline is provided in Appendix B. Capital budgeting topics are most closely associated with finance courses, but they are by no means exclusive to business students. For instance, many engineering students are taught these concepts in their engineering curriculum. Typically, these courses are taught by engineering faculty using textbooks written by engineering professors. For example, one of the well-known engineering economics professors is Chan

[1] We thank Zach Phipps and Trevor Shelbo for their assistance with this research project.

[2] See Spranca, Minsk, and Baron, 1991, for research that examines the difference in meaning between “commission” and “omission.”

S. Park of Auburn University. He is the author of *three* textbooks in the area of engineering economics. Consistent with having engineering faculty teach and write the textbooks on capital budgeting techniques, the engineers have a journal titled *The Engineering Economist* as an outlet for scholarly research related to capital budgeting and other finance-related topics.

Table 1: Does the textbook use

the reinvestment assumption?

Discipline	"Yes"	"No"	"Silent"	Total
Financial Management & Managerial Finance	8	0	2	10
Corporate Finance	6	3	3	12
Capital Budgeting	3	1	2	6
Financial and/or Managerial Accounting	5	0	4	9
Engineering Economics	3	5	7	15
Managerial Economics	4	0	3	7
Real Estate	1	0	3	3
Totals	30	9	24	63

Each book in Table 1 presents the IRR methodology and was categorized as "yes" it uses the reinvestment assumption, "no" it does not use it, or "silent" if it says nothing about the assumption. For example, we obtained 11 corporate finance textbooks with copyright dates after 2000. Of those books, 6 state that the IRR calculation utilizes the reinvestment rate assumption; 3 state they do not use it; and 3 are silent regarding the assumption. Earlier, we quoted from Brigham and Houston (2009) to provide an example of what is said in support of using the assumption. To provide an example of an opposing view, below we quote from Ross, Westerfield and Jordan (2008), authors who do not invoke the reinvestment assumption:

> We *will* take a stand on one issue that frequently comes up in this context. The value of a project does not depend on what the firm does with the cash flows generated by that project. A firm might use a project's cash flows to fund other projects, to pay dividends, or to buy an executive jet. It doesn't matter: How the cash flows are spent in the future does not affect their value today. As a result there is generally no need to consider reinvestment of interim cash flows.

Based on the data that we collected for this study, one question we had was the following: Is the decision to use the reinvestment assumption dependent on discipline? For example, are the finance authors utilizing the assumption more so than the engineering economists? Simple inspection of the data indicates that the answer is "yes," the portion of books using the assumption is dependent on discipline, but can we verify that statistically?[3] When we did a chi-square test for independence on the Keef-Roush data, we found there to be no dependency on discipline.[4] Thus, this might explain why the earlier authors restricted their analysis to these two disciplines.

In Table 2, we report the findings from Keef and Roush's (2001) paper. They found (p. 111) that 43 out of 60 textbooks, or 72 percent of the books, used the reinvestment assumption. Their research categorized books differently than ours in that they used "yes" when the "text clearly implied that the reinvestment assumption is the cause of the NPV versus IRR conflict." We simply looked to see if the textbook used the assumption. Typically the authors would state the assumption without providing the motivation for it. Nevertheless, in order to do a more apples-to-apples comparison to the data collected by Keef and Roush, we combined our finance books into one category.

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[3] Chi-square test of independence – Walker-Check-Randall data from Table 1

H_0: discipline and reinvestment assumption are independent

H_1: discipline and reinvestment assumption are not independent

$\chi^2_{calculated} = 22.46$, $\chi^2_{critical} = 21.03$, i.e., significant at $\alpha = 0.10$

We reject the null hypothesis and conclude that there is a statistically significant dependency between academic discipline and treatment of the reinvestment assumption.

[4] Chi-square test of independence - Keef and Roush data from Table 2

H_0: discipline and reinvestment assumption are independent

H_1: discipline and reinvestment assumption are not independent

$\chi^2_{calculated} = 0.40$, $\chi^2_{critical} = 3.84$, i.e., *not* significant at $\alpha = 0.10$

We fail to reject the null hypothesis and conclude that there is no statistically significant dependency between academic discipline and treatment of the reinvestment assumption.

Likewise, we changed the heading from "Financial and/or Managerial Accounting" to "Managerial Accounting," as none of the textbooks we surveyed was strictly a financial accounting textbook. The final change we had to make was to shift the "Silent" books into the "No" column, in essence applying the same assumption as Keef and Roush regarding silence. These changes in our data enabled us to put our data into Table 2 using the identical configuration used by Keef and Roush and to ask the question: Are more or fewer authors utilizing the reinvestment rate assumption now as compared to that found 10 years ago? Simple inspection of the data indicates that fewer are using the assumption today, but can this be verified statistically?

Table 2: Frequency of reinvestment assumption found by Keef and Roush and in Our Research

	Keef and Roush Results		
Discipline	**"Yes"**	**"No"**	**Total**
Finance	24	11	35
Managerial Accounting	19	6	25
Totals	43	17	60
	Our Results		
Discipline	**"Yes"**	**"No"**	**Total**
Finance	14	8	22
Managerial Accounting	5	4	9
Totals	19	12	31

Source: Keef and Roush (Table 3, p. 111, 2001)

DISCUSSION

The impetus behind this area of research is the feedback one of the coauthors of this study received on a research paper submitted to *The Engineering Economist* in 2007. In the manuscript, the reinvestment assumption was used in the analysis. A reviewer stated that this was "theoretically incorrect" and felt strongly enough about this to recommend the paper be rejected for publication. When we did our literature search, we found that the engineers have already grappled with the validity of the reinvestment assumption and seem to have resolved this issue years ago. In the engineers' world, this issue is an old one that apparently no longer needs discussion. In a paper published in *The Engineering Economist*, Lohmann (1988) claims that he has illustrated "the fallacy of the 'reinvestment rate assumption' numerically, mathematically, and intuitively." Not surprisingly, we see that the highest percentage of texts that are either silent or refute the use of the assumption is in the area of engineering economics. In fact, 80 percent of the authors are either silent or say "not needed" to the use of this assumption, while the next closest discipline to take this stance is real estate at 75 percent. Why is there less of a consensus among finance professors? Do the engineers know something we don't know or vice versa?

In this debate about whether the IRR analysis uses or doesn't use an implicit reinvestment assumption, the focus is generally on the inconsistency between the NPV and IRR methodology when selecting between two mutually exclusive projects. At a discount rate below the Fisher rate, the NPV will point to one project as being the best, while IRR will point to the other. Prior scholars observe that this inconsistency is a result of two different reinvestment assumptions—NPV assumes reinvestment at the cost of capital, while IRR assumes reinvestment at the IRR. It was not this debate that piqued our interest in whether or not the IRR calculation requires the reinvestment rate assumption. Instead, we approach this issue by drawing a parallel to fixed-income investing and the analytics used in that area.

Earlier, in the introduction of our paper, we told a vignette of a professor teaching YTM to his investments class. The YTM calculation on a bond takes into account coupon interest and any capital gain (or loss). Fabozzi (2006) observes that the YTM also "considers the interest-on-interest component, although implicit in this computation is an assumption that the coupon payments can be reinvested at the computed yield to maturity." Fabozzi observes (p. 140) that if the coupon interest payments are not reinvested at the YTM, "the actual yield realized by an investor will be greater than or less than the yield to maturity." Note that it is possible to reinvest coupons at a higher or lower yield than the YTM, so the realized yield could actually be higher than the "promised yield" (another term for YTM). We have been unable to uncover any source that refutes the need to make a reinvestment assumption when calculating YTM.

If an investor on the outside of the firm is exposed to a realized bond yield that is potentially higher or lower than the promised yield because of uncertain reinvestment rates on coupon payments, it follows (doesn't it?) that a corporate manager could be exposed to a realized return on a project that is potentially higher or lower than the IRR because of uncertain reinvestment rates on the project's cash flow. In Table 3, we show three projects with identical IRRs. If management's investment criterion is based on IRR, which project is "best" for the corporation? All three projects have identical investments of $5 million, equal lives, but different cash flows. Project 1 has a constant cash flow; project 2 has cash flows that grow at 10 percent per year; and project 3 has a lump sum at the end of the project's life. Based on IRR, the firm should be indifferent between these three projects. It is conceivable that a firm is indifferent to the cash flow differences. Yet, our analysis finds that project 1 has the greatest reinvestment risk. When we used a 12 percent reinvestment assumption, project 1's return drops the most, to 15.4 percent. If the IRR calculation does not require an implicit reinvestment assumption, which some scholars argue, then it seems that project analysis might require another return metric to fully assess a project—one that *does* require a reinvestment rate assumption. In the world of fixed-income investing, the YTM calculation serves both purposes. Why that isn't the case with IRR calculations (in the minds of some authors) is a debate for future research.

Table 3: Cash flow comparisons of three projects

Cash Flows	Project 1	Project 2	Project 3
CF_0	(5,000,000)	(5,000,000)	(5,000,000)
CF_1	1,671,619	1,416,267	0
CF_2	1,671,619	1,557,893	0
CF_3	1,671,619	1,713,683	0
CF_4	1,671,619	1,885,051	0
CF_5	1,671,619	1,073,556	12,439,015
IRR	20.0%	20.0%	20.0%
Realized Return	16.3%	16.5%	20.0%

CONCLUSIONS

So where do we stand 10 years later? Keef and Roush (p. 110, 2001) stated that "Our assessment of the literature since 1979 is that there has not been a robust denial of the fallacy of the reinvestment assumption." Based on our research, we can make the same assertion 10 years later. The use of the reinvestment assumption is found online (see Investopedia.com) and it is found in many of the current textbooks. While there has been debate on the validity of the assumption, we believe that future research should attempt to resolve the dispute once and for all. The assumptions are just as important as the calculations themselves, and academics and practitioners need to come to agreement as to "best practices." Not so long ago, Adler (2006, p. 4) wrote, "The assumptions related to DCF are increasingly becoming so disconnected from business reality that its continued use should come with the following warning, 'This financial management technique is hazardous to your business.'"

Earlier we identified Bierman and Smidt (1993) as making the distinction between the mathematical calculation of IRR and the usage of IRR. They present a convincing argument for employing the reinvestment assumption when deciding whether or not a project is acceptable. The purpose of teaching IRR is not to teach students the IRR calculation per se. Rather, faculty are presenting IRR as another capital budgeting tool to be used by corporate managers. If a professor subscribes to Bierman and Smidt's argument, then he should utilize a textbook that explains the importance of the reinvestment assumption. It follows, then, that textbooks should also discuss the concept. Our research found that most finance textbooks *do* discuss reinvestment along with IRR, but that most engineering economics textbooks do not. Perhaps the engineering professors should send their students to the college of business when it comes time to teach their students capital budgeting.

Many different disciplines teach IRR and NPV concepts. They aren't just taught in finance courses. Our research found that there is still significant inconsistency between books when it comes to using the reinvestment rate assumption. Moreover, there is lack of consistency across disciplines. Finance books fall at one end of the continuum with 64 percent using the assumption while the engineering economics books fall at the other end with just 20 percent using the assumption. Why can't all the disciplines come to an agreement? Elementary school teachers all agree that 2 + 2 = 4, so why can't professors agree that IRR does or does not involve the implicit assumption that all interim cash flows can be reinvested at the IRR? We can understand ongoing debate and controversy over more advanced theories and calculations, such as the capital asset pricing model, but IRR calculations are too basic for this degree of inconsistency.

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Appendix A

Textbook Title ____

Textbook Author(s) ____

Textbook Publisher/Location____

Textbook Edition ____________________ Copyright Year ____________________

NPV – pages ________________ and attach copies

1. Is the NPV methodology presented?

2. If yes to (1), do they state the reinvestment rate assumption?

3. If yes to (2), what is the specific assumption?

IRR – pages _________________ and attach copies

5. Is the IRR methodology presented?

6. If yes to (5), do they state the reinvestment rate assumption?

7. If yes to (6), what is the specific assumption?

Appendix B

A. Financial Management/Managerial Finance

1. Besley, S., & Brigham, E. F. (2005). *Essentials of managerial finance* (13th ed.). Mason, OH: Thomson Higher Education. (Y)
2. Block, S. B., & Hirt, G. A. (2008). *Analysis for financial management* (9th ed.). New York: McGraw-Hill/Irwin. (Y)
3. Brigham, E. F., & Houston, J. F. (2009). *Fundamentals of financial management: Concise edition* (6th ed.). Mason, OH: South-Western Cengage Learning. (Y)
4. Brigham, E. F., & Houston, J. F. (2004). *Fundamentals of financial management* (10th ed.). Mason, OH: South-Western Cengage Learning. (Y)
5. Brigham, E. F., & Ehrhardt, M. C. (2008). *Financial management: Theory and practice* (12th ed.). Mason, OH: Thomson South-Western. (Y)
6. Brigham, E. F., & Daves, P. R. (2007). *Intermediate financial management* (9th ed.). Mason, OH: Thomson South-Western. (Y)
7. Foerster, S. R. (2003). *Financial management: a primer*. New York: W. W. Norton & Company, Inc. (S)
8. Gitman, L. J. (2003). *Principles of managerial finance brief* (3rd ed.). Boston, MA: Pearson Education, Inc. (Y)
9. Higgins, R. C. (2009). *Analysis for financial management* (9th ed.). New York: McGraw-Hill/Irwin. (S)
10. Lasher, W. R. (2008). *Practical financial management* (5th ed.). Mason, OH: Thomson Higher Education. (Y)

Do the books use the reinvestment assumption? (8 Yes; 0 No; 2 Silent; 10 Total)

B. Corporate Finance

1. Arnold, G. (2005). *The handbook of corporate finance: A business companion to financial markets & techniques*. U.K.: Pearson Education Limited. (S)
2. Brealey, R. A., Myers, S. C., & Allen, J. D. (2008). *Principals of corporate finance* (9th ed.). New York: McGraw-Hill Irwin. (N)
3. Clayman, M. R., Fridson, M. S., & Troughton, G. H. (2008). *Corporate finance: A practical approach*. Hoboken, NJ: John Wiley & Sons, Inc. (Y)
4. Emery, D. R., Finnerty, J. D., & Stowe, J. D. (2007). *Corporate financial management* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.
5. Graham, J. R., Smart, S. B., & Megginson, W. L. (2010). *Corporate finance* (3rd ed.). Mason, OH: South-Western Cengage Learning. (Y)
6. Pike, R., & Neale, B. (2006). *Corporate finance and investment: Decisions & Strategies* (5th ed.). U.K.: Prentice Hall/Financial Times. (Y)
7. Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2008). *Essentials of corporate finance* (6th ed.). New York: McGraw-Hill/Irwin. (N)
8. Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2008). *Fundamentals of corporate finance* (8th ed.). New York: McGraw-Hill/Irwin. (N)
9. Ross, S. A., Westerfield, R. W., Jaffe, J. F., & Jordan, B. D. (2007). *Corporate finance: Core Principles & Applications*. New York: McGraw-Hill/Irwin. (S)
10. Ryan, B. (2007). *Corporate finance and valuation*. London: Thomson Learning. (Y)
11. Smart, S. B., Megginson, W. L., & Gitman, L. J. (2007). *Corporate finance* (2nd ed.). Mason, OH: Thomson South-Western. (S)
12. Vishwanath, S. R. (2007). *Corporate finance: Theory and practice* (2nd ed.). New Delhi: Response Books. (Y)

Do the books use the reinvestment assumption? (6 Yes; 3 No; 3 Silent; 12 Total)

C. Capital Budgeting

1. Bierman, H., & Smidt, S. (2007). *The capital budgeting decision: Economic analysis of investment projects*. New York: Routledge. (N)

2. Bierman, H., & Smidt, S. (2007). *Advanced capital budgeting: Refinements in the economic analysis of investment projects*. New York: Routledge. (S)
3. Peterson, P. P., & Fabozzi, F. J. (2002). *Capital budgeting: Theory and practice*. New York: John Wiley & Sons. (Y)
4. Riahi-Belkaoui, A. (2001). *Evaluating capital projects*. Westport, CT: Quorum Books. (Y)
5. Seitz, N., & Ellison, M. (2005). *Capital Budgeting and Long-Term Financing Decisions* (4th ed.). Mason, OH: South-Western Publishing Company. (Y)
6. Steiss, A. W. (2005). *Strategic facilities planning: Capital budgeting and debt administration.* Lanham, MD: Lexington Books. (S)

Do the books use the reinvestment assumption? (3 Yes; 1 No; 2 Silent; 6 Total)

D. Financial and/or Managerial Accounting

1. Garrison, R. H., Noreen, E. W., & Brewer, P. C. (2006). *Managerial accounting* (11th ed.). Boston: McGraw-Hill/Irwin. (Y)
2. Griffin, M. P. (2009). *MBA fundamentals: Accounting and finance*. New York: Kaplan Pub. (Y)
3. Hilton, R. W. (2009). *Managerial accounting: Creating value in a dynamic business environment*. New York: McGraw-Hill Irwin. (Y)
4. Horngren, C. T., & W. T. Harrison Jr. (2008). *Financial & managerial accounting*. Upper Saddle River, NJ: Pearson Education, Inc. (S)
5. Horngren, C. T., & W. T. Harrison Jr. (2008). *Financial & managerial accounting*. Upper Saddle River, NJ: Pearson Education, Inc. (S)
6. Horngren, C. T., Sundem, G. L. & Stratton, W. O. (2005). *Introduction to management accounting* (13th ed.). Upper Saddle River, NJ: Pearson Education. (S)
7. Larson, K. D., Wild, J. J., & Chiappetta, B. (2005). *Fundamental accounting principles* (17th ed.). Boston, MA: McGraw-Hill. (S)
8. Warren, C. S., Reeve, J. M., & Duchac, J. E. (2009). *Financial and Managerial accounting* (10th ed.). Mason, OH: South-Western. (Y)
9. Weygandt, J. J., Kimmel, P. D., & Kieso, D. E. (2008). *Managerial accounting: Tools for business decision making.* Hoboken, NJ: John Wiley & Sons, Inc. (S)

Do the books use the reinvestment assumption? (5 Yes; 0 No; 4 Silent; 9 Total)

E. Engineering Economics

1. Blank, L. T., & Tarquin, A. J. (2002). *Enegineering Economy* (5th ed.). Boston, MA: McGraw-Hill. (Y)
2. Bowman, M. S. (2003). *Applied Economic Analysis for Technologists, Engineers, and Managers* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc. (S)
3. Brown, T. (2007). *Engineering Economics and Economic Design for Process Engineers*. Boca Raton, FL: CRC Press. (S)
4. Couper, J. R. (2003). *Process engineering economics*. New York: Marcel Dekker, Inc. (Y)
5. Crundwell, F. K. (2008). *Finance for engineers*. London: Springer. (N)
6. Eschenbach, T. G. (2003). *Engineering economy: Applying theory to practice* (2nd ed.). New York: Oxford University Press. (S)
7. Hartman, J. C. (2007). *Engineering Economy and the Decision-Making Process* (1st ed.). Upper Saddle River, NJ: Pearson/Prentice Hall. (S)
8. Newnan, D. G., Lavelle, J. P. & Eschenbach, T. G. (2009). *Engineering economic analysis* (10th ed.). New York: Oxford University Press, Inc. (S)
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11. Park, C. S. (2002). *Contemporary engineering economics* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall, Inc. (N)
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14. Vajpayee, S. K. (2001). *Fundamentals of economics for engineering technologists and engineers*. Upper Saddle River, NJ: Prentice-Hall, Inc. (N)
15. White, J. A., Case, K. E., & Pratt, D. B. (2009). *Principles of Engineering Economic Analysis* (5th ed.). New York: John Wiley and Sons, Inc. (N)

Do the books use the reinvestment assumption? (3 Yes; 5 No; 7 Silent; 15 Total)

F. Managerial Economics

1. Adams, J. & Juleff, L. (2003). *Managerial economics for decision making.* New York: Palgrave MacMillan. (S)
2. Baye, M. R. (2009). *Managerial economics and business strategy* (6th ed.). New York: McGraw-Hill/Irwin. (Y)
3. Jones, T. T. (2004). *Business economics and managerial decision making*. West Sussex, U.K.: John Wiley & Sons Ltd. (S)
4. Keat, P. G., & Young, P. K. Y. (2009). *Managerial economics: Economic tools for today's decision makers* (6th ed.). Upper Saddle River, N.J.: Pearson Prentice Hall. (Y)
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6. Thomas, C. R., & Maurice, S. C. (2008). *Managerial economics* (9th ed.). New York: McGraw-Hill/Irwin. (Y)
7. Webster, T. J. (2003). *Managerial economics: Theory and practice*. San Diego, CA: Academic Press. (Y)

Do the books use the reinvestment assumption? (4 Yes; 0 No; 3 Silent; 7 Total)

G. Real Estate (3)

1. Brueggeman, W. B., & Fisher, J. D. (2005). *Real estate finance and investments* (12th ed.). New York: McGraw-Hill/Irwin. (S)
2. Ling, D. C., & Archer, W. R. (2008). *Real estate principles: A value approach* (2nd ed.). New York: McGraw-Hill/Irwin. (Y)
3. Floyd, C. F., & Allen, M. T. (2005). *Real estate principles* (8th ed.). Chicago, IL: Dearborn Real Estate Education. (S)
4. Ratcliffe, J., Stubbs, M., & Keeping, M. (2009). *Urban planning and real estate development*. New York: Routledge. (S)

Do the books use the reinvestment assumption? (1 Yes; 0 No; 3 Silent; 4 Total)

Grand Total: Do the books use the reinvestment assumption? (30 Yes; 9 No; 24 Silent; 63 Total)

Appendix C
Walker-Randall-Check
Capital Budgeting Paradigm

The purpose of this paper is to update prior work on the treatment of the reinvestment assumption in textbooks, and to extend that work to additional disciplines. However, having read dozens of texts and dozens of papers on the topic, it is difficult to merely report our findings without reporting our conclusions. Dante Alighieri wrote “The hottest places in Hell are reserved for those who in times of great moral crises maintain their neutrality.” Perhaps there is a special place in Heaven reserved for those who observe controversy and provide consensus. Since our conclusions are peripheral to our main purpose they are presented in this Appendix.

The lists of authors on both sides of this issue are long and impressive. We observe that the two sides of the issue, in many ways, are talking past one another; i.e., not arguing consistent circumstances. There are *ex-ante* and *ex-post*, *implicit* and *explicit*, and *internal* and *external* interpretations given to the reinvestment assumption. Even authors who argue vehemently against any reinvestment assumption will discuss how invested funds “grow” at this rate or that.

We are greatly swayed by the following example.

Suppose a municipality[1] is planning to finance the construction of a toll bridge by selling a municipal bond. The bridge will require an initial investment of $1000, will produce net cash inflows of $60 per year for five years, and will be sold after five years for $1000. The municipal bond will have a $1000 par value, a five-year maturity, pay 6 percent annual coupons annually, and be sold at par value.

The time line for the municipality to use in evaluating the efficacy of the bridge is:

0	1	2	3	4	5
($1000)	$60	$60	$60	$60	$1060

The time line for an investor considering the purchase of the municipal bond is:

0	1	2	3	4	5
($1000)	$60	$60	$60	$60	$1060

Clearly the internal rate of return (IRR) of the bridge is 6 percent. When the investor calculates *ex-ante* the expected yield to maturity (YTM) on the municipal bond he/she will *implicitly* assume that the intermediate cash flows will be reinvested at the yield to maturity, and the calculated yield to maturity is 6 percent. If the municipality and the investor are using the same calculator, the key strokes used to calculate the IRR and the YTM are identical. If we were to calculate the Modified Internal Rate of Return (MIRR) of the project we would *explicitly* use a reinvestment rate of 6 percent and again using the identical key strokes on our calculator find that the MIRR = IRR = YTM = 6 percent.

While few would argue against the reinvestment assumption being *implicit* in the YTM calculation and no one could argue that there wasn’t an *explicit* reinvestment rate used to calculate the MIRR, many would argue there is no reinvestment assumption in the IRR calculation.

Therefore, we suggest the following definition of capital budgeting and a framework for internalizing all intermediate cash flow circumstances.

Capital budgeting is a process which examines the effect of a financial transaction on the transactor’s wealth when the transaction’s cash flows are sufficiently distributed in time as to be affected by the time value of money. Depending on the method used, the effect on wealth may be expressed as a dollar change, a rate of return on investment, or merely as an increase or decrease in wealth.

[1] We use a municipality in our example to avoid the issue of taxes. Using a tax-paying corporation and a taxable debt instrument complicates but does not invalidate the example.

Capital budgeting can be applied *ex-ante* to proposed projects as a decision methodology on whether the projects should be undertaken, or *ex-post* to projects already concluded to compare how the assumptions made prior to the project match what actually occurred.

When capital budgeting is applied *ex-ante* it relies on numerous assumptions regarding future events and conditions. For a corporation[2] examining a capital project, some of those assumptions are the:

- amount and timing of the initial investment
- amounts and timing of any changes in revenue
- amounts and timing of any changes in explicit costs
- amounts and timing of any changes depreciation expense
- applicable tax rate(s)
- lifetime of the project
- after-tax cash flow from the disposal of assets at the end of the project
- change in net working capital at the end of the project
- effect the project has on the riskiness of the firm
- amount of uncertainty in all of the above
- intended disposition of cash inflows during the project

Regarding the disposition of cash inflows during the project:

(1) If the corporation knew the intended disposition of cash inflows occurring during the project, then the cash flows resulting from that intended use should be included in the capital budgeting process.

(2) If the corporation knew that cash inflows occurring during the project were to be left idle, then all cash inflows should be assumed to occur at the end of the project when they become available for other use.

(3) If the corporation knew that cash inflows occurring during the project were to be discarded (thrown away) when they occurred, then the analysis should include an equal and concurrent cash outflow and the rate of return on such a project would always be –100%.[3]

(4) If no specific knowledge exists regarding the disposition of cash inflows occurring during the project, then the capital budgeting process must include some assumption, explicit or implicit, regarding that disposition.

For example, assume a corporation is examining a project with cash flows that just happen to be the same as the earlier municipality.

0	1	2	3	4	5
($1000)	$60	$60	$60	$60	$1060

The corporation plans to discard cash flows 1 and 2, allow cash flow 3 to lie idle until the end of the project, and to reinvest cash flow 4 at 20 percent. Then, the future value of the inflows would be:

$$FV_5 = (\$60 - \$60) + (\$60 - \$60) + \$60\,(1 + .00)^2 + \$60\,(1 + .20)^1 + \$1060 = \$1192$$

and the project's IRR would be 3.23%.

If instead of planning to discard cash flow 1 the corporation made no explicit assumption about how cash flow 1 would be employed, the mathematics used to calculate the project's IRR would implicitly assume reinvestment at the IRR, the future value of the inflows would be:

$$FV_5 = \$60\,(1 + IRR)^4 + (\$60 - \$60) + \$60\,(1 + .00)^2 + \$60\,(1 + .20)^1 + \$1060 = \$1192 + \$60\,(1 + IRR)^4$$

and the project's IRR would be 4.80%.

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[2] We return to the more relevant corporate example and assume all cash flows are after-tax and that the tax rate is known with certainty. In practice corporations would need to utilize an expected tax rate.

[3] This curious procedure is required to address criticisms of the reinvestment assumption such as Lohmann, 1988.

REFLECTIONS ON LINDBLOM: THEN AND NOW

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ABSTRACT

The year 2009 is the 50th anniversary of the seminal paper written by Charles Lindblom. In effect, he described "real life" policy formulation and rationalized how simple appreciation of the process could lead to better policy. That paper remains relevant because of the expressed equivalence between decision making and policy formulation. The four publications of Lindblom associated with muddling are reviewed here and associated with some work involving this author as viewed through the lens of Lindblom. Clearly, tenets of Lindblom's work remain applicable in aspects of present business operations.

INTRODUCTION

The year 2009 is the 50th anniversary of the seminal paper written by Charles Lindblom. In that paper (Lindblom, 1959), he recognizes an obvious (to him) fact that in the formulating public policy, tendencies are not to use "rational-comprehensive" approaches but rather a "successive-limited comparison" practice. That is, as a practical matter, it is quite impossible in complex problems to have clear objectives, explicit evaluations, comprehensive overviews and quantified values for mathematical analyses. Instead, value goals and empirical analyses are intertwined. Lindblom goes on to clarify and formalize his understanding of starting from an initial situation in which changes are made step-by-step in small increments; succeeding steps dependent upon the success of the one before. In various portions of the paper, this approach is called, successive limited comparisons, the branch method, incremental method (footnote 9 of the paper) and finally on the last page of the paper – "muddling through," the term that has become synonymous with his name.

In effect, Lindblom was attempting to describe "real life" and rationalize how simple appreciation of the policy-making process could lead to better policy. Put another way, he was attempting to move away from the world as academics at the time felt it should be viewed it to analysis of situations as they actually happen. For instance, in the very edition of the journal in which Lindblom published his article, the book review section (Ostrom, 1959) reviewed four books that were examples of "a literature that is developing a self-consciousness about the tools of analysis that can assist administrators and politicians to organize relevant information for making decisions in public affairs. … with special attention to economic considerations." In the section authored by the editor (Shore,[1] 1959) an article written by Henry Kissinger[2] is quoted as "flailing the policy-making process of the federal government for characteristics typical of the 'incremental' or 'branch' method of making decisions described … by Lindblom." It was thus in this atmosphere that the paper was written and published.

Clearly the Lindblomian approach to policy remains relevant. As this paper is being written (2008-9-24), the Paulson-Bernanke plan to handle the liquidity problem on Wall Street is being has been discussed in congress, approved and is being implemented. If anything is clear from this situation, it is the Lindblomian description of disjointed incrementalism (his apparent favorite term for the process) describes this approach and the steps that preceded it. It is interesting that the criticisms being floated critical of the Paulson-Bernanke plan is that it is incomplete and simplistic – without specifying alternatives, but only a more complete analysis is possible, i.e., a synoptic approach. In his 1979 paper he wrote, "The choice between synopsis and disjointed incrementalism – or between synopsis and any form of strategic analysis – is simply between ill-considered, often accidental incompleteness on one hand, and deliberate, designed incompleteness on the other." In other words, one might think there are better approaches, but it is unlikely.

The approach is also relevant to decision making in general. In the initial (1959) paper policy-formulation and decision-making were equated. Consequently, muddling has made its way into the business literature as a description of how decisions tend to come about. This approach is no less the case for marketing decisions. In this year of commemoration, it thus seems appropriate to review the papers relating to muddling as they relate to

[1] In an endnote to his 1979 paper, Professor Lindblom acknowledges that it was the editor, William Shore, who selected the title for the 1959 paper and thus "may have contributed as much to the attention of the article has received as did its contents."

[2] Kissinger was Associate Director of the Harvard Center for International Affairs. He later went on to serve as Secretary of State in both the Kennedy and Nixon administrations.

marketing. The four publications of Lindblom associated with muddling are thus reviewed and associated with some work associated with this author as viewed through the lens of Lindblom. Clearly, tenants of Lindblom's work remain applicable in aspects of present business operations.

BACKGROUND – NOTES FROM LINDBLOM

Four publications[3] form the foundation for an incremental approach to decision making. The first appeared in 1959 and the last 20 years later. Two were co-authored and two sole-authored. Nevertheless, in all the publications, it is clear that the ideas of Professor Lindblom came to the forefront. In some areas, these papers might be considered theoretical; it would appear, however, that due to their practical nature, they would be considered as relating to recognition and description of actual practice.

The 1959 Paper

Policy considerations apparently were heating up at the time Professor Lindblom published his seminal paper. In reflecting upon the upcoming decade of administration, the editor-in-chief (Fesler, 1959) of that journal wrote, "Domestically the whole economy and society are being re-examined. In prospect are a formidable study of recent social trends and of goals for 1970, a cabinet committee study of economic measures for growth and stability, a wide-ranging review of money and credit institutions as they relate to national economic policy, and continuation of the Congressional Joint Economic Committee." Against that background and in light of comments such as that of Kissinger at Harvard and texts being published on quantitative decision making, Lindblom (1959) suggested that it was important to understand that policy was developed through a "successively limited comparisons (branch)" approach. In clarifying and formalizing this approach, he contrasted it the rational-comprehensive (root) process, which existed as an ideal at that time. It was asserted that to continue to be affected by this method, "as well as some of the most sophisticated variants, operations research for example, will continue to be as foolish as they are wise." Subsequently, he went on to develop the process of "muddling through" that to this day is associated with his name.

[3] In the 1962 paper with Hirschman it is noted that three papers in 1958 preceded the and formed the thoughts summarized in the 1959 paper (Lindblom, 1958 a,b,c).

The essential features of the successively limited comparison (branch, muddling) approach were outlined:

1. value goals and empirical analysis are not distinct from one another, but closely intertwined. This intertwining means that goals may be set or modified on the basis of feedback from results. Further, a succession of small steps may be preferred to one big one.
2. analysis is drastically limited. A major source of simplification is the fact that only those policies are considered that affect the status quo. Consequently, only those policies that differ incrementally are considered. The method economizes on the need for facts and directs the analyst's attention to just those facts that are related to the decision.
3. the test of a "good" policy is that analysts from stakeholder groups agree on the policy – even if they do not agree on the objectives of the policy.

It is important to note that decision-making and policy-making were treated as synonymous for purposes of the paper (op. cit., footnote 2). As a result, the approach has found its way into the management literature and maintains a position in realistic decision making.

The 1962 paper with A. O. Hirschman

This paper is interesting for three reasons. First, it represents co-authorship of a paper by individuals (Hirschman and Lindblom) who viewed situations from some very different perspectives. Further, a third model (Klein and Mechling, 1958) was discussed and so the points of convergence and differences were resolved – at least to the apparent satisfaction of the co-authors. Secondly, the Lindblom (1959) approach by implication had to be extended to the specific examples of 1.) economic development as treated by Hirschman (1958) and 2.) research and development (Klein and Mechling, 1958). Third, in this paper the term "disjointed incrementalism" is used to describe the Lindblomian approach.

With regard to perspectives and examples, the authors of this paper were persuaded that an unbalanced economy might be more productive and quicker to develop than a balanced one, that a carefully thought-out plan might be a hindrance rather than a help in achieving the desired R&D goal, and that sometimes it may be easier to solve a problem if it is *not* fully understood. Convergence among these examples occurs insofar as economic systems, R&D systems, and political policies are never quite finished. Advancement is shrouded with complexity, uncertainty, inadequacy of incentives, and inducements for decision making. Thus, the "best" way to make progress is through mutual adjustment in which a higher plateau may be reached without prior agreement on the goal. The paths of progress may be disorderly but invariably lead to higher ground and involve social progress perhaps not directly involved with the original, identified situation. The necessity to be able to react in these real situations can be retarded if there is an undue preoccupation with attempts at formality and integrated planning. Imbalances tend to be self-correcting and otherwise mobilize resources and energies that might not otherwise be activated.

In reflecting upon what Lindblom decided to call this process, one might wonder if he was particularly comfortable with the "muddling" description of the approach described by him. In this paper, "disjointed incrementalism" is used to describe the process. Muddling in fact does carry connotations of confusion, jumbling, even bumbling, which was not the process described at all. In the original (1959) paper muddling does not appear until the last page and then only twice and in material parenthesized.

> … "But by becoming more conscious of their practice of this method, administrators might practice it with more skill and know when to extend or constrict its use. (That they sometimes practice it effectively and sometimes not may explain the extremes of opinion on 'muddling through,' which is both praised as a highly sophisticated form of problem-solving and denounced as no method at all. For I suspect that in so far as there is a system in what is known as 'muddling through,' this method is it.) …"

Further, in the 1979 twenty year sequel to the original article, Lindblom thanks the editor, William Shore, for the title – an observation he acknowledges could have contributed to its continued popularity. At any rate, in the Hirschman-Lindblom (1962) paper, disjointed incrementalism is introduced and there is some indication of focusing up on its implications. Ten caveats are listed. Among them are:

1. attempt at understanding is limited to policies (strategies) that differ only incrementally from existing policy (strategy).
2. … analysis and policy (strategy) making are serial or successive; that is, problems are not "solved" but are repeatedly attacked.
3. analysis and policy (strategy) are remedial; they move *away* from ills rather than *toward* known objectives.

Finally, the authors make an observation that is almost an afterthought, but is significant in describing everyday problems and processes. "Snags, difficulties, and tensions cannot be avoided, but must on the contrary be utilized to propel the process further. The trouble is that the difficulties are not only 'little helpers,' but may also start processes of disintegration and demoralization. … " Put another way, Murphy was right – things that can go wrong have a tendency to go wrong. These things are part of the process that must be dealt with in eventually achieving success.

The 1963 book with David Braybrooke

Although the 1959 paper might be considered the seminal paper and the 1962 paper generalized the concepts to some important, practical areas, the book with Braybrooke may include some of the clearest writing on muddling. The idea that the process was remedial, serial and exploratory was clarified (p. 74) as was the applicable range of the approach. That is, decisions were discussed in a two dimensional space defined by understanding and degree of change required to solve problems or take advantage of opportunities (p. 78). His approach (disjointed incrementalism – his term again) is applicable in those situations associated with incremental changes and low understanding of the situation. Progress is thus marked by incremental steps in which information gathered in making the step provides not only a basis for the next step, but also helps to define expectations.

One particularly relevant section in this publication is the section devoted to discussing the nature of problems. In this section one may appreciate the applicability of the approach to business situations. That is, "the problem" may in fact be a cluster of interlocked problems with interdependent solutions (p. 54). Put another way, an attempt to solve one problem may indicate that it is associated with another problem that was overlooked in the initial analysis. Thus, a second problem must also be addressed simultaneously. In the Paulson-Bernanke situation referred to above, the initial problem appeared to be associated with "toxic" investments on bank books. When steps were taken, however, to relieve that situation it was found that it was necessary to get financial institutions to lend within the industry again.

Further, this text suggests that steps taken in the process tend to be "remedial, serial and exploratory" (p. 74), and finally, the approach taken is moving away from the present situation – not particularly toward something (p. 102). In other words, the decision maker cannot tolerate the present situation and will only recognize success when he/she gets there.

The 1979 Paper

This paper is the 20 year reprise on the 1959 paper as its title suggests, "Still muddling, not yet through." Again he returns to the description as disjointed incrementalism and defines its steps as:

1. limitation of analysis to a few somewhat familiar policy alternatives;
2. an intertwining of analysis of policy goals and other values with the empirical aspects of the problem;
3. a greater analytical preoccupation with ills to be remedied than positive goals to be sought;
4. a sequence of trials, errors, and revised trials;
5. an analysis that explores only some, not all, of the important possible consequences of a considered alternative;
6. fragmentation of analytical work to many (partisan) participants in policy making.

One value of this paper is that it deals with strategy, which emphasizes the generality of the approach, and there are few organizations indeed that do not have a strategy. This paper suggests that in analysis the choice between synopsis and disjointed incrementalism is simply between ill-considered, often accidental incompleteness on one hand, and deliberate, designed incompleteness on the other. There is no doubt that Lindblom comes down on the side of incrementalism. He summarizes, "incrementalism … is not, in principle, slow moving. … A fast-moving sequence of small changes can more speedily accomplish a drastic alteration of the status quo than can an only infrequent major … change."

OBSERVATIONS OF A LINDBLOMIAN NATURE

Over the past several years, the occasion presented itself to be part of a series of papers. Each of them had two things in common. First, they resulted from practical, empirical, business observations, e.g., the supply of after-sales service or rationalizing buying behavior under conditions of uncertainty. Second, and as a consequence of the first, they in some way contained a rationalization that depended upon observations made by Professor Lindblom during his career. That is, there was a need for trial and analysis of interim results in order to successfully complete processes – Lindblom's definition of scientific muddling or, as commonly referred to, just plain *muddling*.

After-sales Service: Desire to be Best in Industry

Porter (1980) suggests that one way to develop a competitive advantage was through provision of exceptional after-sales service. In a longitudinal study of a niche-oriented, capital goods producer, it was exactly this service that established their position in the market (Zackariasson and Wilson, 2004; Wilson et al, 1999). Put another way, it was possible for competitors to copy their product, but in the field they were not able to replicate the service that was being provided. In other words, as initially determined (Wilson et al, 1999) it supplied not only routine service, but also met exceptional demands through its distributors in an expedient manner – and expediency was important because lost time for the end user meant lost money. Thus, the firm had a flexible inventory system in which parts could be transported from sources in its distribution chain and also flexible personnel as well. That is, in an emergency, if the closest competent person was located with a distributor or subsidiary, it would be that person who would be called upon to complete a job. Nevertheless, when the company was visited three years later, after-sales services were recognized as being even more important in the firm's business (Zackariasson and Wilson, 2004). Although a minor portion of revenues, their provision was responsible for the major portion of profit and created value in the distribution chain. Consequently, the company decided to place even greater emphasis on its service provision and had as one of its goals for the year to "to be the best on site (in service provision)."

It was ironic that in the peer review of the paper one of the reviewers questioned the qualitative nature of this goal – basically suggesting that a quantitative goal would have been a superior statement of purpose. It is just this type of situation with which Lindblom (1959) deals. He asserts that in complex situations, it is impossible, even counter productive, to attempt to be definite about direction of efforts. One relies on feedback from not only individual customers but also competitor responses in determining extent of efforts. Further, provision of service happens to be one of those "problems" that is really "a cluster of interlocked problems with interdependent solutions" (Braybrooke and Lindblom, 1963, 54).

Creative Projects: Development of Video Games

Video games are interesting. Their history dates from initial, largely individual development in the 60s to the place where the industry revenues are now larger than Hollywood box office (Kent 2001). Contrary to popular conceptions, the game developers of today are not a bunch of teenage boys working in their parents' basements in their spare time. This might have been the case some years ago, but today the funding needed in this business requires a businesslike approach to development. The cost of developing an AAA title (more than 1 million copies sold) tends to exceed €15 million. Consequently, development takes an organized, disciplined, albeit creative approach.

In a series of papers (Zackariasson et al, 2006; Walfisz et al, 2006) the operations of a firm were described as it successfully developed video games. The company has developed a heuristic (Simon, 1996, pages 27-28) that allowed it to systematically approach its opportunities while maintaining an element of control. This model not only affected each project individually, but the whole company as an enterprise (Zackariasson et al, 2006). In effect, the company had developed its own prescript that protected its technology without necessarily relying upon key individuals (Anell and Wilson, 2002). Basically, the in-house approach ran 10-day mini-projects over a two year period with each team working on its area. Advancement tended to be shrouded with complexity, uncertainty, inadequacy of incentives, and inducements for decision making as suggested in the Hirschman (1962) paper. At the end of ten days, however, things were put together and progress was evaluated toward the "(more) fun" game. These builds impacted future goals (Walfisz et al, 2006). Lindblom entered this process as consequence of the inability (again) to specify an initial goal and the necessity to deal with a cluster of problems, which went so far as to affect the organizational structure (Zackariasson et al, 2006).

Organizational Buyer Behavior under Conditions of Uncertainty

There tends to be more papers written on marketing than on purchasing and it is hoped that readers will conclude that there is a lot of Lindblom in marketing. One wonders if Lindblom relates to purchasing as well. In fact, in the purchase of customized ERP systems, it appeared as if it did (Andersson and Wilson, 2006). That is, the purchasing firm was quite active in the decisions made in purchasing, but it moved in a manner that Lindblom (1979) would characterize as incrementalist in action.

In the case that was studied, the buying firm went through six separate steps taking 26 months (€681.4) on its way to getting its final system. It started with a rather small project (14 months, €27.5) equipping 20 users; that contract was supplemented with two additional features (5 months, €96.3) that satisfied that need. Before going to satisfying the larger needs of 10,500 additional users, the purchasing company changed suppliers; although the initial supplier adequately provided for the initial needs, it was not large enough to supply the additional volume required. That need was satisfied in 7 months at a cost of €557.6.

The initial time and money was assessed as well spent. The company did not know what it really needed, but the time spent with the first company helped to define that need. Subsequently, the order with the second company was essentially a spec item. Lindblom might say that it had been set "on a productive course of analysis while turning away from conventional attempts at formal completeness that always lapse, for complex problems, into ill-defined makeshifts" (1979, 519). Further, this case suggests that steps taken in the process tended to be "remedial, serial and exploratory" (Braybrooke and Lindblom, 1963, 74), and finally, the approach taken was moving away from the present situation – not particularly toward something (op. cit.. 102). In other words, the decision maker could not tolerate the present situation and only recognized success when he/she got there.

Disruption of Projects: Crises in the Extreme

The paper with Hirschman (1963, 222) asserted that "Snags, difficulties, and tensions cannot be avoided, … ." In projects we called these snags, difficulties and tensions "deviations" (Paper 7). That is, they are the unforeseen interruptions that disrupt progress from the idealistic planning associated with project management and implementation. In this study, we focused on five deviations that came from four separate projects. The snags, difficulties, and tensions were resolved by a process we called "mini-muddling." That is, resolution followed the ideas proposed by Lindblom (1959), but

1) under strict time limits relatively far down in the organizational hierarchy and
2) with a limited number of trials.

This particular study (Hällgren and Wilson, 2007) was a case study dealing specifically with turn-key construction projects. Thus care should be taken in extending results to the general situations. It is inconceivable, however, that projects in general and marketing projects in particular do not have these snags, difficulties, and tensions. Consequently, one would be much surprised if they were not handled in a similar manner in which the construction projects were.

In the extreme, deviations can become crises. When the deviation occurs along the critical path of a project, or when it extends the timing of a non-critical task to make it critical, a crisis occurs (Hällgren and Wilson, 2008). Fifteen separate crises were identified from field studies of construction projects. There are three aspects of Lindblom that can be identified in these crises. First, they frequently were in fact a cluster of interlocked problems with interdependent solutions (Braybrooke and Lindblom, 1963, 54). Second, events need to be set in motion that rectifies behavior. Commonly, these "events set in motion" tend to require iterative cycles and developments to obtain a solution or resolution (Lindblom, 1959). Finally, the approaches tended to follow the "remedial, serial and exploratory" and "away from – not toward something process described with Braybrooke (1963, 74 and 102).

Current Issues in Education and Entrepreneurship

In an op-ed piece it was noted that two recent observations that seemed quite unrelated really might have something in common and further, might relate to how we teach (Wilson, 2008). First, in a recent article in Business Week Francesca Di Meglio (2008) made this observation. "Case studies, once considered the only way to train MBAs, are losing some of their street cred (sic). The latest challenge: computer simulations that allow students to run virtual companies. The games, now used by more than half of all B-schools, can last a couple of days or all semester. Students are assigned management roles and presented with a problem, then get to work. Professors track their every move and supply feedback." Second, there was this quote that introduced an electronic newsletter from the Small Business Association (Canfield, 2008). "As you begin to take action toward the fulfillment of your goals and dreams, you must realize that not every action will be perfect. Not every action will produce the desired result. Not every action will work. Making mistakes, getting it almost right, and experimenting to see what happens are all part of the process of eventually getting it right."

The first quote (Di Meglio, 2008) goes back to Lindblom's (1959) original assertion – namely decision making tends not to proceed by a rational comprehensive approach, but rather one of successive limited comparisons. Instructors will recognize that the case method approach relies heavily on a rational comprehensive approach to decision making. Simulations, on the other hand, tend to present situations amenable to a successive limited comparisons methodology in decision making. Consequently, we may be seeing a basic shift in the approach to business education. The quote by Canfield (2008) goes directly to the approach reinforces the 1962 Hirschman-Lindblom paper where it was noted, "Snags, difficulties, and tensions cannot be avoided, but must on the contrary be utilized to propel the process further (op. cit., 222)." In other words, making mistakes, getting things almost right and experimenting are all part of the process of eventually achieving success. This process is the norm and not the exception as noted above by Canfield.

REFLECTIONS

The purpose of this paper was not to serve as a testimony to Professor Lindblom, although considering its timing and apparent ongoing impact of Lindblom's work perhaps that would not be an inappropriate thing to do.[4] Rather it has been to do two things – first, summarize the observations made by him in the four papers associated with his name and muddling. Secondly, several papers associated with this author were reviewed to illustrate how some aspects of his observations have been seen in business associated studies.

One might reasonably ask, what is the impact of these observations on business market management? Clearly such a question is appropriate. The summary of the four Lindblomian publications appears

[4] It might be noted that there will be a special issue of *Journal of Business Research* devoted to current reflections on Lindblom's contributions.

meaningful for two reasons. On the one hand, there may be a generation of business professionals who may not be aware of this approach to managerial decision making. Thus, this portion of the paper serves to introduce that segment to its basic tenets On the other hand, there may be others among us who recall Lindblom's association with muddling, but forget specifically what was involved or at least could use a refresher. Muddling in common usage in fact does carry connotations of confusion, jumbling, even bumbling, which was not the process described in these papers at all. Instead, it is an action-oriented, real-world approach toward achieving success. Among the tenets introduced in these writings are:

- the essentials of the branch method that includes intertwining goals and activity;
- in other words, the process tends to be remedial, serial, and exploratory;
- the idea that one is moving away from the present situation and not particularly toward another;
- the problem itself may be a cluster of interlocked problems, each of which must be resolved;
- snags, difficulties and tensions are expected to along the way, and
- the approach is amenable to situations in which there is low understanding of the problem and incremental changes are expected/desired.

This framework provides the conceptual foundation for making observations in anecdotal case studies. Within the limitations of situations in which there is low understanding and incremental changes, five situations were identified from the author's own experience. They included the business marketing situations of

- *after-sales service* planning and provision,
- creative *product development*,
- B2B *buying behavior* under complexity,
- *service provision projects* under conditions of reality and
- implications for *education and entrepreneurship*.

It is true that all of the tenets of Lindblom are not evident in every case. In fact, there tend to be two or three that stand out in each study and others not noted. The reader must appreciate, however, that the purpose in making each of these studies was not to find Lindblomian situations. Rather, the rationales were provided after the studies were made for other reasons. One thus tends to conclude that there are a lot of relevant business decisions and activity within the low understanding/incremental approach that Professor Lindblom staked out to describe.

If one were to make recommendations for business marketing managers from these studies, they would follow the recommendations of Lindblom. Namely, they would be to

1. Be flexible in the approach to marketing strategy. This characteristic was noted in each of the cases and was perhaps most evident in the video game papers where flexibility was built into the development process.
2. Do not be so misled to think that situations can be completely and comprehensively analyzed with concomitant resolution of the apparent opportunity or problem. It is perhaps satisfying to educators who have had problems completely accepting case study pedagogy in the past to see that a better approach may be on the horizon for more appropriately dealing with managerial reality.
3. Instead, one should work to be a better practitioner of incrementalism, a.k.a. muddling as it were – a process clearly noted in each of the cases, but perhaps best in the one on purchasing and the ones on deviations/crises in projects.

CONCLUSIONS

Lindblom's basic papers on muddling have been reviewed on this silver anniversary of his initial paper. Basic tenets have been described that can be associated with his approach to policy-decision making and strategy. These tenets have been used to generally describe and define five different business situations. Clearly, tenets of Lindblom's work remain applicable in aspects of present business marketing management and argue for a "muddling" approach to those situations.

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REPLACING THE WORK ETHIC WITH THE DEVELOPMENT ETHIC

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ABSTRACT

The Work Ethic no longer meets workplace need both in terms of employees and employers. Originally it was about earning grace. Then it was about earning the money necessary to lead a decent life. During the Early Industrial Revolution emphasis shifted to a willingness to sacrifice ones time at mind numbing tasks in order to survive. As things improved, employees began to demand more than just a decent salary, things such as respect and empowerment. The Development Ethic better meets these needs and should replace the Work Ethic as the business world's driving force.

It is becoming increasingly obvious that in developed countries, at least, the attitude toward work in general and toward the "Work Ethic" specifically is changing. "People no longer understand the value of a dollar," we hear from owners and executives, "of what goes into earning one." "It's becoming increasingly difficult to find somebody willing to give you an honest day's work for an honest day's pay, " we hear, "everybody is trying to get by doing a little as possible." "People have lost the Work Ethic," we hear.

From the other side, from workers we hear, "The company wants me to work fifty to sixty hours a week without additional pay. That's not fair." We hear, "I worked really hard this quarter, trying to make an impression. Tom just coasted, getting out of anything that he could. And, yet, he received the same salary increase that I received." We hear, "My job doesn't allow me to spend time with my wife and kids. They even expect me to carry files home over weekends to work on."

Maybe the problem is, indeed, lose of the traditional work ethic. Maybe if we revive it such issues would disappear. Or, maybe, instead, the problem is that the work ethic has become obsolete and we need to find something else to build our workplace culture around, something more in tune with modern values, something that is more supportive of efforts to improve the quality of our products, our manufacturing and service processes, our management systems, our work environment, our working lives, and our lives in general.

WHAT, EXACTLY, IS "WORK?"

First of all, however, we need to define the concept of "work." Four types can be identified based on the amount of control employees have over their situation and on the amount of opportunity generated. The four types are *slave, subsistence level, situation improvement,* and *developmental*. In *slave work* individuals exercise have no control and enjoys no opportunity to benefit from their efforts. Slaves do what they are told to do on threat of punishment or even death. The only reward is frequently survival.

People involved in *subsistence level work* gain a small degree of control. They are paid, but just enough for the basics. They live on the edge. The work is usually repetitions and mechanical. Bosses tell them what to do and make sure they do it. They can leave their jobs, but usually put themselves at great risk by doing so due to their lack of skills and their lack of savings. Most of the immigrants that swept into this country during the late 1800s and early 1900s began with subsistence level jobs building railroads, working in mines or on assembly lines in factories.

A majority of employees today are in *situation improvement* type jobs. These jobs pay us enough that we can continually improve our quality of life. Also, we sometimes have a voice in how the work is done, though our bosses still make the final decisions. While the work is frequently more challenging, it continues to be largely repetitious. Finally, once we have reached the situation improvement level, if we are dissatisfied we can leave one job and find another. We can also return to school and receive more education so that we are qualified for a more desirable, better paying position.

The last type of work is *developmental.* In such jobs employees have almost total control in their area of expertise. The manager becomes a "facilitator," helping to generate resources, helping to integrate efforts, rather than a traditional "boss," deciding what is to be worked on, how the work is to be done and by whom. Developmental work pays well in comparison. It allows those involved to continually develop and enjoy their potential. A growing number of such jobs are being generated in the fields of education and research. Entrepreneurship, the fastest growing sector of our economy, also often involves developmental type work in that entrepreneurs are in charge of themselves and must make all the important decisions.

BACK TO THE WORK ETHIC

The "Work Ethic" was a product of the Protestant Reformation. Before that, during the Dark Ages and the Medieval Period, work was considered a vulgar, unattractive way to spend one's time and people did as little of it as possible. The focus was on survival; peasants worked to stay alive, usually laboring in the fields of large landowners. There was very little profit to be made from one's efforts. The Church, at the same time, discouraged the faithful from pursuing profit, fearful that doing so would detract from their quest for grace and that the competition generated would cause the less skillful to suffer. "One just price" was set for the goods sold by craftsmen, a price that did little more than allow them to survive. This was, at best, subsistence level work.

The one attractive reward offered during this period was grace, or "points" gained toward getting into heaven. The Church encouraged parishioners to take part in "good works" beyond their normal labor. This was work that benefited society. It included helping out at a hospice or alms house or cathedral. While no material or "earthly" reward was expected in return for one's efforts, the payment was the points.

Next came the Renaissance. This is when the profit motive took center stage. Due to trade deals made during the crusades, due to exploration into India, China, and Southeast Asia as well as North and South America, wealth began rolling in and profit became the rage. People realized quickly that it was the key to a better and longer life. Work was evolving, at least for the merchants and some craftsmen, from the subsistence level to the situation improvement level. But, at the same time, the Church continued to condemn the quest for profit so that people were forced to make an undesirable choice. They were forced to choose between better creature comforts in this life and their quest for salvation as guided by the Church.

MARTIN LUTHER TO THE RESCUE

A way around this dilemma was found when the Protestant Reformation arrived. Martin Luther succeeded in linking all work, in linking a willingness to work hard at any profession, with getting into heaven. While the previous Catholic concept of "good works" proclaimed that providing a service to the public, to the church, to the needy without asking to be paid for doing so helped earn God's blessing, Luther insisted that *all* forms of work should fill this criteria, that all work contributed in a meaningful way to the advancement of society and, therefore, should count toward gaining God's grace. He also made profit not only acceptable, but desirable in terms of salvation by proclaiming that profit was the measure of how hard one had worked and, therefore, the measure of how much grace one deserved.

On a more earthly level, the belief that evolved through the teachings of Luther, through common sense, and through experience was that every individual, through hard work, should be able to improve his or her situation. This, then, was the origin of the "Work Ethic." The door was open, now, for a mass shift into situation improvement work. The Protestant Reformation and Enlightenment Period that followed allowed the middle class to come into its own.

THE PAYCHECK TAKES CENTER STAGE

During the Early Industrial Revolution what was important in terms of the Work Ethic shifted rapidly from the spiritual toward earthly rewards. Technology grew more complex and became the focus in the manufacturing process, employees now serving machines. Work force responsibilities began to require less skill. At the same time, longer hours were necessary in order to meet the demands of an increasingly competitive marketplace that sought an expanding range of products. The Work Ethic evolved into a willingness to sacrifice twelve or fourteen hours a day at a repetitive task that was deadening intellectually and spiritually in order to receive a paycheck that allowed one to survive.

During the Early Industrial Revolution, slave type work was not uncommon, child employees sometimes being chained to their machines, employees so deep in debt to their employers because they were force to live in relatively expensive company housing and to buy whatever they needed from the company store, that they could not quit and, in many cases, were, literally, worked to death.

Most employees during the Early Industrial Revolution were trapped at the subsistence level. Fairly rapidly, however, due to intervention by newly formed unions and eventually by the federal government, the workforce moved to the situation improvement level, salaries providing more buying power, employees gaining a steadily increasing amount of control over their working lives. But, still bosses made the decisions, still most jobs were repetitious and non-developmental, still the Work Ethic remained the guiding principle, employees sacrificing a majority of their week days completing non-developmental tasks in order to earn a paycheck that allowed them and their families to pursue developmental as well as pleasurable activities during non-working hours.

STILL NOT GOOD ENOUGH

While this was a great improvement, the workforce again eventually grew dissatisfied. Earning money, making an adequate salary was important to improving one's quality of life, yes, but wasting a lot of time on non-developmental activities in order to do so didn't make sense, especially as the workforce level of education rose. Employees began demanding more. They wanted challenge in their jobs, they wanted the authority to make decisions they were capable of making and to solve problems they were capable of solving. They wanted to be listened to when they came up with new ideas. In sum, they sought the right to develop their potential as a means of improving their quality of life during working hours as well as during non-working hours.

The Work Ethic as a primary vehicle for spurring productivity obviously didn't work so well anymore. One alternative was to try to modify it so that it fit into the evolving workplace culture. But how should it be modified? Religion no longer played an important role in the equation; very few still regarded hard work as a means of gaining grace. Also, the more pragmatic belief that "the harder one works the more one should benefit economically" no longer rang true, if ever it had. Experience showed us that the willingness to work hard was not the only important criterion for improving one's salary. Some of those who worked the hardest, in fact, gained the least in terms of rewards.

Perhaps the Work Ethic was simply worn out, what value it once did possess now withered to the point where it could not be revived. Perhaps, the Work Ethic's time had passed and it should be laid to rest, a replacement being discovered that would help revitalize the world of work.

THE DEVELOPMENT ETHIC AS AN ALTERNATIVE

A growing number of people are beginning to identify the "Development Ethic" as that possible replacement. An approach to defining the meaning of life, the Development Ethic was first introduced to western society by the Greek philosopher, Aristotle, born in 384 B.C. It has popped up periodically throughout history, most recently being revived and modified slightly to better fit our modern age by practitioners of the Systems School of management theory.

The Development Ethic says that the purpose of life is to "develop and enjoy our positive human potential to the fullest possible extent." In order for us to do so society must assist by providing five critical inputs – wealth, education, good governance, an environment that encouraged development, and time.

The first input required is the wealth needed to support development related activities. Society is responsible for insuring that all citizens have access to jobs that provide a decent salary. Wealth, more than the other inputs, is foundational to development. Without a strong economy, it would be more difficult for a society to generate the other required inputs. But while the most recent version of the Work Ethic says wealth is the *only* important input, the Development Ethic disagrees strongly.

The second input critical to our quest is access to education. The involved system should be affordable to everybody and should focus on realizing individual potential more so than on hammering students into a predetermined mold. An increasing number of companies understand the value of offering the opportunity for on-going education to their employees at all levels.

The third input required from society is a system of governance in the workplace, the community, and the nation that encourages citizens to pursue self-development and that facilitates their efforts. Democracy, when it is working properly, is the best of all possible systems for this purpose. I find it interesting, however, that while we in the U.S. are willing to fight to maintain a democratic system of governance in national and local politics, when we enter the workplace we most frequently find an autocracy (rule by the few) or a dictatorship in place. Employees rarely have any say as to whom their leaders will be and these leaders, in turn, too frequently isolate themselves from the employees, believing they have earned the right, through "hard work," to serve their own interests, paying scant attention to the developmental needs of reports.

The fourth input required of society is an environment both in the community and the workplace that supports development related activities. It is hard to work on developing one's potential when there is constant noise, when cigarette smoke fills the air, when one is worried about being downsized or about young children returning home from school to an empty house. The ideal environment for development is one that stimulates, but in a positive way, while, at the same time, soothing. The ideal environment is one that a person has control over. This means that in the office, for example, employees should have a say in how their space is organized and decorated.

And, finally, the fifth societal input must be time. Society should help insure that we have sufficient time to do the things necessary to develop our positive potential. If we spend a majority of our waking hours in the office focused solely on making more money, as is the trend in the U.S., we don't have enough left to pursue other developmental activities, both in the office and outside.

These are the five inputs that society and employers should provide so people can develop their potential. And once they have done so, employees who have benefited are expected to use that potential to help generate more of the inputs for others to take advantage of and to dedicate their enhanced talents to improvement of the company's fortunes as well as those of society in general. This agreement creates a win-win-win situation. The individual obviously wins. The company wins. Society wins.

THE DEVELOPMENT ETHIC GENERATES COMMITMENT TO IMPROVED PRODUCTIVITY

Earlier, the article mentioned the amount of time spent on non-developmental, mind-dulling work in factories and offices during the Industrial Revolution. Today's trend is toward finding ways to replace those activities with developmental ones. Our best friend in facing this challenge is, of course, the technology that is taking over repetitive, mind-numbing tasks so that employees can move on to more challenging ones such as planning, product development, and work design.

In terms of our now critical focus on continually improving the quality of products, manufacturing and service processes, management systems, and the work environment, the changeover is imperative. The Work Ethic is built around individual rather than team performance. The Work Ethic teaches that the best employees are those who excel in obeying superiors, in doing what they are told to do. The work ethic believes strongly in the hierarchy, in drawing a clear line between those who make decisions and those responsible for implementing them. The Work Ethic focuses on predefined job responsibilities. Personal matters such as self-development should be attended to during non-working hours.

On the other hand, as we have eventually learned, the driving force behind improved productivity is employee commitment. Once the workforce is committed it will take care of the rest. We have also learned that respect is key to gaining employee commitment, and that there is no better way to show respect for your employees than to encourage them to develop their potential, to facilitate these efforts, and to reward them for doing so.

Workers in progressive companies are no longer expected to follow the dictates of the now outdated Work Ethic to "leave their brains at the door" and do what they are programmed to do as parts of a "well-oiled machine." Rather, they are increasingly being expected to make decisions, solve problems, enhance their education level, design their own work, train each other. These activities, while increasing productivity, also, of course, feed right into the Development Ethic, generating, again, a win-win situation. The employee gains more than just a salary from work, individual development occurring continuously. The company benefits from the employees' enhanced skills and growing enthusiasm.

IT IS TIME FOR A CHANGE

It is becoming increasingly apparent that the Work Ethic no longer suffices and that the Development Ethic makes more sense in the modern day world of work. As Ralph Stayer, owner of Johnsonville Sausage, one of the most progressive and successful companies in the country, is reputed to have claimed, it is absolutely immoral to be the leader of a business and not allow people to develop their talents fully. Such a negative approach doesn't make much sense from a bottom line perspective either.

A growing number of business leaders have begun to agree with these sentiments. The Work Ethic has run out of steam; the Development Ethic is needed to guide future efforts to improve our productivity, our economy, and our society.

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THE SOURCES OF REAL EXCHANGE RATE FLUCTUATIONS IN SUB-SAHARAN AFRICA

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ABSTRACT

This paper looks into the sources of real exchange rate fluctuations in Sub-Saharan African (SSA) Countries. This issue is investigated in a context of small open economies of SSA using a structural Vector Auto Regression (VAR) approach with limited capital mobility and a weak-banking system in Africa. A structural VAR implies long run restrictions of a small open economy model to identify the shocks. The results suggest that the real exchange rate (RER) variability is mostly driven by real disturbances in both the "Communauté Financière Africaine" (CFA) and non-CFA countries at long term forecasting horizons. The findings show evidence that nominal shocks seem to matter more in the non-CFA countries in the short run in explaining RER and price level fluctuations as a result of the diverse fiscal and monetary policies in the non-CFA countries in contrast to the CFA countries.

INTRODUCTION

The analysis of the sources of fluctuations in real exchange rates gained great interest after the collapse of the Bretton Woods system[1] in 1971. Most economists believe that a flexible exchange rate regime causes macroeconomic variables to be more volatile. Mussa (1986) argues that sluggish price adjustment must play a central role in explaining the movements in nominal and real exchange rates in the short run. Mussa's influential paper points out a higher variance of real exchange rates for the post Bretton Woods era.

Cumby and Huizinga (1991), and more importantly, Dibooğlu and Koray (2001) investigate the predictability of real exchange rate changes. They also decompose changes in real exchange rates into transitory and permanent components. They find real exchange rate changes to be predictable and sustained for the German Mark, the Japanese Yen and the US Dollar. Clarida and Gali (1994) find that demand shocks explain most of the fluctuations in real exchange rates since the collapse of Bretton Woods. Clarida and Gali estimate the open macroeconomic model in the spirit of Dornbusch (1976) and Obstfeld (1985) using a structural vector autoregression (VAR) model to identify the shocks to demand, supply, and money. Supply shocks have little impact on the real exchange rate fluctuations.

Lastrapes (1991) empirically investigates the sources of fluctuations in real and nominal exchange rates in the G-6 countries consisting of the United States, Germany, the United Kingdom, Japan, Italy, and Canada. He decomposes the exchange rates into transitory and permanent components. Lastrapes finds that real disturbances such as resource endowments or technology preferences dominate nominal shocks such as money supply in explaining real exchange rate fluctuations at short and long term forecasting horizons. That is, only real shocks have permanent effects on the real and nominal exchange rates. Enders and Lee (1997) examine the fluctuations of real and nominal exchange rates induced by real and nominal factors between the United States and Canada on one hand and Japan and Germany on the other hand. They conclude that the variability of exchange rates is driven by real demand disturbances and not by real supply shocks in the countries considered in the study. They also find little evidence of exchange rate overshooting. Moreover, Dibooğlu and Kutan (2001) investigate the sources of real exchange rate fluctuations in the transition economies of Poland and Hungary. They find mixed results. Real shocks are the main sources of real exchange rate fluctuations in Hungary while nominal disturbances explain some of the variation of real exchange rates in Poland. That is, nominal shocks have a great impact on the real exchange rate fluctuations in Poland, but, in contrast, they do not matter in explaining the variability of real exchange rates in Hungary.

Messe and Rogoff (1988) find that the main sources of fluctuations in real exchange rates are real shocks such as productivity disturbances. Their sample covers the modern floating rate period from 1973 to 1988. Flood and Hodrick (1986) argue that output volatility is higher under a regime of fixed exchange rates than during a flexible exchange rate regime.[2]

[1] The Bretton Woods Agreement (BWA) of July 1944 in New Hampshire established a postwar international monetary system – the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development known as the World Bank – of convertible currencies, fixed exchange rates and free trade. The BWA leads later on in 1947 to the creation of the General Agreement on Tariffs and Trade (GATT) known as the World Trade Organization.

[2] Also see Gerlach (1988) for similar findings.

Most of the earlier studies on the sources of fluctuations of real exchange rates cover the industrialized nations or developed countries. Chadha and Prasad (1994) investigate the sources of real exchange rate fluctuations in Japan from 1951 to 1996. They conclude that relative nominal and real demand shocks are the main determinants in the fluctuations in real exchange rates in Japan.

Elbadawi and Soto (1997) analyze the relationship between real exchange rates and the macroeconomic adjustment in Sub-Saharan Africa (SSA) and other developing countries. Capital flows and foreign direct investment are important factors in the long run fluctuations of real exchange rates in developing countries. Sekkat and Varoudakis (2000) find that exchange rate management matters for the export performance in SSA countries. Savvides (1996) analyzes the variability of nominal and real exchange rates in SSA countries. Both the "Communauté financière Africaine" (CFA)[3] and non-CFA countries experience increased variability of nominal and real exchange rates during the modern flexible period. CFA countries record lower nominal exchange rate variability in comparison to non-CFA countries.

The objective of this paper is to determine the main determinants of real exchange rate (RER) fluctuations in SSA countries. The contribution of the study is to show that RER variability in SSA countries is driven by nominal or real demand shocks or supply disturbances. SSA countries experience both the fixed and flexible exchange rate regimes. The CFA countries adopt the fixed regime while the non-CFA countries maintain a flexible regime. The findings of the study will provide evidence of policy implications for the SSA countries.

This paper is organized as follows. The second section presents the data and the methodology. The third section discusses the empirical results while the last section concludes the study.

[3] The CFA stands for "Communauté Financière Africaine" in West Africa and "Cooperation Financière en Afrique Centrale" in Central Africa. The CFA Franc zone consists of 15 countries with eight (8) in West Africa (Bénin, Burkina Faso, Côte d'Ivoire, Guinée Bissau, Mali, Niger, Sénégal and Togo) and six (6) in Central Africa (Cameroon, Central African Republic, Chad, Congo and Gabon) and the Islamic Republic of Comoros. France colonized the CFA Franc countries.

DATA ANALYSIS AND METHODOLOGY

This study considers bivariate decompositions, which include the Real Exchange Rate (RER) and the price level measured in natural logarithms. The RER series is computed using the Nominal Exchange Rates (NER) times Foreign Prices divided by Domestic Prices. NER are proxied by national currency per Special Drawing Rights (SDR). Consumer Price Index (CPI) and the inflation rates of the G-7 are used, respectively, as proxies for Domestic and Foreign Prices.

The study covers 30 SSA countries from both the CFA Franc and the non-CFA Franc zones. The CFA countries covered in the study include Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Côte D'Ivoire, Gabon, Mali, Niger, Senegal, and Togo. The non-CFA countries are Botswana, Burundi, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Nigeria, Rwanda, South African Republic, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. The sample covers the period from 1965 to 2005 for both the CFA and the non-CFA countries. All the data are annual observations taken from the IFS CD-ROM published by the International Monetary Fund (IMF).

The sources of real exchange fluctuations in SSA countries are investigated using a structural VAR framework with limited capital mobility and a weak-banking system in Africa. This methodology follows Blanchard and Quah (1989) for distinguishing temporary from permanent disturbances using a pair of time series variables. Clarida and Gali (1994) extend it to identify nominal or real demand shock or supply shock using long run restrictions.

Consider a model of an infinite moving average of a vector of variables X_t and an equal numbers of shocks ε_t written as follows using a lag operator L,

$$\begin{aligned} X_t &= A_0\varepsilon_t + A_1\varepsilon_{t-1} + A_2\varepsilon_{t-2} + A_3\varepsilon_{t-3}\cdots \\ &= \sum_{i=0}^{\infty} L^i A_i \varepsilon_t \end{aligned} \tag{1}$$

where A_i represents the matrix of the impulse response functions of the shocks to the elements of X. Moreover, let X_t consist of the changes in Real Exchanges Rates (Δq_t) and Price Level (Δp_t), and ε_t consist of real shocks (ε_t^r) and nominal shocks (ε_t^n).

Real and nominal shocks are assumed to be orthogonal. For instance, technological or productivity changes may be the source of RER variability while nominal shocks reflect changes in nominal exchange rates (reevaluation or devaluation) or nominal money supply changes. Since the vector $[\Delta q_t \ \Delta p_t]'$ is stationary, the model can written as an infinite moving average of structural shocks,

$$\begin{vmatrix}\Delta q_t \\ \Delta p_t\end{vmatrix} = \begin{vmatrix}A_{11}(L) & A_{12}(L) \\ A_{21}(L) & A_{22}(L)\end{vmatrix} \begin{vmatrix}\varepsilon_t^r \\ \varepsilon_t^n\end{vmatrix} \qquad (2)$$

where q_t and p_t are the natural logarithms of real exchange rates and prices and A_{ij} are polynomials in the lag operator, L.

This framework implies that real shocks have permanent effects on real exchange rates, but nominal shocks have only temporary effects[4]. That is, nominal shocks have no long-run effect on the real exchange rate. Therefore, the cumulative effect of nominal shocks on the variability or change in real exchange rate, Δq_t must be zero. This implies the restriction,

$$\sum_{k=0}^{\infty} a_{12}(k) = 0 \qquad (3)$$

where a_{ij} is the k^{th} coefficient in A_{ij} (L). Moreover, there is no restriction of real and nominal shocks on the price level.

Combine equations (2) and (3) and estimate them using a finite order VAR written as,

$$\begin{aligned} X_t &= B_1 X_{t-1} + B_2 X_{t-2} + \ldots + B_n X_{t-n} + e_t \\ &= \left[I - B(L) \right]^{-1} e_t \\ &= \left[I + B(L) + B(L)^2 + \ldots \right] e_t \\ &= e_t + D_1 e_{t-1} + D_2 e_{t-2} + D_3 e_{t-3} + \ldots \end{aligned}$$

(4) or

$$X_t = \sum_{i=0}^{\infty} D_t e_{t-i} = D(L) e_t , \qquad (5)$$

where $D_0 = I$; X_t consists of Δq_t and Δp_t, and e_t represents the residuals of a regression of lagged values of Δq_t and Δp_t on their current values. Note that e_{qt} is the residual associated with Δq_t and e_{pt} is the one associated with Δp_t. B represents the coefficients to be estimated. Equation (5) provides the restrictions needed to identify the shocks. This methodology allows for decomposition of a series into its temporary and permanent components.

The VAR is specified properly by testing the data for times series properties. The Augmented Dickey-Fuller (ADF) and Kwiathowski-Phillips-Schmitt-Shin (KPSS) test statistics are used to test the data for unit roots and stationarity. Table 1 reports the results of the ADF tests while Table 2 shows the results of the KPSS statistic tests.

The ADF test statistics also indicate that the variables are stationary in the first differences at the significance level of 5 percent. This stationarity makes the use of a VAR model appropriate. Moreover, the KPSS test statistics confirm the results of the ADF test statistics. That is, the null hypothesis of the KPSS test is accepted at the first differences at the 10 percent significance level.

EMPIRICAL RESULTS

The dynamic effects of the nominal and real shocks can be analyzed through the Impulse Response Functions (IRF) and Variance Decompositions (VD). The results of the IRF for selective CFA and Non-CFA countries are shown on several graphs in the appendix. Each graph displays the dynamic response of the real exchange rates or the prices to the real shocks (ε_t^r) and to the nominal disturbances (ε_t^n).

The real shocks seem to be the major source of real exchange fluctuations in the CFA and non-CFA countries. The movements in the price level are driven by nominal disturbances in Sub-Saharan African countries. As presumed by the model, nominal shocks have only temporary effects on the real exchange rates.

In the CFA countries at short-term forecasting horizons (1 year), one standard deviation of real shocks causes real exchange rate to decrease by 60 percent but have a mixed result on the price level. Indeed, real shocks cause prices to increase 5 percent in almost half of the CFA countries and decrease for by 2.5 percent in the other half. The real disturbances still have a major influence on the real exchange rate after one year, but the effects on the price level die out. Moreover, one standard deviation of nominal shocks induces prices to fall by 7 percent the first year but increase the real exchange rates by less than 1 percent in most of the CFA countries. Within 3 to 5 years on average, these responses decay towards zero for most of the CFA countries.

[4] See Bayoumi and Eichengreen (1994), and Dibooğlu and Kutan (2001) for further analyses.

On the other hand, one standard deviation of real shocks leads to a 70 percent decrease in the real exchange rates the first year and a 2 percent increase in the price level for most of the non-CFA countries. Nominal shocks have a great impact on the prices. Indeed, prices increase by 12 percent on average in the non-CFA countries in response to nominal disturbances. Furthermore, the real exchange rates appreciate for by 2 percent at the same time. The contemporaneous responses of nominal shocks decay on average towards zero within 4 to 8 years for both the real exchange rates and the price level.

Overall, only real shocks seem to matter in explaining real exchange rate fluctuations in both the CFA and non-CFA countries, and nominal shocks play the major role in the variability of prices. Hoffmaister and Roldós (1996) find similar results about South Korea and Brazil.

The results of the VD of real exchange rates and prices are given in Table 3. The main source of real exchange rate fluctuations in the CFA countries is real shocks in the short and long run. Real disturbances such as technological innovations, productivity improvements, structural reforms or economies of scale explain over 80 percent of the RER variability in the short run (one year) and long run (8 years) in the CFA countries except in Congo where it is only 73 percent. Nominal shocks have a smaller impact on the variation of the RER in the CFA countries even in the short run. They account for less than 7 percent in the short run except for Côte d'Ivoire, Mali, and Congo where they are 8 percent, 11 percent, and 20 percent, respectively.

On the other hand, nominal shocks such as demand disturbances seem to have a major influence in explaining real exchange rate movements in the non-CFA countries. They account for more than 30 percent in the RER variability for Nigeria – an oil exporting country, South Africa, Uganda, Zambia and Zimbabwe. The diverse fiscal and monetary policies in the non-CFA countries can explain the increasing important of nominal disturbances in these countries. Moreover, nominal disturbances seem to matter in explaining price level variability in the non-CFA countries in both the short and long run in contrast to the CFA countries. There is a very strict discipline of fiscal and monetary policies in the CFA countries due to the monetary union in these countries. The CFA countries also have a fixed exchange rate system in which their unique currency, the Franc CFA, is pegged to the Euro of the European Union. The fixed exchange rate regime may conceivably limits the role of nominal shocks in the CFA countries where inflation is not a major macroeconomic problem. These results are consistent with findings about developing countries of Asia and Latin America by Hoffmaister and Roldós (1996). They conclude that nominal shocks have a small impact on the variability of real exchange rates in Asia and Latin America. They use a panel data consisting of fifteen Asian and seventeen Latin-American economies.

CONCLUSION AND POLICY IMPLICATIONS

This study investigates the determinants of real exchange rate variability in SSA countries using a structural VAR model over the period 1960 - 2000. The findings suggest that real shocks play a substantial role in real exchange fluctuations in the CFA countries even in the short run. Nominal disturbances have almost no impacts on the movements of real exchange rates at short and long-term forecasting horizons in the CFA countries. These findings for the CFA countries are consistent with the results of similar techniques applied by other authors to other developing countries in contrast to the findings of the non-CFA countries. In these countries, nominal shocks seem to matter in the RER variability in the short and long run.

The results of this study also show that nominal shocks account for most of the variations in relative prices in the CFA and non-countries in long run. In addition, nominal shocks are important in accounting for the RER fluctuations at short and long- term forecasting horizons in the non-CFA countries. The flexible exchange rate arrangement and the diverse fiscal and monetary policies in these countries could explain the relative importance of nominal shocks in the non-CFA countries.

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APPENDIX

Table 1: Unit Root Tests- ADF TEST

ADF STATISTIC[1]				
	LEVEL[2]		**First DIFFERENCE[2]**	
	q	p	q	p
Country	**CFA COUNTRIES**			
Lag Length	2	2	2	2
Benin	-2.862	-2.310	-6.734	-3.797
Lag Length	2	1	2	1
Burkina Faso	-3.242	-1.569	-6.627	-6.232
Lag Length	2	1	2	1
Cameroon	-2.861	-1.825	-6.739	-3.554
Lag Length	2	1	2	1
Chad	-3.228	-0.825	-6.576	-3.997
Lag Length	1	1	1	1
C.A.R[3]	-2.555	-2.162	-6.929	-3.995
Lag Length	2	1	2	1
Congo	-2.990	-2.500	-4.693	-6.073
Lag Length	2	1	2	1
Cote D'Ivoire	-3.091	-2.340	-4.737	-3.641
Lag Length	1	2	1	2
Gabon	-3.223	-1.239	-6.832	-4.253
Lag Length	2	1	2	1
Mali	-3.371	-1.863	-5.205	-4.076
Lag Length	1	1	1	1
Niger	-2.816	-1.735	-6.853	-4.015
Lag Length	1	1	1	1
Senegal	-2.888	-2.097	-6.959	-3.613
Lag Length	1	1	1	1
Togo	-3.109	-2.255	-6.773	-3.736
	NON-CFA COUNTRIES			
Lag Length	1	1	1	1
Botswana	-3.213	-2.594	-7.088	-4.947
Lag Length	1	1	1	1
Burundi	-3.183	-2.554	-7.083	-3.572
Lag Length	1	1	1	1
Ethiopia	-3.140	-2.506	-6.273	-4.054
Lag Length	1	2	1	2
Gambia	-3.323	-2.842	-6.937	-4.786
Lag Length	1	2	1	2
Ghana	-3.188	-2.390	-5.672	-3.664

Table 1: Continued

Lag Length	2	2	2	2
Kenya	-3.270	-2.602	-5.992	-4.103
Lag Length	2	1	2	1
Lesotho	-3.024	-0.869	-5.441	-4.144
Lag Length	1	2	1	2
Madagascar	-2.716	-1.550	-7.020	-4.297
Lag Length	1	2	1	2
Malawi	-2.361	-0.291	-6.914	-4.735
Lag Length	1	1	1	1
Mauritius	-3.057	-2.208	-6.966	-3.562
Lag Length	2	2	2	2
Nigeria	-3.273	-1.959	-5.417	-4.354
Lag Length	1	1	1	1
Rwanda	-3.336	-2.926	-6.933	-3.919
Lag Length	1	2	1	2
South Africa	-3.351	-2.050	-6.821	-3.759
Lag Length	1	1	1	1
Swaziland	-2.648	-2.023	-6.582	-3.952
Lag Length	1	1	1	1
Tanzania	3.252	-2.319	-6.491	-4.891
Lag Length	1	2	1	2
Uganda	-2.753	-1.940	-6.246	-4.327
Lag Length	1	2	1	2
Zambia	-3.338	-2.407	-6.563	-3.769
Lag Length	1	1	1	1
Zimbabwe	-1.262	-0.670	-7.228	-4.378

CRITICAL VALUES FOR T=40[4]	
10%	-3.18
5%	-3.50
1%	-4.15

Notes:

1. The Augmented Dickey-Fuller (ADF) tests included a constant and a linear trend at 1%, 5% and 10% significance levels.
2. The Lag length is determined using the Akaike Lag Length Procedure.
3. C.A.R. = Central African Republic.
4. The critical values are from Wayne Fuller (1976, pp. 371 and 373).

Table 2: Unit Root Tests- KPSS TEST

KPSS TEST[1]					
Country	**LEVEL**			**First DIFFERENCE**	
	Lag[2]	**q**	**p**	**q**	**p**
CFA COUNTRIES					
Benin	2	.121	.249	.053	.092
Burkina Faso	2	.175	.143	.080	.103
Cameroon	2	.186	.154	.070	.092
Chad	2	.120	.346	.060	.070
C.A.R[3]	2	.133	.301	.054	.072
Congo	2	.207	.159	.081	.138
Cote D'Ivoire	2	.184	.151	.075	.119
Gabon	2	.159	.210	.069	.095
Mali	2	.153	.352	.064	.143
Niger	2	.140	.250	.062	.075
Senegal	2	.135	.253	.051	.089
Togo	2	.210	.121	.071	.067
NON-CFA COUNTRIES					
Botswana	2	.137	.145	.063	.138
Burundi	2	.189	.172	.055	.118
Ethiopia	2	.151	.124	.068	.073
Gambia	2	.220	.213	.060	.117
Ghana	2	.133	.214	.072	.142
Kenya	2	.235	.302	.057	.115
Lesotho	2	.133	.137	.048	.128
Madagascar	2	.156	.311	.042	.077
Malawi	2	.120	.212	.045	.145
Mauritius	2	.224	.131	.046	.070
Nigeria	2	.134	.335	.057	.073
Rwanda	2	.212	.197	.071	.083
South Africa	2	.224	.294	.068	.105
Swaziland	2	.309	.261	.074	.113
Tanzania	2	.120	.341	.043	.143
Uganda	2	.166	.256	.048	.107
Zambia	2	.153	.342	.063	.110
Zimbabwe	2	.363	.359	.042	.069
CRITICAL VALUES FOR T = 40					
10%	.119				
5%	.146				
1%	.216				

Notes:

1. The Kwiathoswki-Phillips-Schmitt-Shin (KPSS) tests included a constant and a linear trend at 1%, 5% and 10% significance levels.
2. The truncation of the Lag is set at 2.
3. C.A.R. = Central African Republic.

Table 3: Variances Decompositions for CFA and Non-CFA Countries

CFA Countries	Year	RER ε_t^r	RER ε_t^n	Prices ε_t^r	Prices ε_t^n	RER ε_t^r	RER ε_t^n	Prices ε_t^r	Prices ε_t^n	Year	Non-CFA Countries
Benin	1	99.06	0.94	0.93	99.07	99.99	0.01	0.15	99.85	1	Botswana
	4	98.74	1.26	6.90	93.10	98.61	1.40	2.82	97.18	4	
	8	98.69	1.31	14.41	85.59	98.59	1.41	2.84	97.16	8	
Burkina Faso	1	97.96	2.04	0.93	99.07	99.99	0.01	0.04	99.96	1	Burundi
	4	97.20	2.80	1.91	98.40	94.85	5.16	1.84	98.16	4	
	8	97.15	2.85	1.64	98.36	94.73	5.27	1.88	98.12	8	
Cameroon	1	98.48	1.52	1.98	98.02	97.21	2.79	9.03	90.97	1	Ethiopia
	4	97.86	2.14	2.14	97.87	95.80	4.20	19.94	80.06	4	
	8	97.86	2.15	2.14	97.86	95.81	4.20	19.94	80.06	8	
Central African Republic	1	99.07	0.9.3	316	96.84	97.51	2.41	4.96	95.04	1	Gambia
	4	98.10	1.90	5.70	94.30	96.27	3.73	6.90	93.10	4	
	8	98.09	1.91	5.72	94.28	96.25	3.75	7.04	92.96	8	
Chad	1	93.27	6.73	5.54	94.46	90.08	9.92	27.60	72.40	1	Ghana
	4	89.16	10.84	6.73	93.27	84.24	15.76	32.98	67.02	4	
	8	88.95	11.05	6.78	93.22	84.22	15.78	33.58	66.42	8	
Congo	1	72.94	27.06	20.30	79.70	95.70	4.30	0.52	99.48	1	Kenya
	4	73.16	26.84	25.29	74.71	95.77	4.23	1.58	98.42	4	
	8	72.98	27.02	25.67	74.33	95.74	4.26	1.61	98.39	8	
Cote D'Ivoire	1	86.77	13.23	8.16	91.84	98.44	1.56	6.85	93.15	1	Lesotho
	4	85.13	14.88	10.65	89.35	97.31	2.69	6.59	93.41	4	
	8	85.08	14.93	10.70	89.30	97.25	2.75	6.59	93.41	8	
Gabon	1	99.84	0.52	4.98	95.02	95.25	4.76	11.77	88.23	1	Madagascar
	4	88.01	11.99	6.96	93.04	94.46	5.54	11.60	88.40	4	
	8	87.89	12.11	7.01	92.99	94.48	5.52	11.65	88.36	8	
Mali	1	91.12	8.88	11.20	88.80	98.33	1.67	0.02	99.98	1	Malawi
	4	91.37	8.63	14.42	85.59	98.13	1.87	3.67	96.33	4	
	8	91.28	8.72	14.80	85.21	98.13	1.87	3.76	96.25	8	
Niger	1	99.77	0.23	1.22	98.78	99.58	0.43	3.78	96.22	1	Mauritius
	4	99.70	0.30	1.63	98.37	96.90	3.10	3.75	96.26	4	
	8	99.70	0.30	1.64	98.36	96.89	3.11	3.74	96.26	8	
Senegal	1	99.94	0.06	0.15	99.85	29.80	70.20	45.07	54.93	1	Nigeria
	4	99.77	0.23	1.00	99.01	19.24	80.76	37.18	62.82	4	
	8	99.77	0.24	1.04	98.86	19.25	80.75	37.18	62.83	8	
Togo	1	98.70	1.30	6.69	93.31	93.29	6.71	9.06	90.94	1	Rwanda
	4	97.90	2.10	7.19	92.81	89.54	10.46	8.16	91.84	4	
	8	97.88	2.12	7.20	92.80	89.48	10.52	8.18	91.82	8	
						77.93	22.07	24.05	75.95	1	South Africa
						70.14	29.86	42.74	57.26	4	
						69.84	30.16	45.00	55.01	8	
						71.04	28.96	47.45	52.55	1	Swaziland
						71.37	28.63	45.25	53.75	4	
						70.91	29.09	46.10	53.90	8	
						97.98	2.02	1.49	85.51	1	Tanzania
						97.55	2.45	1.22	98.78	4	
						97.53	2.47	1.11	98.89	8	
						56.40	43.61	25.11	74.89	1	Uganda
						56.43	43.57	21.64	78.36	4	
						56.08	43.92	21.16	78.84	8	
						75.63	24.37	28.19	71.81	1	Zambia
						63.65	36.35	18.42	81.58	4	
						63.43	36.57	16.35	83.66	8	
						61.51	38.49	57.00	43.00	1	Zimbabwe
						57.58	42.42	72.24	27.76	4	
						57.89	42.42	75.61	24.40	8	

FIGURE 1:

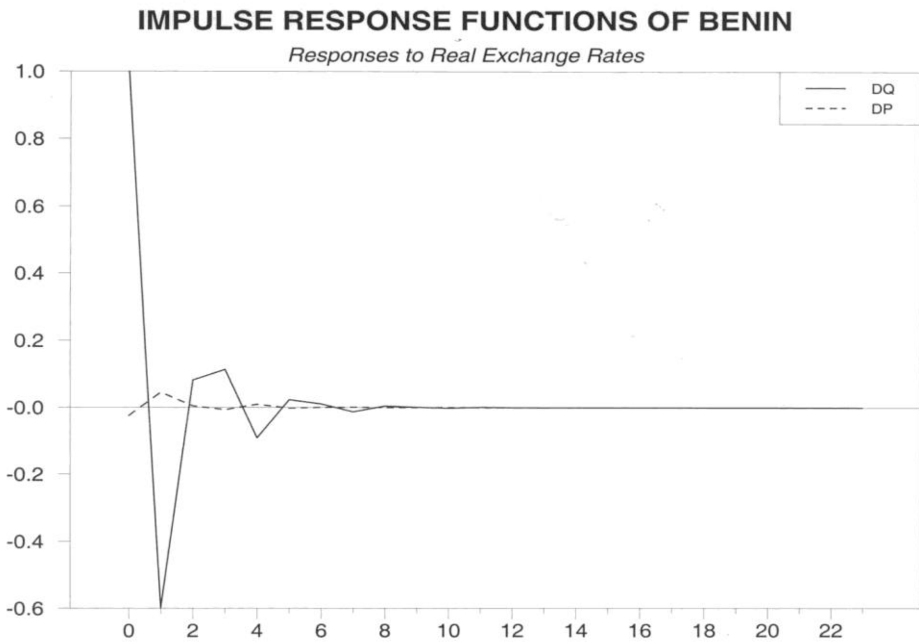
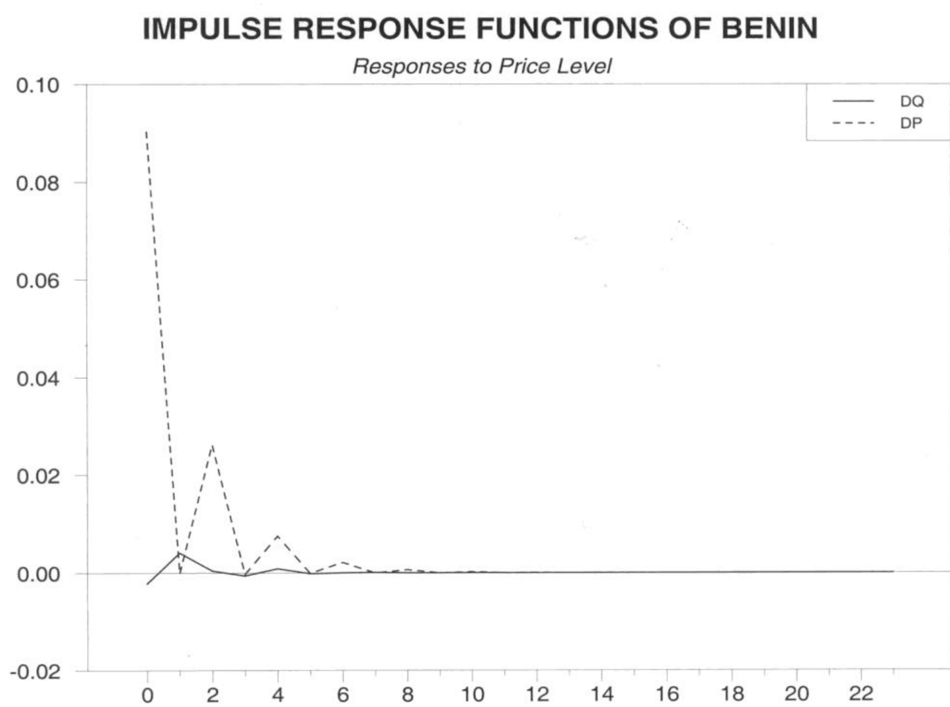


FIGURE 2:



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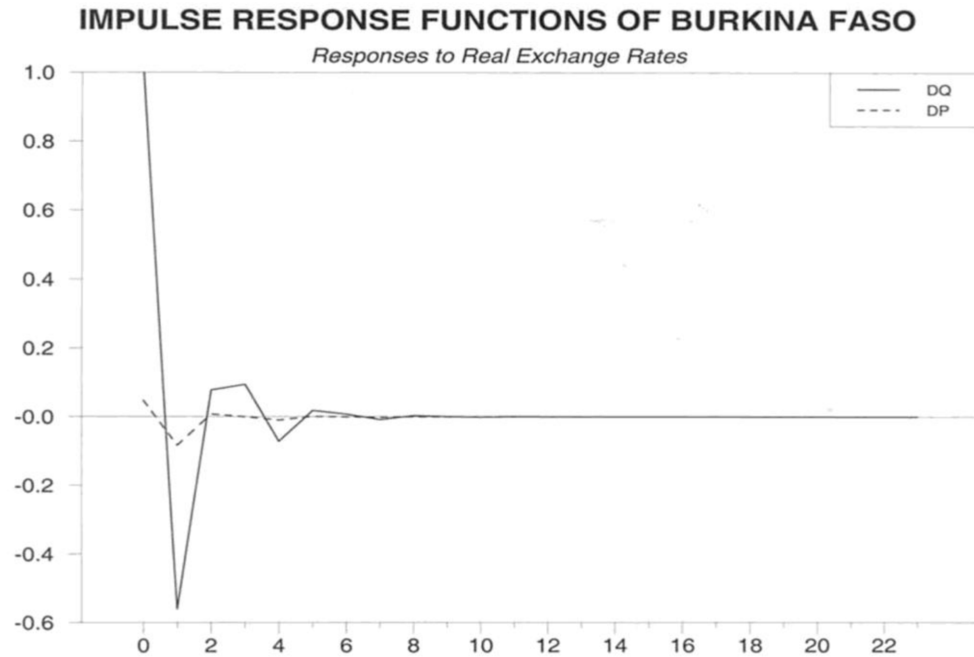
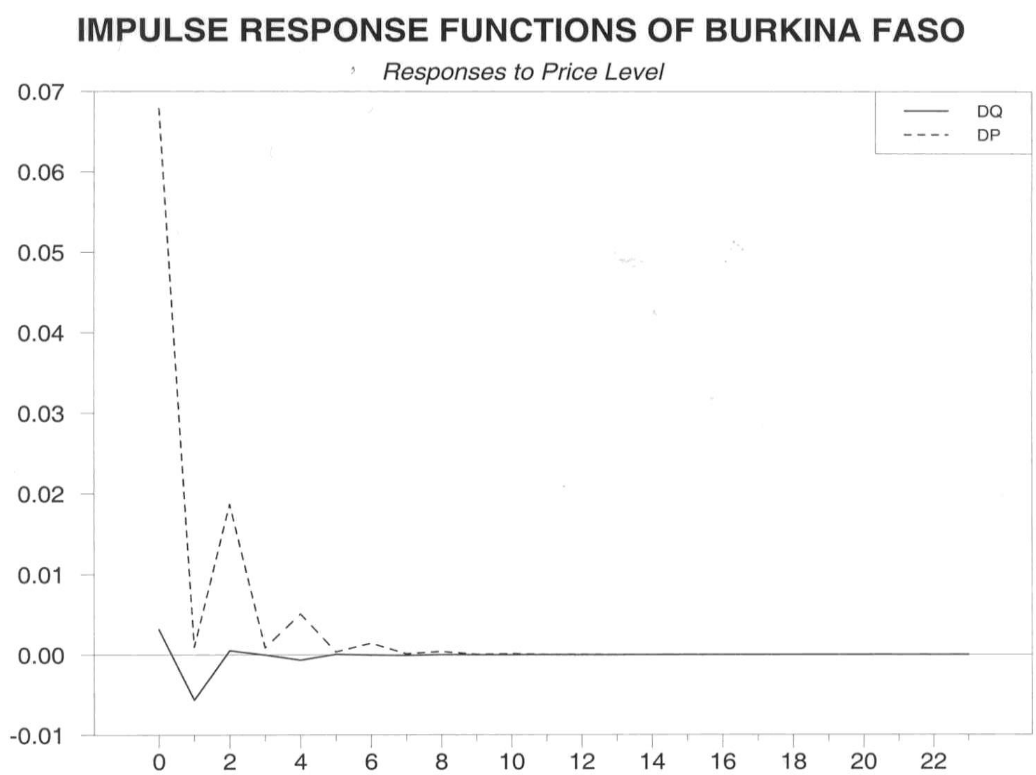


FIGURE 4:



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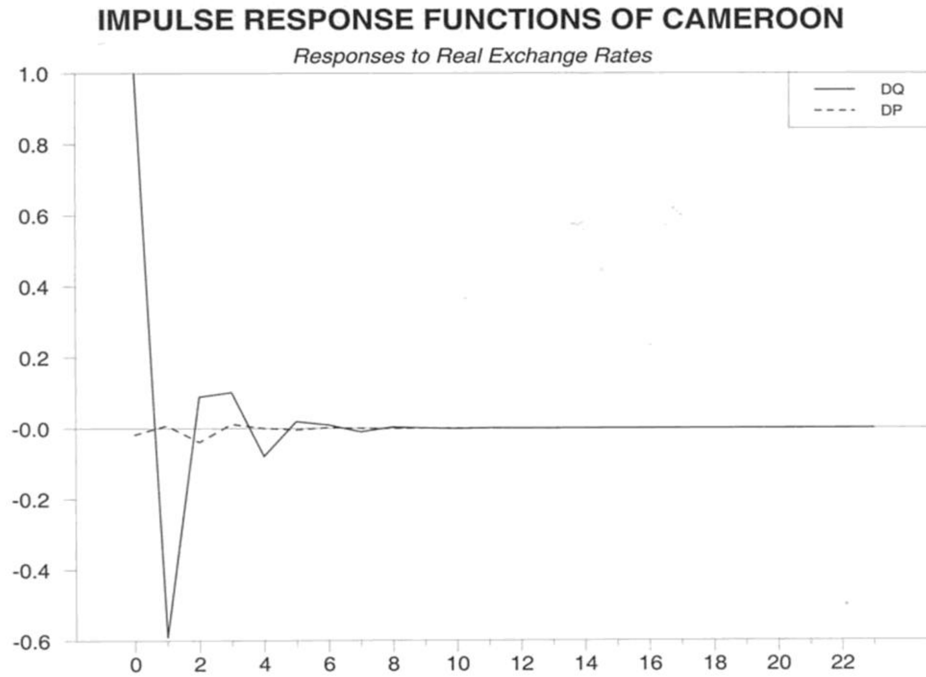

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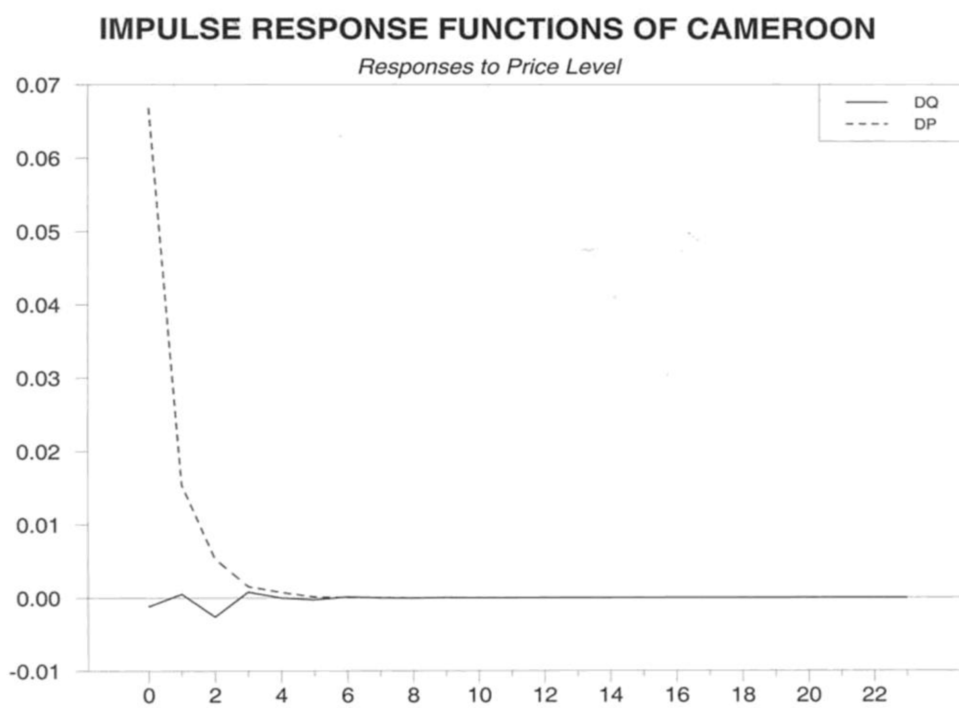

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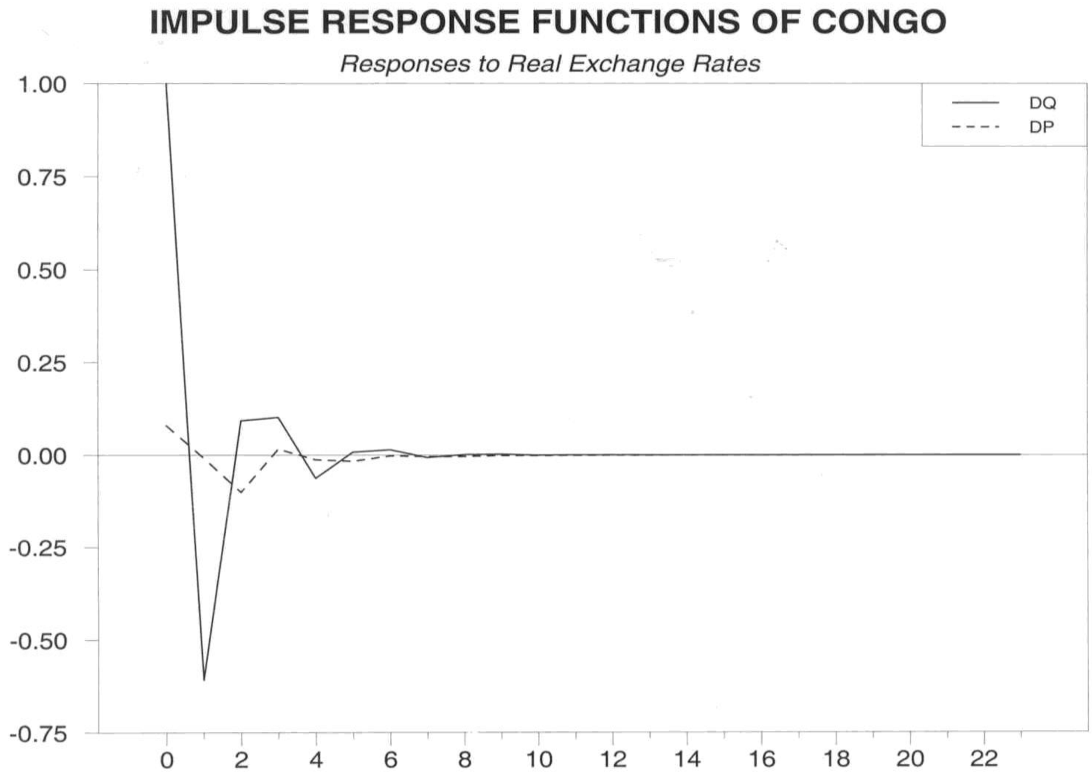

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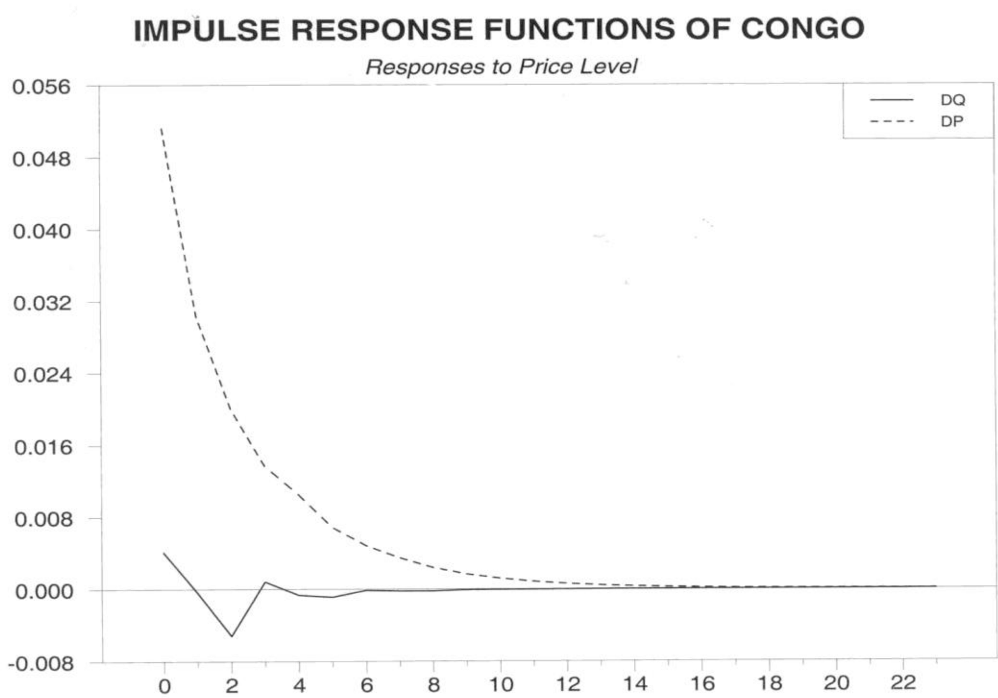

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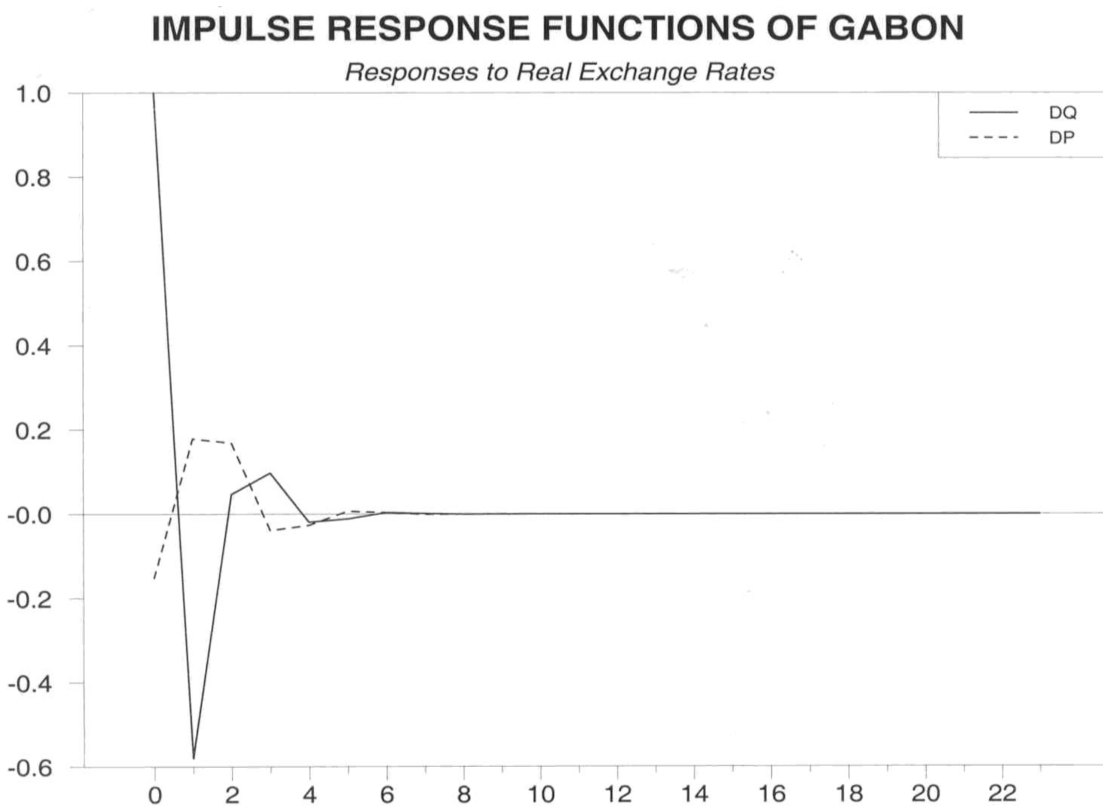
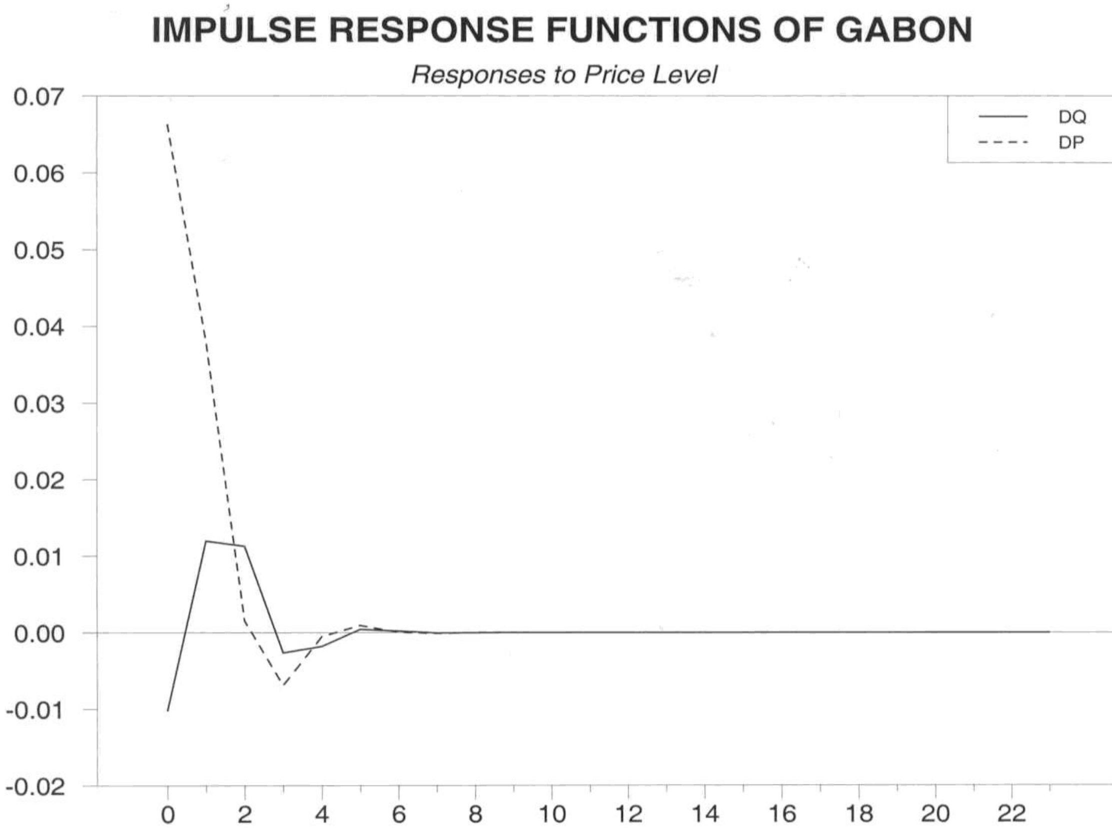


FIGURE 10: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Responses to Price Level
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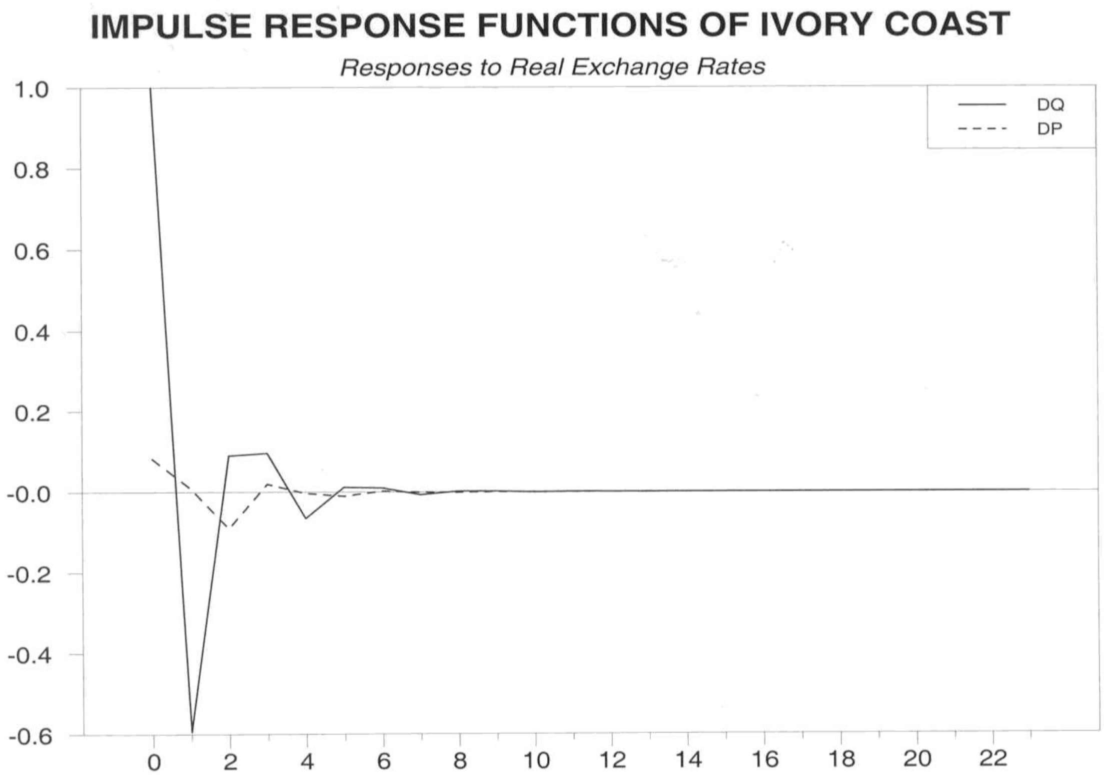
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
0
2
4
6
8
10
12
14
16
18
20
22

FIGURE 11: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Responses to Real Exchange Rates
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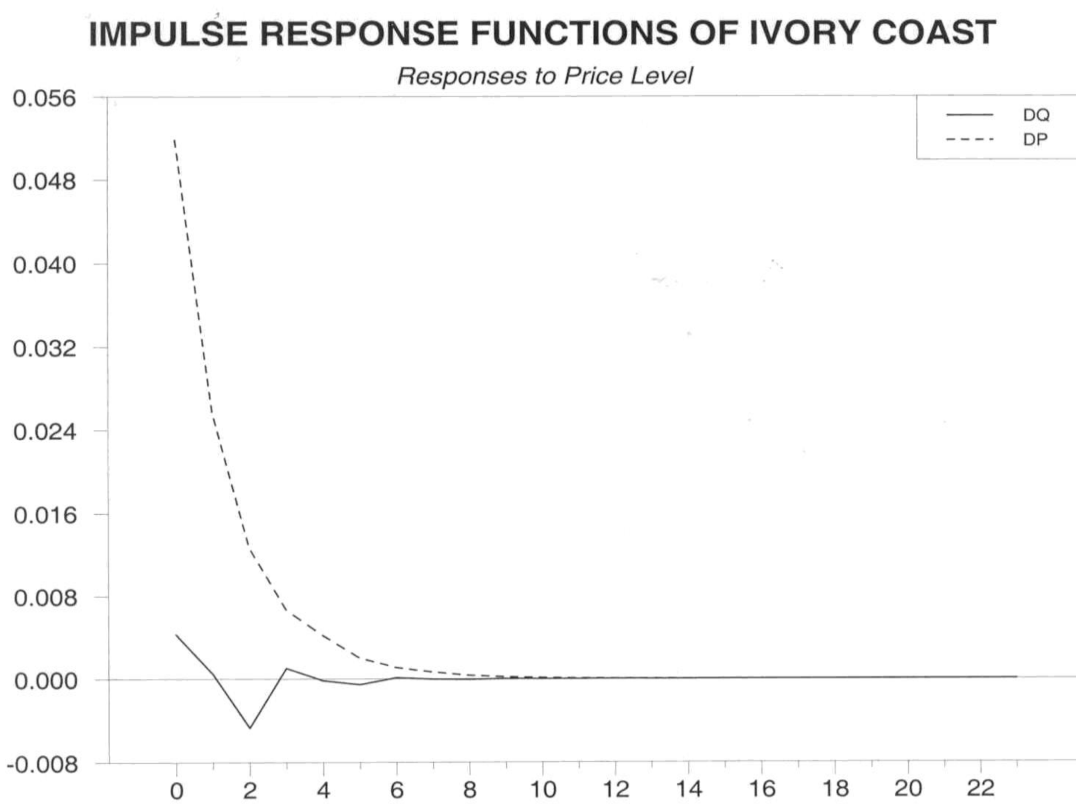
0.8
0.6
0.4
0.2
-0.0
-0.2
-0.4
-0.6
0
2
4
6
8
10
12
14
16
18
20
22

FIGURE 12:


IMPULSE RESPONSE FUNCTIONS OF IVORY COAST
Responses to Price Level
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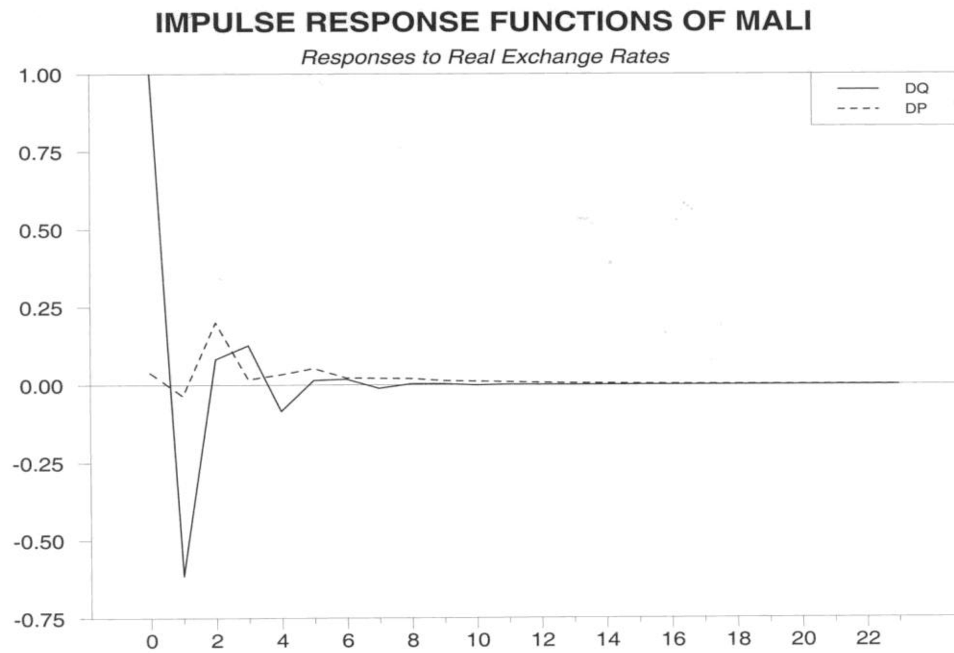
0.040
0.032
0.024
0.016
0.008
0.000
-0.008
0
2
4
6
8
10
12
14
16
18
20
22

FIGURE 13:



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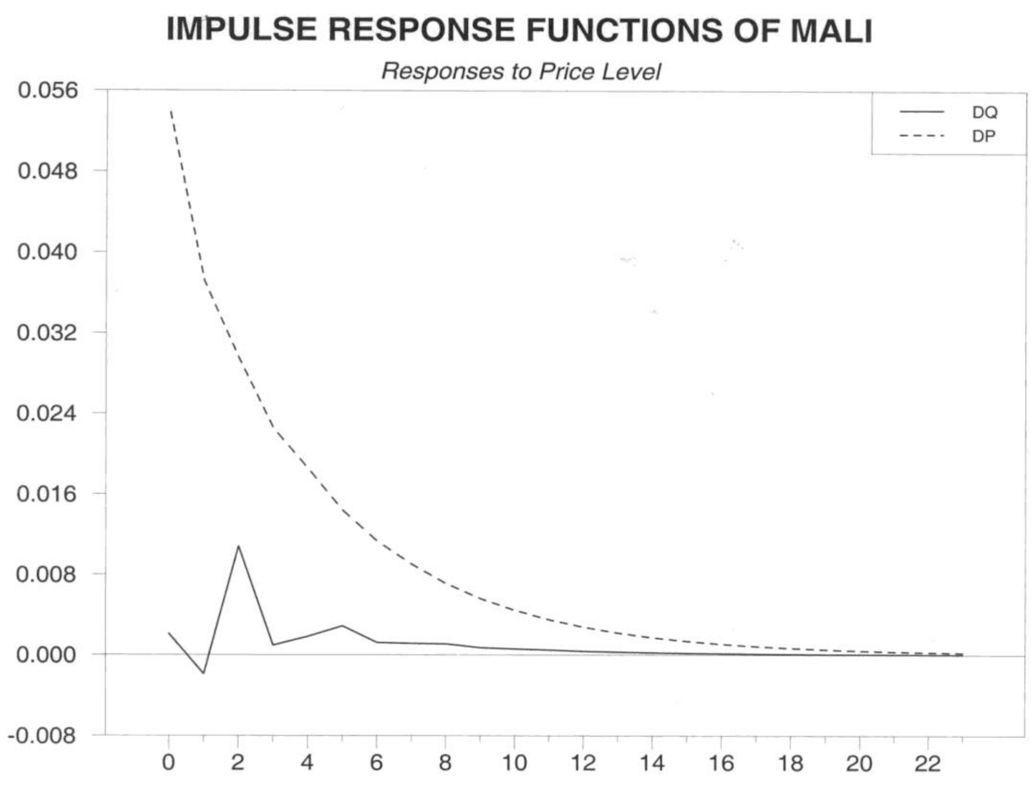

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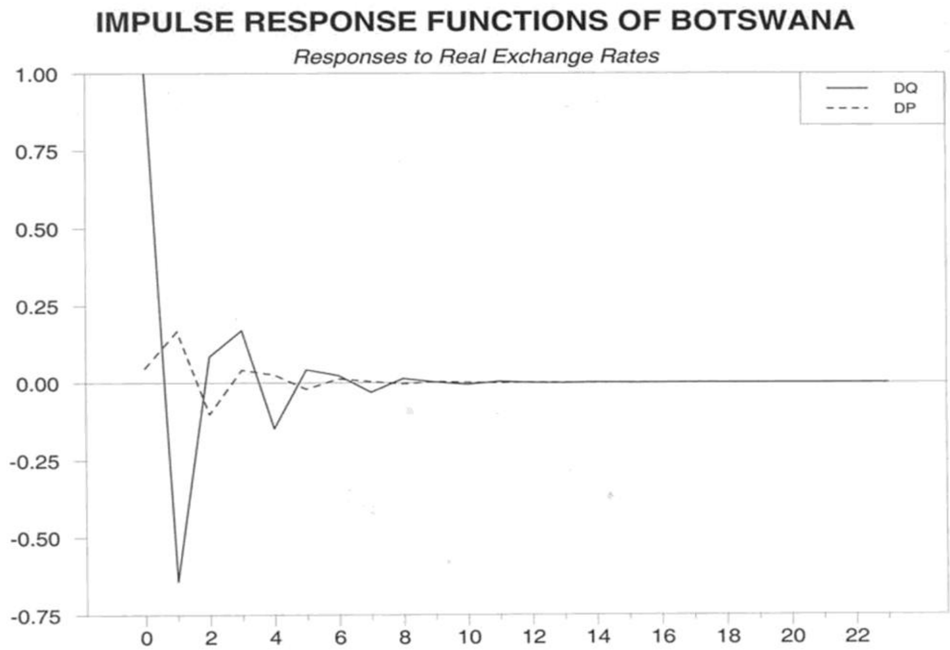

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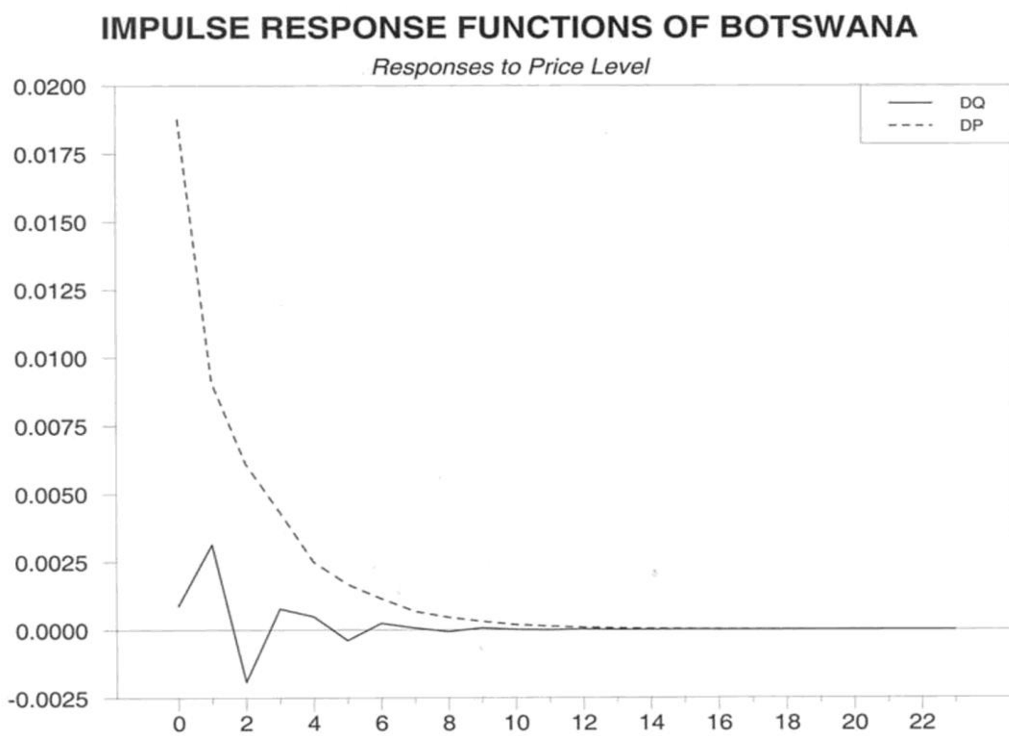

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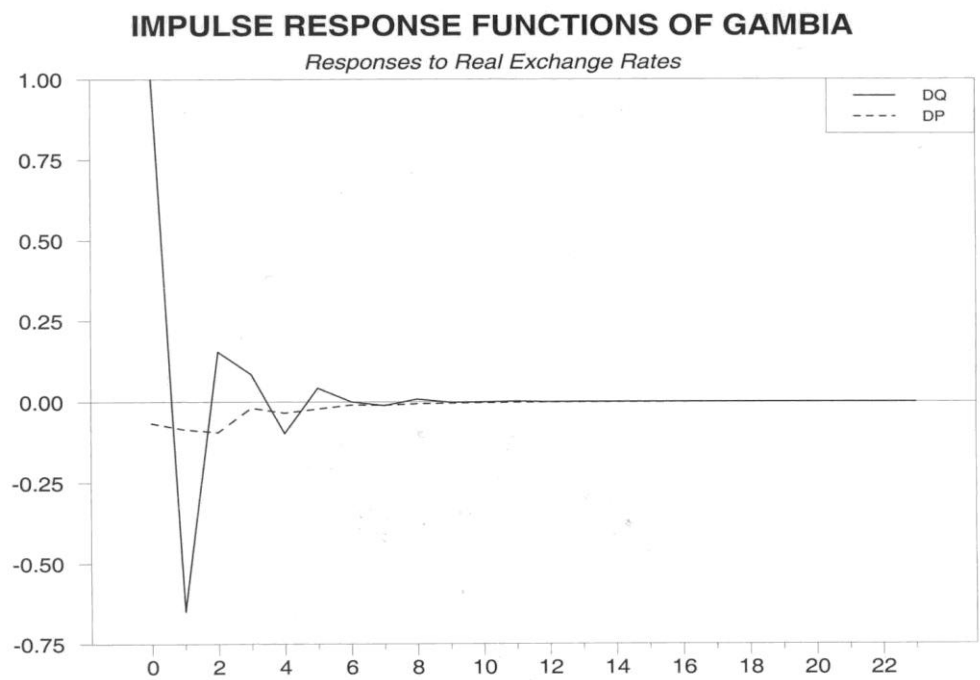

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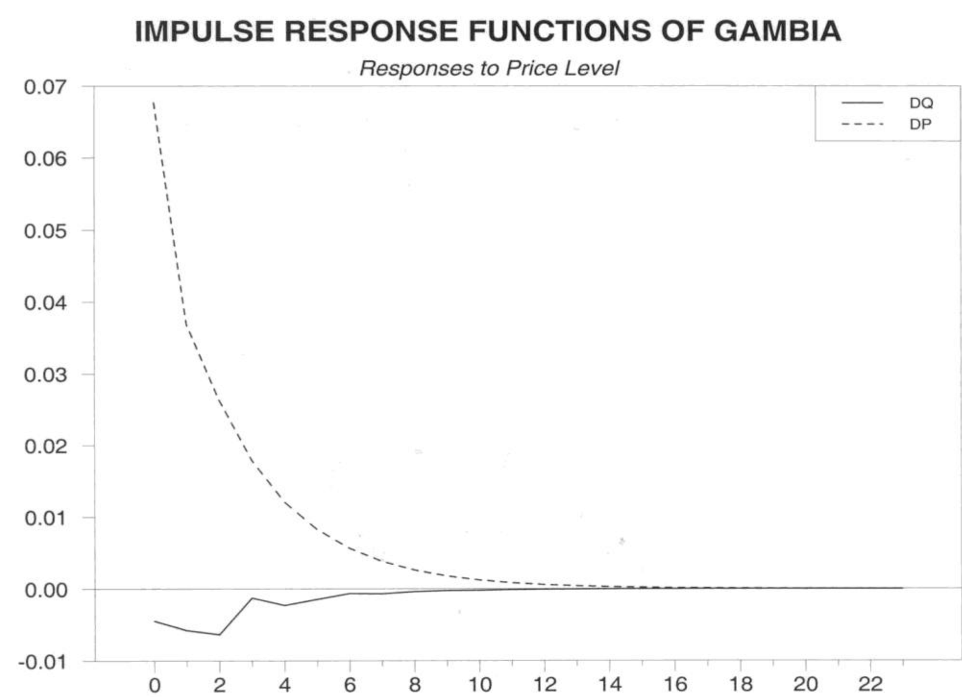

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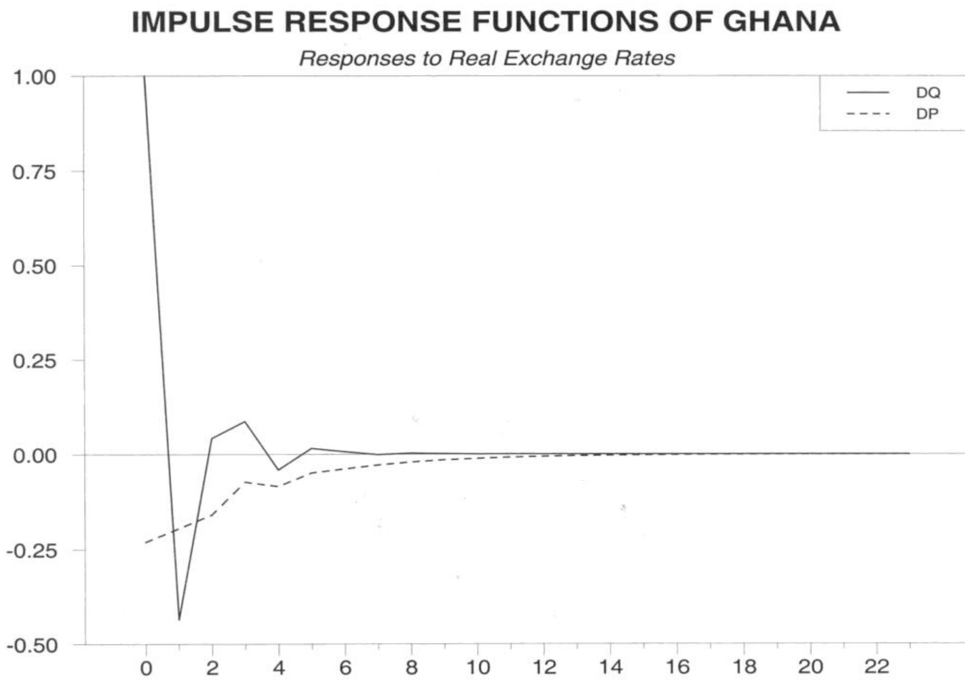

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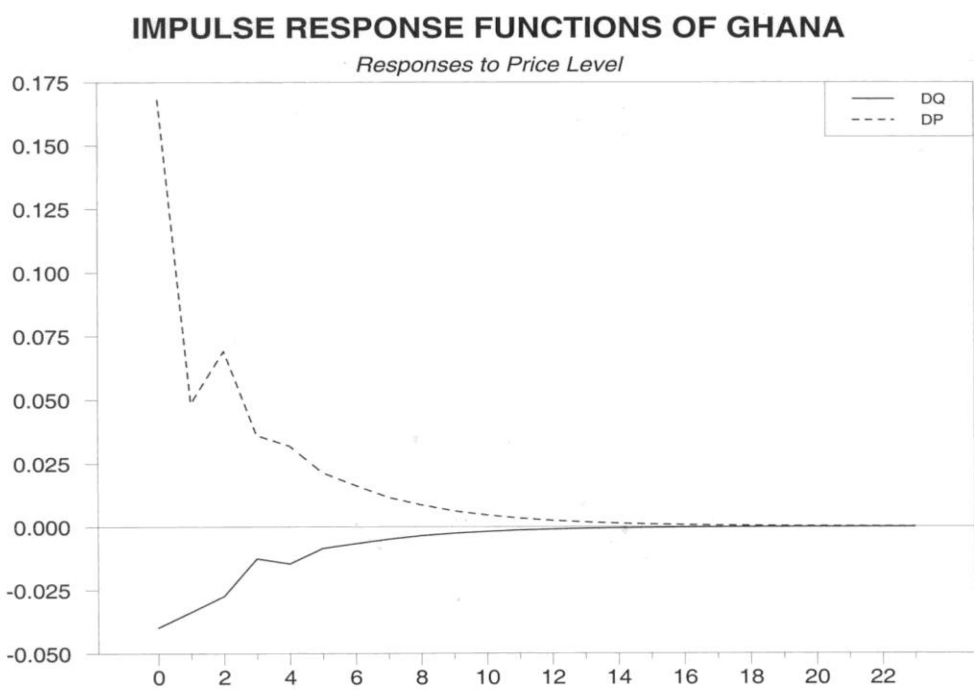

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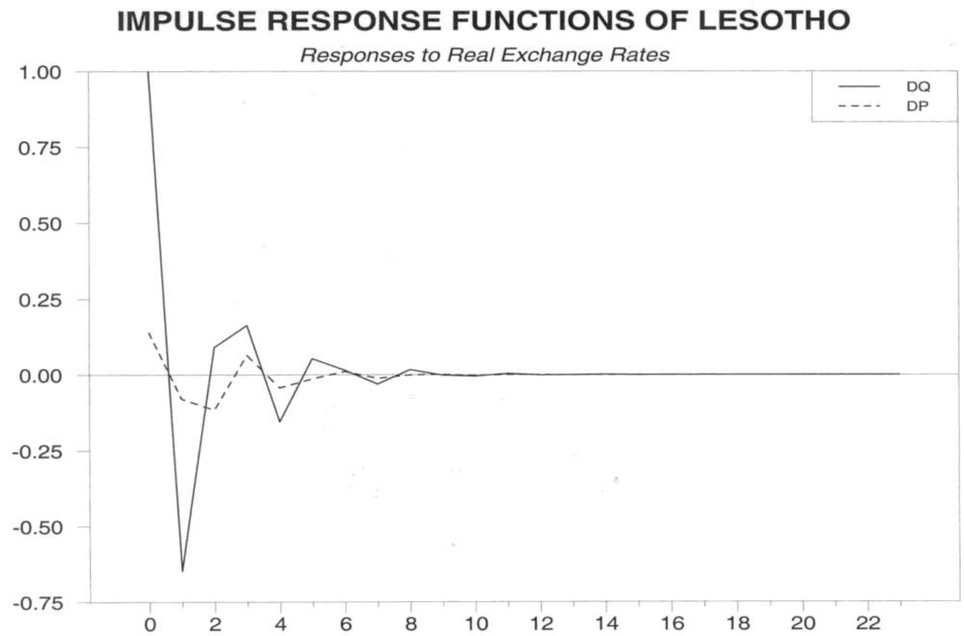

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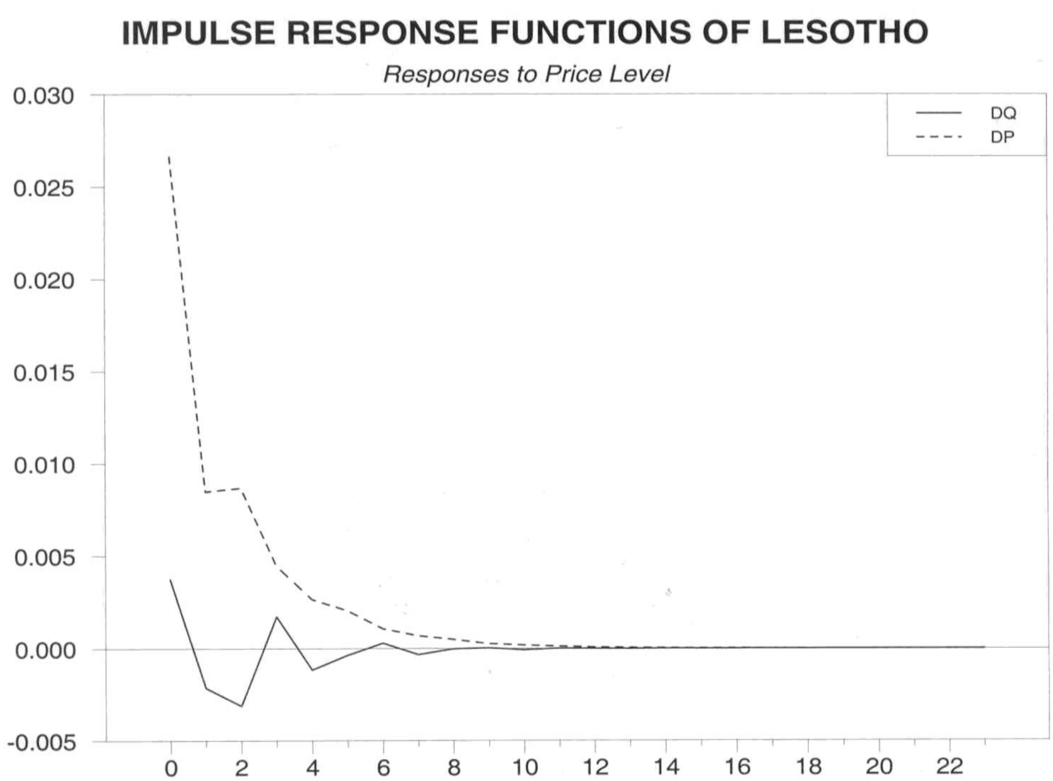

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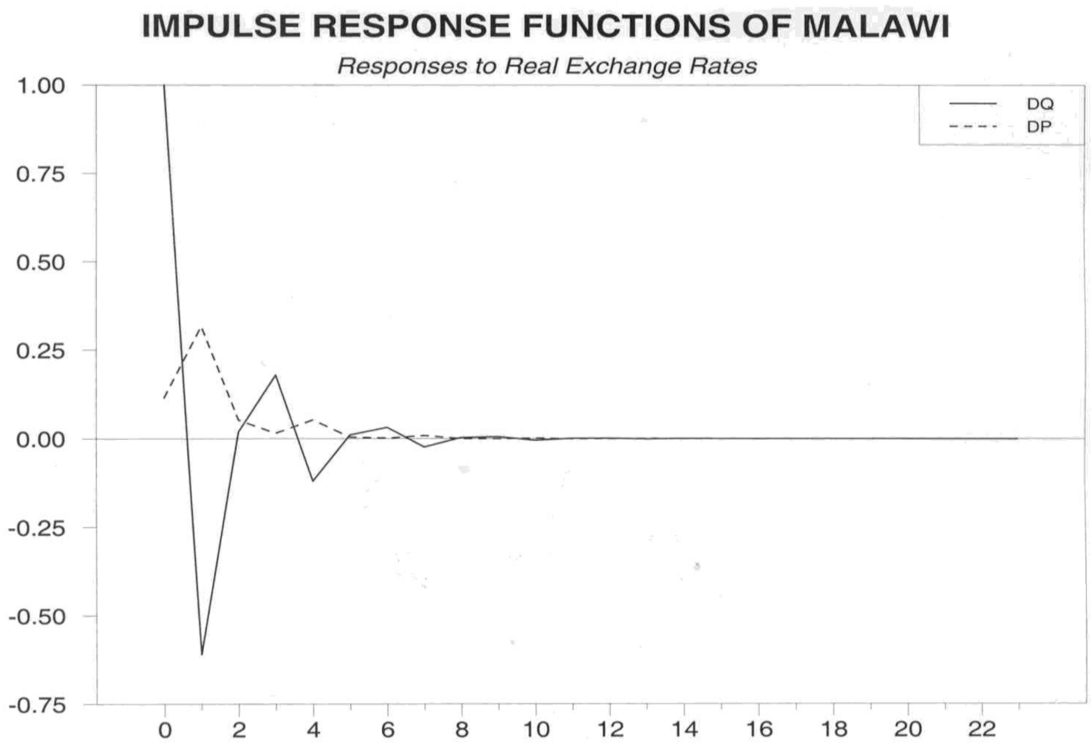

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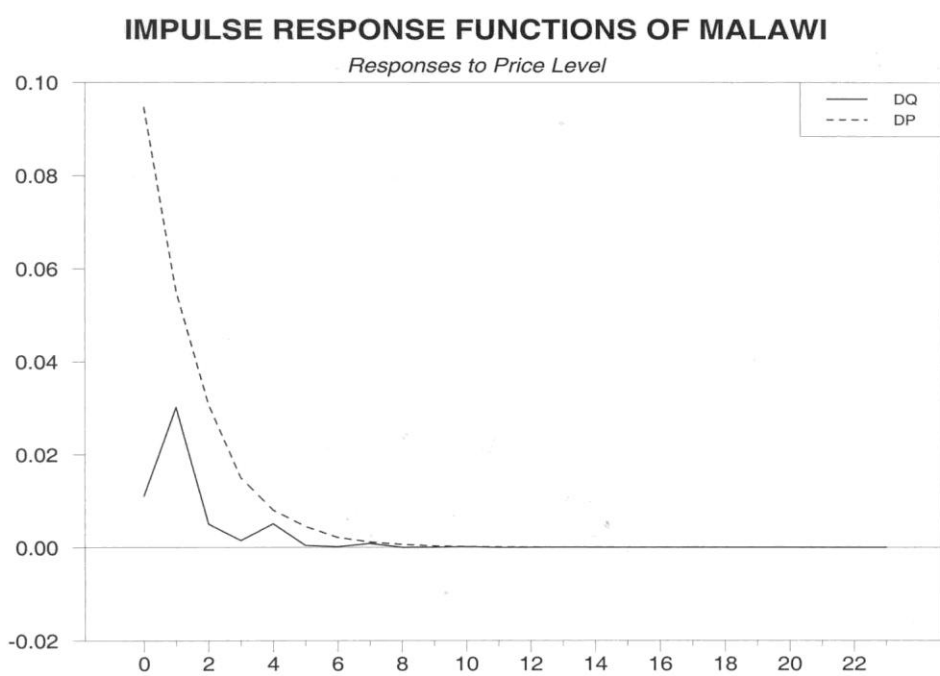

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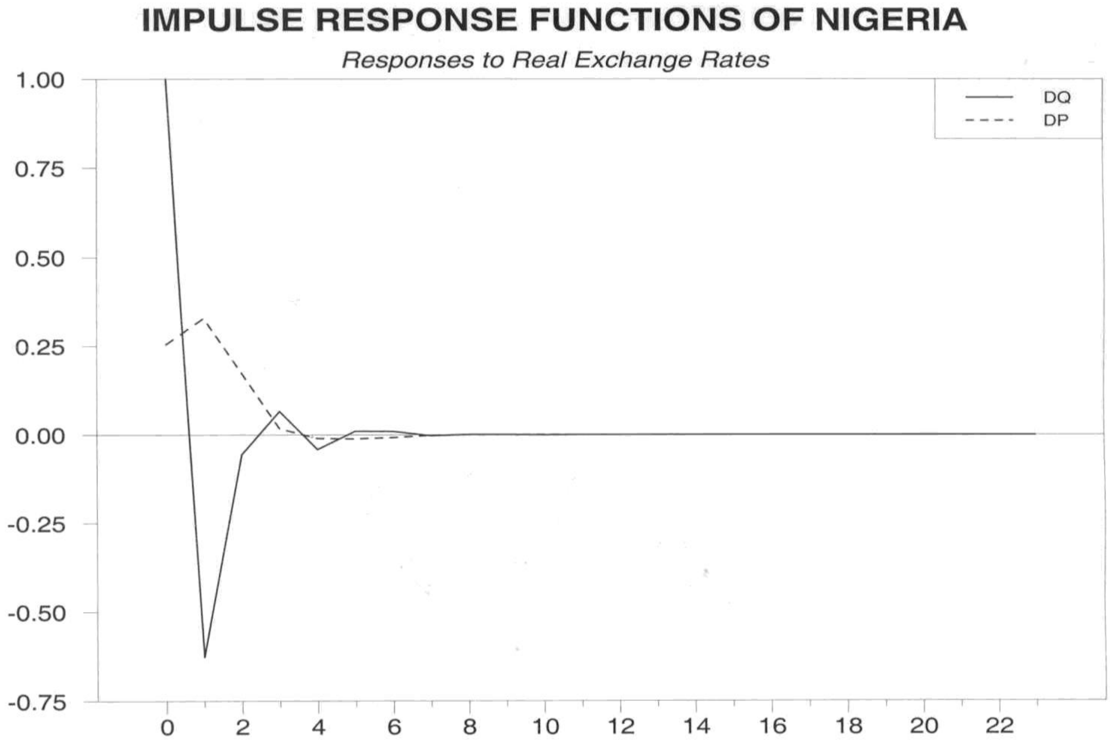


FIGURE 26:

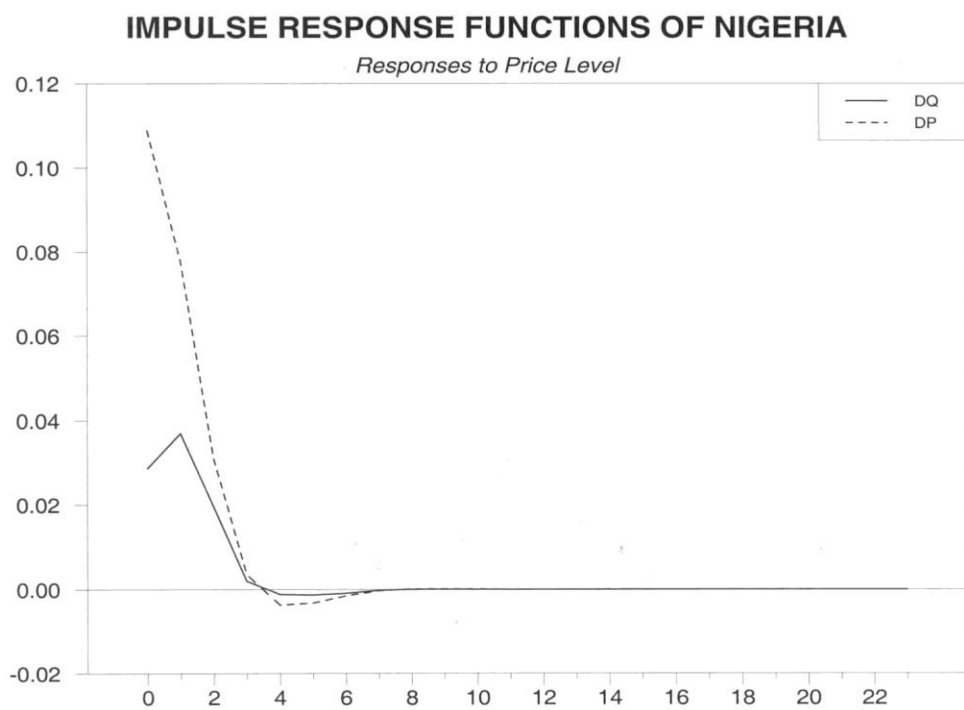


FIGURE 27:

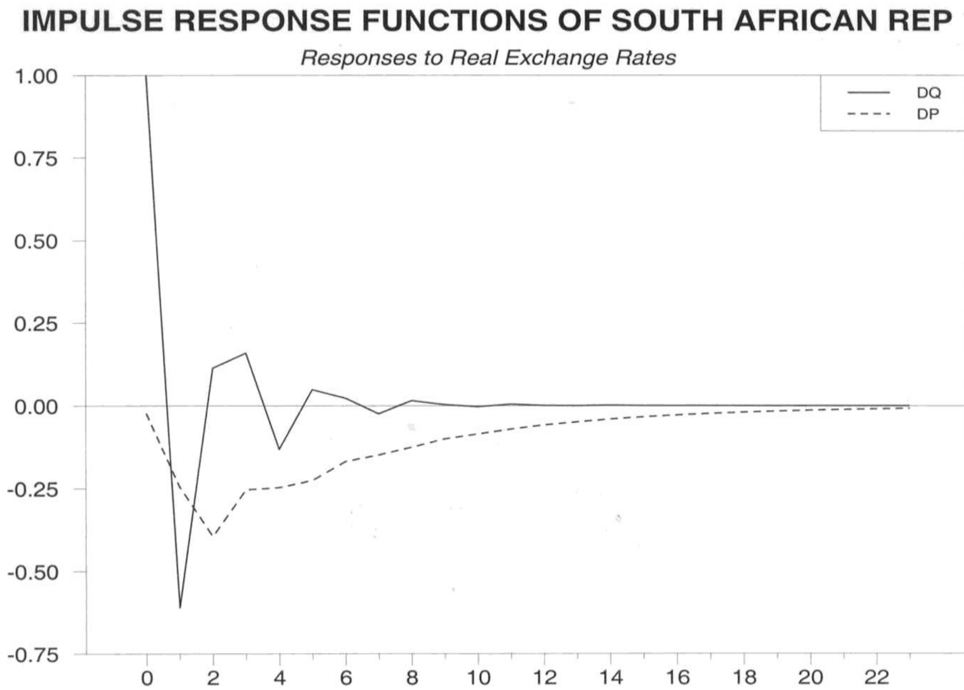


FIGURE 28:

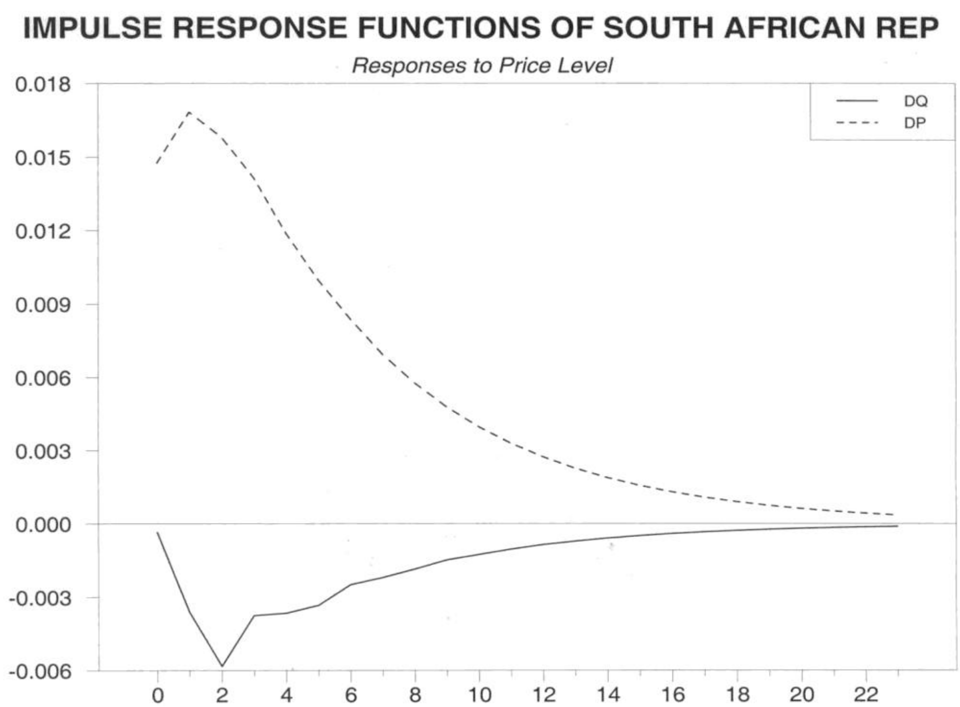


FIGURE 29:

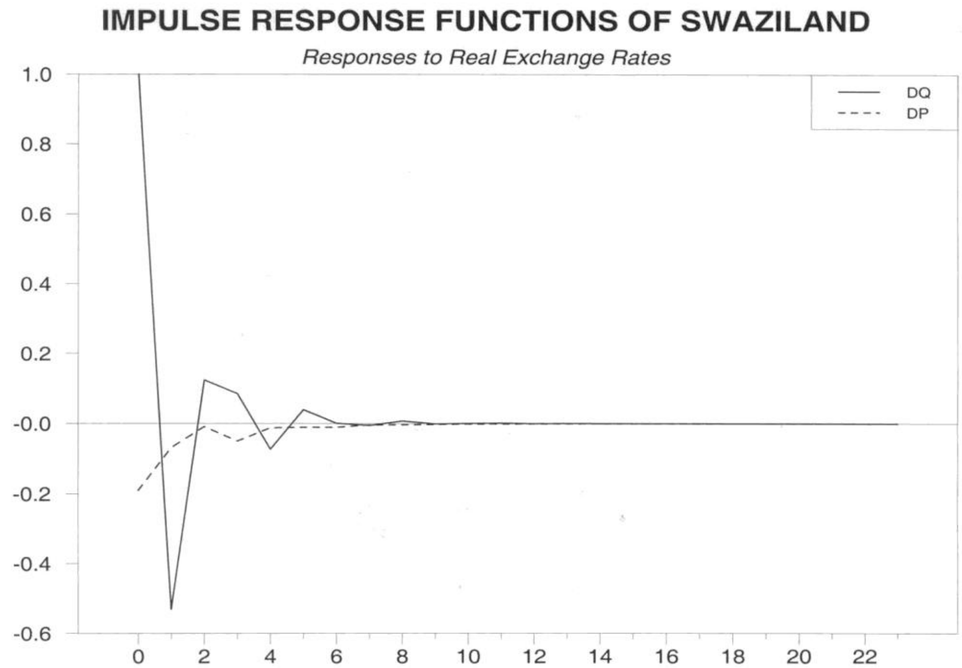
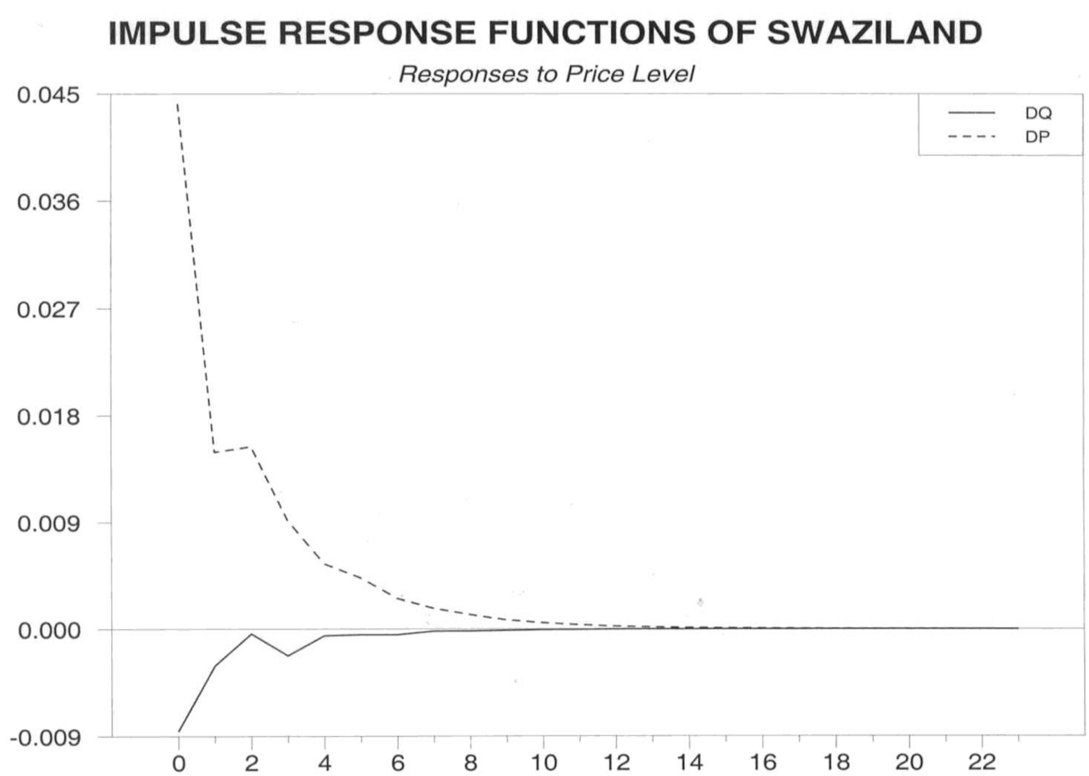


FIGURE 30:



PROGRAM OF THE CONFERENCE

Thursday October 29, 2009

Registration	Days Inn Atrium	**Begins at 7:30 am**
Breakfast	Sylvan Room	**7:30 am - 9:00 am**
Welcome -	**Norman Sigmond, Board Chair** **Dean Frear, President**	**8:00 am - 8:15 am**

Session 1: Sylvan Room **8:15 am – 9:15 am**

Session Chair: Justin Matus

Social Networks, Work Implications and Correlates

Miguel R. Olivas-Luján — Clarion University and Tecnológico de Monterrey Mexico
Elizabeth Presutti — Clarion University

A Risk Analysis of Fixed and Variable Rate Loans

Jerry Belloit — Clarion University
Barbara Garland — Clarion University
Joe Green — Clarion University

Session 2: Sylvan Room **9:20 am – 10:20 am**

Session Chair: Gaetan Giannini

Is there a business case for sustainability?

Justin Matus — Wilkes University

Case Study: Fitting Queuing Lines Models with Poisson Arrival Processes and Exponential Service Time Distributions

Edward Sullivan — Lebanon Valley College
Lauren Throne — Lebanon Valley College

Session 3: Willow Room **9:20 am – 10:20 am**

Session Chair: Miguel R. Olivas-Luján

Comparative Results on Whistle Blowing Policy: A Content Analysis of Codes Of Ethics In Global Fortune 500 Firms for the Top and Bottom 250 Firms

Barbara Garland — Clarion University
Thomas Oliver — Clarion University
Randon C. Otte — Clarion Universtiy
Brenda Ponsford — Clarion University

Exploring the Linkage Between Workforce Unionization and Executive Compensation

Irene Houle — Assumption College

Assessing the Effectiveness of Teaching Business Ethics to Undergraduate Business Administration Students

John Eichlin — Clarion University
Frank Shepard — Clarion University

Session 4: Logan/Harris Room **9:20 am – 10:20 am**

Session Chair: Jerry Belloit

An Exploratory Examination of Service Quality and Customer Orientation in the Child Care Business

Kevin Roth Clarion University

Does Experiential Learning Impact Small Business Contingency Planning?

Cynthia Scarinci The College of Staten Island of The City University of New York

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Session 5: Holmes/Foster Room **9:20 am – 10:20 am**

Session Chair: Margaret O'Connor

Reflections on Lindblom: Then and Now

Timothy Wilson Umeå School of Business

The Sources of Real Exchange Rate Fluctuations in Sub-Saharan Africa

Yaya Sissoko Indiana University

Coffee Break– Sylvan Room **10:20 am – 10:45 am**

Session 6: Sylvan Room **10:45 am – 11:45 am**

Session Chair: Kevin Roth

An Exploration of the Effect of Brand Transgressions on Consumer Attitude and Behavior

Ross Steinman Widener University

Bundling Strategies within a Product-Line Framework

John M. Zych University of Scranton

Session 7: Willow Room **10:45 am – 11:45 am**

Session Chair: Timothy Wilson

Occupational Health in the Refineries

Alok Sen Assam University

Agency Relationships and Ethical Conflicts in Real Estate Markets

Jerry Belloit Clarion University

Brenda Ponsford Clarion University

Frank Shepard Clarion University

Session 8: Logan/Harris Room **10:45 am – 11:45 am**

Session Chair: Yaya Sissoko

Building Trust into an Information System Framework: Can it be accomplished with Technology?

Margaret O'Connor Bloomsburg University

Workaholic Tendencies and Use of Smart Phones

Gayle Porter Rutgers University

Session 9: Holmes/Foster Room **10:45 am – 11:45 am**

Session Chair: Cynthia Scarinci

Are Professional Auditors Overconfident in their Abilities to Predict Corporate Bankruptcy?

Kim Anderson	Indiana University

Is the Reinvestment Rate Assumption for Internal Rate of Return Calculations Truth or Fiction?

John S. Walker	Kutztown University of Pennsylvania
Henry F. Check	Pennsylvania State University
Karen Randall	Ursinus College

Lunch – Linden Room **12:00 pm – 1:00 pm**

Session 10: Sylvan Room **1:15 pm – 2:15 pm**

Session Chair: Bob Kachur

Engaging Students Online: Best Practices for Legal Environment of Business Courses

Donald R.Mong	Slippery Rock University of Pennsylvania

Using the MSLQ in a Computer Information Systems Course: Report from a Summer Pilot Study

William. R. Eddins	York College of Pennsylvania
G.E. Strouse	York College of Pennsylvania

Session 11: Willow Room **1:15 pm – 2:15 pm**

Session Chair: Gayle Porter

An Appraisal and Compensation Framework for Assessing the Short- and Long-Term Impact on Gas Rights Leasing in the Marcellus Zone: A Research in Progress

Christopher Speicher	Marywood University
Uldarico Rex Dumdum	Marywood University

Teaching Personal Financial Decision-Making in Today's Environment- A Panel Discussion

Bruce L. Rockwood	Bloomsburg University
Christine Haririan	Bloomsburg University
Loreen Powell	Bloomsburg University
Wilmer Leinbach	Bloomsburg University

Session 12: Logan/Harris Room **1:15 pm – 2:15 pm**

Session Chair: John S. Walker

Blending Academia and Experiential Learning

Christine Dennison	Youngstown State University
Leigh Ann Waring	Youngstown State University

Innovation in Teaching Techniques: Workshop

Marilyn Vito	Richard Stockton College of New Jersey

Session 13: Holmes/Foster Room **1:15 pm – 2:15 pm**

Session Chair: Henry F. Check

Art of War and Leadership: A Description of Courage

Dave Hartley Clarion University

Executive Reaction to Today's Economy

F. K. Marsh Mount Saint Mary's University

Creativity Necessitates a Changed Organizational Design

Ellen Raineri Wilkes University

Session 14: Sylvan Room **2:15 pm – 3:15 pm**

Session Chair: Dave Hartley

Socio-economic Factors, Freedom and Happiness

Sukhwinder Bagi Bloomsburg University

What Do Economics Faculty at Community Colleges Know and Believe about Assurance of Learning?

Mark Eschenfelder Robert Morris University

Lois Bryan Robert Morris University

Tanya Lee Robert Morris University

The Interdependence of Natural Gas Prices and Rig Count on the Development of the Marcellus Shale Industry and its Economic Impact on Pennsylvania

Art Comstock Marywood University

Christopher Speicher Marywood University

Session 15: Willow Room **2:15 pm – 3:15 pm**

Session Chair: Christine Dennison

AACSB Accreditation and Market Dominance

Rob Poole Richard Stockton College of NJ

Bob Kachur Richard Stockton College of NJ

Spreading the Vision of Exciting Undergraduate Business Learning Through Assessment:Systems, Tools, Techniques, and People

Alan Brumagim University of Scranton

Paul Perhach University of Scranton

Session 16: Logan/Harris Room **2:15 pm – 3:15 pm Finance**

Session Chair: Bruce L. Rockwood

Business Ethics and Service Learning: A Liberal Arts Approach

W. Michael Donovan Cedar Crest College

Teaching is Conversation, Not Lecture: Integrating Web 2.0 Technologies Meanfully into Business Pedagogy - A Panel Discussion

Loreen Powell Bloomsburg University

John Olivo Bloomsburg University

Carl Chimi Bloomsburg University

Margaret O’Connor Bloomsburg University

Session 17: Holmes/Foster Room **2:15 pm – 3:15 pm**

Session Chair: Marilyn Vito

Strategic Adaptation to the Recession by the Hospitality Industry

Charles Lipinski — Marywood University

Ethnicity and Baseball Memorabilia Revisited

Timothy J. Stanton — Mount Saint Mary's University
Curtis D. Johnson — Mount Saint Mary's University
Stephen McGinley — Mount Saint Mary's University

The Relationship Between Wine Rating, Price, Quantity Produced, and Appelation Among 2006 California Chardonnays

Roger Hibbs — Kutztown University of Pennsylvania
Larry Jensen — Kutztown University of Pennsylvania

Coffee Break– Sylvan Room **3:15 pm – 3:30 pm**

Session 18: Sylvan Room **3:30 pm – 4:30 pm**

Session Chair: Roger Hibbs

The Perceived Utility of Accounting Support by Operations Managers

Mark A. Cornman — Youngstown State University

Demographic Transition and Its Impact on Financial Market Performance

Jonathan Ohn — Bloomsburg University

Session 19: Willow Room **3:30 pm – 4:30 pm**

Session Chair: Charles Lapinski

The Evolution of Critical Success Factors (CSF) in ERP Implementations for Large-scale Organizations, and Small to Medium Sized Enterprises (SME) Market Segments. Are There Simlarities or Differences?

Bob Kachur — Richard Stockton College of New Jersey

Has the Work Ethic Run out of Steam

William Roth — Kutztown University of Pennsylvania

Session 20: Logan/Harris Room **3:30 pm – 4:30 pm**

Session Chair: Christopher Speicher

Enhancing the Undergraduate Accounting Curriculum to Augment Core Competencies

Becky Smith — York College of Pennsylvania
Sean Andre — York College of Pennsylvania

Moving Students from a Static to Dynamic Understanding of Accounting in the Basic Financial Management Course using Spreadsheet Modeling

Gary Leinberger — Millersville University

Mediating Effect of Follower Communication Apprehension on the Relationship Between Demographic Dissimilarity and Leader-Member Exchange

Joy Jones — Regent University

Session 21: Holmes/Foster Room **3:30 pm – 4:30 pm**

Session Chair: Donald R.Mong

Future of Medicare

Arshad Chawdhry — California University of Pennsylvania

Use of Electronic Health Record in Private Medical Practices

Archish Maharaja — Point Park University

Performance Measurement in Medical Transcription: Turn-Around Time (TAT)

Nora Palugod — Richard Stockton College of New Jersey

Paul A. Palugod — Insights Business Solutions

Session 22: Sylvan Room **4:30 pm – 5:00 pm**

Optimal Capital Structure: A Special Case Debunking M & M

William Carlson — Duquesne University

Conway Lackman — Duquesne University

*Winner of NABET Best Faculty Paper Award**

Executive Board Meeting **5:15 – 6:00 pm**

NABET Social Hour I – Windsor Suite/Room 208 **6:00 – 7:00 pm**

Dinner – Linden Room **7:00 – 8:00 pm**

NABET Social Hour II – Windsor Suite/Room 208 **8:00 pm**

Friday October 30, 2009

Registration – Days Inn Atrium **7:30 am - 11:00 am**

Breakfast - Sylvan Room **7:30 am - 9:00**

Welcome - Norman Sigmond, Board Chair **7:45am - 8:15am**

Dean Frear, President

NABET Annual Fall Business Meeting

All conference participants may attend

Norman Sigmond and Dean Frear

Special Session **8:15 am – 8:25 am**

Sylvan Room

***Journal of the Northeastern Association of Business, Economics and Technology* (*JNABET*)**

Steve Liedtka — Villanova University

John Walker — Kutztown University

Kevin Roth — Clarion University

Session 23: Sylvan Room **8:30 am – 9:30 am**

Session Chair: Marlene Burkhardt

The Evolution of the Journal of the Northeastern Association of Business Economics and Technology

John Walker — Kutztown University
Jonathan Kramer — Kutztown University
Kevin Roth — Clarion University

Analysis of Student Perceptions in a Business Statistics Course

Deborah J. Gougeon — University of Scranton

Business Simulation for Collaboration and Team Building in Online Business Classes

Paul Ditmore — Edinboro University of Pennsylvania

Session 24: Willow Room **8:30 am – 9:30 am**

Session Chair: Kustim Wibowo

The Fire and Emergency Services Higher Education (FESHE) Initiative: Implications and Opportunities for Business Schools

Robert Fleming — Rowan University

Session 25: Sylvan Room **9:30 am – 10:30 am**

Session Chair: Jonathan Kramer

A Re-examination of Student Perceptions of Corporate Goals

Gabriel Jaskolka — Tiffin University

Is the Federal Income Tax Code Unconstitutionally Vague?

David Vance — Rutgers University

Session 26: Willow Room **9:30 am – 10:30 am**

Session Chair: Deborah J. Gougeon

End Users' Information Security Awareness

Madan Batra — Indiana University
Pankaj — Indiana University
Kustim Wibowo — Indiana University

Time Value of Writing: Effective Learning and Efficient Assessment: Workshop

Cori Myers — Lock Haven University
Dr. Richard Van Dyke — Lock Haven University

Session 27: Logan/Harris Room **9:30 am – 10:30 am**

Session Chair: Uldarico Rex Dumdum

Corporate Operating Characteristics and Capital Structure

Enyang Guo — Millersville University
Osman Suliman — Millersville University

At a Crossroads: The Impact of International Financial Reporting Standards in the U.S.

Cindy Harris — Ursinus College

Gaming as a Tribal Economic Engine

Gary Gordon — Wilkes University

Session 28: Holmes/Foster Room **9:30 am – 10:30 am**

Session Chair: Todd Greer

When the Center Fails: Perspectives On The End of Globalization as We Know It

Mohammed Sidky Point Park University

Cross Cultural differences in American and Korean Executives' decision making: Implications for global leadership

Jude L. Jolibois Regent University

Cosmopolitanism: A Crucial Competency in International Collaborations

Miguel R. Olivas-Luján	Clarion University and Tecnológico de Monterrey Mexico
Sergio Madero Gomez	Dep. Académico de Administración
Edward F. Murphy, Jr.	Embry Riddle Aeronautical University

Coffee Break– Linden Room **10:30 am – 10:45 am**

Session 29: Sylvan Room **10:45 am – 11:45 am**

Session Chair: Mohammed Sidky

Marketing to College Women to Encourage Reflection and Self-Responsibility Regarding Underage or Risky Consumption of Alcohol on All-Women Campuses

Arlene M. Peltola	Cedar Crest College
James A. Scepansky	Cedar Crest College

Practices for Increasing Quality of Learning Experience and Satisfaction, Retention and Graduation Rates – A Panel Discussion

Uldarico Rex Dumdum	Marywood University
Arthur Comstock	Marywood University
Sam Dagher	Marywood University
Gail Jaeger	Marywood University
Brian Petula	Marywood University
Christopher Speicher	Marywood University

Session 30: Willow Room **10:45 am – 11:45 am**

Session Chair: Cindy Harris

XBRL: What Future Business Leaders Need to Know

Andrew Staley	Bloomsburg University
David E. Magolis	Bloomsburg University
Mark Law	Bloomsburg University
Mark L. Usry	Bloomsburg University
Gary Robson	Bloomsburg University
Wilmer Leinbach	Bloomsburg University

Global Credit Crisis of 2008: Role of Unrestrained Deregulation and Fair Value Accounting Standard

Mahendra Gujarathi Bentley University

Pharmaceutical Industry and Health Care Practitioners - An Ethical Perspective

Minoo Ghoreishi	Millersville University
Renato C. Goreshi	University of Pennsylvania

Session 31: Logan/Harris Room **10:45 am – 11:45 am**

Session Chair: David Vance

The Relationship between Attitudes, Socialization, and Entertainment Preferences

Marlene Burkhardt	Juniata College
Alyssa Cuttler	Juniata College
Caleb Davis	Juniata College
Drew Hufford	Juniata College
Jacob Johnston	Juniata College
Anthony Martini	Juniata College
Lucie Molkova	Juniata College
Michael Pearson	Juniata College
Andrew Steffen	Juniata College

The Time Line Process For Delivering Products To Market

Abid Haidery	Professional Engineer Retired

eXtensible Markup Language (XML): A Comparison of Vertical Standards

Rubin Mendoza	Saint Joseph's University
Ashley Travis	Saint Joseph's University

Session 32: Holmes/Foster Room **10:45 am – 11:45 am**

Session Chair: Cori Myers

Formal Socialization Process as a Moderating Variable on Transformational Leadership's Development of Value Congruence

James Early	Regent University

A Factorial Study of Theory X/Y Beliefs

Gabriel Jaskolka	Tiffin University

The Influence of Implicit Leadership Theories

Todd Greer	Regent University

Lunch – Linden Room **12:00 pm – 1:00 pm**