Collectivist and Individualist Influences on Website Design in South Korea and the U.S.: A Cross-Cultural Content Analysis

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When websites are constructed to appeal to various cultures, designers must ensure that those sites are easily navigated by members of those various cultures. The integration of design features into company-sponsored websites may differ between cultures with different communicative predispositions. This content analysis examines collectivist and individualist cultural influences on the design of organizational websites originating in South Korea and the U.S., and particularly how temporal and communication differences are revealed through the decisions designers make to use certain kinds of interactivity and rich media tools. Findings confirm that South Korean websites are more likely than U.S. websites to conform to polychronic time-management tendencies and preferences for high-context communication. Implications for both researchers and Internet marketing communications managers are discussed.

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Introduction

The Internet population reached 1.08 billion people worldwide in 2005 (ClickZ Stats Staff, 2006). People use the Internet not only as a new communication vehicle (Ferguson & Perse, 2000; Flanagin & Metzger, 2000; Papacharissi & Rubin, 2000), but also as a marketing, advertising, and trading channel (Lynch, Kent, & Srinivasan, 2001) on an international scale. Website designers employ various design features, including streaming video/audio, hypertext, and clickable images for aesthetic and functional reasons. When a site is constructed to appeal to various cultures, the designer needs to make every effort to ensure that it is easily navigated by members of different cultures. The integration of design features into company-sponsored websites may
differ from culture to culture (Badre, 2002; Nielsen, 2000; Sears, Jacko, & Dubach, 2000; Sun, 2001) because members in different cultures have different communication predispositions and preferences. Such preferences include space, rhythms, gestures, and environment, which are the main determinants of communication in general (Hofstede, 1980; Kim, 1999; Hall, 1976). While communication technology changes the national culture in which individuals are socialized (Carey, 1968; McLuhan, 1993; Meyrowitz, 1994), it is also acknowledged as an important factor in mediating technological changes as well (Barnett and Sung, 2005).

Although there is research supporting the idea that Internet behavior varies with both national culture and level of economic development (Barnett and Sung 2005), the influence of cultural differences on website design has largely been ignored even though websites are a major vehicle for disseminating opinions to people in global contexts. Web surfers around the world use a similar computer screen, mouse, keyboard, and other peripherals. Web authors also use similar software and technology to create their websites across cultures. These superficial similarities cause researchers and practitioners to believe that consequences of websites are similar for various international audiences (Nielsen, 2000); however, those assumptions are risky because each audience has its own cultural preferences. Before launching a site aimed at foreign users, an organization needs to understand user preferences, attitudes, and buying patterns in a given country. Furthermore, designers should adopt a regional strategy in which company-sponsored websites reflect the preferences of users in various geographic markets (Burgmann, Kitchen, & Williams, 2006; Lynch, Kent, & Srinivasan, 2001). In this regard, the central but contingently flexible management required of multiple websites designed for various globally dispersed markets is a key driver for applying Globally Integrated Marketing Communications (Gould, Lerman, & Grein, 1999). Such global coordination and management of multiple websites also requires an Internet Integrated Marketing Communications perspective, a particular expertise and experience in the integrated management of digital properties (Coyle & Gould, 2007).

Reflecting the potential of cross-cultural differences, sites from South Korea and the U.S are studied here. Many scholars have examined differences and similarities between U.S. and Asian cultures (Gudykunst et al., 1996; Hofstede, 1980; Kim et al., 1996; Singelis & Brown, 1995). In terms of cross-cultural Internet research, South Korea and the U.S. are especially interesting because they are culturally very different but their levels of Internet usage are very high (Lee, Geistfeld, & Stoel, 2007); thus, these two countries have been the object of previous website cross-cultural content analysis (Lee, Geistfeld, & Stoel, 2007) and survey research (Park & Jun, 2003). On three of the five cultural dimensions identified by Hofstede (1980), the U.S. ranks in the top 20 and South Korea ranks in the bottom 20, or vice versa (see Hofstede, 1998, Table 1). The fact that the United States ranks first on the individualism dimension and South Korea ranks 43rd out of 53 countries is of particular importance because, as shall be seen, how cultural aspects relevant to individualism/collectivism may influence website design decisions is explored.
here. Individualism, a characteristic of Western countries, is defined as respect for individual entities, rather than group entities. Collectivism, a characteristic of Asian countries, is defined as respect for the group to which an individual belongs. While the U.S. is considered representative of individualistic culture, South Korea is considered a collectivist culture (Lee, Geistfeld, & Stoehl, 2007; Park & Jun, 2003). In terms of their level of broadband penetration and technological advancement, the U.S. has the largest number of broadband subscribers (46.9M), which equals about 21.6% of all broadband subscribers worldwide; per capita, the U.S. ranks 15th (Burns, 2005). In comparison, South Korea has the fourth largest number of broadband subscribers (13.1M), which equals about 6.04% of all broadband subscribers worldwide; per capita, South Korea ranks first (Burns, 2005). Korea also has one of the highest levels of cell phone saturation in the world (MSNBC.com, 2009), largely due to nationwide development and adoption of digital cell phone standards known as Code Division Multiple Access (Kim et al., 2007). In addition, the Korean government has developed public communications campaigns to increase awareness of newly developing media (Park and Biddix, 2008). Considering the great number of broadband subscribers in the US and the great number of broadband subscribers per capita in South Korea, it is fair to say that the level of broadband penetration in both countries is very advanced.

This paper investigates South Korean-U.S differences in the design features of company-sponsored websites. Specifically two cultural aspects of the collectivist/individualist dimension are examined: temporal and communication context. To do this, two types of design features are analyzed: 1) interactive features, which refer to elements that provide users with methods to link from page to page, (e.g. navigation bars, splash pages, and pop-up windows); and 2) rich media features, which refer to elements such as animated images, clickable images, and streaming video/audio clips.

Cross-Cultural Temporal and Communication Context Differences

The focus here is on two cultural characteristics on which collectivist and individualist cultures have been found to vary, temporal and communication context, and on predicting how those differences may affect website design.

Temporal Differences

Two approaches to time management can be seen in collectivist and individualist cultures (Hall, 1976). Monochronic time, which is prevalent in the U.S., refers to linear scheduling of events. Polychronic time, which is prevalent in Asia, refers to nonlinear scheduling. While people from monochronic cultures prefer to deal with one thing at a time, those from polychronic cultures may handle two or more things at a time with comparative ease. For example, Hall (1976) observed that a seller in a collectivist culture was typically faced with several tasks at one time: He sold a product, took cash, and answered several questions to customers simultaneously. Also, buyers were not arranged in a line; instead, they flocked around the seller or
products. However, when someone talked to a seller in an individualist culture, he frowned at the interruption, and rarely responded. In addition, in an individualist culture clients were lined up linearly to wait their turn.

**Communication Context Differences**

Hall argued, “The meaning of a communication is always dependent upon the context” (1976, p.82). He discussed two kinds of communication context, low and high, in Western and Asian cultures and defined communication context as “the amount of information that is in a given communication as a function of the context in which it occurs” (1976, p. 91). Low-context (LC) messages are inclined to be more context-free than high-context (HC) messages. LC messages rely more upon explicit communications (e.g. textual and verbal form) and less upon information about the background and values of the communicators (Hall, 1976). For example, politeness in interactions has been found to depend on verbal expression in LC messages and on the contextual information of communication (e.g. tones of voice, gestures, appearances, facial expressions, etc.) in HC messages (Ambady et al., 1996). While “most of the information is in the physical context or internalized in the person in high-context culture, the mass of the information is conveyed in the explicit language” in low-context culture (Hall, 1976, p. 91).

This does not mean that cultures are characterized by all HC communication or all LC communication. However, as with other cultural factors, one type will be more culturally prevalent than the other. Hall (1976) argued that a culture where members are deeply involved with each other (collectivism) tends to support an HC communication base, while a culture where there is comparatively little involvement with members (individualism) is based on LC. According to his classification, Asian countries, including China, Japan, and South Korea, are HC communication oriented, and Western countries, including the U.S., Germany and France, are LC communication oriented. Survey research by Kim et al. (1998) is an early attempt to begin empirically testing Hall’s predictions. They found that Chinese and Korean subjects exhibited tendencies consistent with Hall’s description of high-context cultures, while American subjects exhibited tendencies consistent with low-context cultures.

Even though some scholars have criticized these distinctive communication differences (Levine et al., 2003; Gudykunst & Lee, 2003), studies show that HC-LC is still a major predictor in communication styles. For example, members in a collectivist culture are passive communicators who talk less (Burgoon, 1976), disclose less (McCroskey & Richmond, 1987), argue less (Kim, 1999), assert less (Kim, 1999), and engage less in information seeking (Burgoon, 1976) than those in an individualist culture. In addition to interpersonal communication, these cultural values are reflected in various types of mediated messages, including magazines (Zhang & Shavitt, 2003). More importantly, Internet researchers have begun looking at the role of communication context in influencing how consumers in collectivist and individualist cultures may behave differently (Park & Jun, 2003).
Based on the above discussion of cultural characteristics, how the design features of corporate websites in two distinctive cultural domains may vary along these characteristics is described next.

**Design Features and Cultural Influences**

Recent research has begun to examine the effects of website cultural adaptation. Lee, Geistfeld and Stoel (2007) compared Korean and American apparel web sites to see whether differences existed and whether those differences could be attributed to culture. They found that American apparel web sites were more likely to provide information related to products and purchasing products, while Korean apparel sites were more likely to provide information related to consumers' relationships to their community. The authors attribute this to Korea's culture reflecting collectivism and America's culture reflecting individualism.

Vishwanath’s work on online auction behavior has also explored how site visitors from different cultures respond to, prefer, and use information (Vishwanath, 2003; 2004). For example, focusing on the differences that exist among cultures along Hofstede’s uncertainty-avoidance dimension, Vishwanath (2003) found that online auction participants from Japan (high uncertainty-avoidance culture), compared to those from the U.S. (low uncertainty-avoidance culture) and Germany (moderate uncertainty-avoidance culture), were more likely to avoid bidding in auctions with little or no information. Then looking specifically at online auction seller ratings as information cues, Vishwanath (2004) found that bidders from Canada, a high interpersonal trust culture, were more likely to participate in online auctions regardless of seller feedback ratings than bidders from Germany, a moderate interpersonal trust culture, or France, a low interpersonal trust culture.

Singh et al. (2006) used a coding sheet containing 35 cultural category items to determine how culturally adapted a set of German, Chinese, and Indian websites were. They found that users preferred websites that were adapted to their local culture, and measured level of cultural adaptation through a series of four statements. One statement touches on the notion that design might vary by culture: The images, colors, information, and symbols on the site are reflective of my country.

In another study, Kim and Faux (2006) found that users from a collectivistic culture are more likely to use the Internet to extend their offline relationships, while those from an individualistic culture tend to keep their offline and online worlds separate, thereby declining to extend relationships from one to the other environment. Online gatherings facilitated by the Internet are a salient social phenomenon in South Korea (Choi, Lee, & Lee, 2004). *Beongae* meetings, which mean “flash” in Korean, imply an immediate aggregation of online participants. As soon as an online user proposes a meeting, interested participants set up a place and time for *Beongae*. These online collectivistic phenomena are easily observed on Internet bulletin boards, chat rooms, and instant messaging in South Korea.
Design features should assist users in navigating websites easily; however, poor design sometimes gives users the feeling of “being lost.” For any interface design, designers have to know the various constraints that an end user might find helpful (Laurel, 1992). Some constraints are good and necessary in helping users control the amount of information available in their environment (Ariely, 2000). When people have unlimited choices, they usually feel powerless, paralyzed, and overwhelmed (Laurel, 1992). As the level of interactivity of an interface increases, processing demands increase to a point where participants’ capacity to attend may become overwhelmed (Teo et al., 2003; Coyle, 1998). Such a finding has also been demonstrated in traditional media where, for example, videographics inserted into televised lectures that contained unfamiliar material negatively affected memory for the material (Thorson & Lang, 1992).

In a website, menu bars and other directional aids are good constraints to enable users to guide their interaction. There are many devices to simultaneously constrain and guide one’s navigation, including navigation bars, pop-up/pop-under windows, and streaming video/audio. Since the perceived effectiveness of design features may vary from culture to culture, an exploratory examination of two websites is presented next, followed by a discussion of two types of design features, interactive and rich media, that may differentially influence people from different cultures.

**Exploratory Examination of Two Websites**

To clarify further some of the fundamental design differences that were found between South Korean and U.S. websites and that may be driven by cultural differences, two sites, one from each country, are examined that include many of the design features and tools characteristic of each countries’ websites. The chosen sites belong to the Dongsuh Corporation (www.dongsuh.co.kr), a major food manufacturer and importer, and Procter & Gamble (P&G) (www.pg.com). Both sites were part of the content analysis, and are generally illustrative of the differences between South Korean and U.S. websites in this study.

Like many South Korean sites, the Dongsuh site includes animation, streaming video, clickable images, rollover navigation bars, and pop-under windows, which are closely related in function to pop-up windows. The site takes a noticeable amount of time to load due to the large number of rich media tools that are employed. Once loaded, embedded video, accompanied by a voiceover, of a man and woman enjoying a cup of coffee rotates continuously. Five animated circles grow larger when rolled over and one of these circles includes circles within it that also grow larger when rolled over.

The navigation scheme includes two navigation bars, one running vertically along the left side and the other running vertically along the right side. The left side bar is a rollover bar with bubbles that expand upon rollover and include submenus. The right side bar consists of five hyperlinks with clickable images.

Lastly, two pop-under windows open when the Dongsuh site is opened. Both windows provide promotional content about prizes that users are eligible for if they...
provide feedback about content that appears on the Donguh site, in one case, or a partner’s site, in the other.

Compared to the Donguh site, the P&G site is clearly different on many of the variables that are of interest here. First, it has much less animation and the animation is much more subdued. The main focus of the site is a large square that rotates a set of four images that correspond with four major subsections of the site: Products, Innovations, Out Commitment, and P&G People. The only other animation is a rotation of brand logos running horizontally at the bottom of the page. Second, unlike the Donguh site, the P&G site relies on static navigation bars, rather than rollover bars, and the navigation bar links are textual only. Lastly, the P&G site does not utilize pop-up windows, streaming audio or streaming video.

Looking at the two sites more broadly, the Donguh design consists mostly of a large video of consumers enjoying a Donguh product, large and small clickable circles, some overlapping, with a side navigation bar. The layout of these elements is aesthetically pleasing, but not symmetrical. On the other hand, the P&G site utilizes a 3-column symmetrical, tabular layout with smaller images. In summary, this exploration provides evidence for further study and, along with the research literature, support for the formulation of the hypotheses in the next two sections.

Hypotheses for the Interactive Features
Interactivity has been defined as “the degree to which users of a medium can influence the form or content of the mediated environment” (Steuer, 1992, p. 80). Interactive environments are engaging and characterized by real-time communication (McMillan & Hwang, 2002). One of the fundamental building blocks of online interactivity is clickable text, images, music, and other types of media (Webopedia, 2009). Taken together, these types of clickable media are referred to as hyperlinks (Webopedia, 2009). Hypertext, which is one type of hyperlink and refers to clickable text that links to other texts (World Wide Web Consortium, 2009) facilitates user-controlled navigation. It is a core design element that contributes to interactivity. Compared to images and other visual formats, hypertext links are explicitly textual, and thus may be considered a feature of LC messages. Thus, it is hypothesized that:

**H1:** More hypertext links will be found in U.S. websites than in South Korean websites.

Navigation bars are another key interactive design element that contribute to an interactive site experience. Two common kinds of navigation bars are pull-down and rollover. Badre (2002) recommends that menu items in pull-down bars be arranged linearly and organized as plain textual information alphabetically. In contrast, menu items on rollover bars are more often colorful and differently shaped (Badre, 2002). That is, in constructing rollover bars, web designers are more likely to select from a range of typefaces and colors to create a variety of typographic effects so that audiences implicitly recognize the purpose and content of links. Again considering HC and LC communication, pull-down bars are characterized by LC communication compared to rollover bars because pull-down bars rely on text and linear organization. Thus, it is hypothesized that:
H2A: More pull-down navigation bars will be found in U.S. websites than in South Korean websites.

H2B: More rollover navigations bars will be found in South Korean websites than in U.S. websites.

How users respond to marketing messages may be influenced by their polychronic or monochronic time management preferences (Kaufman, Lane, & Lindquist, 1991). In websites, multiple design elements can compete for the attention (Coyle, 1998) and, thus, time of users. Pop-up windows are common ways to attract users’ attention (Edwards, Li, & Lee, 2002). A pop-up window is a small window that suddenly appears in the foreground of the interface. Users can interact with pop-ups by clicking on them or rolling over them. Pop-up windows may include news, promotion, or advertising content. Cho, Lee, and Tharp (2001) showed that pop-up windows are a more useful tool for users than normal banners and teasers because they can get users’ attention. Because pop-up windows introduce new windows into the user’s website experience, they require users to process two or more windows at one time. Simultaneous processing of multiple stimuli is a time-management characteristic of polychronic cultures. It is expected that South Korean web designers assume that exposure to multiple tasks is not uncomfortable for members of polychromic cultures and that they are, thus, more likely to introduce pop-up windows into their websites. Thus, it is hypothesized that:

H3: More pop-up windows will be found in South Korean websites than in U.S. websites.

A splash page is an introductory page that precedes the home page of an organization and usually promotes a particular image or provides advertising information (Whatis.com, 2002). A splash page is timed to move to the home page after a short period of time with or without a “skip” button. It usually contains the organization’s name and/or logo and delivers a welcome message. Rather than stating the purpose and nature of the home page, a splash page is usually created as an elaborate cover page with various pictures and indirect expressions about the organization’s mission. Strictly speaking, it has little functional value, but it can implicitly provide some users with an impression of an organization (Smashing Magazine, 2007). Nielsen (2000) argues that a splash page is useless because it is annoying and users close or leave it as fast as they can. However, Cho, Lee, and Tharp (2001) argue that a splash page with no skip option is a particularly effective marketing method in corporate websites because it consists of forced longer exposure. Kim (1999) argued that individualistic members were more concerned with performing purposeful tasks during communication, while collectivistic members were more concerned with building nondirectional associations with others. Considering the high-contextual nature of splash pages, web authors in collectivistic cultures are more likely to hold a more favorable attitude toward and to use splash pages. Thus, it is hypothesized that:

H4: More splash pages will be found in South Korean websites than in U.S. websites.
To attract users’ attention, web designers often employ visual images, including company logos, pictures of products, and background images. In general, such images have been found to be more often employed in web sites from high-context than low-context cultures (Wurtz, 2005). Clickable images (Johnson, Bruner, & Kumar, 2006; Steuer, 1992) go beyond simply attracting attention, and contribute to interactivity. These images refer to the content that they are linked to and their effectiveness depends on how clear or natural the link is. In turn, the naturalness of the connection between the image and linked content depends on the procedural knowledge primed by the image. For example, users immediately understand what to do with the grocery cart icon present at many websites because of their knowledge of how they use grocery carts offline. Examining personal homepages, Kim and Papacharissi (2003) found that Korean authors, compared to U.S. authors, are more likely to represent themselves with photos of media heroes/heroines, cartoon characters, and their own manipulated graphics. Because clickable images implicitly communicate information about their linked-to content, it is expected that this kind of interactivity tool is more common in high-context communication cultures like South Korea. Thus, it is hypothesized that:

**H5:** More clickable images will be found in South Korean websites than in U.S. websites.

**Hypotheses for the Graphic Features**

Marketers have multiple graphic design tools to improve the visual appeal of their websites, and to visually present their products and services online. Graphical representations usually play a supplementary role in delivering textual messages online (Nielsen, 2000). The meaningful juxtaposition of visuals and text in a web page has been found to have a positive effect on memory for site content (Sundar, 2000).

Nielsen (2000) suggests that when trying to attract the user’s attention to a particular piece of information, web designers may employ an animated headline or teaser. Examining the influence of graphics in web pages, Li and Bukovac (1999) found that animated graphics resulted in shorter reaction time (the time lapse between the appearance of a stimulus and a response to the stimulus) than still graphics, and that large graphic teasers were more likely to be clicked on than small ones. The authors concluded that animated graphics are more attractive to users than still pictures. However, animation can also act as an obstacle to users concentrating on reading text (Nielsen, 2000; Williams & Tollett, 2000). This may be less likely to occur among users in collectivist cultures than those in individualist cultures, as people in collectivist cultures are more accustomed to completing several tasks at one time (Hall, 1976). Also, graphic representation in home pages is indicative of high-context communication, and textual representation in home pages is indicative of low-context communication (Kim and Papacharissi, 2003). Thus, website designers in collectivist cultures may be more likely to employ animation in their sites because the animation can enhance the presentation. Thus, it is hypothesized that:

**H6:** More animated images will be found in South Korean websites than in U.S. websites.
Another graphic feature is streaming video, which consists of moving images sent in compressed form over the Internet. A user does not have to wait to watch streaming video; it begins playing immediately. Streaming video requires less clicking, less engagement, and more watching. Karat et al. (2002) examined user response to streaming video/audio in company-sponsored websites. The material contained a short documentary within a browser, and the experimenters recorded all mouse movement on the screen as a measure of subjects’ interactivity. They found that participants who reported the highest satisfaction with streaming video/audio used the mouse the least, suggesting that they are passively, rather than actively, engaged with the video/audio content. Also, Sundar (2000) examined the effectiveness of multimedia in company-sponsored websites. He found that streaming audio/video on a site decreases users’ memory for content, but increases memory for the advertisements. He concluded that user receptivity to streaming audio/video is related to habitual use of radio and TV. Lastly, streaming video fosters negative evaluations of the site’s content (Sundar, 2000). Therefore, streaming content may not be an effective way to increase user satisfaction and engagement online. However, all of this research was conducted using research participants from Western cultures. Despite the passive nature of watching video, streaming video competes for attention to other site content. Because users from a polychronic culture are more accustomed to handling multiple demands on their attention, it is hypothesized that:

H7: More streaming video will be found in South Korean websites than in U.S. websites.

Method

Sample and Sampling Procedures
A content analysis of 200 American and South Korean company-sponsored websites was conducted to evaluate the hypotheses. Sites were randomly selected from a list of the 406 largest South Korean corporations compiled by the Federation of Korean Industries (FKI) (http://www.fki.or.kr), and a list of the 500 largest U.S.-based corporations published annually by Fortune Magazine in the United States. Sites were chosen by using a random starting point (alternating between the top or bottom of the page) at every fifth interval until seven websites were obtained in each of the 14 South Korean initial categories (n = 101) and four websites were obtained for each of the 26 U.S. initial categories (n = 99).

Measurement
Coders used the following categories to count interactive features in order to measure whether differences existed between South Korean and U.S. company-sponsored websites: number of rollover navigation bars, number of pull-down navigation bars, number of hypertext links, number of pop-up windows and absence/presence of splash pages. Hypertext is clickable text that links to other texts (World Wide Web Consortium, 2009). A navigation bar was defined as a set of links that connects the home page
to the interior pages of a website. Rollover navigation bars are activated by moving the mouse across the chosen link, causing sub-links to appear. Pull-down navigation bars are activated by clicking on a link on the bar to reveal sublinks. Windows that appeared in the foreground of the home page were considered pop-ups. A splash page was defined as an introductory page preceding the home page. Coders used the following categories to count graphical features in order to measure whether differences existed between South Korean and U.S. company-sponsored websites: number of animated banners, number of streaming videos, and number of visual images.

**Intercoder Reliability**

In this study, two graduate students with bilingual capability (English and South Korean) were employed as coders. They were trained for four hours over two consecutive days. Coders examined the home pages of assigned websites, and then made judgments on the units of analysis. Intercoder reliability tests were conducted on a subsample of 20 pages, and two measures of intercoder reliability were calculated. Percent agreement has been widely used to calculate intercoder reliability: 

\[
\frac{2M}{N_1 + N_2} \times 100
\]

where M refers to the number of coding decisions on which the two coders were in agreement, and \(N_1\) and \(N_2\) refer to the number of coding decisions made by coders 1 and 2. For example, suppose that each coder recorded 22 units and they were in agreement on 17 of them; this case would be calculated as \((2 \times 17/22 + 22) \times 100 = 77\%\). Even though percent agreement is widely used, it cannot account for agreement that would occur by chance (Lombard, Snyder-Duch, & Bracken, 2002). To address this potential weakness, Scott’s Pi was also calculated. This statistic accounts for the number of categories as well as the distribution values across them (Lombard, Snyder-Duch, & Bracken, 2002). The Scott’s Pi statistics can be found in Table 1. Scott’s Pi statistics over .75 are indications of acceptable intercoder reliability (Wimmer & Dominick, 2002).

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Intercoder Reliability for the Categories</th>
</tr>
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<tbody>
<tr>
<td>Categories</td>
<td>Percent Agreement</td>
</tr>
<tr>
<td>Interactive Features:</td>
<td></td>
</tr>
<tr>
<td>Rollovers</td>
<td>87%</td>
</tr>
<tr>
<td>Pull-downs</td>
<td>82%</td>
</tr>
<tr>
<td>Pop-up windows</td>
<td>84%</td>
</tr>
<tr>
<td>Splash pages</td>
<td>82%</td>
</tr>
<tr>
<td>Hypertext Links</td>
<td>91%</td>
</tr>
<tr>
<td>Graphic Features:</td>
<td></td>
</tr>
<tr>
<td>Clickable images:</td>
<td>85%</td>
</tr>
<tr>
<td>Animated images</td>
<td>95%</td>
</tr>
<tr>
<td>Streaming video</td>
<td>89%</td>
</tr>
</tbody>
</table>
Results

Descriptive Statistics
A portion of the South Korean company-sponsored websites (n = 26) were designed only in Korean, while 74% of the South Korean company-sponsored websites had a bilingual or trilingual web design, in Korean/English (n = 62), Korean/Japanese (n = 10), and Korean/English/Japanese (n = 3). Also, some of the U.S. company-sponsored websites (n = 5) were bilingually constructed, in English/Spanish (n = 3), English/French (n = 1), and English/Chinese (n = 1); the rest were wholly in English (n = 94).

Table 2 shows a cross-tabulation between countries and design features of websites. The descriptive statistics suggest tentative initial support for the notion that design features vary as a function of culture. South Korean home pages were more likely to include rollover navigation bars, pull-down navigation bars, pop-up windows, splash pages, clickable images, animated images, and streaming video than U.S. home pages.

Hypothesis Evaluation
The hypotheses were evaluated by conducting two logistic regression analyses to make statistical predictions regarding group membership. For both analyses, the dependent variable was the origin of the website. South Korea was coded as 1 and the U.S. as 0. In the first analysis, the predictors of this country variable were interactive features (rollover navigation bars, pull-down navigation bars, pop-up windows, splash page, and hypertext links). In the second analysis, the predictors were graphic features (clickable images, animated images and streaming video).

Results of the first logistic regression model, in which interactive features were possible predictors of group membership, are found in Table 3. In logistic regression, the Wald test is similar to the t-test, and is used to test the null hypothesis that a coefficient is equal to zero. Hypothesis 1 stated that hypertext links would more

<table>
<thead>
<tr>
<th>Interactive Features:</th>
<th>Korea (n = 101)</th>
<th>U.S. (n = 99)</th>
<th>Total</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollovers</td>
<td>53 (52.4%)</td>
<td>20 (20.2%)</td>
<td>73</td>
<td>23.95*</td>
</tr>
<tr>
<td>Pull-downs</td>
<td>43 (42.5%)</td>
<td>19 (19.1%)</td>
<td>62</td>
<td>13.78*</td>
</tr>
<tr>
<td>Pop-up windows</td>
<td>42 (41.5%)</td>
<td>3 (3%)</td>
<td>45</td>
<td>44.05**</td>
</tr>
<tr>
<td>Splash pages</td>
<td>19 (18.8%)</td>
<td>6 (6.1%)</td>
<td>25</td>
<td>7.87*</td>
</tr>
<tr>
<td>Hypertext Links</td>
<td>88 (87.1%)</td>
<td>84 (84.8%)</td>
<td>172</td>
<td>.95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graphic Features:</th>
<th>Korea (n = 101)</th>
<th>U.S. (n = 99)</th>
<th>Total</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clickable images:</td>
<td>89 (88.1%)</td>
<td>63 (63.6%)</td>
<td>152</td>
<td>22.47**</td>
</tr>
<tr>
<td>Animated images</td>
<td>68 (67.3%)</td>
<td>21 (21.2%)</td>
<td>89</td>
<td>45.39**</td>
</tr>
<tr>
<td>Streaming video</td>
<td>23 (22.7%)</td>
<td>7 (7%)</td>
<td>30</td>
<td>10.22*</td>
</tr>
</tbody>
</table>

Note: Degree of freedom (1), **p < .001, *p < .05.
Table 3 Logistic Regression Predicting Countries from Interactive Features

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>Wald</th>
<th>df</th>
<th>P</th>
<th>Odds ratio</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollovers</td>
<td>.43</td>
<td>24.03**</td>
<td>1</td>
<td>.000</td>
<td>1.55</td>
<td>1.41</td>
<td>1.97</td>
</tr>
<tr>
<td>Pull-downs</td>
<td>.29</td>
<td>1.45</td>
<td>1</td>
<td>.227</td>
<td>1.29</td>
<td>.71</td>
<td>2.52</td>
</tr>
<tr>
<td>Splash page (0=no; 1=yes)</td>
<td>1.19</td>
<td>7.34**</td>
<td>1</td>
<td>.006</td>
<td>3.74</td>
<td>.04</td>
<td>5.86</td>
</tr>
<tr>
<td>Pop-ups</td>
<td>2.47</td>
<td>16.11**</td>
<td>1</td>
<td>.000</td>
<td>11.12</td>
<td>5.24</td>
<td>23.75</td>
</tr>
<tr>
<td>Hypertext Links</td>
<td>-.07</td>
<td>6.17</td>
<td>1</td>
<td>.371</td>
<td>1.00</td>
<td>.90</td>
<td>1.99</td>
</tr>
<tr>
<td>Constant</td>
<td>2.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01

often be found in U.S. than South Korean sites. However, hypertext links were not a significant predictor of group membership (Wald statistic = 6.17, p = .37); thus, H1 was not supported. Hypothesis 2A stated that pull-down bars would more often be found in U.S. than South Korean sites. However, pull-down bars were not a significant predictor of group membership (Wald statistic = 1.45, p = .23); thus H2A was not supported. Hypothesis 2B stated that rollover bars would more often be found in South Korean than U.S. sites. Rollover bars were found to be a significant predictor of South Korean group membership (Wald statistic = 24.03, p < .01); thus H2B was supported. Hypothesis 3 stated that pop-up windows would more often be found in South Korean than U.S. sites. Pop-up windows were found to be a significant predictor of South Korean group membership (Wald statistic = 16.11, p < .01); thus H3 was supported. Hypothesis 4 stated that splash pages would more often be found in South Korean than U.S. sites. Splash pages were found to be a significant predictor of South Korean group membership (Wald statistic = 7.34, p < .01); thus H4 was supported.

Results of the second logistic regression model, in which graphic features were possible predictors of group membership, are found in Table 4. Hypothesis 5 stated that clickable images would more often be found in South Korean than U.S. sites. Clickable images were found to be a significant predictor of South Korean group membership (Wald statistic = 17.87, p < .01); thus H5 was supported. Hypothesis 6 stated that animated images would more often be found in South Korean than U.S. sites. Animated images were found to be a significant predictor of South Korean group membership (Wald statistic = 6.15, p < .05); thus H6 was supported. Lastly, H7 stated that streaming video would more often be found in South Korean than U.S. sites. Streaming video was found to be a significant predictor of South Korean group membership (Wald statistic = 5.69, p < .05); thus H7 was supported.

Discussion

The purpose of this paper was to identify how national cultural differences in some important factors identified in prior research might influence the implementation of design features and tools in corporate websites. It is especially important to note
that while South Korea and the U.S are similarly economically developed, national culture differences were found in website design. Thus, considering the issue of the relative impact of economic development (framed in terms of World System Theory, which emphasizes such development) and national culture on Internet phenomena raised by Barnett and Sung (2005), the present data indicate that national culture has an impact on website design.

The first set of hypotheses explored whether the use of interactive features differs across South Korean and U.S. websites. South Korean website designers were more likely to include rollovers navigation bars, pop-ups, and splash pages than U.S. designers. In the second set of hypotheses, whether the use of graphic features varied across U.S. and South Korean websites was explored. South Korean website designers were more likely to include clickable images, animated images, and streaming video than U.S. designers.

Thus, there was strong support for the notion that website designers in the U.S. and South Korea are sensitive to preferences dictated by cultural differences and that this is reflected in the kinds of design features that are implemented. These differences were focused on temporal factors and communication context. Regarding temporal differences, the findings here are consistent with previous time-management cross-cultural studies. People in a collectivistic culture feel more comfortable multitasking than do people in an individualistic culture (Hall, 1976). Similarly, in an online environment, users with polychronic time orientation might be better able to pay attention to multiple online presentations (e.g., animated graphics, video and textual information) simultaneously. They do not feel uncomfortable or overwhelmed by multiple presentations. Conversely, users from individualist cultures exhibit a monochronic-time orientation, concentrating on one task at a time and being more sensitive to interruption by other tasks. In general, web authors in South Korea and the U.S. utilize different interactive features to design effective websites that are consistent with their audiences’ time-management preferences. These results also support research demonstrating that communication context varies by culture. Specifically, HC communication is associated with collectivist cultures while LC communication is associated with individualist cultures. In online communications, textual formats are indicative of LC communication, while the use of visual formats is indicative of HC communication. In this regard, textual description provides less

<table>
<thead>
<tr>
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<th>B</th>
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<th>df</th>
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<th>Odds ratio</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clickable images</td>
<td>.29</td>
<td>17.87*</td>
<td>1</td>
<td>.000</td>
<td>1.35</td>
<td>1.17</td>
<td>1.55</td>
</tr>
<tr>
<td>Animated images</td>
<td>.17</td>
<td>6.15*</td>
<td>1</td>
<td>.013</td>
<td>1.19</td>
<td>1.04</td>
<td>1.36</td>
</tr>
<tr>
<td>Streaming video</td>
<td>1.28</td>
<td>5.69*</td>
<td>1</td>
<td>.017</td>
<td>6.35</td>
<td>1.66</td>
<td>6.45</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01
arbitrary meaning than visual representation, which tends to be more ambiguous. As seen in the analyses, the design of U.S. home pages is, in general, less visual than the design of South Korean home pages. What was not significant is also noteworthy. In particular, differences in hypertext link implementation between the U.S. and South Korea were not found. Hypertext links are the original foundation of web site navigation and are largely textual in nature. As such, it may be that designers across cultures understand the necessity of hypertext links in designing a user-friendly online environment.

Implications and Limitations
A key implication for firms operating multinational websites is that a Globally Integrated Marketing Communications perspective (Gould, Lerman, & Grein, 1999) is likely to be useful. This implies that central management of the website or websites is useful even if only to provide oversight for otherwise decentralized operations of local country or regional websites. As La Ferle (2007, p. 307) indicates, such a strategy may involve standardizing or “centralizing information technology” while at the same time recognizing that different locales may require customized approaches. Thus, were a firm to operate across South Korea and the U.S., for instance, site design and atmospherics would need to be quite customized.

However, while the differences that emerged in the use of graphic design features in this study may be explained by cross-cultural communication differences, the study has certain limitations shared by many cross-cultural studies. Such typical limitations include focusing on just a few countries, cultures, and cultural characteristics because it is difficult to evaluate interactions between multiple cultural factors (Vishwanath, 2003). These limitations can be found in this study. In addition, the findings do not reflect the insights of web site visitors or managers, and the fact that these results represent only one point in time. Thus, while no claim about invariance across all cultures with similar characteristics in this regard is made, it is suggested however that the approach taken, crossing cultures with website design factors, constitutes a framing blueprint for both research applications and global managerial practice.

In that respect, a more generalized implication for cross-cultural research in advertising is that broad globalizing forces, such as the technology of the Internet, have not reduced the influence of local cultures. As suggested by the work of Kjeldgaard and Askegaard (2006), local cultures tend to integrate global developments into their own processes of identifying formation, meaning construction and everyday user practices, a phenomenon known as glocalization. In this regard, South Korean and U.S. users have a common or shared experience in using the Internet though at the same time that experience is in many respects different. Moreover, the Internet allows them to express their culture as well as to further develop it in the new forms it engenders. The Internet is but one site of such cultural expression and formation and further research is warranted into how various globalized advertising technologies interact with different cultures in the further production of culture. Thus, the invariance of cross-cultural effects should not necessarily be assumed and
the interplay of major cross-cultural factors identified in previous research, such as individualism-collectivism, communication context, and power distance, with both local cultural and globalization effects, should be considered. This point further suggests that the present study of the U.S. and South Korea should be read as providing an initial blueprint for theorizing about and researching the evolution and development of the Internet without assuming countries with some similar characteristics will design websites in the same way. It should be kept in mind that the U.S. and South Korea represent highly advanced technologically savvy societies that are unique in their very high levels of Internet adoption when compared with other countries. In that regard, other cultures, regions (e.g., Asian, European, Latin American) and segments within cultures should be studied, reflecting the factors studied here as well as others. In particular, a wider sample of countries ranging across the communication context continuum, from low-context European countries to high-context countries like Japan and China, would help confirm and extend the findings presented here.

With such a generalized blueprint understanding in mind, there also are a number of other implications for cross-cultural Internet research that can be drawn from these results. First, the results were reported at a point in time. Longitudinal content analyses should be conducted to detect changes and patterns of convergence/divergence (standardization/adaptation) as globalization and the Internet continue their rapid evolution. For example, it will be important to monitor the ways and the pace with which social networking sites blur the lines between offline and online worlds in different cultures. Such studies would be useful on a within, monocultural basis, as well as on a cross-cultural basis. Second, other methods should be employed to further address these results, including netnographic (Kozinets, 2002), which follows users in their use of the Internet, semiotic, in which cultural symbolism as it is embodied in design can be compared across cultures; experimental, in which specific design characteristics are primed; and surveys related to various aspects of use of features and attitudes toward various design features. Third, when developing Internet Integrated Marketing Communications strategies (Coyle & Gould, 2007), the role of mobile digital platforms and the design of specific forms of Internet communications, such as online product placement, online display advertising, online sponsorship, mobile communications and e-mail marketing, should be investigated for their evolving cross-cultural design and behavioral manifestations. How company-sponsored websites illustrate the cultural differences of their designers was shown here. It is expected that other kinds of Internet communications might do so as well. Fourth, the Internet provides a tremendous opportunity to consider cultural effects in relation to other issues, such as technology, economic development and globalization. Thus it could be asked, when is national culture important as a determinant of appropriate marketing, especially Internet communications, and when is it not? For instance, Hamil (1997) discusses how firms may develop home pages which reflect global strategies as opposed to country strategies and Redding (2005) considers global virtual communities.
A fifth aspect to consider reflects the idea that although company-sponsored websites represent the public-facing front of a company, they certainly can vary along different, often firm-based, dimensions. For example, some sites may focus on giving users the opportunity to purchase products or services from the homepage, while others may focus on extending the brand’s image online. In this study, cross-cultural differences in website design across these dimensions were explored. Sixth, while this study suggests that website designs reflect the culture of their designers, how users respond to culturally customized websites needs to be addressed. Experiments that manipulate the level and type of cultural customization may be particularly helpful in understanding user processing of website content that targets either a global or local audience. Clickstream and usability software would allow researchers to measure these effects, allowing for better understanding of how such processing influences the paths that audiences exposed to different types of website content take. Language skills may mediate the effects of culturally customized content. One way to explore this particular topic might be to examine how bilingual users respond to culturally customized sites. Finally, the impact of cultural dimensions related to individualism/collectivism is looked at here. Other cultural dimensions like power distance, masculinity and uncertainty avoidance, may also influence website design decisions and need to be investigated.

References


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