Executive Summary

Ultimately, organizations invest in information technology (IT) initiatives to improve their level of performance. However, there have been mixed results from the payoff of IT investments. This article presents evidence that the variation in benefits derived from IT is in part due to the organization’s CIO leadership profile. This profile is determined by whether the CIO’s level of strategic decision-making authority is high or low, and whether his or her strategic leadership capability is high or low. We label the resulting four CIO leadership profiles: (1) IT Orchestrator, (2) IT Laggard, (3) IT Advisor and (4) IT Mechanic, and have identified the typical characteristics of CIOs that match each of these profiles.

Based on empirical data collected from a field study, we show that the level of IT contribution to a firm’s performance varies according to the leadership profile of its CIO. We show how organizations can assess their current CIO leadership profile and provide recommendations for CIOs who need to change their CIO profile to best fit their organization’s goals. Over time, there will be a shift to IT Orchestrators, and CIOs lacking the necessary characteristics should plan to acquire them.

THE IMPORTANCE OF CIO LEADERSHIP TO THE MODERN ORGANIZATION

Over the past several decades, information technology (IT) has become essential for organizations to increase operational efficiency and to obtain strategic success. However, many organizations have experienced the “productivity paradox”—they have not been able to observe business value that is directly linked with their investments in IT. Savvy organizations have realized that they cannot derive business value by simply pouring vast sums of money into IT; rather, the strategic leadership of IT is the key to maximizing its potential benefits.

The chief information officer (CIO) plays a critical role in the ability of an organization to derive business value from IT. Organizations that view the CIO as a strategic asset are more likely to create business value through IT and thereby achieve superior business performance.

However, not all firms need to include IT as an integral part of their business strategy. We argue that the impact of IT within an organization depends on the fit between the CIO and the strategic context of the organization. This article describes four distinct profiles of CIO leadership. We examine the influence of these four profiles on IT’s

1 Jeanne Ross is the accepting Senior Editor for this article.
2 The authors acknowledge the support of the TCU Office of Research and Sponsored Projects, which provided a grant for the survey data collection.
4 For a comprehensive analysis of the organizational views of CIOs and IT performance, see Chatterjee, D., Richardson, V. J., and Zmud, R. W. “Examining the shareholder wealth effects of announcements of newly created CIO positions,” MIS Quarterly (25:1), 2001, pp. 43-70.
contribution to a firm’s performance and then assess the characteristics of each CIO leadership profile within organizations. The primary focus of our research is to enable organizations to understand how the fit between the CIO and the organizational context determines the benefits derived from IT. Given the potential importance of the CIO within the modern organization, as well as recent attention given to this topic, our findings provide criteria that enable an organization to examine its current CIO leadership profile and balance its return on IT investments.

CLASSIFYING CIO LEADERSHIP PROFILES

We have classified CIO leadership on two dimensions:

- The CIO’s strategic decision-making authority within the organization.
- The CIO’s strategic leadership capability.

The Decision-Making Authority Dimension

CIO strategic decision-making authority is the degree to which the CIO has the authority to engage in strategic decision making within the organization. Strategic decision making is distinguished from tactical or operational decision making in that it concerns decisions that will have a significant and lasting impact on organizational performance.

Given the pervasiveness of IT across functional groups and the intertwined nature of business and technology in modern organizations, the CIO should have the decision-making authority to lead strategic IT initiatives if IT is to contribute to the success of the organization. However, despite the strategic importance of IT, some CIOs are still not granted the same strategic decision-making authority as other business executives, and there are large differences in the strategic decision-making authority of CIOs across organizations. For instance, Kaarst-Brown\(^6\) noted that “… many IT executives are still not at the table because they are not viewed equal to their business peers.” Other researchers have observed that, in many organizations, the CIO plays a critical role not only in IT strategic planning, but in business strategic planning as well.\(^6\)

These disparities in the roles of CIOs across organizations are supported by the following statement from a CIO of a major Midwestern university, who was interviewed as part of our study. He said: “In my years networking with various executives, I still find that many firms have completely different views on the strategic role of the CIO. In some organizations the purpose of the CIO is purely operational—he is there to essentially fix the pipes like a plumber. In other organizations, the CIO is considered to be a true strategic leader. In many organizations, the CIO may be stuck somewhere in the middle of this range.”

The Leadership Capability Dimension

CIOs who have the authority to pursue strategic IT initiatives need to be capable leaders to successfully execute strategic projects; otherwise, the consequences for the organization could be problematic. Many CIOs are generally considered to be competent at managing the technical aspects of IT, such as keeping key systems operational; however, many CIOs fail as strategic leaders.\(^7\)

This issue is of concern to organizations since it is through strategic leadership that CIOs can most significantly influence the impact of IT on organizational performance. CIOs who are effective strategic visionaries are well suited to select and champion strategic initiatives that are designed to increase organizational performance. On the other hand, CIOs who are not capable strategic leaders are likely to have a lower level of influence, or possibly even a detrimental influence, on the contribution that IT makes to organizational performance.

The CIO of a large private hospital in our study supported the importance of a capable IT leader to the organization. He said, “To truly make an impact, the CIO must have the ability to personally make strategic decisions. However, if the CIO does not have

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\(^5\) Insights into the variations in authority given to CIOs across organizations can be found in Kaarst-Brown, M. L. “Understanding an organization’s view of the CIO: The role of assumptions about IT,” *MIS Quarterly Executive* (4:2), 2005, p. 287.

\(^6\) Leidner and Mackay found that some CIOs were not only leading IT strategy, but were also initiating organizational strategy. See Leidner, D. E., and Mackay, J. M. “How Incoming CIOs Transition into Their New Jobs,” *MIS Quarterly Executive* (6:1), 2007, pp. 17-28.

\(^7\) To obtain a valid and unbiased assessment of CIOs, it is necessary to get the viewpoint of business executives, rather than CIOs themselves. One of the few studies to have done this is Smaltz, D. H., Sambamurthy, V., and Agarwal, R. “The antecedents of CIO role effectiveness in organizations: An empirical study in the healthcare sector,” *IEEE Transactions on Engineering Management* (53:2), 2006, pp. 207-222. For an in-depth look at CIOs and why they succeed, or fail, see Broadbent, M., and Kitzis, E. S. *The New CIO Leader*, Harvard Business School Press, 2006.
the background and experience to support the right decisions, the results can definitely be harmful.”

The Four CIO Leadership Profiles

Using the two dimensions described above, we have constructed a 2x2 matrix that identifies four IT leadership profiles (see Figure 1):

- IT Orchestrator (high leadership capability, high decision-making authority).
- IT Mechanic (low leadership capability, low decision-making authority).
- IT Advisor (high leadership capability, low decision-making authority).
- IT Laggard (low leadership capability, high decision-making authority).

OVERVIEW OF RESEARCH METHODOLOGY AND FINDINGS

Our research findings are derived from six semi-structured interviews with industry CIOs and pairs of survey responses (one from the CIO and at least one from a senior business executive) from 174 diverse organizations from a range of industries. (Fuller details of the research methodology and respondents are in the Appendix.8)

We assigned each of the 174 CIOs to one of the four CIO leadership profiles.9 The breakdown was as follows:

- IT Orchestrators: 55 (32%)
- IT Laggards: 32 (18%)
- IT Advisors: 31 (18%)
- IT Mechanics: 56 (32%)

Impact of CIO Leadership Profile on IT Contribution

For each of the profiles, we assessed the level of IT contribution to organizational performance by using various statistical techniques10 to analyze the responses of the organizations’ CEOs or other top business executives. We asked these business executives to assess the extent to which IT had contributed to the following seven areas of organizational performance: return on investment, sales revenue increase, market share increase, cost savings, operating efficiency, process improvement, and customer satisfaction. For each area, they rated the IT contribution level on a scale from 1 (IT contribution is minimal) to 5 (IT has contributed to a very great extent). Based on these responses, we averaged the seven components of IT contributions.
contribution for each CIO leadership profile. The results are shown in Figure 2.

The data in Figure 2 clearly illustrates how the CIO leadership profile impacts on the level of contribution IT makes to organizational performance. We observed that the IT contribution level is higher than the overall average in firms where the CIO is classified as an IT Orchestrator or IT Advisor and lower than the average where the CIO is classified as an IT Laggard or IT Mechanic. Firms with IT Orchestrators had the highest IT contribution level, while those with IT Mechanics had the lowest IT contribution level. Our analysis shows that the CIO’s strategic decision-making authority and leadership capability collectively have a highly statistically significant impact on the contribution of IT to an organization’s performance.

**Other Factors Differentiating the Four CIO Leadership Profiles**

Previous research has identified several factors that may help to further explain the differences between the IT contribution levels associated with each of the CIO leadership profiles. However, our study found that a CIO’s age, gender, education level, business and IT experience, and length of service with the organization or as its CIO did not vary significantly across the four leadership profiles. But we did find significant differences in three factors—CIO attributes, CIO integration with top management, and organizational commitment to IT. The components of each of these factors are shown in Figure 3. Our study collected data on these six components so we could identify the distinguishing characteristics of CIOs in each leadership profile.

We describe the characteristics of each of the four CIO leadership profiles below in terms of “low,” “average,” or “high” ratings for each of these six components. CIO knowledge (strategic knowledge and interpersonal skills) were rated by business executives on a scale of 1 (low) to 5 (high). CIOs used the same 1 to 5 scale to rate the level of IT resources. Business executives rated the organization’s strategic IT vision (the degree to which IT is designed to transform the organization) on a scale of 1 to 3, where 1 equates to an “automative” vision, 2 equates to an “informative” vision, and 3 equates to a “transformative” vision.

We found that four of these six components (the CIO’s strategic knowledge, the CIO’s interpersonal skills, the CIO’s membership of the top management team, and the organization’s strategic IT vision) directly influence the level of IT contribution within the organization.

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11 The results of our statistical analysis indicate that the IT contribution levels of each of the four CIO profiles are statistically different from the average. The IT contribution levels of Orchestrators and Mechanics were found, respectively, to be significantly higher and lower than the average (0.01 level of significance via a two-tailed t-test). Advisors were found to be significantly higher than average (0.10 level of significance via a one-tailed t-test). Laggards were found to be significantly lower than average (0.10 level of significance via a two-tailed t-test).

12 We tested the value of each component for each profile versus the average values across all CIOs via an ANOVA test. In our statistical analysis, profiles that had a component value significantly below or above the overall average were designated as “low” and “high,” respectively. Profiles with characteristics that were not significantly different from the overall average were designated as “average.”

13 At one extreme, some organizations espouse an automative vision where the role of IT focuses on replacing human labor and reducing operational costs. At the other extreme, some organizations espouse a transformative vision where the role of IT is to transform the organization through new products or business strategies. And some firms may have an informative vision, which can be considered as an intermediate level of transformation, where the role of IT is to provide information to key decision makers and employees. For more information, see Schein, E. H. “The role of the CEO in the management of change: The case of information technology” in Kochan, T. A., and Useem, M. (eds.) *Transforming Organizations*, Oxford University Press, 1992.
Because of this, we pay particular attention to these four components in the following descriptions of each of the four CIO leadership profiles. For each profile, we also provide an illustrative example of a CIO we encountered in our research who fits into that classification.

**PROFILE OF THE IT ORCHESTRATOR**

In our study, 32 per cent of CIOs were classified as IT Orchestrators. This type of CIO is an effective strategic leader who is granted a great deal of freedom in making strategic decisions. Such a CIO is empowered to influence organizational outcomes. We summarize the defining characteristics of IT Orchestrator CIOs in Figure 4.

The knowledge level and interpersonal attributes of IT Orchestrators are considerably higher than the overall average in our sample. Also, more of these CIOs report directly to the CEO and are formal members of the top management team. IT Orchestrators benefit from organizational support in the form of higher-than-average investments in IT. We posit that CIOs who are IT Orchestrators have the leadership skills that enable them to secure investments for IT. Alternatively an organization that invests highly in IT might actively seek a capable IT leader to handle such strategic responsibilities. Both explanations are plausible, and, in fact, some combination of the two may likely explain the higher-than-average investments in IT in these firms.

The CIO of a major electronics manufacturer provided insight into this phenomenon: “I am not exactly sure of all the aspects that are required to make sure that IT delivers to the bottom line at the end of day. However, one thing I do know is that I cannot perform—and as a result IT cannot deliver—if we [the IT department] are not provided with the proper funding and staff to get the job done.”

We also found that not only do firms with IT Orchestrator CIOs make large investments in IT, they also generally espouse a vision that IT can strategically transform the organization. A transformative vision...
CIO Leadership Profiles: Implications of Matching CIO Authority and Leadership Capability on IT Impact

Illustrative Example of an IT Orchestrator CIO

“Midwestern General Hospital” (MGH) is a large general medical and surgical hospital with approximately 3,000 employees located in an urban center in the Midwestern United States. The contribution of IT to MGH’s organizational performance was rated very high (4.43), well above the IT Orchestrator average of 3.54. MGH’s CIO is considered a highly capable strategic leader (4.67) and is granted a high level of decision-making authority (4.60). All of these ratings are higher than the average ratings for IT Orchestrators, so MGH can be considered as a highly pronounced example of an organization with an IT Orchestrator CIO.

MGH’s CIO is well suited for this leadership profile. He has a very high level of strategic knowledge and has developed complementary interpersonal skills. He is highly integrated within the business—he reports directly to the CEO and is a formal member of the top management team, which enables him to communicate ideas for strategic planning directly to other senior executives. He indicated that he has forged strong relationships with other members of the top management team. Such relationships are expected because a strategically capable and socially adept CIO with formal access to the top management team has the forum and ability to develop a partnership with the upper echelon of the organization.

We observed that MGH has a strong commitment toward IT since it dedicates a large amount of resources to IT and promotes a vision that the purpose of IT is to transform its current business processes. We therefore infer that MGH includes IT as a central part of its strategic mission and expects to yield commensurate benefits from its investments and organizational efforts to capitalize on IT.

The current CIO appears to be a good fit for MGH’s organizational mission. This capable executive has been with MGH for 23 years and served as CIO for 18 years. However, MGH should consider grooming a replacement for this CIO since he is now in his mid-60s and may soon retire. MGH should ensure that the potential replacement is a strong leader who can meet the expectations for success set by MGH. However, IT leaders of this caliber are often in short supply.

is consistent with high IT investment levels, and such firms may be ill-served without a CIO with the requisite strategic knowledge and interpersonal skills. However, it has been noted that CIOs with these attributes are in short supply. To maximize the impact on IT performance, such firms should employ a strategically capable CIO who is a formal member of the top management team and promote a transformative IT vision within the organization. Collectively, these practices can be taxing for the firm—but there are considerable benefits in terms of improved organizational performance. As our research has shown, organizations with an IT Orchestrator CIO obtain the greatest contribution from IT.

PROFILE OF THE IT MECHANIC

At the other end of the spectrum and in stark contrast to IT Orchestrators, IT Mechanic CIOs have a low level of both strategic effectiveness and strategic decision-making authority. We summarize the defining characteristics of IT Mechanic CIOs in Figure 5.

In our research, 32 percent of CIOs were classified as IT Mechanics. These CIOs generally had the lowest levels of strategic knowledge and weaker interpersonal skills. In addition, a lower percentage of these CIOs reported to the CEO than any of the other types of CIO. The CIO of a non-profit organization who was interviewed as part of this study noted: “I can tell you first hand that the reporting level of the CIO is the indicator that you should look at if you want to examine if the organization considers IT to be strategically important. When I was a CIO in industry, I reported directly to the CEO, which enabled me to play a key role in the corporate strategy. In my current position, I report to an underling of the CEO, and I don’t have the same influence to see that IT helps fuel the business.”

Also, firms with an IT Mechanic CIO tend to have an IT vision that is more automation-oriented than transformative. Based on these collective findings, it is not surprising that the lowest contribution of IT to organizational performance was found in firms with IT Mechanic CIOs. The average IT contribution rating of 2.49 (on a scale of 1 to 5) in these firms indicates that IT does not contribute appreciably to the performance of the organization. However, it is important to note that this low level of IT impact may be consistent with
the organizational goals of a firm. If a firm constrains its CIO’s strategic decision-making authority and employs a CIO with only limited strategic leadership capability, it is a signal that IT is not viewed as a strategic enabler within the organization.

In fact, the high percentage of our sample that was classified as IT Mechanic CIOs may reflect an intentional decision on the part of top management teams to limit or neutralize the risk of investing in IT resources and in developing a strategic CIO. As expected, the contribution of IT to the performance of these organizations is not huge. At the same time, the risk of over-investing in IT with disappointing benefits is very low. We therefore consider employing an IT Mechanic CIO to be a risk-averse strategy aimed at minimizing potential IT investment risks while maintaining a functioning operational environment.

**Figure 5: IT Mechanic—Summary of Characteristics**

<table>
<thead>
<tr>
<th>CIO Attributes</th>
<th>CIO Integration with Top Management</th>
<th>IT Commitment</th>
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</thead>
<tbody>
<tr>
<td>Strategic Knowledge (1-5)</td>
<td>Interpersonal Skills (1-5)</td>
<td></td>
</tr>
<tr>
<td>Percentage reporting to the CEO</td>
<td>Percentage a member of top management team</td>
<td></td>
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<tr>
<td>IT Resources (1-5)</td>
<td>Strategic IT Vision (1-3)</td>
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<table>
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<tr>
<th>IT Mechanic</th>
<th>Overall Average</th>
</tr>
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<tbody>
<tr>
<td>Low (2.94)</td>
<td>3.53</td>
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<tr>
<td>Low (3.35)</td>
<td>3.87</td>
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<tr>
<td>Low (36%)</td>
<td>47%</td>
</tr>
<tr>
<td>Average</td>
<td>77%</td>
</tr>
<tr>
<td>Average (3.46)</td>
<td>3.54</td>
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<tr>
<td>Low (1.78)</td>
<td>1.93</td>
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</table>

**Illustrative Example of an IT Mechanic CIO**

“Eastern General Hospital” (EGH) is a large general medical and surgical hospital with approximately 1,900 employees in a suburban setting in the eastern United States. The contribution of IT to organizational performance was rated as very low (1.81), well below the average of 2.49 for firms with IT Mechanic CIOs. EGH’s CIO is not considered a capable strategic leader (2.33) and has a low level of decision-making authority (2.00).

EGH (unlike MGH—another general hospital) emphasizes neither the importance of the CIO position nor a strategic focus on IT. We observed that the CIO appears to be more characteristic of an operational manager than a true executive since he is not a formal member of the top management team and reports to the chief medical officer rather than to the CEO. EGH does not appear to have a strong strategic commitment to IT. Its vision is for IT to merely automate current operational processes and reduce costs. Therefore IT does not play a strategic role within EGH. However, it dedicates significant resources to IT, though they are geared toward operational rather than strategic goals.

The current CIO appears to be an appropriate fit for this managerial role (rather than an executive role) since he does not have strong strategic knowledge or interpersonal skills. Although he may have strong technical and managerial skills, he does not have the attributes needed by a transformational leader. However, the EGH’s top executives appear to be satisfied with their CIO’s current level of productivity and the status quo; the current CIO has been with EGH for 24 years and has served as CIO for 12 years despite his lack of leadership ability. His length of tenure in this position indicates that he may also be satisfied within his IT Mechanic role.

The EGH and MGH cases illustrate that organizations in the same business can successfully have CIOs with different leadership profiles. The important thing is to ensure a good level of fit between the CIO and the organizational context.
PROFILE OF THE IT ADVISOR

Organizations with an IT Advisor CIO (18 per cent in our study) are of particular interest since they obtain a moderately high IT contribution but require fewer resources and less strategic commitment to IT than firms with an IT Orchestrator CIO. We use the label “IT Advisor” since this type of CIO has limited decision-making authority but is a highly capable leader with vast strategic knowledge who may be well suited to serve as a strategic advisor to the top management team on IT issues. Although the impact of IT in firms with IT Advisor CIOs is lower than in those with IT Orchestrator CIOs, it is higher than the overall average and higher than firms with IT Laggard or IT Mechanic CIOs. Thus even when the CIO’s strategic decision-making authority is relatively low, as it is for firms with an IT Advisor CIO, having a capable leader in the CIO position helps IT contribute to organizational performance. This observation underscores the importance of strategic leadership skills for CIOs. We summarize the defining characteristics of this type of CIO in Figure 6.

Like IT Orchestrators, business executives consider IT Advisors to have strategic knowledge and strong interpersonal skills. However, there are several key factors that distinguish these two types of CIO. We observed that IT Advisor CIOs’ integration with top management and their firms’ IT visions are near the overall average. In addition, we observed that, even though firms with IT Advisor CIOs provide the lowest level of resources to the IT department, they still obtain a relatively high level of IT impact. Despite minimizing their IT investment and commitment, these firms are able to derive organizational benefits from IT by employing a capable CIO. In essence, their approach is a “low cost alternative” compared to firms with IT Orchestrator CIOs, which require substantial IT investments and dedication to a transformative IT vision.

PROFILE OF THE IT LAGGARD

Firms with an IT Laggard CIO have a level of IT contribution that is lower than average but higher than that of firms with IT Mechanic CIOs. IT Laggards are the inverse of IT Advisors since they are provided with a relatively high level of decision-making authority, but they do not have the requisite leadership skills to capitalize on the strategic authority provided to them. We summarize the defining characteristics of IT Laggard CIOs in Figure 7.

The strategic decision-making authority given to IT Laggard CIOs suggests that top management has high expectations for them to derive potential benefits from IT. However, it is possible that IT Laggards’ leadership capability is hampered by a fairly conservative IT vision. Without a more aggressive IT vision, IT Laggards may be unable to capitalize on their decision-making authority and are consequently labeled as incapable leaders. We note that despite firms with IT laggard CIOs making higher-than-average investments in IT resources, they do not obtain the same level of impact as firms with more capable but underfunded IT Advisor CIOs.

Our analysis showed that the IT contribution in firms with IT Laggard CIOs was slightly higher than in those with IT Mechanic CIOs. This finding could indicate that IT Laggards are able to use some of their decision-making authority to lead initiatives that potentially have a moderate strategic impact and are within the scope of their abilities. It could also

<table>
<thead>
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<td>Strategic Knowledge (1-5)</td>
<td>Interpersonal Skills (1-5)</td>
<td>Percentage reporting to the CEO</td>
</tr>
<tr>
<td>IT Advisor</td>
<td>High (4.04)</td>
<td>High (4.35)</td>
</tr>
<tr>
<td>Overall Average</td>
<td>3.53</td>
<td>3.87</td>
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</table>
CIO Leadership Profiles: Implications of Matching CIO Authority and Leadership Capability on IT Impact

Illustrious Example of an IT Advisor CIO

“Wholesaler Inc.” is a small to mid-sized wholesaler of recreational goods in the southeast of the United States, with approximately 200 employees. The contribution of IT to organizational performance was rated as moderately high (3.3), which is on par with the typical firm with an IT Advisor CIO. Wholesaler Inc.’s CIO is considered by business executives to be a capable strategic leader (4.33) but is not granted a high level of decision-making authority (2.60). Both of these ratings are close to the average for IT Advisor CIOs. This CIO is thus a quintessential IT Advisor—a CIO who is a strong strategic leader but does not have the authority to make strategic decisions independently.

The CIO’s integration with the top ranks of Wholesaler Inc.’s management is typical of IT Advisors—he reports directly to the CEO but is not a formal member of the top management team. Wholesaler Inc.’s strategic IT vision is also typical of firms with IT Advisor CIOs. The most salient characteristic of Wholesaler Inc. is that it provides a low amount of resources to IT (2.33). This indicates that the firm wishes to minimize its direct IT investments even though it has a CIO who is a capable strategic leader. The combination of a minimalist approach from the business side and a strategic CIO means that Wholesaler Inc. is able to obtain a reasonably high level of IT contribution and a good “bang for the buck” from its IT investments and commitment to IT. We note that IT investments do not directly influence the contribution of IT on organizational performance; however, investments in initiatives that are in accordance with organizational objectives may indirectly influence organizational success.

The CIO indicated that he has formed a very strong partnership with the top management team. This partnership may enable this knowledgeable and adept CIO to navigate the decision-making environment dominated by the top management team and act as an advisor for decisions on strategic IT initiatives.

Wholesaler Inc.’s CIO has been in this executive position for only three years. Therefore it is unclear whether he is content with an advisory role and will stay with the firm in the long run if he is not provided with the appropriate resources or decision-making authority to enable him to exploit his strategic leadership capabilities.

Table: IT Laggard—Summary of Characteristics

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<td></td>
<td>Strategic Knowledge (1-5)</td>
<td>Interpersonal Skills (1-5)</td>
<td>Percentage reporting to the CEO</td>
</tr>
<tr>
<td>Low (3.11)</td>
<td>Low (3.36)</td>
<td>Average (47%)</td>
<td>Average (71%)</td>
</tr>
</tbody>
</table>

Indicate that Laggards eschew potentially more risky initiatives that would have greater strategic impact but are outside of their “strategic comfort zone.” Firms with IT Laggard CIOs might still target strategic IT initiatives but more likely under the guidance of the top management team than the CIO.

Three Key Lessons on IT Leadership

Given that the strategic management of IT continues to be a key issue for organizations, we summarize three key lessons based on our findings. We believe that these lessons provide insights for both IT executives

Figure 7: IT Laggard—Summary of Characteristics
CIO Leadership Profiles: Implications of Matching CIO Authority and Leadership Capability on IT Impact

Lesson 1: Know Thyself

CIOs will benefit from understanding their own leadership profile. Our findings clearly demonstrate that IT’s contribution to organizational performance varies significantly across the four CIO leadership profiles. CIOs who want to increase the level of IT contribution to their organizations’ performance can gain an understanding of how to achieve this by assessing their current profile.

Although organizations may not officially decree their CIOs’ level of strategic decision-making authority, CIOs should assess their level of authority by evaluating their prior and current experiences in leading initiatives within their organizations. However, CIOs must keep in mind that not all organizations expect a high level of contribution from IT. It is therefore also imperative for a CIO to understand the top management team’s vision for IT. If that vision is transformative, the organization needs an IT Orchestrator CIO. If the vision is automotive, a CIO that matches the IT Mechanic profile is appropriate. In firms where the vision is informative (i.e., the role of IT is to provide information to key decision-makers) an IT Advisor CIO will likely be needed.

By understanding his or her current profile, as well as the profile needed to support the top management team’s vision for IT, the CIO can make adjustments to better serve the organization. Note, though, that the CIO’s leadership ability is based on the top management team’s perception. The CIO characteristics most readily changeable and within the CIO’s control are strategic IT and business knowledge, and interpersonal skills (i.e., the CIO attributes listed in Figure 3). CIOs who want—or need—to adjust their own profile will need to begin with these attributes.

Illustrative Example of an IT Laggard CIO

“Parts Manufacturer Inc.” (PMI) is a mid–sized U.S. parts manufacturer for several industry sectors, with approximately 600 employees. The contribution of IT to organizational performance is moderately low (2.71), which is on par with the IT Laggard average. Senior executives do not consider the CIO to be a capable strategic leader (2.67); however, this CIO is granted a high level of strategic decision-making authority (4.30).

This firm has a moderate level of IT commitment since its IT resources and strategic IT vision are on par with the average of firms with IT Laggard CIOs and with the overall average. In addition, the CIO’s integration with top management is average since he is not a formal top management team member but does report directly to the CEO. We observed that PMI’s CIO is in charge of a wide range of strategic decisions for IT; however, he does not have the strategic knowledge or interpersonal skills necessary for a strategic leader in this position. This accounts for PMI having a moderately low level of IT contribution, probably due to the relatively unprepared IT leader acting as the key decision maker within a firm that appears to seek only marginal gains from IT.

PMI’s CIO indicated that he has a strong partnership with the top management team. Although he has the authority to make strategic decisions, he may choose to collaborate with top executives who can compensate for any deficits in his strategic knowledge base. However, the CIO’s weak interpersonal skills may cast doubt on his assertion that can foster such a relationship.

PMI provides its CIO with authority that, at present, he may not be equipped to handle. However, we note that he has been the firm’s CIO for just two years. Perhaps he will acquire greater knowledge and interpersonal skills should he remain in this role for a longer period. To some degree, strategic knowledge, or the application of strategic knowledge, is company specific. The CIO’s interpersonal skills may also further develop after he is able to understand the behavior and goals of PMI’s top management.

14 Our survey results found that CIOs and top management team members have a high degree of agreement on the CIO’s perceived level of strategic decision-making authority. Therefore CIOs can generally accurately assess their level of decision-making authority in the organization.
tracking the value of IT projects, and by identifying projects that have delivered on their business cases.

**Lesson 2: The Global Digital Economy Will Need More IT Orchestrators**

Two of the four CIO leadership profiles (IT Orchestrator and IT Mechanic) have a good match between the CIO’s strategic decision-making authority and leadership capability, and two (IT Advisor and IT Laggard) have a mismatch. IT Orchestrator CIOs are well suited for organizations that want to be at the forefront of IT innovation. However, not all organizations currently believe that an IT Orchestrator is necessary; an IT Mechanic may be ideal for an organization that has only limited needs from IT and wishes to minimize IT costs. On the other hand, there is untapped potential from IT in organizations with IT Advisor or IT Laggard CIOs.

Although not all organizations see the need for an IT Orchestrator, the global digital environment in which many firms now operate increasingly demands that IT is used to help them achieve greater innovation and efficiency. Organizations operating in this environment will need IT to support their business strategies and will be best served by IT Orchestrator CIOs. IT Mechanics, IT Laggards, and IT Advisors may therefore have to evolve into IT Orchestrators.

Moreover, current IT Orchestrator CIOs who wish to continue maximizing the potential impact of IT will need to maintain a high level of decision-making authority and strategic leadership capability as the organizational structure and business priorities change with time. These CIOs need to ensure that they keep their strategic knowledge base current and their interpersonal skills polished. Since the top management team could be continually changing, the CIO must also consistently work to build and maintain strong partnerships with these top executives and develop a uniform agreement that IT is key to the firm’s business strategy. Therefore IT Orchestrator CIOs must continually monitor their attributes and strive to improve them.

All CIOs, regardless of their current leadership profile, need to be aware that future trends will favor the appointment of IT Orchestrators. CIOs without the necessary attributes for the IT Orchestrator profile should be prepared to adapt (see Lesson 3); if they don’t, they may find themselves out of a job. IT Advisors, IT Laggards, and IT Mechanics should therefore prepare to methodically reshape themselves as IT Orchestrators.

**Lesson 3: IT Advisors, IT Laggards, and IT Mechanics Can Transition across Profiles**

**Actions for IT Advisors.** Our research has shown that an IT Advisor CIO can derive moderately high benefits from IT with minimal commitment of resources within an organization that generally has a moderate strategic IT vision. To transition to the IT Orchestrator profile, an IT Advisor needs to focus on obtaining additional funding and strive to instill a vision among top business executives that transformation through IT is fundamental to the firm’s corporate strategy. To gain greater IT commitment from the organization, an IT Advisor CIO should demonstrate a track record for IT to the top management team by providing clear examples of how IT has delivered value to the business. An IT Advisor with strong interpersonal skills has the political savvy and communication skills to formulate and present business cases that show IT is critical to current and future operations and the business strategy. Such business cases will increase the firm’s level of IT commitment and consequently increase the CIO’s strategic decision-making authority.

**Actions for IT Laggards.** We found that IT Laggards’ leadership capabilities generally fall short of what’s needed to achieve the firm’s strategic IT goals. IT Laggard CIOs should immediately address their shortcomings and should lobby the top management team to attend programs that will accelerate their personal development. These programs might be advanced business classes (e.g., graduate-level classes in strategy, finance, etc.) designed to improve their strategic knowledge, or executive development programs designed to enhance and refine IT Laggards’ “soft” skills.

**Actions for IT Mechanics.** IT Mechanics who want to develop into IT Orchestrators must both improve their executive attributes and transform their organizations’ view of IT. We recommend that IT Mechanic CIOs first focus on developing their leadership capabilities and then subsequently work to extend their decision-making authority. In essence, we are recommending that IT Mechanic CIOs first work to transition themselves into IT Advisors and subsequently work to transform themselves into IT Orchestrators.

**MAKING USE OF THE CIO LEADERSHIP PROFILES**

The lessons learned from our study provide a lens through which CIOs and their senior business
colleagues can understand their current CIO leadership profiles. An organization and its CIO can evaluate the current CIO leadership profile by focusing on the CIO’s attributes, CIO integration within the firm, and the organization’s IT commitment. The top management team can then assess if the profile meets the firm’s plans to derive benefits from IT. The CIO can identify shortcomings in his or her own profile and take steps to remedy them so he or she can better serve the organization as the need for IT Orchestrators comes to the fore.

We believe that the profiles developed for this study and the quantified findings from our research will enable senior business executives to directly influence the CIO leadership profile and the contribution made by IT within their organizations. We also believe that this study will provide a foundation for future research on the impact of CIOs on organizational practices and the bottom line of their firms.

APPENDIX: RESEARCH METHODOLOGY

To conduct this empirical study, we collected data in 2006/2007 from CIOs and their corresponding top business executives via a survey. The CIO is defined as the highest-ranking IT executive within the organization. Top business executives included the organization’s CEO or business executives who are either formal members of the top management team or reported directly to the CEO. Business executives responded to questions on the quality of the CIO’s leadership capabilities, attributes, the organization’s strategic IT vision, and IT’s contribution to organizational performance. CIOs responded to questions on his or her integration with top management and the resources provided to IT. Both the CIO and matched CEO or other top business executives responded to questions on the CIO’s strategic decision-making authority, and the mean responses were used, after assessing the inter-rater reliability (the degree of agreement among respondents).

Matched-pair surveys from 174 diverse U.S.-based organizations within multiple industries were returned, providing responses from both the CIO and at least one corresponding top business executive. Among the 174 organizations, 78 (44.8%) were in the healthcare industry, 18 (10.4%) were in the manufacturing industry, 16 (9.2%) were in the finance industry, 15 (8.6%) were retailers or wholesalers, 15 (8.6%) were consulting firms, 8 (4.6%) were in the construction/real estate development industry, 8 (4.6%) were educational institutions, and the remaining 16 (9.2%) were from miscellaneous industries. All the organizations had annual revenue of more than $650,000, and the average number of employees was 7,643. The average age of the CIOs was 49.6 years, and average tenure as the firm’s CIO was 8.8 years. Of the 174 CIOs, 35 (20.1%) were women and 139 (79.9%) were men.

ABOUT THE AUTHORS

David S. Preston

David Preston (d.preston@tcu.edu) is an assistant professor of information systems at Texas Christian University, Fort Worth, Texas. He received his Ph.D. in MIS from the University of Georgia and also holds an M.B.A. from the University of Georgia and a B.S. and an M.S. in Engineering from the University of Florida. His research interests include the role and impact of the CIO in the organization, IS strategic alignment, and the impact of IS on organizational performance. His work has been published or is forthcoming in Information Systems Research, IEEE Transactions on Engineering Management, ICIS Proceedings, Journal of Logistics Information Management, Business Intelligence Journal, and IS Control Journal.

Dorothy E. Leidner

Dorothy Leidner (dorothy_leidner@baylor.edu) is the Randall W. and Sandra Ferguson Professor of Information Systems at Baylor University, Waco, Texas. She has broad international experience, having previously served as associate professor at INSEAD, and as visiting professor at Monterrey Tech University (ITESM) in Mexico and at the University of Caen, France. She is also a regular visiting professor at the University of Mannheim in Germany. She received her Ph.D. in Information Systems from the University of Texas at Austin. Her research has been published in a variety of journals, including MIS Quarterly, Information Systems Research, Journal of Management Information Systems, Decision Sciences, and Organization Science. Leidner received best paper awards in 1993 from the Hawaii International Conference on System Sciences, in 1995 from MIS Quarterly, and in 1999 from the Academy of Management OCIS division. She is currently serving as Senior Editor for MIS Quarterly and is on the editorial board of MIS Quarterly Executive.

Daniel Chen

Daniel Chen (d.chen@tcu.edu) is an assistant professor of information systems at Texas Christian University,
Fort Worth, Texas. He received his Ph.D. in MIS from the University of Georgia and also holds an M.B.A. degree from Washington University at St. Louis. Chen’s research interests lie at the interface between information technology and strategic management. His primary areas of research are organizational impact of IT infrastructures, the role and value of IS leadership, and business value of IT.