

# THE EMERGING CIO ROLE OF BUSINESS TECHNOLOGY STRATEGIST<sup>1</sup>

**Michelle Carter**  
 Clemson University  
 (U.S.)

**Varun Grover**  
 Clemson University  
 (U.S.)

**Jason Bennett**  
 Thatcher  
 Clemson University  
 (U.S.)

## *Executive Summary*

*This article focuses on the emerging CIO role of business technology strategist and its relationship with the three traditional IT management roles—informational, decisional, and interpersonal. Our starting assumption was that two characteristics of a CIO may also influence his or her ability to perform this emerging role: 1) the formal power derived from the CIO's reporting level and 2) the CIO's technical background (technical education and experience). Based on a field study of 45 CIOs, we find that the role of business technology strategist is most strongly related to the CIO's formal power and to his or her skills in absorbing and disseminating relevant information (the informational role). A technical background (technical credibility) is more important for the performance of the other two traditional roles (decisional and interpersonal), which are focused on managing IT resources. These findings on multiple CIO roles therefore help to reconcile a debate in the practitioner literature about how best to leverage CIOs as business technology strategists. CIOs who report to the CEO or a CxO will take an "outside-in" approach that leverages their access to top management. In contrast, in firms that have placed a less strategic focus on IT, CIOs with less formal power will take an "inside-out" approach that leverages their strong technical expertise and effective management of IT resources.*

## THE EVOLVING ROLE OF CIOs

Increased business reliance on IT embedded in products, processes, and decisions has been a catalyst for better understanding of the role of the CIO and, in particular, how CIOs can contribute effectively to their firms' performance. The CIO's responsibility for managing an internal IS function that is well aligned with the business and enables process change has been recognized for some time.<sup>2</sup> However, as IT becomes ever more ubiquitous and is increasingly seen as an integral part of ongoing business success, CIO roles and responsibilities continue to evolve, and a growing number of CIOs are now also *business technology strategists*—strategic business leaders who "use technology as the core tool to create competitive advantage."<sup>3</sup>

Business technology strategists are responsible for creating a roadmap to provide their organizations with competitive advantages. This raises two questions:

- What skills does a CIO need to successfully identify technology changes and convert IT investments into business opportunities?
- Do these skills differ from those needed for proficiency in the three traditional IT management roles—informational, decisional, and interpersonal?

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<sup>1</sup> Leslie Willcocks is the accepting Senior Editor for this article.

<sup>2</sup> Grover, V. et al. "The Chief Information Officer: A Study of Managerial Roles," *Journal of Management Information Systems* (10:2), 1993, pp. 107-130.

<sup>3</sup> Ross, J. W. and Feeny, D. F. "The Evolving Role of the CIO," *Center for Information Systems Research WP No. 308*, 1999; this paper predicted that the web-based era would see the CIO role change from "functional manager to (potentially) business visionary" (p. 15). The business visionary role as depicted by these authors can be equated with the role of business technology strategist. See also Ehrlich, L and West, M. "The Strategic CIO: Using Leadership Skills and IT to Create Competitive Advantage," *CIO Magazine*, May 1, 2007, available at [http://www.cio.com/article/107058/The\\_Strategic\\_CIO\\_Using\\_Leadership\\_Skills\\_and\\_IT\\_to\\_Create\\_Competitive\\_Advantage](http://www.cio.com/article/107058/The_Strategic_CIO_Using_Leadership_Skills_and_IT_to_Create_Competitive_Advantage).

Two characteristics of IT leaders have been associated with the ability of CIOs to play strategic IT roles:

- The senior IT leader's position in the organizational hierarchy, which determines his or her *formal power*.
- The technical education and/or strong technology background of the senior IT leader, which we refer to as *technical credibility*.<sup>4</sup>

We recognize that the importance of these characteristics for a given firm will be determined by the extent to which IT is used for strategic advantage. For instance, two decades ago, in a classification of the IS function, McFarlan and colleagues first suggested that in firms where IT is less strategic, the IS function plays more of a support role for the firm.<sup>5</sup>

In this article, we first describe the three traditional IT management roles (informational, decisional, and interpersonal),<sup>6</sup> followed by our definition of the emerging business technology strategist role. Then—based on a field survey of 45 C-level IS executives—we describe the strength of the relationships between the business technology strategist role, the three traditional CIO roles, technical credibility, and formal power. Next, we discuss the implications of our study for the management of the IS function and the corresponding role of the CIO. Finally, we conclude with specific guidelines for CIOs.

## THE BUSINESS TECHNOLOGY STRATEGIST ROLE AND TRADITIONAL IT MANAGEMENT ROLES

Sustained technological change and the pervasiveness of IT in the workplace have increased calls for today's CIOs to extend their role from managing technologies that support business processes to promoting strategic applications of IT that realize competitive advantages.<sup>7</sup> A business technology strategist develops and executes a long-term plan for the organization's

IS function, designed to support its long-term success. Through strategic action, this type of CIO works to align business and IT strategies, defines the organization's place in the digital economy, embeds technology in business strategy, and designs future possibilities for the business. Business technology strategists are willing to seek help and guidance from outside the firm and are in a position to identify opportunities and select investments.<sup>8</sup> However, a CIO's ability to engage in strategic initiatives may be shaped by his or her skills in the three traditional IT management roles—informational, interpersonal, and decisional. The two key activities for each of these traditional roles are summarized in Table 1 and described in more detail below.<sup>9</sup>

### **Informational Role: Spokesperson and Monitor**

Despite the widely held view that communication between the IT function and business functions is critical to successful IT-business alignment,<sup>10</sup> CIOs are often criticized for failing to convey ideas or talk about business problems using business language.<sup>11</sup> As a *spokesperson*, the CIO serves as a technical expert to people outside his or her immediate department. Acting as an advocate for the IS function, the CIO educates the organization on the strategic role of IT and keeps people abreast of the proactive role IT is taking in improving the business. In addition, spokesperson activities facilitate the CIO in *monitoring* the external environment for potential technology investments. The more CIOs interact with colleagues outside the IS function, the more they will learn about the organization's core business and the industry in which it operates. This knowledge can be used to gather information relevant to business needs—e.g., about market trends, customers, and competitors<sup>12</sup>—which must be disseminated to organizational stakeholders if it is to result in strategic activities.

4 We use the term "technical credibility" to denote both competence in and an orientation toward technical issues.

5 This framework has undergone an evolution in thinking. A more recent version can be found in Nolan, R. and McFarlan, W. F. "Information Technology and the Board of Directors," *Harvard Business Review* (83:10), October 2005, pp. 1-10.

6 These roles are based on Henry Mintzberg's conceptualization of managerial roles, first published in 1973. More recently, Mintzberg consolidated his earlier work in *Managing*, published in 2009 by Berrett-Koehler Publishers Inc. For a fuller discussion of these roles as they relate to CIOs, see Grover, V. et al., op. cit., 1993.

7 Ehrlich, L. and West, M. op. cit., 2007.

8 "IT Management Slideshow: Are You a Strategist or an Operator?," *CIO Insight*, July 8, 2009, available at [http://www.cioinsight.com/c/a/IT-Management/Are-You-a-Strategist-or-an-Operator-432440/?kc=CIO\\_MINUTE07082009CIO1](http://www.cioinsight.com/c/a/IT-Management/Are-You-a-Strategist-or-an-Operator-432440/?kc=CIO_MINUTE07082009CIO1).

9 Our description of the traditional roles is based on Grover, V. et al., op. cit., 1993.

10 Kontzer, T. "Why IT and Business Can't Get In Sync," *CIO Insight*, June 4, 2008, available at <http://www.cioinsight.com/c/a/Trends/Why-IT-and-Business-Cant-Get-In-Sync-103619/>.

11 McAlearney, S. "Does a Tech Manager Need to Be Tech-Savvy?," *CIO Magazine*, September 5, 2008, available at [http://www.cio.com/article/447783/Does\\_a\\_Tech\\_Manager\\_Need\\_to\\_Be\\_Tech\\_Savvy\\_](http://www.cio.com/article/447783/Does_a_Tech_Manager_Need_to_Be_Tech_Savvy_).

12 Grover, V. et al. op. cit., 1993.

Table 1: Primary Activities For Three Traditional IT Management Roles

Role	Activity Description
<b>Informational</b>	
Spokesperson	Involves the communication of information or ideas to people outside the IS function.
Monitor	Seeks and receives information in an effort to understand the organization and its environment. Scans external environment for changes in technology and competition.
<b>Decisional</b>	
Entrepreneur	Identifies business needs and develops solutions that change business situations. Acts as initiator and designer of much of the controlled change in the organization.
Resource Allocator	Responsible for allocation of human, financial, material, and other resources (including information resources).
<b>Interpersonal</b>	
Leader	Responsible for motivating subordinates and for staffing and training.
Liaison	Establishes personal network of external relationships.

### **Decisional Role: Entrepreneur and Resource Allocator**

While the decisional role activities do not directly help CIOs develop and initiate strategy, effective allocation of IS resources leads to better execution of business strategy initiatives by the IS function. Acting as an *entrepreneur*, the CIO is a change agent who plans and initiates change. As a *resource allocator*, the CIO is responsible for all human, financial, and material allocations. These activities involve all stages of decision making from planning to allocating resources and implementing change. They support spokesperson activities because a CIO with a history of successfully implemented strategy initiatives is a more credible advocate on the strategic role of IT. Moreover, CIOs who have successfully implemented change initiatives are in a better position to evaluate new technologies against the organization's current technology infrastructure as well as to develop and execute long-term IT plans that influence the strategic direction of the organization.

### **Interpersonal Role: Leader and Liaison**

Leader and liaison activities are interpersonal in nature and do not directly involve aligning IT with business strategy. *Leader* activities are related to the internal management of the IS function, such as evaluating the quality of subordinates' job performance, resolving conflicts, and motivating and directing the work of subordinates. As a *liaison*, the CIO establishes a network of external relationships. This often-underemphasized aspect of the CIO's role is particularly important for deploying new

technologies, when information politics will be a significant issue.

The interpersonal role activities of a CIO also reinforce engagement in the decisional and informational roles. For example, to allocate resources and schedule realistic project timeframes, the CIO needs to manage the IS team effectively.<sup>13</sup> In turn, CIOs who provide guidance on organizational issues to subordinates may help overcome problems associated with IT workers' unfamiliarity with the business,<sup>14</sup> thereby supporting spokesperson activities. Similarly, liaising with people outside the IS function increases a CIO's ability to gather information about changes in the technology landscape and obtain help and guidance from others in their professional network, thus increasing opportunities to make high-profile contributions to the firm's strategies.

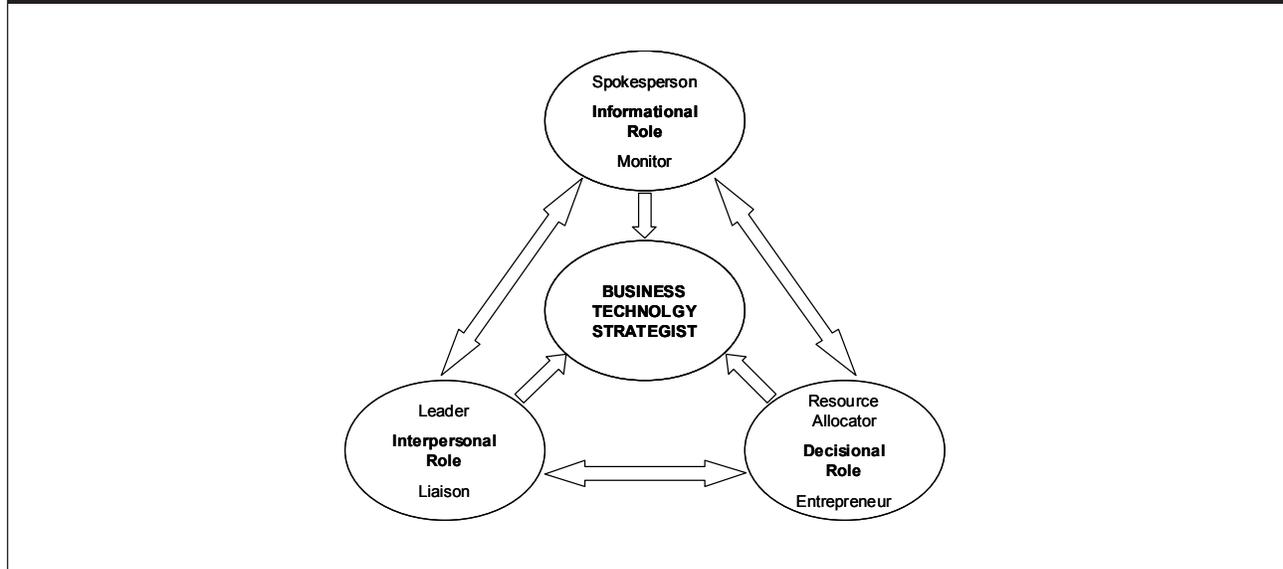
Figure 1 depicts the relationships between the emerging business technology strategist role and the three traditional IT management roles we anticipated before our study. This figure suggests that the role of business technology strategist is supported equally by the informational, decisional, and interpersonal roles. We assumed that these three traditional roles are mutually supportive and enhance the CIO's ability to act as a business technology strategist.

In the next section, we describe the outcome of our study. As shown in Figure 1, we expected that the traditional IT management roles would support the evolving role of business technology strategist, as

<sup>13</sup> McAlearney, S., op. cit., September 5, 2008.

<sup>14</sup> Ibid.

Figure 1: Assumptions About Relationships Between Business Technology Strategist and Traditional IT Management Roles Prior to Data Collection



would the CIO's technical credibility and formal power.

## FACTORS SUPPORTING A BUSINESS TECHNOLOGY STRATEGIST ROLE

As part of a larger study, 45 C-level IS executives provided information on the activities they performed, both as part of the three traditional IT management roles and as part of the emerging business technology strategist role. Our survey also captured data about the respondents' level of technical credibility and their degree of formal power (reporting level) in the organization. We used statistical analysis techniques to understand the relationships of interest (see the Appendix for a description of the specific survey measures used). Figure 2 summarizes our findings. Stronger relationships are indicated by wider, darker arrows.

### **Business Technology Strategist Role is Strongly Related Only to the Informational Role**

Our survey findings<sup>15</sup> show that all three traditional IT management roles are related to each other, with the strongest link between the interpersonal and decisional roles (i.e., internal management activities).

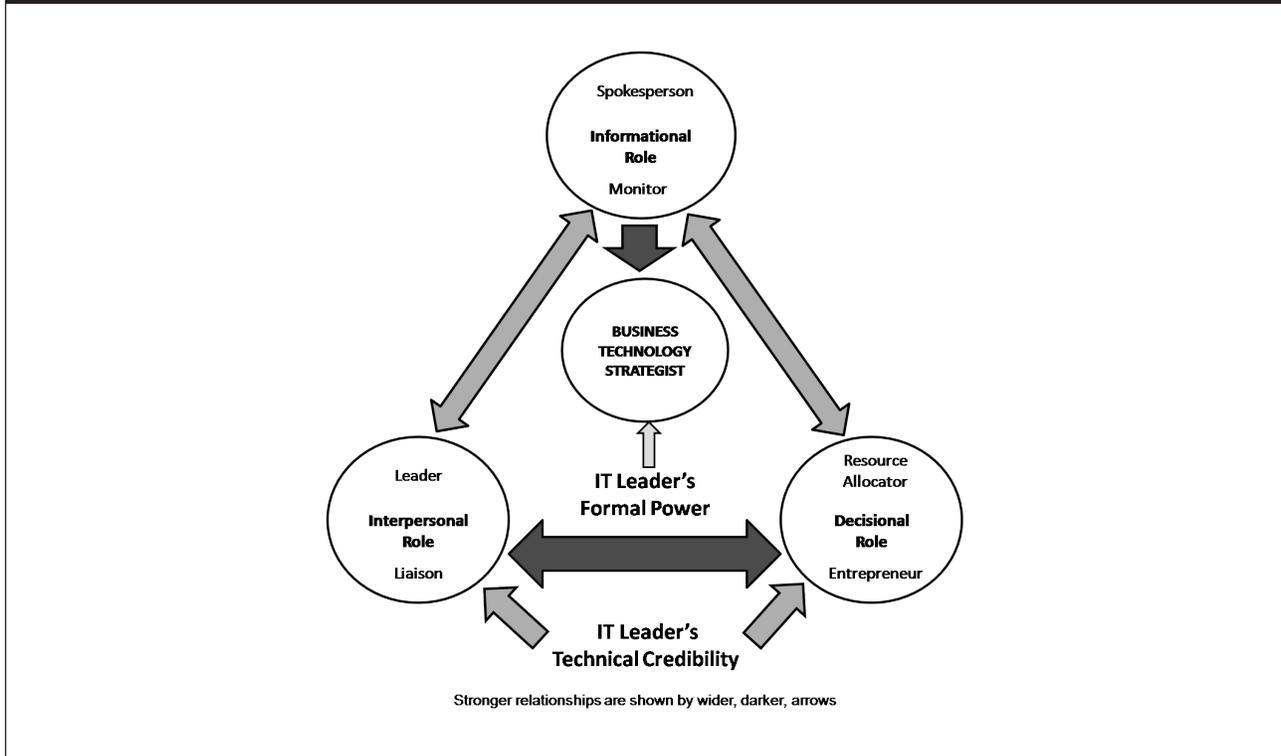
<sup>15</sup> The statistical correlation of the relationships between the various roles and CIO characteristics found in our study are set out in the Appendix.

However, the role of business technology strategist is only strongly associated with the informational role, *not* with the interpersonal and decisional roles. Thus being a business technology strategist is not associated with more traditional IT activities such as leader, liaison, entrepreneur, or resource allocator. These findings support the view that CIOs' participation in strategic action is *not directly* related to their activities in managing the IS function or successfully implementing internal IS projects.

We found positive relationships between the business technology strategist role and participation in both spokesperson and monitor activities. This suggests that business technology strategists scan the external environment for information about technology changes and disseminate their ideas to organizational stakeholders outside the IS function. Additionally, the informational role activities appear to act as a bridge from the business technology strategist role to the interpersonal and decisional roles. For example, external monitoring activities (informational role) are strongly related with liaison activities (interpersonal role). This positive relationship implies that staying attuned to the professional grapevine impacts the CIO's ability to seek and receive relevant information about market changes and trends as well as technology developments, which impact the organization's IS function. In this way, establishing and maintaining a network of professional contacts may indirectly facilitate strategic action.

In addition, entrepreneur activities (decisional role), such as acting as an initiator and designer of change,

Figure 2: Relationships Between CIO Roles, Formal Power, and the IT Leader's Technical Credibility Found in Our Study



are moderately related to the CIO's participation in monitor activities (informational role), such as scanning the external environment for changes in technology and competition and acting as a spokesperson for the IS function (informational role). Allocating human, financial, and material resources (decisional role) was also moderately related to spokesperson activities but not related to monitoring activities. These findings suggest that the CIO's level of communication with people in other departments and, to a lesser degree, the extent to which they seek and receive external information about technology developments, may impact his or her involvement in change initiatives. Networking with people outside the IS function is an enabler of technology strategy. CIOs involved in business change initiatives gain an understanding of the challenges faced by the organization, which, in turn, facilitates the business technology strategist role.

### **Technical Credibility Does Not Facilitate the Business Technology Strategist Role**

The CIO's technical credibility was *not* associated with the business technology strategist role. Thus having a technical education and technical career prior to becoming CIO is not a prerequisite to becoming a

business technology strategist. Our study also found no relationship between technical credibility and the informational role.

However, technical credibility of the CIO was positively related to the other two traditional IT management roles. Specifically, CIOs with stronger technology backgrounds are more likely to participate in internal leader and liaison activities (interpersonal role) as well as to utilize external activities to develop and maintain a personal network of contacts. CIOs with higher levels of technical credibility are also more likely to be directly involved in resource allocator and entrepreneurial change management activities (decisional role). Hence, overall, we found that technical credibility is strongly associated with the management of the internal IS function through the interpersonal and decisional IT management roles but does not facilitate CIO engagement in the business technology strategist role.

### **Business Technology Strategist Role is Facilitated by Formal Power**

CIOs with higher levels of formal power are more likely to participate in strategic activities—and are therefore better positioned to become business technology strategists—than IT leaders not reporting

to the CEO. The lower a CIO's position in the organizational hierarchy, the less likely that he or she is playing the role of business technology strategist. Position is a key enabler of a CIO's ability to embed and align IT with business strategy and to design future possibilities for the business through IT. However, based on our sample, we found no significant relationship between formal power and a CIO's performance in the three traditional IT management roles.

We conclude from this study that the execution of the role of business technology strategist is related to formal power and, as anticipated, to a CIO's ability to absorb and disseminate relevant information. In contrast, the performance of the two internal IT management roles is related to a CIO's level of technical credibility. In summary, formal power and informational roles, rather than technical credibility, interpersonal and decisional roles, facilitate active participation in a business technology strategist role.

## **INFLUENCE OF TECHNICAL CREDIBILITY AND FORMAL POWER ON BUSINESS TECHNOLOGY STRATEGIST ROLE**

Increased business expectations of technology have fueled the ongoing debate in the practitioner literature about which roles and responsibilities characterize successful CIOs.<sup>16</sup> At the heart of this debate is the issue of whether a CIO who aspires to be a strategic business leader should take an "outside-in" or an "inside-out" approach to technology strategy.

## **OUTSIDE-IN APPROACH TO TECHNOLOGY STRATEGY**

Those who advocate an outside-in approach argue that the primary CIO role should be focused on defining the organization's place in the digital economy rather than on traditional technology tasks.<sup>17</sup> These writers argue that business knowledge, not technical credibility (i.e., a formal technical education and/or

strong technology background), is essential to identify changes in technology and competition, educate the organization on the strategic role of IT, and convert business opportunities into profitable IT investments.

From this perspective, a high level of technical credibility promotes a technology focus that limits CIOs' ability to act strategically. First, CIOs with a strong technology background may overemphasize traditional tasks of managing IT resources and overseeing internal IT projects, at the expense of developing business relationships. Because of their focus on building internal IT competencies, they may be less successful in identifying technology developments that are relevant to new competitive business opportunities.<sup>18</sup>

Second, technology-focused CIOs are often criticized for using technical language to discuss business problems.<sup>19</sup> Whether this reflects a lack of business knowledge on the part of CIOs or an unwillingness to discuss technology issues using business terms, ineffective communication skills have been cited by others as an obstacle to the strategic use of IT. When CIOs talk about IT in technical terms rather than how IT can be leveraged by the business, they are unable to effectively engage CxOs in conversations about new ways that IT can enable their firms' business strategies.<sup>20</sup>

Third, an emphasis on the management of internal projects that only tangentially contribute to generating revenue makes it difficult to convince top management to provide the resources necessary to implement transformational projects that demonstrate the strategic value of IT.<sup>21</sup>

In summary, the high technical credibility of an IT leader encourages a focus on internal management of the IS function rather than on activities that help CIOs identify business opportunities and convert them into profitable IT investments and is therefore

16 Currier, G. "CIO Blowback," *CIO Insight*, June 3, 2009, available at <http://www.cioinsight.com/c/a/Research/CIO-Blowback-548257/?kc=CIOMINUTE06082009CIO1>.

17 For additional insight into how CIOs see their role evolving, see "IT Management Slideshow: What Tomorrow's CIO Will Have to Do," *CIO Insight*, May 13, 2009, available at <http://www.cioinsight.com/c/a/IT-Management/What-Tomorrows-CIO-Will-Have-to-Do-419113/?kc=CIOMINUTE05132009CIO1>.

18 Orlov, L. "Why Specific Tech Experience Shouldn't Define the CIO Resume," *CIO Magazine*, August 27, 2008, available at [http://www.cio.com/article/446491/Why\\_Specific\\_Tech\\_Experience\\_Shouldn\\_t\\_Define\\_the\\_CIO\\_Resume](http://www.cio.com/article/446491/Why_Specific_Tech_Experience_Shouldn_t_Define_the_CIO_Resume).

19 See, for example, Ward, J. and Peppard, J. "Reconciling the IT/Business Relationship: A troubled marriage in need of guidance," *Journal of Strategic Information Systems* (5:1), 1996, pp. 37-65. Also, more recently, in the practitioner press, "Tips for IT Leaders to improve communications," *CIO Magazine*, December 13, 2010, available at [http://www.cio.com.au/article/370765/tips\\_it\\_leaders\\_improve\\_communications/](http://www.cio.com.au/article/370765/tips_it_leaders_improve_communications/).

20 For more on how CIOs can engage CxOs in "conversations that matter," see El Sawy, O. "Engaging in CIO-CxO 'conversations that matter': An interview with Peter Keen," *MIS Quarterly Executive* (9:1), 2010, pp. 60-64.

21 Orlov, L., op. cit., August 27, 2008.

not associated with becoming a business technology strategist.

### **Inside-Out Approach to Technology Strategy**

In contrast, those who advocate an inside-out approach to technology strategy believe that a technical background is a prerequisite for making strategic decisions about the use of IT.<sup>22</sup> These authors argue that to execute strategy successfully, the CIO must have the technical “know-how” to get the organization’s technology foundation right through effective resource allocation (decisional role) and leading internal IT projects (interpersonal role). In this way, the CIO gains the legitimacy to serve as a link (spokesperson) between the IS function and top management (informational role). From this perspective, the business technology strategist role evolves in response to a maturing IS function, driven in part by an ever-changing technology landscape.<sup>23</sup>

As the IS function matures, CIOs expand their responsibilities to become primarily business technology strategists, while continuing also to perform the three traditional IT management roles. Through involvement in process-change activities, the CIO gains an appreciation of the core business, which can serve as a basis for developing knowledge about market trends, customers, and competitors. This expanded focus facilitates scanning of the external environment for potential technology investments.<sup>24</sup> In this sense, technical credibility acts as an enabler of business technology strategy. Through successfully implementing projects that improve operational efficiencies and transform the firm, CIOs “earn the right” to participate in making firm-level strategic decisions.

### **Reconciling the Outside-In and Inside-Out Approaches**

The opposing views expressed in this debate imply that there is a single, best model for managing the IS function regardless of organizational context—i.e., irrespective of their approach, CIOs should aim to become business technology strategists. In contrast, our findings indicate that there are clusters of CIOs that represent archetypes and that “one shoe does not fit all.”

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22 Ross, J. W. and Feeny, D. F., op. cit., 1999.

23 For example, see Grover, V. et al., op. cit., 1993; and Ross, J. W. and Feeny, D. F., op. cit., 1999.

24 Orlov, L., op. cit., 2008.

Our research therefore reinforces the persistent notion espoused by McFarlan and colleagues that the overarching role of the CIO depends on the degree to which the organization views IT as a strategic enabler. In firms where IT is perceived as more strategic, the IS function will be positioned toward the top of the corporate hierarchy to facilitate corporate planning of IT-based initiatives.<sup>25</sup> When the IS function is perceived to be in a support role, top management need not be heavily involved.

In terms of the CIO roles examined in our study, the views expressed in the debate therefore suggest alternative approaches to cultivating the business technology strategist role. The outside-in approach requires an effective informational role that depends on business and communication skills, while the inside-out approach gives primacy to the interpersonal and decisional roles supported by technical know-how. Table 2 summarizes the relationships between the four roles, formal power, and technical credibility identified by our study and the implications of these relationships for adopting an outside-in versus inside-out approach to technology strategy in organizations with different views of IT as a strategic enabler.

## **GUIDELINES FOR CIOs**

Based on our findings, we present guidelines to characterize how the traditional IT management roles, formal power, and technical credibility can be leveraged by CIOs aspiring to extend their responsibilities to the emerging role of business technology strategist.

### **1. Invest in Developing Internal Business Relationships**

Whether IT plays a strategic or support role in the organization, CIOs need to develop relationships with business colleagues outside the IS department. Business technology strategists invest time in monitoring and spokesperson activities (informational role) by scanning the external environment for technology changes and communicating their significance to the organization’s ability to compete in their industry. Through effectively performing monitoring activities, a CIO serves as an advocate for the strategic role of IT and earns a voice in the top management team’s strategic decision making. When IT is a support function, developing relationships with colleagues outside the IS department is a means to gain an appreciation of the challenges faced by

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25 Ibid.

<b>Table 2: Implications for an Inside-Out versus Outside-In Approach</b>		
	<b>INSIDE-OUT APPROACH</b>	<b>OUTSIDE-IN APPROACH</b>
<b><i>Formal Power and Technology Strategist</i></b>	A low emphasis on strategic IT initiatives suggests a direct report to top management is not required.	High formal power places CIOs in a position to cultivate important business relationships and top management involvement in planning IT-based initiatives.
<b><i>Informational Role and Technology Strategist</i></b>	CIOs are more likely to be internally focused, but developing relationships outside the IS function helps CIOs gain greater appreciation of challenges faced by the business.	CIOs invest time in monitoring the external environment for technology changes and disseminating this information to organizational stakeholders.
<b><i>Decisional Role and Informational Role</i></b>	CIOs with a history of successfully implementing internal projects are more credible advocates on behalf of the IS function.	CIOs who have successfully executed IT change initiatives have more knowledge of the current IT infrastructure, making them better placed to evaluate new technologies and develop long-term IT plans.
<b><i>Interpersonal Role and Informational Role</i></b>	CIOs providing guidance to subordinates on organizational issues to increase IT workers' knowledge of the business.	CIOs attend different types of conferences and social functions to develop a network of external professional relationships.
<b><i>Interpersonal Role and Decisional Role</i></b>	Interpersonal and decisional roles are tightly coupled. Effective management of IT projects requires strong, IS resource management, including human resources.	CIOs draw on external professional relationships for help and guidance in planning and executing IT change initiatives.
<b><i>Technical Credibility and Decisional Role</i></b>	Strong technical knowledge enables CIOs to effectively distribute resources and create realistic project schedules.	CIOs lacking a strong technical background draw on professional relationships as a source of technical knowledge.
<b><i>Technical Credibility and Interpersonal Role</i></b>	A high level of technical credibility enables CIOs to be highly effective at developing and managing IT professionals.	CIOs lacking strong technical backgrounds engage in professional development while, at the same time, cultivating external relationships.

the organization. This knowledge can be leveraged by IT leaders as they help increase their IT workers' familiarity with the firm's business.

## **2. Match the Approach to Shaping IT Strategy to the CIO's Reporting Level**

CIOs who have higher level reporting relationships (more formal power) can develop the business technology strategist role from the "outside-in." These CIOs can more easily cultivate important business relationships and gain access to the information or resources necessary to develop a strategic portfolio of transformational projects and/or shepherd new initiatives past the planning stage. In contrast, CIOs positioned lower in the organization may lack access

to the people or resources necessary to participate in strategic action but can take an "inside-out" approach to use their technical credibility to lay the foundation for becoming a business technology strategist.

CIOs who gain legitimacy with the business through successful internal projects may also be well positioned to ascend to top management positions because a solid IT infrastructure is a prerequisite for realizing the strategic application of IT.<sup>26</sup> There are also "positive halo" effects of a well-run IS function

<sup>26</sup> Ross, J. W. and Feeny, D. F., op. cit., 1999.

that builds on the technical credibility of not only the CIO but also their teams.<sup>27</sup>

### **3. Recognize That Some Organizations Do Not Need Business Technology Strategists**

Even though this article focuses on the emerging business technology strategist role, we need to re-emphasize that this role may not be needed by all organizations. In organizations that lack a mature IS function, senior IT leaders might better invest effort in developing a stronger IT architecture that is capable of delivering on promises such as timely information provision or improved reliability of service delivery. In others, the CIO may find it necessary to disengage from strategic action when it becomes inconsistent with the firm's present trajectory. For example, when a top management team is in transition, it might be better for the CIO to focus on improving the operational efficiency of IT and project execution rather than investing in new strategic initiatives.<sup>28</sup> Leidner and Mackay (2007) suggest that successful CIOs develop multiple skill sets and adapt their approach as necessary to provide value to the organization.<sup>29</sup> CIOs need to develop a deep understanding of their firms to know when to focus on different roles that align with their organization's specific IT needs at a given point in time.

## **CONCLUSION**

This study provides insights into multiple CIO roles. The emerging role of business technology strategist is facilitated by the CIO's formal power and the ability to absorb and disseminate relevant information. Firms seeking to use technology as a tool to create competitive advantage need CIOs who approach technology strategy from the outside-in. To be effective in these firms, CIOs require a strong orientation toward information activities and a high level of influence within the firm. Accordingly, to become business technology strategists, CIOs must have a high formal position of power. In contrast, technical credibility is related to the performance of traditional internal IT management roles—which

include activities such as managing resources, evaluating subordinates, and overseeing IT projects. Firms that place less strategic importance on IT need CIOs with high technical credibility to be an effective head of the internal IS function.

We also found continuing evidence that IT leaders adapt their roles to align with the overall orientation of the firm toward the IT function. Not every organization needs a business technology strategist. Successful CIOs develop a deep understanding of their organizations so they can best employ the multiple roles we have identified to align with their organizations' specific IT leadership needs. Without this understanding, CIOs may not gain the tacit knowledge necessary to know *when and how* to employ different CIO roles and skills to enhance the firm's performance.

## **APPENDIX: WHAT WE ASKED THE CIOs**

This study is based on a larger investigation of CIO roles. A request to participate in both studies was initially sent to executives selected from the *Directory of Top Computer Executives* employed by organizations listed on the Forbes 1000, Forbes 500 Private, Forbes 500 Public, InformationWeek 500, and governmental agencies. The 45 C-level IS executives who participated in this study were from a diverse set of industries (31% in Manufacturing, 16% in Finance/Insurance, 15% in Retail/Wholesale, 13% in Technology, and the remainder in Healthcare, Utility, Government, and Education). The majority (almost 90%) held the formal title of Chief Information Officer or Vice President.

Data was collected via a survey in which respondents were asked to rate statements relating to the business technology strategist role and three traditional IT management roles on a seven-point Likert scale (1 = strongly disagree; 7 = strongly agree). They also rated both their technical education and technical careers on a seven-point Likert scale (1 = non-technical; 7 = highly technical), and these ratings were aggregated to measure what we labeled as their personal technical credibility. Formal power of the respondents was assessed according to the number of reporting levels below the CEO. The tables below show the specific items and the statistical analyses of the responses.

27 We thank an anonymous reviewer for pointing out that technical credibility may result from either the CIO or the IS team. We believe it is a reasonable extrapolation about how the IS function works in many firms.

28 Feeny, D. "The Five-year Learning of Ten IT Directors," in Willcocks, L., Feeny, D., and Islei, G. (eds.) *Managing IT as a Strategic Resource*, 1997, McGraw-Hill.

29 Leidner, D. E. and Mackay, J. M. "How Incoming CIOs Transition into Their Jobs," *MIS Quarterly Executive* (6:1), 2007, pp. 17-28.

Items Used to Measure CIO Perceptions of the Roles/Activities They Perform			
Role/Activity	Statement (rated on a 1-7 Likert scale)	Mean	Std. Dev.
<b>Business Technology Strategist</b>	<ul style="list-style-type: none"> <li>• Designing future possibilities for the business.</li> <li>• Embedding IT into business strategy.</li> <li>• Defining the company's place in the digital economy.</li> <li>• Helping align business and IT strategies.</li> </ul>	6.106	0.775
<b>Informational Role: Spokesperson</b>	<ul style="list-style-type: none"> <li>• Presiding at meetings as a representative of your department.</li> <li>• Informing others of your department's future plans.</li> <li>• Keeping other people informed about your department's activities.</li> </ul>	6.091	0.701
<b>Informational Role: Monitor</b>	<ul style="list-style-type: none"> <li>• Keeping up with market changes and trends that impact your department.</li> <li>• Keeping up with information on the progress of operations in the company.</li> <li>• Keeping up with technological development related to your work.</li> <li>• Gathering information about customers and competition.</li> <li>• Touring facilities for observational purposes.</li> <li>• Learning about new ideas originating outside your department.</li> </ul>	5.222	0.942
<b>Interpersonal Role: Leader</b>	<ul style="list-style-type: none"> <li>• Evaluating quality of subordinates' job performance</li> <li>• Integrating subordinates' goals with the company's work requirements</li> <li>• Resolving conflicts between subordinates</li> <li>• Seeing that subordinates are alert to problems that need attention.</li> <li>• Using your authority to ensure that your subordinates accomplish tasks.</li> <li>• Maintaining supervision over changes in your department</li> <li>• Providing guidance to your subordinates on organizational issues</li> <li>• Directing the work of your subordinates</li> <li>• Forwarding the important information to your subordinates</li> </ul>	5.393	0.793
<b>Interpersonal Role: Liaison</b>	<ul style="list-style-type: none"> <li>• Maintaining your personal network of contacts.</li> <li>• Attending social functions that allow you to keep up your contacts.</li> <li>• Attending conferences or meetings to maintain your contacts.</li> <li>• Staying attuned to the grapevine.</li> <li>• Developing new contacts by answering requests for information.</li> <li>• Developing contacts with important people outside your department.</li> </ul>	4.548	1.020
<b>Decisional Role: Resource Allocator</b>	<ul style="list-style-type: none"> <li>• Distributing budgeted resources.</li> <li>• Making decisions about time parameters for upcoming projects.</li> <li>• Preventing the loss of resources valued by your department.</li> <li>• Allocating money within your unit.</li> <li>• Deciding for which programs to provide resources.</li> <li>• Allocating equipment or resources.</li> </ul>	5.115	1.069
<b>Decisional Role: Entrepreneur</b>	<ul style="list-style-type: none"> <li>• Planning and implementing change.</li> <li>• Initiating controlled change in your unit.</li> <li>• Solving problems by instituting needed change in your department.</li> </ul>	5.856	1.020
<b>Technical Credibility</b>	<ul style="list-style-type: none"> <li>• Technical Education</li> <li>• Technical Career</li> </ul>	4.52	1.190
<b>Formal Power</b>	<ul style="list-style-type: none"> <li>• Levels below CEO</li> </ul>	1.48	0.628

Statistical Significance of Relationships Between CIO Roles, Technical Credibility, and Formal Power									
	<i>Business Technology Strategist</i>	<i>Interpersonal</i>		<i>Decisional</i>		<i>Informational</i>		<i>Technical Credibility</i>	<i>Formal Power</i>
		Leader	Liaison	Entrepreneur	Resource Allocator	Monitor	Spokesperson		
<b>Bus. Tech. Strategist</b>	1.000								
<b>Leader</b>	0.018	1.000							
<b>Liaison</b>	0.211	0.467**	1.000						
<b>Entrepreneur</b>	0.144	0.708**	0.358*	1.000					
<b>Resource Allocator</b>	-0.025	0.731**	0.399**	0.651**	1.000				
<b>Monitor</b>	0.522**	0.418**	0.547**	0.396**	0.371*	1.000			
<b>Spokesperson</b>	0.299*	0.309*	0.343*	0.320*	0.276	0.410**	1.000		
<b>Technical Credibility</b>	-0.065	0.393**	0.427**	0.423**	0.462**	0.144	0.053	1.000	
<b>Formal Power</b>	-0.376*	0.195	0.256	0.147	0.212	0.041	0.216	0.250	1.000

\*\*Correlation is significant at the 0.01 level (2-tailed). \*Correlation is significant at the 0.05 level (2-tailed).

## ABOUT THE AUTHORS

### Michelle Carter

Michelle Carter (mscarte@clermson.edu) is a Ph.D. candidate in management, majoring in information systems, at Clemson University, Clemson, SC. She also holds an M.S. in Management Information Systems from Georgia State University and an M.Sc. in Computer Science from Anglia Polytechnic University. Her research focuses on how interaction with information technologies shapes individuals' personal, role, and social identities, and on consumer behavior and decision making in online e-commerce environments. Her research has appeared in the proceedings of various IS conferences and workshops.

### Varun Grover

Varun Grover (vgrover@clermson.edu) is the William S. Lee (Duke Energy) Distinguished Professor of Information Systems at Clemson University. He has published extensively in the information systems field, with over 200 publications in major refereed journals. A recent article ranked him as third among the top 200 most influential IS researchers, based on the citation impact of his work. He is Senior Editor (Emeritus) for *MIS Quarterly*, the *Journal of the AIS*, and *Database*, and is a Fellow of the Association for Information Systems (AIS).

### Jason Bennett Thatcher

Jason Thatcher (jthatch@clermson.edu) is an Associate Professor in the College of Business and Behavioral Sciences at Clemson University. He received his Ph.D. in Management Information Systems from the College of Business at Florida State University. His work has appeared in *MIS Quarterly*, *Journal of Management Information Systems*, *Journal of Applied Psychology*, and *Organizational Behavior and Human Decision Processes*.

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