CLARIFYING THE AMBIGUOUS ROLE OF THE CIO\(^1\)

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Executive Summary

The role of chief information officer (CIO) is riddled with ambiguity. To better understand the role, together with the causes and consequences of the ambiguity, we conducted interviews with CIOs, CxOs, recruiters and industry analysts. Our findings indicate that the ambiguity is rooted in the fact that there are five distinct CIO roles: Utility IT Director, Evangelist CIO, Innovator CIO, Facilitator CIO and Agility IT Director/CIO. The appropriate role for a particular organization at a point in time is determined by the criticality of information and technology for competitive differentiation and the maturity of its information leadership capabilities. Both are strongly influenced by the digital literacy of the CxO team. Moreover, our research suggests that in some organizations the CIO roles follow a clear evolutionary path as some responsibilities that CIOs have assumed migrate away from the CIO and become embedded in CxO roles. We highlight the implications of this shift, and provide specific recommendations for CIOs, CEOs, and CxOs as they seek to clarify the role of CIO so that they can optimize the value they generate from IT investments.
THE AMBIGUOUS ROLE OF THE CIO

The role of the chief information officer (CIO) has received significant attention from researchers and practitioners over the last 30 years.² Although much has been written on this topic, an unambiguous description has yet to emerge. Indeed, what is apparent from all the words that have been written is that the role of the CIO is an ambiguous one.

The genesis of all this attention lies in the perennial problems that most organizations experience with their IT investments and the questionable return they believe they are achieving. Generally, the CIO is held responsible for these disappointments and in the 1990s CIOs were reported to have a shorter tenure compared to other CxO roles.³ While some CIOs may not be a good match for their job, a central factor contributing to the lack of success from IT is the confusion about what a CIO is expected to achieve.

To explore the ambiguity that appears to surround the role, we carried out research to examine the causes, identify the consequences and extrapolate how the CIO role might continue to evolve. We interviewed a mix of CIOs, CxOs, recruiters and industry analysts (see the Appendix for an overview of our study). In these interviews we explored their views, not just of their expectations and understanding of the nature of the CIO role but also the issues they encountered. CIOs spoke candidly to us about some of the challenges they face. CxOs talked about their expectations and disappointments and the resulting frustrations they have experienced in getting value

² For academic studies exploring the changing nature of the CIO role published in the 1980s and early 1990s, see the list of selected further readings at the end of this article.
from IT. Analysts focused on the critically of information and technology exploitation in enhancing the value of organizations and the potential role that CIOs can play. Recruiters talked about their experiences in working with boards and leadership teams during a search for a CIO. From our analysis of these interviews, we concluded that there are different demands placed on different CIOs. This led us to identify five distinct CIO roles. Our analysis has implications not just for CIOs but also for CEOs and the wider executive leadership team of an organization.

TRACING THE EVOLUTION OF THE CIO ROLE

The genesis of the CIO role—and the coining of the “chief information officer” label—can be traced to a shift from IT having a supporting role in organizations, automating previously manual tasks, to being a driver of competitive advantage, strategic change and innovation. This shift demanded considerably more than just a focus on deploying and managing IT, which was the role of the CIO’s predecessors. The new role required business-driven approaches to exploiting information and IT. Increasingly, information was recognized as a critical resource that required active management, stewardship and oversight from a senior management perspective. The newly created position of CIO emphasized information over technology, enterprise over function and strategy over operations. Incumbents were still responsible for

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4 Applegate and Elam (1992) suggest that the rise of the CIO marked the transition from the data processing era to the information era (see Further Reading list at the end of this article). See also. Porter, M. E. and Miller, V. “How information gives you a competitive advantage,” Harvard Business Review, July-August 1985, pp. 149-160.

5 William Synott is generally credited with coining the label “chief information officer” in a speech at the 1980 Information Management Exposition and Conference. Synott predicted that “The manager of information systems in the 1980s has to be Superhuman—retaining his technology cape, but doffing the technical suit for a business suit and becoming one of the chief executives of the firm. The job of chief information officer (CIO)—equal in rank to chief executive and chief financial officer—does not exist today, but the CIO will identify, collect and manage information as a resource, set corporate information policy and affect all office and distributed systems.” In 1986, Business Week ran a story announcing the arrival of the CIO; see Bock, G., Carpenter, K. and Davis, J. E “Management’s newest star: meet the chief information officer,” Business Week, 2968, October, 1986, pp. 160-172.
technology, but the role had expanded. In addition to the operational dimensions, the position had a key requirement to provoke executive level discussions across the organization relating to how information and technology could be leveraged, particularly in the pursuit of competitive advantage.

In the quest for executive engagement in information and technology decisions, organizations began to make the distinction between demand and supply. 6 “Demand management” was promoted as a business-led activity concerned with identifying the information required to both shape and deliver the business strategy as well as prioritizing IT spend. The supply side was concerned with satisfying these requirements through the sourcing and deployment of IT. While demand would be determined by business executives working closely with their CIOs, or achieved by establishing a demand organization containing relationship and ‘hybrid’ managers, 7 efficient and effective technology supply was the responsibility of the CIO.

Despite the opportunity this shift provided for CIOs to increase their impact in the “C-suite,” many have struggled. While clearly some may not be up to the job, the lack of impact can be attributed to the polarized views of CxOs about the role of technology in organizations. 8 At one extreme is the belief that IT is an administrative expense and a cost to be minimized while at the other are CxOs who believe that IT offers

6 Mark and Rau have suggested that companies can get more productivity from their IT by dividing IT into demand and supply organizations. See Mark, D. and Rau, D. “Splitting demand from supply in IT,” McKinsey on IT, Fall 2006, pp. 22-19. See also Roberts, R., Sarrazin, H. and Sikes, J. “Reshaping IT management for turbulent times,” McKinsey Quarterly, December 2010.
7 The term “hybrid manager” was first coined by Peter Keen in 1988 and the concept was defined by Michael Earl as “people with strong technical skills and adequate business knowledge, or visa versa … hybrids are people with technical skills able to work in user areas doing a line or functional job, but adept at developing and supplementing IT application ideas.” See: Keen, P. G. “Rebuilding the Human Resources of IS,” in Earl, M. J. Information Management: The Strategic Dimension, Oxford University Press, 1988; and Earl, M. J. Management Strategies for Information Technology, Prentice-Hall, 1989.
significant strategic opportunities. This fundamental dichotomy is at the heart of the different perceptions of the CIO’s role, job tasks, reporting relationships and what he or she is expected to achieve. It also determines the level of engagement and involvement of CxOs in what might traditionally have been considered as IT issues and decisions. Indeed, one study has identified the IT decisions that IT people should not make.\(^9\) But even in situations where CxOs subscribe to a more strategic view for IT they often do not understand what their role is and the wider responsibilities of “the business” in optimizing value from IT spend. This lack of understanding has been attributed to poor levels of “digital literacy” of CxOs.\(^10\)

Most of the contemporary research exploring the CIO role falls into two streams:

- Advocating that CIOs take a stronger and more proactive leadership role in their organizations.
- Exploring the personal competencies of successful CIOs.

The first stream promotes the need for CIOs to expand their responsibilities beyond merely “keeping the lights on” to having a more strategic role driving business transformation, innovating for competitive advantage and acting as key strategic partners to the CEO and wider organization.\(^11\)

Studies in the second stream explore the competencies, personal attributes and characteristics that are required for success, with leadership, influencing, relationship


architect, diplomat etc. promoted as crucial competencies.\textsuperscript{12} Personal attributes identified for success in the CIO role include communication skills, business acumen, people skills, openness and conscientiousness.\textsuperscript{13} Like the findings from earlier studies, contemporary research in this second stream envisions the CIO to be more a business expert than a technical expert. It has also identified CIO leadership profiles (mapping “CIO authority” against “leadership capability”). However, the concept of CIO leadership capability has not been well developed.\textsuperscript{14}

While interesting, much of the research in the second stream has added little to help organization as they seek to capitalize on IT. For example, earlier research sought to discover the different competencies of CIOs (although, confusingly, the term “roles” is used in some studies). These studies assumed that if incumbent CIOs possessed these competencies, they would be successful. But aren’t these competencies generic and required by all senior executives? We would strongly argue that all members of the C-suite should be business leaders, strategic thinkers and driving change and innovation.

**UNDE RSTANDING THE CAUSES OF CIO ROLE AMBIGUIT Y**

The original definition of a CIO is “a senior executive responsible for establishing corporate information policy, standards and management control over all corporate


\textsuperscript{13} According to some researcher, CIO characteristics explain a large proportion of the variance in organizations’ innovative use of IT. See Li, Y., Tan, C.-H., Teo, H. H. and Tan, B. C. “Innovative Usage of Information Technology in Singapore Organizations: Do CIO Characteristics Make a Difference?,” *IEEE Transactions on Engineering Management* (53:2), 2006, pp. 177-190.

information resources.”¹⁵ While this definition might have been precise and appropriate 30 years ago, since then IT has become all-pervasive and businesses have become ever-more dependent on IT. As a consequence, CIO responsibilities have diversified to such an extent that differing organizations now have different authority profiles and positioning in the organization for their CIOs—at least for those whose job title is “CIO.” Over the past 30 years, CIOs have assumed increasing responsibilities—sometimes reluctantly and with a realization that many of these responsibilities best lie outside of the IT organization. But, as described later in this article, some of these responsibilities are becoming increasingly embedded in CxO roles.

Additionally, there is some confusion about what exactly is a CIO. Our interviews identified four key reasons for this confusion.

**Unclear Distinction Between Corporate and Business Unit CIOs**

The first is an unclear distinction between a corporate CIO and a business unit or line-of-business CIO. While both may be labeled “CIO,” each plays a different role. A business unit CIO primarily has responsibility for aligning the IT investment portfolio with the business unit’s strategy. A corporate CIO, on the other hand, is responsible for seeking (IT) supply synergies across the corporation and defining corporate standards and policies to ensure consistency across the technology infrastructure of the group.

A partner in one of the “Big 5” management consultancy firms succinctly captured the challenge posed by an unclear distinction between these two types of CIO:

“... the CIO role is often [defined] at group level with operational IT departments at the operating company level. In these situations it’s quite often the case that the group CIO is somewhat powerless because budgets are controlled by the operating companies. Whilst the group function may set such things as strategic direction, sourcing policy and preferred supplier, it is often the case that operating companies [with their own CIOs] choose to do their own thing since they control the actual spend. In such situations there’s often very little that the group CIO can do about it.”

As described later in this article, this challenge can be addressed by having an effective IT governance structure.

**Inconsistent Use of IT Director and CIO Titles**

The second reason is the frequently encountered distinction between an IT Director and a CIO. These titles are often used interchangeably, particularly in Europe, and more often than not, used inconsistently. For example, one CIO we interviewed has his job title on his e-mail signature as “IT Director/CIO.” While CIO has become an established position in U.S. corporations, many in Europe still prefer the title of IT Director. A partner from a private equity firm, in an attempt to provide clarity, summarized the difference as:

> “An IT director’s job is normally about keeping the lights on, and has little to do with strategy or growth. By contrast the CIO’s role is about the strategic application of IT and information for value generation.”

The CIO of the world’s leading transport operator, which moves more than 2.5 billion passengers every year, commented:
“What we are seeing is so many people that walk around with that title [CIO] but actually they just aren’t—with no disrespect to them, they are actually IT Directors and they are very good at what they do, but they sure aren’t CIOs.”

This inconsistent use of titles simply adds to the confusion, although the label IT Director might provide a hint as to where the focus and expectation of CxOs lie in organizations with this title—what one interviewee referred to as “small ‘i’ large ‘T’ IT management.”

Mismatch Between Expectations and Performance Metrics

A third reason for the ambiguity is the mismatch between expected responsibilities and expressed performance metrics. Most of our CIO interviewees reported a variance between their roles as they understand them to be and how their performance is assessed. Frequently, CIOs expressed their expected responsibilities in terms of supporting strategy, crafting the business direction with CxO colleagues, identifying disruptive technologies and envisioning new opportunities enabled by IT. Indeed, these CIO responsibilities can be found in the recent prescriptive literature.

However, CIOs in our study also reported that their performance was generally assessed in terms of cost minimization, network availability, project delivery (particularly using “process metrics” such as on-time, budget and meeting specifications) and achieving service levels. This can lead to a situation where the CIO is achieving his or her performance goals, but the organization is still failing to optimize value from IT. This contradiction points to a lack of understanding among CxOs of exactly how IT generates value and what their role is, a point that is explored later in this article.
Outdated View of the CIO Role

The final reason for ambiguity about expectations for the CIO role is the genesis of the role and the historical ‘baggage’ associated with it—many CxOs regard the CIO as being primarily concerned with technology and, in some cases, operational processes. The CIO from a European content and consumer business with over 300 titles and 200 websites and a turnover in excess of £1.5 billion ($2.4 billion) told us:

“One of the main reasons why there are so few CIOs in the U.K. is simply that very few chief executives have met or are even aware of really good ones.”

He went on to explain that, in his experience, most CEOs that he has encountered have an outdated view of the CIO role that is inappropriate for today’s business environment.

FIVE DISTINCT CIO ROLES

The data collected from our interviews revealed that there are also more subtle factors pointing toward different CIO roles and that these can help in understanding the ambiguity surrounding the role. From our analysis we have identified five distinct types of CIO—Utility IT Director, Evangelist CIO, Innovator CIO, Facilitator CIO and Agility IT Director/CIO. The label we have used for each role indicates the “mission” of the role. These five CIO types are characterized by differences in the following five factors, also identified from our data:

1. Scope of the role
2. Those issues cited as critical to success
3. The performance metrics used for assessment
4. The *challenges* cited

5. The *nature of the relationship* with CxO colleagues, in particular the CEO.

Table 1 shows how these factors differ across the five CIO roles.
Table 1: Comparison of the Five CIO Roles

<table>
<thead>
<tr>
<th>Scope of The Role</th>
<th>Utility IT Director</th>
<th>Evangelist CIO</th>
<th>Innovator CIO</th>
<th>Facilitator CIO</th>
<th>Agility IT Director/CIO</th>
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<th>Issues Critical to Success</th>
<th>Utility IT Director</th>
<th>Evangelist CIO</th>
<th>Innovator CIO</th>
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<th>Performance Metrics</th>
<th>Utility IT Director</th>
<th>Evangelist CIO</th>
<th>Innovator CIO</th>
<th>Facilitator CIO</th>
<th>Agility IT Director/CIO</th>
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<tr>
<th>Challenges</th>
<th>Utility IT Director</th>
<th>Evangelist CIO</th>
<th>Innovator CIO</th>
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<tr>
<th>Relationship with CxOs</th>
<th>Utility IT Director</th>
<th>Evangelist CIO</th>
<th>Innovator CIO</th>
<th>Facilitator CIO</th>
<th>Agility IT Director/CIO</th>
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<tr>
<td>Not necessary as most interactions are with operational staff.</td>
<td>Sporadic. Fighting for time with CxOs.</td>
<td>Regular formal and informal meetings. Challenges valued by CxOs.</td>
<td>Trusted partner.</td>
<td>Advisor on policies and risks. Advisor on technical capabilities.</td>
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Utility IT Director

This first category of CIO is not really a CIO in the strictest sense of the term (the Utility IT Director role existed long before the label was coined) but a technology and
operationally focused executive whose primary function is to provide IT infrastructure, systems, data and telecommunications capability. Organizations with Utility IT Directors are most likely not strategically dependent on information, or at least choose not to be; rather, they use IT to support operational processes in an efficient manner. The incumbent typically reports to the CFO, with the emphasis of the role on providing essential IT services at lowest cost. As the director of a global investment bank, focusing on mergers, acquisitions, debt and equity placements, commented:

“I think the most obvious reason why so few companies have a CIO is because many genuinely don’t need one. ... The stereotypical widget maker almost certainly doesn’t need one.”

Evangelist CIO

The Evangelist CIO typically takes on the task of raising the profile of information within the organization, “selling” the idea that information can potentially be leveraged to generate significant business value. Generally, the operational aspects of IT are also included in the Evangelist CIO role. With this role, the CIO seeks to educate his or her peers on the potential for information to be a potent business driver, partly by providing them with exciting visions of the future, and partly by creating pilots to demonstrate this potential. The challenges confronting Evangelist CIOs relate to overcoming business managers’ desire to maintain the status quo and getting them to accept the ability of information and technology to transform existing processes,

\[16\] This role has strong resonance with the “keep-it-running CIO” identified by Leidner and Mackay. 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.
products and business models. This sentiment was captured by a recently appointed CIO of a European business services organization:

“I don’t think they [the senior management team] quite understood what my contribution could be. They didn’t understand the business engagement side of IT and I spent quite a lot of my time selling that.”

Because it is not always clear how and when the competitive use of information will result in a positive return on any investments made, it is important that the senior management team as a whole is open to piloting the organization’s strategic use of IT. Convincing skeptics requires visionary information leadership delivered by an Evangelist CIO. The CIO of a news media organization told us of the challenge he faced when the previous incumbent had been a Utility IT Director and the expectations were that he and IT organization delivered services at the most efficient cost:

“I’ve invested quite a lot of time and effort in rebranding what my team and IT do. I’ve made it my business to demonstrate that IT and technology are about more than just keeping the lights on and making sure print runs go out on time.”

**Innovator CIO**

The *Innovator CIO* identifies and develops opportunities to deploy new IT-enabled processes and products/services that give the organization a clear source of competitive differentiation over its rivals. Information is used proactively as an integral part of strategic growth and innovation. As the CIO of an international engineering business with 40,000 employees noted, Innovator CIOs focus on delivering:
“... new thinking about processes, different ways of doing business, better integration of business processes, better use of technology, better focus on business benefits and outcomes.”

Innovator CIOs also begin to transfer and embed these information capabilities into the organization, rather than trying to enlarge their own empires.

By implication, Innovator CIOs are business leaders capable of managing information assets in a way that means they have the same status as those who manage financial and marketing resources. The CIO of a major financial services organization involved in insurance and banking (both retail and corporate) and employing over 140,000 people commented:

“I worked closely with the CEO, turning his strategic vision into reality, firstly by clarifying and detailing the new [banking] product and then by creating a pilot and subsequently delivering a strategic banking solution that provided the business with undisputed competitive advantage.”

**Facilitator CIO**

The *Facilitator CIO* is responsible for ensuring that information skills and capabilities pervade every part of the organization. Rather than restricting information to a single directorate with a vertical structure, Facilitator CIOs ensure alignment horizontally, with the objective of ensuring that every department, function and division within the organization can define, integrate and exploit information. They ensure that the activities performed by Evangelist and Innovator CIOs are embedded into the organization.
The major challenge faced by Facilitator CIOs is encouraging and enabling intelligent users to focus on demand, rather than on involvement with the intricacies of technology supply. The CIO of a global television business captured this sentiment:

“As soon as you try to concentrate responsibility for all that [information] diversity into a single individual ... you create chaos. My role is to refine and to guide. I listen to what each department wants and I help them achieve it.”

Agility IT Director/CIO

An Agility IT Director/CIO is responsible for the supply of technology and systems to support an organization in which demand is being defined as an everyday occurrence by the business. CxOs will have a deep understanding of the potential strategic and operational role of information and technology, and the opportunities they can provide the business, but need someone who can match their aspirations with advanced knowledge of technology supply. The primary challenge for Agility IT Directors/CIOs is to be at the cutting edge of technology and able to access an extensive ecosystem of technology suppliers.

The essence of this CIO type was eloquently captured by the director of an investment bank when he said:

“... I think the notion of a CIO for an investment bank sounds somewhat absurd, in the sense that information is the beginning, middle and end of what an investment bank does, and therefore everyone is responsible for it.”

The CEO of a telecom company was even more forceful:

“Our view is that IT and information are too important to vest in a single individual—it makes far more sense to make sure that IT and information are
integrated parts of every function within the business. Of course, we will still have an IT department. But the responsibilities that a CIO might normally have—above and beyond keeping IT systems working—are best handled by the members of the management team responsible for marketing, operations, finance and so on.”

The comments from these interviewees suggest that as business executives take ownership for exploiting information and technology—in other words, the IT decisions that IT people should not make—a specialist role is required to underpin this with appropriate technology. The responsibilities of the Agility IT Director/CIO are to ensure the integrity of the infrastructure, maintain—not set—information policies and standards, assure security, privacy and compliance, and manage risk and service quality.

DETERMINING THE APPROPRIATE CIO ROLE FOR AN ORGANIZATION

In addition to using the data to identify and define the five distinct CIO roles, we sought to establish under what organizational contexts each role would be appropriate. Detailed analysis of the interviews suggested that the appropriate CIO role for an organization is determined by two criteria:

- The chosen strategy of the organization and in particular the role that information and technology play in any competitive differentiation.

- The level of information capability within the organization.

Both are strategic choices and fundamentally depend on the digital literacy of the CEO and CxO team.
CIO Success Depends on Senior Management’s Digital Literacy

Our interviewees frequently used phrases like “IT fluency,” “IT savvy,” “IT understanding” and “IT literacy” in relation to the understanding that CxOs have of how information and technology creates value and its role in competitive strategy, and their responsibilities and those of the CIO in the value creation process. As a director at a global investment bank noted,

“I think another enabler [of a CIO’s ability to deliver against expectations] is the level of IT literacy of the rest of the management team. The more the management team understands IT, the more likely it is that the CIO will be able to negotiate expectations in an informed and rational manner, and deliver them.”

One CIO told us of his experiences with his CEO at a previous company:

“The CEO always saw IT as a technological subject and struggled to talk to me about anything to do with the business and where it related to IT.”

While this CIO recognized the potential of IT, the leadership team failed to engage with him, resulting in frustration and his ultimate departure from the company.

Information is unlikely to be integral to shaping strategy and strategy execution if digital literacy among the CxOs is weak.

As digital literacy levels increase, decision-making responsibilities about information and IT migrate away from the CIO and the IT organization. The CIO role becomes one of an orchestrator, ensuring the integrity of the underpinning architecture and infrastructure, coordinating demand, maintaining information policies and standards, and being responsible for compliance, risk and security. The CIO of a global broadcasting business put it like this:
“... information is so fundamentally linked to other aspects of the business that it’s almost meaningless to consider it [the CIO role] as a discrete entity. ... To my mind, the role of the CIO is an artificial construct.”

For example, CIOs tell us that most ideas about potential applications of social computing now come not from IT professionals but from employees, particularly marketing staff. They point out that employees are using these media in their personal lives, understand them (although generally not from a technical perspective) and can recognize the potential opportunities for their organizations. The CIO’s task is to provide enabling technology and ensure that corporate information is protected and secure and that any compliance and privacy issues are adhered to. The CIO at a hospital told us of medical consultants who had come to him with a request for Twitter so that they could “follow” each other and know each others’ whereabouts.

**Understanding When Each Distinct CIO Role is Appropriate**

Figure 2 maps the information leadership capability of an organization against the degree to which information and IT are critical for competitive differentiation in the organization’s industry sector. Where an organization is positioned in this framework at a particular point in time—its state—determines the most appropriate CIO role. Table 2 describes the five states and the distinct CIO role related to each one. While these states are derived from our data, State E characterizes how some of the interviewees see the CIO role evolving towards. Indeed, there was a suggestion that companies like e-Bay, Zip Cars and Amazon may already be there.

For organizations and CIOs alike, understanding where they sit on this framework is likely to be critical—not only because it is important to recognize when the need for a CIO arises, but also what is the appropriate CIO role at any given point.
Our data suggests that the CIO role can follow different trajectories in different organizations. In some, the role will follow an evolutionary path, which typically
begins with a *Utility IT Director* having responsibility primarily for the IT infrastructure, data services and the supply of IT to the organization. This is the origin of the role of the most senior executive responsible for IT and has a strong technical and operational focus. As the importance of information and technology to the organization increases, the need for an *Evangelist CIO* to provoke “demand” arises. Eventually, as the CxO team begins to accept that information and IT can play a significant role in the strategy, an *Innovator CIO* is needed to transfer skills for identifying opportunities for exploiting information and technology to the business. Ultimately, vesting this responsibility in a single department or individual no longer makes sense. As the organization begins to take on ownership for exploiting information a *Facilitator CIO* is needed to develop and maintain these capabilities. By this point, the CIO role begins to resemble that of a successful parent: having put values and capabilities in place, the need for a CIO diminishes. Indeed, at the end of the path where information capabilities become deeply embedded and part of the organizations DNA, there may be no need for a CIO at all. Instead, such organizations need an *Agility IT Director/CIO* responsible for IT supply.

Box 1 describes the trajectories the CIO role took in two organizations that were part of our study.

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**Box 1. How The CIO Roles Changed in Two Organizations**

When presented with Figure 1, the CIO of an international recruitment organization was able to explain the journey his organization had traveled and how the CIO role had changed. When he was recruited, the previous incumbent was a Utility IT Director primarily focused on building and managing the IT infrastructure. However, competitors were exploiting information for competitive differentiation, which was causing concern to the new CEO, who believed the business was beginning to suffer disadvantages and should be focusing more in this area. The newly appointed CIO recognized the situation and adopted the Evangelist CIO role by continually highlighting how competitors were exploiting information and IT, and the potential opportunities his organization was missing. Having created
awareness, he quickly moved to the Innovator CIO role and piloted two strategic solutions to demonstrate the value of information. These demonstrations caused a real stir in the organization, which led to the creation of a culture of “valuing information.”

In contrast, the CEO of a legal education business recognized that it was lagging behind competitors in using information and technology for competitive differentiation and did not believe his organization had the time to externally recruit and embed a CIO. He felt that the incumbent Utility IT Director did not have the ability or organizational credibility to assume the required role. The CEO decided to remove this individual and replaced him with his deputy, who had on many occasions expressed the view that the organization was failing to exploit information and technology. The deputy, having organizational knowledge, credibility and power, quickly assumed the Evangelist and then Innovator CIO roles.

While the five CIO roles are distinct, one CIO we presented the research findings to reflected that he played different roles as he interacted with the three main areas of activity of his organization, a global pharmaceutical company. He referred to this as a “change in style” as he dealt with the different leadership teams. Upstream, in Discovery, scientists today spend less time at “the bench” and more time analyzing data to identify potentially interesting compounds. They tend to keep abreast of new technologies, particularly developments in analytics, and he felt that they themselves were actively seeking opportunities to use IT to analyze their data. When interacting with the scientists, this CIO saw his role as a Facilitator CIO and he characterized his relationship as that of a trusted partner. At the company’s manufacturing operations he was an Innovator CIO, bringing ideas from his team on to how information and technology might be used, and raising the profile of the IT organization. Downstream, with the sales organization, he saw his role as an Evangelist CIO. In this part of the business, he found it challenging at times to even secure “face time” with key people to discuss information and IT and what it could potentially do for their business areas. With staff having poor digital literacy, much of his time was spent on trying to engage with them. In response, he established a “demand organization” to work closely with
the downstream businesses to understand requirements as well as educate users and executives about the potential of information and technology.

**IMPLICATIONS OF OUR RESEARCH FOR UNDERSTANDING THE CIO ROLE**

**Implications of Role Ambiguity**

Ambiguity in the CIO role arises when the norms for a specific position are vague, unclear and ill-defined. Ambiguity denotes uncertainty about the expectations, behaviors and consequences associated with a particular role. Specifically, incumbents have a need to know others’ expectations of the rights, duties and responsibilities of the role, the behaviors that will lead to fulfillment of these expectations, and the likely consequences of these role behaviors. Role ambiguity results when these three types of information are non-existent or inadequately communicated. Role ambiguity may also be caused by organizational factors (e.g., rapidly changing organizational structures, job feedback systems) and individual factors (e.g., information processing biases).

Consequences of role ambiguity can include tension, job dissatisfaction and turnover. Research indicates that role ambiguity is positively correlated with both anxiety and propensity to leave (the role) and negatively correlated with several factors such as organizational commitment, employee involvement and job satisfaction.¹⁷

Our examination of the CIO role reveals that significant ambiguity exists. We believe that this is the key reason why many organizations continue to struggle with their IT

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investments. The implication of CIO role ambiguity is that strategic and operational opportunities provided by IT can be missed and any investments made in IT underperform. At worst, this ambiguity can place the very existence of the organization in jeopardy.

Most of the CIOs we interviewed do have clear ideas about what their roles should encompass, what their contribution can be and how value from IT can be optimized. Where this corresponds with the expectations and understanding of their CEO and CxO colleagues, there is role alignment. The frustration for CIOs occurs when ambiguity in the role results in misalignment between expectations of how they can contribute and expectations of what the role of their business colleagues should be. Ultimately, generating business value from IT is a shared responsibility; it cannot be delegated solely to the CIO.

One source of CIO role ambiguity is the low level of digital literacy among CxOs and top management teams. Until the level of digital literacy improves, there will be a constant battle between CIOs and their CxO colleagues about role definition and expectations. One interviewee cautioned:

“Companies need to know how to use a CIO—what outputs they should expect, what contribution to the bottom line and so on. You can illustrate this problem quite clearly by thinking about a listed company doing an analyst or investor meeting. Generally speaking, the CEO will know how to direct questions to the CFO, the CMO and so on. But I don’t think the same would be true with regard to the CIO—because I don’t think enough CEOs really understand what the CIO contributes, in theory and in practice.”
Maybe the lack of role clarity in organizations when recruiting a CIO explains the following comment by an executive recruiter in a boutique CIO search company when she emphasized that: “Most leadership teams [that she has dealt with] do not know what good is!” She went on to explain that their expectations for a new hire are typically framed by their experiences of the previous incumbent and generally have a technology bias rather than seeking a business-savvy CIO.

Some CIO Responsibilities Will Migrate to Business Executives

There is also strong evidence from our data that in many organizations the CIO roles may also be transitory. The current roles have been devised to accommodate the environment that CIOs encounter and will thus continue to evolve. Our analysis suggests that, as CxOs’ digital literacy increases, responsibilities that CIOs assumed when CxOs did not take ownership, will migrate to CxOs. As this happens the CIO role reverts somewhat to the original “technical” view of the role, albeit with additional responsibilities for ensuring the integrity and agility of the infrastructure.

The impending need to migrate some more recent responsibilities of CIOs to other executives was perhaps best captured by the CEO of a European telecom company:

“Maybe what companies should really be focusing on is not the creation of a CIO role, but the infusion of IT and information through every role, and every aspect of the business. ... And I think as time passes, senior managers will come under pressure to become more IT-literate. I think we’ll see IT elements find their way into a wide range of job descriptions and managers’ targets and objectives. Companies will increasingly recognize that IT has to be an integrated part of many, if not all, senior management roles. It won’t be acceptable to have a situation in which the CEO, CFO or any other manager does not understand the
Evolved CIO Role Needs Effective IT Governance

The recent interest in IT governance is a reflection of the evolution of the CIO role. As more and more of the responsibilities that CIOs have assumed over the years move to business colleagues, organizations must ensure there is coherence across a distributed decision-making environment. This is where an effective IT governance structure comes into play, because it defines where responsibilities lie, how coordination across businesses and functions is achieved, and how oversight is provided.\textsuperscript{18} Unfortunately, most IT governance initiatives (and IT governance frameworks) focus on the IT organization’s governance of IT, not on the business’s governance of IT. When we were discussing our research findings with the CIO of an Australian State, he told us that he had recently implemented an IT governance structure and had told his colleagues “if it works, I will be out of a job!” He did acknowledge, however, that he would still have responsibility for IT supply (i.e., he would become an Agility IT Director/CIO).

RECOMMENDATIONS FOR BOARDS, CXOS AND CIOS

Based on our research findings, we provide five recommendations for boards, CxOs and CIOs as they seek to clarify the role of CIO so they can optimize the value of information and IT.

\textsuperscript{18} For more on IT governance, see Weill, P. “Don’t Just Lead, Govern: How Top-Performing Firms Govern IT,” \textit{MIS Quarterly Executive} (3:1), 2004, pp. 1-17.
1. Create a Clear, Unambiguous Statement of the CIO Role

Organizations must ensure there is alignment of CIO role requirements and expectations across the C-Suite to eliminate any ambiguity that might adversely affect performance. Any misalignment can result in dissatisfaction and underperformance.

Boards and CEOs must recognize that optimizing the value of IT is not just about the caliber of the person hired as CIO. Simply hiring a CIO and making him or her part of the senior management team is by no means the solution for better exploitation of information and IT. Even assuming a candidate with the appropriate competencies and experience is available, there are many structural and procedural changes that must also be addressed. Critically, interfaces between the IT organization and other areas of the business must be clearly agreed and articulated, reporting relationships must be formally established, an appropriate governance structure should be designed and implemented, and relevant performance metrics defined. In short, appointing a new CIO is but one step in a much broader process that starts with a clear examination of the intended role of information and technology in the business strategy and the required information leadership capabilities, and ends with a clear, unambiguous statement of the CIO role.

2. Ensure CIO Role Matches CxO and CIO Expectations

The framework in Figure 1 can aid CIOs and CxOs both in understanding the requirements of the role in a particular organization and in highlighting areas where potential ambiguity might arise. For example, a CIO might recognize that information and technology offer opportunities for competitive differentiation, but that the organization’s information leadership capability is not sufficiently mature. In this situation, the organization risks suffering from competitive disadvantages as the CIO
struggles to get the level of engagement and involvement that are necessary for IT-enabled strategies to be conceived and realized. In other organizations, the CxO team might identify the need for a CIO role with a more strategic outlook, but conclude that the current IT leader may not be the right person to assume the new role.

3. CIOs Should Align Expectations With Organizational Requirements

CIOs can use the framework in Figure 1 to align role requirements and their own expectations for the role with those of other members of the C-suite. Carrying out this exercise might, for example, highlight why a CIO is frustrated and struggling to get executive engagement. Newly appointed CIOs should ensure that their expectations and understanding of the role align with those of the CxO team they will be working with.

4. Incumbent CIOs Should Actively Manage Role Evolution

Depending on how the current CIO role and its positioning is assessed, incumbents can take actions to evolve their role to a more strategic one, as described in Table 2. They must recognize, however, that they need to take the CxO team with them on this journey.

5. Some CxO Teams Need to Improve Their Digital Literacy Levels

Our research revealed that many CIOs, recruiters and analysts, as well as several CxOs, believe that low levels of digital literacy among top teams is restricting their organization’s potential for exploiting IT. A low level of digital literacy maturity of some top teams compromises the potential contribution that IT can make to corporate performance.
CONCLUDING REMARKS

For some time to come, the pace of change in the information and technology world will likely be far greater than the pace of change for many other aspects of the business. The CIO will play a crucial role in helping to align to the organization’s information and technology vision with the clock speed set by the digital world and to develop the necessary information leadership capabilities. For some organizations the ultimate objective may be to create an environment in which information is so intimately and fundamentally bound to every aspect of the business and the actions of every manager that diminishes the reliance on a CIO incumbent.

CEOs and CxOs are just as responsible for the successful deployment and exploitation of information as they are for any other business resource. Although they do not need to become technology experts, they must become consummate professionals in their understanding of the information leadership role required by their organization. They need to understand what type of CIO is appropriate at a particular point in the organization’s journey and create an unambiguous statement of the role and requirements. Equally, they must be able to recognize when a new type of CIO role is required. Our research suggests that as the CIO role in a given organization evolves over time, it will ultimately diminish as information and technology decision-making responsibilities migrate to CEOs and CxOs.

FURTHER EARLY RESEARCH ON THE EVOLVING CIO ROLE (1981-1996)


Benjamin, R. I., Dickson, C. and Rockart, J. “Changing Role of the Corporate Information Systems Officer,” *MIS Quarterly* (9:3), 1985, pp. 177-188.


**APPENDIX: RESEARCH METHODS**

To explore the CIO role in detail, we conducted 42 interviews with both current and former CIOs (26), CxOs (12), recruiters (2) and industry analysts and commentators (2). Interviewees were employed by large complex organizations covering a range of industries. While some had global responsibilities, they were all based in Europe. The interviews were semi-structured and, although an initial set of questions was developed from prior research, interviewees were given considerable latitude over what they wanted to say and how they said it. Through a “snowballing” data
collection approach, the interview questions in later interviews evolved in response to
the content of earlier interviews.

Occasionally, further probing of interviewees, often via e-mail or an additional
interview, was necessary to seek clarification and elaboration on points made during
the initial interview. All the interviews, with the exception of two, were recorded and
subsequently transcribed. Our initial findings were also presented to CIOs, both
individually and in focus groups. This was to ensure validity, but also to add
additional richness to our data.

The themes explored during the interviews, together with questions posed, were as
follows:

**Degree of Clarity of the CIO Role.** What is a CIO? What role does a CIO perform in
an organization? What expectations do you/does the CEO/CxO have of you and your
role?

**Understanding the Need for a CIO.** Do you think a CIO can make a material
contribution to a company’s performance? What factors affect the need—real or
perceived—for a CIO in any given company?

**Performance of the CIO.** Why do you think some CIOs struggle in their role? What
are the factors that make your (CIO) job easier to do? What factors contribute to the
success of a CIO? What are the challenges you face in your role? Do you think the
absence of a CIO in the senior management group can have an impact on
organizational performance?

**A CIO’s Ability to Deliver Against Senior Management Expectations.** What are
the criteria that members of the leadership team use to evaluate you/CIO
performance? What are the enablers (e.g. regular review meetings) that help you/a
CIO to deliver the expectations? What are the barriers (e.g. politics) that prevent you/a
CIO delivering on these expectations? Why do you think these barriers exist? Do you
have difficulties in delivering the expectations of the role? What is contributing to
these difficulties? What are you doing to overcome these difficulties? What would
most assist you in delivering on the expectation of the role? Do you find that there is a
stereotypical image of a CIO? What is the impact of the stereotype?

The Evolution of the CIO Role. Do you think that the CIO role will change in the
future? In the longer term, do you think the role will exist? Why? What are the two or
three biggest changes you expect to see with the CIO role as it evolves in the future?
Will any scope change cause a consequential change in the skills/competencies
required for the role?

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