Unlocking the Performance of the Chief Information Officer (CIO)

Joe Peppard

Over the last decade, the position of the chief information officer (CIO) has moved center stage, but this has not always been for the right reasons. The turn of the century saw both the Y2K problem and the dot-com boom and bust, highlighting the vulnerability of organizations to both legacy technologies as well as the enviable hype that has always accompanied new information technology (IT). IT projects are continually dogged by high failure rates.[1] Infrastructure complexity has affected the agility of many organizations to respond to changes in the competitive environment.[2] IT outsourcing has had mixed results[3] with some companies choosing to bring IT back in house very soon after contract signing or when the contract came to an end.[4] Yet few would argue against the crucial role that IT plays in business today; just look at the annual corporate spend on IT. The fact is that most organizations would not survive for long without their IT systems. Consider the Internet and its impact on business models and e-commerce; or how technology is facilitating collaboration, enabling greater mobility, and supporting the challenges of sustainability and the increasing requirements for compliance; or how some companies are leveraging data and information for significant competitive advantage.

Consequently, the CIO and IT leadership have become a focus for research.[5] Indeed, in recent years, all the major consultancies have produced reports on the role of the CIO.[6] A quick search of online book retailer Amazon.com reveals many more books have appeared dealing with this role than any other C-level position.[7] If there is agreement across all these writings, it is that the role is indeed evolving. No longer are CIOs responsible solely for the stew-

The author would like to thank all the interviewees for giving up their time and speaking frankly about the CIO role and would also like to thank Peter Seddon and Don Marchand for comments made on an earlier draft of the manuscript.

ardship of the organization's technology base, ensuring that the computers and telecommunications continue to function; they are now strongly encouraged to become drivers of business transformation and innovation. Recent papers eloquently express this new demand as to "find ways for IT to change the company, not just run it"[8] and "to take a much broader role in the business driving business transformation, innovating for competitive advantage and acting as key strategic partners to the CEO and wider organization."[9]

Yet, CIOs have generally struggled with this new agenda.[10] The dominant diagnosis is that many lack the necessary leadership skills to drive their organizations forward in the use of IT. They are portrayed as not being strategic in their orientation and having little credibility with their business colleagues. Furthermore, many are seen as not having built relationships at appropriate levels in the organization and as deficient in communication and influencing skills. By implication, CIOs are depicted as unable to deal with the cut and thrust of organizational politics. A subtle subtext is that an organization's problem with IT can be placed squarely at the feet of the CIO. The assumption seems to be: get the "right" person in the position with experience and the appropriate blend of skills and competencies and any problems with IT will be solved.

Joe Peppard holds the Chair in Information Systems at Cranfield School of Management, UK.<j.peppard@cranfield.ac.uk>

What my research (see Appendix for an overview of this research) is revealing is that this is a far too simplistic view. While clearly some CIOs may not be up to the job, just like other C-level incumbents, my data suggest that there are other factors that influence a CIO's ability to drive the organization forward in the use of IT and that getting the right person in the role is only part of the equation. My analysis has enabled me to construct a model of CIO performance, providing a more comprehensive view of the factors that influence the contribution of IT and ultimately the value it generates for the business. It reveals some uncomfortable lessons for CEOs and other C-suite members.

The Mythical CIO as Hero

CIOs that apparently do deliver for their organization are fêted as heroes. Authoritative sources such as Silicon.com and *CIO* magazine produce annual lists of top 50 CIOs, while *Computerworld* has its Premier 100 (with the tag line: "This year's winners drive strategy and innovation in top-tier IT departments"). Yet such lists and an individual CIO positioning are typically defined by size of IT budget or the number of seats or devices that individual CIOs manage or the views of their CIO peers. Interestingly, their colleagues in "the business"[11] are not typically polled for their assessment.

Much work has been done to uncover the competencies seemingly required for success as a CIO, and there is unanimous agreement as to what these are. Leadership, being a visionary, a strategic thinker, a relationship architect, a politician, and a deliverer are promoted as crucial competencies if the individual is to have an impact.[12] Personal attributes identified for success in the

role include communication and influencing skills, commercial acumen, networking skills, and people management skills.

Yet when we look at all the research findings, we are left with a question as to what is different between these competencies and those required for other CxO roles? Are these competencies not required for all in the C-suite? Do not all senior executives need to possess these personal attributes? Should not all members of the C-suite be business leaders with strong commercial focus, driving change and innovation? What therefore, if anything, is unique about the CIO role?

This latter question suggests that perhaps research has been progressing down the wrong path, with too much emphasis being placed on the individual. Anecdotally, we hear of CIOs with big reputations, moving to new organizations and struggling. Why might this be? These individuals still possess the same competencies and skills and bring with them a wealth of experience to the role, yet do not seem to enjoy the same levels of success. This suggests that there are other factors at play.

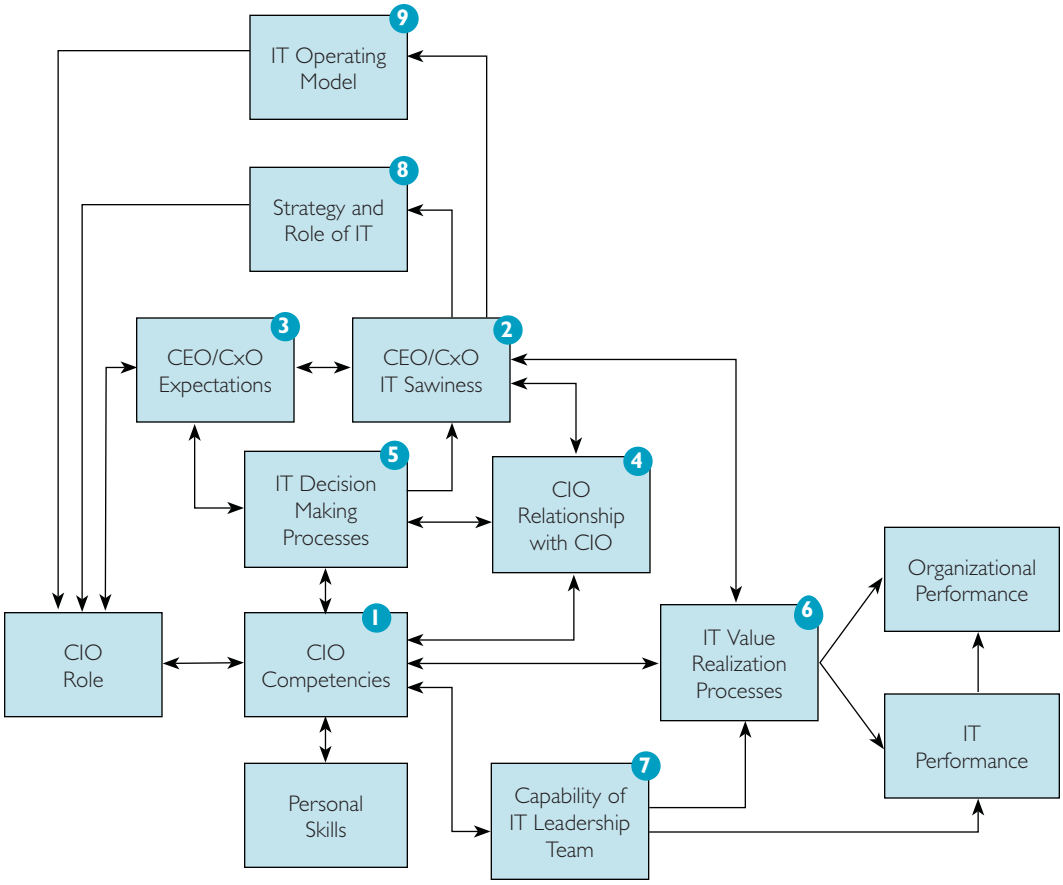
Linking the CIO with the Optimization of IT Value

My findings suggest that there is perhaps too much emphasis being placed on the individual incumbent in the CIO role and the competencies he or she should possess. What the data indicate is *the environment within which the CIO operates* plays a crucial role in the success of the organization in optimizing IT value. My data reveal that there is no direct link between "the perfect" CIO and the contribution of IT to performance. Thus, just hiring a CIO who has been successful in another organization or has the requisite competencies does not guarantee that they will be as successful in their new environment. In fact, getting the "right" CIO may be a necessary, but not a sufficient, condition.

From the data, I have constructed a model positioning the CIO role and its relationship with business outcomes. What the model highlights is that there is no direct correlation between a CIO and organizational performance enabled by IT, with the analysis revealing the factors that impact the effectiveness of the CIO role; or more significantly, the ability of the organization to optimize the value it generates from IT (see Figure 1).

What was immediately obvious from the interviews was the stark reality that the CIO role is a confused role in the executive suite.[13] One contributor to this confusion is the frequently encountered distinction between an "IT Director" or "Vice President for IT" and a "CIO." While the CIO has become an established position in U.S. corporations, many in Europe still prefer the title 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." However, despite this distinction, most interviewees suggest that the label is less important than the actual role the incumbent plays. The CIO of a large public

FIGURE 1. A Model Linking the CIO Role with Organizational Performance Enabled by IT



transport organization 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 Group IT Directors and they are very good at what they do, but they sure aren't CIOs."

This lack of clarity within the C-suite as to what exactly defines a CIO is symptomatic of the problems that CIOs encounter in their role and, more crucially, in their organization's ability to optimize the value from its IT portfolio. Therefore, what can a CIO realistically be expected to accomplish? Can a CIO *really* be held accountable for the delivery of value from IT?

Leadership is Leadership! The CIO as Business Leader *(see Figure 1, box 1)*

Despite the confusion about the role and what it entails, what is clear from the data is that the CIO is first and foremost a business leader. As one

interviewed CIO expressed it, "The CIO role is a proper business leadership role." The retired CIO of a global pharmaceutical company suggested that every CIO should pose the following question to him/herself: "Are you a business leader with special responsibility for IT or are you an IT leader who's delivering to a business?" He suggests that both are significantly different in mindset and attitude and ultimately their impact on performance of the business.

A reason for this was proffered by the CIO of a large transport group, "The business as a whole wants to talk to another business person—that's how they communicate and the CIO needs to talk at that business level and be able to turn around and talk back technically to his team. So someone who can only come with a technical perspective to these Boards is really being sidelined for someone who can come in with a business perspective."

While the overwhelming impression from prior research is that IT leadership is somehow different from the leadership of other functional areas, the interviewees were remarkable consistent that "leadership is leadership," no matter whether you are from marketing, manufacturing, finance, or logistics. The director of a private equity firm was forthright in his assertion that "a typical CIO should be a capable business leader first." As one CIO noted, "You are a general manager, with an IT specialism; other colleagues on the senior management team are also general managers first and foremost, bringing their own specialisms to the top table." An analyst interviewed commented that, just as CFOs are not expected to be good bookkeepers, "CIOs need to be far more dynamic, commercially minded, and communicative . . . Being a good code writer or database developer isn't enough. In fact, it may not be necessary at all. Being a capable business leader, who understands the minutiae of every aspect of the business is. . . . They have to be an influencer, not just a doer or a firefighter. Specific IT skills are likely to be considerably less important than leadership skills, program management experience, communications, and commercial common sense."

This position was supported by the CIO of a media group: "I'm expected to have the same degree of fluency in finance, marketing, HR, legal and regulatory, general management, and a whole host of other areas as my peers on the board. And rightly so—that's absolutely central to the notion of management and good governance." Personal skills underpinning leadership are important, and the majority of interviewees lamented that many CIOs are lacking in this area, sometimes significantly. As a director of an investment bank stated, "In terms of barriers, the most critical one is skills [competencies]. There are very few IT experts who are also great leaders and motivators. But any legitimate senior management role requires business fluency, leadership and communication skills, vision, analytical abilities, and so on. It is rare to find an IT person with that sort of mix. . . . The CIO has to be just as adept in front of a room full of analysts as the CEO or CFO. He or she has to be able to make informed contributions to board meetings covering everything from HR policy to annual results."

During the interviews we heard of many occasions where so called "good" and competent IT managers were promoted into a CIO role. One

interviewee, a director at an investment bank, noted that this often results in failure "because he or she lacks vision, management experience, and leadership skills." He went on to note that he has "heard of many such stories. There's a recent example of a European telecoms company that promoted its IT director to CIO—and to cut a long story short—Accenture had to be brought in to undo the mess he made."

Once the business leadership role of the CIO is acknowledged, the competencies[14] that my research uncovered[15] mirrored most of those identified by previous researchers (see Sidebar 1 for a summary of these). A CIO of a distribution company responded, "I think communication is one of them. An ability to relate to the business management in the business, to focus on their issues, to communicate about the opportunities that IS/IT could help with to improve things for them." The CIO of a global transport organization elaborated, noting, "CIOs get nowhere if they can't articulate themselves very well, because too often they come across very technically, perhaps they're not great communicators in getting their point across and will stumble a little bit when getting their cases across—none of that is acceptable. When you want to operate at a management board level, you need to be able to stand up and give as good a performance as the CFO of the company. It's as simple as that and if you can't do that, you shouldn't be in the job. So, those fundamental communication skills and the ability to articulate complex technical matters to an audience that is totally non-technical is vital in that role and it's only those kind of things that give you the credibility out there with any of those communities that you are dealing with to actually move forward as a CIO."

The turnaround CIO echoed this sentiment, noting that it was important that he was "somebody they could trust, somebody who understood what their needs were. Very approachable, engaging, understanding—softer skills, I guess. Part of that was honesty—if it's not working, then tell them that. They also want to know what you want them to do to help out." The CEO of a European telecommunications company pondered, when commenting on the attributes of a successful CIO, "I think there's a personal element to this. The CIO has to be of the same caliber as other senior managers. You can't have an IT manager trying to act as a CIO—you have to have someone who is as commercially capable, credible and experienced as other board members. For example, these days we expect a CFO to be far more than just an accountant, and I think increasingly, companies are coming to have the same expectations of CIOs. Being a competent IT engineer is a hygiene factor—being an outstanding manager is what really counts."

The CIO of the UK retailer owned by a Hong Kong parent company commented on the importance of being able to navigate the political landscape, "There are a lot of politics within the parent company and even though we work at a distance, you have to establish personal contact with these people. The guy in Hong Kong [Group CIO] runs 31 retailers so only speaks to me infrequently—hopefully when they want to invest and rarely when they have a problem. I have to speak to his PA and make the effort to meet him personally when he's

SIDEBAR 1. CIO Competencies

Leadership

- driving the organization forward in the use of it
- creating a set of value expectations shared across all areas of the business in relation to it
- influencing key stakeholders
- growing and developing own leadership team

Visionary

- envisioning options and opportunities (both operational and strategic)
- an advocate for new technology

Strategic Thinker

- holistic view of business
- contributing to strategy discussions

Relationship Builder

- expressing empathy, listening, and being passionate

Diplomat

- collaborating with colleagues to achieve "win-win"
- building personal networks across the organization
- creating the right impression

Deliverer

- achieving credibility with both *business* and *technical* people through successful delivery of projects and programs
- maintaining cost efficient IT operations and services
- managing risk
- meeting expectations

Reading the Market

- using the marketplace appropriately for sourcing
- commercial acumen
- understanding risk
- networking externally with peers

in Europe, as he doesn't always come to the UK. It's all about personal relationships even if it's just for 30-45 minutes; you have to understand the cultural environment that you work in not only in the UK, but also in Hong Kong. The Chinese place a massive store on integrity and if you break the trust it's almost impossible to repair that trust."

One additional competence highlighted in this research, that has not been previously identified, is the ability to read and use the external market for potentially sourcing IT services and to understand risk. Most of the CIOs interviewed stressed that this was becoming an increasingly important area for them, particularly with the advent of "the cloud" and software-as-a-service (SaaS). Many recounted stories where the vendor was either not delivering or "overcooking" a solution. For example, the CIO of a global insurance company told the story of a project that he inherited from the previous incumbent when he took on his new role: "When I got here, there was a program for an intranet—and I took one look at it and said let's do it for half the cost in half the time. We were basically getting taken for a ride by a big vendor."

The CIO of a global broadcasting corporation was more critical in his views of external vendors: "It's more that they are painting a distorted picture of reality. When it boils down to it, the vendors' objective is to sell massive IT projects. And so it's in their interests to encourage the creation of a situation in which there is one person, who sits at a very senior level, who has access to a big budget, and who can sign checks for enormous projects. And of course it also makes sense to constantly remind the world how important and special these people are. . . . I very rarely encounter a CIO who is commercially competent and confident and clear enough in his or her thinking to be able to push back against the vendors. I'm quite happy to accept that IT is complicated. But by the same token, vendors do their level best to make it more complicated—because it suits their interests to do so. . . . A more important factor is the hype generated by vendors. They are constantly bombarding companies with messages that are designed to make them think that, unless they have a CIO and spend huge amounts on long-term IT projects, they will fail miserably. It's essentially emotional blackmail—but I suspect in some cases, it works."

The importance of external networking was also stressed by a number of CIO interviewees. The Group CIO of a transport company commented, "The other thing that I find fundamentally important as a CIO is I spend a large portion of my time (and it's no fun to do as we're already working long hours) going out to events with suppliers and with fellow peers. I spend a lot of time talking with the BPs [energy], BMIs [airline], British Airways—we get together and we spend time discussing what's coming down the line, what's worked for various people, etcetera. It is that network of contacts that will allow you to respond—not white board type of response or hear about new technology that sounds really great, but the warts and all type of response to people and they really appreciate that."

The IT Savviness of the CxO Team
(see Figure 1, boxes 2, 8, and 9)

Perhaps the one factor that stood out from the interview data was the critical importance of the IT savviness of the senior leadership team. This savviness was referred to by many of the interviewees. Phrases like "IT fluency," "digital literacy," and "IT literacy" were frequently used by informants during interviews to capture this aspect. 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."

IT savviness is not about the ability of senior management to use e-mail or build PowerPoint presentations or construct spreadsheet models, it is a recognition of how IT can affect performance, both operationally and strategically. In addition, it is about understanding how IT generates business value and what the role of non-IT executives is in that quest. This savviness also determines the extent to which the CxO leadership team engages in IT matters: both in IT decision-making processes and in the IT value-creating process itself. Without this savviness, the CIO is often left to his/her own devices, with little engagement from peers. One CIO recounted his experiences 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."

There was a strong suggestion from that data that this lack of savviness can have major business implications. As a Director of a private equity firm noted, "Most companies don't yet see IT as a core, strategic driver of value in their business; as a result they don't see the CIO role as being especially important. IT is seen as a hygiene factor—and only becomes an issue of importance when it stops working or goes over budget. It's not thought of in strategic terms; nor in terms of top-line growth or bottom-line performance. All of which means that there is limited understanding of the role of the CIO, and its potential importance to the business."

The Director of a global investment bank was more somber in his assessment: "There is little clear understanding of the role of the CIO—and its potential importance—because there is such limited understanding of IT as a discipline. The majority of executives have lamentable IT fluency—and don't seem particularly troubled by the fact. Yet they would never be so blasé about, say, a lack of understanding of finance or marketing—because they know they would be vilified by peers. Yet somehow, being ignorant about IT is not seen as a major problem for business people. Except of course it is."

The implications of a lack of IT savviness of the CxO team was illustrated by a partner in a management consultancy firm who recounted the story of a recent assignment with a large FMCG company that had decided to sell off one of its operating companies. "Unfortunately this strategy was not known to the

IT director when SAP was implemented and, as a result, when they started the process of selling the company, they found that the IT system for that one operating unit couldn't be "unplugged" from the rest of the organization. Potential buyers realized that they would have to create an entirely new IT system from scratch—and modified their valuations of the company accordingly. A very significant value was lost—simply because the Board didn't recognize the importance of involving IT when considering the long term future of the company." A similar sentiment was expressed by the CIO of a large global law firm who is not on the senior management team (he reported to the Director of Business Services): "We're often involved far too late or in the latter stages and we're not hearing some of the early dialogue."

The consequence of not understanding what IT could potentially contribute or how IT generates value was starkly illustrated by the experiences of a CIO when he worked for a European Business Services company: "I don't think they 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—the stuff like projects going live, the need for change management and the business ownership of IT solutions wasn't good. The expectation of me was to deliver, but when I said I couldn't deliver successfully without you playing your role in this project, there was quite a lot of surprise."

Yet, what can happen when that IT savviness is present was vividly illustrated by one CIO of a media organization: "At the executive board level, it's generally good [understanding]. I think the Board understands that IT and technology are no longer just operational issues that sit in the background. That's partly because of the change we've seen in our business, and the fact that all things digital are an unavoidable part of the media world today."

The extent of this IT savviness among the top management team is possibly the crucial factor in ultimately determining whether the value generated from IT investments is optimized. Recounting his previous experiences in other organizations, the CEO of a European telecommunications organization commented, "In terms of enablers, I think the overall IT literacy of the senior management team is the most important. If the CIO and the rest of the management team can understand one another, then setting expectations is functionally easier." This view was echoed by a partner in a global management consulting firm: "If the other members of the senior management team have no understanding of IT or its power as a strategic lever, then the CIO has little hope of setting and managing expectations, or delivering against them. So IT literacy across the senior management team, and indeed the company at large, can be either a barrier or an enabler—though right now, for the most part, it's a barrier [in most companies]." Sidebar 2 presents the experience of a CIO who worked for two different CEOs in the same organization.

As depicted in the model, my analysis reveals that this CxO IT savviness influences four key factors:

- the contribution of IT to the strategy of the organization (box 8),
- the operating model for IT (box 9),

SIDEBAR 2. A Tale of Two CEOs

One of the CIOs interviewed worked for a European Business Services organization and experienced first hand the impact of CEO IT savvy. When he was first hired, he reported directly into the newly appointed CEO of the company and was a key member of the senior management team. Prior to his appointment, IT only "looked after the plumbing." This new CEO was strongly of the opinion that information and knowledge drove the business and that IT offered opportunities to be exploited. He gave the CIO the mandate to drive a transformation and innovation agenda. However, not all of the senior management team were of the same view as the CEO; as the CIO recounted, the "process of decision-making prioritization, governance around the value-add of the IT activity was completely new to them. They quite naively thought that if they asked IT to do something they would just do it and they didn't have to actually play a role. So [with the support of the CEO] lots of education about their role and what IT projects actually looked like. We had a hard and fast rule—every project had a project manager and a sponsor in the business who attended the weekly project meeting to try and have some rules and practical actions to underpin the education." The CIO regularly interacted with customers and business partners and was party to discussions about potential acquisitions and part of all due diligence efforts. With the active support of the CEO, he introduced strong IT governance; the CEO chaired the IT Steering committee. Again, with the support of the CEO, he pushed responsibility for many aspect of IT out to colleagues from the business. No IT investment went ahead without strong business sponsorship. He developed a strong internal network and had credibility as a deliverer; although he would admit this was achieved as there was strong business involvement in all IT-enabled change projects (there were no IT projects!).

Four years into his tenure the CEO was headhunted to a new organization. His replacement had a completely different perspective on IT. He saw it as a cost of doing business, and, more strikingly, a cost to be minimized. He also brought some key executives with him and changed the reporting structure, with the CIO now reporting into the CFO and relinquishing his place on the top management team. The new CEO did not see why he should attend steering committee meetings, with the result that the CIO took over as chairman of this forum although it very soon disintegrated, as attendance was poor. Taking their cue from the CEO, the new members of the management team were reluctant to assume any responsibility for IT and were slow to engage in IT issues. To cap matters off, the CEO felt that the company was spending too much on IT and sought a significant reduction in the IT budget. The CIO saw the role as having regressed "and this business about process, innovation, and perhaps information is [now] not perceived as being a significant part of that person's [CIO's] responsibility" although he was unsure where it did resided. He was at pains to point out that he didn't have a poor relationship with the CEO—he described it more one of frustration—but that the CEO "saw IT as a technology subject and struggled to talk to [the CIO] about anything to do with the business and where it related to IT." Within months, the CIO had resigned.

- CxO expectations (box 3—discussed in a separate section), and
- the involvement of CxOs in IT decision-making processes (box 5—discussed in a separate section).

With the lack of IT savviness, the potential for deploying IT strategically can be lost. The data reveal that there is still today a polarized view of IT within CxO teams. They either see IT as an administrative expense, a cost to be minimized, or an enabler of strategic opportunity. In the words of one of the interviews: "IT is typically seen as a hygiene factor, not a major driver of value, in most companies." One investment banker interviewed noted that "most companies—including many high-technology companies—still see IT as a second order issue. It is not perceived as a major driver for growth, so in terms of representation, it gets relegated to the lower echelons of management. . . . They don't seem to be able to envisage IT as a key driver for growth, or as an integral part of their overall strategy." The implications of this can be profound. A leading European IS academic outlined the consequences: "We all know, given the history of this field, if your senior manager thinks that IT is an operational function with no strategic value, it's a cost center with no innovation possible, then they will manage it that way. If the CIO buys into that same view then they're aligned as managers but they're going to get very little value from managing IT other than as a cost."

If the strategy of the organization is strongly shaped by IT, the demands placed on the CIO will be different than those where IT plays a less central role. As a senior telecom analyst noted, "If you think about it, the role of the CIO is defined by the business of the company. What I mean is that a CIO for a low-volume, high-margin fashion house is going to be very different from the role of a CIO in a major telecoms operator."

The data also reveal that the view of IT held by the CxO team also influences both the operating model for IT and reporting relationships. The CIO of a Media Group commented, "I think many companies still see IT from the perspective of managing a cost base. And as a result, in many companies IT is handled by an IT Director who reports to the FD [Finance Director]." The operating model for IT also plays a key role in determining the value derived from IT, and a lack of savviness can result in the adoption of a model that conflicts with the business operating model. The IT Director of a European Merchant Bank found herself fighting running battles with country CEOs. The business was run as a multi-local operation, where country CEOs had full responsibility for strategy and Profit and Loss (P&L). However, the bank ran IT as a centralized operation with investment determined at headquarters and development resource located at the center. With full P&L responsibility, country CEOs were not prepared to have IT systems imposed upon them by the center or to fund centrally developed systems.

Expectations of CxOs *(see Figure 1, box 3)*

What the data reveal is that CxO expectations are strongly influenced by the IT savviness of the senior leadership team. These expectations ultimately define the CIO role and the extent to which CxOs engage with IT issues. My data reveal a gap between what a CIO can expect the role to encompass and

what the CEO/CxOs often expect of the incumbent. One leading recruitment consultant expressed this succinctly when she noted that "most leadership teams [that she has dealt with] do not know what good is!" She went on to explain that their expectation for a new hire is typically framed by their experiences and, to some extent, the previous incumbent. If the IT infrastructure is brittle, shoring this up is the priority they set for recruiting a replacement. This sentiment was echoed wryly by the Group Finance Director of a global publishing and media business: "One of the main reasons why there are so few CIOs in the UK is simply that very few Chief Executives have ever met or are even aware of really good ones." From the data, it seems that senior executive teams err on the side of a technologist for the role. One of the CIOs interviewed, who has worked in the role for many organizations, noted, "Where a company has never sampled anything different, then they naturally assume that this is what the CIO/IT director is all about [a technologist]. I have to say, when organizations like [his company] and others that I have been with, recognize that the CIO quite often doesn't actually fully understand or is up to speed with the technology, but fundamentally understands how to drive an IS organization towards the business benefits, the whole relationship changes quite significantly. That is why we're seeing that great difference."

From the data, it would seem that expectations are framed by the historical experiences that CxO have had with IT.[16] The Group CIO of a global transport company commented, "You don't know something better until you see it. What I mean by that is there is a raft of CIOs out there in the IS community both in the UK and in international operations that call themselves CIOs, but they're not CIOs. They are IT directors—there's a massive difference by that and they tend to be very technically focused, very operationally focused, will drop everything as soon as their server goes down, still got their SMNs on telling them when their printer driver's not working—they are probably 95% actually operationally focused. Now if you bring that to the table, senior executives of a company, whether CEOs or CFOs, they can instinctively tell they're not talking the same language, they do not share the same mind space of what's going on and so they're seen as a service provider to the executive board of a company as opposed to someone who is part of the executive board of a company. That's the fundamental difference."

The lack of credibility from IT in general was seen as partially to blame. The CIO of a global insurance organization commented, "Why would a company want an IT guy on the board when IT so consistently fails? Given IT's track record, companies are generally more comfortable with the CIO being a junior, apprentice executive." Of course, this can be a catch-22 situation. Interviewees noted that failed projects and programs, often mean that business managers are reluctant to get involved in activities to improve success, therefore difficult to kick-start any recovery process.

The measures used by the CxOs to assess the performance of their CIO are a useful surrogate for what they expect. My data reveal that there is still confusion regarding the role and responsibilities of a CIO, in particular, the

mismatch between stated responsibilities and expressed performance metrics. Most of our CIO interviewees reported a variance between their aspirations for the role and how their performance is assessed by their c-level colleagues. Frequently, CIOs reported that their aspirations were in terms of supporting strategy, crafting the business direction, identifying disruptive technologies, and envisioning new opportunities enabled by IT. However, their CxO colleagues assessed their performance in terms of project delivery and maintaining service levels. As a former CIO of an international pharmaceutical business noted, "unfortunately you are more often measured by . . . housekeeping rather than competitive performance and largely operational at that." The CIO of a large UK retailer noted that in general CIOs are "judged in part by not having messed it up—operational stability is still key in retail." This mismatch encapsulates the confusion between CxO and CIO expectations of the role.

A leading European academic suggested that a CIO can assess how his/her contribution is viewed: "If the CEO of your business unit is putting together people for golf and business discussion over the weekend, would he consider the CIO amongst one of those foursomes, not because the CIO is a golf player but because at the 19th hole, there's going to be a lot of business discussion and the CIO has to be a trusted member of the team—a colleague, not just a supporter of the team."

Relationship between CIO and CEO and CxO Team *(see Figure 1, box 4)*

The data also reveal the pivotal roles of the relationship between the CIO and CEO and the CIO and CxO team.[17] It suggests that without these strong relationships, the CIO is likely to struggle. The CIO of a global bank emphasized this: "I think it has got to be done [becoming part of the inner sanctum] by just building relationships and trust . . . I think, really, just to be seen as someone who can add value and get invited into the appropriate discussion. It's a personal gravitas and the ability/communication skills of the individual."

We questioned CIOs as to why they required strong relationships. The CIO of a global bank reported that strong relationships enable the CIO "to create the empathy of a shared agenda so the individuals on the top table will have their own agendas, the collective agenda, and the most important thing is that we, through that, create development plans and create handcuffs that meet the shared agenda and the collective one. I think the relationship enables you to have the discussion and makes the politics more benign." The consequence of a strong relationship was captured by the CIO of a global pharmaceutical company who suggested, "For big companies in the market, where there are opportunities on the horizon (it may not be next year), being able to have a relationship with the senior business people that results in early definition of a solution for the business to prepare itself and take advantage of new opportunities."

A senior IT executive at a global pharmaceutical company emphasized that this relationship must translate into a strategic partnership. For him, this

means not just having "a seat at the table," but also "a voice." Commenting that the CIO must be a member of the most senior leadership team, he noted, "If you're really talking about a strategic partnership, then I think you need a seat at the table, otherwise the perception is always you're a supporting function, you're an order taker and not someone who's sharing in the agenda for strategic change within the organization. It's either are you a cost center or a business capability that can add value? There is evidence of companies in our sector where the CIO sits on the senior executive team where the contribution of IS is held in higher esteem."

The CIO of a global bank suggested the genesis of the situation that can ultimately define the relationship that CIOs have with the leadership team: "I think the key is if the Chief Exec makes the technology the common enemy and so is always, if only jokingly, talking down technology delivery and not understanding the delivery of anything in the technology space as a partnership. It is very hard to turn that round." Thus, the influence of IT savviness of the CxO team is again emphasized as an important pre-requisite for having the kind of productive relationship necessary for IT to add value.

IT Decisions as Business Decisions *(see Figure 1, box 5)*

The data highlight the importance of involving business executives in IT-related decisions such as developing strategy and investment prioritization.[18] Without this involvement, interviewees were unanimous that the CIO will struggle. Equally, the data reveal that the CIO has also to be closely involved in business decision making. The CEO of a European Telecommunications company commented, "Another important enabler is the extent to which the CIO is involved in decision making. If the CIO is one step removed from decision making, then he or she is always playing catch up—and IT is always on the back foot. Unless the CIO is fully integrated into the decision-making process, he or she is never going to be able to deliver against expectations—because those expectations will be set without the CIO's full involvement."

This situation was reinforced by the CIO of a distribution organization: "Because the issues that the CIO could contribute to come down the cascade, quite often too late, and are diluted in their expression to the CIO. The time for changing the thinking is then a little bit late. The time to influence the rest of management thinking has gone and you are kind of back tracking." The partner in a global management consulting organization suggested, "When IT departments are not involved in decision making, they are not able to meaningfully manage expectations. As a result, IT leaders tend to have to spend a lot of their time and energy fighting fires. Conversely, where they are involved in decision making, they have the opportunity to design, plan, and execute in a way that is tightly integrated and synchronized with the rest of the business. There are so many examples of IT projects failing completely, or coming in late, over budget, and out-of-sync with the needs of the company. And this is a sort of vicious

circle—the more IT projects fail, the less likely IT will be involved in decision making, and hence, the more likely future IT projects will continue to fail."

Why a CIO needs early involvement in decision making was identified by the CIO of a global transport company: "How you know you're doing a good job . . . is when senior members of the board (I'm talking from a CIO's perspective here) are phoning you and asking your opinion and asking you to join in discussions—that's really the critical area that I look at that tells me I'm getting it right and doing a good job and they're not phoning me up because their Blackberry doesn't work. They're phoning me up because they're saying we're going to buy [company name] in North America and we're worried about how we integrate that. We need you (that's the three words) as a part of the team to determine how we can do that successfully and the discussions that you're having aren't about we need this number of servers or whatever else, it's about how are we going to manage this change both culturally with the people, with the unions, with whatever. When you're at that level of discussion, that's really the case to me that you're delivering significantly to an organization."

The director of a global investment bank suggested that CIO involvement in business decision making is a good proxy for the extent to which IT is integrated into business activities: "In terms of enablers, I think the most important is the extent to which IT is integrated into the rest of the business. To start with, IT has to be involved in decision making, otherwise it tends to head off in its own direction. The more CIOs or their equivalents are involved in defining the direction of the company, the more they can meaningfully contribute to the performance of the business. The problem is, in many companies, IT is rarely involved in important decisions. And so it gets condemned to a dynamic of project followed by project followed by project—many of which are fighting fires and plugging holes, as IT struggles to keep up."

IT Value Realization Processes *(see Figure 1, box 6)*

The vast majority of the CIOs interviewed for this research stressed the key role of CxOs and other executives in ultimately realizing value from IT investments. Managing the change associated with IT projects and programs was emphasized time and time again by interviewees as the cornerstone of the value realization process.[19] For example, the global CIO of a manufacturing firm, who also sits on the board of the company, noted, "IT is irrelevant without the business change to go with it." He recounted a recent implementation of Salesforce.com where promised changes in sales group behaviors didn't materialize and the project floundered. This sentiment was similarly echoed by many of those interviewed. The CIO of a biotech company stressed the "engagement of the business, particularly of the sponsors, in major change that they're advocating through the organization. Getting the message across that we're in this together in implementing any change and fundamentally it's not done by IS, it will be down to the business. If the business doesn't buy into that proposition, it isn't going to succeed." He went on to emphasize, "Business commitment to the changes they

have signed up for as in new projects rather than the operational stuff. . . . Around projects, the business committing the necessary resources for them to change. For example, while going through JD Edwards' replacement of SAP and getting not just the people available, but the best people out of the business to help with those transitions from one to the other."

Some CIOs went even further, highlighting that IT is ultimately a change function. The CIO of a global insurance organization emphasized, "IT teams are meant to be delivering new value—it's a very different game to finance. Getting the accounting right, that is hugely important, it it's actually a clearly defined and relatively predictable process. IT is much more diverse, and far less predictable."

The CIO's Own Leadership Team *(see Figure 1, box 7)*

Interviewees were unanimous that the operational performance of IT does matter. As the CIO of a distribution company noted, "Yes it's very hard to talk about innovation if the screens go blank every time." Delivering operational performance gives CIOs credibility as they engage with business colleagues.[20]

In this regard, the importance of the CIO's own leadership team and the abilities of that team were stressed during the interviews. Ultimately, it is through this team that required IT capabilities are delivered. Talent management and "growing great performers"—as the retired CIO of a global pharmaceutical company expressed it –were seen as crucially important. Perhaps the CIO of a UK police force captured this sentiment best when he noted that he needed a "really great IT team to help [him] deliver." The partner in an investment bank who works closely with clients in merger and acquisition activity commented on his experience in assessing the IT capability of target companies: "It's the capabilities of the individual [CIO] and the corresponding team that count."

The importance of this team to IT delivery was explained by the Head of Technology at a UK Retailer, "I think he [the CIO] needs a really good management team to rely on those people to take away some of the stuff that can clog up a CIO's work—if you're not careful it may mean you can't concentrate on some of the big issues. Another enabler—the quality of the staff generally in IT is important as well—you need to know you have the right skills. Whether sourcing internally or externally, you need to be able to rely on the people."

Given the time that CIOs spend on working with business colleagues, the need for a strong leadership team was stressed by many of the interviewees. The CIO of a media group elaborated on this point, "Speaking personally, I probably spend about 60% of my time working on plans for the future, and 40% on day-to-day [business] operational issues." He estimated that approximately 80% of his time was spent "away from IT" and that he was utterly dependent on his team.

This latter point was emphasized by most of the interviewees, with CIOsacknowledging the quality of their own leadership team having a major impact on what they can and cannot achieve. The CIO of a public sector/property

management organization emphasized the "quality of individuals within my team. Having very good knowledge of technical and information delivery and having the ability to deliver those. Also being able to work with the business and talking to people within the business at their level."

Despite this dependency, many of the CIOs interviewed experienced problems in hiring senior staff with the right skills, experience, and attitude for their own leadership team. The CIO of a global insurance company noted, "It's difficult to find enough people with the right mix of skills—the deep IT understanding combined with broad commercial acumen." The CIO of a global manufacturing company recounted his experiences: "I've had some major problems recruiting the people who I think are capable of delivering on a strategy. The IT world is still full of infrastructure people. It's all well and good to have a chosen few shouting from the rooftops effecting change, but I've struggled with the ability of a wider theme to deliver. It has a knock-on effect on credibility of course; I think the CIO's never going to be effective until he brings his own team along. That's difficult."

The majority of the CIOs interviewed stressed the importance of building and developing their own team. The recently retired CIO of a global pharmaceutical company recommends that CIOs spend at least 25% of their time with their own staff. This he saw as necessary to "grow great performers." Given that the CIO will be spending considerable time with business colleagues as well as with customers and business partners, these conversations need to be translated into work requirements. The message from the data is that a CIO is only as good as the team that surrounds him/her.

Implications

In his recent bestseller *Outliers*, Malcolm Gladwell argues that success (and failure) is not defined or shaped by a single event but can usually be traced to the confluence of a number of factors.[21] The research reported in this article strongly suggests that the same logic applies to CIOs, their effectiveness and ultimately the impact of IT on business performance. The data reveal that it is not just about an incumbent in the position possessing the "right" competencies, these are necessary but not sufficient; in fact, it was argued earlier in this article that these competencies are common across all CxOs. Other factors also influence the ability of the CIO to generate value from IT—or more correctly, the ability of the organization to optimize this value. The findings from this research emphasize that this quest cannot be enshrined in an individual role, but demand a collective responsibility from all in the C-suite.[22]

What the research also indicates is that focusing solely on personal competencies for the CIO role is likely to be a fruitless endeavor. While possessing these competencies is obviously important for a CIO, it is unlikely these are any different from those required for other leadership roles. This also suggests that focusing solely on the role (i.e., of the CIO) is unlikely to result in much progress; much of the contemporary research explores the evolving role of the CIO.

More fruitful is to begin with what is being sought, i.e., optimizing business value through IT, and examine how the CIO and senior leadership team as a unit can contribute to this quest.

Perhaps the most clear-cut finding from the research is that hiring the "right" man or woman for the job and expecting any historical problems with IT to just disappear is based on a false hope. The data reveal that central to the success of the CIO is the IT savviness of the CEO and CxO team.[23] The implication is that before hiring a new CIO, the CxO team should take a close look at the environment within which he/she will operate. This savviness, or digital literacy as some interviewees describe it, leads to the development of a shared vision[24] across the organization, which is a key to strategic alignment[25] and ultimately to optimizing value from IT investments.[26]

The model developed in this article highlights that this savviness influences the role of IT in the strategy of the organization and the IT operating model. It also sets CxO expectations for the CIO role, frames the CEO relationship with the CIO and affects CxO involvement and engagement in IT decision-making processes, as well as in IT value-realization processes.

However, it is worth recounting that IT has been around organizations for over fifty years and yet demonstrated IT savvy among non-IT leaders and executives does not seem to have evolved. There are exceptions, but, by and large, business leaders are seen as lacking the level of literacy to ensure that IT plays a key role in their organization, both operationally and strategically. This observation is made despite the fact that research has long highlighted the key role of top management involvement in IT success.[27] While the research reported here identifies the factors that this savviness affects, it seems that CxO savviness has not improved over the years. This situation must raise serious questions about the content of MBA programs and the focus of corporate executive development efforts. The problems that most organizations encounter with IT are less about the CIO and more about the shortcomings of CEOs and CxOs.

While it is clear that the leadership of IT is no different than the leadership one would expect at the top of the organization, the research highlights a number of specific *leadership challenges* that a CIO faces. The first is securing the engagement and active involvement of business colleagues in IT issues, particularly in decision making concerning information and IT and IT value realization. If this is not forthcoming, generating value through IT (via IT-enabled change projects and programs) will be severely compromised. This quest demands a collective responsibility. This is perhaps the most demanding of the challenges to overcome, as it requires deeply held beliefs and assumptions to be addressed. As the interviews reveal, in many companies IT continues to be seen as a technical issue not a business imperative.

A second challenge is demonstrating and proving value from IT spend. The data highlighted that this can be a major task. A director of a private equity firm captured this succinctly when he noted, "It's still very difficult to measure the effectiveness of IT. Certainly within the context of due diligence, assessing IT is the most frustrating and complex piece." There are so many variables that can

influence business outcomes and it is difficult, if not impossible, to isolate the IT contribution. The easiest measures to put in place relate to the performance of technology, such as uptime and availability; however, these are necessary but not sufficient. Today, most firms could not function without their IT systems, so there must be some value accruing from IT investments. However, establishing appropriate metrics to report this value remains elusive.

A third challenge is to overcome the IT stereotype. Many of the interviewees referred to the problems this can raise for not just getting engagement and involvement of business executives, but also in setting expectations As soon as a CIO or any IT executive walks into a room, the audience has an immediate impression of what he or she can and cannot do. CIO interviewees strongly indicated that this can represent a significant barrier to CIO effectiveness. One aspect of the stereotype, highlighted by the CIOs interviewed, was that they are not considered "to be business players."

While the interviewees agree that a newly appointed CIO coming to the position with a positive reputation can dent the stereotype image, they also agree that it is still a considerable barrier to overcome. The Head of Technology at a UK Retailer commented, "Sometimes there is an image problem with IT—they [his business colleagues] don't understand where we're trying to get to. There are some stereotypes. . . . IT is good at telling the business what it can't do rather than saying well, we could do this or if we did it this way." The IT stereotype also influences how CxOs behave towards a CIO. As the turnaround CIO interviewed noted, the "CIO is typically regarded as being a technical person and so only interested in technical matters and discussions and almost excluded from discussions around critical business issues."

It was, however, suggested that the CIO him/herself can reinforce the stereotype and consequently their credibility. As the CIO of a global pharmaceutical company commented, "If you have someone who is a geek [as a CIO], they will be put in the geek role and only expected to contribute to the narrow technical things like keeping the networks running, keeping the servers up, the operational stuff. Whereas if the person in the role is seen to understand the business and contribute to it, their role will be more highly valued at peer group level. If the IS executive is seen merely as a technician, that's how they'll be positioned in peoples' minds and won't be seen as really adding value to the business—just part of the support."

A fourth challenge is creating a vision for IT. A leading European IS academic expressed this as "a vision of how [IT] resources can be leveraged and utilized beyond simply competitive necessity." In addition, the CIO must galvanize support among the CxO team as well as within his own leadership team around this vision.[28] Here the CIO and CEO must work as one, as it is normally expected that this vision will come from the CEO, although the CIO can help in framing it.[29]

A fifth challenge for the CIO is building his/her own leadership team. There was unanimous agreement across the CIOs interviewed that they are only as good as their team. There was also a suggestion from the data that CIOs often

don't recognize the time and effort required to build and develop this team. A number of CIOs lamented the challenge of finding staff with the right blend of skills and competencies for leadership roles in the IS organization. There was a suggestion from the majority of the interviewees that the CIO should look to build his/her own team rather than expect to hire directly from the market.[30]

Whether these challenges will pervade into the future is anyone's guess. There was a suggestion by a number of those interviewed that, as we move into the future, these challenges will be lessened as IT savviness across the C-suite improves. As the CIO of a publishing/media organization noted, "as a function of time, I think it will be less and less acceptable for other board members to know little or nothing about IT—particularly in industries where IT is important. I think board members will need to educate themselves about IT, because it has the potential to impact every other area of the business from marketing through to production and finance. It won't be acceptable for board members to glaze over." Why this situation exists was suggested by the group CIO of a global insurance organization, "Demographics is the most obvious. Look at the average board, and it's mostly comprised of 65-year-old white men. These are people who grew up at a time when IT barely existed, and were cutting their teeth in business when IT wasn't as pivotal as it is today."

A key question that must be asked is whether a CIO can actually make a material contribution to the performance of a company? In response to this question, the partner in an investment bank noted, "Well to the extent that any member of an executive management team can, yes. But then it's very rare for a specific individual to have a profound impact on the performance of a company; it's usually teams who make a difference." However, the message loud and clear from the data is that it cannot be a solo run. What, therefore, can a CIO offer? In response to this question, the CIO of a distribution company suggested, "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." Promoting and facilitating this dialogue can help in the CxO team in framing the vision for IT. Creating an awareness of risk is also seen as an important function of a CIO.[31]

However, 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." As the model demonstrates, the lack of IT savvy across the top team can affect how the CIO role is defined and the expectations of the incumbent.

There was a suggestion by a number of the interviewees that the CIO role may be a transitory one. That is, if IT savviness becomes "infused" across the leadership team, there is some indication that the CIO role, as articulated today, may eventually become redundant. In this regard, a word of caution was

expressed by the CEO of a European telecommunications company, who commented, "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 ins and outs of the company's IT systems and strategy. I think it's clear that digital capabilities are becoming more important for companies across almost all industries, and as a result, digital literacy—in the form of IT literacy—will become increasingly important for all business leaders."

However, there is still a requirement for someone in the organization to have overall responsibility for the integrity of the technology platform and enterprise-wide information infrastructure and to orchestrate the technology roadmap. This might suggest that the evolution from an IT manager to CIO might eventually return to that of an IT manager or VP for IT. However, if past progress is anything to go by, we are probably some considerable time away from this situation.

Conclusion

Organizations are today fundamentally dependent on their IT systems; indeed, few could survive for long without them. Yet all the evidence points to the fact that organizations are struggling with IT. Blame for this situation is typically placed at the door of the CIO. The research reported in this paper indicates that this blame is misplaced, due in large part to inappropriate expectations of the CIO role. Instead, it must be understood that the IT savviness of the CEO and senior leadership team are pivotal to the realization of IT value in today's organizations.

APPENDIX

Research Design

The research reported in this paper was first framed by a careful reading of the research literature; much of this literature can be gleaned from the endnotes. This enabled some high-level themes to be determined. Then, to explore in more detail the role of the CIO in today's organization, 42 in-depth interviews were undertaken with both current and former CIOs, CxOs, analysts, and industrial commentators. They were selected for the study using theoretical sampling, which is based on their theoretical relevance for furthering the development of emerging categories. Data were collected following an unstructured data collection protocol (see below). While an initial set of questions were developed,

keyed to themes identified from the literature, interviewees were given considerable latitude over what they wanted to say and how they said it. Through a snowballing effect, the interview questions evolved in response to the content of earlier interviews. Further probing of interviewees, often requiring an additional interview, was sometimes necessary in order to seek clarification and elaboration on points made during the initial interview.

All the interviews, with the exception of three, were recorded and transcribed (detailed notes were taken where interviews were not recorded). When the interviews were complete, all the transcripts were read in order to form a general impression of the data. The data were analyzed using the constant comparative method and theoretical comparisons of joint coding and analysis of qualitative data. About 60% of the categories and concepts developed for the model were "in vivo" codes. The remainder were labels placed on categories by the researcher based on the meaning the categories evoked during comparative examination of the data.

Data analysis started as soon as the first interview was conducted. Initially categories were identified during interviews, which were written down as field notes. From interview transcripts of the recorded interviews open, axial, and selective coding was undertaken. Detailed line-by-line open coding was carried out at the outset of the study, which helped to generate the initial categories, their properties, and their dimensions.

The next stage of the analysis was axial coding, where the categories, properties, and dimensions were integrated to form relationship among the categories. These categories and concepts were then grouped together to form clusters that might have conceptual value in identifying patterns, similarities, and differences in the data. Finally, in order to ensure the full integration of the concepts, theoretical sampling was carried out to gather more data about the categories that we had; this was conducted until all categories were saturated. Memos were written as the researcher went through the three stages of the analysis.

Data Collection Instrument

The data collection instrument was structured around a number of themes, identified from the research literature, which the interviewer sought to explore with the interviewees. The questions, and how each was posed, varied depending on whether a CIO/IT Director, CxO, or analyst/consultant/academic was being interviewed. These high-level themes are listed below together with some sample questions. Background information on each interviewee, their current position, and organization they worked for was also gathered.

- *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?

- *Competencies Required for CIO Success*

  What are the attributes that make a CIO "good"? Can you describe the attributes of a CIO you would consider as adding significant value to the organization?

- *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 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 on 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/CIO to deliver the expectations? What are the barriers (e.g., politics) that prevent you/CIO from 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 longer term do you think the role will exist? Why? What are the 2-3 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? What are the headlines of such required competence changes?

Notes

1. Surveys and reports continue to confirm that the majority of organizations do not realize significant business value from IT-enabled business projects. One recent paper reported that 74% of IT projects from 1994-2002 failed to deliver expected value. See D. Shpilberg, S. Berez, R. Puryear, and S. Shah, "Avoiding the Alignment Trap in Information Technology," *MIT Sloan Management Review*, 49/1 (Fall 2007): 52. Gartner estimates that "eight out of ten dollars spent on IT is ultimately dead money." See Gartner Press Release, October 2006, <www.gartner.com/it/page.jsp?id=497088>, last accessed April 21, 2008. For additional evidence, see *The Challenge of Complex IT Projects*, The Royal Academy of Engineering, London, 2004; National Audit Office, *Delivering Successful IT-Enabled Business Change*, Report by the Comptroller and Auditor General, HC 33-1, Session 2006-2007, London, November, 2006; R. Ryan Nelson, "IT Project Management: Infamous Failures, Classic Mistakes and Best Practices," *MIS Quarterly Executive*, 6/2 (June 2007): 67-78.
2. V. Sambamurthy, A. Bharadwaj, and V. Grover, "Shaping Agility through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms," *MIS Quarterly*, 27/2 (June 2003): 237-263; S.B. Reddy and R. Reddy, "Competitive Agility and the Challenge of Legacy Information Systems," *Industrial Management and Data Systems*, 102/1-2 (2002): 5-16; D. Seo and A.I. LaPaz, "Exploring the Dark Side of IS in Achieving Organizational Agility," *Communications of the ACM*, 51/11 (November 2008): 136-139.

3. T. Kern, L. Willcocks, and E. Van Heck, "The Winner's Curse in IT Outsourcing: Strategies for Avoiding Relational Trauma," *California Management Review*, 44/2 (2002): 47-69; E. Carmel and P. Abbott, "Why 'Nearshore' Means that Distance Matters," *Communications of the ACM*, 50/10 (October 2007): 40-46; D. Mucisko and E. Lum, *Outsourcing Falling from Favor with World's Largest Organizations*, Deloitte Consulting LLP Report, 2005.
4. D. McLoughlin and J. Peppard, "IT Backsourcing: From 'Make or Buy' to 'Bringing IT Back in-House'," in proceedings of the *Fourteenth European Conference on Information Systems*, Gothenburg, Sweden, 2006; N.F. Veltri, C.S. Saunders, and C.B. Kavan, "Information Systems Backsourcing: Correcting Problems and Responding to Opportunities," *California Management Review*, 51/1 (Fall 2008): 50-76.
5. Academic research studies include: B. Ives and M. Olson, "Manager or Technician? The Nature of the Information Systems Manager's Job," *MIS Quarterly*, 5/4 (December 1981): 49-63; J.F. Rockart, L. Ball, and C.V. Bullen, "Future Role of the Information Systems Executive," *MIS Quarterly*, 6/4 (December 1982): 1-14; E.W. Martin, "Critical Success Factors of Chief MIS/DP Executives," *MIS Quarterly*, 6/2 (June 1982): 1-9; R.I Benjamin, C. Dickson, and J. Rockart, "Changing Role of the Corporate Information Systems Officer," *MIS Quarterly*, 9/3 (September 1985): 177-188; C. Stephens, W. Ledbetter, A. Mitra, and F. Ford, "Executive or Functional Manager? The Nature of the CIO's Job," *MIS Quarterly*, 16/4 (December 1992): 449-467; L. Applegate and J. Elam, "New Information Systems Leaders: A Changing Role in a Changing World," *MIS Quarterly*, 16/4 (December 1992): 469-490; M.J. Earl and D.F. Feeny, "Is Your CIO Adding Value?" *Sloan Management Review*, 35/3 (Spring 1994): 11-20; H.G. Enns, S.L. Huff, and C.A. Higgins, "CIO Lateral Influence Behaviors: Gaining Peers' Commitment to Strategic Information Systems," *MIS Quarterly*, 27/1 (March 2003): 155-176; M. Tagliavini, J. Moro, A. Ravarini, and T. Guimaraes, "Shaping CIO's Competencies and Activities to Improve Company Performance: An Empirical Study," in *Proceedings of 11th European Conference on Information Systems*, Naples, Italy, 2003; D. Smaltz, V. Sambamurthy, and R. Agarwal, "The Antecedents of CIO Role Effectiveness In Organizations: An Empirical Study in the Healthcare Sector," *IEEE Transactions on Engineering Management*, 53/2 (May 2006): 207-222; Y. Li, C-H Tan, H-H Teo, and B.C.Y Tan, "Innovative Usage of Information Technology in Singapore: Do CIO Characteristics Make a Difference?" *IEEE Transactions on Engineering Management*, 53/2 (May 2006): 177-190; R. Agarwal and C. Beath, *Grooming the 2010 CIO*, a report for the Society for Information Management Advanced Practices Council, 2007; H.G. Enns, D.B. McFarlin, and S.L. Huff, "How CIOs Can Effectively Use Influence Behaviors," *MIS Quarterly Executive*, 6/1 (March 2007): 29-38; M.J. Earl, "The Chief Information Officer: Past, Present, and Future," in M.J. Earl, ed., *Information Management: The Organizational Dimensions* (Oxford: Oxford University Press, 1996): 456-484; D.E. Leidner and J.M. Mackay, "How Incoming CIOs Transition Into Their New Jobs," *MIS Quarterly Executive*, 6/1 (March 2007): 17-28; D. Preston, D. Leidner, and D. Chen, "CIO Leadership Profiles: Implications of Matching CIO Authority and Leadership Capability on IT Impact," *MIS Quarterly Executive*, 7/2 (June 2008): 57-69; P. Seddon, D. Walker, P. Reynolds, and L.P. Willcocks, "A Case-Based Assessment of the Descriptiveness of Three CIO Typologies and Validity and Two CIO-Effectiveness Models," presented at the *19th Australasian Conference on Information Systems*, December 3-5, 2008, Christchurch, New Zealand; J. Denford and M.T. Dacin, "The CIO Position at the Crossroads: Two Institutional Views of a Management Innovation," in *Proceedings of the Fifteenth Americas Conference on Information (AMCIS)*, San Francisco, CA, 2009.
6. Reports include: *Beyond the Crossroads: How Business-Savvy CIOs Enable Top-Performing Enterprises and How Top-Performing Enterprises Leverage Business-Savvy CIOs*, Centre for CIO Leadership, 2010; *Leadership, Capability and Culture: The CIO's Silent Revolution*, IBM Corporation, London, 2009; *Strategic Insight Survey: A US IT Leadership Perspective*, Harvey Nash, 2009; *The CIO Profession: Leaders of Change, Drivers of Innovation*, Center for CIO Leadership, 2008; *The CIO Profession: Driving Innovation and Competitive Advantage*, Center for CIO Leadership, October 2007; *The Evolving Role of the CIO*, IBM Global Services, 2008; *The New CIO: Change Partner and Business Leader*, IBM Corporation, 2007; *Global CIO Survey 2007: IT Agility—Enabling Business Freedom*, Cap Gemini, 2007; *Global CIO Survey: The Role of the IT function in Business Innovation*, Cap Gemini, 2008; *CIO 2.0: The Changing Role of the Chief Information Officer*, Deloitte, 2004; *Circa 2015: The CIO of the Future*, Software AG, 2008; *Information Technology II: How To Close the CIO Leadership Credibility Gap*, Accenture, September 2006; *Boosting CIO Personal Effectiveness: A Quantitative Analysis of the Management Behaviors of High-Performing CIOs*, Corporate Executive Board, Washington, 2005.

7. See for example, M. Broadbent and E.S. Kitzis, *The New CIO Leader: Setting the Agenda and Delivering Results* (Boston, MA: Harvard Business School Press, Massachusetts, 2005); J. Stenzel, *CIO Best Practices: Enabling Strategic Value with Information Technology*, 2nd Edition (Hoboken, NJ: John Wiley & Sons, 2007); G. Smith, *Straight to the Top: Becoming a World-Class CIO* (Hoboken, NJ: John Wiley & Sons, 2006); K.D. Schubert, *CIO Survival Guide: The Roles and Responsibilities of the Chief Information Officer* (Hoboken, NJ: John Wiley & Sons, 2004); W.L. Anderson, *Unwrapping The CIO: Demystifying the Chief Information Officer Position* (New York, NY: iUniverse, 2006).
8. D. Mark and E. Monnoyer, "Next-Generation CIOs," *McKinsey on IT* (Spring 2004), pp. 2-8.
9. *Today's Challenges, Tomorrow's CIO*, IBM Global Business Services, 2008.
10. *Business Week* ran a story in 1986 announcing the arrival of the CIO. Four years later they were predicting its demise. See G. Bock, K. Carpenter, and J.E Davis, "Management's Newest Star: Meet the Chief Information Officer," *Business Week*, October 13, 1986, pp. 160-172; J. Rothfeder and L. Driscoll "CIO is Starting to Stand for Career Is Over," *Business Week*, February 26, 1990, pp. 78-80. At the beginning of the decade, *Harvard Business Review* also ran an article, collecting the views of a number of commentators on the CIO role. See R. Fazio Maruca, "Are CIOs Obsolete?" *Harvard Business Review*, 78/2 (March/April 2000): 55-63. For a review of the academic research literature, see E. Karahanna and R. Watson, "Information Systems Leadership," *IEEE Transactions on Engineering Management*, 53/2 (May 2006): 171-176.
11. Employees working outside the IS organization or not having an IT role.
12. Agarwal and Beath, op. cit. There seems to be some confusion in the literature with the definition of "role" and "competencies." For example, Smaltz and colleagues suggest roles related to CIO "role" effectiveness as being: Strategist, Relationship Architect, Integrator, Information Steward, IT Educator, and Utility Provider. Is the role of the CIO, for example, to build relationships, or is this what a CIO does to optimize value from IT? Broadbent and Kitzis suggest two roles: "Chief Technology Mechanic" and "Trusted Senior Executive Leader." See Smaltz, Sambamurthy, and Agarwal, op. cit. See also V. Grover, S-R. Jeong, W. Kettinger, and C.C. Lee, "The Chief Information Officer: A Study in Managerial Roles," *Journal of Management Information Systems*, 10/2 (Fall 1993): 107-130.
13. C. Edwards, R. Lambert, and J. Peppard, "Clarifying the Confused Role of the Chief Information Officer," *MIS Quarterly Executive*, under review.
14. Interviewees did not distinguish between *competencies* and *skills*, using them interchangeably.
15. These competencies could potentially become the basis of a quantitative assessment instrument.
16. In the academic management literature this is often referred to as *path dependency*.
17. D.F. Feeny, B.R. Edwards, and K.M. Simpson, "Understanding the CEO/CIO Relationship," *MIS Quarterly*, 16/4 (December 1992): 435-448.
18. Ross and Weill report six decisions traditionally made by CIOs that are today really business decisions. J. Ross and P. Weill, "Six IT Decisions Your IT People Shouldn't Make," *Harvard Business Review*, 80/11 (November 2002): 84-92.
19. This is supported by research. See J. Peppard, J. Ward, and E. Daniel, "Managing the Realization of Business Benefits from IT Investments," *MIS Quarterly Executive*, 6/1 (March 2007): 1-11; Nelson, op. cit.; M.L. Markus, S. Axline, D. Petrie, and C. Tanis, "Learning from Adopters' Experiences with ERP: Problems Encountered and Success Achieved," *Journal of Information Technology*, 15/4 (December 2000): 245-265; D.A. Marchand, W.J. Kettinger, and J.D. Rollins, *Information Orientation: The Link to Business Performance* (Oxford: Oxford University Press, 2001); J. Peppard and J. Ward, "Unlocking Sustained Business Value from IT Investments," *California Management Review*, 48/1 (Fall 2005): 52-70; J. Thorp, *The Information Paradox: Realizing the Business Benefits of Information Technology* (New York, NY: McGraw-Hill, 1999).
20. D. Marchand, "The Role of the Chief Information Officer: Achieving Credibility, Relevance and Business Impact," in P. Bottger, ed., *Leading in the Top Team: The CXO Challenge* (Cambridge: Cambridge University Press, 2008), pp. 204-222.
21. M. Gladwell, *Outliers: The Secrets of Success* (New York, NY: Little Brown and Company, 2008).
22. J. Peppard, "The Conundrum of IT Management," *European Journal of Information Systems*, 16/4 (August 2007): 336-345. See also D. Lohmeyer, S. Pogreb, and S. Robinson, "Who's Accountable for IT?" *The McKinsey Quarterly*, 4 (2002 Special Edition, Technology): 39-47.

23. A similar conclusion was reached by Feeny and colleagues when they reported that "the single most powerful discriminator in our study was that labeled 'CEO Attitude toward IT.'" See Feeny, Edwards, and Simpson, op. cit.
24. In their study of IS-business alignment, Tan and Gallupe report that "there is a strong link between business IS-alignment and shared cognition between business and IS executives . . . Business and IS executives in the companies that report a higher level of business-IS alignment do have a set of core beliefs in common regarding IS." From their research Reich and Benbasat conclude "the one construct that seemed to predict long-term alignment was shared domain knowledge . . . The most important direct predictor of alignment in this study was a high level of communication between IT and business executives." See F. Tan and R.B. Gallupe, "Aligning Business and Information Systems Thinking: A Cognitive Approach," *IEEE Transactions on Engineering Management*, 53/2 (May 2006): 223-237; B.H. Reich and I. Benbasat, "Factors that Influence the Social Dimension of Alignment between Business and Information Technology Objectives," *MIS Quarterly*, 24/1 (March 2000): 81-113.
25. D. Preston and E. Karahanna, "How to Develop a Shared Vision: The Key to Strategic Alignment," *MIS Quarterly Executive*, 8/1 (2009): 1-8.
26. Peppard and Ward, op. cit.
27. This sentiment echoes findings from research undertaken in the early 1990s, where the "critical dependency for the CIO is the attitude and influence of the CEO." See Earl and Feeny, op. cit. See also earlier studies: W.H. Doll, "Avenues for Top Management Involvement in Successful MIS Development," *MIS Quarterly*, 9/1 (March 1985): 17-35; J.T. Garrity, "Top Management and Computer Profits," *Harvard Business Review*, 41/4 (July/August 1963): 172-174; S. Jarvenpaa and B. Ives, "Executive Involvement and Participation in the Management of Information Technology," *MIS Quarterly*, 15/2 (June 1991): 205-227; A.L. Lederer and A.L. Mendelow, "Information Systems Planning: Top Management Takes Control," *Business Horizons*, 31/3 (May/June 1988): 73-78; J.F Rockart and A.D. Crescenzi, "Engaging Top Management in Information Technology," *Sloan Management Review*, 25/4 (Summer 1984): 3-16; T.C. Willoughby and R.A. Pye, "Top Managements' Computer Role," *Journal of Systems Management*, 28/9 (1977): 10-13.
28. Enns, McFarlin, and Huff, op. cit.
29. A similar sentiment was expressed by James Emery in an editorial comment in *MIS Quarterly* back in 1991. See J.C. Emery, "What Role for the CIO," *MIS Quarterly*, 15/2 (June 1991): vii-ix.
30. This recommendation was also expressed by a recent report for the Society of Information Management. See R Agarwal and Beath, op. cit. For guidance on building IT leaders "from the bottom up," see H. Smith and J. McKeen, "Developments in Practice XIX: Building Better IT Leaders—From the Bottom Up," *Communications of the Association for Information Systems*, 16 (2005): 785-796.
31. For more on the risks associated with IT see G. Westerman and R. Hunter, *IT Risk: Turning Business Threads into Competitive Advantage* (Boston, MA: Harvard Business School Press, 2007).