

## Current and Future Challenges:

# The Chief Information Officer

Mastering the power of information

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This article highlights the developing role of the chief information officer (CIO) – an increasingly significant business role that has developed in recent years from being a technically-oriented support function to a commercially-focused part of the business.

The role of the successful CIO is explained: what they do, how they do it and the challenges facing Chief Information Officers. These include developing the credibility of the IT organization, reorganizing IT to meet business priorities, or finding new ways for information to add value.

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## The **role** of the Chief Information Officer

What is unique about the CIO role? What business contributions could CIOs make to their company's success? Should the CIO be accepted as having a strategic leadership role or is it purely operational? The answers to these questions have become much clearer as organizations recognize the potential impact, significance and cost of information.

In the past, it has often been unclear if the CIO role was simply another label for the head of information technology: someone simply to keep

the systems working cheaply. Or does the emergence of the CIO role represent a new and more lasting change in senior executive positions?

The development of the role resulted from an increasing awareness that information had to be managed similar to other important resources such as people, finance and materials. This required managers to plan, budget, evaluate and use information efficiently and effectively.

This shift to treating information as a major *resource*, a potential competitive advantage, required a structural change in the organization. A new function was needed that would act as the focal point for managing information resources and computing, telecommunications and office technologies. It was no longer solely a support function, although that remained important. Now, information had to be managed like finance and HR. This new function called for a different breed of manager – one capable of understanding the management of information and IT in the context of the business's priorities and challenges. The role therefore evolved with a decided bias on *defining* the IT function. The only information that really counted was 'data' that could be automated in some form. Other forms of information, such as those that were less structured, informal or paper based, were considered valuable only if they were suitable for digital conversion.

Consequently, IT progress was linked directly to technological progress, and the CIO title conveniently merged with the IT role. Technological development would define and influence information management. The CIO could then ride the waves of technology in the IT industry, confident that their seat at the senior management table would be assured.

## Beyond cost control

In the late 1980s and early 1990s, the CIO role was clearly influenced by the trend toward re-engineering business processes with an eye on downsizing and cost control. This was the first time the job of the CIO was associated with process improvement. One guru of the re-engineering movement argued that companies were 'paving the cow paths' if they were not rethinking, eliminating and simplifying their business processes *before* introducing new software and database applications.

However, during this time re-engineering and cost control became closely associated, with many companies using re-engineering to explain downsizing. Consequently, IT would focus on automating processes to improve productivity, with the focus on cost control and increased efficiency. The role of the CIO was to enable the process of re-engineering and restructuring while keeping the cost of IT under control. In many companies, the CIO became allied with those who advocated 'rightsizing' and the use of IT for cost control and standardization of processes.

The dominant themes of controlling costs and rationalizing resources with IT continued in the 1990s and they combined with a focus on standardizing IT systems. The CIO concentrated on helping to control the growing costs of IT, as companies placed personal computers, laptops and the supporting infrastructures in the hands of increasing numbers of employees. They also adopted standard IT infrastructures for e-mail and data communications and used outsourcing to consolidate IT services.

The CIO in this era was a powerful enabler, helping companies to streamline, standardize and lower the total cost of IT. Again, the CIO role was closely allied with that of the CFO, since cost control while providing adequate IT services were the key operating themes.

From the mid- to late 1990s, three major developments influenced the CIO role:

1. The rise of the Internet and the emergence of e-commerce and e-business.
2. The need to prepare for Y2K and the new millennium by changing basic software systems.

3. Development of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) systems as 'solutions' to the challenges of supply chain management, financial control and customer focus.

During this era, the role of CIO developed in two directions. First, the CIO could create value by focusing on 'e-enabling' through the Internet, intranets and extranets. Although e-projects were generally separated from the IT function with specialized staffs and budgets, CIOs were called upon to support these projects and transform the company's IT infrastructure.

Second, as the IT industry began to offer powerful applications for ERP and CRM, there was a move to automate business processes. This affected all major processes, from finance to order fulfillment, logistics, manufacturing and sales. The convergence of Y2K with these new ERP and CRM systems then led to an unprecedented boom in the IT industry as companies changed their legacy systems in advance of the new millennium.

For the first time, the focus on cost control was supplanted by a focus on 'driving the business with IT.' During the late 1990s, the CIO took on a more prominent business role because of the size of IT investments and because their scope reached throughout core activities.

However, during 2000 the e-business bubble, dot.com hype and inflated stock market valuations came to a swift end, under the impact of the economic downturn coinciding with 9/11 in 2001. Similarly, in 2002 and 2003 continued sluggishness in the global economy meant the cycle of IT investment and the focus on e-projects and ERP and CRM systems came to a virtual standstill. Senior executives lowered their expectations about what 'e,' ERP and CRM could achieve and the big question became 'What is the business value of IT?' CIOs returned to their roots of cost control, standardization and rationalization of IT resources, but with a twist.

Business leaders are now challenging the assumptions underlying the investments they made in ERP, CRM and 'e' initiatives. Also, they are less willing to invest in new IT driven by the technology industry without a clearer view of business benefits. For the first time, the CIO is being challenged to deliver business value and control costs *at the same time*.

The questions that senior executives ask tend to focus on where IT's business value really lies and how it will deliver competitive advantage. Business leaders realize that IT is available to every firm in their industry and the result is a 'competitive necessity' rather than competitive advantage. So, the new question is does IT matter?<sup>1</sup>

# The quest for business credibility, relevance and impact

The CIO's quest for a business leadership role addresses three questions.

- How can the CIO effectively and efficiently manage the IT organization and resources to deliver value?
- How can the CIO enable managers to deploy and use IT in their business units most effectively?
- How can the CIO become accepted as a member of the senior management team, shaping the business strategy and capabilities needed for enhanced performance?

## Manager of IT resources and operations

The CIO's most basic responsibility is to be an effective leader of the IT resources on which the business depends. Given the constant changes in technology, aligning the IT function with the structure and processes of the business can be very challenging. It requires attention on seven key activities.

1. **Governance of the IT function**, which requires action in two areas. First, organizing the internal functions to serve the business. Second, involving managers and functions in decisions related to IT priorities, projects and investments.
2. **Operating the core infrastructure and related services**. These activities are the commodity service end of the IT organization, simply 'keeping the lights on' or 'fixing the plumbing.' Network availability and the responsiveness of services are key criteria when measuring performance.
3. **Managing the applications portfolio supporting business processes**. Companies have a combination of applications embedded in various versions of software, and these require constant changes. This may be because of obsolescence or, more likely, software developments that make previous versions expensive to support.
4. **Recruiting and managing IT skills, expertise and people**. For the CIO, the people side of IT is a major issue. This is because skills vary with changing technologies and with decisions to insource

or outsource specific processes and services.

5. **Developing and retaining IT project management skills**. This is a major source of concern for CIOs. In most companies the number of IT projects that fail, run over budget, run over schedule or simply under deliver, has far exceeded those that are delivered on time and on budget and meet the needs of users.
6. **Managing the suppliers of IT services and products**. As the IT industry has grown in size and scale, the influence of vendors on decisions about services, products, projects and investments has grown as well. For many CIOs, decisions about what vendor to select can be career enhancing or career ending.
7. **Measuring and managing the company's IT investments**. How well does the company manage IT expenditure – is it getting value for money?

Today, companies spend most of their IT budget on applications and services that are 'necessary to operate' and 'essential to compete.' The challenge for the CIO is to decrease the amounts spent on the 'necessary to operate' by gaining efficiencies and standardization, while investing in applications which provide a real advantage. Assessing how well a company spends money on IT means asking three key questions.

- **Are we spending more or less on IT than other companies in our industry?** Total IT spending as a percent of company revenues has been the benchmark measure of IT since the 1970s. Although researchers have failed to find a correlation between IT spend and business performance, this measure has continued to dominate executive discussions of IT performance. This is because it is easy to understand and comparable across companies.
- **What business return are we getting from our IT investment?** This question is a source of continuing debate between business managers and CIOs, largely because it is so difficult to answer.

The impact of IT investments on the business has often been difficult to trace, especially when these investments involve changes in IT support and information for decision-making. Also, the answers have been calculated in terms of forward-looking projections of return on investment (ROI) that are then not evaluated after projects are completed.

- **What proportion of company IT investment is spent on applications and services that are:**

- 'necessary to operate' the business, such as general ledgers and payrolls?
- 'essential to compete' with other companies, such as ERP and CRM?
- 'distinctive' business capabilities, such as business intelligence and market knowledge, that give us an advantage over our competitors?

Today, most companies spend the majority of their IT on applications and services that are 'necessary to operate' and 'essential to compete'. The CIO's leadership role depends directly on their credibility for effectively managing IT resources and consequently contributing to the company's success.

The CIO's responsibility can be summarized as: *'Spend less; follow, don't lead; innovate when risks are low, and focus more on vulnerabilities, not opportunities.'* These directions may seem conservative, but they represent the CIO's first leadership challenges when building credibility with colleagues.

## The CIO as an enabler of business change

'We have spent the last seven years re-inventing our company through acquisitions and divestitures to be a leading speciality chemicals company. As CIO, I have spent two years re-aligning IT strategy and resources with our new business units and reducing the duplication of hardware, networks, software, data and IT people. We are just entering the stage when we can enable business changes by deploying and using IT and information resources effectively in our 22 business units. The challenge is not if, but how we will do so!' (CIO of a global speciality chemicals company.)

In addition to managing IT resources and operations, the CIO must direct IT-enabled processes and projects. This involves close collaboration with managers inside the company and with customers, partners and suppliers outside. The CIO also needs to contribute to the effective use of information and knowledge in business units by developing appropriate information, people and IT capabilities.

This requires an understanding of how IT and process changes affect behaviours and information practices in the company. It also requires the CIO to guide changes in business processes, information, people and IT.

Managers are confronted with frequent changes in their business and market conditions and these require shifts in three areas:

- Business processes

- The use of management information, especially external market and competitor intelligence
- How people are expected to use information about customers, products and services across the company

If employees' use of information and IT is a key concern of CIOs and business managers jointly, how should these issues be addressed?

For many years, the emphasis of change management has been to deploy an IT project and hope to change the behaviours associated with the way information and IT are used. IT, in the form of ERP and CRM systems, could be used as agents for 'business change.' This was done by forcing changes on employees who had no choice but to *adjust* their work habits and information practices to fit the new processes and systems.

What made this view even more compelling for business managers was that 'there was no going back.' For IT people, this view of IT-driven change made their efforts noble, yet relieved them of the inevitable resistance and reactions of affected users.

For business managers, this approach became a convenient way to introduce changes. Bring in IT and process changes and people are forced to adjust. In other words, you have made changes without taking direct responsibility for them. Moreover, if the projects did not achieve the desired results over time, then IT and process management people could be blamed.

A second approach to the challenge of 'change management' recognizes the need to consider people and organizational adjustments when IT changes take place.

In this case, project managers assess the impact on those people most directly affected by the projects and any training needs. They make business managers aware of their responsibility to proactively manage the change *after* the 'go live' date. However, although the intentions are good, execution can typically fail for three reasons.

- **IT and process change projects (such as ERP and CRM) typically consume the available time and resources of the project team.** Often, to meet deadlines and budgets, project managers cut the training and other initiatives that occur at the end of projects.

The result is that the project goes live without adequate focus on the human adjustment required to use the new processes and systems. After going live, the project teams declare victory and are disbanded, with little attention to how the new systems and databases will be subsequently used.

- **People's use of information and IT in the new process never receives adequate management attention or resources.** Business and IT people move on to other projects, devoting little or no attention to how the new systems are used. 'Out of sight and out of mind' seems to characterize the situation.

Also, since these projects typically affect frontline people and middle management, senior managers are largely unaware of the behavioural and information practice changes that these people face in their daily work.

Managers typically assume that workers should accept process and IT changes. A lack of acceptance they attribute to inevitable human resistance to change. What is clear is that neither CIOs nor business managers place much value on increasing the use of these systems and databases after the project has been deployed.

- **The use of information and IT by people affected by changes and new systems is largely invisible to the CIO and business managers.**<sup>2</sup> IT projects and investments are typically the most visible factors. Business managers and CIOs often devote 90% of their attention to planning and initiating IT projects.

Some managers and CIOs naively seek to solve business problems with IT by thinking that these problems will go away if they implement 'IT solutions.' For example, many companies invested in CRM systems to solve a lack of 'customer orientation' among their people.

What many managers failed to understand was that CRM systems have to be accompanied by behavioral and cultural changes in the ways people use information and IT. These 'soft factors' have not been perceived, measured or managed effectively.

Research suggests that only 25% of the business value of IT and information is linked to deployment and investments, whereas 75% is linked to 'soft factors' relating to people's use of information and IT.<sup>3</sup>

Clearly, this is a vital business issue. Many managers and CIOs devote 90% of their attention to IT investments and deployment that account for only 25% of the business value of IT and information. The use of information and IT receives much less managerial attention. Consequently, much of the potential value in improved use of information and IT may be largely lost.

How can CIOs help managers drive business performance by changing the way people use information and IT? Research at IMD demonstrates that managers increasingly see the value of information and IT as going beyond technology to the knowledge and capabilities of their people. This encompasses the human behaviours and values related to how information and knowledge are used.

It also affects information management practices – the way information is sensed, processed, maintained, organized and collected. This is the **Information Orientation (IO)** of the company.

Although the CIO controls how IT is deployed, they do not control how it is *used*. The CIO must work with business managers to exploit the business value of information and IT usage over time. Consequently, they can target the 75% of the business value of IT that resides primarily in the soft factors, but to make progress, the CIO must be a key player on the senior management team.

## Strategic business player and part of the senior management team

'When I became CIO, I inherited a credible and cost effective IT organization in the eyes of business managers. The real challenge for me now is to build on this credibility, making sure that our business units compete with information, IT and people. I also need to provide leadership among my senior executive colleagues for how IT, information and our people can be used to deliver future growth. Being a recognized player on the management team is a must for meeting these challenges.' (CIO of global pharmaceuticals company.)

The third dimension of the CIO leadership role is the least tangible but the most important. The CIO has to be a genuine player on the senior management team rather than a functional bystander. Gaining the acceptance of senior managers usually requires that the CIO fulfil three requirements.

1. The CIO must earn **credibility** by managing IT resources and operations effectively. If the CIO cannot efficiently deliver IT services and systems then their claim to membership is severely limited.
2. The CIO's contribution must extend beyond the IT function to demonstrate **relevance** to the company's business activities. They must emphasize the value of information, people and IT as essential elements of the operating model.<sup>4</sup>
3. The CIO must be able to have an **impact** on the company's mindset, actions and

business. This can be done by positioning information and IT so that other team members view it as contributing to their business success.

Achieving these criteria results in a self-sustaining 'virtuous' cycle, with business credibility leading to successful and relevant changes. This, in turn, cements the CIO's contribution as a strategic business player with a major effect on the success of the business. However, the converse is also true. Failing to achieve these criteria leads to a downward spiral of ineffectiveness and frustration.

The CIO must also pass the 'golf test'. Other members of the team must perceive the CIO as being the kind of person the CEO would invite to join them on a golf day, when the emergent strategy and decisions that will affect the company or business unit will also be discussed. Is the CIO included in informal team discussions and activities to shape key decisions?

Clearly, not all senior management teams play golf, but most have some informal 'test' which determines inclusion or exclusion from their informal deliberations. It is critical for success that the CIO passes this test.

The rise or fall of the CIO is dependent on how well conditions for acceptance and inclusion on the senior management team are met.

### **Influencing the business strategy: moving from good to great**

Although some CIOs earn their inclusion in the senior management team, they are not always able to influence how that team leverages information and IT capabilities. Effective management of IT deployment and the IT function obviously matters.

Companies must deploy IT at least as effectively as their competitors and as efficiently as possible. However, the company's managers should also seek to align IT with their business needs. Settling for sound IT deployment without simultaneously focusing on how information is used runs the risk of failing to optimize the business value of IT.

Ironically, for business managers to leverage the full value of IT they need to focus on the effective use of information, people and IT in their business *first*. Only then can they align IT deployment with their strategies and capabilities. This important change in management mindset is required so that

linkages between information capabilities are embedded in the way business is done.

Companies such as Dell, Wal-Mart, Frito-Lay and CEMEX have built their businesses on customer, market, product and operational information. The competitiveness of these companies arises from the way their managers deploy and use their information, people and IT capabilities to develop performance.

They strive to extract 100% of the business value of information and knowledge by continuously improving their information, people and IT practices. They not only capture the 25% of business value from IT deployment; they also go after the 75% resulting from effective use of information by their managers, employees, customers and partners.

The CIOs in these companies share a senior management mindset about the effect that information, people and IT practices can have on business success. They see their role as influencing the business strategy and model. This allows their companies to create advantages in using knowledge and information that competitors cannot easily replicate.

By linking deployment and use of information and IT to business capabilities, these CIOs position themselves as fully contributing members of the senior management team. They build on their credibility and relevance gained by executing the other two dimensions of CIO leadership (managing IT resources and enabling business change) to achieve maximum business impact.

Furthermore, they give the senior management team the opportunity to break free from the cycle of competitive necessity. This is achieved by exploiting aspects of IT and information management that are the most difficult for competitors to imitate.

### **Avoiding disorientation: Information Orientation at work**

A growing number of companies have implemented major IT projects using the principles of Information Orientation.

For example, a European banking group transformed its struggling branch-based retail banking business into one of the most successful banks in its market within 1,000 days. This was accomplished by getting the right information to people in the branches, enabling them to successfully cross-sell their products. The bank kept its new customer relationship project simple by providing their customer representatives with:

- an easy to use and intuitive IT interface;

- clear information about customer segmentation, product selling targets and company performance information;
- incentives that created an open culture emphasising teamwork and action.

Similarly, a small, Latin American commodity business became one of the largest global players in its market by successfully deploying

and realising the benefits of technology. Executives admit that the transformation of their business was based on a cultural change. This required a new emphasis on meeting commitments, using information to develop new ways of serving customers, and developing information-centric processes that increased operational efficiency.

## The future of the CIO leadership role

The CIO role as it has evolved over the past 20 years is focused on deploying IT and controlling costs. The ambition to develop a role that would enable the company to leverage information and knowledge effectively remains largely unfulfilled.

Some business managers have answered the question, 'Does IT matter?' with a resounding *NO!* They believe IT provides no real basis for competitive advantage and should be managed as an efficient cost centre. The CIO's task is to prove that important though this is IT can provide much more value to the business.

In many companies, CIOs have opted for the first dimension of the CIO role (managing IT resources), thinking that it was the most achievable and politically safest. However, their contribution to the other two dimensions (enabling change and being a strategic business player) has been marginal at best. What needs to be done?

- **Develop (or rebuild) the credibility of the IT organization quickly.** Credibility in executing the role buys time but is not sufficient on its own. There is no substitute for the next step: adding business value.<sup>5</sup>

- **Move beyond the positioning of IT as a 'competitive necessity' and connect information and IT capabilities with the company's strategies and goals.** As IT becomes a simple competitive necessity, the role of the CIO as head of the IT function may be diminished.
- **Influence the perceptions of other members of the senior management team.** As an individual, the CIO must build credibility and relevance so other senior managers accept and welcome their contributions. As a team member, the CIO must move beyond IT deployment and cost control to demonstrate the business impact of using information, people and IT capabilities. However, business impact is conditioned by whether other senior managers will work with the CIO to leverage information capabilities in their activities and permit the CIO to be a fully contributing member of the senior management team.

It is clear that in many companies today, the future of the CIO role is dependent not just on the qualities of incumbent. It also relies on the belief of senior managers that having a CIO as a business colleague is valuable and contributes to their business unit or company. However, the history of the CIO role in many companies is not pretty. Whether the future role of the CIO rises above the tide will depend on how business managers and CIOs work together to realise the benefits of deploying and using information in their businesses.

**Managing Operations and Information**

For practical guidance, checklists and toolkits relating to the challenges of managing operations and information visit [http://www.leadershipexpertise.com/managing\\_operations\\_and\\_information.php](http://www.leadershipexpertise.com/managing_operations_and_information.php)

# Assessing the Role of the CIO

The following questions provide a starting point when assessing the role of the CIO.

1. What are the CIO's priorities and how could these be developed? Is their purpose primarily to:
  - Manage IT resources and operations?
  - Support business improvements by ensuring the effective use of information and IT?
  - Influence the business strategy, moving the organisation as a whole from good to great?
2. Does the CIO have **credibility** by managing IT resources and operations effectively?
3. Does the CIO's contribution extend beyond the IT function, demonstrating **relevance** and benefiting the company's business activities as a whole?
4. Does the CIO **influence** the company's culture, mindset and the way it works?
5. What guides the CIO's decisions and what techniques do they employ?
6. Does the CIO organize the IT function and operate the core infrastructure and related services to serve the business? Could this be improved by:
  - Involving managers and functions in decisions related to IT priorities, projects and investments?
  - Managing the applications portfolio supporting business processes?
  - Recruiting and managing IT skills, expertise and people?
  - Developing and retaining IT project management skills?
  - Managing the suppliers of IT services and products?
  - Measuring and managing the company's IT investments?
7. Is the CIO focused on the key details necessary to develop the IT function's contribution to the business?
8. Are there adequate measures and performance criteria in place to measure the IT function's progress?
9. Does people's use of information and IT receive adequate attention and resources?
10. Is the use of information and IT by people affected by changes and new systems largely invisible to the CIO and business managers?

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## Sources of further information

<sup>1</sup> Nicholas G. Carr, *Does IT Matter?* Harvard Business School Press, 2004.

<sup>2</sup> See Donald A. Marchand, William J. Kettinger, and John D. Rollins, *Making the Invisible Visible: How Companies Win with the Right Information, People and IT*, John Wiley & Sons Ltd, 2001.

<sup>3</sup> Donald A. Marchand, *Extracting the Business Value of IT: It is Usage, not just Deployment that Counts!* Capco Institute Journal of Financial Transformation, Issue 11, August 2004, p. 127.

<sup>4</sup> The capability of a CIO to contribute value to the business has long been viewed as essential for success. See, for example, Michael J. Earl and David F. Feeny, *Is Your CIO Adding Value?* Sloan Management Review, Spring 1994

<sup>5</sup> This view is persuasively presented by Marianne Broadbent and Ellen Kitzis in *The New CIO Leader*. Harvard Business School Press, 2005.