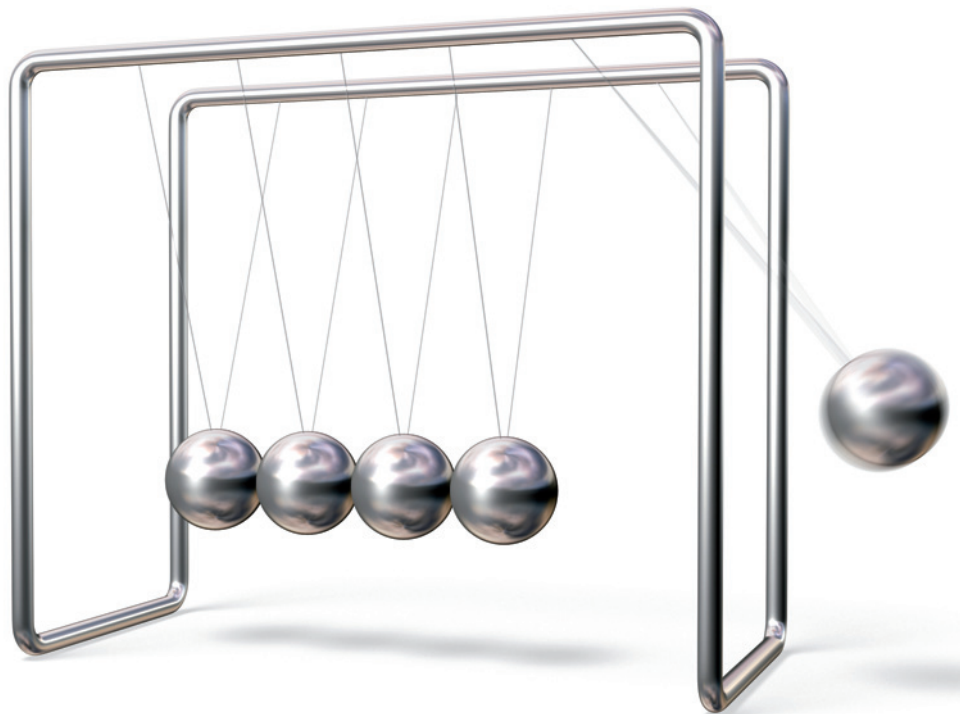


Realising value  
from a CIO  
Navigating the  
silicon ceiling





# Introduction

The nature and dynamics of the role of the Chief Information Officer (CIO) have been debated for well over a decade. But far from reaching any conclusion, to date the debate appears to have created more questions than it has answered. Definitions of the CIO role still appear to vary widely; understanding of the scope of the role is still apparently limited; and as has been widely reported, many CIOs seem to feel perpetually out of the loop; trapped below the proverbial 'silicon ceiling'.

But why? There appear to be no such difficulties relating to the role of the Chief Financial Officer (CFO), the Chief Operating Officer (COO), Chief Technology Officer (CTO) or even the Chief Marketing Officer (CMO). Is the role of the CIO really so different?

In June 2008, Deloitte and Cranfield School of Management decided to examine the role of the CIO from a new perspective, drawing on the insights of CEOs, investors, analysts, consultants and industry commentators, as well as CIOs themselves. The research, based on a series of semi-structured interviews, was designed to stand back from traditional approaches towards this topic, and explore the complex tangle of assumptions and misconceptions that surround the very concept of the CIO. Four key questions were posed: What degree of clarity is there in the CIO role? Why are there so few CIOs? Which factors affect the CIO's ability to deliver against expectations? And how will the role of the CIO evolve in the future?

The primary conclusion from the research is that the role of the CIO is extremely sensitive to the context of the organisation, and as a result, changes in shape and dynamics as a function of the organisation's needs. Most importantly, the role of the CIO appears to be transient, with a clear beginning, middle and end. Once information and technology have become an integral part of the organisation, both at an operational and strategic level, and are used to drive innovation and change, then the need for a CIO is expected to diminish.

Based on a more fluid and reflexive definition of the CIO, this report helps to illustrate how organisations can evaluate whether they need a CIO at all; what type of CIO they might need given their context; and what type of organisational changes may be needed to best leverage their CIO's potential. Where applicable, it also offers suggestions to help CIOs to better establish their position, integrate into the management team and prepare for the next phase of their career.

# Executive summary

The role of the CIO within UK companies appears to be a source of divided opinion and considerable confusion. For many companies, the role and the issues surrounding its effective execution appear to be widely misunderstood. For a growing number, however, the role of the CIO – and information and technology more generally – are becoming recognised as critical to business performance and growth.

Nonetheless, CIOs remain relatively scarce amongst the senior management teams of UK companies, and it appears that many basic questions about the nature and dynamics of the role remain unanswered.

Specifically, there appears to be confusion as to the definition of the role of the CIO – both within companies that have one, and those that don't. Amongst companies without a CIO doubts seem to persist as to the rationale for having one at all. Many still question the relevance of the role, and the contribution that a CIO could make to strategy, innovation and growth. This situation highlights the fact that in the business community at large, the very notion of the CIO is still far from accepted.

There is greater clarity among those companies that already have a CIO, and among CIOs themselves. However there still remains a degree of dislocation between the two, which manifests most clearly in unsuitable performance measures and persistent communication and alignment issues.

However, our research suggests a means of understanding many of these problems. Our approach derives from a recognition that the role of the CIO is extremely sensitive to context, and more importantly, is transitory. Five phases of information and technology leadership have been identified by this research: only three of them tend to require a CIO.

Early information and technology leadership is clearly the domain of the IT director or manager. Most companies are unlikely to recognise the need for a CIO until they start to include information and technology as key ingredients of strategy, innovation and broader business management. At this point, they most likely need an *Evangelist CIO*, who can advocate the importance of information and technology, bring order to legacy systems and processes, and take a more active role in organisation management.

As acceptance grows and order is established, companies are likely to need a CIO capable of contributing to, or indeed leading, the innovation process. The *Innovator CIO* would normally be charged with actively leveraging information and technology to create new products, services and business models – as a means of demonstrating, through example, how valuable information and technology can be. In parallel, the *Innovator CIO* is expected to transfer and embed these capabilities into the organisation – rather than trying to enlarge their empire.

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I think a very substantial proportion of executives within the FTSE 350 probably don't know what a CIO is, or what he or she is supposed to do

Rory Cellan-Jones, Technology Correspondent – BBC News

Finally, once information and technology become part of the organisation's DNA, a *Facilitator CIO* is likely to be necessary. The *Facilitator CIO* seeks to ensure that every department and division leverages information and technology to the full, and that every manager is able to apply these capabilities to their area of responsibility. In essence the *Facilitator CIO* cements the distribution of responsibility for and application of information and technology across the organisation. This is likely to be a prelude to his or her departure. In many respects, the *Facilitator* role represents a springboard from which the CIO can obtain a permanent seat at the high table, but in an information led business role. Once the job of the *Facilitator CIO* is reaching completion, the leadership requirement of the organisation should have come full circle, and is expected to return to that of an IT manager or director.

Based on this model, where tensions arise between existing CIOs and their peers it is likely to be because the type of CIO engaged is out of sync with the needs of the organisation. For example, an *Innovator CIO* may become frustrated by the lack of acceptance and slow pace of change in an organisation that actually needs an *Evangelist*; and an *Evangelist CIO* in an organisation that needs an *Innovator* may be seen as ineffective and unfocused.

This situation is often exacerbated by the perennial issue of understanding: the lack of a common language between CIOs and the rest of the business. Information and technology are still shrouded in mystery, wrapped in a language full of jargon and acronym. Many CIOs and their colleagues have done too little to demystify and communicate openly. As a result, it appears that too few companies enjoy a clear, open and cooperative relationship between the CIO and his or her team, and the rest of the business.

The fact that historically, companies' information and technology projects have often failed to fully deliver their intended benefits does not help<sup>1</sup>. Senior executives still ask why they should have a CIO on the senior management team when many candidates have presided over, at best, patchy performance.

<sup>1</sup> 62 percent of IT projects fail. Why? CNET News, 21 March 2008.

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I've seen CIOs transformed from being an aggressive, positive bunch to being extremely timid – within just a decade or so. CIOs have been absolutely hammered by businesses, because IT has so often disappointed. And CIOs have to take part of the blame – not only for poor execution but also for poor management of expectations.

Toby Redshaw, CIO – Aviva plc

In spite of this, as the flow of information and complexity of technology increase, the need to align, control and apply information and technology – at the highest possible level – becomes paramount.

Gone are the days of applying information and technology retrospectively, once the big decisions have been made. Innovation – the backbone of new business models, new products and services, and even entirely new markets – will have to become increasingly linked with information and technology. CIOs will have a vital part to play, ensuring that their organisations are doing everything possible to leverage the value and potential of digital assets.

The big questions are: will they, and for how long? The answer to the first is organisation specific. Whether or not CIOs are given the opportunity to prove themselves and contribute to growth depends on the extent to which organisations recognise that not having one is potentially a problem. While there appears to be a trend towards greater understanding and appreciation of information and technology, action – in terms of appointing and empowering an appropriate CIO – still lags some way behind. The answer to the second question is “not forever”, given the transitory nature of the CIO role.

What this infers is that the career path of the CIO is not linear, and detailed knowledge of IT is not necessarily a prerequisite. Far more important will be the ability to plan clearly for the future, drive change, lead innovation, promote integration and cooperation, educate and motivate others, and focus constantly on the needs of internal and external customers.

The end game is that information and technology should not only serve the needs of the business, but also become as much a driving force for change, innovation and growth as marketing, finance or strategy. Ultimately this should allow the ambitious CIO to move around the silicon ceiling, becoming an accepted, valued and permanent part of the senior management team in an information-orientated line role. This is likely to be increasingly important to British companies’ capacity to deliver value growth in an ever more hostile – and digital – global economy.

## **Methodology**

This report is based on primary research, which took the form of semi-structured interviews. There were over 40 interviewees in total, of which 17 were CIOs, 14 were senior managers, and 11 were analysts, commentators, consultants or academics. Between them, the interviewees represented 42 organisations, spanning sectors as diverse as print media, financial services and legal education. Each interview was transcribed and checked for accuracy. The interviews were conducted during June and July of 2008.

Analysis of the interview transcripts was led by Cranfield School of Management. All of the transcripts were coded, and analytical tools were used to draw out key trends, and to collate findings. Two discrete teams worked in parallel, so that findings and conclusions could be crosschecked.

In parallel with the analysis process, additional interviews were conducted with subject matter experts in order to ‘stress test’ the findings, and ensure relevance and balance.

## **Acknowledgements**

Both Deloitte and Cranfield School of Management would like to extend their gratitude to all those involved in this research – especially the interviewees, all of whom gave exceptional insights.

# The CIO today

It appears that the vast majority of British companies have now embraced information technology (IT) – which to many means servers, networks, desktops and portables – as a necessary part of business. However, substantially fewer seem to have really understood the wider importance of *information* – as a vital ingredient to organisational performance. Similarly, relatively few companies have chosen to address this situation by engaging a CIO – in the fullest sense of the definition.

## Defining the role of the CIO

Our view, based on this research and our broader interactions with CIOs and corporations, is that *the CIO is a senior management team member who is responsible for leveraging the present and future value of information and technology, as well as being jointly responsible for the performance, growth and governance of the organisation.*

The presence of a CIO on the senior management team can and should signal a difference in attitude, approach and strategy. With a CIO in place, information and technology are represented at the highest executive level, and can become an integral part of decision-making, strategy formulation, innovation and the overall management of the organisation. This does not infer, however, that all businesses will ultimately – and permanently – need a CIO.

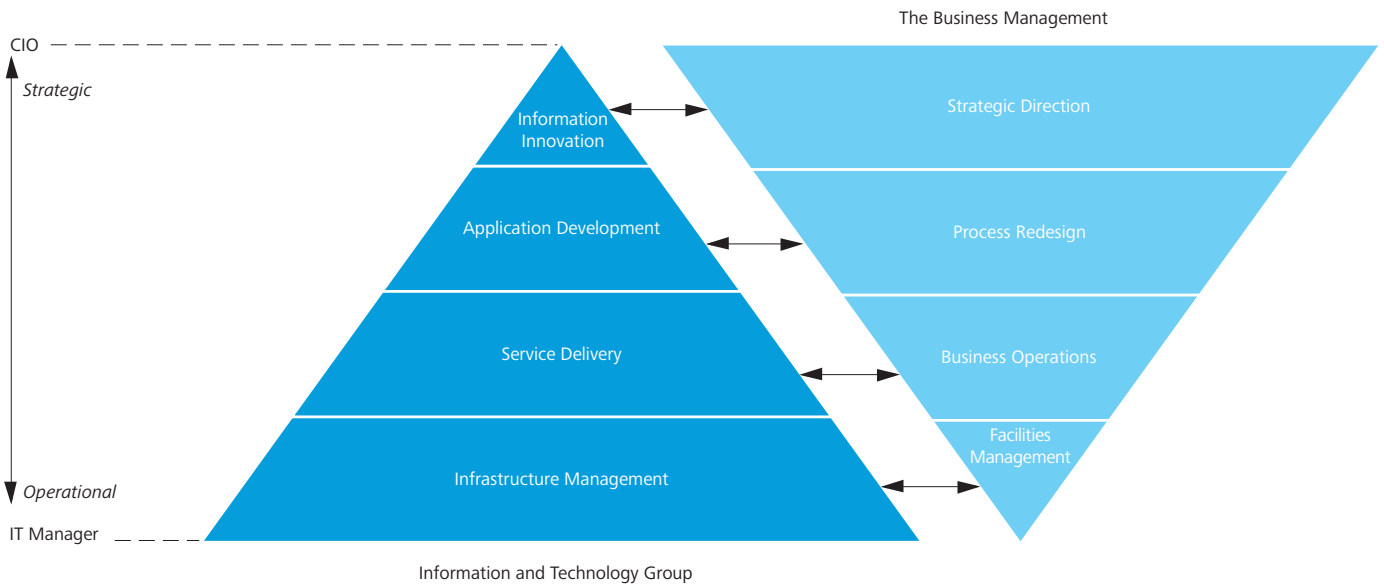
The business management team of an organisation, and its information and technology group, can be portrayed through four discrete levels, as illustrated in *Figure 1*. Such a structure implies that the need for a CIO is generally most acute in organisations that use information and technology strategically.

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I think many companies still see information and technology from the perspective of managing costs. As a result, they tend to be handled by an IT director, who reports into the CFO. This often leads to information and technology becoming second order issues.

Paul Cheesbrough, CIO – Telegraph Media Group

**Figure 1: The hierarchy of information and technology needs**



In the UK, it seems that the majority of companies' IT activities are encompassed within the lower three categories – infrastructure management, service delivery and application development. For some, that perception is correct; at least for the time being. For a growing number of others, however, a combination of changing business models, increased competitive pressure from overseas, shifting customer preferences and other factors have forced the realisation that information and technology are valuable strategic levers, which have to sit at the heart of innovation and growth. Of these organisations, some – but not all – have chosen to engage a CIO.

### Reasons for engaging a CIO

Amongst the companies involved in our research that had appointed a CIO to the senior management team, there were three main reasons for their decision.

The first was related to the emergence of perceived external threats. The dotcom boom and subsequent bust, the rise of the internet and growth in e-commerce: these and many similar events were cited as examples. Such external changes served to undermine business models, disrupt routes to market and most importantly, bring the importance and potential of information and technology into very sharp focus. For some companies, the most obvious response to such threats was to hire a CIO.

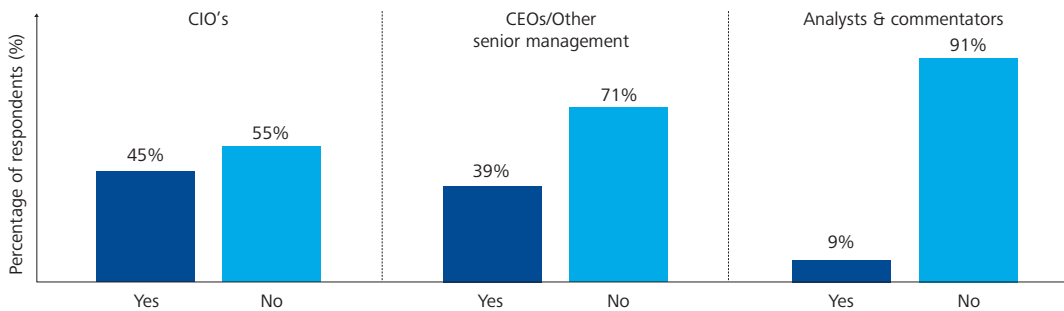
The second reason was related to strategy. Decisions designed to give the organisation competitive edge, exploit new opportunities or improve business performance often informed the need for a CIO, as part of a broader suite of changes.

The third reason for appointing a CIO was simply to follow the trend set by other organisations, often without a clear rationale for doing so. In some instances, the appointment of a CIO was motivated by the desire to attract or indeed retain talent, rather than achieving specific business objectives.

### Lack of clarity in the CIO role

Perhaps not surprisingly, the main reason for not having a CIO is simple lack of clarity. Even though the CIO role is well over a decade old, many business leaders and commentators still express uncertainty about what a CIO is, and does.

**Figure 2: Is there clarity regarding the definition of the role of the CIO?**



As illustrated in *Figure 2* above, our research suggests that this lack of clarity is even evident amongst CIOs themselves.

Given the low level of clarity amongst CEOs and other senior managers, it would appear that CIOs face an uphill struggle if they are to make it to the senior management team. In part, it is their responsibility to remedy this situation. CIOs, and the industry bodies that represent their interests, must move quickly to define not only the shape and scope of the role, but also the interfaces with other senior management posts, dependencies, deliverables and performance metrics.

### Too few CIOs have the opportunity to excel

As a consequence of the lack of a widely accepted definition of the CIO role, many existing CIOs find themselves measured on the basis of targets and objectives that are at best tangential, at worst, distracting. Many CIOs still have their performance measured on the basis of traditional IT metrics, such as uptime, project delivery and variance from budget. Only a small minority of those CIOs interviewed were measured in a manner that reflects the strategic nature of the role, and both its information and technology components. This dislocation between the definition of the role of the CIO, the actual job done, and the performance measures applied puts existing CIOs in a position where it is often very difficult for them to excel.

It also sets an unfortunate precedent. Since there are relatively few CIOs over all, and few of them are empowered or assessed in a way that allows them to perform well, companies without a CIO have few aspirational examples to follow. That is not to say that there are few good CIOs – there are many. But too few of them are given a platform from which they can make a difference – and can be seen to make a difference.

### Breaking the cycle

Though this situation is unfortunate, it is not insurmountable. Steadily increasing information and technology competence across management teams generally may help to improve understanding and acceptance. Additionally, the pressure exerted by a challenging economic climate may lead companies to consider all of their options – including the engagement of a CIO – with more rigour and clarity.

Information and technology professionals, industry bodies, advisors and vendors have an important role to play. First, they must help to articulate the nature and purpose of the CIO role, and more particularly, how it integrates with those around it. Secondly, they could help to clarify the measures by which a CIO should be assessed – blending operational IT metrics with those relating to corporate governance, strategy and business growth.

And finally, they should consider supporting existing CIOs in embracing and becoming an active participant in the broader management of the organisation, and especially innovation.

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**One of the main reasons why there are so few CIOs in the UK is simply that very few chief executives have met or are even aware of really good ones**

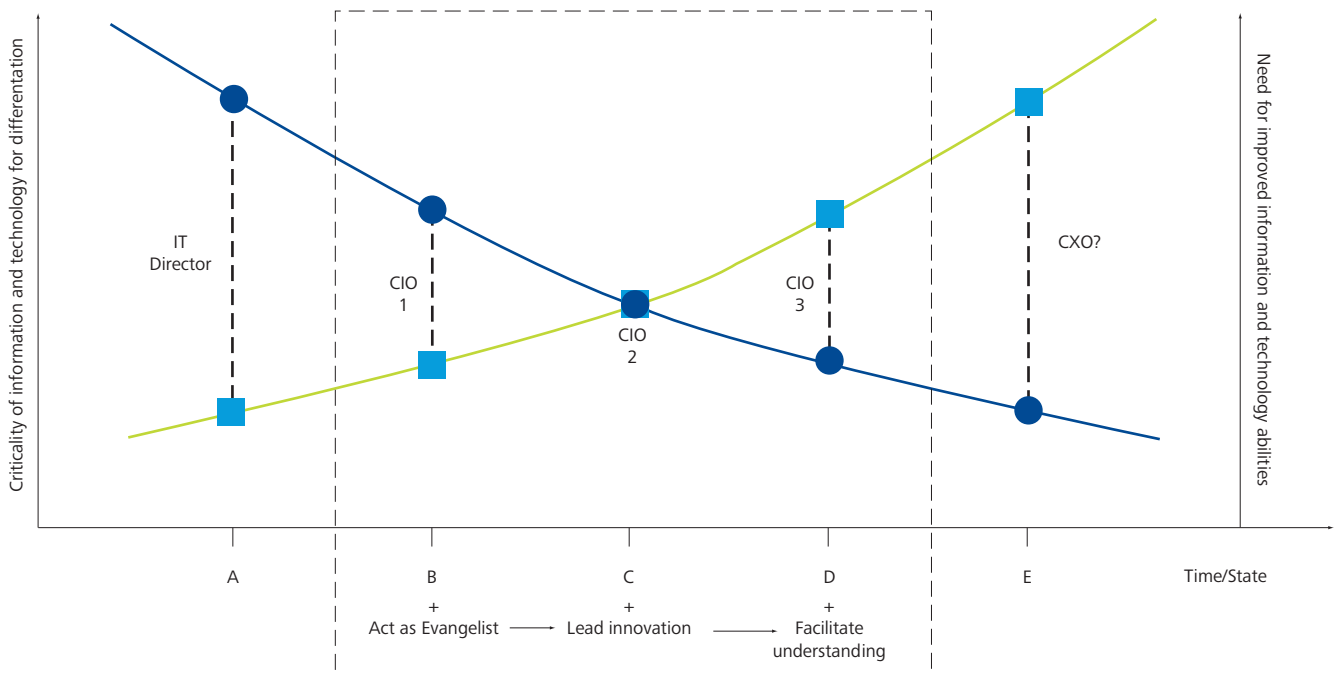
John Allwood, Group CFO – MECOM Group plc

# What next for the CIO?

The need for a CIO – and the capabilities of the CIO – are almost always dictated by context. Context depends on the industry an organisation operates in, its competitive dynamics, its degree of international spread, the time sensitivity of its products or services, and a very long list of other factors.

However, as *Figure 3* below illustrates, the most important contextual variables are the extent to which companies need to improve their information and technology capabilities (descending blue line), and the extent to which information and technology are critical for business differentiation (ascending green line). Our research identified five phases (labelled A to E) that information and technology leadership may go through. Each phase has implications for the required competencies of the leader.

Figure 3: The CIO cycle



There will be a need for the CIO role until the use of technology is so mature that it is like plugging a hairdryer into an electric socket

Stewart Smith, former CIO – GKN

Within this context it is clear that the role of the CIO is transitory. In most cases, it need not exist until such time as the information and technology needs of the business exceed the capabilities of a typical IT department.

In other words, the need for a CIO is not evident until the organisation begins to see information and technology as being part of strategy and innovation, as opposed to being rooted primarily in operations.

Perhaps more importantly, the role of the CIO has a finite end. Once the organisation has positioned information and technology at the heart of their activities, the need for a CIO effectively diminishes.

By this point, information and technology capabilities should be so embedded in the organisation that it no longer makes sense to vest responsibility for them in a single individual.

For companies and CIOs alike, understanding where they sit on the continuum implied by the CIO Cycle is likely to be critical – not only because it is important to recognise when the need for a CIO arises, but also what type of CIO is appropriate at any given point. *Figure 4* below presents details of each state of information and technology leadership, with a focus on the information capabilities and governance required.

**Figure 4: The five states of information and technology governance**

State	Criticality of information in the industry for differentiation	Need for improved information abilities	Discussion
A	Information and technology are currently not used for differentiation.	Information and technology capabilities are in need of significant improvement – and hence are currently low.	Organisations typically have an IT director or manager who makes (or is given little opportunity to make) marginal contribution to the strategic application of information technology.
B	Examples exist of information and technology usage contributing to differentiation and competitive advantage but they are not widespread.	Information and technology capabilities are still in need of improvement, but some isolated capabilities do exist.	Organisations typically have an <i>Evangelist CIO</i> who can explain how information and technology can be used for differentiation, and who can galvanise support.
C	Significant recognition potential of the high potential value of information and technology exists across the industry.	Adequate operational information and technology capabilities, but residual weakness in a strategy and innovation.	Organisations typically have an <i>Innovator CIO</i> who actively applies information and technology to gain competitive advantage, and to develop information capabilities.
D	Information and technology are used to provide differentiation and competitive advantage right across the industry; laggards suffer material disadvantage.	High level of information and technology capabilities – both operational and strategic – high level of acceptance and integration.	Organisations typically have a <i>Facilitator CIO</i> to work with business/department leaders to leverage the greatest possible advantage from information and technology.
E	Information and technology are recognised as being at the heart of the industry and are treated as such.	Exceptional information and technology skills are applied.	Organisations typically no longer need a CIO, because information and technology have become deeply embedded and integrated into every aspect of the organisation – operational issues can now be handled by an IT director or manager.

### State A: Traditional IT Manager/Director

For most companies, the cycle begins with an IT director or manager, whose primary functions revolve around the provision of infrastructure, communications and systems. At this point in the cycle, the organisation is most likely not strategically dependent on information and technology; rather, they are more likely to use IT to support operational performance in areas such as accounting, billing, supply chain management and so on.

### State B: Evangelist CIO

Once companies have recognised the potential of information and technology within their industry, an *Evangelist CIO* is likely to be required. This individual typically takes on the task of raising the profile of information within the organisation, ‘selling in’ the idea that it can be leveraged to generate business value.

*The Evangelist CIO* typically seeks to convert his or her peers to the notion that information and technology are potent drivers, partly by exciting them with potential visions of the future, and partly by using information capabilities to radically improve operational performance.

The barrier between states A and B is critical. It is difficult to think of an industry in which information and technology could not make a material contribution to differentiation, competitive advantage and growth at some point in the future.

Tension arises because for many companies it is not always clear how and when this will be; and a more traditional IT director is not always best placed to answer these questions. It is therefore important that the senior management team as a whole are aware of, and respond to, the organisation's evolving information and technology leadership needs.

#### **State C: Innovator CIO**

As the transformational power of information and technology becomes more accepted and understood, companies typically demand a CIO who is able to lead by example. The *Innovator CIO* should normally do exactly that – using information and technology to propose new products and services, or elements of both, that give the organisation sustainable competitive advantage and a clear source of differentiation versus rivals. The *Innovator CIO* uses information and technology proactively, as an integral part of tactical manoeuvring, strategic growth and innovation. In parallel, the *Innovator CIO* should transfer and embed these capabilities into the organisation – rather than trying to enlarge their empire.

By implication, the *Innovator CIO* is a business leader capable of managing information and technology in such a way that he or she has the same status and accepted role as marketing, finance and operations.

#### **State D: Facilitator CIO**

With information and technology established as a vital part of the organisation's strategy, the *Facilitator CIO* is responsible for ensuring that information and technology skills and capabilities continue to pervade every part of the organisation. Rather than compressing information and technology into a single directorate with a vertical structure, the *Facilitator CIO* starts to align them horizontally, with the objective of ensuring that every department and division within the organisation can define, integrate and exploit information. The *Facilitator CIO* ensures that the work performed by the *Evangelist* and *Innovator* CIOs are enabled and embedded.

#### **State E: CIO Metamorphosis**

Having reached a point where information and technology are a critical part of an organisation's DNA, it could be argued that vesting responsibility for them in a single department or individual no longer makes sense. By this point, the CIO should resemble a successful parent: having put values and capabilities in place, and ensured awareness and clarity, everything should function without further intervention.

As a result, the CIO role may cease to exist. As the *Facilitator CIO* role reaches its natural conclusion, organisations' information and technology leadership requirements are expected to come full circle, returning to that of an IT manager or director. Meanwhile, successful *Innovator* and *Facilitator CIOs* could be offered a springboard from which they can obtain a permanent seat at the high table, but in a line management function where information is a critical component. In short, successful CIOs could have the opportunity to fill other CXO roles.

# Getting the CIO balance right

Given that information and technology are potentially powerful drivers of growth, it follows that creating the right leadership structure for information and technology has the potential to allow the organisation to exploit them to the fullest, and gain advantage over competitors.

But there are two critical caveats. The first is that simply hiring a CIO and making them part of the senior management team is not the whole answer. Even assuming a perfect candidate, there are many structural and procedural changes that, ideally, should precede the engagement of a CIO. The role must be carefully defined, in relation to the extent to which the organisation needs to improve its information and technology capabilities, and the extent to which information and technology are critical for business differentiation.

Additionally, interfaces with other departments must be clearly agreed and articulated, reporting relationships need to be formally established, and performance metrics must be set out. In short, engaging a CIO should be one of the last steps in a much broader, deeper process that starts with a clear examination of the relative strengths and weaknesses of the business, and ends with a clear statement of needs, covering all areas, not just information and technology.

The second caveat is that each state in our model may require a different CIO candidate. The characteristics of an *Evangelist*, an *Innovator* and a *Facilitator* are quite different (see *Figure 5* below). Although in some circumstances a gifted individual may be able to accommodate all of these characteristics, others may not. Either way, it is likely that the individual will require carefully structured training and development to assist with their transition.

**Figure 5: The changing characteristics of the CIO**

Evangelist	Innovator	Facilitator
Visionary	Manages complexity	Team player
Great communicator/persuader	Matches IT opportunities with issues	Business understanding
Thick skinned	Great relationship manager/team player	Focus on technology
Business understanding	Deep knowledge of business	Resource efficiency
Committed	Develops organisation information capabilities	

By implication, it will likely be important for the CIO to have a supporting team that is agile enough to respond to the change implied by the evolving nature of the CIO role. Frequently the team's role will be to enable the CIO to evolve by ensuring a steady state of service delivery in day-to-day management.

This implies that the CIO's team will likely need a strong, experienced group of first line reports, capable of keeping the information and technology 'machine' running smoothly, and responding to change, irrespective of the phase of governance, and the implied characteristics of its leader.

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The CIO has to balance project delivery versus innovation and strategy setting, versus operational running of systems. Essentially it's about letting go of some of the detail but still making sure that detail is progressed. It's about having the vision to look a few years further ahead, not just meeting the commitments in this year's work plans, and it's about always demonstrating a clear understanding of, and a well-judged response to, the pressures his or her organisation faces.

Gary Hird, Technical Strategy Manager – John Lewis Partnership

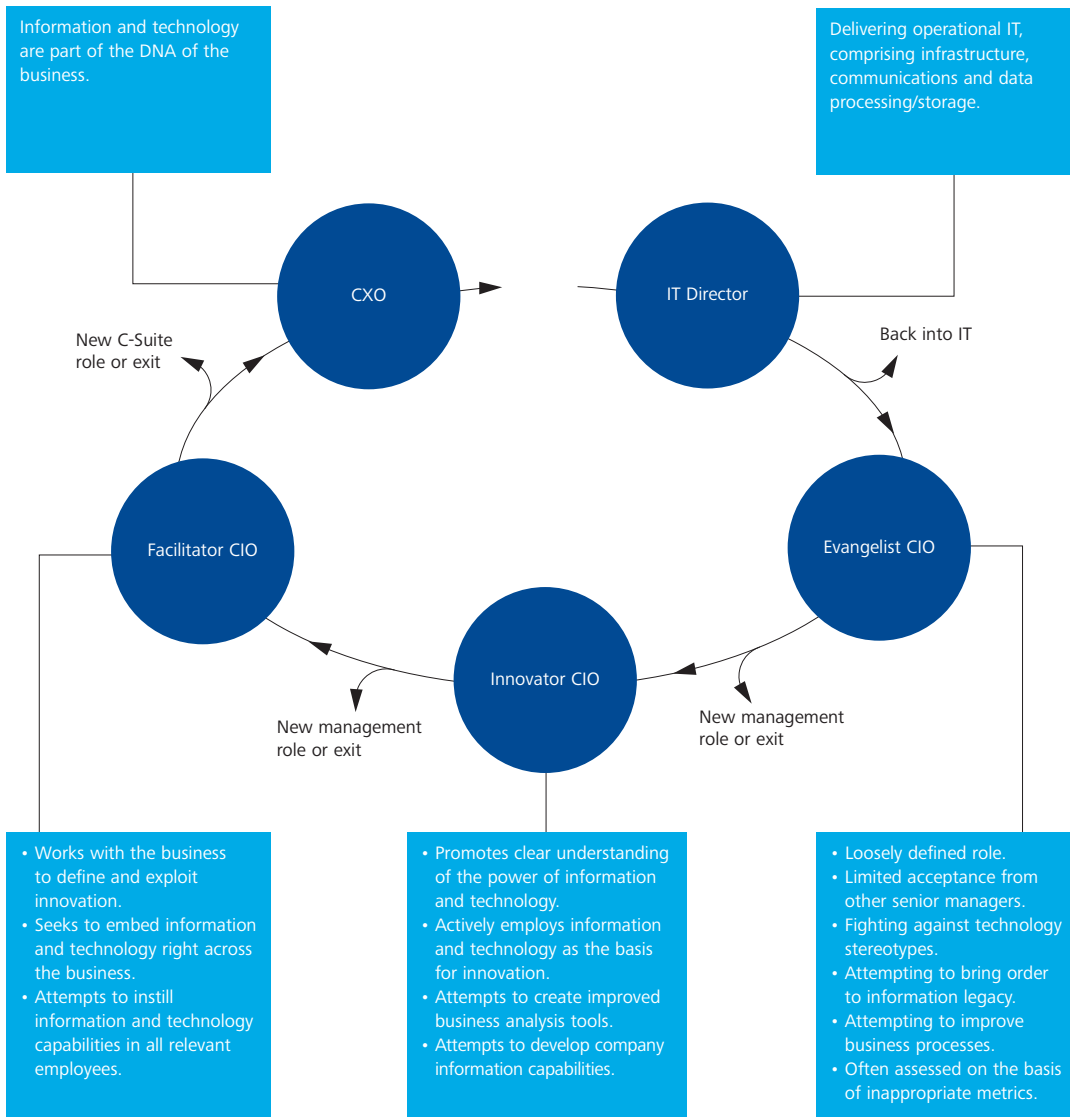
Companies should think carefully about recruitment, human resource management and succession planning. Attracting a gifted *Evangelist CIO* only to brush him or her aside once information and technology are becoming established and credible would be hugely wasteful, and demoralising. Companies should try to think several phases ahead, and ensure that they have suitable roles carved out for CIOs who have succeeded in delivering some – or indeed all – of the information and technology transformation that the role implies.

#### **CIOs' career choices**

Looking at the situation from the CIO's perspective, two quite different career trajectories emerge. On one hand, successful CIOs are expected to be in short supply, and may have the opportunity to move from organisation to organisation, repeating a successful formula. Alternatively, outstanding CIOs may be able to use their position as a springboard to other, permanent senior management roles.

However, failure to do so may result in a CIO being pushed back into an operational IT leadership role, as illustrated in *Figure 6* (opposite).

**Figure 6: The evolution of information and technology leadership**



Accepting that the CIO role is transitory is likely to be key. With it comes a recognition that there is a finite job to be done, with a clear beginning, middle and end. The CIO should then be able to think about his or her work in terms of clear milestones on the way to an equally clear objective – transferring their CIO skills to another organisation, or growing into another senior management role within the same organisation.

# Your CIO – aligned or misaligned?

Our research indicates that a growing number of UK organisations are likely to engage a CIO. Getting the CIO in sync with the stage of development of the organisation, and more specifically its information and technology needs, will be key. Even before a CIO is in post, companies will need to ensure that they are ready to follow the route set out by the five states of IT leadership, and the three key phases that require a CIO.

Change will be required across many parts of the organisation, not just those adjacent to the CIO. Gaining genuine business value from a CIO is likely to require the organisation to accept the importance of information and technology to support innovation and growth. Much of this change, however, will have to be driven by CIOs themselves. The future of CIOs lies in their own hands.

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Companies will increasingly recognise that information and technology have 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 will become increasingly important for all business leaders.

Felix Geyr, CEO – Be Unlimited

As companies and their CIOs navigate around the silicon ceiling, they must be prepared to be honest with themselves and each other. Companies must objectively assess their acceptance and application of information and technology, and be prepared to respond to any weaknesses. And CIOs must be prepared to accept that, on occasion, the role may differ from their capabilities.

Appointing a CIO, in and of itself, will do little to transform organisations. But if organisations see the appointment as a trigger, signalling the start of a new approach to the exploitation of information and technology, then the results could be considerable.

#### **Information Leadership begins with the CEO**

CEOs are just as important to the successful deployment and exploitation of information and technology as they are to any other aspect of the business. As a result, they can continue to profess to be novices with technology, but they must become consummate professionals in their understanding of the leadership aspects of information and technology. They need to understand when it is appropriate to hire a CIO, and equally, when it is no longer necessary to have one. With or without a CIO, the information and technology buck stops with the CEO.

# Conclusion

Getting in sync is key to generating value from a CIO. Historically, and for some time to come, the pace of change in the information and technology world has been far greater than the pace of change for businesses at large. As a growing number of companies find themselves confronted by the digital age, it will be essential that they keep up with the pace set by information and technology. The CIO will have to play a central role in this transition, helping to align the vision, mission, strategy and information competencies of the organisation to the clock speed set by the digital world.

The ultimate objective is to create an environment in which information and technology are so intimately and fundamentally bound to every aspect of the business and the actions of every relevant manager, that the need for a CIO diminishes. What might such an organisation look like? That is probably the subject for another report.

The transitory nature of the CIO role means that many organisations may have a limited window of opportunity within which to act. The relatively simple task of understanding whether or not a CIO is necessary can take time. The more complex task of recruiting the right individual is likely to take even longer, particularly since it must be accompanied by changes to structure, internal processes and performance measures (amongst many other things). Then there is the on-going job of ensuring that the right CIO is in place, given the needs of the company. All the while, the clock will continue to tick and the importance of information and technology will likely grow. To ensure that this window of opportunity is exploited fully, organisations should consider reviewing the information and technology needs of their business – today and in the future – and assess how a CIO could generate value, and what type of CIO is likely to be appropriate. For many UK organisations, it may no longer be a question of if, but when.

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Designed and produced by The Creative Studio at Deloitte, London. 26923