



# The Essential CIO

Insights from the  
Global Chief Information  
Officer Study

Healthcare Industry

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## Overview

As the world becomes more instrumented, interconnected and intelligent, the CIO role holds even more importance. CIOs increasingly help their organizations cope with complexity by simplifying operations, business processes, products and services. CIOs have a seat at the executive table to help infuse technology into products, services and processes. As they face greater levels of complexity, they will need to collaborate with organizations outside the enterprise to leverage the competencies needed to support their firms.

## Introduction

How are healthcare industry CIOs helping their organizations adapt to the accelerating change and complexity that mark today's marketplace? To find out, IBM conducted face-to-face interviews with 118 healthcare CIOs as part of its global CIO study of 3,018 CIOs in 18 industries and 71 countries.

Although CIOs in the healthcare industry mirror their global counterparts in many ways, our survey revealed some distinct differences that affect healthcare CIOs and influence their decisions about how IT is deployed within the enterprise. Our findings related to healthcare CIOs can be categorized into three key areas:

- Healthcare CIOs and their CEOs are in agreement on priorities and critical issues.
- High-performing healthcare organizations tend to view IT as a critical enabler, are better prepared for complexity, and have greater focus on analytics and globalization than their lower-performing peers.
- The global CIO study revealed four distinct "CIO Mandates" based primarily on how an organization views the role of IT: Expand, Leverage, Transform and Pioneer. The predominant mandate for healthcare is the Expand mandate.

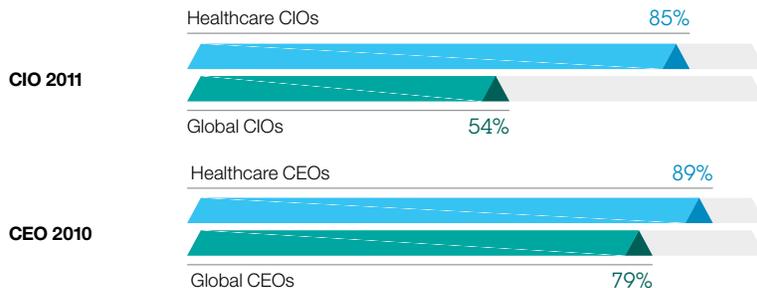
## Seeing eye-to-eye with the CEO

One of the most noteworthy findings from the study is that CIOs are, in many ways, in tune with CEOs. For example, healthcare CIOs and CEOs both expect more change than their global peers (see Figure 1).<sup>1</sup> With changing regulations and citizen expectations, new sources of healthcare data and dramatic increases in information exchange, healthcare CIOs face significantly more complexity than their peers.

Figure 1

Healthcare CIOs and CEOs expect high levels of complexity in the next five years.

### Expect high/very high level of complexity over the next five years



Healthcare CEOs and CIOs are also in synch in terms of their focus areas for the next five years. Both include insight and intelligence, client intimacy, industry model changes and people skills among their top-four focus areas (see Figure 2).<sup>2</sup>

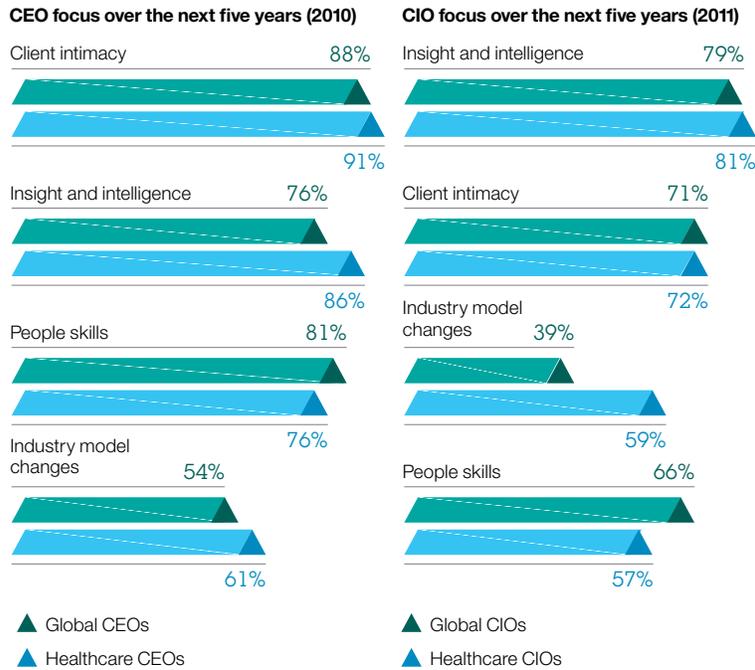


Figure 2

Healthcare CEOs and CIOs share similar five-year focus areas.

Given that the top focus area for the majority of healthcare CIOs is insight and intelligence, we were interested in how they planned to turn information into insights on which they could act. When asked what activities they will prioritize over the next three to five years to effectively turn data into actionable information, healthcare CIOs agree with the global population on two of the top three ways: visual dashboards and master data management.

“Healthcare is going to reach a stage in evolution where the information gathered from service will generate more revenue than the service itself. The aggregation of patient information can be extensively leveraged toward predictive analytics.”

Healthcare Provider CIO, United States

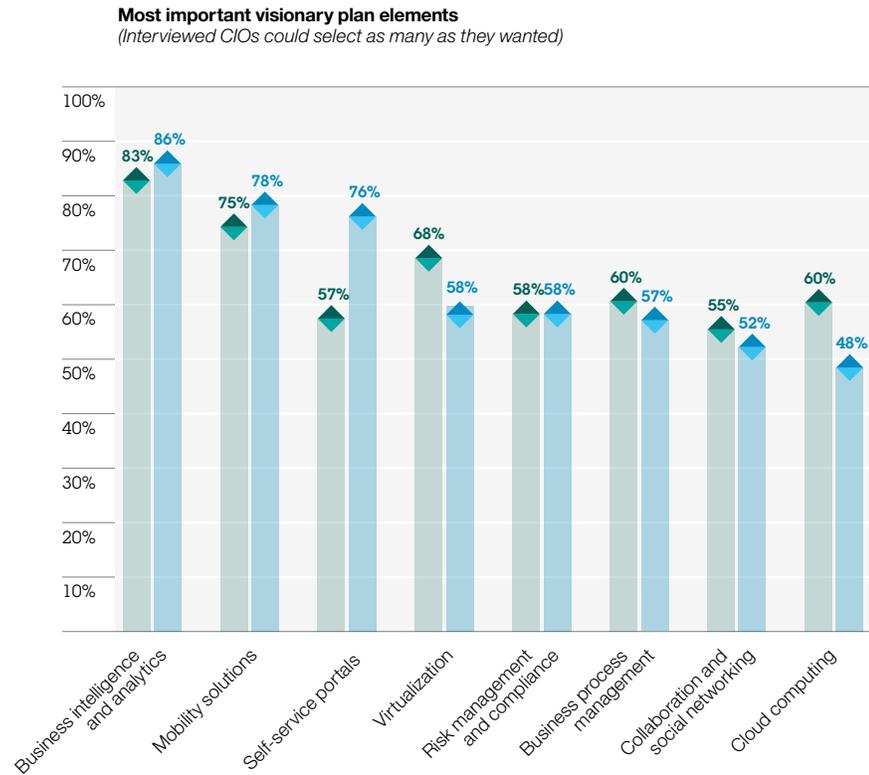
However, the healthcare CIO’s strongest emphasis, with a much higher priority than the global sample, is on data warehousing (80 percent versus 64 percent). The explosion in the amount of clinical data makes data warehousing an essential foundation for turning data into actionable information.

When asked about visionary plans to increase competitiveness, 83 percent of healthcare CIOs listed business intelligence and analytics, which provide insights about performance and outcomes. Also high on the list are mobility solutions and portals, which can help deliver care and services more efficiently (see Figure 3).

**Figure 3**

Healthcare CIOs’ visionary plans focus on analytics, mobility solutions and self-service portals.

- ◆ Global sample
- ◆ Healthcare



## High performers stand out from the crowd

As part of our survey, we asked respondents to assess their organizations' competitive position. Those who selected "substantially outperform industry peers" were identified as top performers, while those who selected "somewhat or substantially underperforming industry peers" were grouped as lower performers. The study revealed some notable differences between the two groups.

Top-performing organizations understand that IT is critical to achieving their goals. Their CIOs work hand-in-hand with other executives to define approaches to support the business strategy and mission. In fact, CIOs in outperforming healthcare organizations are almost one and a half times more likely to view information technology as a critical enabler of organizational vision than those in underperforming organizations.

While complexity is a common challenge, CIOs in top-performing organizations appear to have better prepared their organizations to face it. Two-thirds of CIOs in outperforming healthcare organizations feel "very prepared," compared to less than half of underperformers. In addition, none of the outperforming organizations' CIOs indicated they were "not prepared," while 16 percent of underperforming organizations rated themselves "not prepared."

There were also differences between outperformers and underperformers in terms of their focus areas in the next three to five years. Outperforming organizations are very strongly focused on ramping up their analytics capabilities. More than 90 percent of healthcare CIOs cite insight and intelligence as a key focus for the next three to five years, compared to 65 percent of underperformers (see Figure 4).

The healthcare industry is facing consolidation, as well as pressures to improve quality and access while restraining costs. In this environment, analytics and the insights they can deliver are crucial to success. Understanding this, CIOs in outperforming organizations are determined to provide the necessary business and clinical insight and intelligence.

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"Complexity will follow the increased complexity in society in general... We will implement the necessary technology and drive innovation with business and IT working hand in hand."

**Regional Healthcare Organization CIO**, Northern Europe

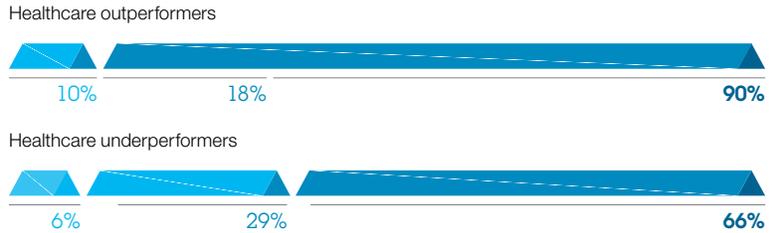
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**Figure 4**

Healthcare outperformers are more focused on insight and intelligence than their underperforming peers.

- ▲ No change
- ▲ Moderate increase
- ▲ Much more focus

**Plans to focus on insight and intelligence in next three to five years**



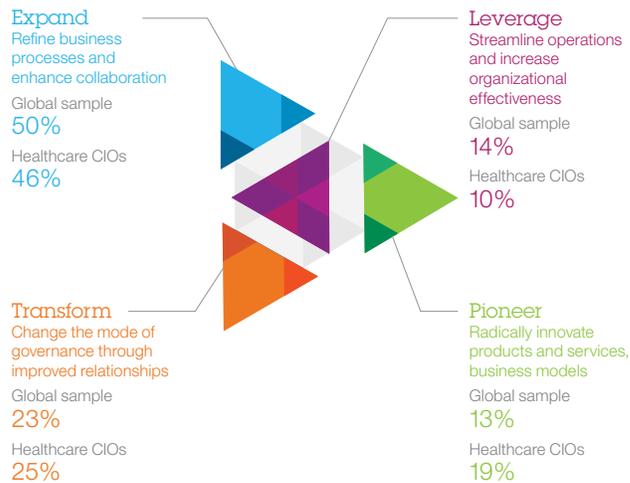
Finally, outperforming organizations are also more focused on globalizing their brands and products, while underperforming organizations place a higher importance on localizing brands and products. Recognizing that healthcare is becoming more “globalized,” 60 percent of outperforming healthcare organizations plan to leverage their brand globally to extend their footprint. This might be done physically, by partnering or building facilities overseas, or virtually, by spreading expertise via published standards, clinical pathways and care plans. Only 20 percent of underperforming organizations have similar plans.

**The CIO Mandate**

Perhaps the most useful insight to emerge from this study is not what makes CIOs the same but, instead, what makes them different. Virtually all CIOs spend at least part of their time on IT fundamentals. However, our research identified four distinct CIO Mandates that are based primarily on how different organizations view the role of IT (see Figure 5).

**Figure 5**

Our research revealed four distinct CIO Mandates; the Expand mandate is most common among healthcare organizations.



These mandates were derived from iterative cluster analysis, including state-of-the-art statistical and textual analysis of the thousands of CIO responses. The analysis revealed typical response patterns associated with each mandate. Each pattern indicated a distinct approach to IT leadership derived from specific organizational needs.

### Expand

This widespread mandate includes organizations that expect CIOs to manage a balanced set of responsibilities that range from fundamental to visionary. Their CIOs lead IT operations that help expand organizational capabilities by refining business processes and enhancing enterprise-wide collaboration.

### Leverage

These organizations view IT as a provider of fundamental technology services. Their CIOs are asked to leverage IT to streamline operations for greater organizational effectiveness.

### Transform

Organizations with this mandate see IT primarily as a provider of industry-specific solutions to change the business. Their CIOs are called upon to help transform the industry value chain by enhancing relationships with customers, citizens, partners and internal clients.

### Pioneer

Here, organizations view IT predominantly as a critical enabler of the business/organizational vision. This group of CIOs is invited to help pioneer or radically re-engineer products, markets and business models.

As with the global study population, the majority of healthcare CIOs follow the Expand mandate (46 percent). Also similar to the global population, the next most popular is Transform, with 25 percent of healthcare CIOs following this mandate. However, the similarities end there. Among the general population, the proportion aligned with the Leverage mandate (14 percent) is very close to that of the Pioneer mandate (13 percent). Among healthcare CIOs, 19 percent are aligned with the Pioneer mandate, while 10 percent follow a Leverage mandate.

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“We adopt out-tasking of routine activities to free our own people to do core process work.”

Healthcare Provider CIO, Germany

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## Expand mandate

The dominant Expand mandate is the most common mandate within all industry segments except financial markets, where there are more Pioneer mandates. The 46 percent of healthcare CIOs associated with an Expand mandate help re-engineer their organizations, making them faster, more flexible and better equipped to turn data into insights. These CIOs have the most balanced mix of responsibilities, allocating their energy relatively evenly across the full spectrum from fundamental to visionary.

The dominant view of IT in an Expand environment is as a *facilitator of organizational process efficiency*. Yet CIOs associated with this mandate estimate they spend, on average, only slightly less time *providing fundamental IT services* and *providing industry-specific solutions*. Their role as a *critical enabler of the organization’s vision* is less demanding, though far from insignificant.

### Top performers

CIOs from high-performing healthcare organizations who align with the Expand mandate view collaboration and integration as especially important and are much more focused on these areas than their peers. For example, compared to their underperforming peers, 122 percent more healthcare outperformers aligned with the Expand mandate focus on internal collaboration and communication to help their organization’s strategy. By the same token, 50 percent more Expand mandate outperformers strongly focus on integrating business and technology to innovate.

### Global integration

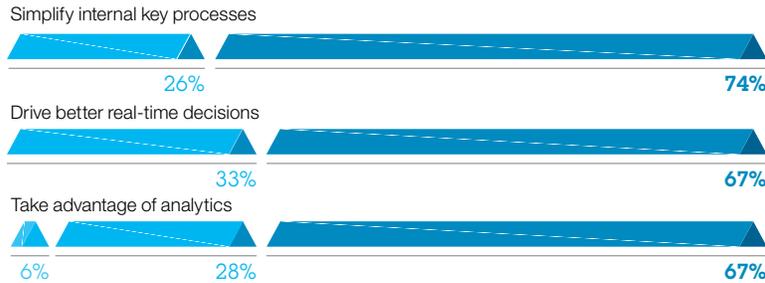
To benefit from global integration, healthcare Expand mandate CIOs recognize the need to partner and leverage outsourcing – and also maintain the right mix of capabilities within the organization. Only 5 percent plan to “do everything in house.” Almost three-fourths plan to change their mix of capabilities, knowledge and assets within their organizations.

### Operational improvements

Perhaps the most critical requirement of organizations that demonstrate the Expand mandate is the ability to enable better decision making. That’s why process simplification and driving better real-time analytics-based decisions are top priorities for healthcare CIOs aligned with the Expand mandate (see Figure 6).

**How will IT drive operational improvements for the organization?**

**Healthcare Expand mandate CIOs**



**Figure 6**

Process simplification and driving better real-time analytics-based decisions are top operational priorities for Expand mandate CIOs.

- ▲ No involvement
- ▲ Support
- ▲ Lead

**Transform mandate**

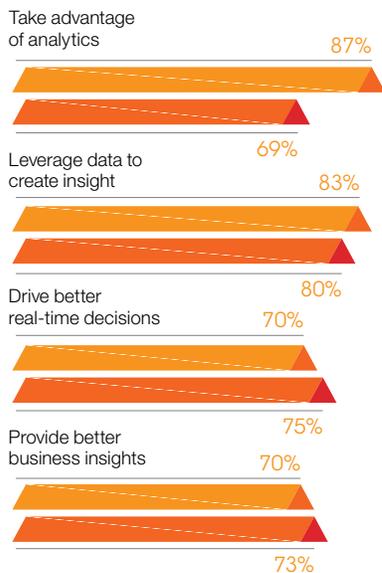
Organizations that operate with a Transform mandate expect IT, more than anything else, to be a provider of industry-wide solutions to support business. It is not surprising that the Transform mandate is the second most popular among healthcare CIOs, given the mandate is dominated by other customer-focused industries that feel competitive pressures to create stronger customer and stakeholder connections.

Organizations that operate with the Transform mandate place substantial emphasis on simplification of both internal processes and interactions with citizens, clients and external partners, and they use “big data” to enhance their customer and partner relationships. Healthcare Transform mandate CIOs especially tend to capitalize on advanced analytics to help enable business insight (see Figure 7).

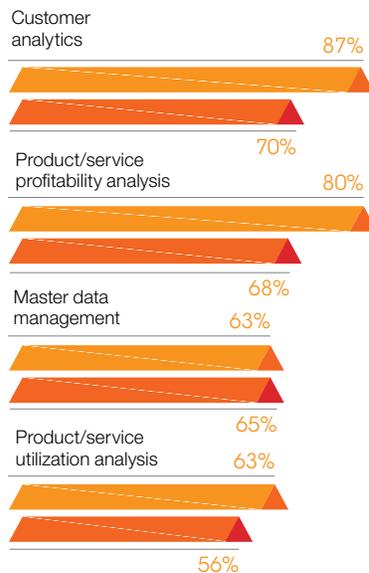
“My motto is ‘It’s all about simplification.’”

Healthcare CIO, Australia

**“Big data” goals CIOs are working to accomplish**



**Tools and activities CIOs plan to use to achieve their data goals**



**Figure 7**

Healthcare Transform mandate CIOs rely on analytics to help enable business insight.

- ▲ Healthcare Transform mandate CIOs
- ▲ Global Transform mandate CIOs

“Changes in government and changes in demographics will affect us and patient expectations dramatically.”

Healthcare Provider CIO, Canada

“Simplify, simplify, simplify” is the mantra for Transform mandate CIOs, who see IT as a tool to streamline business processes. Underscoring this emphasis, the top operational improvement priorities for Healthcare companies’ Transform mandate CIOs are all about simplification: simplify internal processes (83 percent), simplify for clients (77 percent) and simplify for external partners (43 percent).

### Pioneer mandate

CIOs following the Pioneer mandate optimize IT to radically change products, markets and business models. The business asks them to be critical enablers of their organization’s strategic vision. Not surprisingly, CIOs with a Pioneer mandate are most often found in industries experiencing rapid changes.

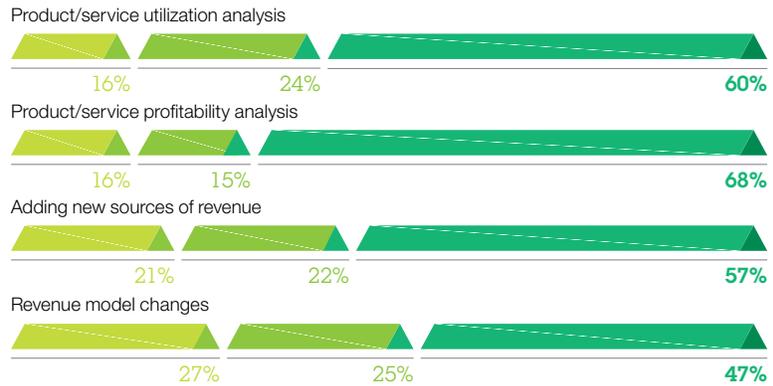
Like their global peers, healthcare CIOs with a Pioneer mandate are enabling utilization and product portfolio analysis to increase revenue. However, compared to other Pioneer CIOs, they are less likely to recognize the transformative potential of new sources of revenue and revenue model changes (see Figure 8).

**Figure 8**

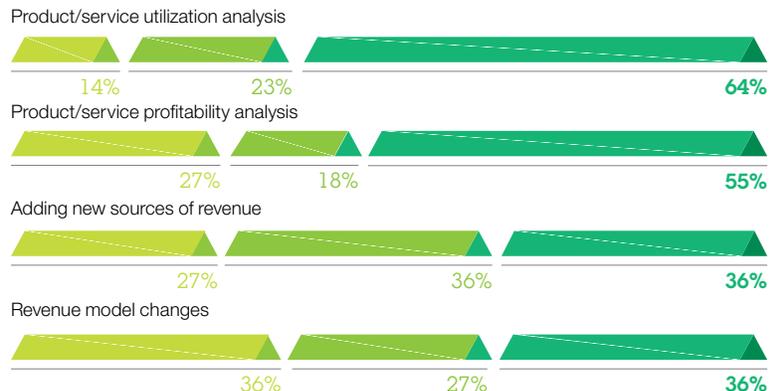
While focused on product utilization and profitability analysis to help increase revenue, healthcare Pioneer CIOs are less focused than their global peers on new sources of revenue and revenue model changes.

- ▲ Low transformative potential
- ▲ Average transformative potential
- ▲ High transformative potential

#### Activities related to increasing revenue Global Pioneer mandate CIOs



#### Activities related to increasing revenue Healthcare Pioneer mandate CIOs



## Leverage mandate

For many organizations, efficient operations are more important to growth than agility. Thus, their CIOs are focused on driving efficiencies and minimizing risk. CIOs with a Leverage mandate drive improvements in governance and controls, procedures, internal collaboration, and transparency between IT and the business.

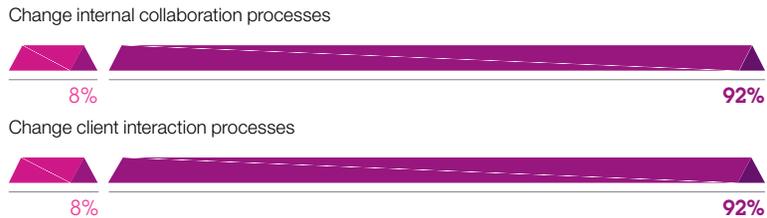
The 10 percent of healthcare CIOs in our study aligned with the Leverage mandate tend to continually review their legacy environments, with an eye toward cost control. When asked how they plan to control or reduce costs associated with their legacy environment, their most popular answer was rationalizing the application portfolio (29 percent), followed by radically and totally renewing the IT environment (19 percent).

Leverage mandate CIOs recognize the transformative potential of technology to further enhance internal collaboration and client interaction – healthcare CIOs even more so. Over 90 percent of healthcare CIOs with the Leverage mandate recognize that technology has high impact and transformative potential for the industry and their organizations, compared to roughly 70 percent of Leverage mandate CIOs from the global sample (see Figure 9).

### Technology impact on industry and organization Global Leverage mandate CIOs



### Technology impact on industry and organization Healthcare Leverage mandate CIOs



“Evaluate, measure and constantly improve the value IT can deliver to day-to-day business.”

Health Insurance CIO, Austria

Figure 9

Leverage mandate CIOs focus on technology that will further enhance internal collaboration and client interaction.

- ▲ Low transformative potential
- ▲ Average transformative potential
- ▲ High transformative potential

## Next steps for CIOs

Clearly, the most successful CIOs will be those who understand and deliver on their mandate and closely align their IT capabilities with organizational strategy (see Figure 10).

It's important to realize that CIO Mandates represent a single point in time. A mandate can change when an organization's needs and objectives change, perhaps in response to economic, competitive or technological forces. We find that CIOs often have circumstances that transcend one mandate which is why, for example, they might continue to implement some of the behaviors of a Leverage mandate executive even if they are also evolving within one of the other mandates.

**Figure 10**

We suggest specific strategies for each mandate.

### Expand mandate 46%

*Refine business processes and enhance collaboration*

- Focus on core competencies and leverage commonalities
- Communicate/collaborate internally
- Focus on business process and security management
- Review/update legacy environment.

### Transform mandate 25%

*Change the mode of governance through improved relationships*

- Use "Big Data," real-time information
- Simplify for clients/partners
- Strengthen and use the value network
- Use risk management frameworks



### Leverage mandate 10%

*Streamline operations and increase organizational effectiveness*

- Standardize infrastructure, common processes and security practices
- Control legacy costs
- Implement collaboration tools
- Introduce new technology incrementally.

### Pioneer mandate 19%

*Radically innovate products and services, relationships, business models*

- Pilot technology for social value
- Explore new costing models
- Enhance the constituent experience
- Pursue nonstop open innovation.

Regardless of whether an organization requires an emphasis on delivery of essential IT services or challenges the CIO to pioneer new opportunities, healthcare CIOs need to innovate. With ongoing technological shifts, the seemingly endless onslaught of data and the increasingly frenetic pace of change, making incremental improvements to operations may no longer be sufficient. Regardless of the mandate with which they align, healthcare CIOs need to be careful not to view the future as more of the past. They must prepare to embrace new rapidly evolving managerial methods, such as closer collaboration with multiple external organizations, using emerging tools, including portals, cloud computing, enterprise-wide data warehousing methods and predictive analytics.

Continue the conversation at [ibm.com/theessentialcio](http://ibm.com/theessentialcio)

### For further information

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#### Notes and Sources

- 1 IBM Institute for Business Value. "Capitalizing on Complexity: Insights from the Global Chief Executive Officer Study." May 2010. [www.ibm.com/capitalizingoncomplexity](http://www.ibm.com/capitalizingoncomplexity)
- 2 Ibid.