The New Voice of the CIO

Insights from the Global Chief Information Officer Study

IBM

Introduction

In a fast-moving business environment, how can today's Chief Information Officer (CIO) make the biggest impact on behalf of the entire organization? To answer that question, we listened to over 2,500 CIOs worldwide, including 71 Chemicals and Petroleum CIOs from 30 countries.

As part of our research, we also sought to understand the differences between the responses of CIOs from organizations with high profit-before-tax (PBT) growth (referred to in this report as "High-growth CIOs") and those of CIOs from organizations with low PBT growth ("Low-growth CIOs"). For details about our research methodology, please see "How our research was conducted."

These one-hour, face-to-face conversations, along with our statistical and financial analyses, made clearer the changing demands on CIOs. Not content to be known only as consummate IT experts or perpetual seekers of savings, CIOs are redefining their role.

The voice of the CIO is being heard in new ways – as CIOs are increasingly recognized as full-fledged members of the senior executive team. Successful CIOs are much more actively engaged in setting strategy, enabling flexibility and change, and solving business problems, not just IT problems.

Today's High-growth Chemicals and Petroleum CIOs spend an impressive 62 percent of their time on activities that spur innovation. These activities include generating buy-in for innovative plans, implementing new technologies and managing non-technology business issues. The remainder of their time is spent on essential, more traditional CIO tasks related to managing the ongoing technology environment. This includes reducing IT costs, mitigating enterprise risks and leveraging automation to reduce costs elsewhere in the business.

CIOs universally acknowledge that some of their most important objectives too often seem to clash: *How can I support the introduction of new services while avoiding the disruption of existing services? How can I reduce costs while improving services? How can I balance the need to influence business strategy with the need to provide top-notch IT support?*

Complementary, yet sometimes conflicting roles
One CIO summed it up well: "In IT, we are not magicians, but we are certainly jugglers." On any given day, CIOs are poised for the unexpected, leading an organization that solves a myriad of problems for customers, both internal and external. Without question, IT functions represent the lifeblood of most businesses. But CIOs told us that they can only turn more attention to new technology ideas *after* addressing current IT needs.

After thousands of interviews, we found that successful CIOs actually blend three pairs of roles. These dual roles seem contradictory, but they are actually complementary. To characterize each role, we have coined a term that describes its dominant quality. At any given time, a CIO is:

• An Insightful Visionary *and* an Able Pragmatist

• A Savvy Value Creator *and* a Relentless Cost Cutter

• A Collaborative Business Leader *and* an Inspiring IT Manager.

By integrating these three pairs of roles, the CIO:

Makes innovation real

It's not enough to just plan for innovation – it needs a robust foundation. When acting as an Insightful Visionary, a CIO is perceptive, promoting a broad technology agenda to help the business profit from leading-edge initiatives. The flip side of the Visionary is the Able Pragmatist role. As a Pragmatist, a CIO deals with the realities of the business. The Pragmatist also facilitates the productivity of current IT solutions to allow more time and budget for innovation.

Raises the ROI of IT

Using IT to produce greater business value is vital, accompanied by an ongoing focus on lower costs and higher efficiency. A Savvy Value Creator finds new ways to help customers and the organization profit from how data is used. The Relentless Cost Cutter, its counterpart, is focused on managing budgets and processes to eliminate or reduce costs.
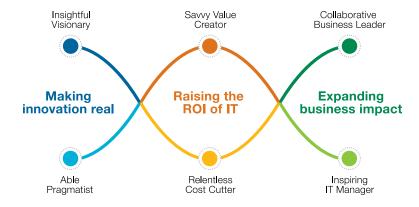
Expands business impact

To contribute the most to the organization, proven expertise in both business and technical matters is vital. Part of the time, CIOs will engage with the enterprise as Collaborative Business Leaders, to drive new business initiatives and cultural shifts jointly with fellow CxOs. At other times, the Inspiring IT Manager role occupies center stage to motivate the IT organization and deliver superior IT performance.

Adjusting the mix, one pair at a time
It's no surprise that CIOs must reconcile seemingly opposing mindsets. But our findings revealed ways they can be more effective in this everyday balancing act. Even some experienced CIOs acknowledged that they are sufficiently strong in just one or two of the six CIO roles. Yet every role requires at least some attention.

The realities facing each individual influence how that CIO can, and should, manage change at any given time. Many factors impact their decisions about how much emphasis to place on any single role, including macroeconomic and regional conditions, industry-specific forces and various organizational characteristics, as well as the CIO's own skills and aspirations.

But despite the multiple forces in play, our findings show that successful CIOs discover ways to focus on high-value projects in support of their organizations. **We share with you the voices of many CIOs and what they are doing to achieve three primary goals: to make innovation real, raise the ROI of IT and expand business impact.**

Making innovation real

Insightful Visionary *and* Able Pragmatist

The Insightful Visionary is active in setting strategy and helping the business explore how technology can drive innovation. The Able Pragmatist sets the stage for enacting innovation. Key Visionary actions are to: push business/technology integration, champion innovation and expand CIO influence. Key Pragmatist actions are to: enable the corporate vision, make working together easy and concentrate on core competencies.

The most successful Chemicals and Petroleum CIOs excel in both respects. Sixty-four percent of those in high-growth organizations *actively integrate business and technology to innovate*, while 77 percent *use collaboration and communication tools to help realize business change*, compared with just 28 percent and 44 percent, respectively, of those in low-growth organizations.

Obviously, new technologies are not the only source of innovation, and business-oriented initiatives also rank high among Chemicals and Petroleum CIOs' visionary plans for enhancing their companies' competitiveness. But the vast majority of High-growth CIOs seem to be focusing on the development and deployment of software and data innovations as competitive differentiators (see Figure 1).

"Innovation is not always just about new technology. The challenge is integrating different technologies, and in different ways."
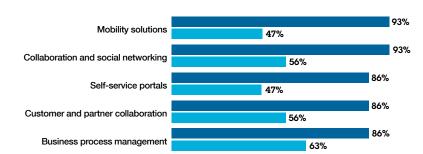
CIO, Chemicals and Petroleum Company, Europe

Figure 1   **The top five visionary plans of Chemicals and Petroleum CIOs**
Most High-growth CIOs are concentrating on IT as a means of competitive differentiation.

■ *High-growth*
■ *Low-growth*

Mobility solutions — 93% / 47%
Collaboration and social networking — 93% / 56%
Self-service portals — 86% / 47%
Customer and partner collaboration — 86% / 56%
Business process management — 86% / 63%

The most successful Chemicals and Petroleum CIOs are equally competent in their capacity as Able Pragmatists who set the stage for innovation while "keeping the engines humming." High-growth CIOs spend more than twice as much time as their low-growth peers on activities that enable the corporate vision. And 64 percent use third-party business or IT services, compared with just 43 percent of their Low-growth counterparts.

Are you well-versed in how emerging technologies and innovative processes can be used to help optimize business processes and enable more informed and effective decision making in the upstream and downstream Petroleum segments, and in the Chemicals industry?

In what ways do you plan to partner with your internal technology stakeholders and third parties externally to increase the time you devote to driving innovation within the business?

What new mobility solutions, collaboration tools and processes are you using – and how are you using them – to enhance the sharing of information among employees, partners and customers, and thus stimulate innovation?

Do you measure – and explain – the results of all IT initiatives in such a way that your colleagues not only understand the results, but are also convinced and inspired?

Raising the ROI of IT

Savvy Value Creator *and* Relentless Cost Cutter

The Savvy Value Creator devises better solutions by understanding customers' needs, while the Relentless Cost Cutter is vigilant about trimming expenses wherever possible. Key Value Creator actions are to: make the data "sing," reach customers in new ways, and enhance integration and transparency. Key Cost Cutter actions are to: standardize to economize, centralize the infrastructure and keep cost reduction a top priority.

As Savvy Value Creators, Chemicals and Petroleum CIOs are skilled customer advocates who create value by truly understanding what customers want. Again, however, High-growth CIOs lead the way. More often than their low-growth counterparts, they proactively craft data into actionable information and help their organizations cope with ever-increasing volumes of data by suggesting better ways to use that data (see Figure 2).
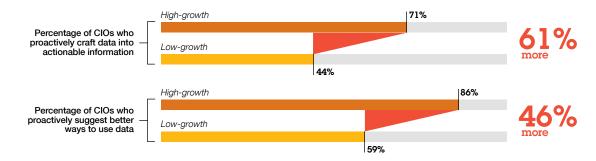
"The objective is for IT to be viewed as a facilitator of organizational process efficiency."

CIO, Chemicals and Petroleum Company, Middle East

Figure 2   **The most successful Chemicals and Petroleum CIOs are savvy value creators.**
They proactively craft data into actionable information and suggest better ways of using
data more often than their peers in low-growth organizations.

Percentage of CIOs who
proactively craft data into
actionable information

High-growth   71%
Low-growth   **61%**
                                        more
44%

Percentage of CIOs who
proactively suggest better
ways to use data

High-growth   86%
Low-growth   **46%**
                                        more
59%

High-growth Chemicals and Petroleum CIOs also devote more energy to
business process standardization as a means of cutting costs, although all
Chemicals and Petroleum CIOs are perpetually in search of savings. They
spend about 16 percent of their time focusing on measures to reduce their
companies' technological costs – which is slightly more than the average
in the survey population as a whole.

In what ways are you working with the business to extract the maximum
financial return (return on capital employed) from your current IT portfolio?

Do you actively reach out to the business to suggest new ways in which IT can
provide value and help cut costs or are you just realizing the value and cost
targets set by the business?

How are you leveraging your competitors' experiences to further optimize
business and IT processes. Are you using any industry benchmarks?

If you were your own successor, what are the top three things you would do to
generate a 20 percent increase in performance from your IT investments?

Expanding business impact

Collaborative Business Leader *and* Inspiring IT Manager

The Business Leader thoroughly understands the organization's core business and builds strong partnerships, internally and externally. The Inspiring IT Manager demonstrates personal IT expertise and advocates stronger skills across the IT organization. Key Business Leader actions are to: know the business, get involved with business peers in non-IT projects, and present and measure IT in business terms. Key IT Manager actions are to: cultivate truly extraordinary IT talent, lead the IT forces and enhance the data.

High-growth Chemicals and Petroleum CIOs are typically better Business Leaders than Low-growth Chemicals and Petroleum CIOs. They more often help their companies manage change by providing flexible applications and add value by having strong governance models in place. However, surprisingly few Chemicals and Petroleum CIOs, from high-growth organizations or otherwise, are deeply involved in determining the course of the business.
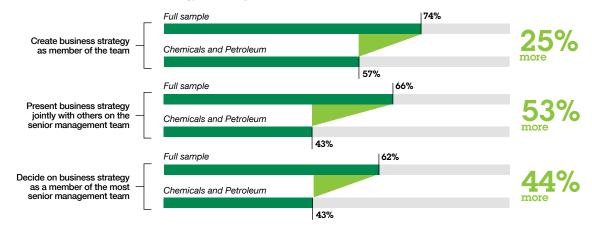
Only 57 percent of High-growth Chemicals and Petroleum CIOs help *co-create business strategy* as members of the senior management team, for example, compared with 74 percent of all CIOs in the full survey sample. Similarly, only 43 percent help *decide and present business strategy*, versus 62 percent and 66 percent, respectively, of the total sample. Indeed, High-growth CIOs often play an even smaller role than Low-Growth CIOs (see Figure 3). This suggests that many Chemicals and Petroleum CIOs need to expand their horizons and engage more closely with non-IT issues.

"CIOs have to articulate the value proposition of IT and technology solutions, and how they are going to benefit the business."

CIO, Chemicals and Petroleum Company, Asia

Figure 3 **Chemicals and Petroleum CIOs play a relatively small role in business strategy
development**
They are much less frequently involved in co-creating, developing and presenting business
strategy than their peers in other industries.

Chemicals and Petroleum CIOs are generally more comfortable in their role
as Inspiring IT Managers – and High-growth CIOs are especially proactive
on this score. They *create centers of IT excellence* 14 percent more
frequently than their counterparts in low-growth organizations. They also
put more effort into enhancing the data their companies collect. Fifty-
seven percent of High-growth Chemicals and Petroleum CIOs report that
the data is readily accessible and 93 percent that it is *reliable and secure*,
versus just 50 percent and 69 percent, respectively, of Low-growth CIOs.

Do you leverage business relationships throughout the enterprise to expand
your scope of responsibilities beyond the IT organization?

How can you improve the impact of IT on the business strategy development
process?

How can you start an ongoing dialogue between the business and IT that also
drives shared objectives and measurements?

Do you have a plan to align technology skills and business processes
continuously throughout the IT organization, and enhance organizational
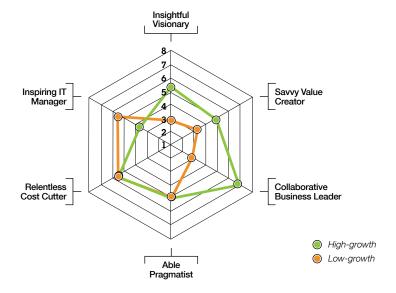flexibility ?

Is your IT organization passionate about protecting and improving the quality of
enterprise data, and promoting innovation ideas that create new value for the
business?

Managing dual roles in the future

Despite the multiple forces in play, our findings show that CIOs have discovered ways to focus on what matters most to them and their organizations. The collective voice of more than 2,500 CIOs worldwide points to key actions to help CIOs attain the primary goals of making innovation real, raising the ROI of IT and expanding business impact.
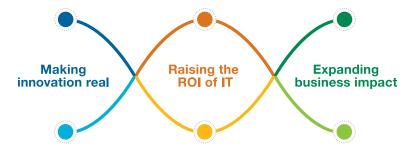
We have used these insights to complete profile analyses – visually represented by the "spider diagram" in Figure 4 – which provide a more structured way of enabling you to identify the areas where you might want to concentrate. The diagram shows that Chemicals and Petroleum CIOs in low-growth organizations typically focus on being Inspiring IT Managers and Relentless Cost Cutters, but they concentrate less on the other CIO roles.

Figure 4 **There are significant differences between High-growth and Low-growth C&P CIOs**
High-growth CIOs emphasize their role as Collaborative Business Leaders, whereas Low-growth CIOs see themselves, first, as Inspiring IT managers.

NOTE: Each CIO role was scored based on responses to a discrete set of questions. The average overall score for each role was plotted within the three performance categories (High-, Medium- and Low-growth). With a possible range of 0 to 10, actual scores fell between 2 and 8.

Conversely, Chemicals and Petroleum CIOs in high-growth organizations adopt a more balanced approach. They focus primarily on their role as Collaborative Business Leaders, but they juggle this with acting as Insightful Visionaries who champion innovation and Relentless Cost Cutters who strip out inefficiencies.

Making innovation real   **Raising the ROI of IT**   **Expanding business impact**

Over time, we expect CIOs to regularly assess how much emphasis is appropriate on each of the three pairs of roles. Our profiles offer CIOs a more structured approach to identify where they want to increase their focus and how to do it. Whichever role you choose to emphasize, we look forward to working with you.

For further information, please send an e-mail to the IBM Institute for Business Value at iibv@us.ibm.com, or to download the complete IBM Global Chief Information Officer Study, visit our Web site:

ibm.com/voiceofthecio

How our research was conducted

This report features Chemicals and Petroleum insights from the inaugural edition of our IBM Chief Information Officer (CIO) study – the latest in the ongoing C-Suite Study Series developed by the IBM Institute for Business Value. To better understand the challenges and goals of today's CIOs, we met face-to-face with 2,598 of them, in what is the largest known sample of these executives. Between January and April 2009, we interviewed these CIOs, who represent different sizes of organizations in 78 countries and 19 industries.[1]

Our analysis used 2004-2007 profit before tax (PBT) growth, relative to peers in their industries, to associate organizations with one of three growth levels: High, Medium or Low. For organizations where this information was not available, we used statistical correlation to assign levels, based on closest overall similarity of answers.

To simplify the terminology in this report, we will primarily refer to CIOs who work in organizations with high PBT growth as "High-growth CIOs" and to those working in organizations with low PBT growth as "Low-growth CIOs." Presenting our findings in terms of these categories offers CIOs a more structured approach to identify where they want to increase their focus and how to do it.

About the IBM Institute for Business Value

The IBM Institute for Business Value, part of IBM Global Business Services, develops fact-based strategic insights for senior business executives around critical industry-specific and cross-industry issues. Browse through our research library at **ibm.com**/iibv.

IBM.

Notes and sources

1 CIOs we interviewed in the following countries were counted in
the Growth Markets category: Argentina, Australia, Bahrain, Brazil,
Cameroon, Chile, China, Colombia, Croatia, Czech Republic,
Ecuador, Egypt, Gabon, Georgia, Ghana, Guinea, Hong Kong,
Hungary, India, Indonesia, Malaysia, Mexico, Morocco, New
Zealand, Nigeria, Pakistan, Peru, Philippines, Poland, Qatar,
Romania, Russia, Saudi Arabia, Singapore, Slovenia, Slovakia,
South Africa, Taiwan, Thailand, Tunisia, Turkey, Uruguay, Venezuela
and Vietnam. The Western Europe category includes CIOs from:
Austria, Belgium, Denmark, Finland, France, Germany, Ireland,
Israel, Italy, Luxembourg, Monaco, Netherlands, Norway, Portugal,
Spain, Sweden, Switzerland, and United Kingdom. The North
America category consists of CIOs from: Bahamas, Canada,
Cayman Islands, Jamaica, Trinidad/Tobago and the United States.

Our CIO respondents represented 19 industries. The
Communications sector includes: media and entertainment;
telecommunications; and energy and utilities. The Distribution
sector includes: agriculture; airlines; consumer products and
wholesale; food, beverages and tobacco; life sciences; mail,
package and freight delivery; professional services; railroads;
real estate; retail; transportation and logistics; and travel and
tourism. The Industrial sector includes: aerospace and defense;
automotive; chemicals and petroleum; computers and office
equipment; electronics; energy (production and refining);
engineering and machinery; forest and paper products; industrial
products; and network and other communications equipment. The
Financial Services sector includes: banking; financial markets;
and insurance. The Public sector includes: education; government
and public service; and healthcare payers and providers.