



**CEOs are expanding the
innovation horizon: important
implications for CIOs.**

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Introduction

After years of cost-cutting and efficiency campaigns, business leaders in companies of every size and across the industry spectrum are refocused on top-line growth—and they're seeing innovation as the means to achieve it. With globalization, commoditization and technological advances all forcing significant change on the business, these organizations are being compelled to act in order to gain competitive advantage. They know that exponential growth lies ahead for those who can lead the innovation movement and seize opportunities to differentiate themselves.

IBM's Global CEO Study 2006 was conducted to understand how CEOs view innovation, to capture current insights and to learn what is on their innovation agendas. It tapped a broad cross-section of CEOs to understand how companies are enabling innovation and where they are focusing their innovative energies. The study results have important messages for all business leaders but should be of particular interest to CIOs, who have long been counted on to support and enable corporate innovation efforts.¹

The study indicates that CEOs are expanding the innovation horizon. In fact, there is a categorical shift toward a more expansive and unconventional view of innovation, as well as a need for a greater mix of innovation types. While CEOs still believe that product, service and operational innovations are important; they feel that innovation must also be applied to a company's very core—to the way it does business. CEOs deemed **business model innovation** vital to creating new and differentiating value for their companies.

Highlights

There is a categorical shift toward a more expansive and unconventional view of innovation, as well as a need for a greater mix of innovation types.

"Some of the boldest plans under consideration within our company work by leveraging the collaborative potential of service providers in other domains."

—Global CEO Study participant

CEOs viewed **internal and external collaboration** as an essential prerequisite for innovation. They felt that successful collaboration among employees and internal organizations is only part of the innovation equation. CEOs are increasingly relying on external sources for their most innovative ideas, admitting that partnering outside the organization has resulted in higher revenue growth and an impressive array of innovative solutions.

Much has been written about the gap in alignment between the information technology (IT) organization and the rest of the business. CEOs in the study voiced the need to go beyond simple alignment and close the gap completely. They see the **integration of business and technology** as imperative for innovative efforts to yield their highest potential. IBM's financial analysis, conducted as part of the study, reinforced this view. It showed that organizations which were effective at integrating business and technology insight delivered significantly better financial results (in terms of revenue growth and operating margin). In general, CEOs believe that technology has a larger role to play in their business strategies, helping them capitalize on strategic opportunities.

The purpose of this paper is to highlight valuable insights from the CEO Study that have particular relevance to CIOs and the IT organization. With business growth back on the corporate agenda and innovation headlining the list of priorities, CIOs need to understand the implications for IT. This paper helps CIOs learn what they can do to enable innovation. It explains how CIOs can address the IT concerns expressed by CEOs, increase the innovative capability of the organization and drive the business forward.

Innovation types defined

- ***Products and services***—*Innovation applied to products or services or market-related activities*
- ***Operational***—*Innovation that improves the effectiveness and efficiency of core processes and functions*
- ***Business model***—*Innovation that fundamentally transforms the way a business works or drives revenue.*

The IBM Global CEO Study 2006

For the Global CEO Study, IBM surveyed 765 CEOs, business executives and public sector leaders on the subject of innovation. Study participants hailed from 20 different industries and 11 geographic regions, from mature markets and important developing markets, such as China, India, Eastern Europe and Latin America. They included large and small business leaders of both public and privately held companies. The sizeable and diverse survey population provided IBM with a wide array of perspectives and ideas, as well as substantial opportunities for analysis.

The study findings are based on in-depth interviews with the CEOs. In 80 percent of cases, the CEO's responses were delivered face-to-face. The remainder were conducted by telephone. The CEOs were frank and passionate, exposing their concerns, their motivations and their plans for the future. Their responses offer a compelling new view of innovation, with CEOs looking to gain sustainable market advantage through the creation of a new business model that diverges from or even overturns industry norms.

Based on these responses, three key considerations emerged for CIOs:

- ***Deep business model innovation is critical.*** *Product, service and operational innovations remain important, but competitive pressures have pushed business model innovation much higher on the CEO's innovation agenda. Companies that can substantially change how they add value to their own or other industries differentiate themselves and gain a competitive edge.*

Highlights

- **External collaboration is indispensable.** CEOs stressed the overwhelming importance of collaborative innovation, not just internally across traditional silos but also externally beyond company walls. Business partners and customers were cited as top external sources for innovative ideas.
- **Innovation can be ignited by business and technology integration.** Technology can enable and drive innovation. But to truly capitalize on technology's potential and unleash an organization's creative energy, technology know-how must be combined with its business and marketing insights. CEOs view consistent business and technology integration as crucial to innovation.

CEOs rated an inflexible infrastructure and insufficient access to information as two of the top ten obstacles to innovation.

The study also identified the CEOs' specific concerns about IT, and these should be of significant interest to CIOs. First, nearly 80 percent of CEOs rated "business and technology integration" of "great importance" while less than half felt their organizations were "integrated to a large extent." In addition, CEOs identified "inflexible physical and IT infrastructure" and "insufficient access to information" as two of the top ten obstacles to innovation.

The CEO Study findings provide a tremendous leadership opportunity for CIOs, who can provide strong vision and direction to enterprisewide innovation efforts.

Results like these have serious implications for CIOs, mainly because they portray the IT organization as a hindrance rather than an enabler of innovation. But they also point to a tremendous leadership opportunity for CIOs, who can provide strong vision and direction, while helping to spearhead enterprisewide innovation efforts. There is little doubt that CIOs will be called upon to help drive innovation, but the greatest gains will be made by those who proactively construct the right mindset and infrastructure to enable it.

Highlights

"In this commoditized market, we are able to command greater customer loyalty because of collaborative innovations. This implies both higher revenues and lower risks."

—Global CEO Study participant

Extensive business model innovators are experiencing greater operating margin growth than their peers.

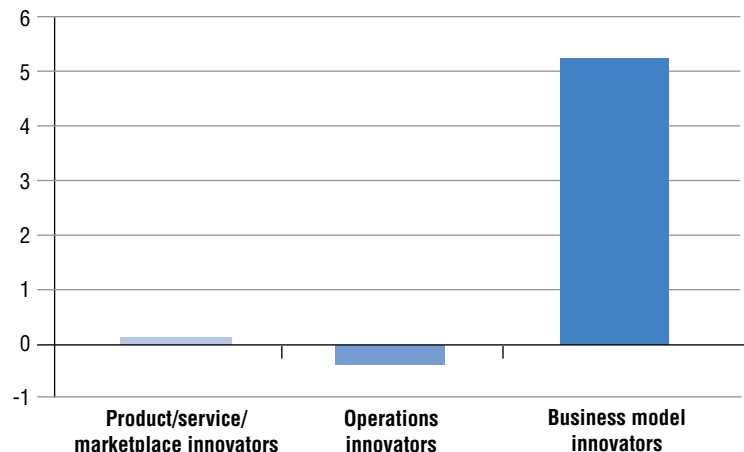
The CIO's role in driving business model innovation

Two-thirds of the CEOs interviewed for the study expect their organization to be inundated with change over within the next two years. With intensified competition, escalating customer expectations and globalization all bearing down on their organizations, they believe that fundamental business changes will be required. They are viewing business model innovation as the answer. Many are seeing the way they do business as an important differentiator because such innovations do not invite imitation or commoditization the way that product and service innovations do.² Simply put, the competitive advantage they offer the business is more durable over the long run.

The study found that today CEOs are focusing nearly 30 percent of their innovative efforts on business model innovation. Some admitted giving it as prominent a place on their agendas as more traditional types of innovation. Even CEOs who did not see a reason to focus on business model innovation before now believe the time has come—and with good reason. IBM's financial analysis revealed that companies that put more emphasis on business model innovation experienced significantly better operating margin growth (over a five-year period) than their peers.

Figure 1. Operating margin growth in excess of competitive peers

(Compound annual growth rate over five years)



Highlights

Business model innovators are pursuing innovation opportunities outside their comfort zone, creating value for their company and their industry as a whole.

CIOs need to develop the right climate for business model innovation within the IT organization.

Leaders in business model innovation are implementing major strategic partnerships and changing the structure of their organization. Externally, they are combining their own expertise with the specialized capabilities of partners. Internally they are collapsing organizational boundaries and leveraging shared service centers. They are pursuing new business opportunities outside their comfort zone, creating value not just for their company but also for their industry as a whole. For these companies, innovation occurs proactively rather than in response to specific events, and it has resulted in business designs that are truly differentiating.

Business model innovators cited other benefits as well, including cost reduction and strategic flexibility. These CEOs report being better equipped to respond efficiently to market changes and operational demands. In addition, cooperative partnerships are enabling them to lower their operating costs, while providing new opportunities for revenue generation.

CIOs have an important, but challenging, role to play in driving business model innovation. With CEOs identifying an unsupportive culture as a primary obstacle to innovation, CIOs can begin by building the right climate within the IT organization. By looking inward first, they improve the way IT approaches innovation and the rest of the business. They can also identify new, better ways of doing business and change their own business model to encourage innovative thinking. In addition, CIOs can lay the physical foundation for collaborative thought by assuring a highly scalable, highly flexible infrastructure is in place and capable of handling the demands of the expanded innovation horizon.

Highlights

Adopting a customer-centric approach will increase IT's ability to innovate in ways that positively impact the business.

Innovate the IT business model first

By its very nature, business model innovation requires a customer-centric approach. It is about redefining customer segments, targeting customers who are underserved, and in general, creating new value for customers. Ultimately a company redesigns itself to effectively and efficiently deliver its value proposition. That requires getting much closer to the customer.

With business services increasingly enabled and delivered by technology, CIOs must take the lead in helping the IT organization move in a customer-centric direction. To do this, IT's own business model will need to change.

At a high level, one could view the IT business model as the interaction of people, processes, and technology for the purpose of achieving defined business goals. The IT organization is responsible for a number of technical processes, and each requires a specific degree of interaction with the business. Each is executed by one or more people, often from different parts of the organization. If the processes are not adequately aligned to the needs of the business, achieving business goals can be difficult. With customer centricity as a guiding principle, the processes can be redefined – changing the way IT works within the company and increasing IT's ability to innovate in ways that positively impact the business.

Even simple process changes can have a significant effect on the people charged with executing them. Inevitably, questions arise about the soundness of the current organizational structure and business model, and often changes must be made. Understanding the effectiveness of the current business model is essential to knowing where and how to make improvements.

Highlights

IT leaders who truly understand the “business of IT” make credible business partners for the rest of the organization.

One way companies and IT organizations in particular can develop a deeper understanding of their current business model is by breaking down, or “componentizing,” the operation into its individual processes. Componentization enables business and IT leaders to determine the core strengths that set them apart and are the major value drivers for the business. It provides a systematic means of identifying the ways in which IT provides specific support to the business operation. Many companies are exploiting such “component business modeling” techniques to identify IT process improvements and sourcing strategies that can drive higher levels of efficiency and value for the organization.³

Changing the IT business model also requires that IT become a credible business partner to the rest of the organization. That means CIOs have to see and manage IT as a business, rather than as a cost center with its own set of rules and accountabilities. These next-generation IT leaders truly understand the “business of IT” and are reconfiguring the IT organization to run like a business. Advances in technology facilitate this transformation, enabling CIOs to consolidate operations, minimize infrastructure and application redundancies, enable cost transparency and integrate disparate systems and data across the enterprise. CIOs will need to orchestrate such business model innovations for the IT organization and the services it delivers to the rest of business.

Demonstrating operational excellence in running the business of IT is central to establishing credibility with business leaders. It establishes the CIO as an innovation thought leader and change agent for transforming the firm’s business model.

Highlights

The IT infrastructure must be agile enough to respond and adapt to the changes brought about by innovation.

Create a flexible, responsive infrastructure

By design, business model innovation introduces substantive changes into the organization. As such, it relies on the infrastructure to be agile enough to respond to those changes. If, for example, a company's new business model calls for the establishment of worldwide research community and the infrastructure is unable to accommodate the volume of input or the security needs of the participants, the new model will invariably fail.

An infrastructure that is inherently flexible and responsive can address business changes like these more easily. But it requires CIOs to leverage infrastructure technologies like virtualization and autonomic computing that are designed to accommodate unpredictable change, improve efficiency and reduce the time to market for new business capabilities:

- ***Virtualization** reconfigures system resources dynamically and transparently to meet the demands of a changing business workload and application mix.*
- ***Autonomic computing** enables complex systems to heal themselves by dynamically diagnosing and repairing problems in accordance with company-specific business policies. Because it does this without the need for human intervention, it provides faster time to value.*

But these technologies must be part of a bigger plan in order to be feasible and successful. By defining an enterprise architecture, CIOs can provide the context for integrating such technologies. Further, they can leverage a service-oriented architecture (SOA) to facilitate system and application integration across a heterogeneous IT environment. SOA componentizes and transforms

Highlights

Techniques like component business modeling and SOA enable business and IT leaders to rethink how they do business, and that is essential for business model innovation.

the capabilities within a company's applications into modules or "services" that can be made available for use by other applications. Embracing SOA can simplify the development and reduce the cost of new applications and dramatically increase infrastructure flexibility, which in turn facilitate the implementation of innovative process and business changes.

Like component business modeling, SOA can also increase business understanding among the IT community. It forces IT professionals to think in terms of business architectures, not just technical architectures. When designing an inventory management system, for example, it requires IT to consider the company's business flows and how best to meet the needs of the business. In general, it leads to a better dialogue between business and IT.

Techniques like component business modeling and SOA enable IT and business leaders to look at the business through distinct but fundamentally compatible lenses, to rethink how they do things and to consider alternatives—and that is paramount to business model innovation. Such practices exemplify the CIO's role in driving business model innovation.

The CIO's role in enabling collaboration

In the Global CEO Study, over 75 percent of CEOs indicated that collaboration and partnering are very important to innovation. The most significant sources of ideas cited were employees, business partners and customers, in that order. With traditional sources of ideas like internal R&D falling much lower on the list, it is clear that CEOs are looking outside the organization for breakthrough thinking.

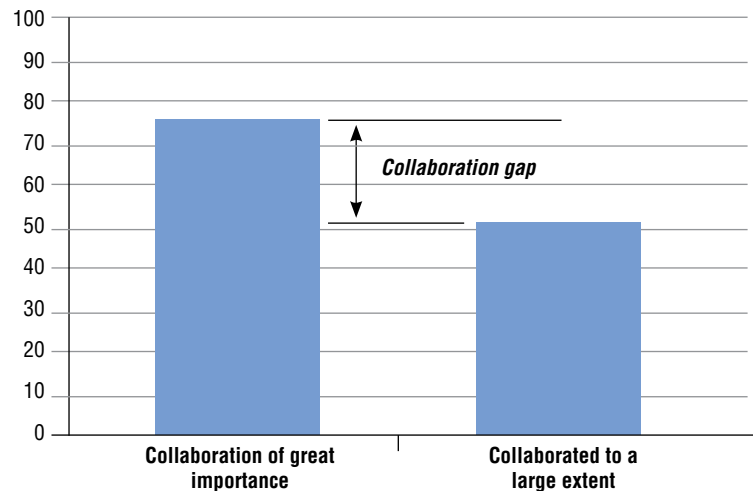
Highlights

With so many CEOs looking outside the organization for breakthrough thinking, the ability to collaborate externally is critical.

Although CEOs see tremendous innovation potential through external collaboration, most indicated that they were unable to collaborate to the desired degree. One reason for the gap is a general lack of serious intent. CEOs felt that collaboration needed to be taken more seriously and their organization lacked the skill set needed to successfully build collaborative relationships internally and externally.

Creating an environment and infrastructure that encourages knowledge and information sharing should be at the top of the CIO's agenda. As senior executives, CIOs have an important role to play in helping make collaboration an integral part of the company's business strategy and in enabling collaboration for both people and systems.

Figure 2. Importance versus extent of collaboration and partnering
(Percentage of respondents)



Highlights

“Partnering is the only way to extract maximum value and avoid reinventing the wheel.”

—Global CEO Study participant

Open architectures and collaborative technologies make new partners and skill sets more easily accessible and practical to employ.

Collaborative technologies enable companies to bring skill and scale together at unprecedented levels. As IT leaders, CIOs lead the implementation of collaborative technologies, both within the IT organization and across the enterprise, and they should work to remove any technology-related inhibitors to collaboration. This is key to expanding the innovation horizon beyond company walls.

Remove technological barriers and leverage collaborative technologies

Today’s technology advancements make human collaboration possible in many forms. Team workspaces, instant messaging, communications dashboards and other collaborative technologies are enabling individuals, companies and countries to join forces, increasing productivity while accelerating creative thought. Whether it’s deploying basic Web conferencing software or ensuring sufficient computing capacity to aggregate and analyze input from thousands of heterogeneous devices in real time, the CIO is ultimately accountable for facilitating the use of collaborative technologies across geographies, time zones and corporate boundaries.

Collaboration with external partners’ systems can be severely impeded when users must negotiate their way through a maze of proprietary standards and incompatible data definitions. Conversely, when infrastructures are based on open, common standards, collaboration is easier. Open standards make global connectivity possible, transcending traditionally the immutable limits of distance, scale and language. They make new partners and skill sets more easily accessible, and that makes them more practical for companies to employ.

Partners can be instrumental in new business models

Porto Media had developed proprietary technology that enabled fast loading of digital content onto flash media cards. It envisioned a totally new business where customers could download music and movies onto these cards from kiosks at retail locations. The success of its new business model depended on Porto Media being able to convince content providers that their content would be protected and used appropriately.

Through collaboration with 4C (a consortium comprising Intel®, IBM, Toshiba and Matsushita), Porto Media found a solution to its content protection dilemma. 4C enhanced its Copy Protection for Recordable Media (CPRM) technology, creating the ability for content providers to specify flexible usage rules such as “play only once” or “play until a certain date.” Porto Media combined its proprietary loading technology with the standards-based content protection technology developed by 4C into an attractive offer for content providers.⁵

Collaboration can also be hampered by mounting security concerns. Business leaders may be anxious to share information as long as it is protected from unauthorized access and use. For most, security has become a top priority because of the potential for exposure and confidential data loss. In a collaborative arrangement, security leaders on both sides have to agree on how they’ll work within the security constraints that each has in place.⁴

CIOs have to establish a strong, global intellectual property system in order for collaboration to succeed inside and outside organizational boundaries. They can help business leaders take an in-depth look at the business to decide what should be open and collaborative and what should remain proprietary. They have the technology and process expertise to simplify these decisions for the enterprise.

SOA approaches are helping CIOs address collaborative challenges and facilitating collaboration with external systems. Being standards-based, SOA provides a framework for moving away from point-to-point solutions that make communications difficult. Standard protocols, such as Web services, bridge multivendor platforms and enable information to be shared more easily across company firewalls. In addition, SOA helps collaborating companies maintain connectivity in spite of changes occurring on either side. It masks the underlying technical complexity of each company’s IT environment and allows for easier integration of business processes that span organizational boundaries. Over time, SOA can lower the cost of connectivity and system collaboration while increasing the ways in which companies can collaborate.

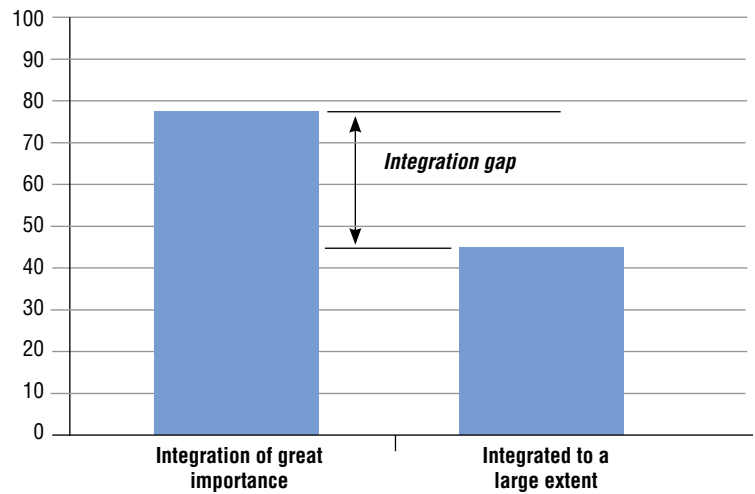
Highlights

When technology is combined with business and market insights, companies can achieve their highest innovation potential.

The CIO's role in integrating business and technology

Technology is a catalyst for innovation in new product and service development and in the transformation of business and operational models. Capitalizing on its innovation potential requires integrating technology expertise with business and marketing insights. It's not sufficient to simply install new hardware or roll out new applications. IT professionals must proactively evaluate new technologies in the context of business and market needs. Such knowledge must then be integrated into business strategy formulation efforts.

Figure 3. Importance versus extent of business and technology integration
(Percentage of respondents)



Highlights

Business and technology integration has been shown to lower costs, strengthen customer satisfaction and increase revenue.

The importance CEOs place on business and technology integration is apparent. Nearly 80 percent of the CEOs interviewed for the Global CEO Study rated business and technology integration of “great importance” or “critical importance.” However, a significant gap exists between their desired level of integration and their actual implementation. Many feel current integration efforts are inadequate and find the lack of integration to be a real source of frustration. They recognize the underlying potential of an integrated operation—lower costs, greater customer satisfaction and increased revenue—but in many cases feel unable to improve the situation.

In contrast, CEOs who have succeeded in implementing business and technology integration extensively are seeing the positive results of those efforts. These CEOs reported revenue increases three times as often as less integrated companies did. IBM’s financial comparisons showed similar results: companies that had integrated extensively were growing revenue five percent faster than their competitors over a five-year period.

Be a business executive first, a technologist second

With so much innovative potential riding on business and technology integration, savvy CIOs are taking the lead in closing the age-old gap between business and IT. They are focusing more time on business strategy and business transformation and less on day-to-day IT concerns.

Answering business needs through technology

For pharmaceutical companies, speed to market determines success. Eli Lilly found an innovative way to accelerate the drug discovery process by reaching beyond its research labs. The company's InnoCentive Web site taps a virtual community of over 85,000 scientists in 175 countries to work on critical R&D problems that haven't been solved. Eli Lilly posts problems any scientist can tackle, given the right expertise, and awards as much as US\$100K for solutions.

In addition to speeding market delivery for new drugs, InnoCentive cuts the cost of drug discovery by spreading the risk externally. The success rate has been far better than in-house performance—about one-sixth of the cost of doing it all in-house.⁷

Today the more effective CIOs are those who can combine a deep understanding of their organization's business issues with knowledge and insights of current and emerging technologies.⁶ They are aligning their IT priorities with those of the business and implementing technology to suit changing business requirements. They are ensuring technological change has an important place on the corporate agenda.

Equally important, these CIOs are promoting and aiding in the maturation of a new governance structure that integrates business and IT leadership and fosters shared responsibility for the use of IT across the business. Such an integrated governance approach cuts to the core of the business and IT alignment issue by dispelling the notion of alignment completely. Instead, it melds business and IT leadership together, enabling the management teams to function as a single unified entity. Integrated senior executive committees set direction regarding the use of IT, integrated business technology councils manage IT investments across their lifecycle and integrated standards committees establish and enforce standards and policies that affect business-IT integration. An integrated IT governance structure is the cornerstone for business model innovation. It ensures business model innovation can thrive.

But today's CIO must also provide an amiable context for innovative thought. The CIO needs to actively cultivate an entrepreneurial atmosphere in which business and technology integration occur naturally. That means infusing the IT organization with "hybrid" business skills that are typically in short supply among IT professionals, skills like pricing, marketing, and demand management. IT organizations with the right mix of business and technology skills are better positioned to formulate and shape strategies that integrate technology with the needs of the business. Moreover, they are better equipped to execute successfully on such strategies.

Highlights

CIOs figure prominently in effecting the changes that will enable companies to realize the promise of business model innovation.

Conclusion

Most CEOs agree that radical, fundamental change is in store for their organization over the next two years, and both the business and IT will need to adapt. Faced with globalization and major market shifts, the business must reinvent itself to create a differentiating value proposition, and CEOs see business model innovation as the answer.

IBM's Global CEO Study 2006 makes clear that CEOs are eyeing a much wider innovation horizon. But to capitalize on their expanded innovative potential, business and technology integration must improve and the landscape for collaboration must extend beyond traditional boundaries.

CIOs figure prominently in affecting these changes. The role of the CIO centers on establishing the right infrastructure, culture and climate for business model innovation. CIOs must be proactive in creating deep partnerships and shared knowledge between business and IT. More important, CIOs should lead by example:

- *Innovating the business model for IT first*
- *Making collaboration a true discipline and consistently leveraging best practices and technologies, and*
- *Integrating business and market insights for all the services that IT delivers.*

CEOs understand that the business cannot drive innovation alone. IT has a major role to play, and they are looking to their CIOs to become a business partner and play an integral part in implementing the company's business strategy and vision. They recognize that CIOs will be instrumental in establishing the conditions and environment needed to ignite innovative ideas, drive their execution and ultimately capture the innovation dividend. These CEOs know that the success of their organization's innovation efforts isn't just about aligning business and IT; today it's about being totally in sync and driving business value together.

CIOs who want to succeed in this new world need to act quickly and proactively. The speed of change demands that CIOs begin changing the IT business model and helping the business execute its innovation strategy. No one is better equipped to assume the role of chief innovation officer, interpreting the potential of technology to transform the business and enabling the company's innovation promise to be realized.

For more information

For further details about the Global CEO Study 2006 or to learn how IBM is working with organizations around the world to help them become more innovative, visit:

ibm.com/innovation

To speak with an IBM representative in your region or industry, send an e-mail to:

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