

# Delivering Technology Innovation

A.T. Kearney's IT Innovation and Effectiveness Study





**S**uccess and sustained growth may be difficult for companies these days, but it is by no means unattainable. Times of economic turmoil often provide the groundwork for the strongest firms to emerge and thrive. Amid budget cuts and capital shortages, falling sales and tight credit, the leading companies are those that place their bets wisely, continuing to invest in leading-edge information technology innovations that will see them through this economic malaise. Simply put, successful firms view downturns as opportunities that can't be wasted.

Technology is almost synonymous with innovation, and many of the great recent innovations have been in IT. According to A.T. Kearney's 2009 IT Innovation and Effectiveness Study, IT remains an area where firms can generate a competitive advantage.

Consider one of the great success stories of this recession—Amazon's Kindle. Initially launched with much fanfare in November 2007, Amazon released a new, enhanced version of the electronic reader in February 2009. Despite the recession, Amazon reported a 24 percent jump in first-quarter profits thanks in part to the Kindle. Despite attempts by many rivals, the Kindle remains the leading digital reading device on the market, and when the economy rebounds, Amazon will likely be out in front in this lucrative market. Additionally, the unique product has the potential to transform industries such as education and research around the world—a big reason why the Kindle may be more than just the latest gadget.<sup>1</sup>

The economic mood may be gloomy, but success stories like the Kindle show that the value of IT innovation has not diminished. Our 2009

study, which polled roughly 150 executives from major companies, found that most business leaders understand the importance of IT innovation in terms of their companies' bottom lines and future goals (*see sidebar: About the Study on page 2*). At the same time, few firms match that understanding with the tools, strategies or capabilities to drive successful innovation in technology and IT.

In this paper we look at the findings of the study and outline how successful IT innovators stand out against the competition.

### Game-Shifting IT Innovation

A.T. Kearney defines IT innovation as the game-shifting strategies, enabled by technology, that create a sustainable competitive advantage or significant cost reductions. A common goal of IT innovation is to deliver new solutions to customers, products or supply chains. For example, Procter & Gamble and Best Buy use "open innovation" concepts to propel new product ideas, using IT-enabled collaborative environments to generate and collect ideas from a broad online community. The auto insurance industry

uses wireless communications (telematics) to combine vehicle tracking and satellite navigation.

For the past decade, A.T. Kearney has sponsored global studies to assess IT effectiveness and innovation. Among the findings in this year's study:

- Ninety percent of respondents identify IT as either an “important” or “extremely important” strategic differentiator. Nearly as many (84 percent) cite IT innovation as growing in importance.
- C-level executives believe IT innovation is becoming more important, yet investment in IT innovation misses target levels by more than 75 percent.
- Most businesses value IT but not necessarily their IT departments.
- Complex legacy IT systems are a major obstacle to IT effectiveness, not only raising costs but also constraining growth.
- IT innovators have distinct characteristics that separate them from their peers.
- For IT to enable innovation, it must:
  - Build a stronger partnership with the business and suppliers

- Change organizationally, improving structures, processes and talent

- Reduce complexity and renew its architecture

Study participants also note emerging technologies such as social networking, cloud computing and platform-as-a-service (PaaS) as significant developments. Together, these innovations

*Today's CIOs must be more than just technologists—they must be business leaders who can articulate how new technologies can better position the company for competitive advantage.*

may prove vital for gathering data and delivering applications and IT services at reduced cost. Other product innovations, such as machine virtualization and grid computing, will deliver massive computing power.

## About the Study

In 2009, A.T. Kearney sponsored a global research project to understand how technology innovations are incorporated into companies' business strategies, the decision-making around these strategies and the issues related to adopting and implementing new technology. The nearly 150 study partici-

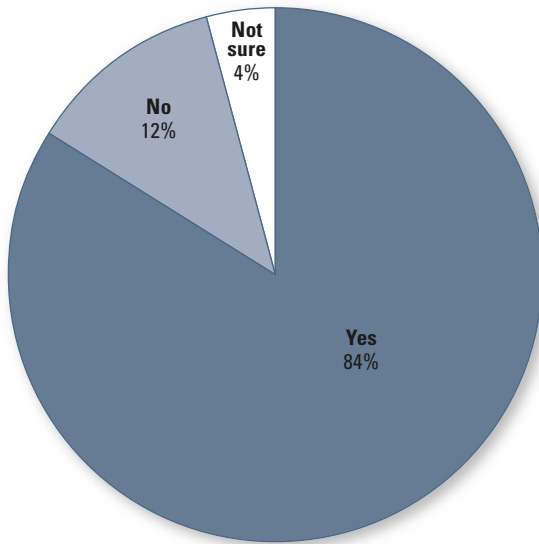
pants included A.T. Kearney clients, board members and senior-level executives from American and European companies with \$500 million or more in revenue. Companies were primarily from five industries: automotive, communications and high-tech, consumer products and retail, financial institu-

tions, and process industries. All executives who participated in the survey were directly involved in their companies' IT investment decisions; they were queried about their companies' IT innovation priorities, strategies and investment direction.

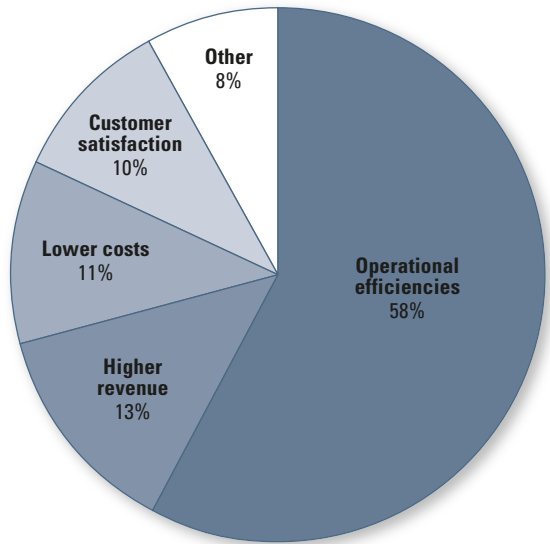
**Figure 1**

Technology innovation is becoming more important to companies

**Over the past five years has IT innovation become more important to your company and top executives?**



**What has been the contribution of technology innovation to your company's performance?**



Source: IT Innovation and Effectiveness Study, A.T. Kearney, 2009

### IT Innovation: The Impact on Business

While many areas of a company are involved in innovation, IT often sits at the center of the innovation engine. When leaders of various functions are asked about their innovative projects, almost inevitably there is a technology focus. Study participants overwhelmingly agree that technology innovation is a major contributor to improving operational efficiencies (see figure 1). Technologies such as global positioning systems (GPS) and radio-frequency identification (RFID) are notable examples.

Our findings reveal five vital business needs that IT innovation can help drive: reducing costs, improving quality, accelerating time-to-market, boosting productivity and increasing revenue growth. The first four focus on the bottom line—exploiting technology to improve efficiency within the business and IT operations. The last one

focuses on the top line. Indeed, IT innovation is vital for improving customer service, sales and marketing, decision-making and analytics, and supply chain performance (see figure 2 on page 4).

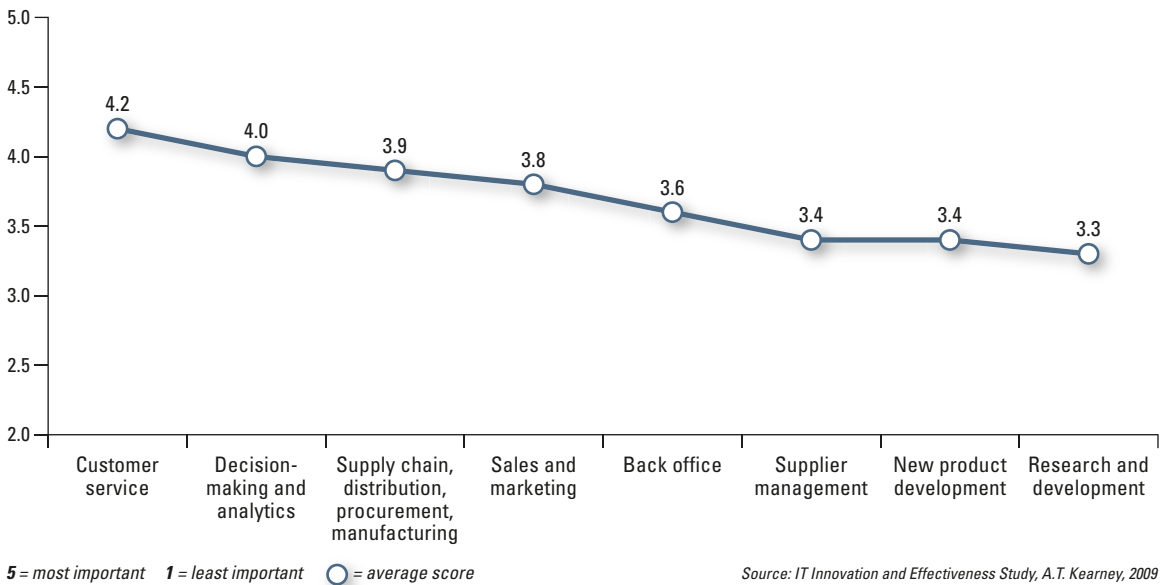
IT innovation is also crucial in developing and supporting products and services that transform the customer experience. More than half of executives consider IT central to their products and services, and another 27 percent believe IT plays at least a minimal role, for example, using the Internet as a distribution channel (see figure 3 on page 4). We expect future IT innovations to be instrumental not only in functions and processes but also in product development.

We found a strong correlation between successful IT innovation and overall growth. For example, among executives whose companies boast sales growth in the 10-to-20 percent range, 85 percent

**Figure 2**

Technology innovation helps improve key functions

For each area of your company's value chain, how important is IT innovation for your company's success and growth?



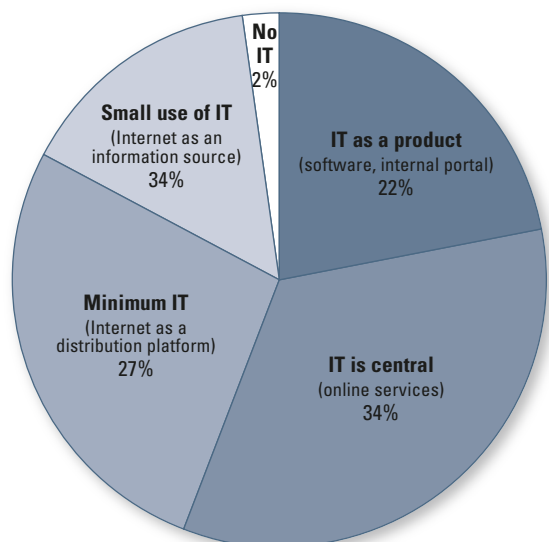
cite the positive value of technology innovation (see figure 4). Although it is impossible to draw a direct correlation between IT innovations and a company's growth, from our experience and the opinions of executives, we do not think it is a coincidence (see sidebar: *An Interview with Professor Mark Jeffery*).

**The Technology Landscape**

IT innovations typically fall under one of five areas on the technology landscape: information, applications, peripheral devices, connectivity or hardware. One or more of these usually serves as the foundation for enabling a new industry trend or game-changing invention. Across each area, the innovations not only provide value to products, customers and supply chains but also improve cost-effectiveness. At the same time, the pace of technology change is picking up in each area.

**Figure 3**

The extent of IT in products and services

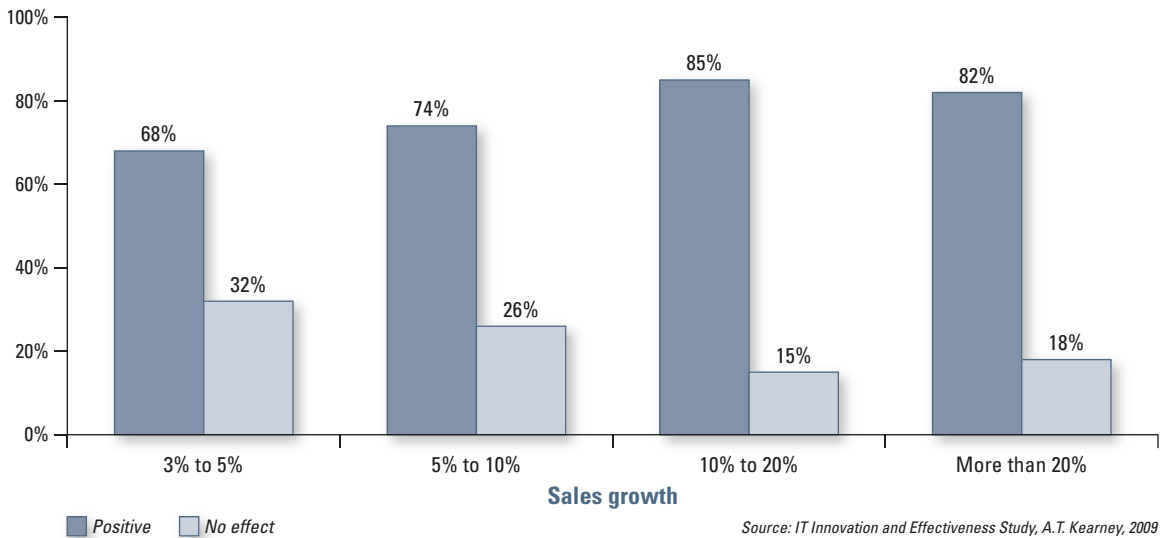


Source: IT Innovation and Effectiveness Study, A.T. Kearney, 2009

**Figure 4**

Companies with a positive view of IT innovation have greater sales growth

Overall, within your company, how would you rate the results of technology innovation?



## Interview with Professor Mark Jeffery

As part of the IT Innovation and Effectiveness Study, A.T. Kearney interviewed several industry thought leaders about the study results and findings. Professor Mark Jeffery is the Director of Technology Initiatives in the Center for Research on Technology and Innovation at Northwestern University's Kellogg School of Management. Twice a year, Professor Jeffery convenes a summit of leading senior IT executives. The following is an edited transcript of our discussion with Professor Jeffery.

**A.T. Kearney:** What is the current state of IT innovation?

**Mark Jeffery:** Overall budgets are being slashed, but even in the downturn, market leaders continue to

invest. Market leaders view IT spending as an opportunity to build market share, and IT innovation represents an opportunity to accomplish this. Firms continue to use IT innovation to drive revenue growth and steal market share. Leaders view the downturn as a great time to invest.

**A.T. Kearney:** How can IT groups organizationally take better advantage of the innovation opportunity?

**Mark Jeffery:** Innovation occurs by design, and not by mistake. Strong IT organizations must invest in innovation; those that don't are merely taking orders. Successful IT organizations are led by managers that are business leaders first and technologists second.

Successful IT organizations must set aside budget to innovate and take risks. Innovation is well-managed risk-taking. Good innovation is not by committee. Good CIOs have small dedicated teams, and then they let them loose. These small teams create and prototype, but are not tightly controlled.

**A.T. Kearney:** How have you seen IT simplification used as a cost-reduction and revenue-growth action?

**Mark Jeffery:** IT complexity is a common challenge for CIOs. CIO leaders focus on their inherited patchwork of applications, seek to rationalize it, and then reinvest the savings for the future.

Let's take a closer look at the five areas shown in figure 5:

**Information.** The emergence of Web 2.0 and social networking provides new channels for companies to reach more customers faster and generate consumer energy. News agencies use RSS feeds and Twitter to provide instant updates and breaking news; retailers and airlines use Twitter to send promotions to target customers. Virtually every direct-to-customer industry—including retail, banking, hospitality and transportation—has invested in some sort of customer relationship management (CRM) technology to understand consumer tendencies. By selectively marketing to high-potential customer segments, companies can increase revenues and improve returns on their marketing investments.

**Applications.** Many IT organizations are

exploring service-oriented architecture (SOA) and other enterprise-wide design standards, such as software as a service (SaaS), to reduce development and hardware costs. Designing IT architecture for the entire organization rather than for individual functions or processes is now essential for controlling complexity, maintaining flexibility and improving efficiency.<sup>1</sup>

**Peripheral devices.** Mobile point-of-sale systems improve operational flexibility and customer satisfaction. For example, airline passengers can pay for food or drinks with a credit card while on flights, and retailers and car rental agencies use point-of-sale systems to expedite checkout and reduce customer wait times. Bank customers can get instantaneous remote access to their accounts and conduct financial transactions securely over mobile devices. Field-service operations have been

**Figure 5**  
Five areas of IT innovation that enable new trends

	Information	Applications	Peripheral devices	Connectivity	Hardware
Enablers	<ul style="list-style-type: none"> <li>• Web 2.0 (wikis, blogs)</li> <li>• Portal consolidation</li> <li>• Consumer energy</li> <li>• Customer innovation labs</li> <li>• Open innovation</li> <li>• Social networking</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Web-oriented architectures</li> <li>• Software as a service (SaaS)</li> <li>• Agile methodologies</li> <li>• Service-oriented architecture (SOA)</li> <li>• Web-based design toolkits</li> <li>• Open source software development</li> <li>• Semantic search technologies</li> <li>• Rapid development methodologies</li> </ul>	<ul style="list-style-type: none"> <li>• Convergence</li> <li>• Open standards</li> <li>• Telematics</li> <li>• Biometrics</li> <li>• Mobility in banking and remote diagnostic processing</li> <li>• Automatic product activation</li> <li>• Global asset tracking and remote management</li> </ul>	<ul style="list-style-type: none"> <li>• Unified communication</li> <li>• Fourth generation (4G) wireless</li> <li>• Fiber optics</li> <li>• Quality of service (QoS)</li> </ul>	<ul style="list-style-type: none"> <li>• Virtualization and grid computing</li> <li>• Platform as a service (PaaS) and cloud services</li> <li>• Less duplication</li> <li>• Productivity mandate</li> <li>• Green IT</li> </ul>
Industry trends	<ul style="list-style-type: none"> <li>• Richer, more interconnected experiences</li> <li>• High-resolution video</li> <li>• Real-time data on-demand</li> <li>• Interactive data exchange</li> </ul>	<ul style="list-style-type: none"> <li>• Hybrid applications</li> <li>• Faster development</li> <li>• Open standards and interoperability</li> <li>• Applications and development tools for smaller devices</li> <li>• Software services (requiring less investment)</li> </ul>	<ul style="list-style-type: none"> <li>• Global proliferation</li> <li>• Mobile penetration</li> <li>• Network agnostic devices</li> <li>• Simpler supply chain and fulfillment</li> </ul>	<ul style="list-style-type: none"> <li>• Global broadband penetration</li> <li>• 20 Mbps LTE, greater than 25 Mbps WiMAX, 100Gbps Ethernet*</li> <li>• Standard integration protocols and formats</li> </ul>	<ul style="list-style-type: none"> <li>• Computing efficiency</li> <li>• Greater than 30% virtualized servers</li> <li>• More than 50% power savings</li> </ul>

\* Gbps is gigabits per second; Mbps is megabits per second; LTE is long-term evolution.

Source: A.T. Kearney analysis

<sup>1</sup> For more information, see "Service-Oriented Transformation" at [www.atkearney.com](http://www.atkearney.com).

transformed through the use of mobile devices that provide accurate and real-time information to delivery drivers.<sup>2</sup>

**Connectivity.** Wireless connections are only getting faster—with revolutionary 3G standards soon being replaced by 4G—as network demand continues to grow. As WiMAX and 100 Gigabit Ethernet technologies mature and become market-ready, low-latency environments will be readily accessible. With improved connectivity, there is less need for hardware and network footprints.

**Hardware.** In hardware technology, virtual servers are helping IT organizations improve efficiencies. Virtualization allows central manage-

ment of computing services such as storage and desktops and provides on-demand services, thus cutting costs, improving allocation and reducing the hardware footprint. For example, Motorola is moving toward a thin client model for all desktop computing, with employee desktops virtualized and managed centrally by IT. This is also an opportunity to move toward a “green IT” environment and more sustainable computing.

Across traditional functions and processes, innovative technologies are helping to improve efficiency and revolutionize business functions (see figure 6). IT works with business and process leaders to bring innovation to the table. True

**Figure 6**  
Innovations are revolutionizing business functions

Function	Example innovations	Enabling technologies
<b>Marketing</b>	<ul style="list-style-type: none"> <li>• Web-based strategies to increase customer loyalty</li> <li>• Next-generation customer resource management to better understand customer needs</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile applications on 3G networks</li> <li>• Augmented reality, overlaying computed information on real-world imagery</li> <li>• Integrated customer databases and advanced analytics</li> </ul>
<b>Sales</b>	<ul style="list-style-type: none"> <li>• Customer feedback options</li> <li>• Advanced analytics and retrieval of unstructured data to target select customers and cross-selling opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile applications on 3G networks</li> <li>• Social bookmarking and REST* technologies</li> <li>• Online engines that recommend products to customers</li> <li>• Social networking tools to alert customers of sales</li> </ul>
<b>Product development</b>	<ul style="list-style-type: none"> <li>• Open innovation, using external knowledge sources to improve the development cycle</li> <li>• Link products with back-office systems to improve reliability and support services</li> </ul>	<ul style="list-style-type: none"> <li>• Interactive websites where customers post, discuss and vote on ideas</li> <li>• Online communities of scientists and engineers who provide solutions</li> <li>• Integration engines linking the product to the customer’s service and financial data</li> </ul>
<b>Research and development</b>	<ul style="list-style-type: none"> <li>• Unstructured interactions among employees and external participants to deliver information to researchers</li> <li>• Data sharing across the organization</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced search tools to find experts with the right skills and news from diverse sources</li> <li>• Fusion of enterprise and social information to improve productivity</li> </ul>
<b>Supply chain</b>	<ul style="list-style-type: none"> <li>• High-speed networks, portals and tracking devices to increase visibility</li> <li>• Advanced forecasting engines to match supply with demand</li> </ul>	<ul style="list-style-type: none"> <li>• Real-time, integrated portals that span the enterprise</li> <li>• Extranets</li> <li>• Statistical modeling with real-time market data</li> </ul>
<b>Manufacturing</b>	<ul style="list-style-type: none"> <li>• Wearable computers for factory workers allow flexibility not offered by typical robots</li> </ul>	<ul style="list-style-type: none"> <li>• Microcomputers</li> <li>• Electronic content management</li> <li>• Wireless workplaces</li> </ul>
<b>Mergers and acquisitions</b>	<ul style="list-style-type: none"> <li>• SOA* and advanced integration protocols to eliminate complexity, modernize the application portfolio and better integrate applications</li> </ul>	<ul style="list-style-type: none"> <li>• SOA</li> <li>• Web-oriented architecture</li> <li>• Application integration architectures</li> </ul>

\* SOA is service-oriented architecture; REST, short for representational state transfers, is an architectural style for large-scale software design. Source: A.T. Kearney analysis

<sup>2</sup> For more information, see “Transforming Field-Service Operations,” at [www.atkearney.com](http://www.atkearney.com).

*“Most innovation comes from identifying where IT can make a difference and placing small bets and executing effectively. Communicating these success stories can help create momentum for future innovative IT efforts.”*

— **CHARLES PATEL**  
CIO, VWR International, LLC

innovation is only possible when the chief innovation officer (CIO) and business managers collaborate to achieve the company’s business and innovation goals.

### Barriers to IT Innovation

While technology and innovation go hand-in-hand, achieving true business success from IT is extremely difficult. The success stories are well known, yet most companies are also acutely aware of how difficult it is to realize the full potential of their IT innovation investments. Our findings suggest the following barriers to IT innovation.

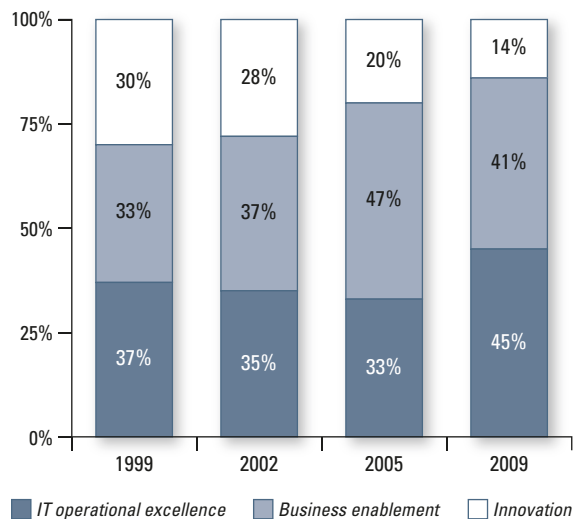
#### Matching investments to business needs.

Across industries, investment in IT innovation does not match stated business priorities. In the past 10 years, innovation has shrunk to just 14 percent of IT budgets, down from 30 percent in our first study (see figure 7). Meanwhile, 45 percent of the IT budget goes to improving operations, indicating that IT departments are focused heavily on day-to-day activities and cost reduction. Respondents say that number should be closer to 35 percent, with one-quarter of the IT budget going to innovation and 41 percent going to business enablement. This suggests that while executives agree on the importance of IT innovation, most companies are not securing the appropriate funding for it. Many market

leaders and academics believe firms should invest aggressively in IT innovation to drive top-line growth and bottom-line efficiencies, even in a difficult economy.

**Negative perception of IT.** Many organizations have a negative perception of their IT departments. Executives agree that technology is important—but that their IT departments are not. Many IT

**Figure 7**  
Innovation has shrunk to just 14 percent of IT budgets



Source: IT Innovation and Effectiveness Studies, A.T. Kearney, 1999, 2002, 2005, 2009

departments are relegated to a mere “keeping-the-lights-on” function or being an order-taker, underwhelming the business with small operational enhancements. Innovative ideas come from elsewhere within the company—leaving IT departments on the sidelines. We heard from several executives that IT departments are such a barrier that they take their most innovative business technology projects “off the grid”—meaning they run them without support of the IT department—to complete them in a more timely manner.

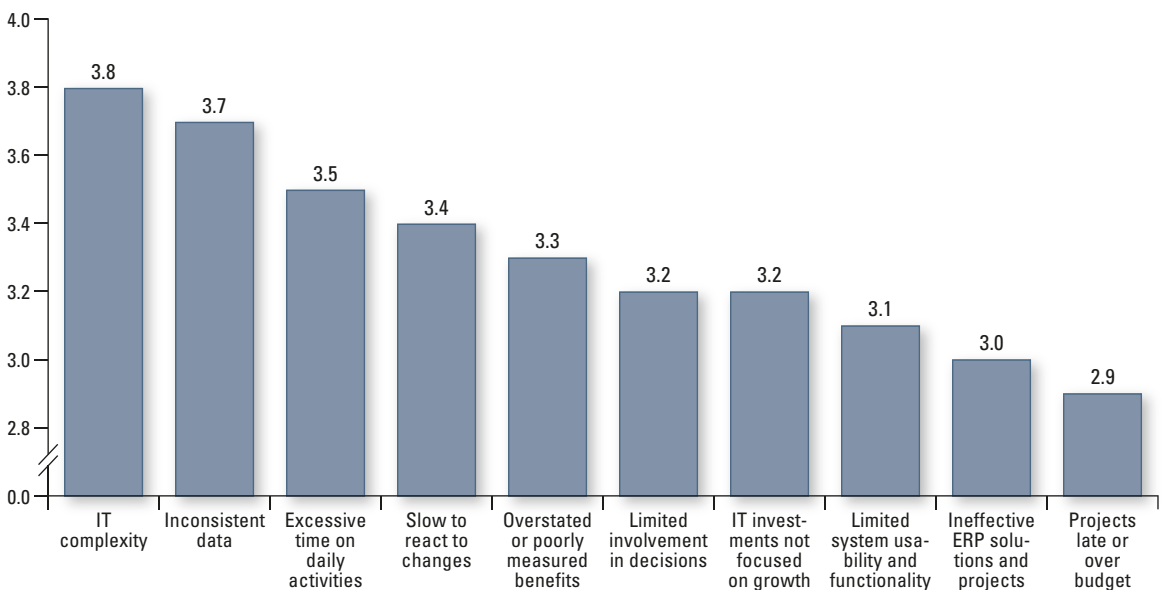
**Complex systems, inconsistent data and a poor incubator environment.** Complexity, poor data and excess time spent on day-to-day activities are among the biggest IT barriers to growth. IT’s slow reaction to change and a failure to measure or outline benefits properly are also on the list (see figure 8). As organizations grow and their legacy systems meet increasingly sophisticated interfaces,

IT departments become less able to manage the growing complexity and inconsistent data. When IT projects fail, there are common reasons: an inability to integrate new systems effectively, a limited appetite for investing in innovation and a poor incubator environment (see figure 9 on page 10). A commitment to IT innovation will bring serious and sustained improvements.

### Six Mandates for IT Innovation

What separates IT innovation leaders from the rest of the pack? Our study reveals that leaders demonstrate not only vision and out-of-the-box thinking, but also an ability to recognize the roadblocks to making the vision a reality. Studying these best-practice companies, it becomes clear that effective IT innovation does not occur by accident. Rather, leading companies share the following attributes:

**Figure 8**  
Which IT growth barriers are most relevant to your business?

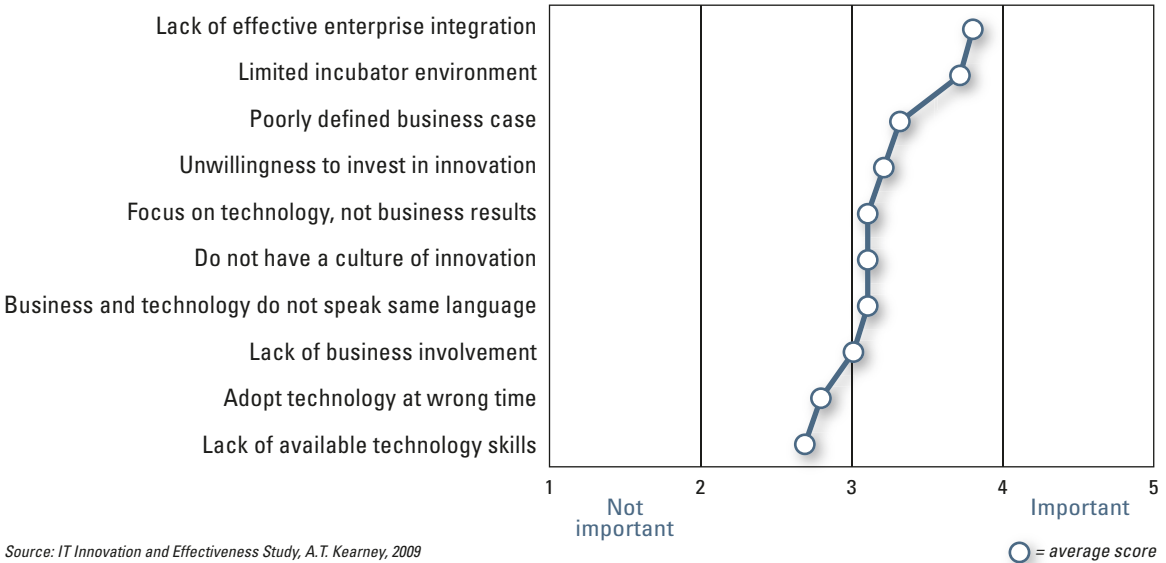


5 = most important 1 = least important

Source: IT Innovation and Effectiveness Study, A.T. Kearney, 2009

**Figure 9**

The main reasons IT innovation projects fail



Source: *IT Innovation and Effectiveness Study*, A.T. Kearney, 2009

**1. Develop world-class IT delivery capabilities.** The best IT departments get the basics right, both to improve execution and their reputations within the business. That means focusing first on delivering IT services effectively—reducing complexity in the application portfolio, developing business skills within IT and forecasting business needs better. This frees up more resources to focus on innovation rather than day-to-day activities.

However, technology innovation does not always mean using leading-edge technologies. Basic IT tools and operational change can offer great opportunities for innovation; establishing business leadership within IT can help the IT organization become viable partners in innovation. Study participant Charles Patel, CIO of VWR International, LLC, a global laboratory supply and distribution company, agrees. “Innovation success does not typically start with large-scale global projects,” Patel says. “Most innovation comes from

identifying where IT can make a difference and placing small bets and executing effectively. Communicating these success stories can help create momentum for future innovative IT efforts.”

Reducing complexity is also key to IT delivery, by limiting redundancy and ensuring that the right systems are supporting the right business processes. Companies can spend years and hundreds of millions of dollars trying to dig out of their legacy applications to take their business to the next level, only to fail because of the complexity of their IT environment. Needless to say, this type of situation makes it harder to foster IT innovation.<sup>3</sup>

“We are consistently challenging our enterprise architecture to ensure that each project gets us to an end-state and removes transient applications,” Patel adds. “We want to have common IT wherever possible. This allows us to redirect investments to innovative projects while being

<sup>3</sup> For more information, see “A Blueprint to Fix IT Complexity,” at [www.atkearney.com](http://www.atkearney.com).

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— MARK JEFFERY

Director of Technology Initiatives  
Kellogg School of Management, Northwestern University

more reactive to business and market changes.”

**2. Enable IT innovation through investments and measurement.** Placing IT initiatives and investment targets (for business enablement and innovation programs) under a single umbrella can help ensure that IT innovation gets the investment it needs. IT can be viewed holistically as a portfolio rather than a series of independent projects. At the same time, by prioritizing technology-related initiatives, management can vary its approach to sponsoring and measuring IT innovation—defining expectations based on the type of project and measuring the portfolio based on value delivered. We segment the portfolio and investments by objective:

***Improve operational excellence.*** Focus on mature applications and data-center technology that make information systems more effective and cost-efficient. Examples include applications that monitor software and networks, enable data integration or run commodity administrative business functions. These are typically prime candidates for outsourcing, since they provide base services and are standardized, enabling third-party support at a reasonable cost.

***Increase core value.*** Focus on processes that when operating properly can take value chains and business operations to world-class levels. Reducing costs is not the measure of success—instead, improvement in returns and growth is

the goal. These applications typically include enterprise resource planning (ERP) systems and workflow engines that enable end-to-end business processes across functions.

***Enhance innovation.*** Aim for breakthroughs—applications that increase competitiveness, improve market dynamics, reposition the company against its competitors or allow entry into new markets. These can be leading-edge technologies such as mobile devices, cloud computing and SOA. Mature applications and technologies that transform traditional paradigms or business models also belong in this group.

Segmenting the portfolio and investments by objective will ensure that innovation gets the resources it needs and produces solid returns.

**3. Balance IT leadership with business partnerships.** More companies and industries are outlining specific positions and establishing IT councils and other forums to drive IT innovation. For example, 80 percent of auto companies and almost 70 percent of financial services firms have created specific positions or structures for IT innovation. These companies are more likely to have a positive view of IT and its contributions to the company.

Companies that value IT innovation at the most senior ranks include technology’s role in their corporate mandates, core values and organizational structure. As three-quarters of

survey respondents with an established IT innovation governance structure say they see better results from their efforts, a governance structure appears vital for forging a close partnership between IT and business.

For example, Tyco formed an IT leadership council to address the challenge of managing IT in its distributed business unit operating model. The council brings together innovation and IT leaders from across the organization to collaborate on defining and managing the strategic portfolio of initiatives.

Just as technology executives should be held accountable for business results, business managers should be responsible for the results of IT innovation—for helping to set the IT agenda and extracting value from IT projects. Technology

project leaders work with, and report to, a business leader who is responsible for ensuring all initiatives achieve solid business results.

Today's CIOs must be more than just technologists—they must be business leaders who understand technology and can articulate to top management, business unit leaders and line employees how new technologies can better position the company for a competitive advantage. As projects focus more on achieving measurable business value, and as the partnership between IT and business solidifies, this skill will make the CIO and others driving IT innovation vital contributors at the corporate strategy and planning table.

Manjit Singh, CIO of Chiquita Brands International, says, "The most basic, yet impor-

## Delivering Lasting Value

IT innovation is not always about simply applying leading-edge technology to a problem. Often it means finding the sweet spot between technology, processes and customers in order to deliver lasting value.

In the retail propane industry, profits rely heavily on weather conditions and operational efficiency. You can't reign in Mother Nature, so the choice for where to direct attention would seem obvious. Yet the industry structure has traditionally prevented companies from making dramatic operational shifts. Retail propane is a slow-growth commodity industry—margins are roughly 5 to 10 percent—and it is highly fragmented, as the top 50 companies own less than half of the combined market share.

A propane company we worked with, also a participant in this study,

faced some additional challenges. Its organizational structure was decentralized, with hundreds of retail operations providing full service to relatively small delivery territories. Delivery drivers guided operations, determining which customers required propane and when it should be delivered. Management had little understanding of, or control over, daily operations.

The IT system presented perhaps the greatest obstacle—not uncommon in this industry. IT spread across hundreds of service areas and featured outdated applications running on unconnected platforms incapable of sharing data. The company's core business functions—customer management, collections, pricing and distribution—were supported by highly customized legacy applications.

Boxed in on various fronts, leaders

were ready to make a dramatic break and focus on customer service and delivery operations as differentiating factors. Using a balanced mix of centralized and decentralized initiatives that focused on organizational structure and business processes—the customer was always at the center of its operations. The new IT design supported the new strategy by integrating technology across multiple locations and sites.

Transforming field-service operations improved the economics of each delivery and reduced overall fixed costs.

The following technologies work together across the value chain (*see figure*):

**Demand forecasting.** Statistical modeling in an ERP solution improves demand forecasting.

**Pricing.** A customized pricing engine in the ERP solution prices

tant, metric I use is the number of business partners who seek me out to discuss new business initiatives and how IT can help support them, versus the number who seek me out to complain about IT service delivery.”

**4. Integrate products and services with traditional back-office IT.** Because the IT perspective cuts across all functions, it can improve integration and innovation with the business. A centralized IT division can forge a comprehensive view of processes that are fundamental to the organization, and therefore help standardize, optimize and innovate these processes. By integrating data and information, IT can help improve products and services, including delivery and the customer experience, which can increase customer loyalty and generate repeat business.

Often the most static aspects of a supply chain can be the best places for game-changing IT innovations. For example, integrating product and customer technologies with more traditional back-end technologies. As mobile technology and ubiquitous connectivity continue to mature, organizations can peer into their operations in new ways (*see sidebar: Delivering Lasting Value*).

Consider Coca-Cola. The company designed a self-serve dispenser called Freestyle to test new drink flavors and beverage concepts. As the dispenser pours more than 100 varieties of sodas, juices, tea and water, usage data is collected and transmitted over a private wireless network to the company’s data warehouse in Atlanta. Coke can more easily assess a new drink’s performance, identify differences in regional tastes and help

products by customer or geography.

**Order management.** A centralized ERP solution creates, tracks and bills orders.

**Scheduling and routing.** A routing system connected to the ERP system schedules and routes orders.

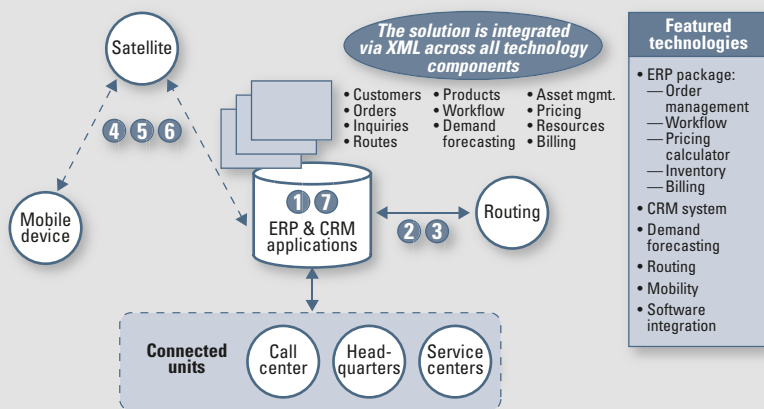
**Delivery.** A mobility solution connects drivers to the service center and provides detailed route information.

**Customer service.** Centralized ERP and CRM applications track inquiries and take new orders.

**Tracking and reporting.** ERP and data warehouse deliver operational and strategic information to management.

Today, this IT architecture serves as the backbone for the company’s operational model, helping to increase shareholder value and competitive advantage.

**Figure: Standard technologies can yield an innovative solution**



**Technology integration overview**

- 1 Each night, the demand-forecasting system calculates demand for all active customers
- 2 CRM and ERP systems provide demand, customer and resource information to the routing system
- 3 Routing system calculates and creates optimized routes. These routes are sent back to ERP system
- 4 Orders are created in the ERP system and then sent to the driver’s mobile device
- 5 Completed orders are entered into the mobile device and transmitted through the satellite communication system back to ERP, CRM and routing systems
- 6 Throughout the day, the local service-center manager can send updated routes and messages to drivers
- 7 Orders are taken 24 hours a day by the call center and entered into the ERP system for future or immediate delivery

fast-food outlets decide which drinks are best for their markets. As *InformationWeek* explains, “This kind of test marketing is much cheaper than the old model, in which new products were bottled, brought to market and then canceled if they didn’t gain traction.”

Similarly, Zipcar, an urban car rental company, allows customers to make reservations on the Web or via an iPhone, and all necessary information is then transmitted wirelessly to the car’s onboard computer system. When the renter

*Aim for breakthroughs — applications that increase competitiveness, improve market dynamics, reposition the company against its competitors or allow entry into new markets.*

arrives, waving a “Zipcard” or pressing a button on an iPhone will locate the car, unlock it and enable the starter. Gas can be purchased with a card that is equipped in the vehicle, and extending the rental period is as easy as sending a text message.

5. **Collaborate with customers, employees and suppliers to deliver IT innovation.** Successful innovators manage the strategic IT roadmap among all stakeholders: business, technology and suppliers, and even customers, academics and outside industries, while navigating the complexities of working with different people, processes and technologies. Some departments, including sales and marketing, product development, customer support and supply chain, are commonly on par with or even better than IT when it comes to using

technology innovation for a competitive advantage. Expanding the IT skill base to include better business skills is vital for meeting business needs.

More companies are taking collaboration to new heights. Procter & Gamble is partnering with software company inno360 to build on its Connect + Develop program, linking P&G to suppliers, entrepreneurs and even competitors that can help push new innovations. In a recent interview with the *Business Courier of Cincinnati*, Chris Thoen, P&G’s director of innovation

and knowledge management, said, “Inno360 is intended to help us tap into networks of literally millions of innovative people around the world, to find exactly the right answers to our innovation challenges.”

General Motors teamed up with Carnegie Mellon University’s Tartan Racing to develop the driverless Boss SUV, an award-winning vehicle that serves as

a testing ground for autonomous-driving technology. Their newest vehicles are driverless cars armed with lasers and cameras. According to an article in *Scientific American*, the GM-CMU team said the next project could include technology that allows cars to communicate with one another and with traffic signals to help avoid accidents. According to the article, this partnership has pushed the progress of driverless vehicle innovation and helped position GM ahead of its competition in this burgeoning area.

Mobile phone maker Nokia’s Ovi is a new mobile Internet service platform that allows external developers to create applications, much like they do for Apple’s iPhone. At the Ovi Store customers can download independent applica-

tions to their phones, including ringtones, wallpaper and Facebook.

IT innovators also study other industries for technology ideas that may help solve their problems. For example, retailers are setting up shared-services centers to field customer requests, Apple installed red phones in its stores so customers can connect to troubleshooters, and McDonald's is still experimenting with remote customer service at its drive-thru windows.

**6. Make sound business decisions on emerging technology.** Evaluating which nascent technologies will support your corporate strategies—and which ones should be ignored—is key to

establishing a competitive position (*see sidebar: Cloud Computing: Catching Up to the Hype?*).

Drawing a technology landscape that puts emerging technologies into the context of corporate strategy helps identify both the potential benefits and possible roadblocks to capturing business value. Options are evaluated according to the business benefits the technology will generate and how successfully it can be deployed.

Finally, a culture that encourages IT innovation will allow for experimentation and time to gauge the true impact of an idea. For example, Walmart's innovation laboratory encourages employees and suppliers to develop new technology

## Cloud Computing: Catching Up to the Hype?

The promise of cloud computing has been on the horizon for a number of years, but have the services and offerings caught up to the hype? Considering a global market that grew to \$16 billion in 2008 and is projected to grow to \$42 billion by 2012, the answer would seem to be an emphatic yes.

Cloud computing is the term for using Internet Protocol (IP) to access computing resources, including software, operating systems, processors, peripherals and networks. Major advances in virtualization have turned "variable cost" models into commercially viable propositions, and parallel developments in the business services management suite are making cloud computing a reality.

So far, there are three offerings:

**Software as a service (SaaS).** The most mature of the three, SaaS consists of software packages hosted and delivered via a public or private network.

One of the most prominent examples is Salesforce.com, which provides CRM software on a per-use and per-transaction basis and can be accessed via the Internet.<sup>4</sup>

**Platform as a service (PaaS).** This emerging technology bundles services such as databases, web servers and development tools. Google App Engine or Amazon's Elastic Compute Cloud provide access to software tools without the need to install or manage applications or infrastructure. These services add flexibility and expedite internal application development and customization.

**Infrastructure as a service (IaaS).**

The newest of the three, IaaS, uses delivering services such as virtual servers, extended networks and remote storage capabilities. In 2008 AT&T announced the launch of Synaptic Hosting, a utility computing service with managed networking, security

and storage. As infrastructure outsourcing evolves into a service-based rather than equipment-based model, IaaS will grow.

Overall, barriers to cloud computing still exist—including legal concerns, latency, reliability and the perception of loss of control as applications and servers are not visible. The recent loss of data on T-Mobile's Sidekick phone, the result of a failure by a Microsoft computer system, highlights these concerns. And the grand promise of 20 percent savings has not panned out, with savings closer to the 5 to 10 percent range, according to findings in our recent study.

IT organizations should be selective about applications when migrating to a cloud environment. Development and initial test environments can be ideal candidates, even as the test environments still have to mimic the actual production setup for compliance reasons.

<sup>4</sup> For more information, see "SaaS: Managing the Anti-IT Application," at [www.atkearney.com](http://www.atkearney.com).

prototypes, and showcases leading-edge technologies to demonstrate how they can be used to serve shoppers better and deliver bottom-line results.<sup>5</sup>

## The Road Ahead

IT organizations often struggle to figure out where to focus first for tangible results. The following are several activities that can drive short-, medium- and long-term results.

**Short term.** Build momentum for change with activities that show measurable progress quickly.

**Analyze the existing IT portfolio** outside the specter of operational excellence. This draws attention to just how much of the portfolio is truly focused on innovation. Look for quick wins that could begin the process of building an IT innovation platform.

**Focus the IT organization** on innovation by creating roles or assigning resources to collaborate directly with those on the business side of the company.

**Articulate IT priorities** that align with the company's innovation agenda and let it be known that IT is engaged, present and taking action on this issue.

Picking the “low-hanging fruit” can bring change with minimal investment in time and resources.

**Medium term.** A broader effort can create

more fundamental change and improve the perception of the value IT delivers to the business. IT should continue to standardize and improve processes and broaden the skill set of those dedicated to innovation. As IT continues to focus on innovation, tracking and monitoring emerging technologies and keeping an up-to-date technology roadmap is vital for bringing fresh, cutting-edge ideas to the table.

**Long term.** Institutionalizing changes will be the key to future innovations. A sustained partnership between IT and an innovation function will build positive perceptions, while reducing complexity—organizationally and within the application portfolio—will free up room for innovation. The goal is to foster creative new ideas from the top of the organization to the bottom.

## Time to Invest

In these tumultuous times, business leaders consider IT among the first places to cut costs—especially when their IT departments are little more than technology enablers. IT departments can take steps to improve their standing within the company and become business partners in innovation. Innovators establish an IT structure to support collaboration. Improving delivery, reducing costs and improving the overall effectiveness of IT can allow for greater focus on innovation.

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<sup>5</sup> Walmart 2007 Annual Report.

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