Harvard Business Review
OnPoint
ARTICLE

Getting IT Right

by Charlie S. Feld and Donna B. Stoddard

Included with this full-text *Harvard Business Review* article:

Getting IT Right

The Idea in Brief

Companies waste $500 billion worldwide on information technology (IT) spending. Why? Most top executives ignore IT. Left unsupervised, IT departments enthusiastically fulfill multiple departments' requests. They create dozens of complex information systems that don't talk to each other—and that consume mounting resources just to keep functioning.

How to turn IT from a costly mess into a powerful competitive weapon? First, realize that IT work demands the same inspired leadership and superb execution that other parts of your business require—as well as top management's attention and high expectations.

Next, apply three principles:

- **develop a long-term strategic IT plan,** focusing your IT group on overarching company goals

- **create a unifying technology platform** serving your entire organization, not just individual units

- **cultivate a high-functioning culture** in which the IT department works as a business-savvy team and meets tough corporate performance standards

Using this disciplined, three-pronged approach, you generate enormous power from IT—with less investment.

The Idea in Practice

When companies apply these principles, their IT organizations often deliver results within just six months. A closer look at the principles:

DEVELOP A LONG-TERM IT PLAN

Most people see IT as delivering quick, silver-bullet solutions. But IT requires a long-term, disciplined, and strategic view.

▶ Example:
Snack-food giant Frito-Lay's batch- and paper-based data-processing systems were hampering its ability to compete against regional rivals. To re-sharpen its competitive edge, the CEO first decentralized sales and marketing, enabling them to launch store-by-store and street-by-street offensives. Then he used technology to arm sales reps with hand-held devices that let them manage price, inventory, and customer changes in real time. A long-term IT funding mechanism kept IT spending predictable and stable.

The changes saved 30,000–50,000 hours of paperwork annually, freed up $40 million per year to fund renewal of data systems, and raised domestic revenues from $3 billion to $4.2 billion in three years.

CREATE A UNIFYING TECHNOLOGY PLATFORM

Most organizations' IT initiatives resemble independent countries—each with unique business applications, technologies, and data definitions. To slash redundant costs, create a unifying platform.

▶ Example:
Delta Airlines ran more than 30 different IT platforms. Each required 100 support specialists—costing $700 million per year. Chaos reigned. Delta refocused its IT investments on a new, simplified, and unifying architecture—the Delta Nervous System—which linked customer, flight, schedule, and employee databases. Now the company could upgrade or replace older sys-

tems where necessary—without disrupting the overall IT system. IT costs shrank 30%. Employees from all functions could interpret system data in the same way—agreeing, for example, on the meaning of "flight arrival." Chaos dissipated.

CULTIVATE A HIGH-FUNCTIONING IT CULTURE

Corporations have long treated IT as an isolated corporate entity, prompting IT folks to lose sight of overarching business strategy. Solution? Cultivate a high-performance IT culture tightly integrated with the entire company.

▶ Example:
When Burlington Northern and Santa Fe railroads merged, the new entity had 24 months to blend two separate IT systems. Its goal? To develop the largest integrated, real-time rail information system in the world. BNSF established an accountable IT leadership team, then set leadership performance targets reflecting expectations across the whole firm. Regular updates, staff meetings, project reviews, and IT board meetings gave IT rigor and routine. People began working more efficiently. The new IT group beat the 24-month target by three months. BNSF achieved $500 million in cost savings.

It's been 40 years since the advent of modern IT, yet few companies do it well. If you stick to three central principles, you can turn IT from a costly mess into a powerful weapon.

Getting IT Right

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Of all the members of the executive committee, the CIO is the least understood—mostly because his profession is still so young. Over the centuries, the fields of manufacturing, finance, sales, marketing, and engineering have evolved into a set of commonly understood practices, with established vocabularies and operating principles comprehended by every member of the senior team. By contrast, the field of information technology—born only 40 years ago with the advent of the IBM 360 in 1964—is prepubescent.

This generation gap means that, in most organizations, the corporate parent—caught in the linguistic chasm between tech-speak and business-speak—has no idea what its youngest child is up to. Management too often shrugs its shoulders, hands the kid a fat allowance, and looks the other way. Later on, the company finds it's paid an outrageous price for the latest technological fad. Instead of addressing the problem, many companies just kick the kid out of the house.

The result in many major corporations is that IT is an expensive mess. Orders are lost. Customers call help desks that aren't helpful. Tracking systems don't track. Indeed, the average business fritters away 20% of its corporate IT budget on purchases that fail to achieve their objectives, according to Gartner Research. This adds up to approximately $500 billion wasted worldwide.

Such waste—most egregious in industries like transportation, insurance, telecommunications, banking, and manufacturing—is a direct result of the fact that IT has so far operated without the constructive involvement of the senior management team, despite the best intentions of CIOs. Over the years, IT departments have enthusiastically fulfilled requests by different corporate functions. In the process, companies have created and populated dozens of legacy information systems, each consisting of millions of lines of code, that do not talk to one another. As the data from discrete functions collect in separate databases, more and more resources are required merely to keep the systems functioning properly.

While the Y2K crisis impelled many companies to clean up the worst of their legacy systems, most organizations merely did spring cleaning, ignoring the fact that their technological houses badly needed structural repair. Despite advances in technology, most companies continue to struggle with 35-year-old, costly, and rigid information archeology; a cynical executive board; a discouraged IT organization; and throngs of increasingly frustrated customers. Add the confusion of mergers and acquisitions and a long march of poorly implemented "solutions" (ERP, CRM, data warehouses, portals, mobile computing, dashboards, and outsourcing), and you end up with chaos. How can this situation possibly be set right?

Making IT work has little to do with technology itself. Just because a builder can acquire a handsome set of hammers, nails, and planks doesn't mean he can erect a quality house at reasonable cost. Making IT work demands the same things that other parts of the business do—inspired leadership, superb execution, motivated people, and the thoughtful attention and high expectations of senior management.

IT success also requires common understanding. Senior managers know how to talk about finances, because they all speak or understand the language and can agree on a common set of metrics (profit and loss, balance sheets, return on assets, and so on). They can do the same with most elements of operations, customer service, and marketing. So why not with IT? There is no longer any reason why nontechnical executives should allow themselves to be befuddled by IT discussions or bedazzled by three-letter acronyms. And there is no reason that technologists cannot learn to speak the language of business and become perfectly good leaders.

We believe that there are three interdependent, interrelated, and universally applicable principles for executing IT effectively and that it is top management's responsibility to understand and help apply them. The three principles are:

A Long-Term IT Renewal Plan Linked to Corporate Strategy. Revamping IT is like renewing a major urban area while people are living there. The effort requires a plan that keeps the entire IT group focused on the company's overarching goals during a multiyear period, makes appropriate investments directed toward near-term cost reduction, and generates a detailed blueprint for long-term systems rejuvenation and value creation.

A Simplified, Unifying Corporate Technology Platform. Such a platform replaces a wide variety of vertically oriented data silos that serve individual corporate units (HR, accounting, and so on) with a clean, horizontally oriented architecture designed to serve the company as a whole. This is similar to selecting standard-sized pipes and connectors for a city plan.

A Highly Functional, Performance-Oriented IT Organization. Instead of being treated as if it were different from the rest of the firm or as a loose confederation of tribes, the IT department works as a team and operates according to corporate performance standards.

Like interlocking gears, these principles work together and must be consistently applied. If they mesh well, each reinforces the others. If one is disengaged or turns in the wrong direction, the whole machine starts working against itself or grinds to a halt.

As a CIO, Charlie Feld has successfully applied these principles to rejuvenate IT at a number of *Fortune* 100 companies—first at Frito-Lay, then during his career as CIO at corporations such as Delta Air Lines and Burlington Northern and Santa Fe Railroads. What follows is a composite of his experiences, which illustrate the three principles in context.

Gear 1: A Long-Term IT Plan

Because the rate of technological change is so rapid, and the job tenure of CIOs generally brief, most people see IT through the narrow lens of short-term, silver-bullet solutions. Heaven knows, vendors want you to believe that their important new technologies will blow away what has come before. You can't blame a salesperson for trying to sell, or CIOs for having a queasy buy-or-lose feeling, but this attitude is precisely the opposite of the one companies should be taking. We would argue that because the winds of change buffet IT more than any other area of the organization, IT benefits most from a long-term, disciplined, strategic view, and a square focus on achieving the company's most fundamental goals.

For example, Frito-Lay's strategic goal has

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always been to make, move, and sell tasty, fresh snack foods as rapidly and efficiently as possible. That goal hasn't changed since the 1930s, when founder Herman Lay ran his business from his Atlanta kitchen and delivery truck. He bought and cooked the potatoes. He delivered the chips to stores. He collected the money and knew all his customers. He balanced the books and did his own quality assurance. Herman Lay knew how to conduct the perfect "sense and respond" e-business before such a thing ever existed, for he held real-time customer, accounting, and inventory information all in one place—his head.

After years of spectacular growth, the company grew more and more distracted from this simple business model. By the early 1980s, the company's sales force had swelled to 10,000, and information grew harder and harder to manage. The company's old batch-based data processing systems were all driven by paper forms that took 12 weeks to print and distribute to the sales force. All sales transactions were recorded by hand; reams of disparate data were transferred to the company's mainframe computers. Much was lost in the process of setting up a dozen different functional organizations and a variety of databases, none of which communicated with each other.

This modus operandi made it impossible to change prices quickly or develop new regional promotions, streamline production, or improve inventory management. It was as if Herman Lay's company had suffered a spinal cord injury, with the brain and the body no longer connected. At the same time, the company was seeing the rise of strong regional competitors. The leaders realized that if trends continued as they were, its overall revenues would fall significantly by the early 1990s.

Mike Jordan, who took over as CEO of Frito-Lay in 1983, decided to tackle the problem. He reconstructed the company as a hybrid organization that was neither totally centralized nor decentralized. His goal was to teach the company to "walk and chew gum at the same time," as he put it, by separating out the company's two competitive advantages: the purchasing, production, and distribution leverages of a national powerhouse, and the local resources that gave the company regional speed and agility. All this led to an organizational design that kept purchasing, manufacturing, distribution, systems, accounting, and R&D as

There is no longer any reason why nontechnical executives should allow themselves to be befuddled by IT discussions or bedazzled by three-letter acronyms.

the centralized platform, leaving the decentralized sales and marketing organizations to launch their store-by-store and street-by-street offensives.

Having identified the company's strategy, Jordan then developed a long-term IT renewal (as opposed to a "rip and replace") plan. An executive committee—comprised of the CEO, CFO, CIO, and two executive vice presidents—outlined a shift from paper to a risky, emerging handheld technology for the salespeople on the street, as well as a transformation from batch accounting to online operational systems. The goal was to digitally reconnect the company's nervous system. Equipped with the cool new handhelds, the sales force would be able to manage price, inventory, and customer changes in real time and connect to the supply pipeline. The handheld computers would also establish a technological "beachhead"—one sufficiently important to keep the business's attention and achieve fast operating results.

Paying for all this, of course, would not be easy. The journey would take from 1984 to 1988, at a huge cost (at the time): $40 million for the handhelds and about $100 million for the databases and core systems. Some on the executive committee balked, arguing that efficiencies gained by the technology would be lost by salespeople working fewer hours. But the company had no choice but to revitalize its regional sales, and though the systems overhaul would be costly, staying put would be even costlier.

To fund the new computers, Jordan set up a long-term, ongoing funding mechanism designed to keep IT spending both predictable and fairly stable from year to year. To get things rolling, each sales region had to commit to a reduction in selling expenses from 22 cents on the dollar to 21 cents within a year of the handhelds' installation. The savings would be achieved by increasing sales at constant cost, reducing costs, or a combination of the two.

The scheme worked: With the new system in place, the company saved between 30,000 to 50,000 hours of paperwork per week. By 1988, savings resulting from better control over sales data came to more than $40 million per year—savings that in turn funded the renewal of the core data systems. Frito-Lay was able to cut the number of its distribution centers, reduce stale product by 50%, and increase

its domestic revenues from $3 billion in 1986 to $4.2 billion by 1989. Today, Frito-Lay continues to be the dominant player in the snack-food industry.

Frito-Lay's technology story received a lot of press at the time, mostly because the handheld technology was sexy. But notice what the story was really about: It was about executing Herman Lay's original, real-time business experience—feeling the money jingling in the pocket and seeing the inventory in the truck.

Gear 2: A Unifying Platform

Most IT organizations are amazingly complex and have individual initiatives that are like independent countries, each with its own business applications, technologies, culture, data definitions, and orientation. Project costs soar because individual teams are isolated rather than harnessed together, and few teams reuse each other's components—a condition exacerbated by a plethora of consultants and competitive technologies. And when a company is running hundreds of heterogeneous hardware and software systems, costs run rampant.

Consider the cost of such complexity at Delta Air Lines. In 1997, Delta's fleet consisted of 600 airplanes and a rainbow of models, ranging from 727s, 737s, 757s, to 767s, from MD 80s and 90s to L1011s. (By contrast, Southwest Airlines operates only one kind of airplane.) Each plane carried different instrumentation from different eras; as a result, the company needed to train pilots and crew members to operate the different models. Keeping track of aircraft, people, parts inventory, qualified mechanics, handling equipment, and catering carts all added to the structural cost of the airline. Delta's new CEO, Leo Mullin, and his executive team understood that if they reduced the number of plane types they operated, they could lower annual costs by hundreds of millions of dollars.

What the executives didn't understand was that they had an even worse problem in their IT organization. The company was running more than 30 major IT platforms, with 60 million lines of code, none of which were integrated with each other. Each platform required approximately 100 IT support specialists to keep the systems up and running. That arrangement cost the company about $700 million per year in capital and operating expenses. The problem within IT made the air

fleet look like a model of simplicity. Running the airline was nearly impossible. Gate changes by the tower systems were not received in time by the people who needed them: the crews, caterers, reservation agents, ticket counter agents, mechanics, baggage handlers, and customers. The gate-change data were locked inside individual and often conflicting systems.

Once it understood the root cause of complexity, Delta's executive team agreed to a long-term simplification project. Delta launched an effort to build an IT organization that spoke a common language, operated against a simple and well-understood set of principles, and created an architecture that included a common set of databases. Everyone in the IT organization focused on a consistent set of methods, technologies, and management disciplines.

From 1998 to 2003, Delta refocused its formerly decentralized IT investments of $200 million to $300 million annually on a unified IT architecture called the Delta Nervous System, which cut inefficiencies out of virtually every area of its operation. Like Frito-Lay's system, Delta reconnected the electronic brain (IT) to the physical body (operations) by linking the customer, flight, schedule, and employee databases that keep track of everything from reservations to ticketing to check-in and baggage handling to crew operations.

The foundation of the Delta Nervous System was a comprehensive and aggressive simplification effort within the IT architecture to keep the number of moving parts to a minimum. To rebuild and simplify its IT systems, Delta took a radically different tack. Rebuilding the systems from scratch would have been extremely costly—plus the company had an airline to run. Instead, Delta built a new set of software, or middleware, that connected a common infrastructure with every application. The middleware within the Delta Nervous System sat on top of the old transaction systems and carried critical operational data from one application to the other. If a gate changed, the middleware pushed the news to the other systems that needed to know about the change (catering, crew, gate agent, baggage tracking, and so on). With this middleware in place, Delta could then go back and upgrade or replace older systems where necessary, without disrupting the IT system as a whole. (For a vi-

sual of the Delta Nervous System, see the exhibit "The Silo-Based Organization Versus the Layered Organization.")

The middleware layer within the Delta Nervous System proved essential to leveraging technology innovation at Delta. It allowed the company to add new technology in a simpler and less risky manner over time. Most companies go through the agonizing work of rewriting their systems as technology changes. Delta, however, did the opposite. For example, Delta disconnected the manual systems that fed the operations control center (OCC) and reconnected them to the Delta Nervous System. This effectively rejuvenated the OCC without resorting to radical surgery or replacement. The OCC became a vibrant, fully functioning participant in the Delta Nervous System at a fraction of the cost.

The design of Delta's nervous system also formed the road map and contract between IT teams, providing guidance on how data would be stored, where the data would come from, how many copies the company would keep, as well as rules for calculating and interpreting the data. For example, all systems (operations control center, tower, gate, passenger, and crew) could now agree on the same meaning for a "flight arrival."
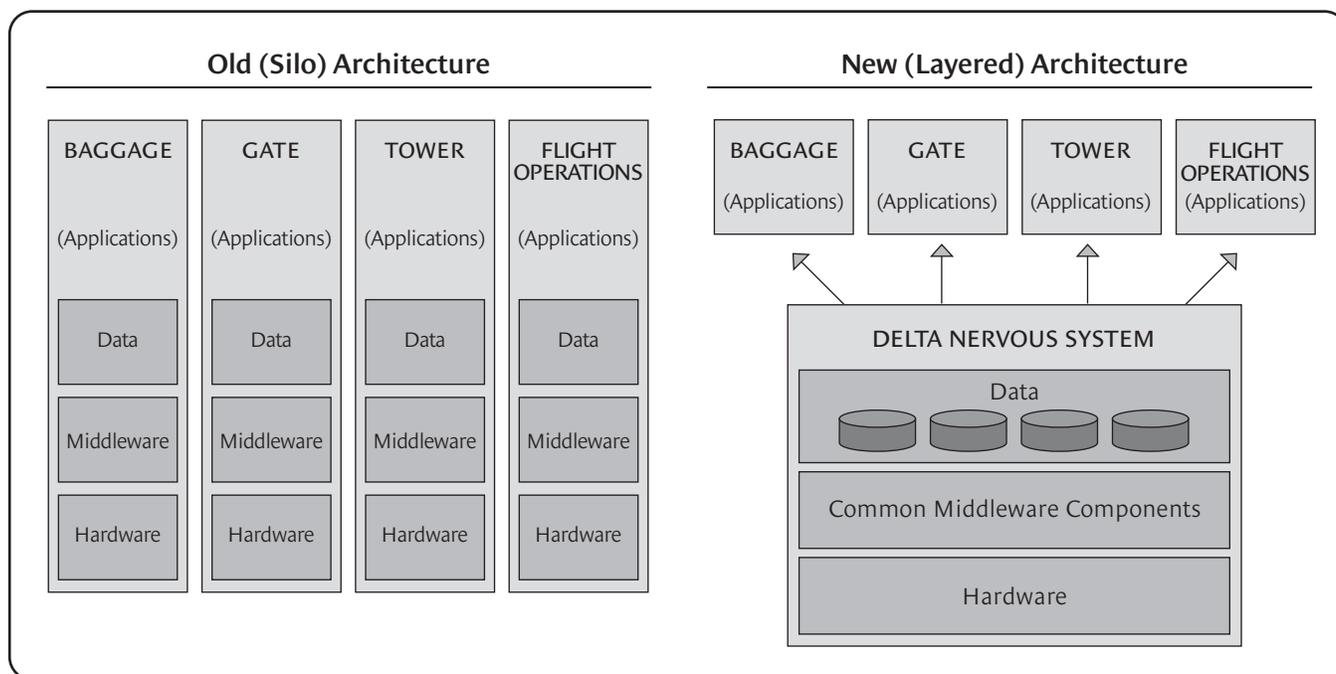
Since Delta revamped its information architecture, the company has reduced its IT costs by 30%. And despite the downturn in the airline industry, Delta has committed to a cost savings and revenue enhancement of $2 billion by the end of 2005, while increasing its service levels. Just as important, Delta has

The Silo-Based Organization Versus the Layered Organization

Delta's IT architecture was once made up of a series of silos. Different parts of the company used different applications and disconnected databases, leading to redundancy, increased costs, and overall organizational dysfunction.

To rebuild and simplify its IT systems, Delta introduced a common layer of middleware that connected the company's electronic brain (IT) to its physical body (operations). Sitting on top of the old transaction systems, the middleware carried key operational data from one application to another: Customer, flight, schedule, and employee databases were connected to reservations, ticketing, check-in, baggage handling, and crew operations. Delta could then upgrade or replace older systems where necessary, without disrupting the underlying IT system.

Old (Silo) Architecture				New (Layered) Architecture			
BAGGAGE (Applications)	**GATE** (Applications)	**TOWER** (Applications)	**FLIGHT OPERATIONS** (Applications)	**BAGGAGE** (Applications)	**GATE** (Applications)	**TOWER** (Applications)	**FLIGHT OPERATIONS** (Applications)
Data	Data	Data	Data				
Middleware	Middleware	Middleware	Middleware	**DELTA NERVOUS SYSTEM** Data			
Hardware	Hardware	Hardware	Hardware	Common Middleware Components			
				Hardware			

learned that discipline and simplicity in its approach to technology management lead to both speed and efficiency.

In doing the hot, sweaty work of simplifying its systems and aligning IT with the company's overarching business goals, Delta's senior managers also learned to trust their instincts. They learned that the same business skills that allowed them to see what was wrong with the company's fleet of aircraft could also guide them in managing Delta's armada of technology platforms.

Gear 3: A High-Performance IT Culture

There's no reason why most companies can't develop a long-term IT road map tied to corporate goals. There's also no reason that given sufficient discipline and resources, most can't develop a unifying IT platform. But without a high-performance IT organization in place—one that looks very different from those found in most companies—a messy IT business will persist.

For years, corporations have treated IT people differently—a holdover from "glass house" data processing culture of 30 years ago. Treating IT as if it were a separate corporate entity sets up a vicious cycle. Allowed to work in their own tribes, IT folks feel less affiliation with the company than they do with their own projects. Like the soldiers building the bridge on the River Kwai, they grow so isolated that they forget what the war is about.

By contrast, the people in a high-performance IT organization don't feel different from other corporate citizens; in fact, they are business-savvy leaders in their own right. They operate according to the same corporate values as everyone else and are measured by the same tough performance standards.

The story of the 1995 merger of Burlington Northern and Santa Fe Railroads offers a case in point. The two railroads had two very distinct cultures, performance characteristics, and leadership styles. Burlington Northern's culture was kind, collaborative, and soft on accountability. Santa Fe's culture was tough and strictly hierarchical. Thrown together into a single, 1,500-person organization, these two talented but antagonistic teams were told by CEO Rob Krebs that they had 24 months to complete a seamless merger of their separate IT systems. The goal was to develop the largest integrated, real-time rail information system in the world—one that would allow the new company to control traffic and cargo across 33,500 miles of track that covered 28 states and two Canadian provinces. From a technology standpoint, it was a challenge of immense proportions.

But once again, the issue wasn't technology; it was about establishing a new and cohesive culture, with a clear-cut set of rules and a solid performance-management and feedback system. How, the leaders asked, would people react to the deadline pressure, and how would the teams work together to accomplish a Herculean mission? How would the overhaul of systems get done? How would talent be developed?

First on the agenda was the establishment of an accountable IT leadership team. An IT organization that has clear guidance, a shared mission, and high expectations can focus the developers and engineers around the work and correct performance problems. To do so, the IT managers must be hands-on people who are deeply involved in overseeing projects and teams. In setting up a leader-led organization, BNSF established three simple levels of hierarchy: the CIO, vice presidents, and directors.

Once the new leadership structure was in place, BNSF set the performance and bonus targets for expected leadership behavior—the same ones that applied across the company as a whole. These targets had three components: delivering results, leadership competencies, and the "new BNSF" cultural behaviors. A top-performing leader had to deliver on all three of these targets. None of the IT staff members had ever been evaluated in such a clear way before, and they responded extremely well to expectations and feedback.

Part of the secret of getting people out of the old way and into the new is to establish a rhythm—that is, to control the flow, timing, and pace of the work. Setting a calendar and adhering to it is, in most cases, the most visible means of signaling the transformation of the IT culture and new set of processes. At BNSF, quarterly updates, staff meetings, directors' councils, project reviews, technical reviews, and IT board meetings all helped give the new team a sense of normality and routine—especially important for people who are undergoing a reorganization. The meetings helped transform the formerly frustrating and messy

IT cultures. Instead of accepting disorganization and lack of participation as a given, people showed up on time and generally became more efficient in their jobs.

The new organization and performance system was time-consuming to put in place, of course. Most of the leaders grumbled about these demands and the intense time pressure of the work. This was especially true for those who never had to manage under a clear set of expectations. But over time, and especially with the early success of the project, healthy work patterns began to emerge, and a new culture was born. Within a few months, BNSF's newly merged IT group became a high-performance organization—so much so that it beat the 24-month target by three months. The reorganization, combined with the savings realized from streamlining processes and facilities, allowed BNSF to achieve roughly $500 million worth of cost savings that it had committed to the Interstate Commerce Commission to obtain merger approval. Without the performance gear at high torque, BNSF could not have attained its corporate goals.

All Systems Go

Once these three gears are aligned and locked together, IT organizations and systems tend to deliver results rapidly—in many cases within six months. Yet despite the obvious benefits of these gears, some businesspeople may ask themselves, "Do we really have to do all of this ourselves? Can't we simply outsource to firms that already know how to do this stuff? And wouldn't outsourcing be a cheaper alternative in the long run?"

The answer to all these questions is yes and no. Over time, fewer and fewer CIOs will run their own networks and data centers, and much development may be augmented by partners. However, the "gears" become even more critical when you bring outsourcing and offshoring into the picture, because management complexity rises. You can't abdicate the leadership and vision for these critical functions. And when you have a number of long-term contracts with various suppliers, the long-term plan must be extremely well articulated (Gear 1). When you work with a number of vendors that have their own tools and methodologies, it's critical to orchestrate an overarching common framework under which everyone can work productively (Gear 2). It's also much easier to build a high-performance culture when you own the human resources (Gear 3). In operating a multi-company workforce, it takes extraordinary leadership to create the esprit de corp required for high performance.

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Without question, the next decade will require much more professional and sophisticated IT leadership than ever before. Fortunately, companies are learning fast. As we progress through the next decade, IT will mature from adolescence to adulthood, and much more speedily than any profession ever has. As the technology matures and improves, so will the skills, processes, and principles on which effective IT is based. And here's the bonus: Once organizations get IT right, they will get much more for far less.

Getting IT Right

Further Reading

A R T I C L E S

Wringing Real Value from IT, Second Edition
Harvard Business Review OnPoint Collection
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This collection offers additional guidelines for applying rigorous leadership and execution standards to IT—for getting IT right.

We continue pumping $2 trillion annually into information technology to pursue competitive advantage and spur productivity. But extracting strategic value and productivity gains from IT has become increasingly challenging.

Why? First, like other widely adopted technologies, IT no longer affords a unique competitive edge. You can't do business without it. But scarcity—not ubiquity—makes technologies strategic. Second, despite the increase of both productivity and IT spending in the 1990s, IT didn't directly fuel that productivity. Instead, it enabled companies to answer stiffening competition with new products and more efficient business processes. The spread of these *innovations* spurred productivity.

Does all this mean that IT has little impact on strategic value and productivity gains? Not if you apply the practices described in the collection's three articles:

- IT Doesn't Matter
  by Nicholas G. Carr

  As IT grows more ubiquitous, waste increases. For instance, though businesses buy 100 million+ PCs annually, most workers use their computers for simple applications that require a fraction of available computing power. **Manage IT's risks** by buying only what your company needs. Delay cutting-edge IT investments to avoid getting soon-to-be-obsolete applications. Let impatient rivals shoulder the cost of experimenting with the latest technologies.

- Strategy and the Internet
  by Michael E. Porter

  To extract strategic value from IT, **use IT to create a unique strategic position**. How? Integrate IT with your company's other functions in ways that rivals can't imitate and that enable you to generate better products, higher-quality services, or proprietary content. Ensure that IT complements, not replaces, your traditional ways of competing, and that it integrates your virtual and physical activities. For example, use your Web site to attract customers and connect them with flesh-and-blood salespeople—who provide personalized advice and after-sales service.

- The *Real* New Economy
  by Diana Farrell

  To aim your IT investments accurately, **concentrate on what influences productivity most in your company** (labor efficiency? asset utilization? cost reduction?). Beware of investing in IT systems that all your rivals are considering. And if you have qualms about your company's tolerance for risk or its ability to merge IT with other advantages to stay competitive, follow—don't lead—IT trends.

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