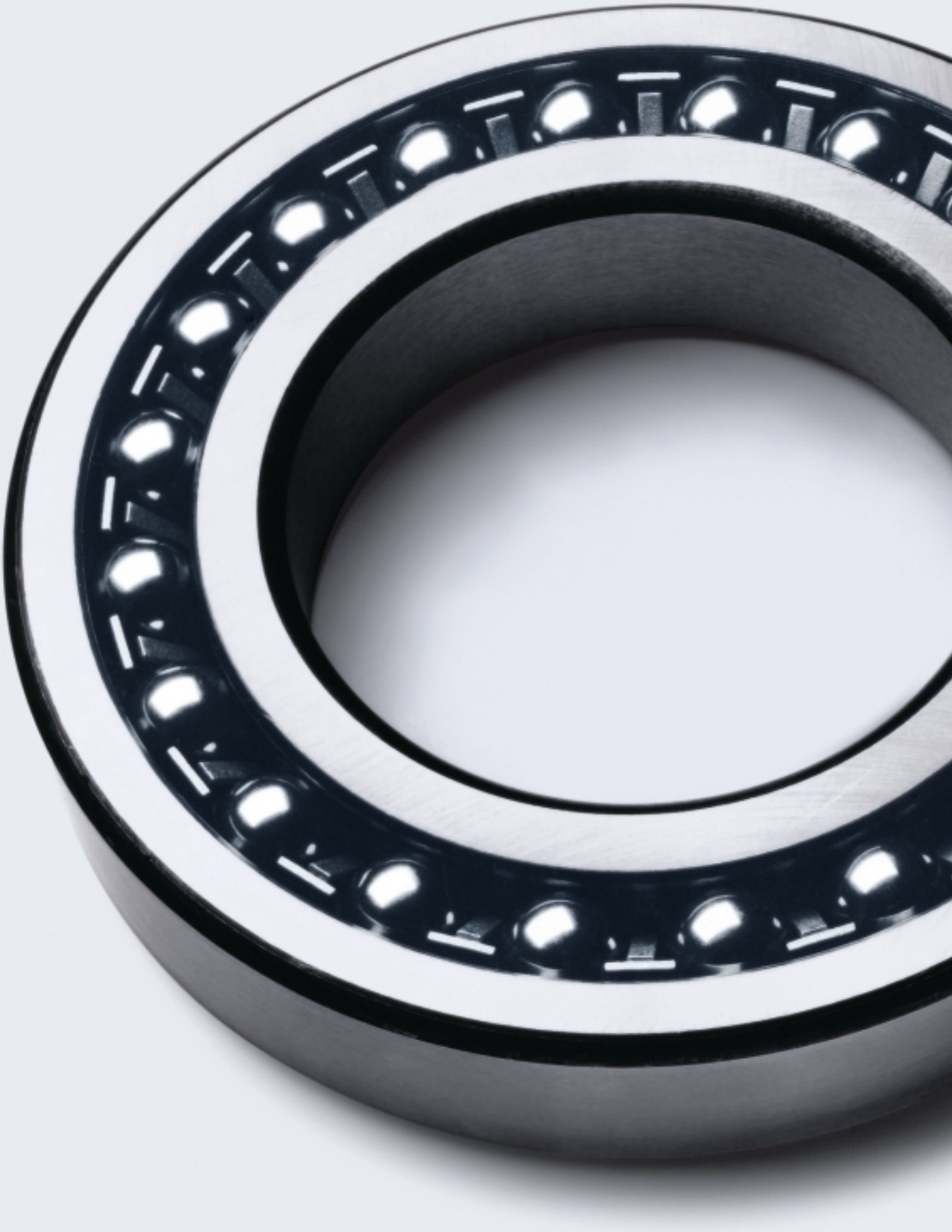

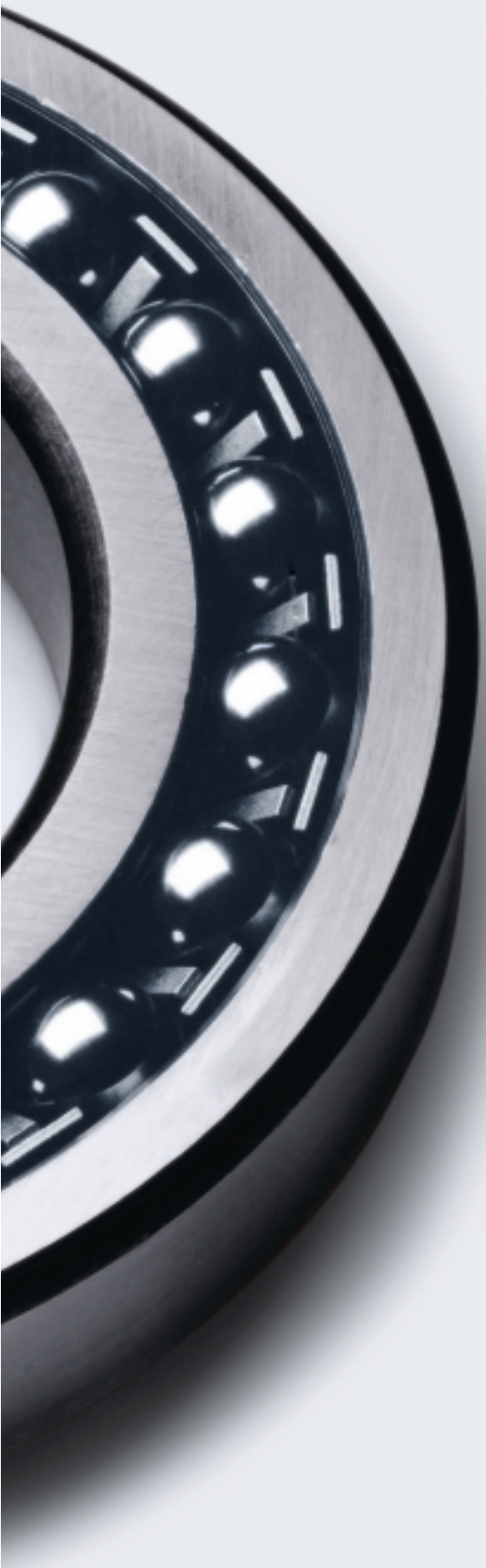

Information Technology

Managing the IT lifecycle

By Gary A. Curtis and Jeanne G. Harris

How can an organization derive maximum innovation and strategic value from its IT function? By adopting a three-stage approach that considers IT mastery as a management and organizational capability rather than a primarily technical one.

Gareth Lewis, IT services director at Virgin Group, probably put it best: "We're definitely not IT for IT's sake."

Lewis's deceptively simple observation goes to the heart of recent Accenture research into the strategic value of information technology. Our study, which included interviews with CIOs and other top executives, has concluded that for companies like Virgin, IT is a substantial driver of innovation and business value. Clear winners and losers emerge from this research, but while technical competence is clearly important, we believe a crucial distinction is that high-performance businesses approach IT mastery as a *management and organizational capability* rather than as a primarily technical one.[1]

Of course, mastery in five areas of critical technical capability—which we have identified as infrastructure, integration, industrialization, information and innovation—helps significantly to increase the value of IT investments. (For more on these key IT capabilities, see page 52 in this article and *Outlook Special Edition*: "Breaking away," May 2004.) Yet as important as these factors are, high-performance businesses go beyond technical mastery. For each of what we call the "five I's," these companies develop a corresponding set of IT management and business capabilities.[2]

The IT lifecycle

How can an organization develop higher levels of IT mastery and thereby derive the maximum strategic value from its IT function? The best course of action will vary depending upon such factors as a company's business strategy, current capabilities, competitive pressures and unique assets. But our research strongly suggests that companies with a high-performance approach to IT have one thing in common: a three-stage lifecycle by which they tend to develop those management and organizational capabilities necessary to use IT strategically.

Before a company can derive significant value from IT, it must have a basic infrastructure and a set of applications in place. Executives can then shift their attention to developing higher-quality, consistent and integrated business applications delivered by a professional and competent IT organization. Once these fundamental capabilities are established, employees must develop sufficient analytic skills and business acumen. They must routinely analyze and apply information to business processes and decisions in ways that improve performance. As companies use information more effectively, they attain greater insight into the dynamics of their business, which tends to produce significant business innovation—and, ultimately, renew the IT lifecycle.

Stage 1: Create an organizationwide culture that understands and values IT infrastructure

On the surface, IT infrastructure appears to be primarily a technical issue. However, companies have considerable latitude in determining when and how they will invest in infrastructure. Among high-performance businesses, top management—including the CEO, board of directors and operational executives—play a critical role in this

[1] For the purposes of this study, we define *mastery* as the ability to perform certain key business functions or competencies at a discernibly higher level than average performers.

[2] Jeanne Harris and Jeffrey D. Brooks, "A Matter of IT Value," Accenture, September 2004.

process. IT masters are characterized by an executive-level business commitment to invest in infrastructure as well as an appreciation for the benefits, mitigation of risk and opportunities that a modern infrastructure can deliver.

Top managers at leading businesses are actively involved in the design of key IT architectural principles (such as security or data integrity) and are strong proponents of strategic infrastructure investments. Senior executives collaborate with IT managers to assess emerging infrastructure capabilities and determine their potential business impact. For example, before approving large-scale technology projects, the Virgin board of directors typically consults with group IT director Lewis, who oversees the IT operations of the company's 27 main operating businesses.

Executives in high-performance businesses also recognize the benefits of organizationwide compliance with infrastructure standards and security. "Standardize, homogenize and simplify" is one of Lewis's mantras. "It frees up the IT director to focus on the business," he says. "The really good IT directors are leading the thinking about what the art of the possible is within the business."

Lewis, like other executives in our study, espouses the importance of creating a corporate culture that values the establishment and maintenance of a solid infrastructure that creates economies of scale. "You have to keep control of the intellectual capital behind the infrastructure," he explains. "In some businesses, that's quite a new skill set." Lewis says companies like Virgin do well by developing much stronger skills in the areas of architecture management, program and process management, and contract management—skills that often are neglected.

Stage 2: Integrate processes, applications, information and people across the business

With their reliable IT infrastructures in place, high-performance businesses focus their attention on effectively integrating business innovation across the value chain. They integrate and standardize cross-company processes, applications, information and people.

But integrated applications and data really are just the first steps in this stage. Research consistently shows that for IT to deliver operating benefits (such as higher quality, improved productivity or faster time to market), they must be accompanied by complementary changes to a company's business processes. These often include changes to management culture, job design, skills development, incentive programs and organizational structure.

High-performance businesses demonstrate a managerial commitment to ongoing process and system optimization. They routinely focus management attention on ensuring that there are well-defined and efficient cross-*functional* business processes, and that these processes also link to customer and supplier processes.

Intel Corporation, for example, has a culture characterized by what CIO Doug Busch calls "an aggressive posture about using IT to enable improvement" to its business.

Intel's commitment to process improvement is evident in its Edge-to-Edge initiative to optimize factory planning. The program—when combined with related initiatives—is on target to deliver more than $100 million in tangible value this year. To

High-performance businesses consistently experience higher levels of ongoing collaboration between IT and business personnel, including top management.

accurately forecast capacity, the company needed real-time access to consistent and integrated information from numerous systems touching virtually every aspect of Intel's business.

But making the most of that information required an important cultural change. Intel's Keith Reese, vice-president of the technology and manufacturing group and general manager of the Intel supply network group, explains that as the company's access to data has expanded beyond the limits of discrete spreadsheets, so has its decision-making capability. Intel is moving toward what he calls "collaborative solve," in which people from different business operations jointly respond to real-time information by collaborating on such decisions as how to meet manufacturing orders.

Other changes were needed, too, says Reese: "With business analysts on both the IT side and the business side, we found that too many times, things were lost in translation. Now we have one business analyst who can speak for both sides." Another big shift: "People have to go from being providers of data to providers of solutions. In the past, they've often been rewarded for doing what the group they work most closely with asked them to do, instead of taking the lead to make the best decision for Intel."

High-performance businesses consistently experience higher levels of ongoing collaboration between IT and business personnel, including top management. To tackle Intel's factory planning challenge, the company built a blended team. One leader's

The five "I's" of IT mastery

Companies need to invest in five key IT capabilities to achieve a high-performing technology function.

Capabilities	Definition	Characteristic
Infrastructure	• Core foundation for delivering secure, reliable solutions and predictive performance monitoring	• Promotes flexibility and integration securely • Disciplined foundation for predictive metrics (process and applications)
Integration	• Software enabling better process performance, easier integration, improved intelligence	• Planned versus haphazard application development • Driving industry standards for data and process
Industrialization	• Advanced manufacturing discipline in designing, building and running processes, applications and infrastructure	• Predictability lowers risk • Investment in tools and methods • Improved cycle time, defect rate, productivity • Global integrated delivery
Information	• Strong foundation for fact-based decisions and actions	• Common, accurate, enterprise-wide base • Ability to convert insight into action
Innovation	• Strong pipeline of technologies applied to high-impact processes	• Steady and constant process • Leverage existing investments

SOURCE: ACCENTURE ANALYSIS

core capabilities are in technology, while the other leader's strength is in planning; this blending of expertise is reflected in the composition and daily responsibilities of the team itself.

Another opportunity for collaboration between business and IT: selecting a portfolio of IT investments that will effectively prioritize and allocate resources to generate multiple benefits. Says Rick Devenuti, corporate vice-president of Microsoft Services and IT: "We have aligned our application teams by line of business to enable them to thoroughly learn the business and become part of the *what* and not just the *how*." Reducing nondiscretionary IT spending is a key area for collaboration. "Our business executives understand that every application you create becomes a ball and chain around your neck in terms of feeding it for future years," notes Devenuti.

Microsoft's operating and IT management teams together set annual goals for the reduction of nondiscretionary IT spending. This year, the goal was to get it below 30 percent of overall IT spending. The company is on schedule to achieve that figure, according to Devenuti: "Once executives understand the impact of 'nondiscretionary' spending to maintain legacy applications and how little business value they get out of it, they get much more excited."

As part of this second stage in the IT lifecycle, high-performance businesses also create value through a process we call *industrialization*: By applying the management principles of advanced manufacturing to designing, building and running systems, IT becomes a more efficient operation.

An important key to successful industrialization is superior project management, which contributes to a better alignment to strategic goals, increased quality, faster speed to market, customer satisfaction, reduced costs and lower implementation risk. Companies that do a good job of project management average an overall ROI of 28 percent on major IT-based projects, and achieve an average improvement of more than 21 percent across 20 project management performance metrics. Studies have found that high-performance businesses manage projects much more effectively than average companies do: They complete more than 95 percent of their IT initiatives on time and within budget, while average companies report success rates ranging from 51 percent to 67 percent.

Leading companies also manage against well-defined and agreed sets of technical and business objectives. They efficiently maintain and operate their applications and regularly measure key indicators such as predictability, cycle time and defect rate.

But they also establish business objectives and hold everyone accountable. For Intel's Edge-to-Edge initiative, IT and operating executives defined metrics together at the outset of each project. Business and technical results then became the joint responsibility of all. Both organizations have success metrics for the project built into their annual bonus calculation.

Finally, companies that have mastered Stage 2 employ low-cost sourcing strategies to create efficient, reliable IT engines. For example, various shared services, partnering and offshore arrangements can increase the value of a company's IT spending.

At the heart of Thomas Cook's recent dramatic turnaround in the United Kingdom was an innovative, 10-year arrangement in which a cost-effective shared services center brought information technology, finance and payroll, human resources and project delivery functions under one outsourced roof. After just 16 months, the formerly unprofitable company was able to improve operations, reduce its cost base by £83 million and post a £36 million profit.

Stage 3: Transform information and insight into value-creating innovation

Once an organization has an efficient and effective infrastructure, a solid IT organization, and well-integrated information and processes, it is ready to turn its attention to creating or catalyzing new business value by using information and by generating value-enhancing business innovations. Most executives at high-performance businesses agree that the creative process of transforming information into insight is the greatest challenge to becoming an IT master. "The imaginative thinking-through of how information might serve your business is really key," confirms Charles House, Intel's director of societal impact of technology.

During this stage, companies build the analytical tools that help them exploit information through improved decision making. But just as important, they build an analytical capability into every aspect of their business organization, from finance to manufacturing.

Accenture's research indicates that high-performance businesses do a significantly better job than their lower-performing counterparts in drawing insights from information and transforming these into business value. They view information as a key strategic asset, digging well

beyond normal financial information to glean critical insights from real-time operating information.[3]

For example, Mayfield Village, Ohio-based Progressive Casualty Insurance Company's strategy for achieving high performance involves hiring bright, analytically focused MBAs and giving them access to timely information about the company's business. Managers are consistently and visibly rewarded for using information to improve business performance.

Companies that derive superior results from IT are less likely to have purely IT-centric initiatives; rather they identify business-enhancing improvements. At Intel, the ability to collect and use data for decision making is one of seven "quality vectors" through which the company regularly measures effectiveness throughout the organization—from information technology to sales to manufacturing.

The dedication to rigorous analysis for continual business improvement was crucial to an Intel program known internally as Global Copy Exactly. The company wanted to ensure that its end products were the same regardless of where in the world they were manufactured—not an easy goal given the diversity of its suppliers.

To understand precisely how it creates its chips, Intel undertook a massive research project involving multiple

[3] Thomas Davenport and Jeanne Harris, "Data to Knowledge to Results," *California Management Review*, Spring 2000.

Leveraging information

In "Breaking away," the May 2004 issue of *Outlook Special Edition*, Accenture introduced the concept of the four I's—the four key IT capabilities necessary for high performance: infrastructure, integration, industrialization and innovation. We are adding a fifth I—information—to the equation. Information is the lifeblood of business. Increasingly, success is based on a company's ability to create value from information, and to use it as the basis of innovation, collaboration and improved decision making.

Unless information is used to generate business insight, performance improvement is limited. Yet only the most successful companies seem to have learned this important lesson. Accenture research confirms that the ability to use and apply information is a key source of value; it also confirms that mere access to data doesn't mean it is used, understood or acted upon.[4]

Companies must develop a series of IT capabilities to leverage information. They need common data and processes throughout the organization; real-time access to accurate transaction data; easily accessible data warehouses and marts; powerful business intelligence tools; and knowledge management repositories and tools.

As noted in the main article, high performance also requires related business capabilities, including broad and deep analytical skills; a culture of people who are analytically focused to work together and with business decision makers; a culture of fact-based decision making; and a willingness to share and apply knowledge.

[4] Thomas Davenport and Jeanne Harris, "As Information Flows, So Flows Value," *Optimize*, November 2002.

groups, both internal and external. The goal was to design appropriate tools and process improvements. Ultimately, it came down to a supply chain issue: The company needed a better way of getting raw materials in time for manufacturing.

Scanning the environment in search of supply chain excellence, researchers looked at Intel's direct competitors and others in the microprocessor industry, as well as companies in other industries. The knowledge Intel gained resulted in substantial improvements in IT and business processes. Explains House: "Four years ago, we were in the lower third in supply chain management. After three years, we were at parity with our industry. Now we are ahead and still moving forward."

Insights from such efforts are critical to using IT as a driver for innovation. Accenture's research confirms that high-performance businesses distinguish themselves by rigorously monitoring actual business results against expected benefits, learning what works and what does not, and incorporating new knowledge into an ongoing improvement program.

In Stage 3, high-performance businesses use IT to commercialize intellectual property and develop new IT-enabled products—to invest in revenue-driving innovations that differentiate the products and services they offer.

At insurer Progressive, the company's website builds loyalty by allowing customers to compare pricing for auto insurance. Virgin changed the way rail passengers in the United Kingdom think about buying tickets by launching an electronic ticketing service. Microsoft uses its own company as a testing ground for new software products.

As a result, companies like Progressive, Virgin and Microsoft typically increase customer penetration and enjoy above-average earnings-per-share growth. These companies are often technological innovators as well. While they might not be the first to experiment with a new technology, they are often the first to employ innovative technologies as soon as they become reliable, scalable and economic.

It is not simply the monitoring and adopting of new technology that helps lead to high performance. High-performance businesses are also expert at applying proven technology in innovative ways to solve business problems. Intel's Edge-to-Edge program, for example, relies on well-established factory planning and optimization software. The innovation lies in a series of insights and algorithms that will propel Intel into a new era of manufacturing efficiency and enhanced revenues.

High performers understand that creating lasting value from IT is analogous to a "first-time yield" challenge in manufacturing: Poor performance at any stage reduces an organization's overall ability to create value. They recognize that to truly master IT, their entire company must perform well at all five I's. But high-performance businesses also understand that they cannot improve everything at once. As a result, they have intuitively adopted a lifecycle approach to building their IT-enabled managerial and organizational capabilities over time.

High-performance businesses recognize the importance of top management's leadership role in building a management and organizational capability. By viewing IT mastery as a management and organizational challenge, rather than as a purely technical one, and by approaching the task in the context of a lifecycle, these companies improve their operating performance and their competitive capabilities, and are far better positioned to continue to drive sustainable business value from their IT investments. ■

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