What to Expect

Today, the state of the art in business technology is moving from the pioneering efforts of e-business to a more complex theme of services digitization. Services digitization is the ongoing transformation of paper-based transactions into new integrated multi-channel processes. Services digitization may seem like just another "hot fad." Peering closer, however, you will find a significant difference: Digitization does not center on technology, but rather on capturing value through improved productivity and performance. Digitization gives every company the ability to reallocate their resources totally.

In this chapter, we set the stage for the rest of the book. We begin by looking at the five business, technology, and management trends that are causing the migration from e-business to services. We then show that services digitization is a concrete strategy that leading companies are executing against using the concept of a services blueprint. We illustrate the logic behind a services blueprint with two in-depth best-practice case studies of GE and Wal-Mart.

Introduction

We are often asked the questions: Is e-business over now that the dot-com bubble burst? Are we going back to the old ways of doing business? We don't think so. The changes set in

motion by the Internet are irreversible and will take time to diffuse through organizations. Migrating from old to new ways of conducting business is a continuous, open-ended process. It's not a journey your company can opt out of if you hope to remain competitive.

The transformation of twenty-first century business is under way. At the heart of this wide-ranging transformation is the use of technology to digitize complex services. Some firms like Intel are well into this journey. Intel's mission is to be a worldwide, 100 percent e-corporation. This five-year effort began in 1999 with Intel selling products online, shooting to more than $1 billion in online sales per month within the first year. Since then, Intel's digitization efforts have expanded, and Web-based services are the preferred method for operating and conducting business with its customers, suppliers, and employees worldwide.[1]

Other firms are doing the same. They are systematically creating new services by rewiring and integrating existing business processes. Consider the following examples:

- GE is saving billions of dollars by improving and digitizing various sales, general, and administrative (SG&A) processes while some of its competitors flounder. Is GE's strategy of moving back-office services (call centers, payment processing) to India and China dramatically lowering overhead costs?
- HSBC Holdings PLC, a Hong Kong-based financial services firm, is thriving and buying U.S. banks while its peers lay off thousands. Do its sophisticated global financial operations, linked by advanced network technology, allow it to keep costs under control?
- Southwest Airlines is able to control its operating costs, despite all the turbulence in the airline sector, while competitors struggle and declare bankruptcy. Has Southwest's strategy of continuously digitizing core spend management and customer-facing processes separated it from the rest?
- Eastman Chemical is able to digitize its supply network and lower raw material costs while its peers in the chemical industry suffer from high costs. Is the lack of effective supply chain management one of the root causes leading to the poor performance of its peers?
- Amazon.com is thriving by becoming the online service channel for big retailers like Circuit City, Target, Office Depot, Toys "R" Us, and Nordstrom. Are the retailers implicitly acknowledging that Amazon.com can digitize processes (order-to-return, target-to-engage) better than they online?

What makes some companies so much better at new services design and digitizing business processes than their competitors? What business trends are they seeing that others are not able to perceive? How are they leveraging technology? What unique process, application, and infrastructure capabilities are they developing? These are the questions that form the basis of this book. Are they relevant? Well, just look around you. Market leaders in every industry are quietly incorporating as much digital technology into their products, processes, and services as possible. These firms are beginning to see financial results—better operating margins and lower costs—with the added plus of real-time interaction with the customer.

Clearly, the nature of competition is morphing, but how and why some firms are better at evolving into digital companies is not fully understood. What *is* known is that the macroeconomic transformations taking place are real and profound. Due to customer pressure, organizations are transitioning to a multichannel—brick, Web, mobile, and tele—services economy. However, there are many emerging perspectives on services. Some view it as a technology issue (Web Services). Some view it as an online process issue (e-services). Some view it from the customer perspective (value). All these views are relevant and pertinent. We need a framework—a services blueprint—that ties all of these viewpoints together. Not having a clear services blueprint invariably leads to suboptimal decisions that waste time and resources.

Before we talk about the services blueprint, how can we be sure that the trends are pointing toward services? This is an important issue, as it lays the foundation for the rest of the book.

Services Is the Mega-Trend

If you open a technology magazine or listen to any vendor presentation, you will read or hear the following: E-Business on Demand, Services on Demand, Business Process Management, Composite Applications, xApps, Real-Time Enterprise, Enterprise Application Integration, Web Services, and Adaptive Supply Chains.

What do all these buzzwords have in common? If you look closely you will find that they are all part of the services digitization mega-trend. The impetus for services digitization lies at the convergence of five core trends taking place in business.

- Technology Payoff and ROI—How can new value be created by leveraging existing technology investments?

- Process Configuration and Flexibility—How can technology help reconfigure operational processes and improve flexibility through business process outsourcing?
- Cross-Enterprise and Multi-Channel Business—How can companies move from uni-channel, single business unit solutions to cross-enterprise, multi-channel solutions?
- Improving Application Integration—How can applications be integrated more quickly and cheaply to create a real-time environment?
- Aligning Outside-In and Inside-Out—How can the inside-out process perspective (customer management, supply chain) be balanced with an outside-in services view (Easy To Do Business With, one face to the customer)?

Each of these trends, by itself, is important. Combined, they present the emerging picture that is services digitization.

Technology Payoff and ROI Trends

Companies don't want to hear about innovation, vision, or possibilities anymore. They want results, return on investment (ROI), and better execution.

In December 2002, McDonald's posted its first quarterly loss in 47 years. To turn things around, the board got rid of the CEO and installed a new management team. The team promptly started examining various money draining initiatives as they related to near-term financial benefits and restaurant profitability. The team zeroed in on technology spending in an effort to save "tens of millions" of dollars.

In particular, the focus was on an ambitious project called Innovate. Innovate was envisioned as a global real-time network that would link fast-food restaurants, headquarters, and suppliers of McDonald's. The long-term business objective was to create a digital environment to share consumer demand data and procurement information and to reduce paperwork. The initial installation of the network was scheduled for late 2003 beginning in Canada and France. The United States portion of its business was to be linked by 2005.[2]

McDonald's decided to kill the Innovate project because it was taking too long to realize an ROI. Millions of dollars had already been spent on Innovate, and tens of millions more would have been required before completion.

McDonald's is not unique. Tough business conditions and the need to focus on fewer priorities have inspired a backlash against mega-technology projects. The backlash has resulted in tech investments being placed under the ROI micro-

scope. Many CEOs and CFOs are questioning whether they are getting results for the money spent. This introspection is forcing companies to refocus their energy on what customers care about. Some are going back to the basics; others are accelerating digitization initiatives to support and streamline business processes better.

Clearly, a shift in thinking is taking place among senior management, line of business users, IT departments, and mainstream technology vendors. They have come to the realization that technology is only part of the solution. Merely implementing technology applications and infrastructure doesn't amount to productivity or payoff. Business processes, change management, and incentives are key to wringing value out of technology investments. Common sense, you might say. But common sense is quite uncommon and often overlooked in search of the quick fix. So begins a new chapter in information technology.

As the technology love affair turns cautious, back-to-basics process thinking is taking center stage again. Evidence of this trend can seen in Table 1.1, which captures the evolution of business process transformation. We think that current digitization must be understood against the background of the past.

Table 1.1: Historical Perspective: Changing Process Priorities (Innovation)

Time Period	Focus	Method
1970s	Quality	Total Quality Management, Zero Defects, Statistical Process Control
1980s	Lean Manufacturing	Just-In-Time, Zero Inventory, Kanban, Computer Integrated Manufacturing
Early 1990s	Process Improvement	Vendor Managed Inventory, System Outsourcing, Customer Satisfaction, Enterprise Resource Planning, Lean Thinking
Mid- to Late 1990s	Process Reengineering	Business Process Reengineering, Six Sigma
Late 1990s to 2002	Transaction-Centric—Digitization of Tasks and Simple Processes	E-Commerce, E-Business, Collaborative Commerce (B2B), Customer Relationship Management
2003 onward	Services-Centric—Digitization of Cross-Enterprise Processes	End-to-End Supply Chain Enablement, Business Process Outsourcing, Business Process Management

Process Configuration and Flexibility Trends

Driven by the constant need to cut costs and gain flexibility, business processes are being reconfigured or outsourced.

The need for process flexibility is not a new trend. The trend has been evident for the last two decades. First, in blue-collar factory automation, on the heels of industrial robotics, came computers with intelligent shopfloor automation software. Second, in white-collar administration, spreadsheets and enterprise applications like ERP took hold. Networking facilitated by high-bandwidth fiber optics and other telecom innovations set the stage for mind-blowing innovation. Finally, the Internet, Web, and mobile computing came along and enabled a global productivity boom, resulting in technology innovations that are constantly laying the foundation for renovating industrial-age processes.

At the macro level, factors that caused this process redesign flux include customers, competition, (de)regulation, growth via mergers and acquisitions (M&A), divestitures, and internal reorganization. At the micro level, process instability was caused by the huge investment in factory automation technology, the demand for more real-time information, and tighter collaboration among business partners. Regardless of why companies redesigned processes, improving productivity—in manufacturing, sales, and supply chain—was the goal.

More recently, evidence of the dramatic process changes brought forth by the Internet is beginning to show up everywhere. Consider business process outsourcing. Service jobs such as call centers, billing, and claims processing, the mainstay of the United States, British, French, and other developed economies for the past 20 years, are moving. These jobs, courtesy of the Internet, are set to follow manufacturing jobs by emigrating to China, India, the Philippines, and other low-wage countries. We are witnessing in services exactly what happened in manufacturing 15 years ago. Whatever can get done in a more cost-effective location will be relocated.

Besides outsourcing, organizations are reconfiguring processes wherever possible to drive productivity higher. Even if various discrete parts of the business are operating at peak performance, too often the end-to-end business processes are not. That is because many processes—with customers, suppliers, and employees—remain largely disjointed, linked by a hodgepodge of information flows—telephone calls, faxes, e-mail, spreadsheets, and FedEx packages. Connecting and improving broken processes have taken on broader urgency due to the velocity and volatility of modern business.

Multi-Channel and Cross-Enterprise Trends

In some firms, processes are moving from a single channel to a multi-channel focus. In others, processes are moving from department to cross-enterprise. Both are fairly significant trends.

Most of the current e-business thinking is centered on uni-channel automation and single business unit applications. Unfortunately, customers don't think or act this way; they want flexibility. In other words, they want efficient and effective hybrid combinations, that is, new service designs that weave brick, click, call center, and mobile channels. They also want the service designs to span internal and external boundaries. For instance, when you call Delta Airlines, they offer internal transactions such as travel reservations but also external services such as car rentals and hotel reservations.

Consider the service problem facing retailers. Most have invested heavily in Web sites and digitized significant portions of the end-to-end processes (order-to-return). However, when the customer behavior changes from uni-channel (Web site) to multi-channel (Web site, retail store, and call center), the carefully crafted end-to-end process that worked well for a single channel breaks down completely. Let's look at a simple variant: The customer buys online but returns offline at a store and gets her account credited immediately. This simple action can wreak havoc with finely tuned back-office processes, such as inventory management, financials, and reverse logistics, which have been optimized for a single channel or business unit.

As the business environment changes, so must the underlying processes. Unfortunately, organizations tend to ignore process problems until it's too late. This primarily occurs because management regards process design as a low-level activity tied to the application implementation process. As a result, most management teams tend to trivialize end-to-end process design and pay a big price downstream. The numerous first-generation e-business projects that have been discontinued or minimally adopted prove our point.

All is not lost, however. Cutting-edge organizations are adopting new ways of attacking process transformation problems. These organizations see digitization as a complex combination of multi-channel process thinking, cross-enterprise integration, and business technology. This thinking increasingly shapes enterprise application innovation.

Process transformation has three interrelated dimensions:

- Changing Type of Process Interactions—new multi-channel processes are evolving from traditional uni-channel processes.

- Changing Scope of Process Integration—processes are expanding from business unit-centric to cross-enterprise and inter-enterprise.
- Changing Degree of Process Digitization—processes and transactions are evolving from manual to automated.

Figure 1.1 displays the process transformation. *Where does your corporation lie?* The nonstop management decision problem is to align all three dimensions continuously with customer, employee, or supply chain priorities. Optimizing only two dimensions, as is frequently done, often leads to poor choices that cause problems in the long run.

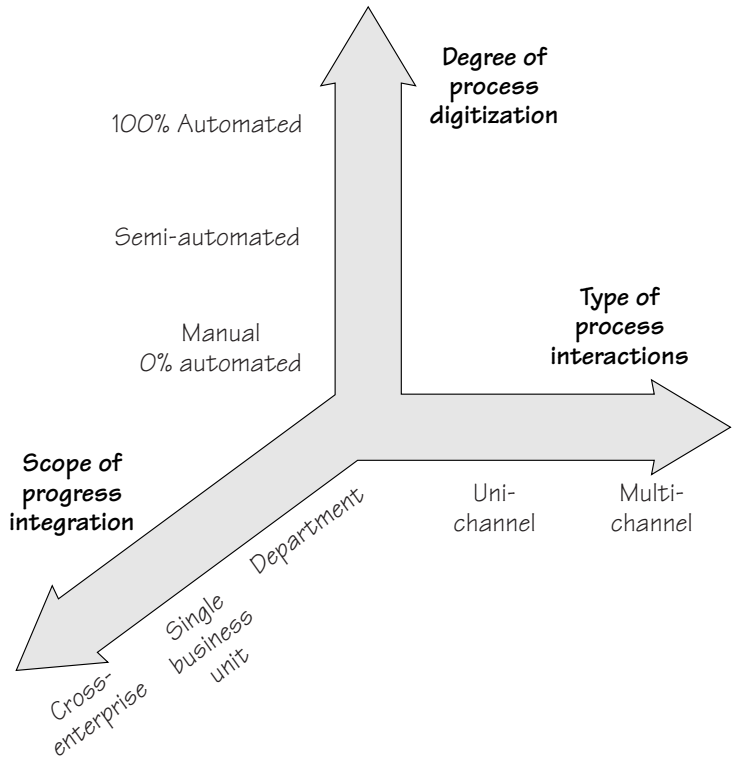

Figure 1.1: Process Transformation Dimensions

Improving Application Integration Trends

There are significant changes taking place in the way applications and supporting infrastructure are integrated. These changes are taking place under the broad umbrella of service platforms, Services Oriented Architecture (SOA), and Web Services. The corporate world is migrating from a bottom-up integration model to a top-down service integration model that leverages multiple underlying enterprise application components.

SAP, PeopleSoft, Oracle, IBM, Microsoft, Sun, and BEA have grasped this development and are racing to address the issues of change with a new breed of cross-application service platforms called xApps, Services on Demand, and E-Business on Demand. Service platforms are emerging as the foundation on which process digitization will actually occur. (See Chapter 3 for more details on service platforms.)

Leading companies have seen this service platform trend and have been creating proprietary versions for several years. FedEx, the world's largest express shipper, has been developing a Fast Service service platform. The company's complex cross-channel, multi-enterprise service platform allows it to outperform its competition in the business of door-to-door delivery of small packages and just-in-time delivery of high-value components. In order to build a service platform similar to FedEx, companies need to invest in a Services Oriented Architecture. Examples of SOA products are SunONE from Sun Microsystems, NetWeaver from SAP, and WebSphere from IBM.

An analogy should give you a better idea how everything fits together. A car (a service platform) has large components (chassis, powertrain, electronics, and climate). The chassis (SOA) in turn is made up of subcomponents (driveline system, steering system, and braking system). These subcomponents are further made up of sub-subcomponents. The braking system is made up of brake hubs, brake rotors, and catalytic converters. These, too, can be decomposed further. You get a picture of the complexity involved here.

Similarly, the underlying foundation for all these SOAs is the fledgling field of Web Services. Web Services enable different applications to be integrated without the hassle of custom coding. In addition, Web Services are not reliant on one vendor or programming language. They allow businesses to share data with each other and customers while keeping IT systems secure behind a firewall.

Web Services are often misunderstood. They are not a fad; they are a model of computing and integration that helps solve the challenges of multi-channel and cross-enterprise process integration. The business driver of Web Services is

simple: As business requirements shift, companies are trying to keep pace and are demanding greater productivity, less risk, and higher returns from their software investments. They are also desperately trying to leverage their existing multi-million dollar investments in applications. Clearly, organizations everywhere are looking for standardized ways to integrate information assets.

A simple analogy for Web Services is the euro, the standard currency of the European Union. Prior to the euro, incredible inefficiency existed due to the need to change currencies every time a border was crossed. With the euro standardized across the Union, barriers to trade and cross-border movement have been lifted. Productivity has been boosted because a pile of paperwork tracking currency exchange has been eliminated. Similarly, without Web Services, the scale and scope of digitization will be constrained due to fragmented applications and infrastructure.

Web Services and SOA are closely intertwined with process thinking. Without process thinking, Web Services and SOA are not very effective. While this should be obvious, it is not widely accepted. We have found very little process thinking preceding Web Services adoption in organizations or vendors. If this does not change, the service platforms developed using Web Services will fail miserably.

Aligning Inside-Out and Outside-In Process Trends

Consider the following customer request: We want you to become Easy To Do Business With (ETDBW). A successful ETDBW digitization project starts with the recognition that the focus is not technology, but understanding customer priorities and aligning internal processes accordingly. So the key questions are: What new services do we need to design to become ETDBW? What channels (brick, click, tele, and mobile) do we need to synchronize?

Consider the internal management request: We want to lower the cost of serving the customer, increase the productivity of agents in our call centers, and increase customer loyalty. So the key questions are: How do we segment our customers? What applications do we need to integrate internally?

There are two viewpoints of digitization that are battling each other in the real world:

- **Customer-Centric**—outside-in design of cross-channel and cross-enterprise workflows driven by a superior understanding of what the customer really wants.
- **Process-Centric**—inside-out design of application integration to support workflows driven by what managers think the customer wants.

Design from the customer perspective is the problem that most customer-facing groups (strategy and marketing) are wrestling with. Process integration from the efficiency and productivity standpoint is the problem most internal-facing groups (operations and human resources) are grappling with.

While both viewpoints are necessary, the applications and infrastructure needed to support them tend to be different. Therein lies the problem. It is very difficult to leverage the investments in applications and infrastructure made to support the process-centric view in the customer-centric context. While this looks rather trivial, it is very hard to do. Why? Because most enterprise applications, which support internal processes in corporations, are fragmented and are not integrated. Significant investments have to be made in integrating applications to rectify the problem.

Now imagine a situation where there are twenty different customer-facing projects, each with its own customized integration model. The business outcome: severe structural problems in the organization's process foundation—applications, infrastructure, and people—as it struggles to keep up with changing corporate and customer priorities. Avoiding these structural problems, which in turn are driving up business risk, is job number one for management.

One way to avoid the inside-out and outside-in alignment problems is to have a clear focal point (for example, Every Day Low Price) and align the processes accordingly. For instance, Wal-Mart over the years has succeeded in executing its Every Day Low Price focal point while its competitors—KMart, Ames, and other discount retailers—have faltered. Wal-Mart's ability to focus and digitize the supply chain and logistics processes effectively allowed the company to slash prices and outperform its competition. We think that Wal-Mart's ability to align all its investments to create value around a focal point is a key long-term differentiator.

As Figure 1.2 shows, customers care about value. Line of business and IT departments tend to care about processes. Services represent the convergence of customer priorities, business priorities, and technology capabilities. Not aligning the three carefully can lead to problems. Operationally speaking, creating new services requires an outside-in (external) perspective on customers' interaction with the service and an inside-out (internal) perspective on existing capabilities and applications.

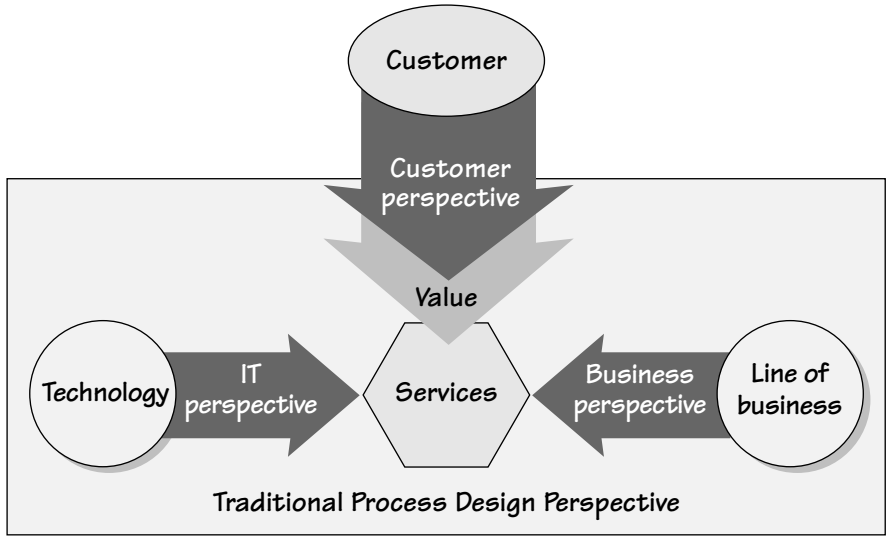

Figure 1.2: The New Process Thinking—Taking the Customer's Perspective

The Need for a Services Blueprint

We began the book by asking: Is e-business dead? We took you on a journey into some of the converging trends that are shaping the next wave of technology investments. We hope that you are now convinced that the state of the art in business technology is clearly centered on services digitization.

To understand the magnitude of the task that lies ahead, ask yourself the following questions: *How many processes do you have? What percentage have you digitized?* Most managers are taken aback by these questions. Take a moment and count all the critical business processes associated with ordering, fulfillment, payment, billing, employee benefits, sales, marketing, and customer service. In your opinion, what percentage of these processes is completely and effectively digitized? Is it 10 percent, 30 percent, 50 percent, or more? Our research indicates that the average is between 20 and 30 percent—higher for Global 2000 companies, lower for small- and medium-sized businesses (SMBs).

Clearly, after five decades of technology investments, the journey toward digitization of business processes is still in its infancy. To write its obituary as some in the media did after the dot-com collapse is somewhat premature. Process digitization is a multi-year marathon that will require tremendous endurance. Some companies have this endurance; most don't. The most challenging questions confronting business leaders and managers are not "What processes do we digitize?"

or "How do we digitize?" but "What is our focal point that ties together our ongoing process digitization efforts?"

Focal Points

What focal point is guiding your digitization investments? Focal points define what your business is all about. Market leaders have crisp focal points to direct their digitization efforts. Consider the following examples:

- **Easy To Do Business With**—Why did Staples, the office products superstore, succeed in executing its Easy To Do Business With strategy while others faltered? Did Staples' ability to create a technology-based service blueprint effectively allow the company to implement an integrated multi-channel strategy linking office supply stores, e-commerce, catalog operations, and contract stationery businesses?

- **Low Cost**—Why did Dell succeed in executing its build-to-order, customer self-service strategy while Compaq, AST, Packard Bell, Micron PC, and Gateway faltered? Did Dell's ability to improve continually an operational blueprint allow the company to digitize its low-cost supply chain and undercut prices?

- **Zero-Defect Quality**—Why did Toyota succeed in extending its market share in a down economy? How is it able to align changing customer priorities with its production process? Did Toyota's ability to digitize the design process allow it to take a new car from design to production in less than a year (compared with as many as three years for its competitors)?

There is a common ingredient shared by each example that is critical for success. That is the ability to focus digitization initiative. Everything that Staples does—customer-facing, employee-facing, supplier-facing—needs to support its Easy To Do Business With focal point. Unfortunately, very few companies have such clear direction in their digitization efforts.

Having a distinct focal point differentiates market leaders. These companies consistently execute a focused business strategy using technology as an enabler. These businesses stand out not only because of their superior talent for seeing the big picture and for sensing shifting customer priorities, but because they implement technology day in and day out to create customer value.

Why can't competitors copy market leaders? The answer is remarkably simple. Competitors take a piecemeal approach to technology innovation. They do well at finding and assessing new ideas, only to run into a shortage of people

and skills during execution. Often the managers charged with execution are simply too busy addressing immediate urgent tasks to implement capably new ideas that will bear fruit tomorrow. Success is mostly a function of execution.[3] *Does your firm have a focal point that shapes the services blueprint, which in turn drives execution?*

The Blueprint as an Execution Differentiator

What is Dell Computer's services blueprint? Thousands of pages have been written about Dell Computer's direct-to-consumer business model. Many consulting firms have analyzed it for their clients. Yet, no competitor has replicated it with the same efficiency. So, a focal point is necessary but not sufficient. Steady execution over a long period of time is critical to success. Few executives dispute that.

Execution is the science of turning multi-million dollar application and infrastructure investments into results. This is proving to be much harder than expected. Consider the following data: More than $300 billion is spent on software application initiatives in the United States every year.[4] Unfortunately, only 17 percent of those initiatives finish on time, on budget, at acceptable performance levels, and at full scope. A whopping 50 percent of initiatives miss targets—they are late, overspent, and have reduced features and functionality. Even more appalling is that the remaining 33 percent are canceled.[5] This means that more than $100 billion per year is flushed down the drain because of poor execution. Poof! It's gone.

Another way to interpret the data is to say that 83 percent of all technology initiatives get into trouble. What is keeping businesses from executing better? This is becoming a core question as post-dot-com firms transition from the glitz of strategy to the nitty-gritty of execution. Poor execution cannot be hidden anymore. It is estimated that companies implement at most 20 percent of their stated technology strategy. The dire straits of technology execution have been visible for some time, but companies were able to gloss over their problems in the frenzy of the dot-com era. That tactic has been exhausted.

So what differentiates the doers from the talkers? The big differentiator we found is the market leaders' ability to digitize systematically and continually complex business processes such as supply chains or employee self-service. The business processes that get digitized are selected based on a focal point.

Market leaders don't deviate too much from their core focal point. A focal point such as Low Cost or Zero-Defect Quality is usually the steadfast guiding principle that anchors their execution efforts. These focal points are not gen-

eric branding messages or vision statements, instead they help focus ordinary products, processes, and services into solutions or value-added experiences that people want.

The essence of a crisp focal point is knowing what customers want. Bad things happen to good companies when companies don't execute according to customers' immediate priorities. The visible result is a steady erosion of companies' revenues, profits, and market value. Just look at the plight of the telecommunications industry. Former heavyweights, such as Lucent Technologies, Nortel Networks, and Alcatel, tumbled as troubled telecomm customers, such as WorldCom, KPN, Frontier, and Qwest, slashed capital spending in an attempt to remain solvent. After a job-shedding spree and other draconian cutbacks in every cost category imaginable, these firms don't have much room to maneuver. Can you think of the focal point of these companies? Do you think these companies had a clear blueprint?

Effectively digitizing processes to cut costs and stay competitive is a priority as firms restructure for the future. A growing vanguard consisting of Siemens, Nike, Kraft Foods, Nestlé, and 3M appears to understand the rules of the new battle being fought. These companies know they must relentlessly refine processes to withstand the multiple shock waves that followed the incredible prosperity of the 1990s. The best method for refining is to digitize ever-expanding processes and embed them into a service infrastructure to ensure survival and gain sizeable leads over competition.

Three Categories of Blueprints

Services digitization hinges on clear focal points and superb execution. There are three different categories of blueprints in play today—process improvement, strategic improvement, and business transformation (see Figure 1.3). The categories are based on the scale and scope of impact you want to make on the organization.

A blueprint falls into the process improvement category if companies are in mature markets and face relatively low uncertainty. These companies are mostly attempting to move the ball forward. In executing process improvement, a company must focus doggedly on conventional measures like capacity utilization or throughput and on such basics as creating operational efficiencies through improving administrative tasks. This is a conservative approach—call it hitting singles instead of swinging for the fences. Companies that have executed systematically on process improvement, such as Siemens, Kodak, and Alcoa, have steadily cut costs and raised productivity.

Objective	Example	Description
Process Improvement	GE Honeywell Caterpillar	• Reducing hand-off costs and rework • Reducing process variation using Six Sigma • Transaction cost reduction—using technology to shorten end-to-end processing time • Business process outsourcing—fixing specific errors • Improving customer satisfaction
Strategic Improvement	Wal-Mart Dell Intel Cisco	• Replacing manual processes with digital processes wherever possible • Enhancing logistic and supply chain efficiencies • Increase customer focus—Web-enabling strategic operations • Cycle time reduction—decreasing time to market
Business Transformation	IBM AT&T Vivendi	• Rewiring the industry—changing the rules of the game • Creating a new customer focus—from product-centric to customer-centric • Abandoning old ways of doing business • Major culture change required among all participants

Figure 1.3: Three Categories of Execution

Strategic improvement occurs when firms attempt to grow into new areas by introducing additional products and services or streamline end-to-end processes by enhancing the linkages with customers and suppliers. When executing strategic improvement, a company generally focuses on measures such as increasing customer service and leveraging new business opportunities. Companies like Carrefour, Tesco, and Intel have embarked on strategic improvement and ultimately have dominated their competition.

Digitization related to business transformation is high risk. In executing this, a company (such as Amazon.com or Yahoo!) uses so-called "disruptive innovation" to change the rules of the game in a particular industry by creating new customer niches, channels, or cost economics. Due to uncertainty in the econ-

omy, transformational strategies that pave the way for the future are often based on inadequate information.

Transformation strategies may work for some start-ups. In a large corporation, however, it is very risky and has a high failure rate. Few corporations attempting business transformation have succeeded. Most dot-com companies that were talking revolution were intent on executing transformation strategies. Few survived—a testament to the fact that revolutions tend to be bloody. Companies like Vivendi Universal under Jean Messier, Ford under Jacques Nasser, and AT&T under Michael Armstrong were all attempting transformation strategies. These companies are in the midst of retrenching from their visionary strategies. In contrast, IBM appears to be a successful example of business transformation.

It's tempting, of course, to say, "I want to accomplish all of them!"—process improvement, strategic improvement, and business transformation. Don't. It takes vastly different skills to execute each. Identifying which one is your primary driver for digitization efforts is a very important first step. Your technology foundation depends on it.

Digitization at General Electric (GE)

More than any other institution, GE has mastered the art of digitizing while conducting business. GE is a 124-year-old diversified technology, manufacturing, and services company, committed to achieving leadership in each of its key businesses. GE's multi-business success comes from its competitive corporate culture, shared strategic priorities, and ability to find new and more efficient ways to run the business.

To reach and maintain the leadership position, GE's ongoing growth and strategy is focused on four key initiatives: WorkOut, Six Sigma, Services, and Digitization.

WorkOut—Globalization

WorkOut, the oldest initiative at GE (going back to the early 1980s), has become so ingrained in GE's culture that it's less of an "initiative" now and has simply become the way the firm operates. Globalization began as a search for new markets for GE's products and services. This quickly expanded to include finding the most competitive sources of finished products, components, and raw materials. When the globalization initiative began, the company derived more than 80 percent of revenues within the United States; today, more than 40 percent of GE's

revenues are generated outside the United States. GE is a truly global company, always strengthening its international presence with new local operations, acquisitions, and joint ventures.

Six Sigma—Improving Manufacturing and Service Quality

During the 1990s, many companies utilized Six Sigma to eliminate process variability and optimize quality. Six Sigma—virtually defect-free processes, products, and services (3.4 defects per million)—takes its name from the Greek letter "sigma," which is used in statistics to indicate standard deviation. GE uses Six Sigma to help distinguish between work that is absolutely necessary versus work that is nice to do but not critical to quality.

Through this quality methodology, GE claims that it has been able to develop and deliver much-improved products and services. Six Sigma builds on the old quality principle that employees often have the best ideas about what tasks can be simplified or eliminated. It is estimated that GE has trained more than 100,000 people in Six Sigma and completed 500,000 projects.[6] Six Sigma has helped changed GE's focus from inside to outside, namely to the customer. This change in perspective has undoubtedly helped improve products and services in new ways. (For more information on Six Sigma, see Chapter 10.)

Services—Converting Products into Solutions

In parallel to the Six Sigma efforts, GE is transforming itself from an engineering company into a services firm. In some areas, it is going even further by moving from services to total solutions (that is, providing products, services, and financing). What's more, GE is focusing on creating service platforms to support high-tech products and equipment. For instance, part of GE's medical strategy is to provide services for a digitized hospital that has no paper files, no traditional nurses' stations, and no medical records department. Instead, all the information about a patient is available on computers and kiosks located strategically throughout the hospital. Critical information like diagnostic images and medication are available instantly. That means less time tracking and documenting patient information, and more time for patient care.

By developing leading-edge technology and then driving it back into the installed base of equipment, GE is aiming to increase its customers' productivity. For customers, this enables them to become more competitive at lower investment costs. For GE, this has created a rapidly expanding services business, which is expected to grow substantially for decades to come.

Digitization—Increasing Productivity and Profitability

GE is using Six Sigma to evaluate all the work it does and to shed, streamline, or simplify tasks that aren't critical. The logical next step of Six Sigma is process digitization. The digitization goal: to utilize Internet-based workflows wherever possible to eliminate process friction and streamline the operations of GE. The digitized GE expects to have smaller administrative "back rooms," reduced waste, and faster decision making.

Its financial goal is expanded productivity and profitability. It has invested $10 billion in IT since 1998 to make digitization a vital part of the company. GE is reserving spending for all sides of the business—from the "make" side of internal process digitization, to the "buy" side of sourcing and procurement, to the "sell" side of customer transactions and service.[7] Anything to do with customers and growing revenues is receiving digitization priority.

Digitization is a "game changer" for GE because it improves the competitive position. Consider how Internet and Web technology are allowing GE to reallocate back-office processes. At GE, 60 percent of the resources are in the front office—customer facing, manufacturing, selling, and accounting. The other 40 percent of the resources is in the back office—billing, receivables, and call centers. GE plans to take out $10 billion of its SG&A costs by 2005. Simply optimizing the working capital situation—faster recovery of receivables, reduction of liabilities, and reduction of inventories—would produce an ROI in the billions range as a direct result of GE's digitization effort.[8]

Digitization Themes at GE

At GE, digitization is the conduit through which globalization, Six Sigma, and product services strategies are shaping a leaner conglomerate. The purpose of digitization at GE is to implement corporate strategies that can be distilled into seven themes:

1. Make yourself Easy To Do Business With—present one face to the customer.
2. Develop a process enterprise—integrate around the customer.
3. Create an outside-in service focus, rather than an inside-out product view.
4. Anticipate customers' needs through services—build value around how the product is used.
5. Integrate virtually, not vertically, using flexible business process outsourcing.

6. Make the business agile—do less planning and more "sense and respond" to uncertain economic events.
7. Include measurement as part of management, not accounting—utilize digital cockpits (a report where managers can view an aggregate of customized company statistics) to monitor, act, and control events.

Once formulated, these enterprise-level themes must be converted into business processes, which are then mapped into applications and systems. All this must be done more quickly and cheaply than ever before. Translating an organization's strategic objectives into processes and applications that in turn drive operational results is the critical role of management.

Digitization at Wal-Mart

Wal-Mart has relentlessly pursued the Every Day Low Price (EDLP) focal point in its quest to become the world's largest retailer.[9] Process digitization based on the cornerstone EDLP focal point is a core part of its strategy.

Wal-Mart—A Brief History

Wal-Mart was born in 1945 when Sam Walton opened a Ben Franklin variety store in Newport, Arkansas. In 1946, his brother, James Walton, opened a similar store in Versailles, Missouri. In 1962, the first Wal-Mart Discount City, a no-frills discount store, opened its doors. In 1984, Wal-Mart created the first three SAM'S CLUBs, and in 1988, the first Wal-Mart Supercenter, a format that combines a supermarket with a general merchandise discount store, was unveiled.

Due to its aggressive acquisition strategy, customers from many countries can now appreciate the benefits of Wal-Mart's relentless focus on ELDP. In 1992, Wal-Mart went global with a joint venture (50 percent interest) in Mexico with Cifra. Since 1992, Wal-Mart's international presence has continued to thrive.[10]

- In 1996, Wal-Mart entered China with a Supercenter and a SAM'S CLUB in Shenzhen. By 2003, Wal-Mart had opened 20 units and employed more than 10,000 associates.
- To enter Germany, Wal-Mart bought the 21-store Wertkauf hypermarket chain in 1997. In 1999, Wal-Mart bought 74 Interspar hypermarkets from Spar Handels AG, a unit of the French retailing conglomerate Intermarche.
- In 2000, Wal-Mart purchased ASDA Group PLC, the third-largest retailer in the United Kingdom (229 U.K. stores) for $11 billion.

- In 2002, Wal-Mart bought 6.1 percent of The Seiyu Ltd., a Japanese chain, for $46 million.

The company has changed considerably and now forms almost 2 percent of the U.S. economy. Each week over 100 million customers, tempted by rock-bottom prices, traipse through the stores where they can buy diverse products and services, do their banking, get their eyes checked, or have the oil changed in their car—truly a one-stop shopping experience.

Wal-Mart's Blueprint for Digitization

Wal-Mart's blueprint for process digitization is illustrated in Figure 1.4. This blueprint captures four different layers:

1. Customer—the Every Day Low Price strategy for creating sustainable value and differentiation from the customer's perspective.

2. Business Services—the strategic priorities for various business processes, which enable low cost leadership, differentiation, and execution focus. They include expertise in store management, logistics, and supply chain management. Sales are primarily on a self-service, cash-and-carry basis, with the objective of maximizing sales volume and inventory turnover while minimizing expenses.

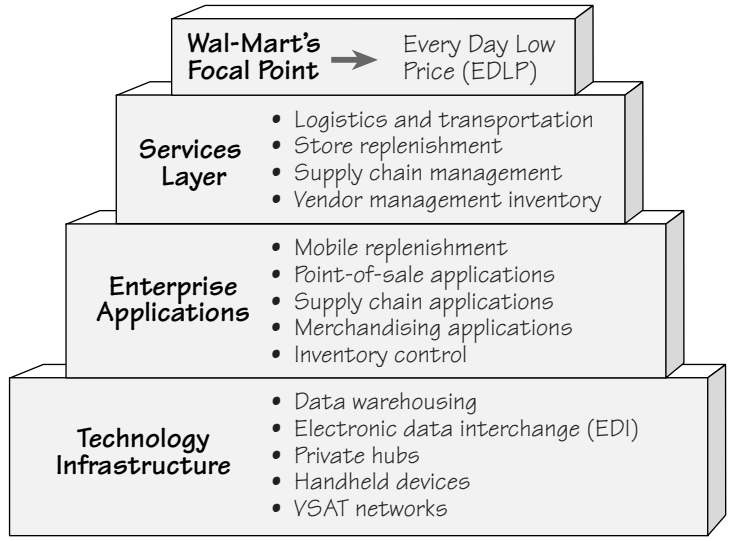

Figure 1.4: Blueprint for Wal-Mart's Digitization

3. Enterprise Application Infrastructure—the layer that helps digitize and integrate business processes tasks into streamlined information flows.

4. Technology Infrastructure—the foundation that supports the various applications across diversified store formats and geographic locations.

Of these, the customer's perspective is the most important. The ability to offer value and service continuously to customers largely determines Wal-Mart's top position within the retail industry. Wal-Mart employs many programs designed to meet the competitive pressures within the industry. These include Every Day Low Price, Low Price—Always, Item Merchandising, Store-Within-a-Store, Price Rollbacks, and Store of the Community.

Wal-Mart has core competencies and size advantages that allow it to fulfill the promise of Every Day Low Price. They include expertise in store management, logistics, and information technology. Let's look at each in detail.

Wal-Mart Differentiator—Effective Localized Store Management

Wal-Mart discount stores are mammoth. Many Supercenters, the larger cousins of the discount stores, have 500 associates and more than $100 million in annual sales, almost the size of a midsize business. A wide range of merchandise is sold and is grouped under 40 different departments.

Although Wal-Mart stores are ubiquitous, each one is different. Every Wal-Mart store is tailored for its community, which is no easy task. To keep customer-service levels high and sales increasing, Wal-Mart encourages associates to think creatively about how they merchandise and stock products.

One way that associates hone their merchant skills is through the VPI (Volume Producing Item) contest. VPI provides a store-level opportunity for associates to showcase their ability to promote items they think can be top sellers. Associates choose the VPI item, order it, design an eye-catching display, conduct promotional activities, and track and report sales progress. The goal of VPI: finding creative ways to turn products with potential into big sellers.[11]

Given the size of Wal-Mart, decentralized store management is extremely important. The managers who are closest to the action know what is important in their locale.

Wal-Mart Differentiator—Logistics Management

The processes for which Wal-Mart has set the best-practices standard are distribution and supply chain management (see Figure 1.5).

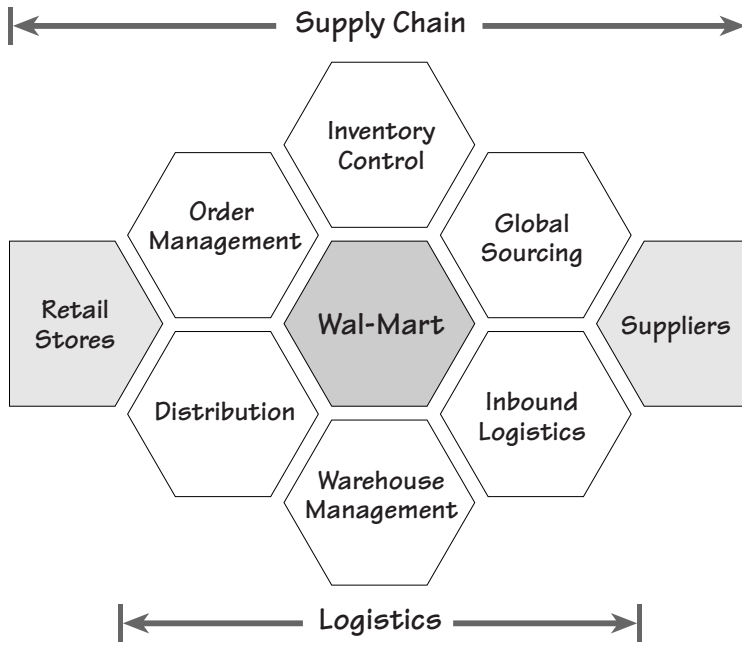

Figure 1.5: Wal-Mart's Process Expertise

The company's distribution network spans the globe. A total of 84 percent of Wal-Mart Discount Stores' and Supercenters' purchased merchandise was shipped from Wal-Mart's 72 distribution centers. Of these, 32 are general merchandise distribution centers, 20 are grocery distribution centers, eight are clothing distribution centers, and nine are specialty distribution centers. The specialty distribution centers ship items such as jewelry, tires, and optical supplies. The balance of merchandise purchased is shipped directly to the stores from suppliers.[12]

A key part of supply chain management is "global sourcing." Over the last few years, Wal-Mart has improved the quality of its goods—as well as its supply logistics and retail prices—by acquiring certain products for all of its stores around the world from a single source. To support global sourcing, Wal-Mart operates three import distribution centers in the United States and a total of 35 international distribution facilities.

Wal-Mart also controls logistics costs by having its own private fleet of trucks. This enables customized, cost-efficient delivery to stores, accommodation for peak seasonal periods, night deliveries, and accelerated delivery.

Wal-Mart Differentiator—Information Technology Execution

Using technology to simplify processes, eliminate waste, and analyze and react to more meaningful information has been the execution focus of Wal-Mart. Thus far, technology has aided in Wal-Mart reducing its operating and SG&A expenses as a percentage of sales to less than 15 percent.

Technology is the catalyst that enabled Wal-Mart to wring efficiencies out of processes that are unmatched by leading companies in other industries. Take, for instance, the replenishment problem. At any given moment, a typical Wal-Mart Discount Store has more than 70,000 standard items in stock. Every one of them has to be identified, ordered, inventoried, and replenished. A typical Supercenter is even tougher to stock since it carries more than 20,000 additional grocery items, many perishable. These have to be reordered frequently, sometimes even daily.

How does technology enable this? Since 1996, Wal-Mart has been using handheld computers linked to in-store servers by a radio-frequency network. It's a high-tech conduit to an internal inventory system. These handhelds help keep track of real-time information for the inventory on hand, deliveries, and back-up merchandise in stock at distribution centers. Mobile computing has enabled Wal-Mart to have higher quality sales and inventory information. As a result, suggested ordering quantities on many items are available to associates in real time to assist them in the task of keeping stores replenished and items in stock.

Across all of its formats, Wal-Mart is one of the most effective users of technology. Some other impressive technological feats include:

- In the 1980s, using satellite communications to link stores to headquarters for Just-In-Time inventory management (the first major retailer to do so).
- In the early 1990s, building the Retail Link system, which provides sales data—by item, store, and day—to vendor partners. This information saves suppliers time and expense in planning their production and distribution, which translates to lower merchandise costs.
- In the mid-1990s, utilizing an item locator system that allows associates to scan an item and electronically check on its availability in other area stores.
- In the late 1990s, creating the New Retail Link Private Hub, which allows more than 10,000 Wal-Mart suppliers to log into a Web portal, peruse databases, and find out which store sold how much of its products. With a latency of a mere six hours from transaction to analysis, Wal-Mart is using the Web

to provide real-time information not only to stores and corporate managers, but to vendors as well.

The value of technology shows up in a crisis. An article in the *Wall Street Journal* on September 18, 2001, described how Wal-Mart used its Data Warehouse (built on NCR's Teradata technology) to understand its customers' changing buying patterns the week after the World Trade Center attacks. On the morning of the attacks, stores were desolate. By that Tuesday evening, customers stockpiled guns, ammunition, bottled water, and gasoline containers. On Wednesday, sales of flags shot up, causing a shortage and triggering orders to restock the flag inventory. By Friday, the number of customers in the stores returned to normal, but the average number of purchases declined. Based on predictive analysis, some stores were able to foresee a sharp increase in sales by the fifth day. As a result, they increased staffing by 20 percent for the weekend and stocked up on items that customers normally buy. This paid off as sales increased by 25 percent that weekend compared with the same weekend a year earlier.

Data-driven merchandising means that Wal-Mart shelves are hardly ever empty. The financial result: some of the highest sales per square foot of floor space in the retail world.

Other retailers, such as Lowe's (a home improvement store for the do-it-yourself consumer) are copying Wal-Mart's model. LowesLink gives vendors secure access to daily sales data—down to the SKU level—on the products they supply. The system also allows vendors to add item information to the database. Ultimately, Lowe's wants its vendors to control inventory levels in individual stores based on what's selling. Long-range purchasing forecasts (90 days to six months) will be e-mailed to vendors who can use the data to improve fill rates, lead times, and production efficiency.

So, if Lowe's could copy Wal-Mart's Retail Link, why couldn't Kmart?

Wal-Mart versus Kmart—A Blueprint Comparison

For more than three decades, Wal-Mart has demonstrated the willingness to embrace technology both in-house and with its suppliers. Competitors did not follow until it was too late.

Let's contrast Wal-Mart to Kmart. Kmart sprang from a pair of five-and-ten-cent stores, called Kresge's, in Memphis and Detroit, established in 1897 by Sebastian Kresge, a traveling hardware salesman. In 1962, Kresge's entered the large-scale discount retail market with the construction of the first Kmart outside

Detroit. With success, the company expanded aggressively and began selling home improvement supplies, office supplies, and sporting goods.

When Charles C. Conaway became Kmart's CEO in May 2000, he announced a massive $1.4 billion investment in technology in an attempt to make up for past neglect. The subsequent supply chain troubles were well documented. Lack of supply chain integration resulted in expensive advertising snafus where consumers could not buy the advertised specials because they were not on store shelves. Kmart could not effectively fix the supply chain problems, and it took a $195 million write-off in 2000.[13] Why the mismatch between effort and result?

In the long run, every business at its core is an information business. Wal-Mart embraced this trend in the late 1970s, while Kmart tried half-heartedly. The difference between Wal-Mart and Kmart was technology savvy and a pragmatic supply chain blueprint that took years to polish. In 1997, Wal-Mart had an annual technology and communication budget of $500 million and an information systems staff of 1,200. Kmart, on the other hand, had four CIOs in four years—no stability, no consistent strategy.

The Kmart example illustrates the challenges of execution. Blueprints—focal point, processes, applications, and technology—need to evolve in tandem with the corporate vision. Modern business is a study in perpetual motion—expansion, cost-cutting, mergers, acquisitions, divestitures, turnarounds, and bankruptcy. Organizations are in a constant state of flux as they reshape themselves to meet the demands of investors and customers. The companies that are built to last are those that change on all fronts: customer, data, and process.

Digitization Execution Is a Senior Management Issue

Services Blueprint = Focal Point + Services + Processes + Applications. If any one of these is missing or not in sync, the digitization effort will either fail or deliver less than expected ROI. As a result, all forays into digitization have to be carefully planned and managed. *Whose job is it to oversee digitization in your company?* Most people respond that it is the CEO's job, but it is really not. Most CEOs don't have the time or expertise to manage the digitization of processes. If digitization is considered important, then the CIO needs to step up to the plate.

The CIO function is changing and becoming more and more process oriented. It is hard to see how any modern corporation can operate without some sort of digitized foundation in critical functions, such as invoicing, billing, payroll, inventory, and customer service. As a result, the annual spending on technol-

ogy infrastructure and applications worldwide—1.5 to 3.5 percent of revenues across most industries—is growing and is estimated to be around $1 trillion.[14]

Blueprint execution has moved up the agenda as companies demand better return on investment. Yet technology execution is not well understood or even taught. As far as we know, no university teaches a course on the basics of execution—the art of getting things done, surprisingly, given that execution is a fundamental managerial skill.

A few years ago, innovation was lauded, and execution was considered a foregone conclusion. We encountered few senior managers interested in the details of technology execution, let alone acquiring a superior understanding of it. However, the economic downturn of 2001–2002 changed everything. All eyes have turned to execution, as "nice-to-have" projects are replaced by "need-to-have" initiatives. Also, with the digitization of enterprise-wide supply chains and customer interactions, the locus of technology-enabled value creation shifted from transactions to complex processes. As a result, technology-enabled execution has inched its way to the top of management's agenda.

Not paying attention to execution issues can prove very costly. Consider the problems at Agilent Technologies, a testing equipment and chip maker, which resulted in roughly a $105 million revenue shortfall and $70 million in reduced operating profit. In June 2002, the former division of Hewlett-Packard began to roll out the first phase of its corporate-wide initiative, Project Everest, which included migrating 2,200 legacy systems to an Oracle ERP platform. This complex implementation covered more than 50 percent of the volume and virtually all of Agilent's financial processes, as well as functions such as order handling and shipping. Although the company had spent nearly 18 months working with roughly 100 consultants to install the program, integrating financial and operational data turned out to be more difficult than anticipated. It had to spend an additional $35 million in programming costs to cover the unexpected hitches in implementation and rollout.[15]

The case of Agilent Technologies is not an anomaly. Enterprise applications are so intertwined with day-to-day business operations that executives have no choice but to understand them. As technology implementations get bigger, managing them is getting harder. After paying lip service to technology, senior management and corporate boards are taking a closer look at technology investments and the link between planning and execution.

In a changing economy, every corporate board wants to make sure that technology investments result in business benefits. Executives recognize that they

need to understand better the process digitization principles and tools that will allow them to create organizations superior to those of their competitors.

Seven Points to Ponder

> Now this is not the end.
> It is not even the beginning of the end.
> But it is, perhaps, the end of the beginning.
> —*Winston Churchill, 1942*

E-business has not taken its last breath—far from it. As these words are written, more companies worldwide are scrutinizing their businesses to determine what services or processes can be digitized. Timing is critical. Market leaders in various industries accepted the need for process digitization years ago and have been embracing it as a proven method for improving their business processes. The transition from process automation to digitized services has begun.

Critical points to remember regarding digitization: It's not just about technology; it is also about processes and execution. Managing digitization, from vision to implementation, is where you will either succeed or fail.

We spotlight seven points for you to ponder while you digest the chapter:

1. The current business environment has been described in terms of "chaos," "revolution," or simply "change." There is a clear pattern that can be gleaned from the turmoil: nonstop digitization of business processes.
2. Services digitization builds on the efforts of e-business and e-commerce. Digitization is the outcome of the nonstop business need to be more customer-driven and process-centric.
3. A successful digitization effort is one in which the company treats technology not as a sole solution, but as an enabler for innovating, improving, and integrating business processes. Process digitization has three dimensions: the type of interactions (uni- versus multi-channel), the scope of integration (business unit versus cross-enterprise), and the degree of digitization (manual to real time).
4. Good companies have a clear focal point; mediocre ones don't. Managers should devote themselves to determining a focal point to anchor

ongoing digitization efforts. Align digitization projects with your strategy, such as being Easy To Do Business With or offering an Every Day Low Price.

5. A focal point by itself is not enough. Digitization cannot be accomplished or managed without a blueprint that supports the focal point. Blueprints translate an organization's strategic objectives into process and applications that, in turn, drive operational results.

6. Three different blueprints—process improvement, strategic improvement, and business transformation—exist based on the scale of impact you want to make. Before going ahead with a digitization project, determine which blueprint is appropriate for you.

7. Finally, be patient. As the GE and Wal-Mart case studies show, process digitization is not a quick fix. You must successfully execute one project at a time. A digitization project draws resources from many distinct areas of a company. Overseeing and coordinating a digitization project at all times is exceedingly important.

Services are the new currency of business. Offering the fastest service, the best value, or the highest-quality product need not be a pipe dream. Services digitization is the vehicle through which your company can think on its feet and respond to customers with lightning speed. If that sounds relevant to you, read on.