

A HARVARD BUSINESS REVIEW ANALYTIC SERVICES REPORT



**Harvard
Business
Review**

ACCELERATING THE PACE AND IMPACT OF **DIGITAL** **TRANSFORMATION**

FULL REPORT

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Can Digital Generate Significant Impact for More Than 21% of Enterprises?

After questioning 680 executives across functions and industries—from financial services to manufacturing and technology—four crucial points have emerged on the impact of digital technologies on global organizations.

1. Digital is a competitive weapon but its impact is unevenly distributed. While optimistic about the future, only 21% of executives see significant results from digital transformation in their enterprises today. These leaders consider digital a key contributor to growth, and say that it plays a significant role in establishing a superior competitive position.

But why is success not more pervasive, and what can we learn from the leaders?

2. The challenge isn't technology prowess, budget, or access to extraordinary talent. The study indicates that the biggest hurdles are the inability to experiment, change management, legacy systems, a risk-averse culture, and organizational silos.

But leaders see things differently, as silos and an aversion to risk are lower barriers. And crucially, an enterprise's business architecture—beyond the technology component—seems to influence the results: 53% of organizations with strong alignment between customer expectations and their organization's middle- and back-office functions/systems are achieving significant positive business impact from digital, compared with 3% of those with little alignment.

3. The necessary leadership, skills, vision, and approach are often fragmented or immature. These qualities don't even appear to fully reside in the CIO's organization, the traditional home of enterprise technology and business transformation. Indeed, only around a third of respondents think that the IT organization can align digital interventions to business outcomes; design customer-focused solutions with, for example, design-thinking approaches; use Lean to integrate middle- and back-office functions and systems; and consistently act on insight from data.

4. Leaders focus their efforts differently. Only half of respondents believe that their companies have an enterprise-wide digital **strategy**, but digital leaders (77%) stand out. Only 40% of respondents say their companies use **metrics** to pinpoint interdependencies across organizational processes, but 71% of leaders do. And tenured employees remain the backbone of change, as only 38% of companies say that they rely on **digital natives** for their digital efforts—although leaders depend on them more.

The design and implementation **approaches** respondents use are not seen as very effective at overcoming legacy system and process challenges, but leaders are better off. And while **partners** offer some help, leaders seem to find the right third parties to support them.

Against this backdrop, we question whether the key to digital success lies in technical acumen or something else.

Our experience shows that as large companies evolve they are supported by four pillars. They (i) infuse adequate business domain expertise into the transformation program, (ii) methodically focus on the end user's journey through design-thinking or equivalent methods, and (iii) harness Lean practices that enable end-to-end process design beyond sales and marketing and into middle- and back-office functions. This results in (iv) better digital technology and analytics choices.

These pillars make digital work. We call this approach **Lean DigitalSM**.

The findings from this research are essential reading for any business. To assess your organization's ability to generate impact from digital interventions and compare the results against your peers', take the Lean Digital Ratio—a companion to this study—at ratio.genpact.com.

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ACCELERATING THE PACE AND IMPACT OF DIGITAL TRANSFORMATION

The nature and trajectory of digital transformation are on the cusp of significant change. According to a Harvard Business Review Analytic Services global survey, companies are predicting sizable leaps in business performance from their use of digital technologies. For example, in two years, the number of business leaders expecting significant impact from digital technologies will more than triple from 21 percent today to a majority of nearly 65 percent. Organizations are banking on hefty increases in revenue, profit, and customer loyalty from their digital endeavors.

What is behind the steepening trajectory? A strong strategic impetus for the use of digital technologies. Businesses are moving away from considering digital as simply an IT challenge and are turning to digital technologies to fortify their ability to compete—supporting new products, business models, and customer experiences, including interactions with back-office functions. But companies face formidable barriers to achieving their aggressive goals. Many are hampered by an inability to experiment quickly, manage change, cope with legacy systems, and take risks.

Nonetheless, this survey finds a tightening digital race across all industries. There are still leaders, who are predominantly from technology-related industries and point the way. But businesses across all sectors are not always very far behind and expect to catch up. Even players from sectors such as utilities and manufacturing that have traditionally been behind the curve are taking a more strategic view of digital technologies and expecting to move forward at healthy clips.

The tightening race is reflected in a new talent mandate that stretches across the business landscape. The emphasis is no longer on technology knowledge. Instead, businesses are focusing on strategic and cultural abilities such as customer problem-solving skills, change management, and the ability to communicate and collaborate.

As George Westerman, a researcher at MIT and coauthor of *Leading Digital* puts it, “If a company’s leaders are taking a technology view of digital transformation, they are doing it wrong.” In this report, we interview executives whose companies are getting it right and best poised to compete going forward.

WHO IS LEADING THE PACK, AND BY HOW MUCH?

To understand how different organizations are forging ahead with digital technologies, respondents were asked to evaluate the impact of these technologies on their organization’s ability to achieve positive business outcomes. The survey found three distinct groups: leaders (ranking the impact from 8 to 10 on a 10-point scale), followers (5 to 7 on a 10-point scale), and laggards (1 to 4 on a 10-point scale). [figure 1](#) Leaders account for a little more than 20 percent of businesses. These organizations hail mostly from technology-related sectors and have been at the forefront of digital transformation. Followers comprise nearly 60 percent of businesses and are found in virtually every industry.

Leaders are ahead of the pack, with 98 percent of them strongly agreeing that within two years their organizations expect positive business outcomes from the use of digital technologies.

About 20 percent of businesses are laggards. These companies tend to be energy companies, utilities, or manufacturers. Although these industries have traditionally lagged others in their use of digital technologies, the picture is changing quickly. Energy companies, for example, are embracing opportunities to help customers and businesses manage their energy use. Consumer product manufacturers are using technology to sell directly to consumers and provide effective customer experiences for both consumers and retailers. Even heavy equipment manufacturers such as GE are getting into the game by using the internet of things (IoT) to shift from producing machinery to providing solutions that drive efficient use of that machinery.

Leaders are ahead of the pack, with 98 percent of them strongly agreeing that within two years their organizations expect positive business outcomes from the use of digital technologies. However, followers aren't far behind, at 70 percent. And more than 60 percent of laggards expect a sizable impact. [figure 2](#)

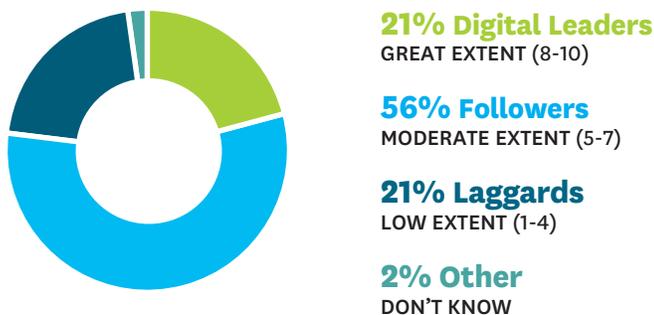
What Sets Leaders Apart

Strong strategic use of digital technologies is one of the most important hallmarks of leaders. Although only 22 percent of companies overall say digital technologies play a strong role in their ability to compete, 62 percent of leaders believe they do. Nearly 70 percent of leaders versus 41 percent of followers and 22 percent of laggards use digital technologies to improve decision making. Nearly 70 percent of leaders use digital technologies to a great extent to support the launch of new products. Only 41 percent of followers and 15 percent of laggards do the same.

FIGURE 1

BUSINESSES LEADING THE PACK

Percentage indicating to what extent their organization currently achieves positive business outcomes as a result of its use of digital technologies. [SCALE OF 1-10]



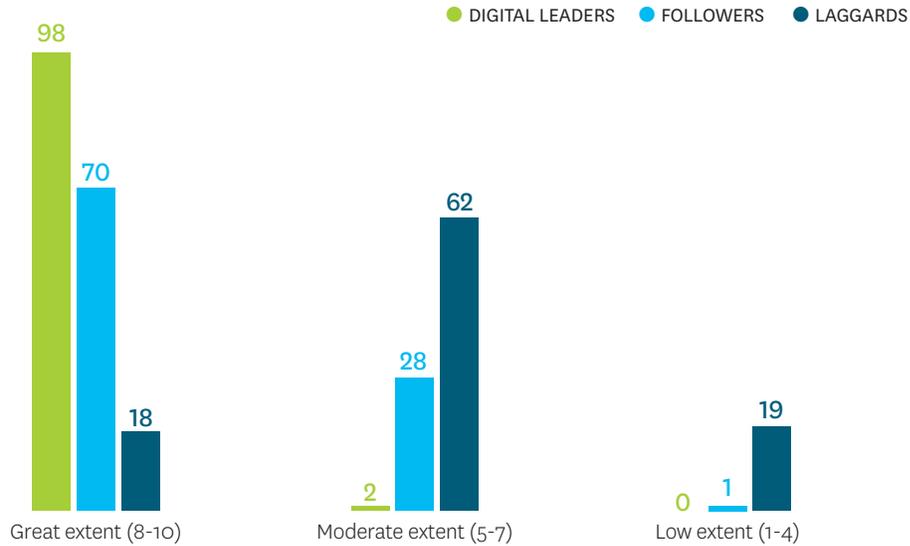
SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JUNE 2016

FIGURE 2

EXPECTED BUSINESS IMPACT OF DIGITAL TECHNOLOGY IN TWO YEARS

Percentage indicating to what extent they expect their organization will achieve positive business outcomes two years from now as a result of its use of digital technologies.

[SCALE OF 1-10]



SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JUNE 2016

Leaders are also far more likely to use digital technologies to support new business models—65 percent versus 34 percent of followers and 16 percent of laggards. [figure 3](#) In addition, leaders are more likely to focus digital efforts on more than customer-facing touchpoints such as websites. They also put more energy behind improving non-customer-facing functions such as accounting, auditing, and procurement—40 percent of companies overall versus 62 percent of leaders.

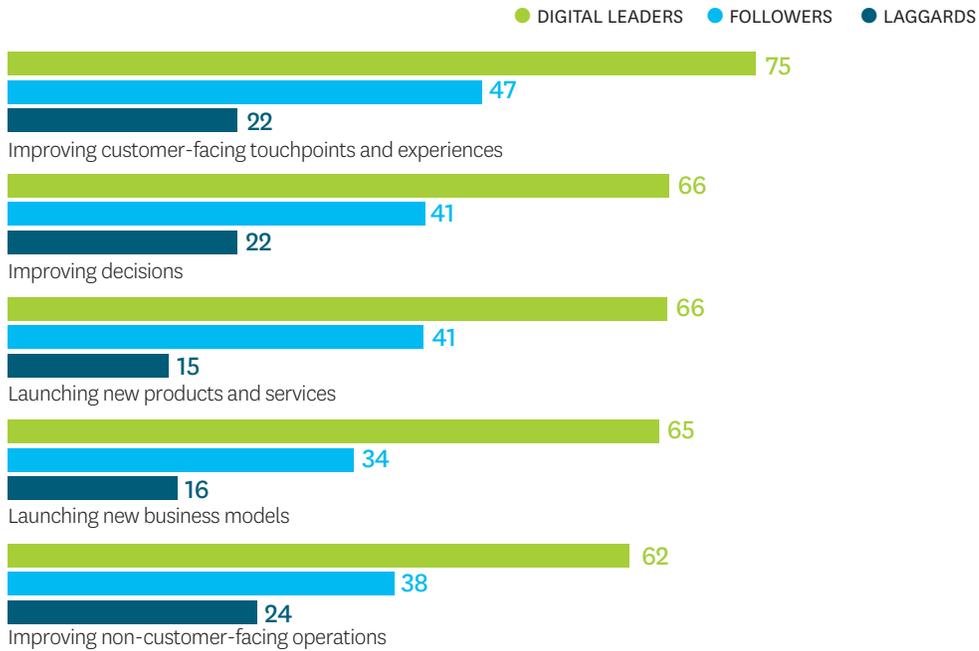
Nonetheless, followers and laggards are planning to accelerate their digital progress. For example, currently 75 percent of leaders, 52 percent of followers, and 20 percent of laggards strongly or slightly agree that the use of digital technologies has increased top-line revenue. But when considering their expectations for the coming two years, the gap narrows considerably—85 percent of leaders, 71 percent of followers, and 54 percent of laggards. [figure 4](#) The impact of digital technologies on customer loyalty and optimizing the costs of serving customers show similar trajectories. [figure 5 and 6](#)

Equally important, leaders are more focused on developing a single view of their customers—although virtually every organization is still at the starting gate. [figure 7](#) This is a sizable task that requires tight alignment of functions across the enterprise and overcoming legacy systems that don't speak with each other. As a result, no more than 10 percent of companies currently strongly agree that their organizations have a single view of their customers. However, more than 40 percent of leaders strongly agree that their companies will have that view in two years. And followers and laggards expect to be not that far behind.

FIGURE 3

WHERE LEADERS PLACE THEIR BETS

Percentage indicating to what extent their organization supports each of the following with digital technologies. [SCALE OF 1-10]



SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JUNE 2016

Leaders are also highly collaborative, both internally and externally. For example, only 20 percent of leaders say that progress with digital technologies is hampered by a lack of collaboration between IT and lines of business. On the part of followers and laggards, the number climbs to 35 percent and 44 percent, respectively. In addition, leaders have the deepest level of collaboration with partners and feel that these organizations have a deep understanding of their companies' business and can help design and implement digital technology solutions.

Perhaps most important, leaders have woven the strategic use of digital technologies into the fabric of how they operate. For example, these companies are far more likely than others to have a clear digital strategy in place—77 percent of leaders versus 19 percent of laggards strongly or somewhat agree. They are also far more likely to have to have a corporate vision for the use of digital. Only 12 percent of leaders say their organization lacks a strong vision for digital. On the part of laggards, the number jumps to nearly 50 percent. Leaders are also the heaviest users of metrics to pinpoint process interdependencies that are vital to assessing the effectiveness of digital solutions. [figure 8](#)

IMPACT OF DIGITAL TECHNOLOGIES TODAY AND IN TWO YEARS

Percentage of respondents indicating to what extent they agree/disagree with the following statements.

● STRONGLY AGREE ● SLIGHTLY AGREE ● NEITHER AGREE NOR DISAGREE ● SLIGHTLY DISAGREE ● STRONGLY DISAGREE

FIGURE 4

INCREASING TOP-LINE REVENUES

The use of digital technologies has increased our top-line revenue.

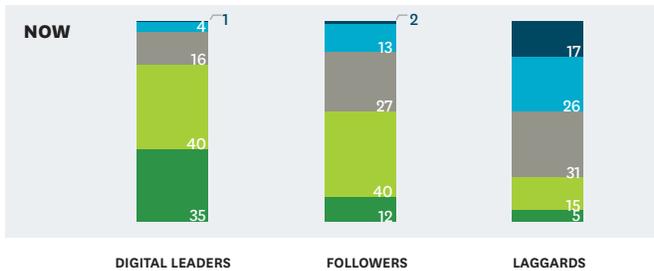


FIGURE 5

DRIVING CUSTOMER LOYALTY

The use of digital technologies has increased customer loyalty.

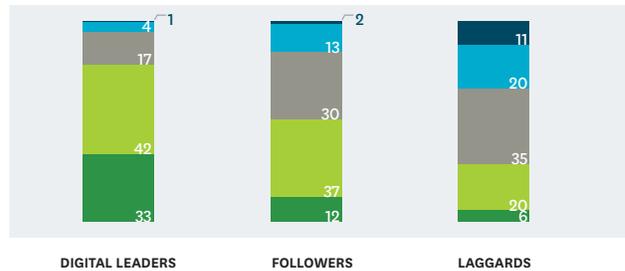


FIGURE 6

OPTIMIZING COSTS TO SERVE

Digital technologies have helped our organization optimize the costs of serving customers.

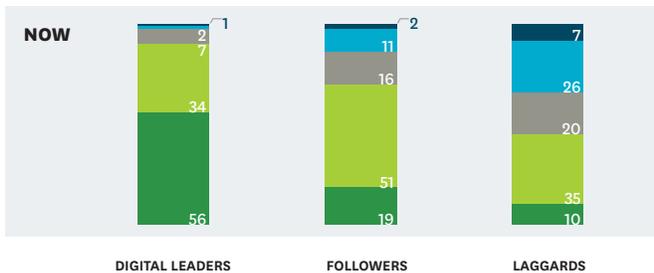
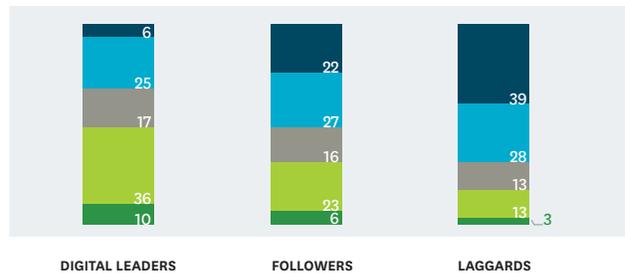


FIGURE 7

CREATING A SINGLE VIEW OF THE CUSTOMER

We have a single customer view across all channels and customer touchpoints.

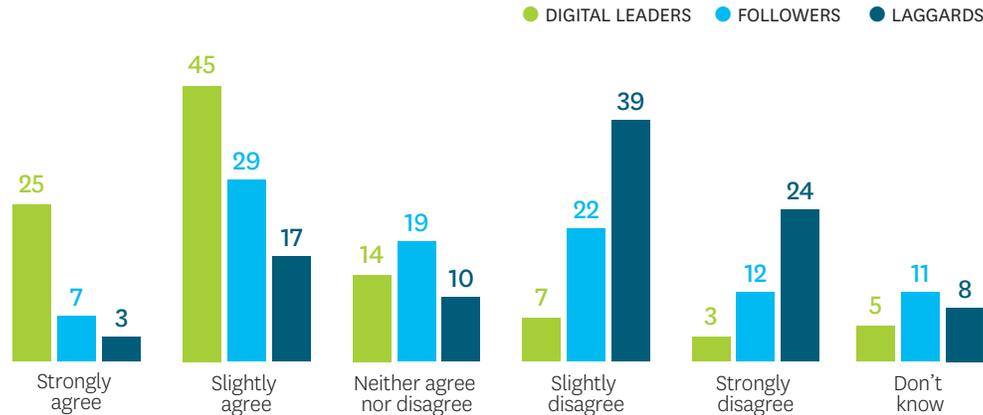


SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES, JUNE 2016

FIGURE 8

MEASURING THE PROCESS

Percentage indicating to what extent do they agree or disagree with this statement about how their company manages and uses digital technologies to transform the enterprise: “We use metrics to pinpoint the interdependencies between process steps across the organization.”



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BARRIERS STANDING IN THE WAY

Although organizations around the globe plan to boost the use and impact of digital technologies, they face barriers that leaders have overcome to a greater extent. [figure 9](#) For example, followers and laggards struggle with the ability to manage change and experiment quickly. Overcoming these challenges often requires a culture that isn't risk averse, which many companies don't have. For example, 50 percent of laggards say their organizations are risk averse. On the part of leaders, the number drops to 23 percent.

Tactical Steps to Create a More Risk-Tolerant Culture

An established U.S. bank has had to confront a strong cultural aversion to risk in order to transition from a traditional to an online bank. Banking customers see their financial institutions as stewards of money and expect them to eschew risk. That demand has only grown since the 2008 financial crisis. At the same time, a new breed of digital bank has burst on the scene and encroached on banks' traditional markets. To compete, established financial service companies have had to become more experimental with digital technologies and change how they offer their services. But the need for experimentation can easily collide with an aversion to risk inherent in fiduciary responsibility. To steer clear of that collision, the bank's leadership devotes considerable energy to creating a sense of urgency and defining a digital vision for the brand. But it is also taking a very tactical step—using analytics to ease tensions over taking risk.

Big data and analytics provide comfort with experimentation by creating transparency into market conditions and near real-time insights into how experiments are or aren't working, according to one of the bank's executives. The bank is investing in analytics capabilities to provide better and faster insights into the competition and the results of their experiments. These insights provide

“Technology won’t create efficiency and value if the underlying processes aren’t harmonized.”

Pascal Visée, Nonexecutive and Independent Adviser and Former Chief Enterprise Support Officer, Unilever

predictability and give the organization a sense of control over risk and understanding of the market conditions that require new and different services.

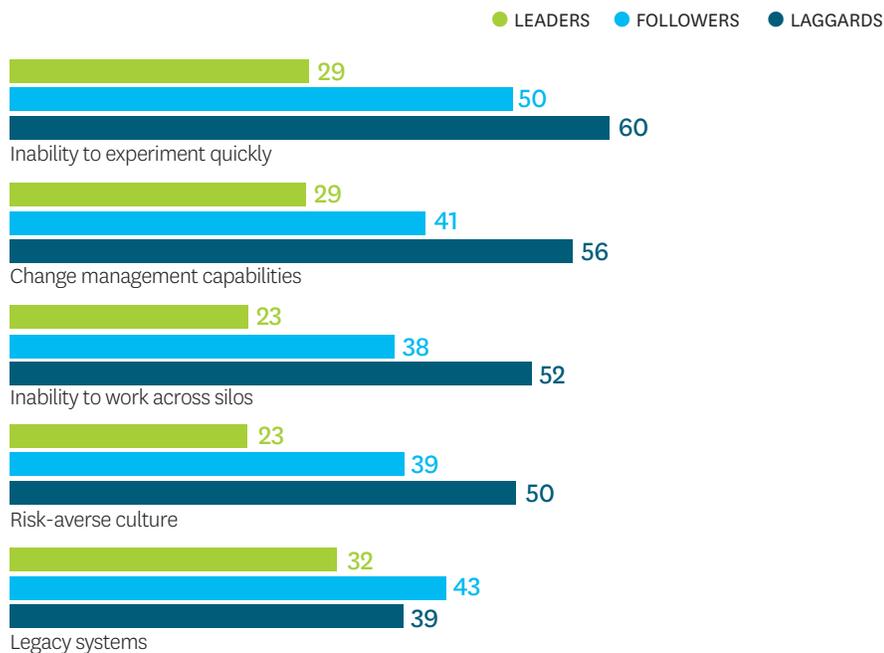
A global technology company is taking a similarly practical step. Its leaders are pushing the organization to develop new ideas, experiment, and learn from mistakes. However, as a technology executive at the company points out, the admonition to learn from mistakes can be difficult to define and implement.

To bring greater clarity and ease to the challenge, the organization clearly articulates what types of mistakes won’t get people into trouble. For example, a mistake that can be fixed in a few days or weeks can be acceptable. But something that takes months to correct and has serious consequences can get employees into trouble.

FIGURE 9

TOP-FIVE BARRIERS TO DIGITAL TRANSFORMATION

Percentage indicating to what extent each of the following is a barrier to their organizations’ use of digital technologies. [8-10 ON A 10-POINT SCALE]



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“I believe it is critically important to account for the ‘last mile’—how the improvement will exactly translate into greater value.”

Filippo Passerini, business adviser and former CIO at Procter & Gamble

David Ferguson, CEO of Nucleus Financial Group, a Scotland-based provider of wealth management software, adds more practical advice. He finds that many individuals are ready to experiment but can become apprehensive when push comes to shove. “Even passionate innovators can be afraid of doing new things,” he says. “You may need to push them a little to take more risks.” To provide that encouragement, Ferguson has turned to agile development. Agile uses fast cycles, often called sprints, which put experiments on a clear and fast schedule that can prompt the gunshy to pull the trigger.

Coping with Legacy Systems

Legacy systems are also a challenge for most companies, especially financial service providers. However, leaders have a much greater capacity to overcome this stumbling block. The majority of companies say they will have to replace some or all of their legacy systems. But only 15 percent of laggards and 33 percent of followers strongly or slightly agree that their companies have effective processes in place to do so. On the part of leaders, the number jumps to 62 percent.

The major challenge in overcoming legacy systems is the inertia from decades of these systems and processes, says Pascal Visée, a nonexecutive and independent adviser and former chief enterprise support officer for Unilever. To overcome this inaction, Visée observes that digitally advanced enterprises employ a two-punch approach: “Businesses have to invest and maintain the systems that they rely on to operate. At the same time, they are experimenting with new technologies that may ultimately replace the legacy systems.”

To make the two-punch approach work, organizations need to rigorously define the potential business value of digital experiments, according to Filippo Passerini, a business adviser and former CIO at Procter & Gamble. Passerini believes that companies often turn to new technologies with only a general assessment of the value they can generate. As an example, he points to internal collaboration software that can improve sales-force productivity. “Many companies will install internal communication platforms believing they will improve communication, which, in turn, will drive productivity,” he says. “I believe it is critically important to account for the ‘last mile’—how the improvement will exactly translate into greater value. For example, will it increase the number of sales calls? Will it accelerate the speed of products or services going through the pipeline? How will we measure how these improvements will be realized?”

Visée also stresses the nontechnological dimension of dealing with legacy systems. “Nonstandardized work processes are often a bigger challenge than the systems themselves,” he points out. “Since most companies have multiple legacy systems, they also have many different versions of the same work process. Technology won’t create efficiency and value if the underlying processes aren’t harmonized.”

Silos Are a Challenge, But Cybersecurity and Money Aren't

Organizational silos are also significant impediments to organizations' use of digital technologies, and leaders have made the most progress in overcoming them. Collaboration between IT and lines of business is a prime example. Nearly 50 percent of laggards believe that the level of collaboration between IT and lines of business in their organization doesn't pass muster. On the part of leaders, the number drops to 20 percent.

Despite the rising incidence of corporations and governments being hacked and the potentially immense costs of remedying such breaches, cybersecurity is low on the list of barriers. Only 27 percent of companies overall strongly agree that cybersecurity is a barrier to their use of digital technologies. Only 33 percent of laggards agree.

Finally, money doesn't appear to be a major obstacle either. Only 28 percent of respondents strongly agree that insufficient budgets are a barrier to digital success. Between now and 2018, nearly 90 percent of companies plan to increase their digital technology investments, and almost 50 percent are planning to increase those investments significantly.

THE PRIMACY OF END-TO-END CUSTOMER EXPERIENCES

Businesses increasingly realize that even when products don't lend themselves to digitization, the customer experience of buying and using them does. In everything from obtaining a mortgage to renting a car, companies are addressing the end-to-end customer experience to ensure that it is competitive in terms of speed, efficiency, and simplicity.

Passerini points out that digital technologies can be applied to two dimensions of the customer experience. The first is the front end and how the company interacts with its customers. But aligning back-end operations with customer expectations to make the experience smooth is equally important.

Front-end customer touchpoints, such as company websites, have been a major focus. Almost 50 percent of respondents report that their companies support these touchpoints with digital technologies to a significant extent (8 to 10 on a 10-point scale). Among leaders, the number rises to 75 percent. However, non-customer-facing functions such as accounting, sales operations, auditing, and procurement are also becoming important focuses. About 40 percent of companies overall and 62 percent of leaders are supporting these operations to the same extent as they do customer-facing touchpoints.

The Importance of Aligning the Back End with Customers

Companies that focus on how back-office functions help meet customer-experience expectations have a pronounced edge in business performance. For example, only 5 percent of companies that place little emphasis on supporting back-end operations with digital solutions are achieving positive business outcomes from digital technologies overall. Among companies placing a stronger emphasis on embedding digital here, the number leaps to 62 percent. Similarly, only 4 percent of businesses with little digital focus on non-customer-facing operations say that digital technologies are putting their company ahead of the competition. The number jumps to almost 50 percent among those diligently addressing back-end touchpoints with technology.

“Machines learn by recognizing patterns among thousands or millions of inputs. If processes aren’t standardized, there won’t be any meaningful patterns for machines to recognize and learn from.”

Caroline Basyn, senior vice president of international business services, Mondelēz International

Marriott International is a case in point. The hotelier has moved systematically from digitally fortifying front-end experiences to strengthening customer interactions on the back end. The company began using digital technologies to market its hotels and lure customers with compelling and efficient online booking processes. With more than \$12 billion in annual booking revenue coming through online channels, Marriott turned its digital attention to what George Corbin, senior vice president of digital, calls “winning the stay.” “This has been the biggest expansion of our digital strategy,” says Corbin. “We conducted extensive research into customer expectations after they book a room and are now trying to cater to these needs through digital technologies.”

Mobile check-in was one of Marriott’s first back-end digital forays. To make mobile check-in work required connecting enterprise mobile applications to property systems at each of Marriott’s more than 4,000 hotels. To make the connection, Marriott created teams with members from Corbin’s digital group and the lodging operations worldwide who collaborated closely to work through the myriad details.

With the mobile check-in process under their belt, Corbin and the digital operations team began tackling guest services such as special requests. At several hundred hotels, guests can now make a special request through the Marriott mobile app. The guest can pick from a preselected list of popular requests, such as ordering extra towels or pillows. Guests can also send a text message with special requests such as dining recommendations or delivery of an anniversary gift to the room. To fulfill the request, Corbin says the hotels “ride the rails.” As he puts it, “Rather than create entirely new systems and procedures, we plug the digital requests into systems and protocols that already exist. This allows us to leverage on-property staff using procedures they are familiar with.”

The U.S. bank mentioned earlier offers another example. The company realized that to meet its customers’ expectation of seamless access to all their accounts in one place, it had to redesign and rebuild its receivables systems to create a single view of its customers. This was central to treating them in a holistic fashion instead of as a series of unconnected accounts.

A Lean Toward Artificial Intelligence

Westerman believes that Lean methodologies—a customer-focused process improvement approach—can and should play a role in harmonizing back-end systems. The harmonization of processes is essential to making back-end systems efficient and ready for enterprisewide digital solutions. “Lean can be very valuable in eliminating the spaghetti of business process and technologies,” he says. “It helps standardize processes from the perspective of what the customer wants and can help eliminate any inefficiencies in meeting customer demands.”

Robert Laubacher, executive director of MIT Sloan School of Management’s Center for Collective Intelligence, believes that machines will eventually take over much of this work. Laubacher sees two stages of technology development as applied to back-end processes, including those tied to customer interactions. The first is to use technology to automate routine processes. On the horizon, however, Laubacher sees increasing use of machine learning and natural language processing, which will allow computers to learn and perform more complex operations. Laubacher also believes that when new technologies are adopted, employees whose work is replaced can be “upskilled” to focus on higher-level tasks.

One of the world’s largest snack companies, Mondelez International, is exploring how these technologies can help address back-end systems. In the future, these applications will help unlock profitable business opportunities, such as improving the experience of selling directly to primary retail customers, responding more quickly to supplier inquiries, and improving employee experiences. “We are experimenting with artificial intelligence in everything from business planning to managing receivables,” says Caroline Basyn, senior vice president of international business services. “Robotics today can do more than process transactions based on rules. Through pattern recognition, they can learn these processes and make decisions.” As an example, she cites Mondelez’s experiments with computer-generated budget reports, where machine learning creates commentary text for tables and is currently accurate about 70 percent of the time—a figure that will improve as the technology learns.

Lean is essential to the use of artificial intelligence in operations. “Machines learn by recognizing patterns among thousands or millions of inputs,” Basyn says. “If processes aren’t standardized, there won’t be any meaningful patterns for machines to recognize and learn from.”

Lack of Enterprise Capabilities

Despite the efforts to create efficient and competitive end-to-end customer experiences, the results often fall short. When asked to rate how well their company’s mid- and back-office interactions align with customer expectations, only 17 percent of respondents say they meet those needs extremely well (8 to 10 on a 10-point scale). On the part of leaders, the number is higher but still less than half: 42 percent.

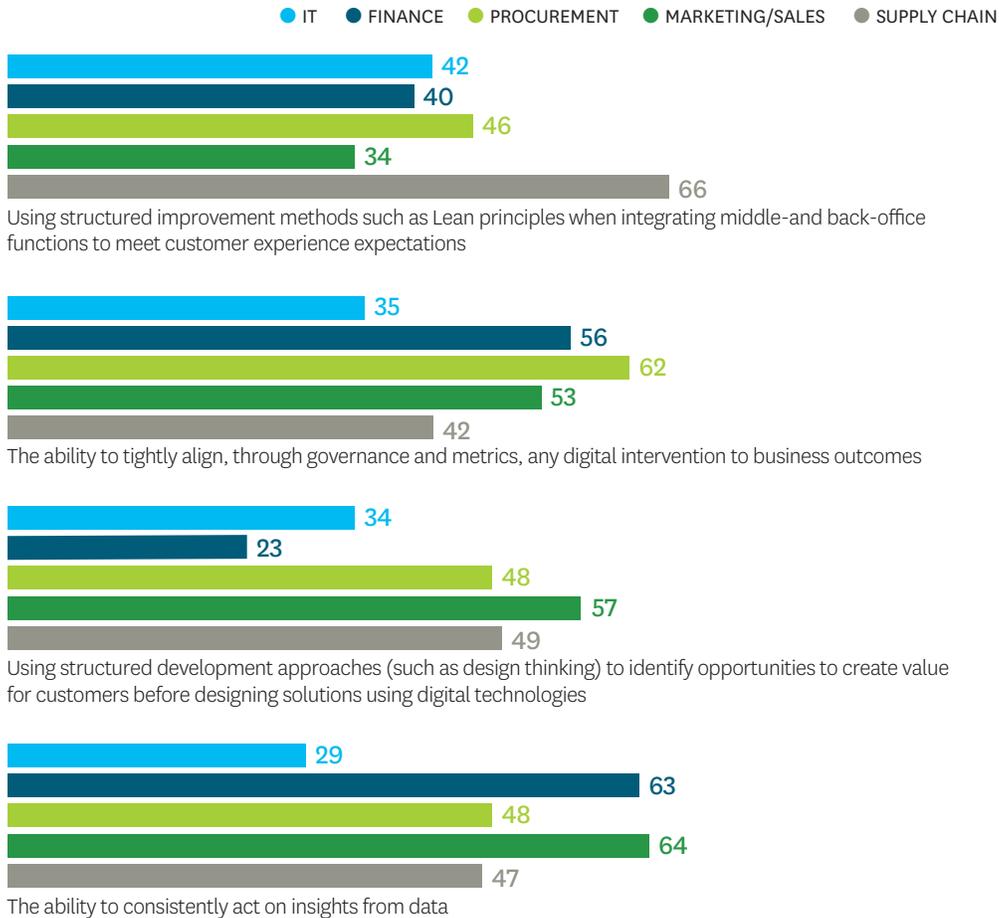
A major driver of the shortfall is a decided lack of enterprise capabilities to design new digital solutions and manage the organizational change needed to implement them. Respondents were asked to rate the effectiveness of several capabilities on the part of their IT organizations as well as other functions they are familiar with, including finance, procurement, marketing/sales, and supply chain. [figure 10](#) None of these scored especially well, and IT organizations often fare worse than others. For example, only 35 percent of IT departments have clearly defined metrics and governance in place to design and implement digital solutions that support business outcomes. With other functions, the numbers range from 42 percent for the supply chain to 62 percent for procurement.

Effective design-thinking capabilities also fall short. Only 34 percent of respondents say their IT organization has these capabilities, and marketing/sales is the only group that tops 50 percent. Capability gaps in design can hamper digital progress significantly. As technology changes the scope of what is possible, companies need sophisticated design capabilities in order to understand customer environments and develop novel solutions to customer challenges that are in sync with business capabilities.

FIGURE 10

WHICH CAPABILITIES DOES THE ORGANIZATION HAVE?

Capabilities that respondents perceive that their IT organization possesses as well as the function with which they are most familiar.



SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JUNE 2016

Structured improvement methods such as Lean are also not common. Only 42 percent of IT organizations are reported to have that capability. Among other functions, supply chain tops the list at 66 percent, possibly because of its history of working closely with manufacturing and other operations.

The ability to act on data doesn't fare well either. Only 29 percent of IT organizations are considered skilled at gleaning insights from data. This skill is more common on the part of finance and marketing/sales, but not significantly—63 percent and 64 percent, respectively.

In terms of leadership, CTOs and CIOs still lead the charge. [figure 11](#) Although the use of digital technologies is becoming central to how companies compete, only 39 percent of companies say their CEO is in charge of creating a vision for digital. In addition, the role of the chief digital officer doesn't seem to be gaining much traction. Only 16 percent of respondents say a chief digital officer drives their organization's digital vision.

FIGURE 11

EXECUTIVE ROLES LEADING THE DIGITAL CHARGE

Percentage indicating who in their organization is primarily responsible for creating the vision for digital technologies. [RESPONDENTS COULD CHOOSE UP TO THREE.]



SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JUNE 2016

A NEW TALENT MANDATE

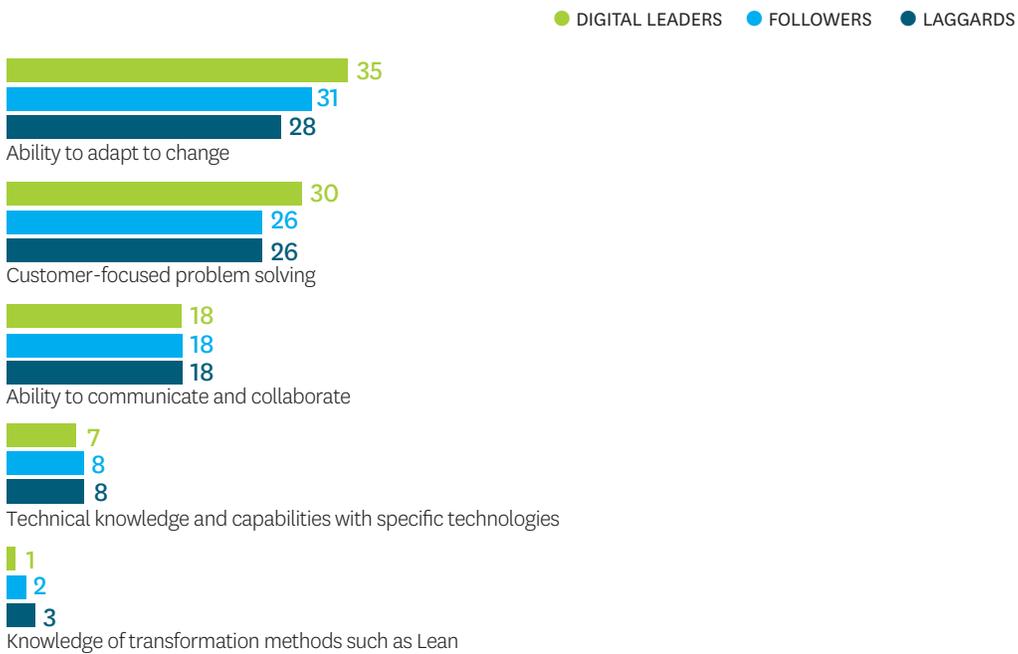
Reflecting the strategic impetus currently driving digital transformations, technology knowledge is falling toward the bottom of the list of the skills that companies deem most important. The skills most in demand—the ability to adapt to change, customer-focused problem solving, and collaboration and communication skills—underscore the growing focus on competitive capabilities and the barriers businesses face using technology to strengthen their competitive strength. Companies from all groups—leaders, followers, and laggards—agree on the types of skills their organizations need. [figure 12](#)

Despite the potential of Lean in digital transformation, very few organizations believe employees need knowledge of Lean methodologies. However, according to Westerman, “In trying to drive major transformational change, companies must often start by cleaning up messy systems and processes, and Lean can help that effort.” As artificial intelligence and machine learning increasingly step to center stage, organizations will need to clean up the mess if machines are going to learn.

FIGURE 12

SKILLS NEEDED TO HARNESS TECHNOLOGY

Percentage indicating which of the following are the most important skills for employees to have so that the organization can harness digital technologies. [RESPONDENTS' FIRST CHOICES ONLY]



SOURCE HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JUNE 2016

CONCLUSION: DIGITAL TRANSFORMATION BEYOND TECHNOLOGY

Although the digital transformation of business has been a corporate agenda item for several years, only a handful of companies are successfully harnessing digital technologies to grow and beat the competition. However, as the survey finds, the nature and trajectory of digital transformation are moving it far beyond a few companies. Where businesses once chased new technologies as the latest shiny object, organizations across the board are increasingly using digital technologies to strengthen their competitive capabilities. And they are expecting significant gains in business performance from their efforts.

But most companies still face obstacles that can prevent them from achieving their goals, including managing change, fostering risk-tolerant cultures that encourage experimentation, and aligning back- and middle-office functions with customer needs. Most organizations also lack digitally relevant capabilities such as customer problem solving and improvement approaches such as Lean. Digital leaders, on the other hand, have a solid enterprise digital strategy and vision in place. They have also overcome the barrier of organizational silos, and can assess the specific impact of digital solutions with metrics that pinpoint process interdependencies. As businesses strive to make their ambitions real, they can follow the example of digital leaders to build the required capabilities, can overcome transformation barriers, and can accelerate the pace and impact of their digital progress.

METHODOLOGY AND PARTICIPANT PROFILE

A total of 682 respondents drawn from the *Harvard Business Review* audience of readers (magazine/e-newsletter readers, customers, HBR.org users)

SIZE OF ORGANIZATION

Sixty-nine percent were in organizations with 10,000 or more employees, 13 percent were in organizations with 5,000 to 9,999 employees, and 19 percent had 1,000 to 4,999 employees.

SENIORITY

Thirteen percent of respondents were executive management or board members, just over a third (35 percent) were senior management, 37 percent were middle executive management, and 15 percent came from other grades.

KEY INDUSTRY SECTORS

Sixteen percent were in manufacturing (including 4 percent of respondents from consumer goods), 14 percent were in technology, 13 percent were in financial services, and 11 percent were in energy/utilities. Other sectors were each represented by 8 percent or less of the respondent base.

JOB FUNCTION

Fifteen percent of respondents were in sales/business development management and marketing; 9 percent each were in finance/risk, IT, and HR/training. Other functions were represented by 8 percent or less of the base.

REGIONS

Thirty-eight percent of respondents were located in North America, 37 percent were from Europe, and 25 percent were from the rest of the world.

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