



Center for Digital Transformation
Research Report



2020
**The State of Digital
Transformation in U.S.
Companies 2020:
6 Prescriptions for Success**

A new survey by UC Irvine reveals deep differences between digital leaders and laggards. Want to join the leaders? Make their best practices your own.

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Leadership for a Digitally Driven World™

Introduction

In today's fast-moving world of digital transformation, your biggest threat may not be from digital natives, but instead from traditional competitors.

Until quite recently, digital natives — most of them tech-savvy, pure-play startups — were widely feared. It seemed they would soon leapfrog industry stalwarts, rendering them obsolete. After all, isn't that what Amazon did to Borders...what Uber and Lyft did to big-city taxi fleets...and what Craigslist did to your local newspaper?

All this happened during digital transformation's first wave. Now a second wave is upon us. This time, older, more established companies have their competitors worried. While these organizations may not be digital natives, they've become today's new digital leaders by adding digital expertise and technologies to their deep base of industry knowledge and physical assets.

This combination of industry expertise and newfound digital skills can be formidable, especially when combined with bold new strategies. Consider how several large financial services companies — among them, JPMorgan Chase, Visa and Citigroup — are countering their industry's digital natives, the FinTechs, by embracing digital approaches, building new internal capabilities, and selectively partnering with and investing in startups.

Similarly, retail giant Walmart has augmented its 11,500 brick-and-mortar stores worldwide with a robust online shopping site. The company's longstanding technology prowess in supply chain now complements its online capability, and that's serving the company well during the coronavirus pandemic. Grocery sales alone on the Walmart.com site accounted for a massive \$900 million in just one recent month, double the amount it took in during the same month a year earlier [1].

Indeed, in our survey of nearly 200 executives at North American companies, close to three-quarters (73%) of respondents said they face increased competition from established companies that have implemented ambitious digital strategies. That's substantially more than the 57% of respondents who said they face increased competition from digitally-focused startups.

Importantly, our survey also found a large gap between digital leaders and laggards. This gap is likely to grow during the current COVID-19 pandemic. Organizations that can seize the moment — for example, by moving rapidly to new delivery models, the way colleges and universities have swiftly adopted online learning — stand to gain. Those that instead put their digital efforts on hold could find themselves, once the pandemic ends, in deep trouble.

Digital progress abounds

To be sure, many organizations have made a great deal of progress in digital transformation. In our survey, more than half (55%) of the respondents said digital transformation now plays a part in their organization's overall growth strategy. And nearly 1 in 5 (19%) said digital transformation is key to the organization's overall success.

¹The Motley Fool, "Online grocery shopping at Walmart doubles during the pandemic," 4/18/20, <https://www.fool.com/investing/2020/04/18/online-grocery-at-walmart-doubles-during-pandemic.aspx>.

Spending on digital transformation is rising too. Prior to the pandemic, total worldwide expenditures on digital transformation technology and services were forecast to hit \$2.3 trillion by 2023. This would represent more than half of all IT spending for that year [2]. While IT spending will almost certainly drop — IDC now says by nearly 3% this year — no one expects digital transformations to halt [3].

As many organizations have discovered, digital transformation is far from easy. In our survey, respondents noted challenges to their digital transformation efforts that included cultural resistance (cited by 51% of respondents), a lack of budget or other resources (64%), an unwillingness to fund digital transformation from the operating budget (43%), and other initiatives taking higher priority (69%).

Still, other barriers to digital transformation included cybersecurity concerns (cited by 77% of respondents), a lack of cooperation between departments or divisions (51%), and risk-management and legal implications (53%).

In specific industries, digital transformations face particular challenges. For example, one survey respondent, a manager with a financial services and communications company, said, “The complexity of moving money across borders and currencies creates significant operational and risk-management challenges.” By contrast, another respondent, an executive with a regional airline, told us, “The best result comes when we can align quickly to business initiatives and deliver digital iteratively. But this is not yet true for all our initiatives.”

Six best practices for digital leadership

Given the many pressing challenges faced by organizations along their digital transformation journeys, you may wonder how your organization can best move forward.

Based on our survey, we’ve identified a half-dozen best practices. To dramatically increase your organization’s odds for a successful digital transformation, we recommend you follow these six prescriptions:

1. Educate and engage top managers (possibly including yourself)
2. Define your digital strategy carefully — then execute just as carefully
3. Allocate the capital needed for vital resources, including people, expertise, intellectual property and technology
4. Strengthen your cultural and organizational “muscle,” notably around agility and collaboration
5. Build the capacity to recruit and develop top digital talent
6. Get smarter about technology — both its capabilities and limitations

To help you implement these best practices for digital transformation, here’s a more detailed description of each, along with supporting statistics from our recent survey. To make the main takeaways even clearer, in many of the accompanying charts, we’ve separated the data into two important categories:

- **Leaders:** Representing 14% of our survey respondents, these executives describe their organizations as being *significantly* ahead of their closest competitors in the use of digital technology.
- **Laggards:** Representing 28% of those we surveyed, these leaders categorize their organizations as either *slightly behind* or *significantly behind* their closest competitors in using digital technology.

² IDC, “Worldwide spending on digital transformation will reach \$2.3 trillion in 2023,” 10/28/19, <https://www.idc.com/getdoc.jsp?containerId=prUS45612419>.

³ IDC, “IDC forecasts a drop in IT spending in nearly every industry in 2020 due to COVID-19, but the scope of these reductions will vary across industries,” 4/21/20, <https://www.idc.com/getdoc.jsp?containerId=prUS46228020>.

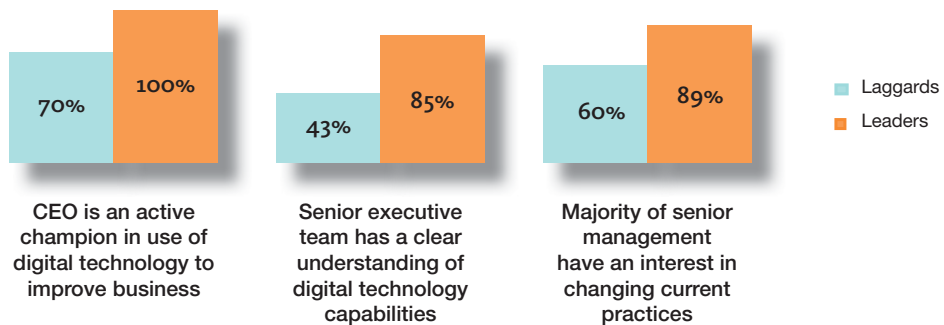
The remaining 58% of the total survey base described themselves as either on par with their competitors' use of digital technology or *slightly* ahead.

1. Educate and engage top managers

Digital transformation is a top-down activity. Because these efforts are costly, time-consuming and involving not just IT, but nearly every department, they're best led by executives at the C-level. That should include the CEO and CIO, of course, but can also include the chief officers of finance, marketing and other affected functions. And due to the high cost of digital transformation, it may be appropriate for board members with budget-approval voting rights to get involved too.

That's very definitely the case for digital transformation leaders, but with the laggards, it's not. [See Figure 1.] Among leaders, *all* say their CEO is an active champion in the use of digital technology to improve the business. But among laggards, only 7 in 10 can make that same claim. Moreover, a large majority (85%) of the leaders say their senior executive team clearly understands the capabilities of digital technology. But among the laggards, that's the case for fewer than half (43%). An even larger percentage (89%) of leaders say a majority of their senior managers are interested in changing current business practices. Among the laggards, that interest is found among a much smaller group — 60% of all. Taken together, senior management at laggards just isn't ready for digital transformation.

Figure 1. Top management engagement



The laggard mentality is well presented by one survey respondent, an executive with a natural resources company: “Our senior executives...have a mindset that technology is a tool to reduce costs and increase production — versus being able to transform the business model.”

2. Define your digital strategy carefully — then execute just as carefully

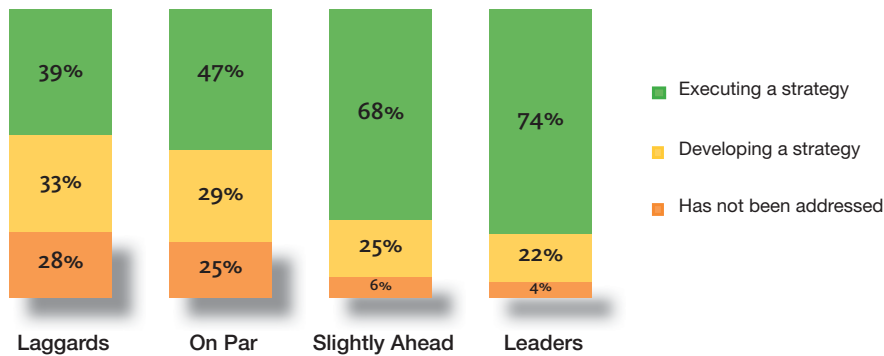
Digital transformation is most definitely *not* a seat-of-the-pants operation. These projects are massive, costly and lengthy. Drawing up a comprehensive, detailed strategy is nothing less than essential.

Execution matters too. Without it, even the best-laid plans will go awry. And with so much at stake, that's not how any organization wants its digital transformation to go.

These assertions are backed up by our survey results. Many laggards, almost by definition, have not yet even addressed their digital strategy. Among them, that's the case for more than one in four (28%). Another one in three laggards (33%) are still in the midst of developing their digital strategy. That's over 50% who don't have a defined strategy yet. [See Figure 2.]

In our survey, the leaders in digital transformation are also leaders in digital strategy. Nearly three-quarters (74%) of leaders not only have a digital strategy, but they're also executing on it.

Figure 2. The leaders have a plan

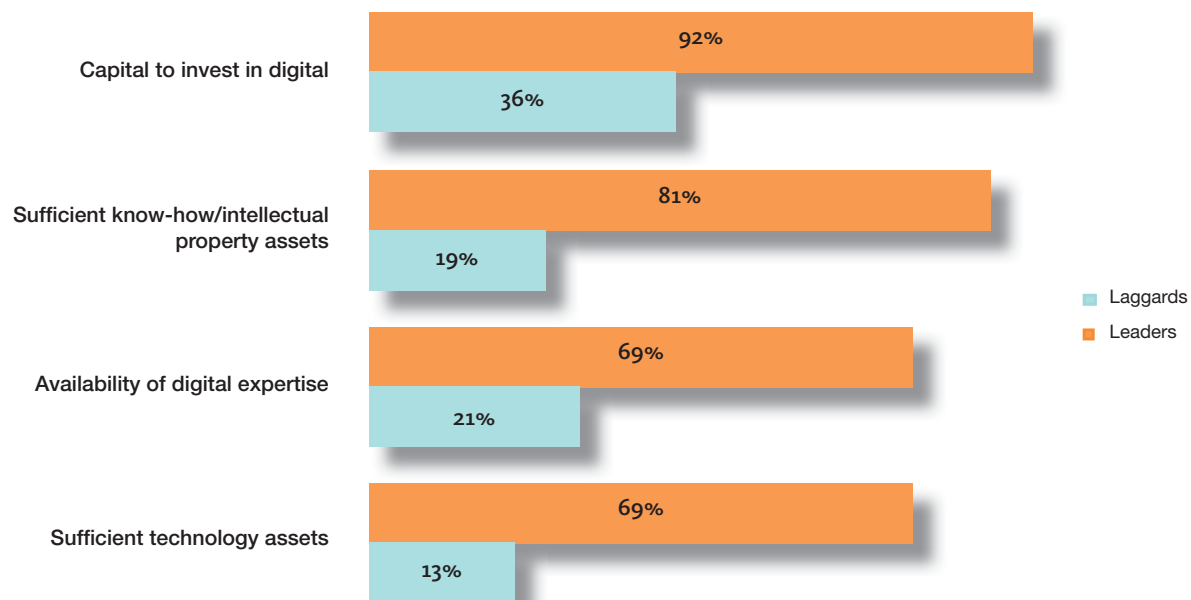


3. Allocate sufficient capital for vital resources

Given the broad reach of most digital transformation efforts, these projects are bound to be resource-intensive. This isn't an opportunity for half measures. Organizations that succeed with digital transformation are doing so in part because of their willingness to invest sufficient capital in staffing, training, expertise, intellectual property, technology and related services.

When it comes to allocating capital for digital leadership, our survey reveals an enormous gap between digital transformation leaders and laggards. [See Figure 3.] Nearly all (92%) the leaders have allocated sufficient capital, but that's the case for only about 1 in 3 of the laggards.

Figure 3. Leadership capabilities for digital transformation



That’s not to say leaders are spending wildly or blindly. On the contrary, the best plans will include calculations for an improved return on investment (ROI), competitive positioning and other important factors. But if you aren’t allocating capital to digital transformation, you don’t stand a chance.

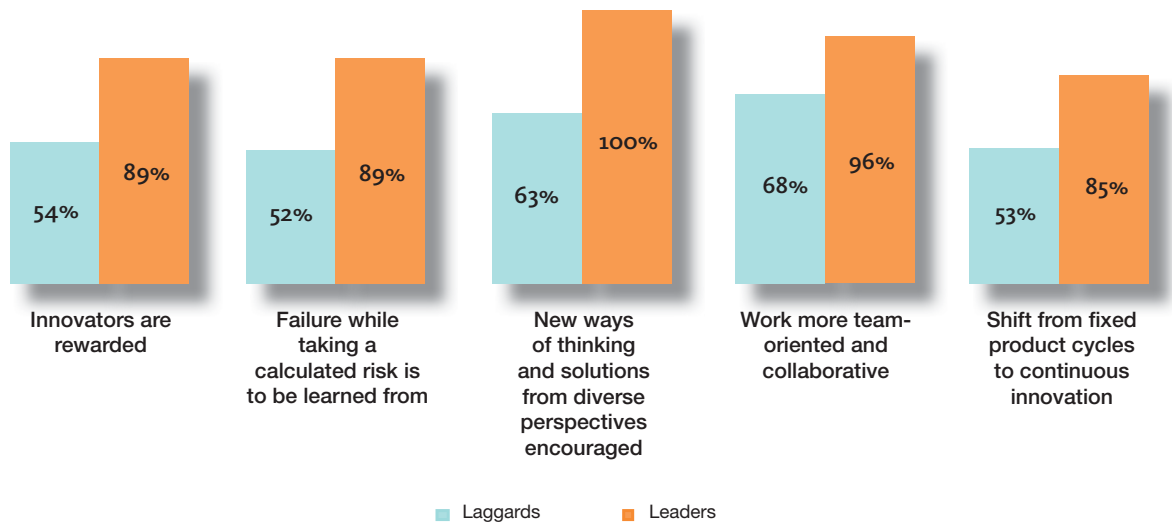
Other gaps separate digital leaders from laggards, too, and in some cases, they’re enormous. Take having sufficient know-how and IP; it’s abundant with 81% of the leaders, but only 19% of the laggards. We found a similar gap on the availability of digital expertise; 69% of leaders say they have it vs. only 21% of the laggards. Another big gap exists around having sufficient technology assets; it’s on hand for 69% of the digital leaders, but only for 13% of laggards. Software is codified knowhow. If a company doesn’t have distinctive knowhow, it will struggle to differentiate itself. Technology assets and talent are the foundation of digital transformation. If a company doesn’t have these, it simply cannot compete.

4. Strengthen your organization’s ‘muscle’ — especially around agility and collaboration

Digital transformation isn’t a task for the uncommitted. On the contrary, it makes demands that require organizations to adopt new and unfamiliar ways. These include rewarding innovation; accepting new, higher levels of risks; and collaborating not just within a team or group, but also across functions, perhaps even across the entire organization.

In this area, our survey once again identified a profound gap between the leaders and the laggards. [See Figure 4.] Our leaders scored high (85% or higher) on all five factors of organizational “muscle” — rewarding innovation, learning from failure, thinking in new ways, working collaboratively, and innovating continuously. But the laggards, by comparison, were far less likely to display these characteristics. Of the five important organizational characteristics, three of them — rewarding innovation, learning from failure, and continuous innovation — were found at only about half the laggards.

Figure 4. What’s your organizational working environment?



One longstanding issue is the inability of IT groups to align their activities with top business goals and strategies. While this problem dates back to the early days of business computing, it takes on a special significance in this age of digital transformation. Yet in our survey, nearly half (46%) of all respondents say

they have collaboration and alignment between digital and business-unit teams only to *some extent*, a *small extent*, or *not at all*. And fewer than one in five (18%) say they have this kind of IT-business collaboration and alignment to a great extent.

In one ironic twist, some of the organizations most resistant to developing these “muscles” are those that have been most successful — until, that is, quite recently. “Our past success is an enemy of change,” said one survey respondent, an executive with a medical-technology provider. “We have not been a digital company, but have seen very good growth in the last decade. There is a burgeoning awareness of our need to embrace digital, but we’re not sure where to start.”

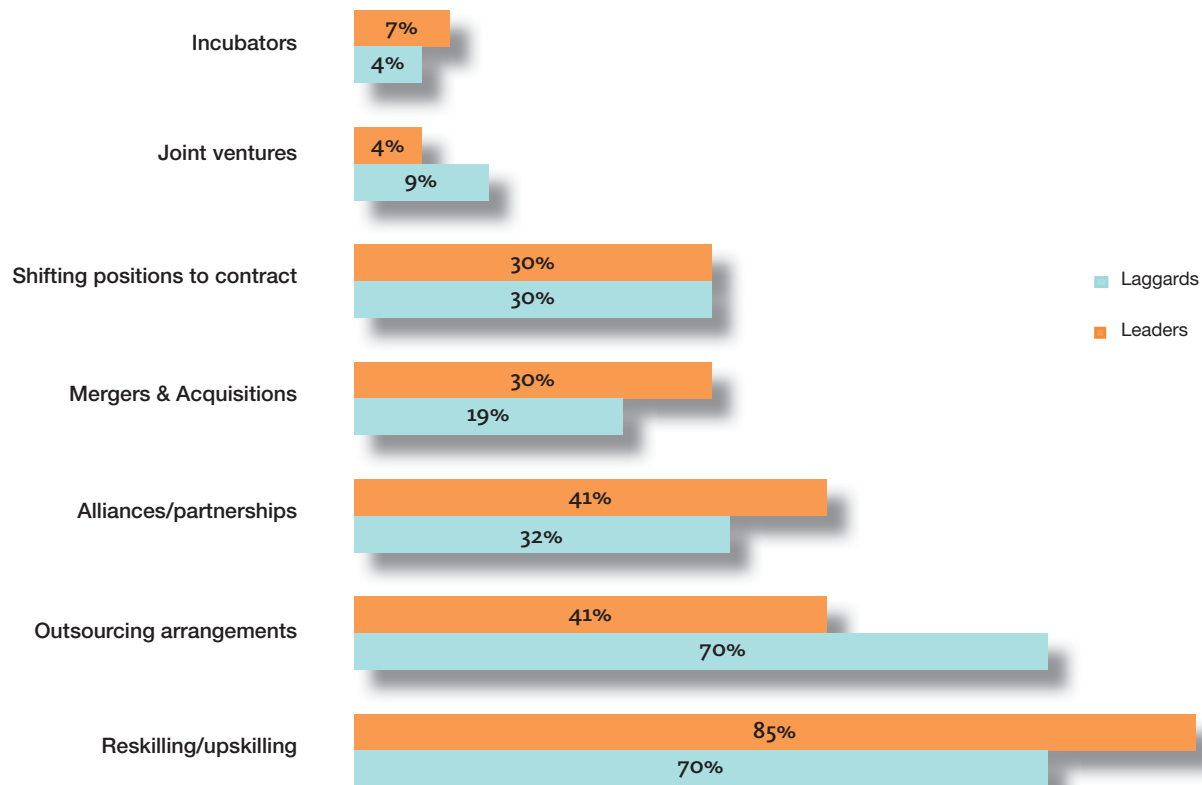
5. Gain the ability to both recruit and develop top digital talent

For an organization to succeed at digital transformation, it needs a great deal of technical talent. While that may sound obvious, the much-acclaimed skills gap is real. Nearly one in five (19%) survey respondents say technical talent for innovation exists in their organizations either *not at all* or only to a *small extent*. Only 12% said they have technical talent to a *great extent*.

Perhaps typical was this comment by a manager at an events organizer: “We need to change the culture of our employees to become more digital-savvy. [Our] existing employees don’t have a strong understanding of this stuff.”

Similarly, when asked to assign their organization a grade for digital transformation knowledge, nearly one in 10 of our survey respondents gave themselves a grade of *poor* or *very poor*. More than half (55%) only gave themselves a grade of basic or fair. And just 6% gave themselves a grade of *excellent*.

Figure 5. How organizations add tech-savvy employees



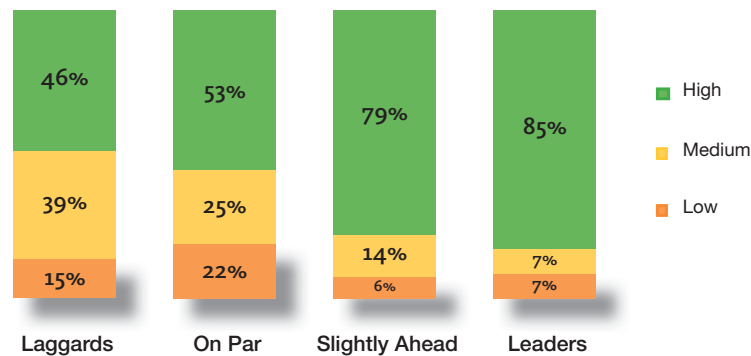
It follows that roughly seven in 10 respondents say they're actively recruiting employees to help fill their organizations' technical gaps. That's not to say this work is easy. In fact, more than three-quarters of our respondents say it's difficult.

In their quest to add tech-savvy employees, organizations are exploring several approaches. [See Figure 5.] These include incubators, joint ventures, and shifting employees to contract-worker status. But our survey reveals that the real differences between digital leaders and laggards come in four other areas. Outsourcing shows a significant gap; it's used by over two-thirds (70%) of the laggards to bolster their technical skills, but by fewer than half (41%) of the leaders. Instead, leaders rely on training for reskilling and upskilling (cited by 85%), alliances and partnerships (41%), and mergers and acquisitions (30%). In each of those three practices, the laggards lag by roughly 10 to 15 points.

6. Get smarter about technology's capabilities — and limitations

Leaders in our survey are nearly twice as likely as laggards to be advanced users of software, including platforms, analytics and applications. [See Figure 6.] Among the leaders, 85% are *high* users of software, whereas that's the case for fewer than half (46%) of the laggards.

Figure 6. Software as a source of value and competitive advantage

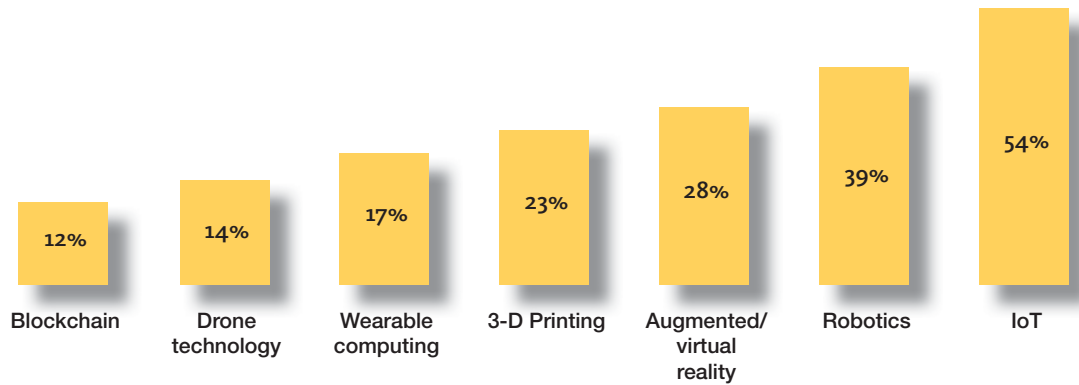


What's more, respondents to our survey say they're increasingly using software to improve *business* results. These include improvements to operational performance, understanding of customers, interactions with suppliers, and product know-how.

Indeed, software has become so important to digital transformation, more than a quarter (28%) of survey respondents say that in addition to their core business, they are now also software companies. An even larger group (41%) say they've become more of a software-driven business. And a commanding two-thirds (67%) say that software at their organization is now a necessary core competence.

Agile approaches to software development have caught on rapidly. Including scrums, Lean and Kanban, these approaches are now used by three-quarters of our survey respondents. However, among digital transformation laggards, these approaches are meeting resistance. While "fail fast" is a chief tenet of Agile approaches, one survey respondent, an executive with a building-materials manufacturer, reports that "failure is frowned upon."

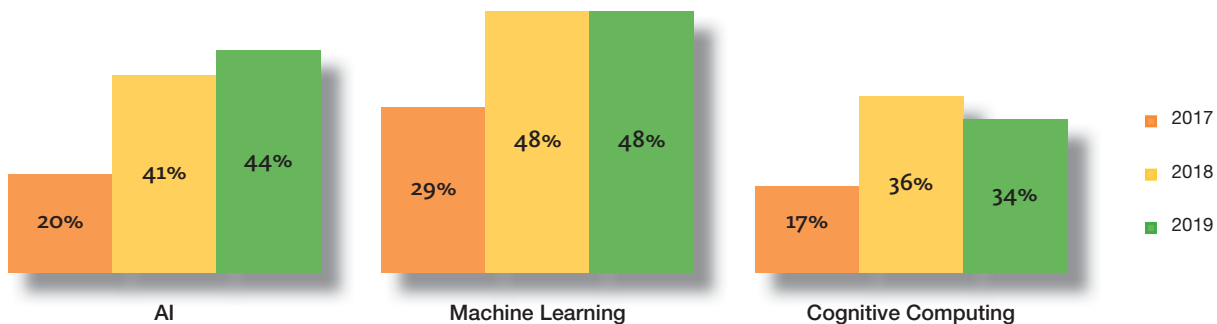
Figure 7. Emerging technologies in use



Not all emerging technologies are created equal. Some are simply more important for digital transformation than others. [See Figure 7.] Survey respondents told us that their most important emerging technologies are IoT (being used by 54%), robotics (39%) and augmented/virtual reality (28%). The least important? They're wearables (used by only 17%), drones (14%) and blockchain (12%).

In addition, some emerging technologies continue to fall short on delivering their promised benefits. Our survey suggests that's the case for artificial intelligence (AI) as well as two related technologies, machine learning and cognitive computing. [See Figure 8.] Over the last three years, and especially over the last two, the use of these technologies among our survey respondents has barely grown at all.

Figure 8. The limits of growth (percentage using by year)



One likely reason for this sluggish growth: Many organizations lack the advanced skills these technologies require, and they're finding it difficult to bring these skills on board. As stated above, three-quarters of our survey respondents say they're having difficulty recruiting digital-savvy employees. And only about one in 10 say the technical talent needed for innovation is available in their organization to a great extent.

Also, with technology developing and changing so quickly, some organizations worry that past investments can become obsolete in the future. "While we need to modify and improve our digital systems quickly," says one respondent, an executive with a regional utility, "we also need to minimize the risk that significant investments will be outdated quickly as technology continues to improve. This also makes it hard to justify additional digital funding in the future."

Hard work, real benefits

Clearly, digital transformation is a lot of work. But is it worth the effort?

Our survey findings provide clear affirmation that it is. Over half of our survey respondents (52%) say their use of digital technologies has improved the customer experience to either a moderate or great extent. Respondents also say their use of digital technologies has improved their internal communications (cited by 46%), enhanced employee productivity (55%), helped to develop new business models (37%), and created the ability to respond quickly to new business opportunities (43%).

The benefits can be even more concrete. For example, nearly two-thirds (62%) of our survey respondents say their use of digital technology has enhanced existing products and services. Other concrete benefits reported include launching new products and services (cited by 54%), launching new businesses (27%), and opening new markets (31%).

The COVID-19 pandemic is further accelerating digital transformation. While the situation is difficult for all industries, digital leaders will use the moment to adjust their strategy, then continue making progress. For example, consider a pharmaceutical company that's testing a new medication. Prior to the COVID-19 pandemic, it enrolled patients in a randomized clinical trial. But now, patients cannot visit the testing site. They can't have their clinical data collected, their safety monitored, or their progress tracked. Nor can they receive the next round of medication. Instead, the sponsor is switching mid-stream to a distributed trial, in which home nurses visit patients to collect data and administer medications.

Even in the midst of this massive business disruption, digital transformation is here and now. The business benefits are real.

Methodology: How we conducted the survey

This report is based on a State of Digital Transformation in Business survey conducted by the Paul Merage School of Business at the University of California, Irvine. The survey was conducted from Feb. 13 to May 5, 2019. A total of 193 questionnaires were completed.

Respondents reported working in a range of industries, including manufacturing (21% of all respondents), finance and insurance (10%), transportation (8%), healthcare (7%) and professional services (6%). All survey respondents worked for organizations based in North America.

By job title, respondents told us they hold senior business and technical positions. Their titles include chief executive officer, president and managing director (18% of all respondents); chief financial officer, treasurer and comptroller (also 18%); chief information officer and other technology director positions (24%); and senior vice president, vice president and director (9%).

At the time of the survey, many of our respondents worked for large organizations. Nearly nine in 10 (87%) were employed by organizations with at least 1,000 employees. And almost two-thirds (65%) said they work for companies with annual revenue of at least \$1 billion. Nearly nine in 10 of these organizations were incorporated before 2005.



About the Authors

Vijay Gurbaxani is the Founding Director of the Center for Digital Transformation and Taco Bell Professor of Business & Computer Science at UC Irvine. His research, teaching and consulting interests are at the intersection of business strategy and information technology (IT). His approach is distinctive in its use of economic principles as the lens with which to analyze strategic management questions. Vijay has extensive experience in management education and advisory services, having lectured worldwide on management issues, taught extensively in degree and executive programs, and consulted for and provided research expertise to Fortune 500 companies, technology service providers, and consulting firms.

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About the Center for Digital Transformation

The Center for Digital Transformation, a Center of Excellence at The Paul Merage School of Business at UC Irvine, has been built on the belief that digital technologies are transforming the strategy and structure of business enterprises. The Center's vision is to be an influential voice and catalyst for advancing the competitiveness and productivity of businesses in the digital economy by providing executives with a better understanding of the dynamics of this profound technological shift and of what these forces mean for their industries and organizations.

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