OXFORD ECONOMICS

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Trusted Global Innovator

AI ACCELERATED

The great shift to artificial intelligence and automation

THE GREAT ACCELERATION

2020 has been a year of trend acceleration. Organizations already under pressure to rapidly rethink processes, products, and services to stay competitive in the digital economy suddenly had to make those innovations happen overnight as the COVID-19 pandemic and widespread social unrest called everything into question, from business models to talent strategies. These massive disruptions around the world sped up demand—and raised the stakes—for digital reinvention and the new ways of working it enables.

At the heart of these big changes is the set of emerging technologies enabled by artificial intelligence (AI). Applications of AI once expected to roll out in incremental phases were deployed quickly to digitize customer experiences, manage supply chains, and support modified operations. Other AI-enabled technologies are playing big roles in supporting agility, too. AI virtual agents have come from laboratories to kiosks and retail sales environments as demand for touchless contact increases. Robotic process automation (RPA) has become core to maintaining efficiency, and predictive analytics enables responsiveness in a volatile marketplace.

But adoption of AI is uneven, with some organizations already realizing value from advanced applications while others struggle to catch up. To understand progress toward AI implementation in North America, Oxford Economics and NTT DATA surveyed 1,000 executive and non-executive employees across industry sectors about their current and planned tactics for organizational transformation. The senior executives in our sample speak to long-term strategies, while the employees report on how successfully—or unsuccessfully—leadership visions are being translated into action.

This research was conducted in early 2020, largely before the onset of the COVID-19 pandemic, and shows that most companies were not using AI at scale when the world changed. The data also points to essential next steps on the AI journey as companies respond to the new business environment, and identifies where early leaders are seeing returns on their investments.

The following themes emerged from our primary research:

Developing a culture of speed

Markets are being remade in terms of opportunity, operations, and customer expectations, and there is no going back to the old pace of innovation.

An ongoing focus on AI implementation

Organizations must have a clear plan for integrating AI and AI-enabled technologies into every aspect of their business, and solidifying processes around data collection and analysis needed to make that happen.

Upgrading workforce strategies to prepare for change

The uncertain economy will only amplify talent and change-management issues. The need for change does not make everyone suddenly good at change.

The ethics of AI

Executives and employees do not always see eye-to-eye about AI strategies and the risks of turning decisions over to machines.

The rewards for getting AI right

Companies that are furthest along—in terms of AI adoption levels, employee training, leadership understanding, and performance management—tend to report stronger business results than others.

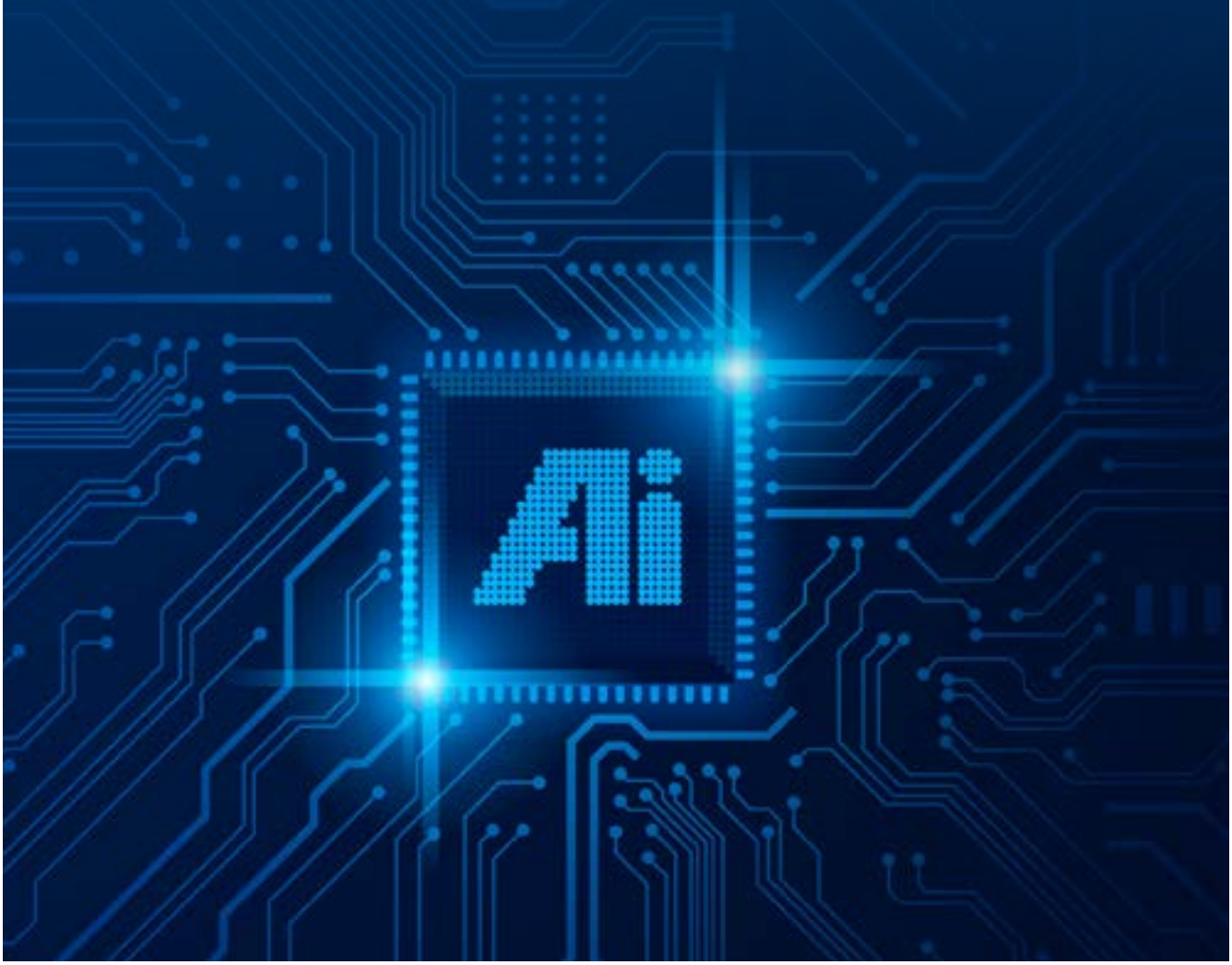
The new sense of urgency does not erase the challenges that have defined AI adoption in the past; it just means leaders have more at stake as they respond to these evolving barriers. Organizations do not have money or time to waste on technology investments gone wrong—so they must pivot their organizations to focus on agility, talent, change management, ethics, and other pressing issues.

WHAT IS ARTIFICIAL INTELLIGENCE (AI)?

Ask a room of executives to define artificial intelligence, and a heated discussion will likely ensue. Even experts bring a wide range of definitions to the technology, and often conflate the term with other related tools or AI-powered applications.

For the purposes of this study, we define artificial intelligence as an advanced software that uses algorithms to mimic human thought processes and senses in order to make complex decisions, "learn" from past operations, and modify its behavior to improve performance over time. General AI is distinct from applications that may be AI-enabled, such as chatbots, virtual intelligent agents, natural language processing, predictive analytics, automation, and robotic process automation (RPA).

Understanding the differences between these applications of AI is critical for implementing it successfully. As businesses adopt emerging technologies, they must have a coherent plan that separates the sometimes vague and overly optimistic coverage of "AI" from the capabilities and potential of specific tools.



RAPID REINVENTION

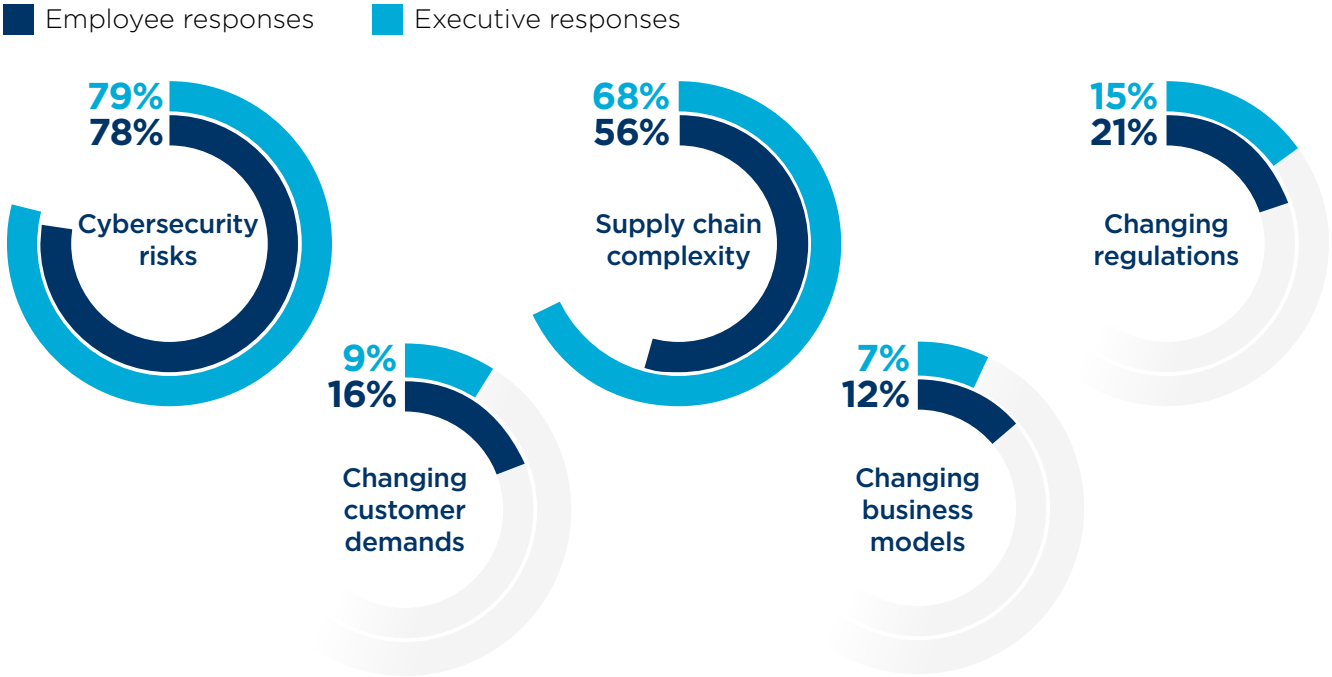
The pace of change is faster than ever. This revolution is happening at every level, from global business, political, and regulatory environments to the specific technologies and processes that make organizations run. Moving quickly has become even more important, as disruptive competition materializes rapidly and innovative responses to the pandemic could mean the difference between success and failure.

Our survey shows that many are feeling the pressure to adapt to new technologies. About half of executives say a failure to implement AI would cause them to lose customers to competitors, and 44% think their organization's bottom line would suffer. Employees are on the same page, and also expect big changes: 49% agree there will be major changes to the tasks required by their organizations in the next three years, and 41% say AI will disrupt their industry.

This rapid technology adoption must happen even as broader changes threaten business as usual. More than three-quarters of executives and employees expect cybersecurity risks—already a challenge before the pandemic pushed more services and processes online—to have a negative impact on operations. Supply chain complexity also poses a challenge, with two-thirds of executives and over half of employees expecting a negative impact.

Fig. 1: Big challenges ahead

Q: To what extent do you expect the following to have an impact on your company's operations in the next three years? *"Significant negative impact" and "Some negative impact" responses combined. Top five employee and executive responses shown.*



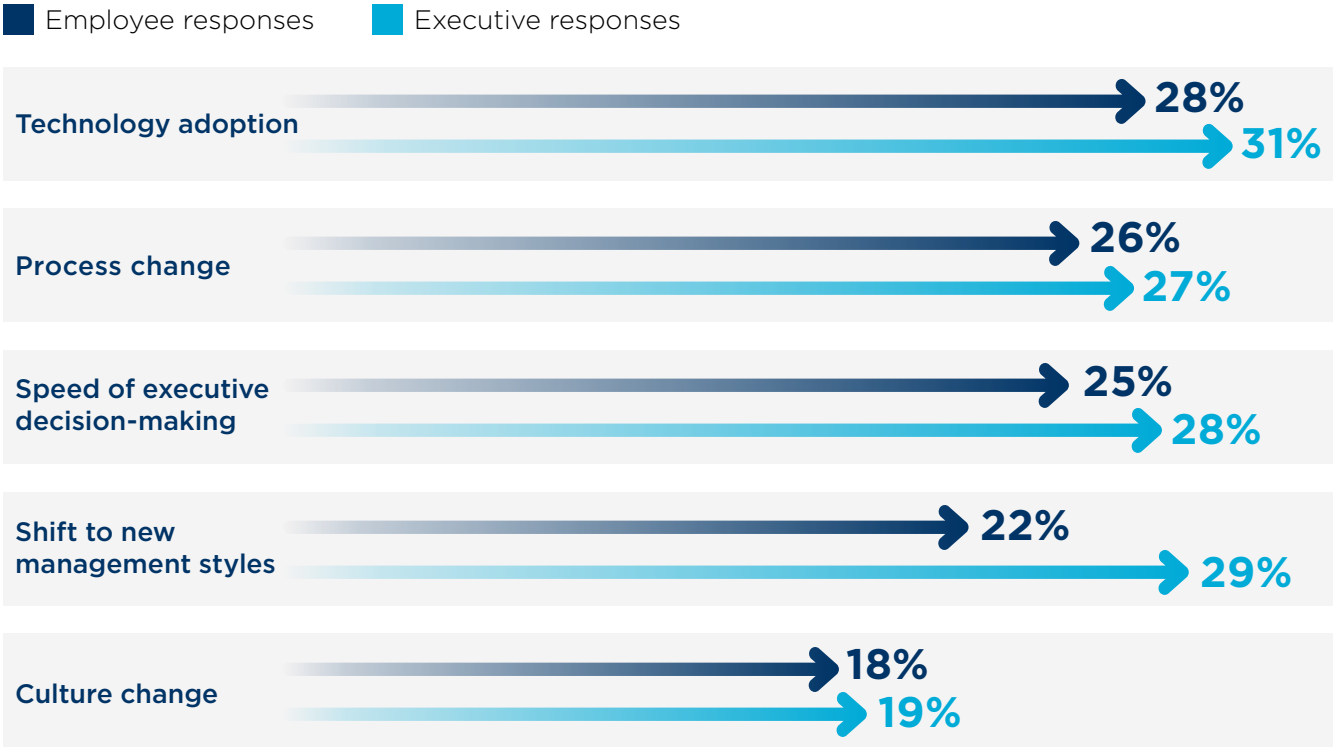
If implemented effectively, emerging technologies like automation and AI should increase responsiveness in these areas—for example, by quickly identifying and alerting cybersecurity teams to breaches, or by predicting supply chain disruptions.

Yet most organizations we surveyed could be moving faster to adapt. Under one-third of employees (29%) say they feel the need to adjust to new ways of working with AI, a sign that many doubt the sweeping technology changes will affect them personally—perhaps one reason technology adoption tends to happen more slowly than leaders hope or plan for. About one-quarter to one-third of executives and employees describe the pace of technology change, process change, or executive decision-making at their company as stagnant or slow. Culture—which plays a major role in determining how workers respond to disruptions, like those faced during the COVID-19 lockdowns—also tends to be slow to change.

Even as organizations look to increase the pace of transformation around technology, processes, decision-making, and culture, they must consider risk at every turn, carefully prepare employees across the organization, and adjust ways of working with external partners.

Fig. 2: Change could be happening faster

Q: For each of the following business areas, which most accurately describes the pace of change at your organization? *"Fast" responses (as opposed to "Stagnant," "Slow," "Moderate," or "Don't know"). Employee and executive responses shown.*



AI GOES MAINSTREAM

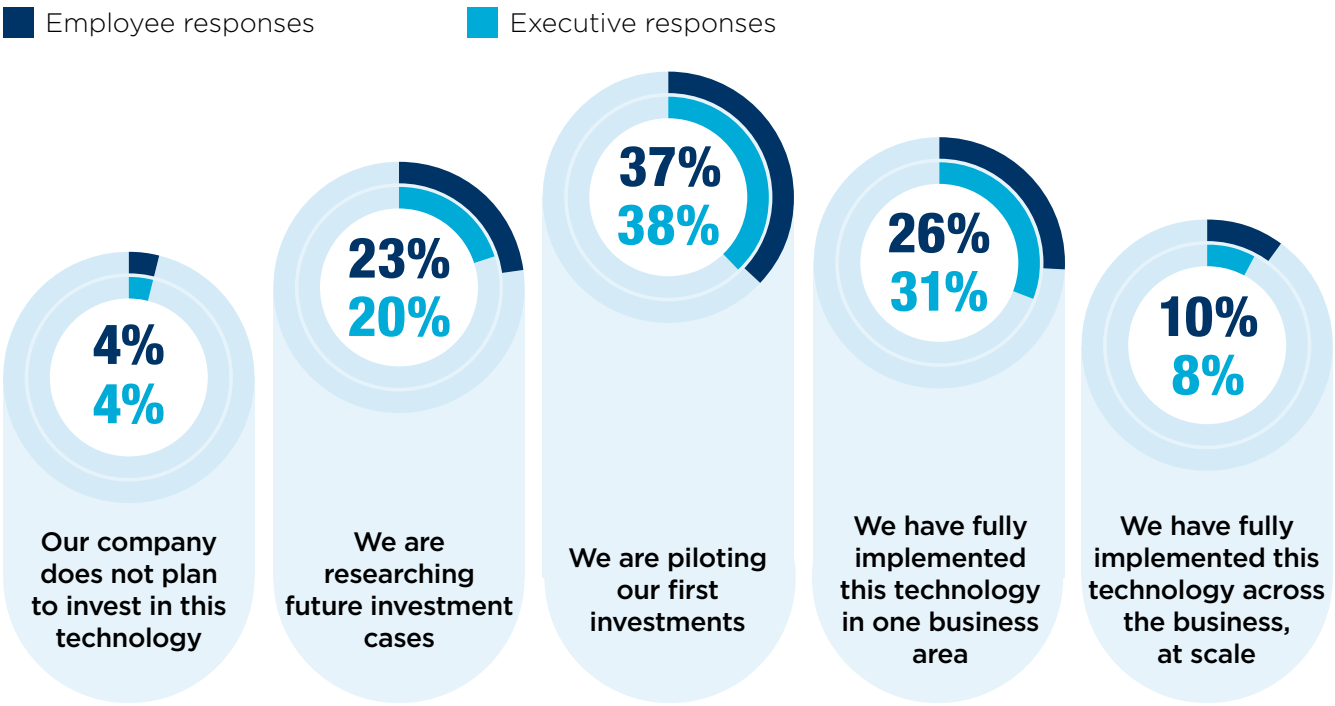
Artificial intelligence—in conjunction with more-established technologies like cloud—is widely understood as critical to success in a growth-oriented economy, from interactions with customers to product and service innovation. But it is even more important in an uncertain economy, especially as more products and services go digital to accommodate major disruptions such as the pandemic-driven lockdown.

When we asked our executive survey respondents how important various technologies are to performance, efficiency, and productivity—metrics that have become even more important in a crisis—over half (53%) cited AI as critical or very important, outranked only by cloud. Other technologies, such as machine learning, predictive analytics, robotic process automation, and natural language processing, are also seen as important. (See page 4 for more on how we define true artificial intelligence, vs. other AI-enabled tools.)

The survey shows that before the pandemic hit, AI investment was already under way at most firms. Nearly three-quarters (70%) of executives say AI has been strategically implemented in key functions to optimize specific processes. But AI should become even more of a priority as organizations recover from pandemic-related disruptions that underscored the importance of speed, agility, and efficiency: as Fig. 3 shows, only about 10% of respondents have fully implemented the technology across the business at scale.

Fig. 3: AI investment has room to grow

Q: To what extent has your organization invested in artificial intelligence? *Employee and executive responses shown.*



What slows adoption? Part of the challenge may be that AI cannot be implemented the same way technologies that predated it were. "It may [...] take a long time to develop and fully implement AI systems, and there are few if any shortcuts to the necessary steps," wrote Vikram Mahidhar and Thomas H. Davenport in an article for the *Harvard Business Review* in 2018.[1] Two years later, many executives remain unprepared to follow the implementation roadmap, even as they aim to accelerate their investments and ROI. Less than half of executives in our survey say their organizations have identified a specific use case for AI (47%) or tested AI internally (44%). Just two-thirds of executives say their organization has a process in place to monitor AI performance. Governance, talent, and integration into existing systems—each cited as important by Mahidhar and Davenport—also need improvement.

Perhaps the most essential determinant of AI success is data, which must be plentiful, high-quality, secure, and capable of being understood and applied by the workforce. Our survey respondents are reasonably confident in the management, quality, usefulness, and security of their data, though just one-third to one-half are completely confident.

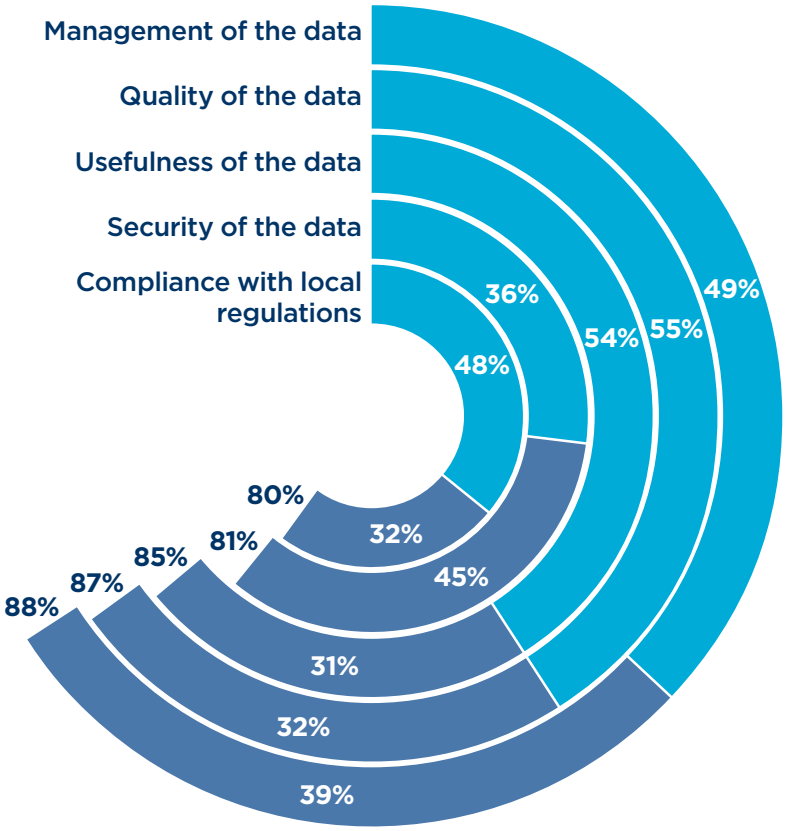
This finding is broadly in line with previous research conducted by NTT DATA and Longitude Research. That study found that, even as 79% say they understand the value of their data, only one in 10 use it to transform their organization. The ability to collect higher-quality data—and quickly act on those insights—will become more important in the wake of COVID-19.

Fig. 4: Executives are relatively confident in data strategies—though few are completely confident

Q: How confident are you in the following aspects of the data your organization collects and uses to make decisions? *Executive responses shown.*

Moderately confident

Completely confident



[1] https://hbr.org/2018/12/why-companies-that-wait-to-adopt-ai-may-never-catch-up

AN UNEVEN LANDSCAPE: HOW AI ADOPTION VARIES BY INDUSTRY

Our survey included respondents from eight industries: healthcare, financial services, manufacturing, public sector, media and telecommunications, insurance, retail, and automotive. Naturally, priorities and strategies vary based on business realities for individual sectors, and analysis of the data reveals variations in progress toward AI adoption and strategies for implementation.

Fig. 5: The pace of change varies across industries

Q: Which most accurately describes the pace of change at your organization in terms of technology adoption? *"Fast" responses. Executive responses shown.*

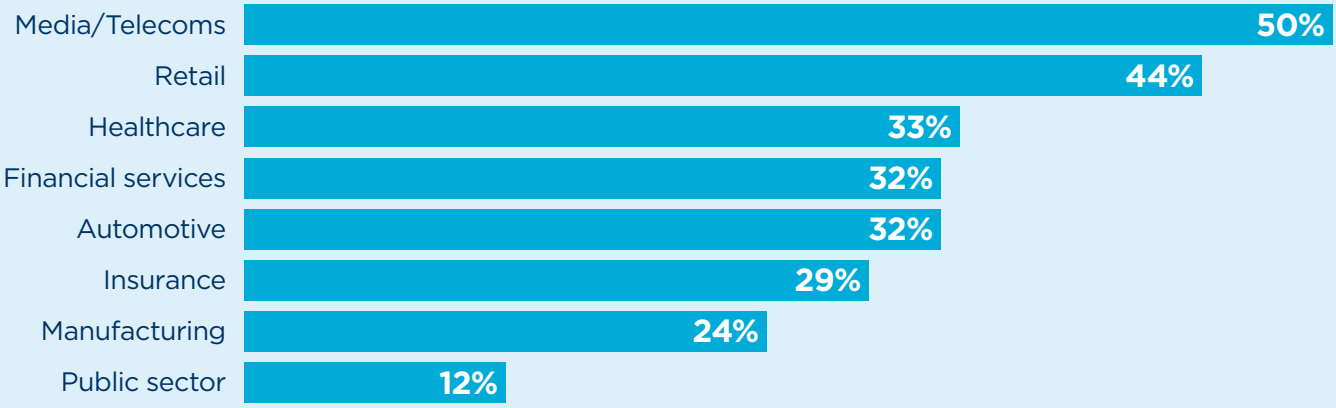
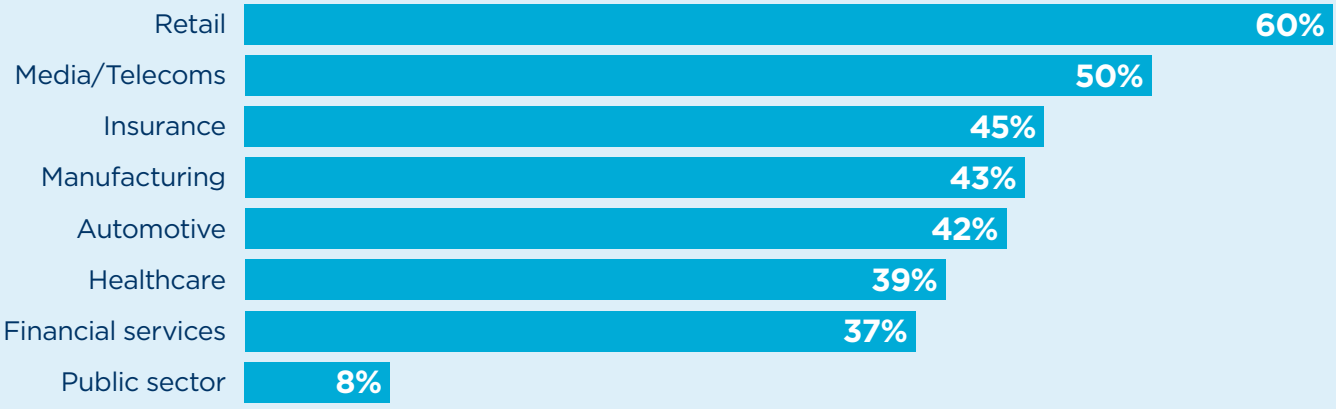


Fig. 6: AI adoption across industries

Q: To what extent has your organization invested in AI? *"We have fully implemented this technology in one business area" and "We have fully implemented this technology across the business, at scale" responses combined. Executive responses shown.*



AUTOMOTIVE

AI has long presented a threat—and an opportunity—to the automotive industry, which must adjust its innovation model around the promise of autonomous vehicles even as it focuses on maintaining efficiency and managing a complex supply chain.

Automotive respondents in our survey are on par with other sectors in many areas but tend to emphasize the value of particular applications of AI and are ahead in taking steps related to workforce transformation.

Strengths

- More likely to have a process in place to monitor AI performance (80% of executives say so, vs. 66% across sectors)
- Among the most likely to have taken certain steps to reduce AI risk, like sponsoring employee training programs in AI-powered technologies (66% of executives vs. 59%), increasing their information security budget (58% vs. 46%), or increasing the diversity of employees working on AI projects (52% vs. 40%)

Areas for attention

- More likely than all others to say they worry their jobs will be automated out of existence (40% of employees say so, vs. 28% total)
- Least likely to say their organization has conducted customer research into ethical expectations to reduce AI risk (26% of executives say so, vs. 42% across sectors; 28% of employees say so, vs. 35% across sectors)

FINANCIAL SERVICES

Financial services organizations tend to be focused on applications of AI around predictive analytics, virtual assistants, robotic process automation, and blockchain.

Our survey results show a focus on these and other areas, as well as an understanding that attention to skills will be required in order to successfully—and ethically—apply AI in the years ahead.

Strengths

- Among the most likely to say AI has been strategically implemented in key functions to optimize specific processes, according to employees
- Most likely to say they personally understand the technical aspects of AI applications at their company (79% of employees vs. 65% across sectors)

Areas for attention

- Roughly as likely as other sectors to say they have encountered an AI that repeatedly offered suggestions that worked against a marginalized people (25% of employees, vs. 21% across sectors)—a particular ethical risk for the industry

HEALTHCARE

Technology adoption and process change tend to be slower in healthcare than in other sectors. However, the widespread disruption caused by COVID-19 has forced adoption of new technologies for many healthcare organizations, and respondents may now be positioning for future AI implementation for the sake of both innovation and efficiency.

The industry is forging ahead by increasing information security budgets, hiring outside consultants for guidance, and sponsoring training programs for AI-powered technologies—and they are more likely than respondents from other sectors to say AI lives up to the hype.

Strengths

- Somewhat more likely than others to have processes in place to monitor AI performance (71% of executives say so, vs. 66% across sectors) and to have identified places to test AI applications (73% vs. 66%)
- Somewhat more likely to say they inform the workforce about decisions the organization plans to make (86% of executives, vs. 74% across sectors)
- Roughly as likely as others to say they have taken steps to reduce AI risks like increasing information security budgets (48% of executives say so, vs. 46% across sectors) or performing black-box testing (36% vs. 33%)

Areas for attention

- More likely to describe the pace of technology adoption at their company as slow or stagnant (35% of employees, vs. 28% across sectors)
- Among the most likely to say that an AI application suggested taking an illegal measure due to efficiency (27% vs. 23% across sectors), or to say most employees would overlook unethical AI decisions to keep their job (23% vs. 21%)

INSURANCE

Insurers in our survey are among the most mature industries when it comes to AI, with one-fifth of executives meeting our set of leader group criteria.

Just under half of executives say they have implemented AI in at least one business area, and employees in the sector are more likely than others to work regularly with AI. The early focus is paying off: executives and employees are both among the most likely to say these implementations have provided substantial or transformative value in profits, innovation, accuracy, efficiency, and revenue.

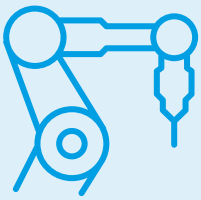
Strengths

- Just under half of executives say they have implemented AI in at least one business area (vs. under 40% of all respondents)
- More likely to say their organization has sponsored training in AI-powered technologies for employees (44% of employees vs. 33% across sectors)
- Most likely to say AI implementation has provided substantial or transformative improvements in efficiency (62% of executives vs. 42% across sectors)

Areas for attention

- Like others, relatively unsure that employees have technical expertise in AI (39% of executives say so, vs. 38% across sectors)
- More likely to expect job changes due to AI (56% of employees say so, vs. 49% across sectors)—something management will have to prepare the workforce for

MANUFACTURING



Manufacturing firms tend to still be in the early stages of applying true artificial intelligence.

They are focusing on specific industry needs: executives are most likely to say that RPA is a form of AI, and are more aware of the potential impact of AI on employee job responsibilities. And some are already realizing benefits: nearly half say AI has already improved employee accuracy and increased innovation.

Strengths

- Most likely to say that most or all teams at the organization work with RPA (56% of executives, vs. 37% across sectors)
- Among the most likely to say they personally understand the technical aspects of AI applications at the company (80% of executives, vs. 75% across sectors)

Areas for attention

- Less likely to say their organizations have sponsored training programs in AI-powered technologies for employees (27% of employees, vs. 33% across sectors)
- Among the least likely to say that C-suite executives have identified new areas to test AI applications (41% of employees, vs. 59% of all respondents)
- Less likely to say their organization is more ethical than the majority of their peers (47% of employees, vs. 57% across sectors)

MEDIA AND TELECOMMUNICATIONS

Media and telecommunications firms in our sample are among the AI leaders. Nearly one-quarter (22%) meet our criteria for the leader group—the highest percentage in our survey.

Respondents from the industry tend to acknowledge the importance of a talented workforce, prioritize training for their managers and employees, and have created a digital-first culture to attract skilled workers. This mindset has shown early results: they are among the most likely to say AI has helped them win repeat business and boosted employee productivity.

Strengths

- Most likely to say that AI has been strategically implemented in key functions to optimize specific processes (86% of executives, vs. 70% of all respondents)
- Most likely to have begun training in AI for their current employees (62% of executives, vs. 48% across sectors) and leadership (58%, vs. 46% across sectors)
- Most likely to say AI will speed up innovation (74% of executives, vs. 66% total)
- Most likely to say their managers are equipped to manage the organizational changes ahead (62% of employees, vs. 54% total)

Areas for attention

- More likely than others to say they have encountered an AI application that gained access to restricted data (40% of employees, vs. 24% across sectors)
- Less likely to have hired workers with AI experience (34% of executives say so, vs. 42% across sectors)

PUBLIC SECTOR

COVID-19 and the resulting economic challenges have put additional strain on a sector that already struggles with tight budgets and vulnerability to disruption.

Perhaps in part due to these constraints, public sector respondents to our survey have room to grow in their technological maturity. They are least likely to say AI is very/critically important to performance, efficiency, or productivity, and are behind in sponsoring training programs or hiring specialists.

Strengths

- Tend to be researching or piloting investment in AI, a sign of future progress
- Are planning to take steps to reduce risk in the coming years, like sponsoring employee training programs and increasing information security budgets

Areas for attention

- Most likely to disagree with the statement "the speed of our AI implementation is sufficient" (32% of executives, vs. 14% of all respondents)
- Most likely to say that AI is not useful to their current work (49% of employees, vs. less than one-third across sectors)

RETAIL

Retailers are used to disruption, but the level of operational change required from the fallout of COVID-19 is particularly dramatic. As many shift even more services to digital, employ virtual agents for a high volume of customer requests, and grapple with supply chain disruptions, the value of AI has become clear in the past few months.

Retailers in our survey are among the most likely to have fully implemented AI in at least one business area. Executives also are most likely to have identified specific use cases where AI can enhance their business and hired workers with AI experience.

Strengths

- Most likely to say their organization is more ethical than the majority of their peers (80% of executives, vs. 70% across sectors)
- Most likely to have performed black-box testing in preparation for AI implementation (56% of executives, vs. 33% across sectors)
- Among the most likely to say that AI will help them do their job more efficiently (78% of employees, vs. 68% total)

Areas for attention

- Among the most likely to say that they are concerned about the effect of AI on the job security of others (26% of employees, vs. less than one-fifth across sectors)

MODERNIZING THE WORKFORCE

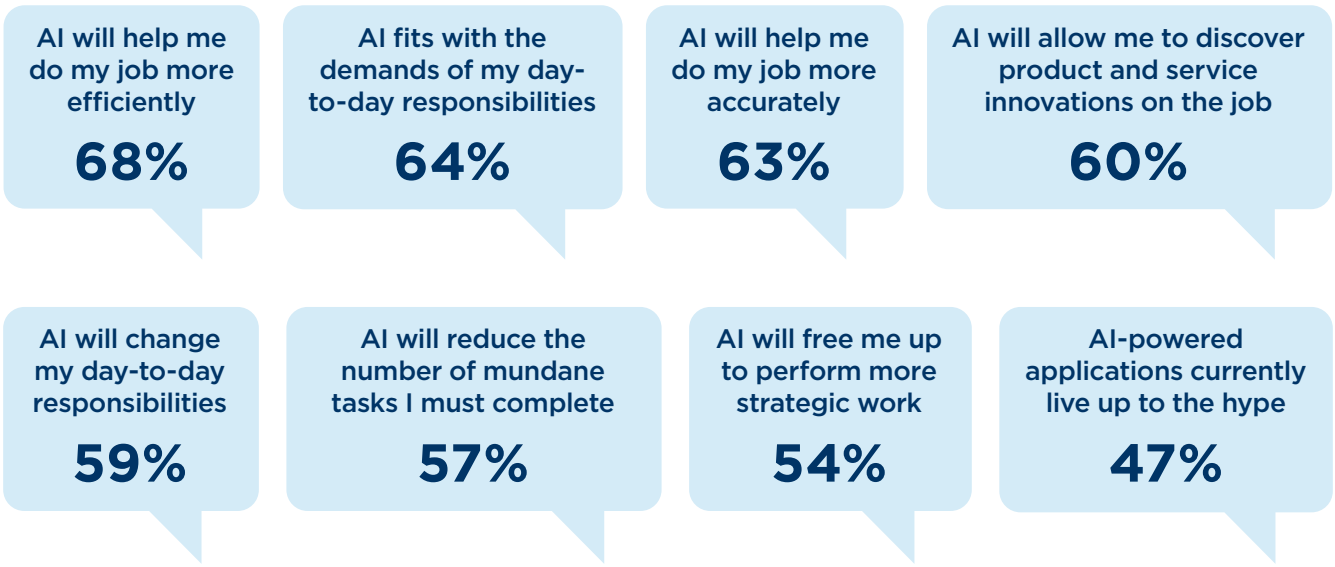
Responding to rapid change and innovating around digital technologies is about more than IT spending. Organizations must fundamentally change the way they hire, train, and reskill employees; engage workers for the long term; and manage change across the organization.

Despite the need for more clearly defined implementation strategies and data governance, AI is already changing the way organizations work. According to our survey respondents, the technology is beginning to support improvements to efficiency and productivity, and has increased the number of automated processes.

Employees expect AI to help them do their jobs more efficiently and discover product and service innovations. If implemented correctly, the technology should eventually free up some employees to do more strategic work—increasingly important as automation replaces or fundamentally changes many tasks and job descriptions.

Fig. 7: Employee optimism about the changes AI will bring

Q: To what extent do you agree with the following statements about the impact of AI on your current job? *"Agree" and "Strongly agree" responses combined. Employee responses shown.*



Updating the skills mix (with both technical and "soft" skills like collaboration and critical thinking) is essential to effective transformation around new technologies. That means hiring people who understand how to deploy new AI technologies, and integrating the newcomers into existing systems and processes. Supporting current employees who may need to change ways of working for new technology—by supplying in-house training or time and resources to pursue it independently—is just as important.

Most executives in our survey understand the need for a skilled workforce, and even build investment strategies around it: 66% cite expertise in emerging technology (e.g., AI, automation, algorithms) as most important in determining which AI applications are introduced.

Investment in AI-based skills may improve employee performance, creating a kind of virtuous circle that aids long-term talent development. Two-thirds or more say AI will make employees moreo efficient, improve employee accuracy, and speed up innovation.

EQUIP EMPLOYEES WITH THE RIGHT SKILLS

Leaders must ensure that they are providing opportunities for employees to reskill. Part of this depends on exposing all workers—not just those in IT or other technical functions—to new technologies. That may mean ensuring that everyone has equal access to training on new tools, clearly communicating new processes and the reasoning for certain technology investments, and making sure that workers across functions understand how the overall organization runs.

While many executives and employees work with emerging technologies, adoption is not consistent across the enterprise: 43% of executives say only select teams work with AI, and only 5% say it is in use across all teams. This suggests that many organizations have limited pockets of understanding among certain individuals or functions, ultimately increasing the risk of organizational silos that can slow transformation.

Responsibility for learning to work with new technologies is not limited to junior employees. Even executives at the most senior level must keep up with technical skills—though currently just 29% strongly agree that they understand AI, and less than one-fifth of executives say their organization is very effective in hiring managers with skills in emerging technologies. Without a solid understanding of how the AI, analytics, and algorithms that are running operations actually work, senior leaders put the company's overall strategic direction, ethics, and financial performance at risk.

IDENTIFY WHAT EMPLOYEES WANT AND NEED

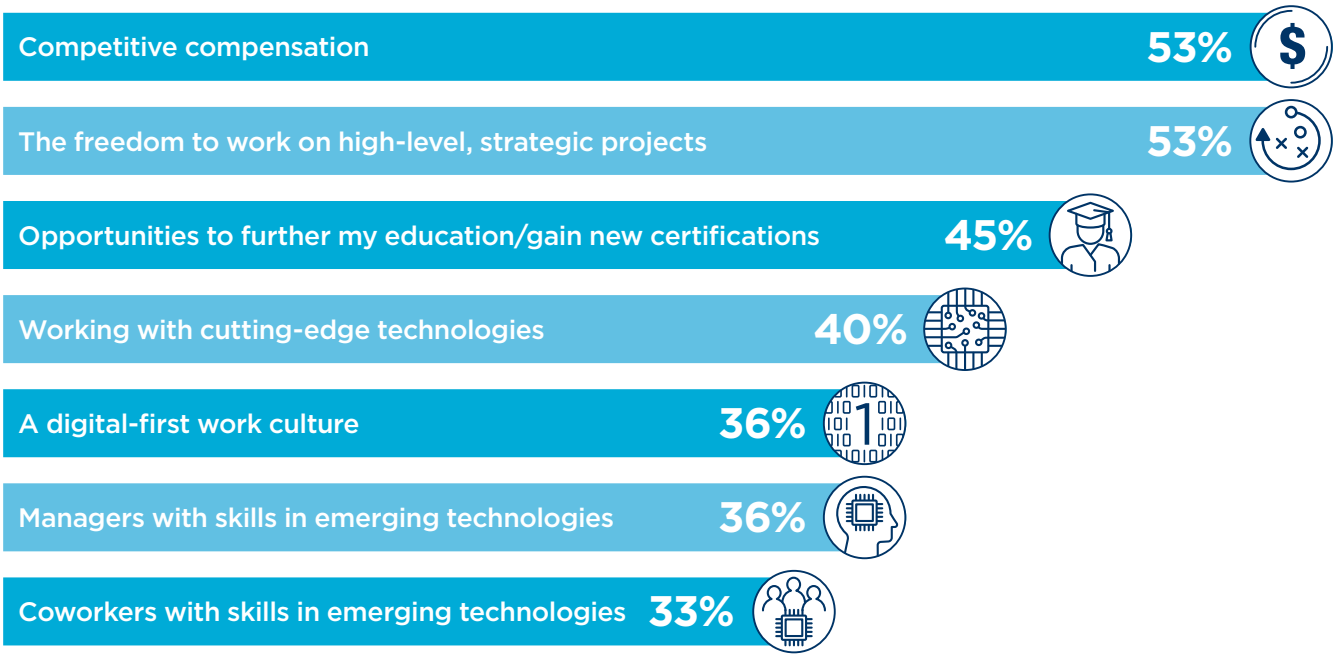
Engaging and retaining workers depends on finding out what matters most to them, especially as COVID-19 fundamentally changes what employees need and expect from their employers. Flexibility on location, support for childcare needs, and ensured safety at offices and work sites are becoming more important to workers, and employers will need the tools to deliver on those desires—or risk losing their top talent to a labor market that is broadening to include more remote work opportunities.

The ability to learn new skills will become a bigger perk to employees as time goes on, and more important as companies increasingly adopt automation. Over half of employees say freedom to work on high-level strategic processes would inspire them to stay in their job, and nearly half (45%) would be motivated to stay by education opportunities.

Executives believe they are delivering on these needs—nearly three-quarters say they are effective or very effective in providing opportunities to work on strategic projects (73%) and educational opportunities (73%). (Although our surveys for this program do not directly address views on this topic, previous Oxford Economics research suggests that there are often substantial perception gaps between executives and employees on these and related issues.)

Fig. 8: Keeping talented workers depends on stimulating work and training opportunities

Q: Which of the following would most influence your decision to work at/stay at a specific organization? *Select all that apply. Employee responses shown.*



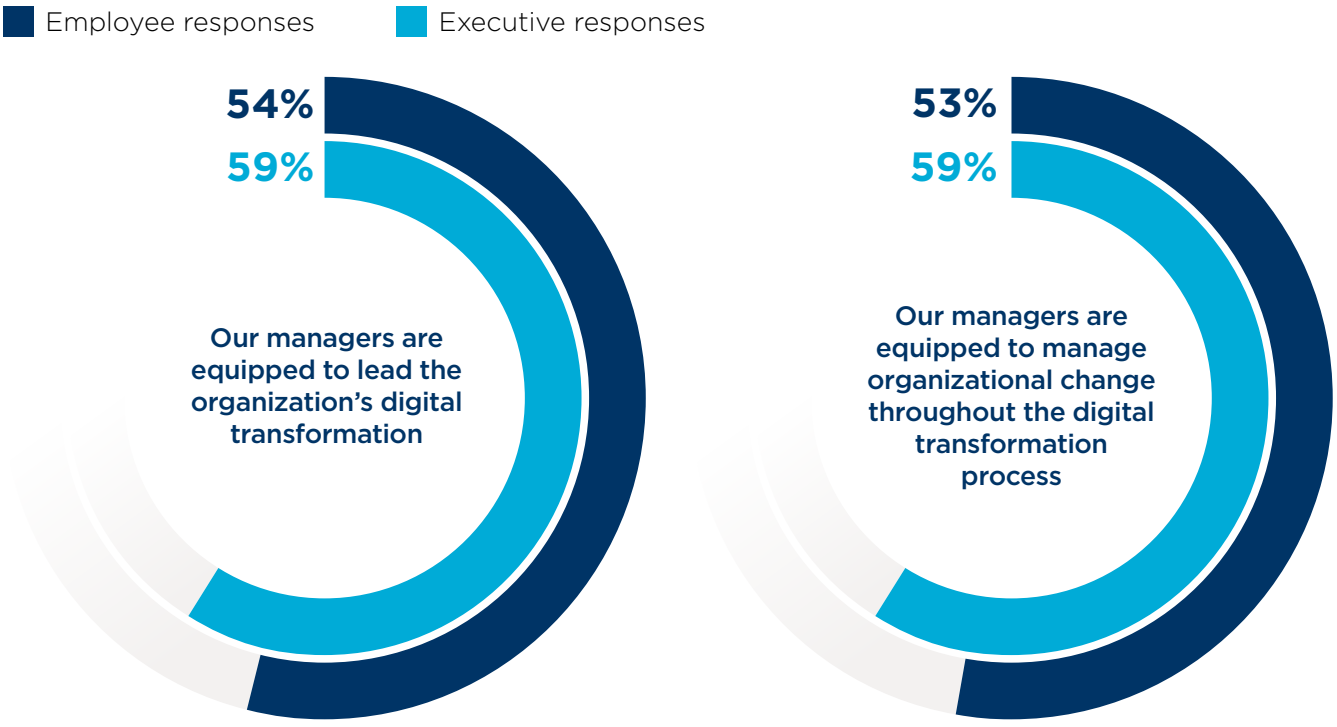
MANAGE CHANGE ACROSS THE ORGANIZATION

Managing change is a critical factor in preparing the organization for AI. Especially in a time of uncertainty, employees need the structure and support to onboard new processes and technologies. The workforce is not going to change overnight, especially as trust issues around AI and automation—and very real fears of job loss or job changes—persist. Managers must work closely with employees to prepare them for the technology-driven changes ahead, close skills gaps, and create career paths for workers if they are to garner support for digital transformation initiatives.

Yet leadership at many organizations does not seem to be up to the task. As Fig. 9 shows, many leaders are not managing organizational change throughout the digital transformation process.

Fig. 9: Are leaders prepared to manage change?

Q: To what extent do you agree with the following statements about working at your organization?
"Agree" and "Strongly agree" responses combined. Employee and executive responses shown.



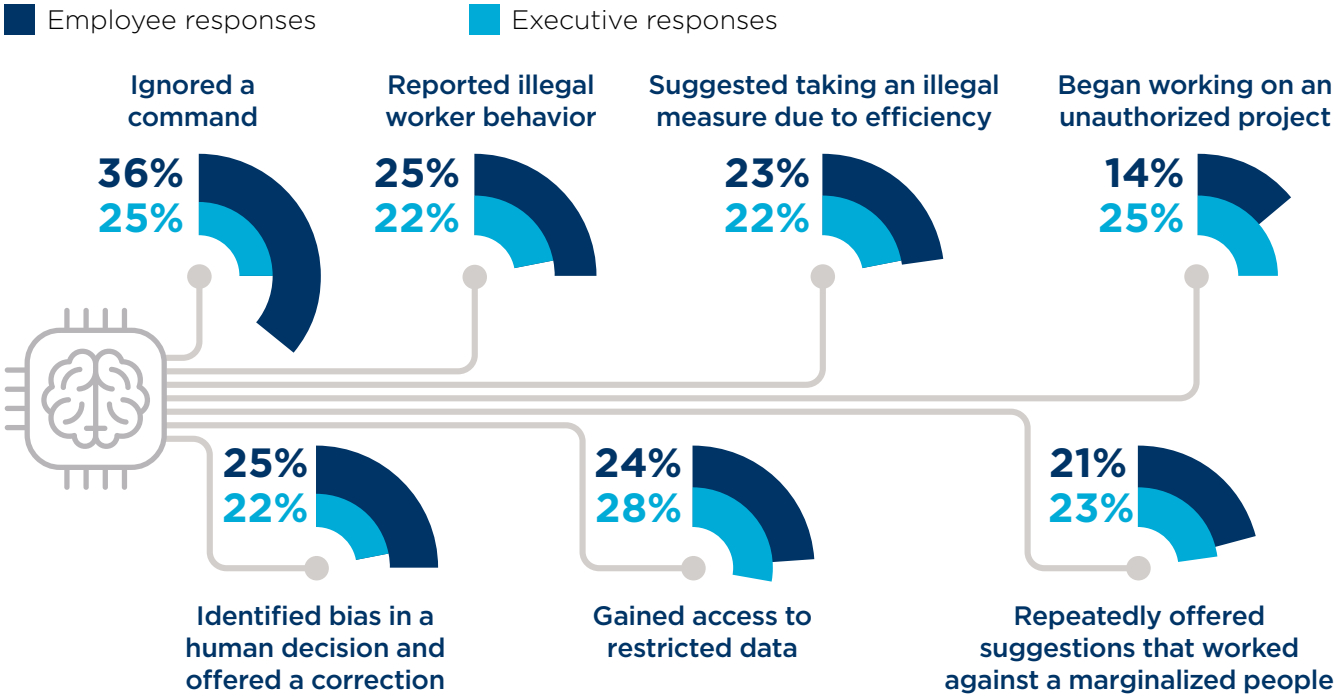
MANAGING NEXT-GENERATION RISK TODAY

Big changes bring big risks, and the power of AI adds new complexity to the challenges of organizational transformation. Lives are at stake when software controls vehicles or medical devices. An automated production line can make mistakes at industrial scale. Biases that are not identified prior to being implemented into systems that approve mortgages, determine solutions, or make business and hiring decisions can sway life-changing decisions and redline marginalized groups. At a time when businesses are recommitting to ethics—and are more likely to be held accountable by both their employees and customers—getting this right has never been more important.

Despite the highly publicized risks of data-sharing and AI, from facial recognition to political deep-fakes, leadership at many organizations seems to be vastly underestimating the ethical challenges of the technology. Just 12% of executives and 15% of employees say AI will collect consumer data in unethical ways, and only 13% of executives and 19% of employees say AI will discriminate against minority groups.

Fig. 10: AI does not always follow the rules

Q: In your encounters with AI, have you witnessed any of the following? *Employee and executive responses shown. Respondents could select all that apply.*



That underestimation is unsurprising. "One of the major issues with algorithmic bias is you may not know it's happening," said Joy Buolamwini, MIT researcher and founder of the advocacy group Algorithmic Justice League, in an interview with Frontline late last year.[2] Biases can be hidden or too reflective of common thought patterns to be immediately perceptible.

Another reason many executives and employees may not understand the widespread nature of AI bias is that the technical details are hard to understand for those who are not intimately familiar with the software's development. Lack of AI prowess within the organization can create big problems, especially if employees begin to trust software more than they trust themselves. For example, 16% of employees think others would defer to an AI decision, even if it was factually incorrect.

An alarming percentage of our survey population reports having already experienced these types of incidents. One-quarter of executives and 36% of employees say they have encountered an AI application ignoring a command, and about one-fifth of both groups say an AI app offered them suggestions that worked against a marginalized group. Executives from companies with over $20 bn in revenue are more likely to say they have seen an AI application that does this (41% vs. 21% of others)—and since the largest companies tend to be ahead on AI implementation, others should watch out for this in the future.

Most companies are not doing enough to protect their customers and employees—and their reputations—from these risks. For example, only 33% of executives say they have performed black-box software testing (where information is entered into a program without visibility into the internal structure, design, architecture, or implementation of the item so the effectiveness of the program is determined exclusively by the outcome). These kinds of tests will become more important to AI traceability and transparency, important pieces of developing and maintaining AI ethics.

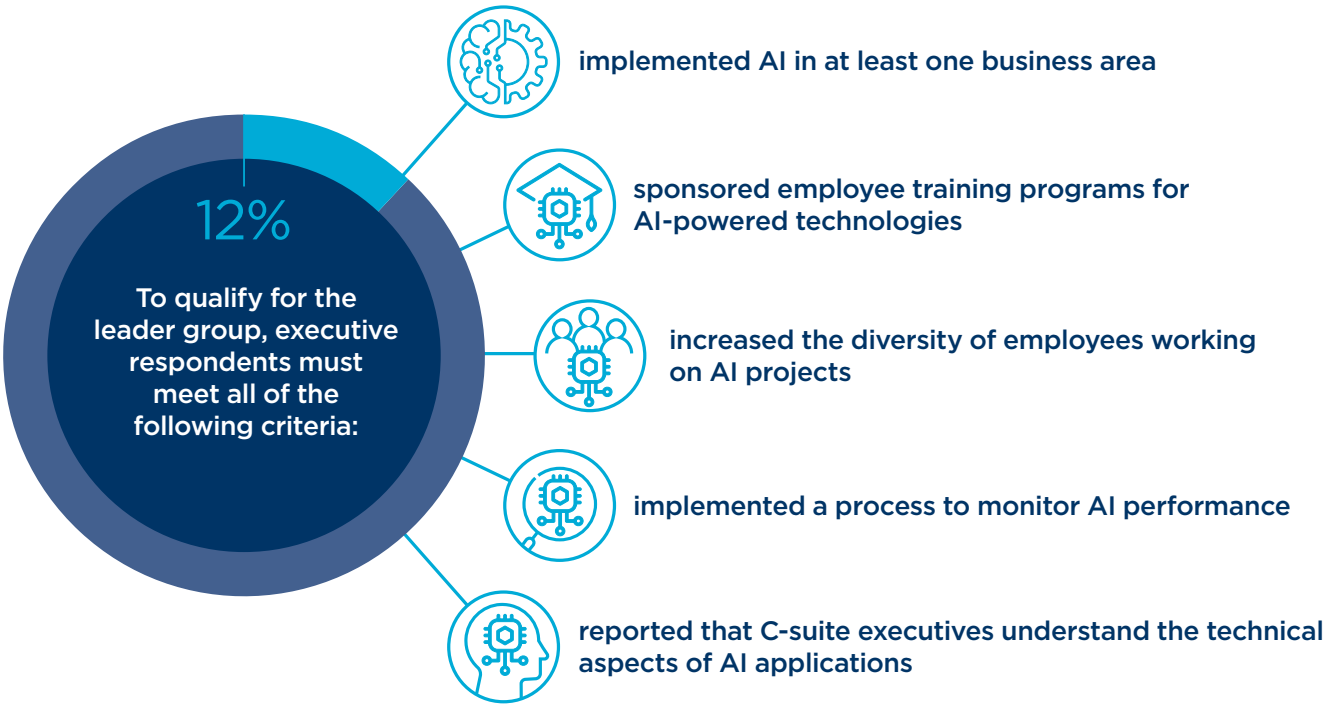
Despite the need for speedy transformation, charging ahead with AI investments before planning carefully for data and technology needs, talent requirements, and ethical considerations sets organizations up for failure from the start.

2 https://www.media.mit.edu/articles/artificial-intelligence-can-be-biased-here-s-what-you-should-know/

UNDERSTANDING THE AI MATURITY CURVE

Nobody predicted how quickly the future would get here, but some are better prepared for what happens next. An elite group of executives (approximately 12% of the sample) have put systems in place that nurture AI transformation in all its complexity, and were likely better prepared to respond quickly to changes brought on by COVID-19.

Fig. 11: What defines our leader group?

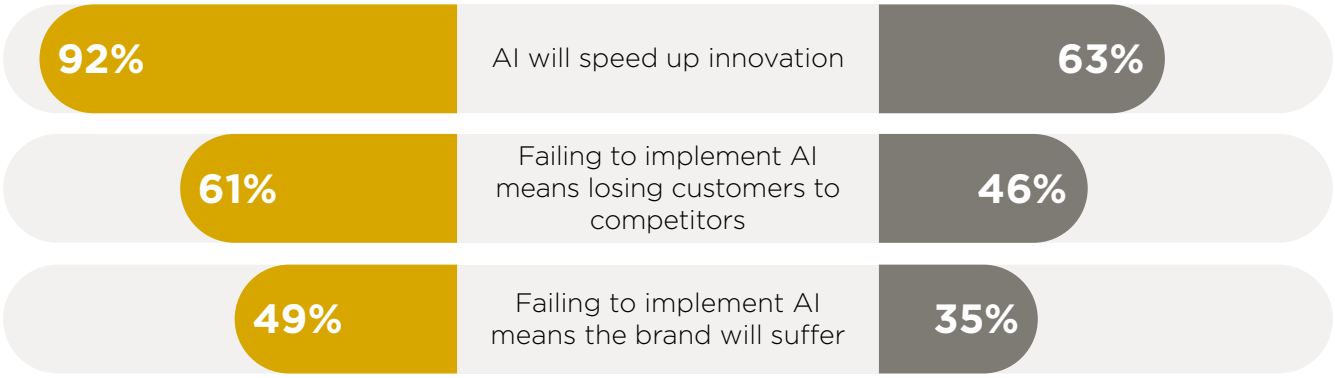


It is important to note that, to some extent, reaching our leader group's level of maturity depends on resources available for investment. And while leaders represent a range of company sizes, the organizations in our survey reporting higher annual revenue tend to be ahead of the curve in AI adoption. But even big companies are not immune to challenges, likely because they are dealing with more complex AI applications.

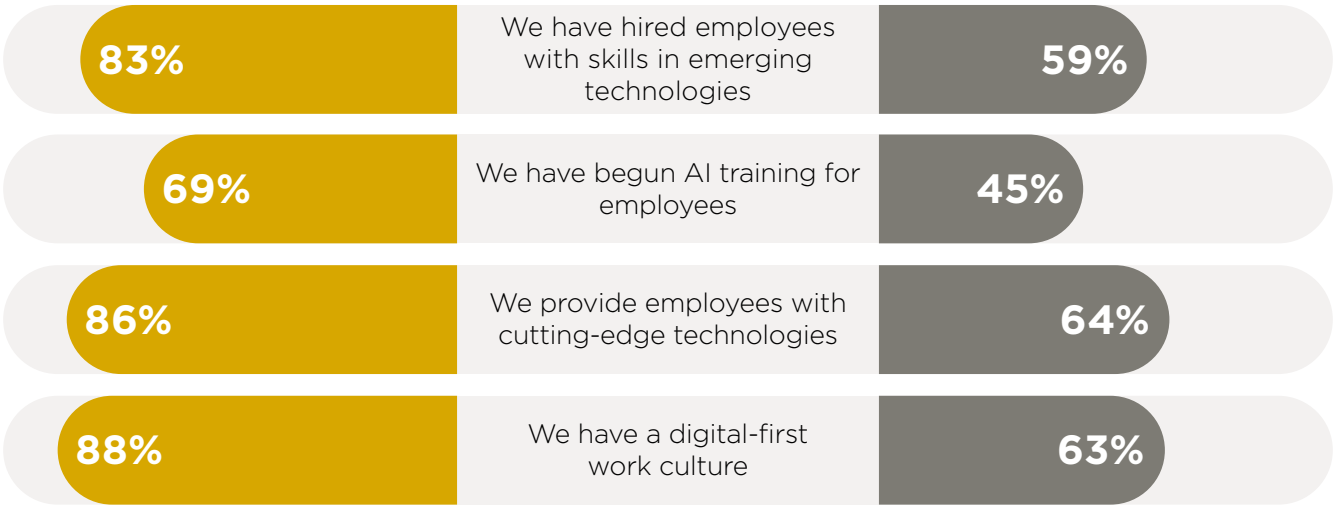
Comparing the survey responses of our leader group with the rest of the survey sample shows that those further ahead in preparing the organization for AI stand out in key areas.

HOW AI LEADERS STAND OUT

Leaders emphasize the value of AI. They are more likely than others to say that the technology influences innovation, competitiveness, and overall brand reputation.

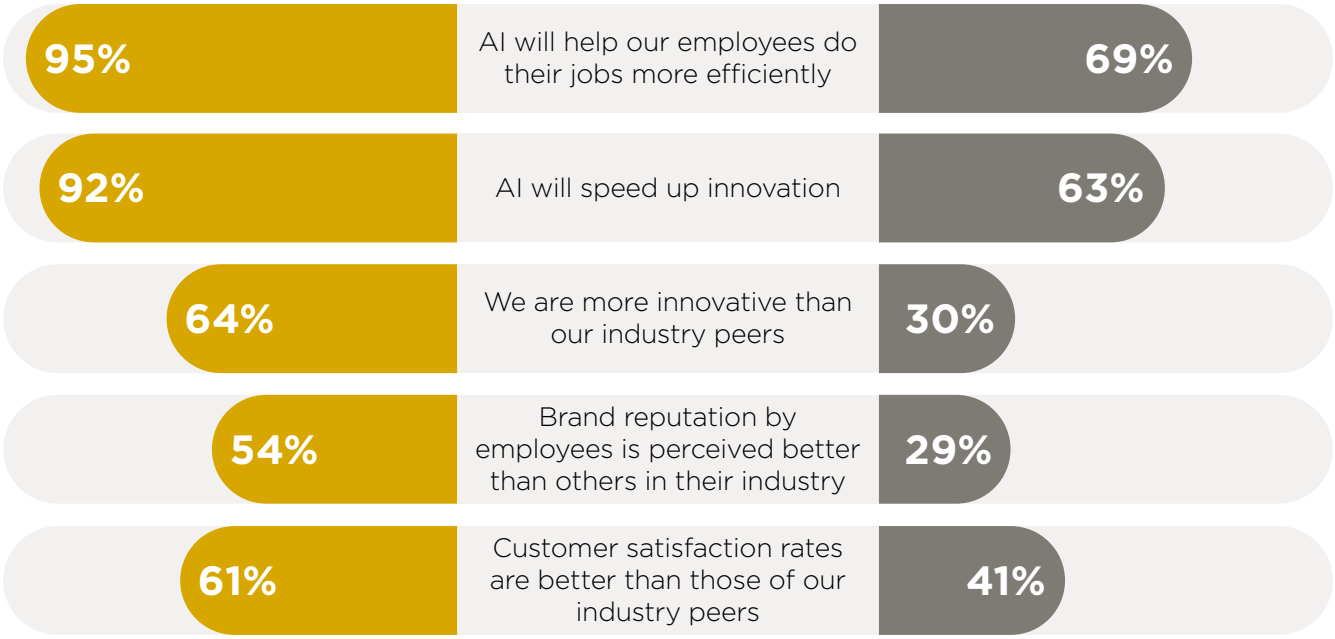


Leaders demonstrate stronger talent strategies—a critical part of transforming around AI and automation—in terms of hiring, training, and culture.



Leaders do not ignore the risks of implementing AI, and are more likely to have taken steps to reduce AI risk.

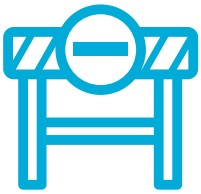
Leaders report stronger performance. Though we cannot determine cause and effect, respondents further along in their AI adoption expect more value from the technology in the coming years and report stronger overall performance in key areas.



CONCLUSION

AI adoption is expected to become critical to competitive advantage, agility and resilience, and innovation as companies respond to a tumultuous 2020 and plan for the uncertainty ahead. The results of our research point to several areas of focus for organizations on the path to responsible adoption of artificial intelligence.

Get ahead of change—and be ready for it to accelerate.
Rapidly onboarding AI depends on more than just technology spending; organizations must have the skilled talent, processes, and performance metrics in place to ensure effective implementation of the technology, increase agility and resilience, and drive further innovation.



Don't expect AI to be easy.
Integrating AI and AI-enabled technologies across the business demands a clear plan for tools, data, skills and leadership—and a thorough sense of what barriers to expect along the way.

Understand that transformation means more than technology.
AI presents one of the great leadership challenges of our time. Transformation starts at the top; senior leaders must manage change in every phase of implementation, leverage partnerships, and apply function- and industry-specific best practices.

Commit to ethics and transparency at every turn.
Organizations must implement governance and ethics programs to review all AI projects and articulate both desired results and possible unintended outcomes, ensure AI traceability and transparency, and regularly perform audits to ensure that outcomes are correct as AI technologies continue to learn.

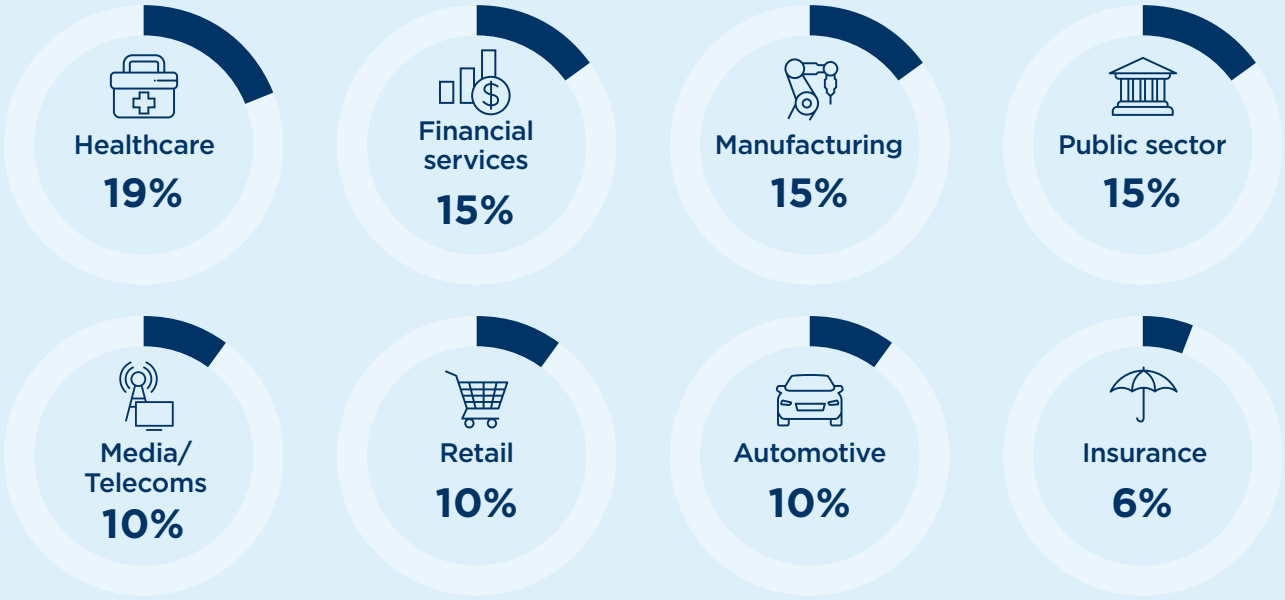
ABOUT THE RESEARCH

Oxford Economics and NTT DATA surveyed 500 executives and employees about progress toward adopting and implementing artificial intelligence in all its forms—and mitigating risk along the way. This research followed up on our previous analysis of the future of data analytics.

We conducted a quantitative survey of 500 senior executives (C-levels and direct reports) and 500 non-executive employees. The survey was conducted via computer-assisted telephone interviewing in early 2020.

Survey respondents come from the United States (75%) and Canada (25%), and represent a range of company sizes, from $500 million to more than $20 billion in revenue. The sample spans eight industries.

Fig. 12: Survey respondents by industry



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