THE FUTURE OF WORK IS NOW

Setting the Course for an Empowered and Connected Workforce

Picture a workplace energized by ambient technology that conforms to your behavior. Imagine being able to perform your job anytime, anywhere, and from any location while getting more work done. Envision fluidly moving between your personal and professional lives with technology helping to manage your busy day so you can focus on what matters most.

These are just a few of the intriguing changes in store for the future of work.

The workplace is in the midst of an unprecedented digital transformation, driven by the rise of mobile and connected systems, the explosion of online data, and the emergence of automated technologies such as artificial intelligence (AI) and machine learning (ML). While this trend presents a remarkable opportunity for organizations to dramatically improve operational efficiency and competitiveness, it also leaves many feeling uncertain about what the future holds—and where they should invest their time, energy, and budgets.

For answers, Microsoft partnered with Harvard Business Review Analytic Services to ask more than 600 business leaders around the globe how they think work will change by 2040. The survey's findings offer encouraging news: most do not see technology replacing our essential value as humans. Rather, they anticipate it making workers more strategic, focused, and productive by handling many of the menial and time-consuming tasks that take us off course.

While business leaders were largely optimistic about this future, most (71%) still had one major concern: they do not feel adequately prepared for coming changes. The study indicates three things will need to happen to overcome this challenge. First, companies will need to think broadly and critically about the central role modern technology should play in the lives of workers. Second, with teams becoming more widely distributed, businesses need to embrace tools that support widespread communication and collaboration. Third, every business operator and employee must stay open to new ways of thinking, working, and learning.

In the end, the study suggests a need for every organization to prioritize technology investments right now to enable the future of work. Companies that adapt can maximize their chances of future success while those failing to do so could be at a significant disadvantage.

At Microsoft, our mission is to empower every person and organization to achieve more with technology. We are committed to having an ongoing and active role in delivering innovation that will help customers learn, grow, and seize opportunities presented by the future of work.

We encourage all businesspeople to read this study to learn more about the rising trends that are most likely to guide their professional activities for the next 20 years and beyond.

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The way work gets done is poised to undergo a dramatic transformation, driven by developments that just a few decades ago were largely the province of science fiction. In this new world, robotics and artificial intelligence (AI) algorithms will increasingly handle the hard or repetitive tasks humans can't or don't want to do, while simultaneously equipping them with instant access to information and insights for the higher-value activities that remain. Workplaces themselves will be smarter, outfitted with technologies such as the internet of things (IoT) that let them cater more closely to workers' needs and expectations.

The ripple effects will be significant. To understand where trends are headed, Harvard Business Review Analytic Services asked over 600 global business and IT decision makers to share their thoughts on what work will look like between now and 2040. Overall, the findings suggest that developing organizational structures and building effective teams will continue to be top of mind, as will determining how to leverage the best technology to empower employees. While there may be differing perspectives on the approach, one thing became clear throughout the survey: with business environments becoming more complex, leaders increasingly recognize they must plan now for the workplace of tomorrow.

Here are some of the study's specific findings:

TECHNOLOGY AND HUMAN BEINGS WILL BECOME COLLABORATORS
Despite concerns that automated systems might put people out of work, survey respondents feel such technology will eventually lead to more jobs. In fact, leaders largely believe these technologies will work in partnership with humans to arrive at smarter strategic decisions while assuring productive communication and collaboration across organizations.

AMBIENT TECHNOLOGY WILL CONFORM TO HUMAN BEHAVIOR
Respondents see technology largely operating in the background to energize the work environment—seamlessly supporting and engaging people more efficiently as they collaborate with one another and move between tasks. This will reduce stress, create efficiencies, and free people to focus on work that unlocks ingenuity, creativity, and strategic thinking.

HIGHLIGHTS

33%
OF SURVEY RESPONDENTS BELIEVE AI WILL ELIMINATE MORE JOBS THAN IT CREATES.

72%
OF RESPONDENTS IDENTIFIED AI AS THE TECHNOLOGY THAT WILL HAVE THE MOST TRANSFORMATIVE IMPACT.

67%
OF RESPONDENTS SAY AI WILL BECOME A ROUTINE, COMMODITIZED COMPONENT OF EVERYDAY WORK.

Tech Leaders Are the Most Optimistic About the Future of Work

Executives as a whole are optimistic about the impact of technology, but executives from organizations already adept at taking advantage of technology in fields such as big data and advanced analytics, or early iterations of AI and robotic process automation, share the most confidence in its impact on work over the next two decades. Those who see themselves as leaders in these areas are more likely to say AI will make their organizations more productive and profitable, for example. They also see greater benefits from AI for high-value functions like executive management. They are less worried that AI and its applications will crush careers, and more likely to be investing in the ongoing training and education of their employees to ensure they're prepared for the new world of work.

SEGMENT DEFINITIONS

Revenue Achievers

69% OF TOTAL SAMPLE
Respondents selecting any amount of revenue growth in response to the question "How has your organization's revenue changed, cumulatively, over the past two years?"

Tech Leaders & Laggards

29% OF TOTAL SAMPLE
Respondents selecting 8, 9, or 10 on the agreement scale to the statement "Your organization is a leader in exploring and adopting advanced technologies (e.g., artificial intelligence, robotic process automation)."

These patterns are similar among younger executives when compared to older executives, and for companies whose revenues have grown over the past two years. Revenue achievers tend to be more optimistic about the changes technology will bring than those whose revenues have declined. The achievers are also more likely to be laying the groundwork for future success. Forty-two percent of revenue achievers say their organizations are investing in ongoing training and development of their workforce as technology makes some jobs obsolete.

Here are some of the survey's most provocative findings when comparing tech and analytics leaders and laggards:

For tech leaders, AI is the catalyst for more productivity. Eighty-one percent of tech leaders believe AI will make their organizations more productive and 79% think it will make them more profitable—versus 69% and 57%, respectively, of tech laggards. Seventy-eight percent believe AI will make them personally more productive, versus 67% of laggards.

Analytics leaders see a bigger impact from AI on high-value work. Forty-two percent anticipate that executive management will realize significant value from intelligent robots, intelligent automation, and other advanced technologies in 2040, for example, versus 19% of tech laggards. The contrasts are smaller but still significant for HR, risk management, sales/business development, and security.

Tech leaders are more likely to expect a wide range of workplace changes to be common in 2040, including flat, less hierarchal organizational structures (65%, vs. 46% of tech laggards), flexible work schedules (80% vs. 68%), virtual conference

DATA DEMOCRATIZATION WILL EMPOWER MORE EMPLOYEES TO MAKE STRATEGIC DECISIONS

Employees at all levels of companies will have greater access to quality data and actionable insights—enabled by powerful AI, machine learning, and analytical tools. As such, more workers will be authorized to make business-critical decisions. In short, data is becoming democratized, which could have long-term implications for organizational hierarchies.

EMPLOYEES WILL TURN TO DYNAMIC TALENT NETWORKS TO GET WORK DONE

Leaders largely believe workforces will be comprised of full-time, part-time, and freelance talent within the next few decades. As such, employees will increasingly assemble teams of internal and external networks of people rather than defaulting to in-house subject matter experts for help with projects. Because of this, survey respondents say, companies will need to deploy strong communication and collaboration tools and provide ample training to help workers use them effectively.

CORPORATE CULTURES WILL PRIORITIZE WORKPLACE TECHNOLOGY

Respondents believe successful leadership teams will embrace technological change as part of their corporate cultures. Companies that recognize a need to deploy best-in-class communication and collaboration tools to support their increasingly diverse and distributed workforces will be the most competitive and profitable.

Optimism About Technology's Impact

Optimism about the future of work among survey respondents is closely correlated to how adept their organization has been at taking advantage of technology in fields such as big data and advanced analytics, along with early iterations of AI and robotic process automation. The acceptance of intelligent robots, augmented reality, and other advanced technologies is only likely to grow as younger generations move into the workforce.

"If you watch young people playing video games that already employ some forms of augmented or virtual reality, it's not hard to believe they'll expect access to those same types of technologies in a work environment," says a senior leader for employee experience at a global airline based in the Asia-Pacific region. "They're quite comfortable with where we're headed."

Senior business executives, too, are becoming more comfortable with, and are looking forward to, the integration of technologies. Seventy-three percent of those surveyed say technological advancements will make their organizations more productive over the next two decades and 64% say those advancements will make their organizations more profitable.

While many technologies will help shape the new ways that work gets done, 72% of the executives surveyed identified AI as the technology that will have the most transformative impact, with 67% saying it will become a routine, commoditized component of everyday work. Executives predict that AI will leapfrog other technologies in importance by a large margin. Other technologies such as robotic process automation (cited by 32% of survey respondents as among the most transformative), cloud computing (29%), and IoT (27%) were also noted as valuable to the future of work. FIGURE 1

Many of the transformations brought about by new technologies will be disruptive. As robotics and algorithms take over the tasks that humans can't or generally don't want to do, traditional job descriptions will crumble. "The things we used to box up and call a job" will be distributed to the right person or robot to do them, says John Boudreau, professor of management organization at the University of Southern California's Marshall School of Business.

Current jobs in transportation or retail commerce that consist mostly of automatable activities may disappear. But the jobs that consist of a mix of activities—some of which are automated and others not—will likely

FIGURE 1

AI SEEN AS MOST TRANSFORMATIVE TECHNOLOGY FOR WORK

Robotic process automation and cloud computing round out what are expected to be the top three most transformative technologies of the next two decades.

Artificial intelligence, including machine learning
72%

Robotic process automation
32%

Cloud computing
29%

The internet of things
27%

Applied neuroscience (e.g., applying insights about human behavior to decision making)
25%

Virtual digital assistants
17%

Augmented or virtual reality
17%

Natural language processing
16%

5G cellular mobile communication
14%

Autonomous vehicles
11%
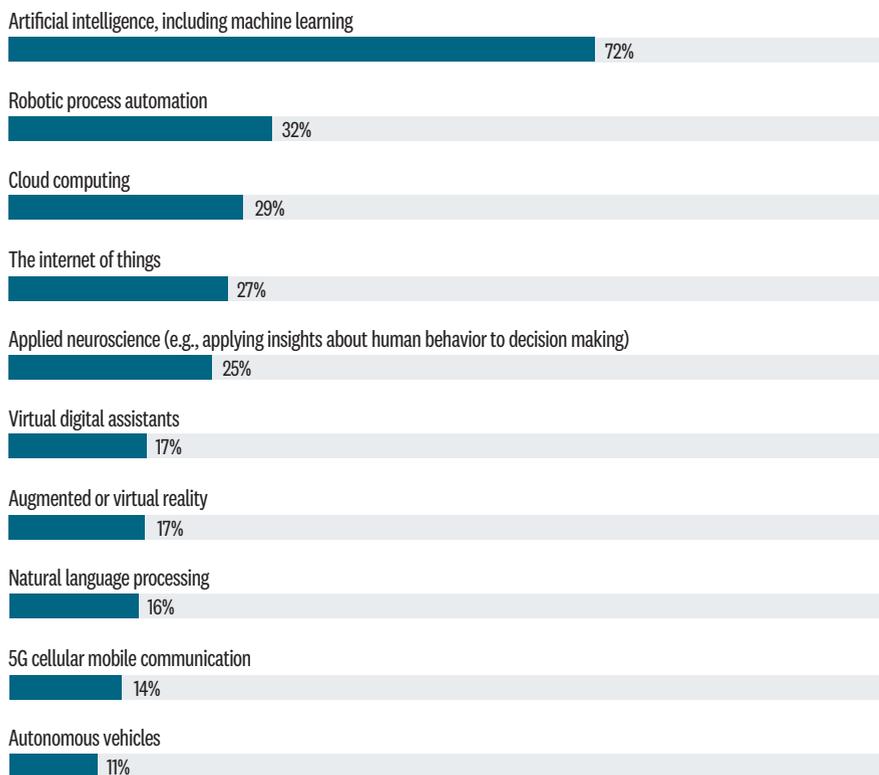
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

be transformed. Those might include positions in fields such as health care, financial analysis, or customer service. Our understanding of which work activities can be automated will change as we learn more. We may need to update the simplistic view that computers will always be bad at emotional intelligence, for example.

"Right now, robots are good at physical intelligence but pretty bad at emotional intelligence," says Tom Mitchell, professor of machine learning, computer science, robotics, language technologies, and biomedical engineering at Carnegie Mellon University. "But there's a lot of research taking place in emotional intelligence that could change everything. Here at Carnegie Mellon, to cite just one example, computers

ONLY 33% OF SURVEY RESPONDENTS BELIEVE AI WILL ELIMINATE MORE JOBS THAN IT CREATES.

TECH LEADERS

rooms enabled by advanced technologies such as virtual reality and 3D holograms (87% vs. 68%), common areas that function as communication tools (74% vs. 61%), a globally dispersed workforce (81% vs. 68%), and widespread availability of virtual assistants (66% vs. 53%).

Tech leaders are more likely to believe advanced technologies will make remote collaboration more effective. Seventy-six percent of tech leaders believe nascent technologies such as virtual reality, 3D holograms, and 5G communications, as they mature, will make remote collaboration significantly more effective between now and 2040, versus 64% of laggards.

Tech and analytics leaders anticipate that networking will increase in value. Seventy-seven percent of tech leaders and 79% of analytics leaders agree that employees' access to the expertise of others in professional networks will become as valuable as their own subject matter expertise over the next two decades, versus 64% of tech laggards and 63% of analytics laggards.

Tech leaders are more likely to see technology as a means of improving products and services, by a margin of 74% compared with 32% of tech laggards. That said, they're also more inclined to see it as a means for reducing payroll costs (37% vs. 23%).

Tech and analytics leaders are much more likely to be committed to ongoing training and development of the workforce as new technologies make some jobs obsolete, by a margin of 65% to 16% for tech leaders, and 63% to 16% for analytics leaders.

Supply chain, e-commerce and IT are expected to be among the functional areas most helped by intelligent robots, intelligent automation, and other advanced technologies.

Artificial intelligence will allow me to be more productive.
68%

Technological advancements will make my organization more profitable.
64%

My organization has realized performance benefits (e.g., improved productivity, sales, market share, or profits) as a result of its investments in advanced technologies.
48%
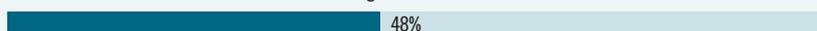
My organization is committed to ongoing training and development of its workforce as new technologies make some jobs obsolete.
39%
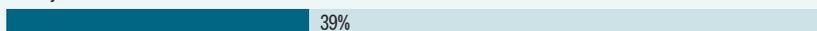
Artificial intelligence will eliminate more jobs than it creates.
33%
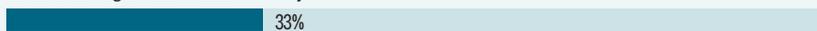
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

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are being taught to determine a person's emotions by looking at the expressions on their face at a speed of 30 frames per second. What if technology gets really good at something like that, to the point that computers are better than you or me at telling whether somebody is speaking truthfully? Or if computers could actually read and understand factual text? Search engines as we know them would disappear. They'd be replaced by computers that just read the web and write briefings on what we need to know or engage in conversation with us. Developments like these would have a huge impact on many aspects of life and work."

Another social-scientific technology likely to transform work over the next two decades is applied neuroscience, which refers to the application of insights about human behavior to decision making. Survey respondents cite applied neuroscience before many other more culturally popular technologies, such as augmented or virtual reality, holograms, quantum computing, and autonomous vehicles, as likely to have a big impact on work.

Technology and People Will Collaborate

For jobs that involve a mix of automated and human-centered activities, partnerships between people and AI may emerge that could be truly worthy of executive optimism. Beyond developing, training, and maintaining those robots, humans will still be busy making high-level decisions about how to act on the insights that AI delivers. In the hospital, a software robot may interpret a CT scan, but a physician will still deliver the news to the patient and counsel on the best course of treatment. In corporate finance, AI-powered analytics may indicate that a stock offering could strengthen a company's balance sheet, but the treasurer and CFO are still going to have a lot to say about when it makes sense to take that offering to market. Many labor-intensive but endlessly varying jobs will remain, from maintenance mechanic to hairdresser, as will jobs that require human empathy, such as

social worker or therapist. In fact, only 33% of survey respondents believe AI will eliminate more jobs than it creates between now and 2040.

In terms of the functional areas expected to benefit most from intelligent robots, intelligent automation, and other technologies, survey respondents point first to supply chains and logistics, e-commerce and IT—cited in each case by 81%. Nearly as many (77%) cite operations/ production, followed by security (72%). Sales and business development (43%), human resources (40%), and executive management (29%), all of which are likely to be harder to automate, are expected to be least impacted. Different companies will take advantage of new technologies at different times and at varying scale. FIGURE 2

While technology in the past was used primarily to streamline processes, many of the biggest applications over the next two decades will center on collaboration and communication— with technology acting as a guide or partner to human employees. When asked in which specific ways their own workplaces will be most impacted by technology over the next two decades, 41% of respondents mentioned the search for experts and intelligence across the enterprise, and 40% mentioned assistance in meeting and collaboration. Fifty-three percent of respondents foresee the widespread availability of virtual assistants for human employees. Sixty-four percent still believe corporate success will be dependent on efficiency gains.

These findings suggest that organizations need to be prepared for a world in which technology replicates and collaborates with human labor, helping to do things faster and better while also doing increasingly complex or rote tasks.

Creating a More Engaging and Flexible Work Environment

Organizations are already starting to build the workplace of the future. They are equipping frontline workers with access to data, and pushing decision making further toward the edges of

FIGURE 2

SUPPLY CHAIN AMONG TOP BENEFICIARIES OF AUTOMATION

Supply chain, e-commerce, and IT are expected to be among the functional areas most helped by intelligent robots, intelligent automation, and other advanced technologies.

● EXTREMELY SIGNIFICANT VALUE ● NO VALUE

Supply chain/logistics — 81% / 1%
E-commerce — 81% / 1%
IT — 81% / 2%
Operations/production — 77% / 1%
Security — 72% / 2%
Finance — 62% / 3%
Procurement/purchasing — 60% / 3%
Marketing — 57% / 5%
Risk management — 53% / 4%
Sales/business development — 43% / 6%
HR — 40% / 8%
Executive management — 29% / 15%
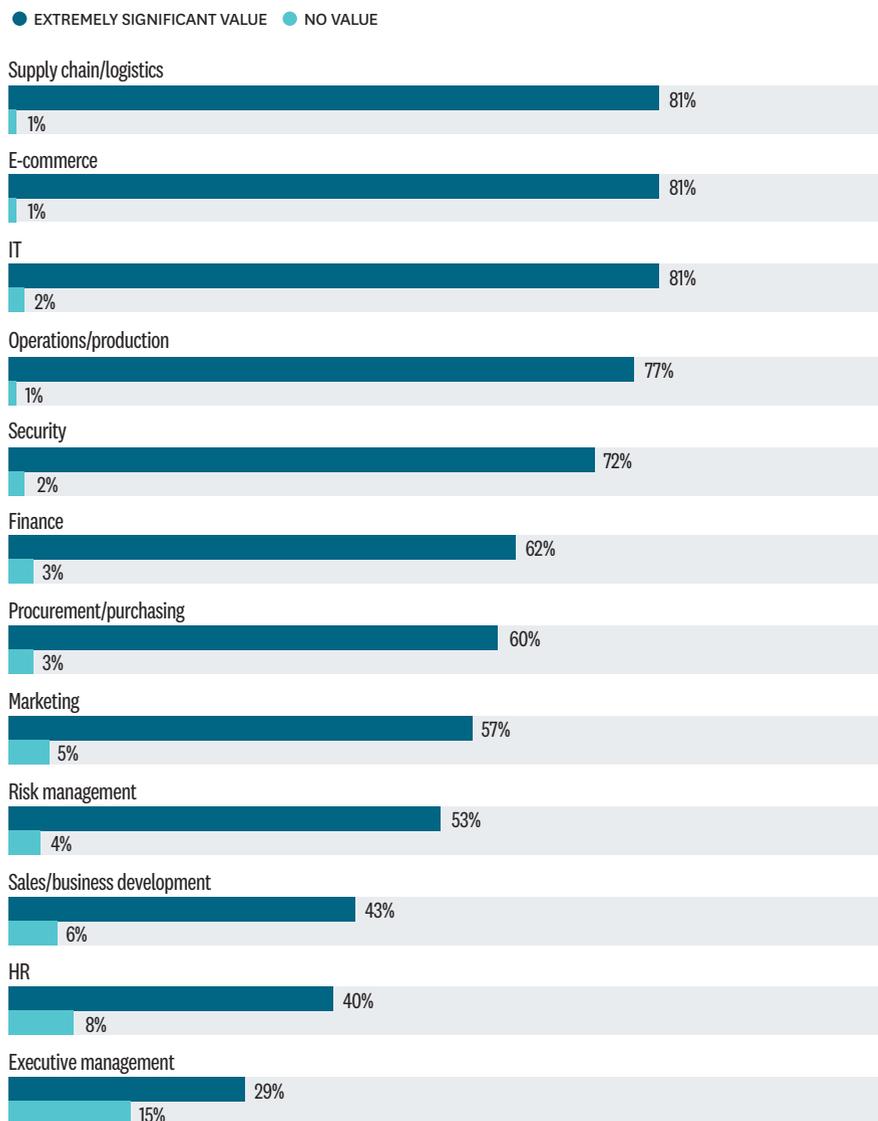
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

FIGURE 3

WORKPLACE MOTIVATIONS SHIFT FROM MONEY TO FLEXIBILITY

Flexible schedules and work locations, and access to training, are predicted to become more important than salary and benefits.

68%	48%	38%	35%	30%	21%	21%	12%	11%
Flexible work schedules/work locations	Access to training or development opportunities	Salary and benefits	Intrapreneurship opportunities	More flexible work contracts for full-time employees	Subsidies for necessities	Free time	Guaranteed employment	Family incentive plans that provide workers' children with job opportunities
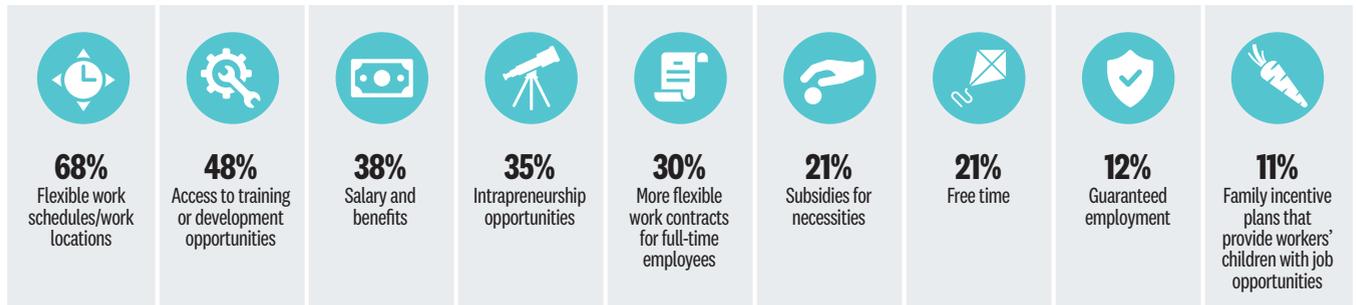
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

THE MOST IMPORTANT EMPLOYEE MOTIVATOR WILL BE A FLEXIBLE WORK SCHEDULE AND WORK LOCATION, ACCORDING TO 68% OF SURVEY RESPONDENTS.

the enterprise. They are creating work spaces that promote communication and collaboration, leveraging new tools such as IoT to make the day-to-day work experience simpler and more fluid. They are accommodating, where possible, their employees' wishes for flexible work arrangements.

Respondents believe AI and other technologies will enhance these trends and that these emerging workplace characteristics will be convention by 2040:

Access to third-party expertise will become critical as the universe of knowledge expands and the freelance workforce is more enabled by technology. Seventy percent of survey respondents believe access to the expertise of others will become just as important as subject matter expertise by 2040.

Lifelong education and training will become essential. Seventy-two percent of survey respondents believe employers will offer their employees more continuous learning and training opportunities between now and 2040. Thirty-five percent believe employers will become more active in endowing colleges and universities and influencing their curricula, and 32% believe employers will expand or alter

compensation plans to help recruits repay education expenses. In a related finding, 87% of survey respondents say schools and universities will need to revise their curricula to better prepare students for the digital age.

Salary and benefits will fall to the third most important motivator for employees. The most important employee motivator will be a flexible work schedule and work location, according to 68% of survey respondents. The second most important will be access to training or development opportunities, say 48% of respondents. In a marked change from a few decades ago, when most Baby Boomers entering the workforce were primarily looking to make as much money as possible or learn new skills,[1] salary and benefits now fall to third, cited by only 38% of survey respondents as a key employee motivator. FIGURE 3

The use of flexible work environments will continue to expand. Nearly half the surveyed executives see demand for more flexible work environments. Seventy-seven percent say flexible work schedules will be common in 2040, driven in part by the expanded presence of Millennials and Gen

1 "Millennials Are In Search of a Different Kind of Career," by Gillian White, *The Atlantic*, June 12, 2015, citing the Allstate/National Journal Heartland Monitor Poll No. 22. Reprinted by Allstate at http://heartlandmonitor.com/millennials-are-in-search-of-a-different-kind-of-career/

# Asia-Pacific Region Executives See Work Changing the Most

Business executives around the world generally agree that technology and social trends will transform the way work gets done over the next two decades, but they sometimes diverge on the details. The most consistent geographical distinction is that those working in the Asia-Pacific region tend to envision bigger changes than those in North America.

Compared to their North American counterparts, for example, executives in the Asia-Pacific region are more likely to expect intelligent technologies to displace workers over the next two decades (53% vs. 41%). They also are more likely to believe that intelligent robots, intelligent automation, and other advanced technologies will deliver value for key enterprise functions, including marketing, risk management, purchasing/procurement, human resources, sales/business development, and executive management. And they are more likely to believe AI will make them personally more productive. In fact, the only major region where executives are more optimistic about AI's personal productivity boost is Latin America.

More so than their peers in North America, executives in the Asia-Pacific region also are more likely to expect employers to reward employees for participating in professional networks over the next two decades (51% vs. 27%), and to expect organizational structures to become flatter as frontline workers become empowered by better access to information and analytics (63% vs. 46%).

Another area where executives in the Asia-Pacific region and North America diverge is on the question of whether employers will become more active in influencing the curricula of universities over the next two decades. Forty-six percent of those in the Asia-Pacific region (and 44% in Europe) expect employers to become more influential when it comes to curricula, versus only 27% of those in North America. On the other hand, 42% of respondents in North America believe

When asked which functional areas will be impacted by advanced technologies over the next two decades, executives in the Asia-Pacific region are generally more optimistic about a widespread impact than their counterparts in North America—or Europe.

● ASIA-PACIFIC   ● EUROPEAN UNION   ● NORTH AMERICA

Marketing
- 67%
- 56%
- 51%

Risk management
- 66%
- 45%
- 51%

Purchasing/procurement
- 63%
- 53%
- 61%

Human resources
- 50%
- 36%
- 40%

Sales/business development
- 49%
- 42%
- 39%

Executive management
- 34%
- 26%
- 26%
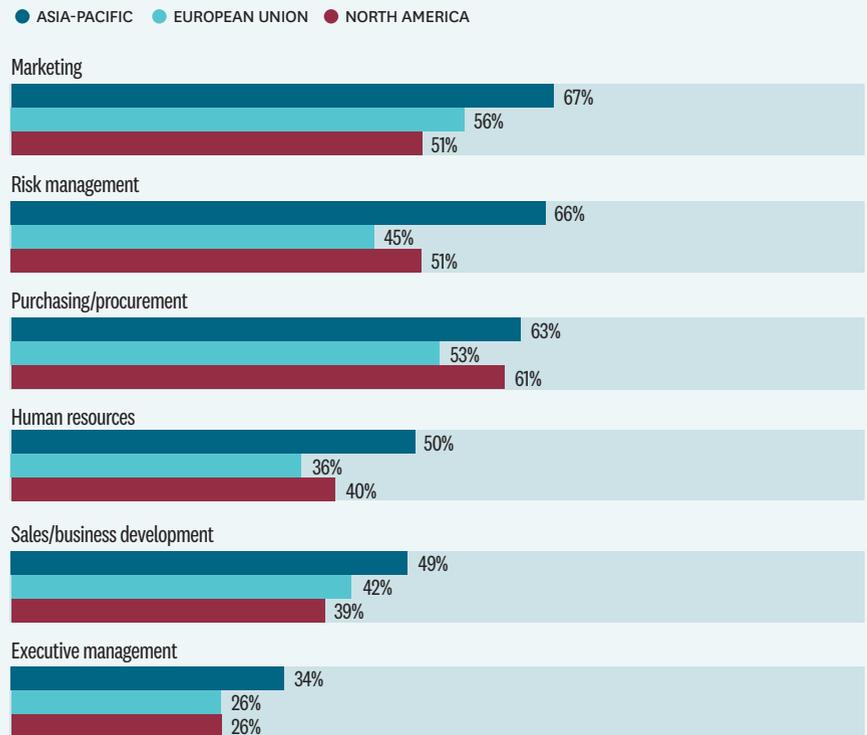
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

employers will expand compensation programs to help recruits pay for education expenses, versus only 31% in the Asia-Pacific region and the Middle East/Africa, and 20% in Europe.

Money issues play out differently in at least one other way as executives think about how work will be transformed between now and 2040. When asked to rate the biggest barriers to building a workplace prepared for the social and technological changes that will take place over the next two decades, respondents in North America, Asia-Pacific, the Middle East/Africa, and Latin America most often cite budget concerns and sunk costs in legacy facilities and systems. However, respondents

Just 25% say their organizations see technology mainly as a tool for reducing payroll costs, implying that **paring the workforce isn't a top priority** for their technology agenda.

in Europe are more likely to cite cultural issues, namely employee resistance to change and a risk-averse corporate culture.

When asked which technologies will have the greatest impact on work over the next two decades, more than 70% of executives in the Asia-Pacific region, Europe, the Middle East/Africa, and North America agree that AI will be at the top of the list. Only in Latin America is that sentiment significantly different, with just 53% believing AI will be among the most transformative technologies. Elsewhere, expectations about which technologies will impact work the most are more diverse. Thirty-six percent of Asia-Pacific respondents expect cloud computing to be among the most transformative technologies, for example, as do 29% in Europe and 31% in the Middle East/Africa—but only 26% in North America.

By contrast, respondents in North America are more likely to anticipate that augmented or virtual reality will have a major impact on work over the next two decades (20% say so, versus 16% in Europe, 10% in Asia-Pacific, and only 6% in the Middle East/Africa). Expectations around natural language processing follow a similar pattern, with 20% in North America seeing a big impact, versus 7%, 17%, 4%, and 7%, respectively, in Asia-Pacific, Europe, the Middle East/Africa, and Latin America.

Zers in the workforce and also by employers' own preferences for a scalable, on-demand workforce. Thirty-seven percent of survey respondents say both trends will have an impact on the workplace of the future.

All this suggests that full-time employees, freelancers, contract workers, and gig workers will be working and collaborating from wherever it makes the most sense for them in the moment, enabled by technologies that break down barriers between space and time. Seventy-one percent of survey respondents say remote employees will be enabled by advanced technology such as mixed reality, 3D holograms, and 5G communications, technologies that are already available today but haven't been widely used in business applications. FIGURE 4

Help with communication and collaboration will be especially important as the workforce becomes more widely distributed. More than three-quarters of survey respondents (77%) say the percentage of employees who work remotely will increase between now and 2040. Seventy-three percent envision a globally dispersed workforce, and 59% believe the gig economy will continue to expand.

Organizations will be flatter, with more decision making done at the edges of the enterprise. Employees closest to customers and production processes will now have the data and tools they need to make decisions. As noted earlier, 53% of survey respondents foresee widespread availability of virtual assistants for human employees in 2040.

The workplace itself will be used to promote and enable collaboration. Sixty-seven percent of survey respondents say they expect common areas to become more plentiful in office spaces over the next two decades, in part to facilitate communication. "There's tremendous competition for new ideas and products," observes architect Robert Mankin, a Los Angeles-based partner at the firm of NBBJ and head of the company's workplace design practice. "Companies will want workplaces that accommodate or encourage the connections, synergies, and serendipitous encounters that lead to a new idea or the next great breakthrough for their organization."

Past Disruptions Top of Mind
While most executives today are excited about what technology will bring to the workplace in 2040, they are not oblivious to the fact that change itself can be disruptive. They are mindful of past disappointments—software implementations that underdelivered, analytics that proved unreliable due to dubious data, or new hardware that employees never accepted because it didn't mesh well with their work processes or corporate culture.

There's also an understandable concern around how new technologies, particularly where they automate tasks previously done by humans, will impact employees and their colleagues. In a recent survey by the Pew Research Center, 72% of Americans said they are somewhat or very worried about a future where robots and computers can do many human jobs. Only 33% said they are somewhat or very enthusiastic about that prospect. Some of the business

executives surveyed for this report are similarly concerned. Only 22% think most workers will be able to find equal or better jobs if technology takes over their current position.

On the whole, though, the executives surveyed are notably more optimistic. Just 25% say their organizations see technology mainly as a tool for reducing payroll costs, implying that paring the workforce isn't a top priority for their technology agenda. And as noted earlier, only 37% believe AI will eliminate more jobs than it creates. FIGURE 5

The Importance of Culture

Emergent developments in the complex ecosystem of work seldom happen everywhere all at once, but instead are pioneered by those organizations with the innovative spirit and resources to make them happen. Survey respondents say the most common barriers to building a workplace equipped for the future are budget constraints, employee resistance to change, and a risk-averse culture, each cited by approximately four in 10 respondents. This suggests that even as they invest in technology, employers also will need to invest in change management. FIGURE 5

Meanwhile, more than a quarter of survey respondents also say that a lack of strategy or vision from the C-suite will likely hold their organizations back. As one respondent observed, "Our company is aiming too low. There are deeper opportunities, but we're just scratching the surface." Another added, "We're not even looking," while a third allowed that "exhaustion from hopping on too many fads" has led to employees "separating into neophile and curmudgeon camps rather than open-minded skepticism."

Future Growth Rides on Embracing Technology

Most organizations have a long way to go to fully leverage the technologies that will shape the future of work. Right now, for example, the use of AI in mainstream workplaces is in its nascent stages, and even technology leaders

TOMORROW'S ORGANIZATIONS WILL BE FLUID AND FLEXIBLE

Fluid organizational structures, flexible work schedules, and virtual conferencing will all be common in 2040.

● EXTREMELY COMMON   ● NOT AT ALL COMMON

Flexible work schedules
77%
1%

Virtual conference rooms enabled by advanced technologies (e.g., virtual reality, 3D holograms)
76%
2%

A globally dispersed workforce
73%
2%

Common areas (work spaces function as a communication tool)
67%
2%

Corporate success dependent on efficiency gains
64%
4%

Widespread availability of virtual assistants for human employees
53%
4%

Flat organizational structures/less hierarchy
53%
6%

Employers reward employees for participation in professional networks
35%
12%

Separate offices
21%
34%

Rigid departmental boundaries (e.g., between sales, marketing, and customer service)
10%
53%

SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

are still trying to understand AI's full power and how best to employ it. In fact, only 29% of survey respondents see their organization as a leader in taking advantage of big data and data analytics, a field arguably much more mature than AI. This suggests that companies that haven't begun to prepare for the workplace of tomorrow will need to begin soon or risk putting themselves at a significant competitive disadvantage.

"You have to bring a different level of adrenaline to the organization to foster a learning and evolving culture," says a senior technology leader for a global

FIGURE 5

MONEY AND CULTURE ARE HURDLES

Budget constrictions, employee resistance to change, and risk aversion are all seen as top barriers to building the workplace of tomorrow.

| **44%** Budget concerns/sunk costs in legacy facilities and systems | **38%** Employees are resistant to change | **38%** Risk-averse corporate culture | **31%** Lack of talent/skills/training for employees | **29%** Inability to experiment with new technologies and work environments | **28%** Lack of strategy/ vision from the C-suite | **26%** Lack of understanding of the benefits provided by modern workplaces | **23%** Insufficient commitment to change from the C-suite |
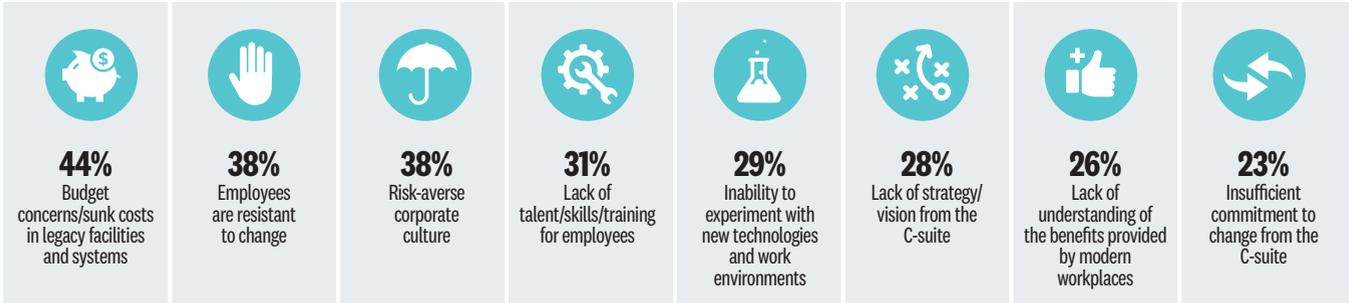
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, FEBRUARY 2019

ONLY 29% OF SURVEY RESPONDENTS SEE THEIR ORGANIZATION AS A LEADER IN TAKING ADVANTAGE OF BIG DATA AND DATA ANALYTICS.

airline based in the Asia-Pacific region. "If you can't adapt and don't have a willingness to try, you're really going to struggle."

To thrive in the decades ahead, companies will need to embrace transformative technologies. They'll also need to provide employees with the resources they need to operate in a high-speed, data-driven, AI-enabled world. Indeed, companies can anticipate that good employees will gravitate toward those employers offering the opportunity to grow and make an impact on the company's success. That retention challenge will include offering ongoing opportunities for continuing education and training.

Organizations also will need to create workplaces that enable the communication, collaboration, and networking that survey respondents indicate will be so important between now and 2040. This future work environment includes technology that allows remote workers and third parties to act as integral parts of the team, and open and flexible spaces that encourage communication and innovation. Companies also will want to foster a culture that promotes and rewards collaboration and knowledge-sharing. Finally, they'll want to recruit widely and provide the flexible work conditions workers increasingly say they want.

"The workplace has to evolve to support a diverse mix of people and skill sets if companies are going to stay at the forefront of the competition for new ideas and products," says NBBJ's Mankin. "Companies also have to incorporate learning environments into their workplace. Some companies have done that in the past, but I think we'll see more of it as we go forward."

Rather than guess at what these workplaces of the future might look like, 81% of survey respondents say organizations will need to use data and analytics to better understand how workplace design and features impact business performance.

That's good advice because the nature of work is always evolving. But the changes expected over the next two decades are dramatic enough that those who fail to adapt may soon find themselves at a distinct disadvantage in the marketplace.

Companies that embrace the future of work, by contrast, will likely find themselves operating with unprecedented levels of efficiency and innovation, driven by highly connected and collaborative employees unbound from the workplace constraints of the past.

"THE WORKPLACE HAS TO EVOLVE TO SUPPORT A DIVERSE MIX OF PEOPLE AND SKILL SETS IF COMPANIES ARE GOING TO STAY AT THE FOREFRONT OF THE COMPETITION FOR NEW IDEAS AND PRODUCTS." ROBERT MANKIN, PARTNER, NBBJ
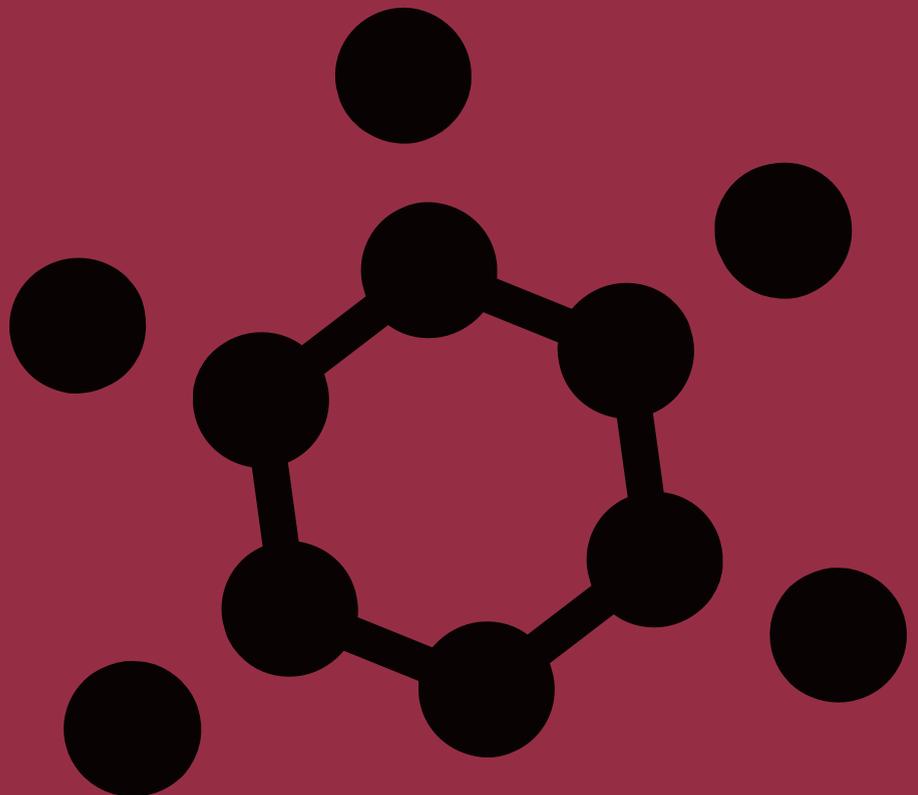
METHODOLOGY AND PARTICIPANT PROFILE

A total of 629 respondents drawn from the HBR audience of readers (magazine/enewsletter readers, customers, HBR.org users) completed the survey.

SIZE OF ORGANIZATION

11%
500 TO 999
EMPLOYEES

27%
1,000 TO 4,999
EMPLOYEES

12%
5,000 TO 9,999
EMPLOYEES

49%
10,000 OR MORE
EMPLOYEES

SENIORITY

26%
MANAGER/
SUPERVISOR

21%
SENIOR MANAGER/
DEPARTMENT
HEAD

14%
DIRECTOR

9%
CONSULTANT

8%
EXECUTIVE
MANAGEMENT
(EVP, SVP, GM,
MANAGING
DIRECTOR,
ADMINISTRATOR)

7%
C-SUITE/
PRESIDENT/
CHAIR

6%
VICE PRESIDENT

ALL OTHER TITLES ARE LESS THAN 6% EACH

KEY INDUSTRY SECTORS

13%
FINANCIAL
SERVICES

11%
TECHNOLOGY

11%
MANUFACTURING

9%
GOVERNMENT/
NOT-FOR-PROFIT

8%
BUSINESS/
PROFESSIONAL
SERVICES

7%
EDUCATION

7%
HEALTH CARE

6%
RETAIL

ALL OTHER INDUSTRIES ARE LESS THAN 6% EACH

JOB FUNCTION

18%
GENERAL/EXECUTIVE
MANAGEMENT

13%
HR/TRAINING

8%
SALES/BUSINESS
DEVELOPMENT/
CUSTOMER SERVICE

7%
STRATEGIC
PLANNING

6%
R&D/INNOVATION/
PRODUCT
DEVELOPMENT

6%
CONSULTING

6%
OPERATIONS/
PRODUCTION/
MANUFACTURING

6%
MARKETING/PR/
COMMUNICATIONS

ALL OTHER FUNCTIONS ARE LESS THAN 6% EACH

REGIONS

48%
NORTH AMERICA

28%
EUROPE

15%
ASIA-PACIFIC

5%
LATIN AMERICA

4%
MIDDLE EAST/
AFRICA

Figures may not add up to 100% due to rounding.

SUBJECT MATTER EXPERT CONTRIBUTORS

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Tom Mitchell, professor of machine learning, computer science, robotics, language technologies, and biomedical engineering at Carnegie Mellon University

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