JOBS AND AI ANXIETY

The future of work: adapting to technological change
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Technology has always had the power to dramatically change the world we live in, often with little or no warning. But today, innovations are coming faster than ever, and they are transforming one thing in particular — our jobs.

It’s hard to ignore all the anxiety-provoking news reports about robots and other machines eventually replacing many types of workers. At Robert Half, we believe there will be changes ahead due to technology, but we also believe that most of them will ultimately be job-enhancing.

We talk to employers and workers all day, every day, who tell us how new technology is redefining the way they work. We created this report based on their input, as well as on what we learned from our surveys of managers across the United States and Canada. In addition, we consulted a number of internal and outside experts, including leading futurists, to find out how they think technology will affect the workplace.

“People and their relationship with technology, or more specifically, how they work with and apply technology in new and imaginative ways, will help define the new world of work,” says Paul McDonald, senior executive director at Robert Half.¹

Certainly, factors besides technology are driving workplace change. But we believe technology will be responsible for the lion’s share of what’s ahead. Even things like the gig economy, which on the surface appear to be social and market phenomena, are wholly enabled by technology. It is also technology that makes possible alternative work arrangements, such as telecommuting.

This report provides an up-close look at what you can expect in the workplace of the future.

¹ More at RobertHalf.com
WHAT’S AHEAD?
5 TRANSFORMATIVE TECHNOLOGIES

Technology is already changing how we work. Desktop devices and smartwatches tell us when we’ve been sitting too long. Voice-activated technology can sync conference room hardware with presentation software and adjust the lighting and temperature in the room.

Still, what we’re seeing is just the start. And it’s the foundation for the new world of work.

We asked managers across North America which technologies they believe will be the most disruptive to their workplace in the next five years. In many cases, the responses of our survey participants aligned with the predictions of the experts we interviewed one-on-one. Following are what these technology and business experts believe will bring the most significant change to organizations, and to how people work, over the next several years:

• Automation
• Artificial intelligence
• Augmented reality, virtual reality and mixed reality
• Cloud computing and services
• The Internet of Things

These five transformative technologies are the focus of this report.
Automation makes workers more valuable

Business process automation has already taken hold. Take those chatbots that handle basic customer inquiries, for example. And, in the office, business process automation is helping organizations speed up and streamline everything from data analysis and document signing to onboarding employees.

Robotic process automation (RPA), in particular, is a way for businesses to automate processes to reduce costs and boost employee productivity. Examples include software robots (or bots) that take care of basic, and often tedious, tasks such as data entry and accounting records reconciliation.

Tony Abel, an expert in RPA solutions and a managing director at global consulting firm Protiviti, a Robert Half subsidiary, says, “RPA can be easily deployed and its applicability in a business environment is nearly endless.”

Jonathan Wyatt, managing director and global head of Protiviti Digital, adds, “There are plenty of surveys out there that say about 40 percent of the tasks people do today will be automated over the next 10 years or so.”

RPA can handle travel and expense management, and it can compare individual expenses against predefined rules and regulations from both internal and external computer systems. Abel says RPA tools can also be programmed to handle processes such as IT user provisioning — automatically assigning new employees access rights to business systems based on their role, business unit and other criteria.

A trap many organizations fall into with new and emerging technologies is the temptation to automate anything that can be automated without prioritizing which elements make the most promising candidates. This is an inefficient approach; companies need to have a plan. For example, Protiviti helped one Fortune 500 technology solutions company that wanted to deploy RPA within its audit department to decide which 100 controls and activities were best for automation. Selections were based on factors such as time and cost savings, as well as the potential of the automated control to reduce errors.

How will automation change your workforce? What jobs can be automated? What skills will you need to hire for? Get the answers.

Process automation helps companies not only save money but also make better use of talent. “Most business leaders have a long, long list of things they would like to do if they had the people to do it,” Wyatt says. “By using

“RPA can be easily deployed and its applicability in a business environment is nearly endless.”

TONY ABEL, managing director, global leader for RPA solutions, Protiviti
“We will have a symbiotic computing relationship to AI. That means humans will increasingly use AI to augment their thinking, as AI increasingly learns from humans.”

DANIEL BURRUS, technology futurist, disruptive innovation expert and best-selling author

As we automate more processes and interact more with machines in our everyday jobs, Protiviti’s Wyatt says, “many of us can expect to do less of our work through a keyboard in the future.” AI will be quietly handling routine tasks, like data entry, in the background. And using our voice and gestures, we will instruct AI to perform tasks such as taking notes, conducting web searches or logging on to our computer in the morning.

“Rather than eliminating jobs, AI will transform them,” says Madhumita Bhattacharyya, managing director and leader of advanced analytics and artificial intelligence services at Protiviti. “It will create new, advanced opportunities with higher-level strategic growth and responsibilities.”

‘Symbiotic computing’

After the initial wave of job disruption, people will eventually settle into a close working relationship with AI technology, says author Daniel Burrus, a technology futurist and disruptive innovation expert.

“We will have a symbiotic computing relationship to AI,” he says. “That means humans will increasingly use AI to augment their thinking, as AI increasingly learns from humans.”
Symbiotic computing is the concept of humans and AI working as partners, Burrus explains, but with AI primarily serving as the supporting partner in the equation. Burrus shares this example of a symbiotic relationship between a medical professional and AI to help explain the dynamic: “AI in the form of IBM Watson knows more about oncology than an oncologist does. But if you were a cancer patient, would you want a really great oncologist, just Watson or a really great oncologist who has access to Watson? You’d probably choose the third option, which is symbiotic computing.”

While it will take a few years to reach the age of symbiotic computing, AI-enabled technologies are already supporting businesses as well as their workers and customers. Robo-advisers, for example, are now commonplace in the financial industry, providing digital financial expertise to consumers based on algorithms.

Finding the most beneficial areas to apply AI technology demands human ingenuity, says Jeff Weber, executive director of Robert Half Technology. He predicts that many jobs AI generates in the near term will be centered on picking the right business cases, turning those ideas into reality and then refining them.

An employee push for AI?
Though many workers today worry that AI could replace them, in the future it may actually be employees who pressure their companies to experiment with AI. Why? Just as it happened with the internet and smartphone technology, people expect to use the same tech tools and services at work that they use in their personal lives.

Employees are increasingly exposed to AI in everyday life, using tools such as Google Maps and smart home devices. As a result, says Dan Schawbel, research director at Future Workplace and author of Back to Human, employers need to recognize AI’s power as a recruiting and retention tool. “Top talent doesn’t want to work for a company that isn’t modern and focused on innovation,” he notes. “Talented people, even if they aren’t in a tech-focused job, want access to leading-edge tools.”

Find out how to enhance your recruitment and retention efforts with AI.

AI’s cousin, machine learning
Machine learning, a machine’s ability to learn without being programmed, is closely related to AI. It’s also going to play a key role in the future of work because it can help companies save money and increase profits. Machine learning can, for example, allow a firm’s business systems to perform occasional or routine maintenance on themselves.

“Many of us can expect to do less of our work through a keyboard in the future.”

JONATHAN WYATT,
managing director, global head of Protiviti Digital
More than half (60 percent) of business leaders across multiple industries surveyed for a report by Harvard Business Review (HBR) Analytic Services said the future success of their company will depend on machine learning to outdistance competitors in the future.¹⁰

Brandon Purcell, a senior analyst with Forrester Research, said in the HBR Analytic Services report that most companies vastly underestimate machine learning’s ability to analyze data collected by social media, online purchases and other sources. He went as far as saying, “One-hundred percent of any company’s future success depends on adopting machine learning. For companies to be successful in the age of the customer, they need to anticipate what customers want, and machine learning is absolutely essential for that.”¹¹

We asked employers across North America, “In general, in which ways do you think technological advancements such as artificial intelligence and robotics will affect jobs at your company?”

Here were their top responses.

### How Employers See AI and Robotics Affecting Jobs

**United States**
- Require new skills: 47%
- Enhance employees’ productivity: 47%
- Allow teams to focus on more strategic areas: 44%
- Create new opportunities for staff: 44%
- Change processes: 44%

**Canada**
- Require new skills: 49%
- Change processes: 48%
- Enhance employees’ productivity: 45%
- Replace routine responsibilities: 45%
- Allow teams to focus on more strategic areas: 37%

*Source:* Robert Half surveys of more than 1,200 managers in the United States and 300 managers in Canada; multiple responses were allowed.
Immersive tech to expand far beyond entertainment

Virtual reality (VR), augmented reality (AR) and mixed reality (MR) — three immersive technologies that fall under the extended reality (XR) umbrella — are nearing the end of their adolescence and moving into the workplace. Many professionals can expect to work with immersive technologies very soon, if they aren't already. Even people who won’t depend on them for core job functions will still need to be comfortable using them.

Here’s a quick overview of each technology:

• **VR** is a three-dimensional, computer-generated environment or re-creation of a real-life environment or situation that users can interact with and explore. Users typically experience VR through headsets, sometimes paired with hand-held controllers.

• **AR** allows users to integrate, or overlay, digital information into their real-world environment in real time. An example is walking downtown and viewing the landscape of shops through your phone’s camera. As you look at each business, the name pops up, as well as its star rating, hours of operation and perhaps even current promotions.

• **MR** merges real and virtual worlds to produce new environments and visualizations where physical and digital objects can coexist and interact in real time. Microsoft’s HoloLens is an example of an MR device: It’s a holographic computer, built into a headset, that lets users interact with holograms in a real-world environment.

“VR, AR and MR have a big role to play in the future of work,” says Burrus. “That’s because they can be creatively applied almost anywhere in a business.”

According to a global survey by the World Economic Forum, more than half (58 percent) of companies expect to adopt VR and AR by 2022. And the MR market is estimated to reach $3.68 billion by 2025 due to widespread adoption of the technology by various industries, especially manufacturing.

As we are seeing with AI, many organizations are only in the early stages of adopting immersive technologies. They are trying to figure out how best to apply VR, AR and MR to create value for the business. As more companies begin the journey, they will need people who can work with these tools — talent that is already scarce.

“Businesses have a need for not only AR, VR and MR developers but also people who understand the business case for these technologies: How do we apply them to retail? To sales? To manufacturing?” says Burrus.
Burrus also expects VR to be especially useful in recruiting by paving the way for more dynamic interactions between job candidates and hiring managers. Some employers are already experimenting with VR to give candidates at career fairs virtual tours of their organization and show them what it would be like to work in specific jobs. Currently, headsets are required, but future technology could make this recruiting approach much less cumbersome.

Robert Half’s McDonald agrees that VR could play an important role in helping candidates and employers decide if they’re a good match. “VR can be a powerful tool for helping job seekers learn about the company’s culture and values by giving them a deeper view of a company during the recruiting process, especially as the technology advances,” he says. “They can see if the organization is a fit for them. This also helps employers accelerate the hiring process and ensure a better long-term hire.”

**The cloud on fire**

For various reasons, from costs to security concerns, many businesses were initially hesitant to move to the cloud. But that’s the past. Today, the global market for cloud computing is on fire as more companies use it for creating and delivering new apps, storing and analyzing data, and other purposes. And the world of work is changing because of it.

Three-quarters (75 percent) of accounting and finance leaders in the United States polled for a 2018 report from Robert Half and Financial Executives Research Foundation said they are either using cloud-based solutions or plan to do so in the future, compared to 72 percent in our 2017 survey and 62 percent in 2016. Seventy-three percent of Canadian financial executives said in the 2018 report they are using or plan to use cloud-based solutions — up six points from last year’s survey and 26 points from 2016.

### Cloud services responsible for most cloud growth

One of the biggest contributors to the proliferation of cloud technology — and areas for cloud-related job growth — is the cloud services market. Cloud services are those that users can access through the internet or a cloud computing provider’s server. Some examples of these services include:

- **Software as a Service (SaaS)** — Software that is licensed on a subscription basis and is centrally hosted
- **Infrastructure as a Service (IaaS)** — Computer infrastructure, such as hardware and servers, that is provided on an outsourced basis
- **Platform as a Service (PaaS)** — A cloud-based computing platform that allows clients to develop, run and manage business apps without the infrastructure that software development processes typically require

AI as a Service (AlaaS) is also on the rise. As with all cloud services, AlaaS offers its product — AI tools, in this case — at a reduced cost and with greater user-friendliness and potential scalability than a company could get by creating AI solutions on its own. Alphabet, Amazon and Microsoft have all discovered that the AI they use to improve their own products can be turned into a service and sold to corporate customers.

Global research firm Gartner predicts that IaaS, which includes Google Cloud Platform, Amazon Web Services and Microsoft Azure, will be the fastest-growing segment of the cloud services market in the near term.
It is important to incorporate AI concepts as part of general educational curricula to ease workers’ transition to the AI world.

MADHUMITA BHATTACHARYYA, managing director and leader of advanced analytics and artificial intelligence services, Protiviti

Research from International Data Corporation (IDC) estimates that SaaS provider Salesforce and its ecosystem of customers and partners will create 3.3 million new jobs and more than $859 billion in new business revenues worldwide by 2022. And keep in mind that these aren’t just IT roles, like developers and cybersecurity experts, but also other professionals a business needs to operate, including marketing, sales, finance, administrative, human resources (HR) and customer service staff.

The cloud and machine learning

Cloud technology is also important to the future workplace as a steppingstone to machine learning.

“Cloud-based tools provide the necessary foundation that lets organizations capture, prepare and analyze data easily and economically,” states the HBR Analytic Services report, “precisely the steps required to train and keep [machine learning] models current and valuable.”

More than 60 percent of business leaders across multiple industries surveyed by HBR Analytic Services say the cloud will help reduce machine learning costs and make work processes more efficient.

In addition, the cloud helps deliver big data to more workers, not only to data scientists or data analysts.

The latter roles will be in high demand, of course. But industries ranging from finance to healthcare to retail will also need to hire skilled professionals for other jobs that are made possible or enhanced by analytics.

The Internet of Things: Alexa is talking to your front door right now

The Internet of Things (IoT) is a massive and rapidly growing information network in which objects, animals and even people are embedded with electronics, software, sensors, actuators and, critically, network connectivity. These various “things” talk to each other and interact without the need for human-to-human or human-to-computer involvement.

By 2020, Gartner estimates that more than 20 billion connected smart objects, from automotive systems to home appliances to electric meters, will be talking to each other.

Most people already know the IoT because of its use in the home. One of the best-known examples of the IoT is Amazon’s Alexa, an AI device that can control, typically via a home’s Wi-Fi network, household IoT devices such as door locks, lighting and thermostats.

“It is important to incorporate AI concepts as part of general educational curricula to ease workers’ transition to the AI world.”

MADHUMITA BHATTACHARYYA, managing director and leader of advanced analytics and artificial intelligence services, Protiviti
In the airline industry, Rolls-Royce uses IoT-enabled sensors in its jet engines to monitor their performance and connect them with air traffic control and weather services. In the agriculture field, Semtech recently announced that it would be using GPS trackers and biometric sensors to monitor animals’ vital signs and movements.

Other examples of the IoT’s interconnectivity powers appear in the healthcare sector, where providers use IoT technology for remote health monitoring. And manufacturers rely on smart sensors and IoT devices to help them manage their supply chain, improve production and even predict machine failures.

All these innovations require people who understand the Internet of Things. That’s why IoT job growth is likely to be significant over the next several years. Companies across industries — and many IoT-focused startups — will be looking for professionals who can not only develop these devices and apps but also connect them, maintain them and keep them secure. Those organizations also need specialists, such as business intelligence analysts and data scientists, to interpret and help apply data insights from the IoT.

We asked managers, “What are the barriers to your team adapting to new technologies?” Here were their top responses.

### United States
- Resistance to change: 43%
- Difficulty integrating with legacy systems and processes: 37%
- Effort or cost to implement new technologies is greater than the benefits: 32%

### Canada
- Resistance to change: 49%
- Difficulty integrating with legacy systems and processes: 33%
- Insufficient training for employees: 32%

**Source:** Robert Half surveys of more than 1,200 managers in the United States and 300 managers in Canada; multiple responses were allowed.
The World Economic Forum (WEF) projects in a report that 75 million jobs could be displaced worldwide by 2022 due to the new division of labor among humans, machines and intelligent technologies — but 133 million new roles could potentially emerge.\(^26\)

Entirely new professions will be created as a result of the adoption of new technologies. Many of these jobs will be higher paying and require broader skill sets.

AI in particular is shaping up to be a major job creator. Six in 15 emerging jobs growing most rapidly in the United States already relate in some way to AI, according to the LinkedIn 2018 Emerging Jobs Report.\(^26\) And skills related to AI are needed in every industry, not just tech.

According to the WEF, these jobs will range from remote healthcare monitor and advanced big data analyst to developers of an increasing range of web-enabled products. (For some examples, see our sidebar on future jobs on Page 18.) These opportunities will open up an entirely new set of livelihoods for those willing to reskill and companies willing to support them in the process.
But it’s not simply a question of employers upskilling their workforce, notes Protiviti’s Bhattacharyya. “It is important to incorporate AI concepts as part of general educational curricula to ease workers’ transition to the AI world,” she says.

Opportunities abound in a newly level playing field

Colin Mooney, chief digital officer at Robert Half, believes it’s not too late for anyone to build new skill sets and gain an understanding of emerging technologies. Because of the continual disruption that technology is causing, he says, no one is likely to be very much ahead of anyone else — whether they are a recent college graduate or an executive with decades of on-the-job experience.

“It’s really a level playing field out there in terms of learning the newest tech skills,” Mooney explains. “No one has all the necessary skills for the future of work, at least from a technology perspective, because everything is changing so rapidly.”

Burrus agrees that it’s never too late to adapt. “Humans are infinitely upgradeable,” he says. “We can learn new things whether we are 18 or 80.” He says workers in the future “can expect to have many jobs and do many different things during their career” because technology, and the world, will continue to change rapidly.

Since so few people have deep skills or experience working with new technologies like AI, workers have a great opportunity before them. People can take advantage of technology’s disruption by learning (and continuing to learn) more about just-arriving innovations and training their teams to use and get the most from them.

Dr. Tracey Wilen, a researcher and speaker on the impact of technology on society, work and careers, suggests that employers consider giving their employees a nudge to help encourage learning. “People will be more inclined to use new technologies if they see them as useful and relevant to their work,” she explains.

The transdisciplinary professional

Firms may already have a tail wind as they adopt new tech tools: a willing audience. Forty-five percent of employers surveyed in the United States and 25 percent of those in Canada said they feel their teams are very eager to learn about new technologies.

“There is evidence that suggests the companies that do best bring their workers along with them as they change,” says Robert Atkinson, president of the Information Technology and Innovation Foundation, an independent, nonpartisan research and educational institute.
Providing employees access to new technologies and the associated training gives companies a recruiting, retention and performance boost. Schawbel, the research director at Future Workplace, says, “Investing in your workers is smart. Retraining employees not only can help save the business money in the long run but also helps [workers] advance in their career.”

Professionals in all industries need to embrace technology and build new skills. Get tips on future-proofing your career.

What does the ideal future worker look like in any industry? It’s someone who combines a rare mix of talents, according to Wilen. These workers need to be a combination of a broad business generalist, an industry specialist, and a technologist who understands how to apply new technology effectively in their work and for the betterment of the business. Wilen calls these workers “transdisciplinary professionals.” They are people who can comfortably scan the horizon to analyze a business problem and come up with an innovative solution that includes technology — a priceless skill set in the future workplace, she says.

Wilen has this advice for professionals who want to acquire these skills: “Take a career selfie — a snapshot of where you are in your career — put focus on it and plan your next steps.”

Jobs will focus on things humans do best

Because of the coming advances, Mooney says, companies and workers will start to look at jobs much differently.

“Work in the future won’t be defined — or confined — by a role or job title,” he says. “It will be based largely on people’s increased ability to apply their own unique set of skills, knowledge and talents to their work.”

People’s jobs will center on what even the most advanced software can’t achieve by itself. It still takes a human to react to unexpected events, such as a business crisis.
Skills employers seek will change along with technology

We’re at ground zero right now for many of the technology tools coming to the workplace. No doubt, many others have yet to be invented. That means the skills needed in five, eight or 10 years will be different from the ones businesses are looking for right now.

Too often, managers don’t recognize that each time they recruit somebody, it presents an opportunity to build the workforce of the future,” Protiviti’s Wyatt says. “They need to take the time to assess the digital competencies of candidates they’re recruiting. When individuals who have a digital mindset choose to leave or not to join the organization, management needs to try to understand why and whether this is an indicator that change is needed.”

Building a Team That Can Get the Most From New Technologies

Here’s how managers expect to upgrade their workforce’s technological skills.

**United States**

- Train current staff: 64%
- Hire new staff with requisite skills: 47%
- Work with external services providers (e.g., managed services firms): 47%
- Bring in consultants who are subject matter experts: 45%

**Canada**

- Train current staff: 64%
- Hire new staff with requisite skills: 48%
- Bring in consultants who are subject matter experts: 41%
- Work with external services providers (e.g., managed services firms): 39%

Companies that expect to hire new staff with requisite skills will likely find it difficult — just as it is today. Eighty percent of respondents in the United States and 88 percent in Canada said they expect it will be at least somewhat challenging to find professionals skilled in the new technologies that their organization plans to implement.

*Source: Robert Half surveys of more than 1,200 managers in the United States and 300 managers in Canada; multiple responses were allowed.*
### Steps Employers Are Taking to Keep Workers’ Skills Current

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<td>1. In-person training, seminars and classes</td>
<td>1. In-person training, seminars and classes</td>
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<td>2. Online courses</td>
<td>2. Online courses</td>
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<tr>
<td>3. Knowledge transfer from consultants or other external subject matter experts to staff</td>
<td>3. Reimbursement for professional certification costs</td>
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<td>4. Reimbursement for professional certification costs</td>
<td>4. Working with a mentor</td>
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<td>5. Working with a mentor</td>
<td>5. Tuition reimbursement for college courses</td>
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Despite these efforts, many employers surveyed — 82 percent in the United States and 90 percent in Canada — expect that it will be at least somewhat challenging for their organizations to get staff up to speed on new technologies the business is implementing.

**Source:** Robert Half surveys of more than 1,200 managers in the United States and 300 managers in Canada; multiple responses were allowed.
An ever more flexible workforce

In many ways, companies pursuing digital transformation and workers in the gig economy were made for each other. Technology is enabling the use of contract and interim professionals more than ever. The gig economy increasingly includes knowledge-intensive industries and creative occupations.31 This is sometimes referred to as the human cloud.

A growing number of digital projects can be more efficiently staffed with these contract and interim professionals. Interim staffing is a good way for companies to access hard-to-find skills, especially businesses still laying the foundation for new technologies. Firms seeking specialized skills are recognizing that they don’t need to hire full-time employees for these initiatives, especially those for which they don’t have time to conduct a traditional candidate search.

According to the WEF report, employers intend to make wider use of contractors with specialized skills.32 Seventy percent of employers surveyed for the Aspen Institute’s Future of Work Initiative said they expect more companies and organizations to move toward an on-demand workforce model in the future.33

In the legal field, as one current example, technology is spurring the use of project teams assembled for eDiscovery and litigation support initiatives. These projects can be handled more cost-effectively and quickly with a mix of skilled professionals using cloud-based software to read and scan legal documents.

A new labor model

A new labor model is emerging that comprises, among other elements, a managed services approach. This model draws on full-time employees, external consultants and interim professionals, and in a more coordinated way. Companies will increasingly outsource sophisticated, knowledge-based work for major events such as an enterprise resource planning upgrade and even turn over entire business functions to managed services providers.

Technology helps enable this model, as it makes working with external resources and remote teams much easier for companies. New uses of tools like RPA and AR, for example, allow employees around the globe to come together in a much more efficient and collaborative manner.

“Work in the future won’t be defined — or confined — by a role or job title.”

COLIN MOONEY, chief digital officer, Robert Half

Discover how to create a strong telecommuting program that helps teams collaborate effectively.
These developments come at a time when economic and generational trends are prompting companies to move away from the traditional labor model. Many firms are now operating with leaner middle management teams, and more professionals want the flexibility and variety that project work provides. The model is especially attractive to firms needing ongoing consultants who, over time, develop a deep knowledge of the organization’s strategies, risks and opportunities.34

**8 Jobs You May Hire for in the Future**

Some jobs in the future will require specialized, high-tech skills, but the experts we interviewed believe many more positions won’t — even though employees will be working closely with new technologies.

“A lot of the roles, if not the majority, will not be as technical as many people assume, even in the field of AI,” says Protiviti’s Jonathan Wyatt. “We all use Excel functions without a full understanding of the mathematics behind them. In fact, we may not even be aware of the complexity of many of the apps we use. In a similar way, many of us will be using advanced AI, defining use cases and integrating tools we could not imagine today, without fully understanding how it all works.”

Here are eight jobs you may be hiring for in the future (if you aren’t already).

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<th>Deep Learning Specialists</th>
<th>Digital Conference Techs will ensure peak performance of voice-activated and VR technology in company meeting rooms in multiple locations and will direct employee training.</th>
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<td>Edge Computing Technologists</td>
<td><strong>IoT Architects</strong> will integrate IoT devices into business offerings; implement IoT, cloud and mobility initiatives; and define IoT security strategies.</td>
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<td>Avatar Designers</td>
<td><strong>Intelligent Automation Directors</strong> will advise and support internal business teams on new applications of intelligent technology, using computer vision, neuro-linguistic programming, machine learning and RPA to drive efficiencies in processes.</td>
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<tr>
<td>Remote Patient Specialists</td>
<td><strong>HR Tech Directors</strong> will maintain RPA and other tools used by the HR department for activities such as travel and expense management, onboarding new employees, and IT user provisioning.</td>
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8 Jobs You May Hire for in the Future

Deep Learning Specialists will develop machine learning algorithms for supervised learning and deep learning (forms of machine learning), and guide development of those algorithms from prototype to production.

**Avatar Designers** will be one of many new roles on creative, video product and design teams as dynamic video content becomes much more important as a form of communication.

**HR Tech Directors** will maintain RPA and other tools used by the HR department for activities such as travel and expense management, onboarding new employees, and IT user provisioning.
TECHNOLOGY AND WORK RELATIONSHIPS

Technology can free up workers to focus on initiatives that best reflect their individual talents. Will the freedom from monotonous tasks also play a role in their personal relationships?

Protiviti’s Abel thinks so. “Technology — the bots — can run in the background 24 hours a day, seven days a week, 365 days a year,” he says. “They are working on a schedule that we humans can no longer relate to. Technology has essentially taken the bot out of the human, and what’s left is the need to be more interactive with each other.” As manual tasks are reduced, people are free to engage in more collaboration and creative thinking.

Perhaps that’s what the managers we surveyed in the United States were telling us when they were asked how they’ve seen their workplace relationships change in the past five years and how they think technology has contributed to those changes. Seventy-nine percent of the respondents said their workplace relationships had improved, and 64 percent said technology had greatly influenced that change.

In Canada, 67 percent of respondents reported at least some improvement in their workplace relationships during the same period, but only 42 percent said tech had been a top factor driving that trend. A larger percentage of
respondents in Canada (56 percent) said technology had “somewhat contributed” to recent improvement in their workplace relationships.

**Soft skills will be more important than ever**

Working together more often while machines handle the tedious tasks will require better people skills. Robert Half research shows half of employers in the United States and Canada — 51 percent and 50 percent, respectively — expect to see the introduction of new technologies in the workplace driving up demand for soft skills.

Uniquely human attributes like empathy will top the list of soft skills for both workers and business leaders, according to Schawbel. Empathy and other types of emotional intelligence, like compassion and the ability to understand nuance, are areas where human workers have technology beat.

“Soft skills have been the new hard skills for several years now in most professions, from finance to IT,” Robert Half’s McDonald says. “If you’re not already making a point to cultivate and master soft skills like communication and collaboration, you’re undermining your ability to adapt to change and remain relevant in the future workplace.”

Soft skills are also key to an effective virtual workforce. While technology makes remote work possible, it is soft skills that make it successful.

More virtual teams and remote workers mean professionals will have fewer opportunities to meet with their colleagues in person, Schawbel says. “As a result, they’ll need better communication skills to combat isolation and loneliness. Communicating regularly and in a human way will become more essential as workers are more dispersed,” he says.

**Don’t wait for technology to overtake your team. Prepare your staff for the future of work.**

“If you aren’t willing to change, technology will run you over. It takes no prisoners.”

**DAN SCHAWBEL,** research director at Future Workplace and author, Back to Human
Employers tell us these soft skills will be the most valuable in the workplace of the future.

### Tech-Driven Soft Skill Needs

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic thinking</td>
<td>55%</td>
<td>63%</td>
</tr>
<tr>
<td>Leadership</td>
<td>53%</td>
<td>57%</td>
</tr>
<tr>
<td>Communication</td>
<td>51%</td>
<td>50%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>43%</td>
<td>49%</td>
</tr>
<tr>
<td>Intellectual curiosity</td>
<td>39%</td>
<td>42%</td>
</tr>
</tbody>
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*Source: Robert Half surveys of more than 1,200 managers in the United States and 300 managers in Canada; multiple responses were allowed.*
CONCLUSION: MAKING CHANGE YOUR FRIEND

How much time managers have to prepare their teams, and themselves, for the new world of work depends to some degree on where they sit. Disruption and change are occurring faster in some workplaces than in others. For those in the technology industry, for example, the pace of change is likely much more intense than in other sectors.

Regardless of the industry, though, it’s never a good idea to just wait for change to happen. Managers should be taking steps now to better understand how technology is likely to transform their workplace.

Protiviti’s Wyatt underscores the sense of urgency: “We are in a world that’s about to be completely reinvented. Businesses need people who not only can see the possibilities of new technologies like AI but are also excited about them. They need workers who don’t fear change. They need people who want to drive change — and are capable of doing that.”

“Workers need to make change their friend,” futurist Burrus says. “If they don’t, it will become their enemy. And businesses should get out in front of disruption and turn it into a competitive advantage.”
Schawbel takes the same view: “If you aren’t willing to change, technology will run you over. It takes no prisoners.”

Robert Half Technology’s Weber offers another tip to business leaders: Be strategic in preparing for and driving technological change. “Don’t just dip your toe in the water if you want to bring about digital change in your organization. Likewise, don’t jump in haphazardly and say, ‘OK, now let’s do something different!’ You must be thoughtful and focused in your approach. Otherwise, the change will fail, or it simply won’t happen.”

Companies that will have the most success adapting to change are those that make it an integral part of the corporate culture, says McDonald. “That includes not just welcoming diverse perspectives,” he says, “but also making a point to recruit innovative and critical thinkers — people who can continually learn new technologies and ways of working.”

Find Out More About the Future of Work

How can you take advantage of new technology and move your business forward? See the following articles for strategies to help you and your team embrace the future of work.

- Job automation in the workplace of the future
- AI’s impact on the workplace
- Steps to prepare your team for the future
- Future-proofing your career
- Keys to a strong telecommuting program

See more research and insights on the future of work on the Robert Half blog.

“Don’t just dip your toe in the water if you want to bring about digital change in your organization.”

JEFF WEBER, executive director, Robert Half Technology
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ROBERT HALF: THE STAFFING INDUSTRY INNOVATOR

Robert Half has always been a company made up of innovators. We recognized early that digital transformation is a staffing industry game changer. This has allowed us to customize technology tools that set the bar for customer service.

Robert Half has been working with Silicon Valley’s most innovative companies to develop our proprietary technologies. We’re now using AI, machine learning and big data to help us make better job matches. And we continue to expand the ways in which our customers can interact with us online, from submitting job orders through our website to browsing for skilled job candidates.

Robert Half can help you hire so your team embraces technological change.