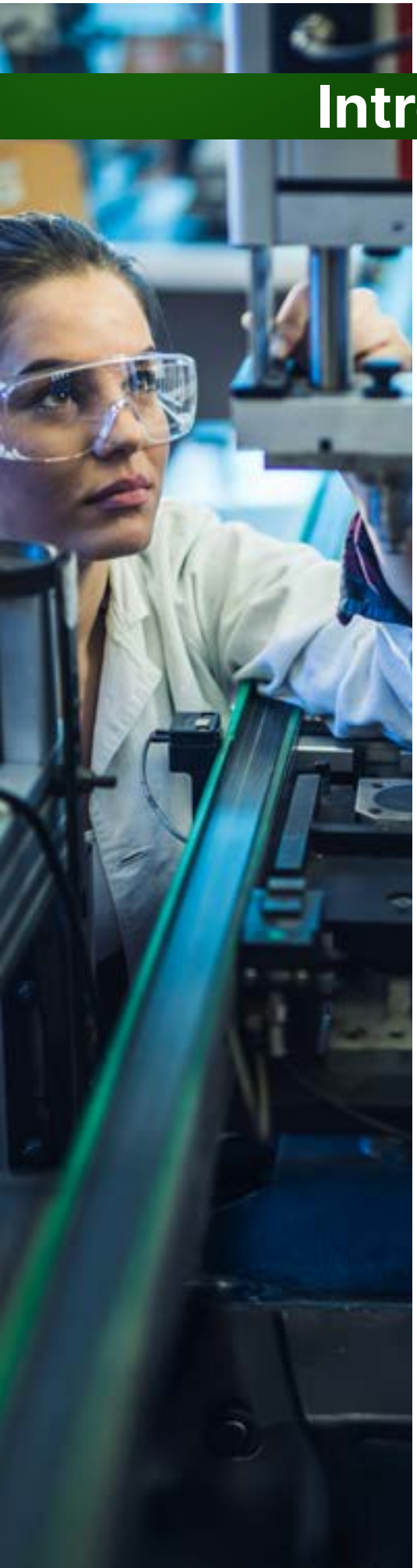
MAKING INDUSTRIAL AND SOFTWARE AUTOMATION FULL PARTNERS AT WORK

Manpower®

Work Intelligence Lab
by ManpowerGroup®

TABLE OF CONTENTS



Introduction

Executive Summary

- The **ManpowerGroup Employment Outlook Survey** research found that in mid-2025, **61% of global companies are increasing their investment in task and process automation.** This figure is even higher for organizations that are highly impacted by workforce aging (71%) and uncertainty around international trade (68%).

- **ManpowerGroup's 2025 Global Talent Barometer** found that employees are **more concerned about economic instability (34%) than being replaced by AI or other automation technology (19%).**

- **The two major types of workforce automation include industrial automation and software automation.** Industrial automation leverages physical robots to perform manual labor in manufacturing and other production settings. Software automation enhances HR and employee productivity and efficiency by delegating simpler digital tasks to smart machine partners.

- While many forms of automation are already well-established – such as business process and robotic process automation – **intelligent automation tools such as agentic AI are likely to replace generative AI as the next workforce MVP.** Where they once operated with only a limited store of information and required heavy oversight, today's agentic AI bots can collaborate both with other technology systems and human workers with looser supervision.

- **Recommendations for leaders implementing new industrial or software automation include** designing human-friendly systems, connecting systems from end-to-end, creating an infrastructure for human/machine team assembly, facilitating supervised independence, upskilling and empowering human colleagues, and measuring success beyond raw productivity.

An Automation Experiment

A group of Carnegie Mellon University researchers recently set up a fake software company, TheAgentCompany,[1] to test how well automation in the form of AI-based agents would fare in a real-world business scenario with no human supervision.

The simulation included designated bots, such as a Chief Technology Officer and a Chief HR Officer, to govern tasks such as online research, code writing and spreadsheet development. TheAgentCompany had several information and communication tools at its disposal, from an ultra-specific employee handbook to a live chat function, and the AI agents were designed to engage easily with one another.

There was every reason to believe the experiment would be a success. After all, agentic AI technologies developed by Anthropic, OpenAI and others could do so much more than execute human instructions. TheAgentCompany bots allegedly had the ability to act independently and make novel decisions in unfamiliar environments.

However, **TheAgentCompany failed.** There wasn't a single category of work in which the AI agents accomplished the majority of the tasks required, and the researchers quickly learned that the AI agents weren't as good at simple tasks as they thought. They often misinterpreted feedback, were sidelined by minor changes or abnormalities, and lacked common sense when faced with a problem. The conclusion? **Automation can be extremely useful, but it isn't the answer to everything.**

"The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency." ***– Bill Gates***

[1] *Carnegie Mellon University*

We actually learned this lesson a long time ago. When automation first came to the scene during the late 18th and early 19th centuries, it was defined as the use of mostly self-driven equipment in a system of manufacturing or other production process. At this time in history, known as the Industrial Revolution, many despaired that automation would mean the end of human work.

Today, we see a resurgence of that concern with the addition of intelligent, AI-based technologies to traditional automation strategies, such as production forecasting and predictive maintenance. Many workers fear that mass layoffs and record-high unemployment will result from integrating machine participation in traditionally human-driven work processes.

But just like in the Industrial Revolution, this has yet to happen. According to ManpowerGroup's latest Employment Outlook Survey[2] of more than 40,000 employers around the world, the story is more complex. Most employers expect to keep their headcount flat or hire in Q3 2025. Only 16% said they anticipate decreases. **Sectors such as IT and Communication Services are poised to increase hiring volumes, and while industries such as financial services, real estate, healthcare and life sciences are dialing back hiring,** there are multiple factors involved besides automation.

Most employers expect to keep their headcount flat or hire in Q3 2025

While automation will continue to make a huge impact on human work, it will not replace it. And the degree to which it can be effective in helping us build and manage successful organizations will depend on how we design it, incorporate it, and most importantly, oversee it.

In this paper, we'll discuss current global workforce use of automation – including prevalence and type. We'll then provide recommendations for leaders striving for business efficiency, and to that end, effective human and machine integration.

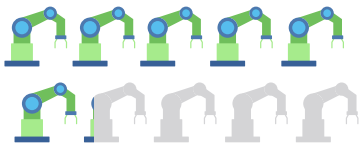
[2] *ManpowerGroup Employment Outlook Survey, Q3 2025*

Global Automation Trends

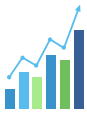
The Current State of Workforce Automation

We asked more than 40,000 employers around the world to share their automation investment plans for 2025.[2] Most businesses (61%) across industries said they plan to increase their process automation budgets. South and Central America are at the forefront of increasing automation investment at 68%, followed by North America (63%), Asia Pacific (62%) and Europe (58%). Investment plans were also more ambitious for larger organizations and those in high-tech sectors such as communications, IT and financial services.

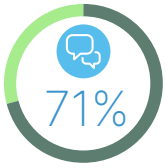
A Global View of Automation Investment[2]



61% of employers across industries worldwide plan to increase investment in automation in the next twelve months.

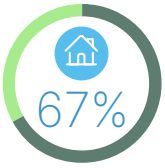


Large enterprise businesses (5,000+ employees) are the most bullish, with 68% planning to increase investment in the next twelve months.



Communications Serivces

Information Technology



Financials & Real Estate

Communications Services (71%), Information Technology (70%) and Financials & Real Estate (67%) employers are the most likely to increase automation investments in the next year.

Small businesses (less than 50 employees) are more conservative, with 58% planning increased automation investment.

Planned investments in future automation are the strongest in the South and Central Americas (68%), but more conservative in Europe (58%).

[2] ManpowerGroup Employment Outlook Survey, Q3 2025

In terms of the most-impacted functions, the respondents said they anticipated the most changes to IT and data groups, while they felt ESG and risk groups were the least likely to be affected. In the Americas, automation is being used more prolifically in the sales and marketing functions than in the EMEA and APAC regions.

Global Job Functions Most Impacted by Automation in 2030[2]

IT & Data	**76%**
Manufacturing & Production	**71%**
Sales & Marketing	**71%**
Operations & Logistics	**71%**
Administration & Office Support	**68%**
Engineering	**68%**
Sustainability & Environmental	**68%**
Human Resources	**66%**
Front Office & Customer-Facing	**66%**
ESG Risk, Advisory & Governance	**63%**

How much do you think the following job functions will change in the next five years due to automation?

Deloitte's 2025 State of Generative AI in the Enterprise study[3] illustrated that **26% of global companies are heavily investing in autonomous agent development, and another 42% are actively exploring it.** And the IBM Institute for Business Value[4] estimated that 92% of C-suite executives planned to digitize workflows and leverage some degree of AI-powered automation by 2026.

But is automation actually replacing human workers? New research from Staffing Industry Analysts (SIA)[5] revealed that automation is still mostly aiding in human role redesign and augmentation versus rendering humans unnecessary.

For example, only 14% of large staffing buyers have replaced temporary workers with automation, and these are more likely to be larger buyers and those primarily using industrial workers. Notably, **no firm with fewer than 10,000 employees reported replacing contingent workers with automation.** Those organizations using contingent IT staff were the least likely (9%) to replace these workers with automation.

Workers are aware of automation's growing influence in their organizations. Nearly 40% of U.S. employees reported some form of automated management at their workplace in 2024, with just under 34% experiencing automated schedule assignment and 32% percent seeing their tasks assigned through automated systems.[6]

[2] ManpowerGroup Employment Outlook Survey, Q3 2025 | [3] Deloitte | [4] IBM Institute for Business Value
[5] Staffing Industry Analysts (SIA) | [6] Statista

However, most are not very concerned. ManpowerGroup's recent Global Talent Barometer research[7] found that employees are more concerned about the economy's instability (34%) than being replaced by AI or automated tech (19%).

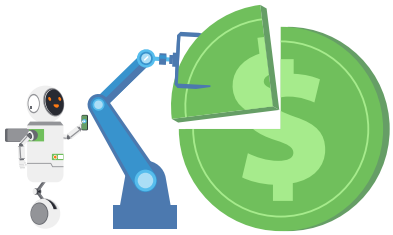
A Global View of Top Worker Concerns[7]

Economic instability	**34%**
Company restructuring	**24%**
Being replaced by AI or other technology	**19%**
Mass layoffs	**19%**
Rapid skill set changes (AI & automation)	**17%**
Increased outsourcing of jobs	**13%**
Being replaced by workers from other countries	**12%**
Changing environmental regulations	**10%**
Return to office issues	**7%**
There are no threats to my career	**28%**

Percentage of workers who rank the following in their top three career threats

Only three in ten workers in Malaysia (31%), India (29%), Mexico (29%) and Singapore (28%) ranked being replaced by AI as one of the top threats to their careers. Workers in Europe were the least likely to see AI and automation as a top threat, reporting at just 13% in the Netherlands and Norway, and 14% in Germany. The Talent Barometer study also uncovered that members of Generation Z fear being replaced by technology more than members of older generations.

Lastly, many employees are taking ownership of the greater productivity afforded by some types of automation. In 2024, McKinsey[8] found that the employees who reported time savings from automation went on to use that additional time to contribute to other activities in their organizations.



Economic concerns currently outweigh automation worries for workers

Understanding the Global Automation Landscape

The two major types of workforce automation include **industrial automation and software automation.** Industrial automation leverages physical robots to perform manual labor in manufacturing and other production settings. One might say that robots are hardware that has been programmed to engage with the environment and complete tasks automatically.

Software automation, on the other hand, enhances HR and employee productivity and efficiency by delegating simpler digital tasks to smart machine partners. So far, we've mentioned several subtypes of software automation, including agentic AI, but we have yet to define them. Here, we'll examine each subtype in the context of how they are used to manage HR-related processes.

[7] *ManpowerGroup Global Talent Barometer, June 2025* | [8] *McKinsey*

Subtypes of software automation and how they are used to manage HR-related processes

Business Process Automation (BPA) allows leaders to streamline total processes from start to finish – measuring and then optimizing the effectiveness of strategies that impact the full business, such as the employee experience. BPA assists distributed organizations with maintaining process consistency and compliance across geographically far-flung workforces.

Process Mining is an automation technique that leverages algorithms to critically review log data. This method evaluates workflow effectiveness, such as onboarding, enabling leaders to refine it to meet business goals.

Robotic Process Automation (RPA) automates high-volume, repetitive office tasks, resulting in faster and more accurate response teams for an improved employee experience. RPA frees up human professionals to focus on higher-order HR tasks such as personalized recruitment, strategic workforce and succession planning, engagement issues, and skills gap assessment and training.

Intelligent Automation is driven by AI and allows bots, or agents, to operate autonomously, make decisions, and learn based on situations they've come across and analyzed. Over the last few decades, AI-based HR chatbots have improved in sophistication and capability. Where they once operated with only a limited store of information and required heavy oversight, today's agentic AI bots can collaborate both with other technology systems and human workers with looser supervision. An agentic HR bot, for example, might work with an agentic legal bot to research and select a new benefits offering.

Advanced Automation integrates human workers and automated partners across multiple systems throughout the organization. Natural language processing, machine learning and unstructured data analysis form the foundation of advanced automation. The processes it serves tend to be more complex and relevant to knowledge workers in specific disciplines. One workforce-related example is a flight risk system that taps into employee sentiment and performance at different points of the employee experience and makes intervention recommendations to HR leaders and managers.

Amazon Vulcan Uplevels Industrial Automation

As of 2025, global technology and e-commerce company, Amazon, had accumulated a substantial non-human workforce, deploying more than 750,000 physical robots across its operations.

The fleet manages various aspects of the fulfillment process, including transporting goods and preparing them for shipment. For example, autonomous mobile robots (AMRs) navigate warehouse floors and carry products to human associates, Gantry systems automate the storage and retrieval of items, sortation robots sort packages based on destination, packaging robots select and label boxes and then insert products, and inspection robots review shipments for quality control.

The newest addition, Vulcan, is an advanced robot with a sense of touch. Possessing advanced force feedback sensors and the ability to handle delicate products, the Vulcan robots work in tandem with human associates to improve productivity and safety in Amazon's fulfillment centers.

Furthermore, Amazon Web Services enables Amazon's robotic fleet to process and share the rich data generated by its sensors, cameras and other processes.

According to Scott Dresser, Amazon's vice president of robotics,[9] the further incorporation of AI into industrial automation processes is likely to result in a 25% productivity improvement at Amazon's next-generation fulfillment centers.

At Amazon, industrial automation augments rather than replaces human workers and creates a safer and more efficient work environment. So far, the extensive use of robotics in the fulfillment process has created a multitude of new job categories, including robotics maintenance and engineering, and employee training in robotics systems.

[9] Amazon

Creating Competitive Advantage

Recommendations for Business Leaders

Adding automation to your workforce – whether industrial automation, software automation or a combination of the two – requires substantial forethought and planning. It's definitely not as simple as declaring that a new piece of automation will take over all of the tasks associated with a human role and preparing for subsequent layoffs. Keep these best practices in mind as you engage.

Design human-friendly systems

In the realm of "design thinking" theory, both industrial and software automation components should be built with their key consumers and operators in mind – humans. This means that leaders must work with their development partners and vendors to create intuitive and easy-to-navigate user interfaces that decrease adoption time and frustration and simplify training and onboarding processes.

Connect your systems from end to end

The automation market is growing quickly, and it's tempting to add seductive new tools to your arsenal without considering their impact on the rest of your technological infrastructure. However, neither industrial nor software automation can drive efficiency and other business outcomes if new technologies are not seamlessly integrated with other IT systems and existing human-driven processes. Ideally, human workers will leverage these tools and others within one platform, and centralized data management and storage will provide a single source of the truth.

Create an infrastructure for human/machine team assembly

Nearly all work teams of the near future will require human and smart machine collaboration, and job roles must be configured as such. It's critical to redesign your roles so that you break the work down into its component parts and assign tasks and workflow based on the relative strengths and skills of the technology and human experts. This exercise should be undertaken at a high level, across the organization, and also every time you create a new role.

Facilitate supervised independence

As in the Carnegie Mellon example, leaders tend to overestimate smart machines' capabilities – especially when the technology is billed as "autonomous". Even as the most sophisticated offering to date – agentic AI – becomes more capable, it still requires extensive human oversight. Human experts need to allow automation to work its magic while also monitoring and judging its effectiveness at every step. Your human employees on the front lines should also be prompted to speak up regarding the most practical ways to work alongside industrial and software automation. For example, a productivity algorithm in a warehouse might not take into account a worker's need to use the restroom or leave the building for an emergency.

Upskill and empower human colleagues

Before new automation technology is rolled out, it's wise to consider the experience human employees will have working with it. All employees, regardless of function, should be trained annually on the use of software automation. However, role-specific automation may require more in-depth education and on-the-job mentoring and practice. The introduction of either new industrial or software automation should be accompanied by a change in management and communications strategy to support a new way of working. Involved workers should also be encouraged to provide extensive feedback on the best way to incorporate smart machines.

Measure success beyond raw productivity

Leaders sometimes expect that adding industrial or software automation will result in an immediate productivity boost, but this may not be the case. As Bill Gates said, automation won't magically solve problems with flawed processes, and it will take time for your teams to rethink current roles and workflows to maximize automation's contributions. You may experience an initial decrease in productivity as human workers learn what they need to change and do to operate most effectively alongside new technology. So, at the beginning, consider tracking metrics such as error reduction, employee satisfaction and engagement instead.

Academy of Advanced Manufacturing Helps Fill Skilled Technical Roles

In 2017, Manpower partnered with Rockwell Automation to answer a question challenging manufacturers: with the steady advance of investment to modernize production with sophisticated industrial automation technologies, **where is the highly skilled workforce to operate and maintain it?**

Manpower knew that the vanguard of this workforce would be automation technicians, but with a critical shortage of supply, could we create the talent that the industry needed?

The answer was the Academy of Advanced Manufacturing. To effectively pipeline talent into new roles quickly, the program focuses on U.S. military veterans who have adjacent skills to the automation technician role. Those accepted into the program move into a hands-on learning environment hosted at Rockwell Automation. The accelerated, three-month program features training in the latest industrial automation technology, is fully residential, and is provided at no cost to veterans – who are also trained in professional skills and prepared for interviews with multiple participating employers. **On average, program participants are moving into employment as automation technicians at 2-3x the wage they were making prior to the training.**

From an initial pilot group of 14 veterans, we have graduated over 475 automation technicians from all branches of the military who go into well-paying careers enabling automation technology at over 100 employers in manufacturing industries as varied as consumer goods, heavy industry, tires, building materials, automotive, and food service.

Augmenting Automation with Skilled Technical Talent

Manpower Skilled Technical is a leader in providing specialized staffing and workforce solutions for the modern world of manufacturing. As global automation accelerates, Manpower is committed to partnering with organizations to meet their skilled technical roles and workforce needs.

Global Capabilities

- Access to best-in-class skilled technical talent
- A dedicated skilled technical recruiting team
- Pipeline of candidates ready to fill temporary, temp-to-perm, and permanent positions
- A full suite of manufacturing advisory services and workforce solutions, including flexible staffing, direct hire, project staffing, and onsite management
- Specialized training for Manpower Associates

Experience Recruiting Key Manufacturing Roles

Maintenance Technician | **Quality Technician** | **Manufacturing Technician** | **Automation Technician** | **Engineering Technician**

Manpower's expertise in contingent staffing and permanent recruitment provides rapid access to a highly qualified and productive pool of candidates. Their flexible workforce solutions offer the business agility needed to succeed in a constantly shifting world. **To learn more, visit manpowergroup.co.in**

Global Workforce Solutions

Upskilling & Reskilling at Scale

Contingent and Permanent Talent Resourcing

Strategic Workforce Planning

OnSite Management

Talent Management Services

About Manpower

Manpower® is a global leader in contingent staffing and permanent resourcing, providing companies with strategic and operational flexibility and creating talent at scale. Our talent agents and specialized recruiters leverage data-driven insights to assess, guide and place people into meaningful, sustainable employment, and our PowerSuite® tech platform enables assessment and matching to predict performance potential. Our Manpower MyPath® skilling program provides rapid skills development at scale with on-the-job training, market-based certifications, and coaching for roles in growth sectors. In this constantly shifting world, our flexible workforce solutions provide companies with the business agility needed to succeed. Manpower is part of the ManpowerGroup® (NYSE: MAN) family of brands, which also includes Experis and Talent Solutions.

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