

Workforce in motion

Skills and pathways to future jobs
in the United States

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AI, automation, and broader structural trends are accelerating the reallocation of work across the US economy. Capturing its benefits requires developing new professional pathways and skills, and reducing barriers between declining and growing occupations.

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At a glance

- **The US economy could create more jobs in the next decade than will be replaced through automation, but the change may require the largest and most sustained workforce transformation in US history.** We estimate that roughly 11 million workers in declining occupations may need to transition to new jobs, ranging from six million to 16 million depending on the pace of automation adoption and its impact on labor demand.
- **Jobs of the future, particularly growing jobs, could pay more on average but require more skills.** Roughly 60 percent of growing employment could be in the top two wage quintiles, with much of the increase concentrated in healthcare, construction, and management occupations. Conversely, more than 70 percent of declining employment could be in the bottom two quintiles, primarily in office and administrative support, retail and sales, and transportation and logistics occupations.
- **One in seven workers could have a direct pathway into growing jobs, but almost half may face an unpaved pathway.** While every transitioning worker has a route into growing work, only about one in seven can make the move with no or very limited retraining. Barriers, particularly credentials or certifications, which roughly 85 percent of growing jobs require, can twist or block otherwise viable pathways.
- **Overall, more than 70 percent of workers could require some level of reinvention because new tasks may require more than 15 percent of their time.** Whether or not workers change jobs, most of them will need to continually build new skills as most occupations reinvent regardless of whether employment grows, declines, or remains stable.
- **Three types of skills help workers move, move up, and keep adapting.** “Essential” skills widen career options, while “enabling” skills unlock higher-paying jobs. “Empowering” skills prepare workers for continuous change, and demand for them has already started to surge. The demand for AI fluency has increased 11 times since 2022, as demand for adaptability has increased fivefold and demand for resilience, curiosity, and willingness to learn has tripled.



Introduction

Every generation confronted by a new technology asks whether machines will replace workers. Steam mechanized production, electricity restructured factories, computers digitized information. Artificial intelligence has revived the question with new urgency because it affects all workers and all jobs, including cognitive work that once seemed resistant to automation.

Labor markets adjust to technology innovation and adoption not simply by shedding jobs but also by creating new jobs and by reorganizing and reallocating work. Some activities are automated, others become more valuable, new tasks emerge, demand expands in some sectors and contracts in others, and workers move—or fail to move—between occupations, employers, and geographies.

Electronic spreadsheets do in seconds what took an accounting clerk a day before they came on the market in the late 1970s, but while clerical roles built on manual calculation disappeared, accountants did not. In fact, the US Bureau of Labor Statistics estimates that the profession will grow more rapidly than the average over the next decade. Even as calculating a forecast became cheap, judgment and expertise became more valuable.

While social media abounds with dire predictions about the impact of AI on labor, the United States is likely to have more jobs available in 2035 than today, but with fewer workers because the population is aging. While estimates of the full impact of AI on the workforce differ widely, our base estimate indicates that automation could reduce labor demand by the equivalent of roughly 36 million jobs, while growth in the AI value chain and the broader economy could generate demand for more than 40 million jobs over the next decade.

Our estimates reflect four factors. First, automation enabled by AI and other technologies could reduce labor demand, but not on a one-for-one basis, because automation of work does not translate directly into job losses. Second, the demographic backdrop and rising living standards could drive sustained labor demand growth in the “human economy”—jobs that are often harder to automate and already face or could face labor shortages. Third, the AI boom, combined with the need to modernize infrastructure, could increase demand for workers in both the “physical economy” and the “tech economy.” Finally, we expect AI itself to create new jobs that we cannot yet imagine, just as previous general-purpose technologies did. Much of this shift would occur within occupations, but roughly 11 million US workers, or about 7 percent of current employees, might need to shift between occupations to secure new jobs.¹

Counting jobs is an insufficient measure of the impact of new technology. Job opportunities can be abundant and yet leave millions of workers without work if those positions require different skills, credentials, locations, or pay structures than current jobs. Many growing jobs in the next decades will require new and more skills, so having viable pathways from shrinking to growing jobs will be critical to successful transitions in a labor market shaped by automation.

A pathway provides a practical route between occupations and is shaped by four conditions—destination demand, skill adjacency, wage preservation, and time needed to acquire credentials. A direct pathway will take a worker to a growing occupation with limited retraining and no loss of income, while a winding pathway requires developing more new skills or accepting pay cuts. An unpaved pathway is strewn with large skills gaps, lower wages, or additional required credentials. Any of these pathways can be blocked by barriers too large to overcome in practice.



The quality of the pathway into a new or changing occupation matters (Exhibit 1). While almost every worker in the US economy has at least one pathway to a new job, only one in seven workers has a direct pathway to new work. The skills workers carry from one occupation to another are the keys to navigating pathways to new jobs successfully. Some skills are required in a wide range of occupations, and some are concentrated in higher-paying work. Skills like adaptability, curiosity, resilience, and a willingness to learn may increase in value because they help workers acquire new capabilities as work changes.

But while skills facilitate mobility, a variety of bumps along pathways can become barriers. A worker may have the skills needed for a job in a growing occupation, but other factors—requirements for a license or specific academic degree, or a move to a region with a different language—may make it unattainable. In this report, we examine skills and barriers that shape pathways to growing occupations in the era of AI.

Exhibit 1

The workforce challenge ahead is connecting workers to growing jobs through high-quality pathways.

Three pathways from declining to growing labor demand

DECLINING LABOR DEMAND

Automation reduces labor demand related to tasks where productivity gains translate into workforce reductions

Broader structural shifts such as digitalization and changing patterns of consumption further reduce demand in some US occupations

Direct pathway

Short, direct road: High skill match, no wage loss, or fast credential timing

Winding pathway

Some detours: Moderate skill match, some wage loss, or moderate credential timing

Unpaved pathway

Long and uncertain: Low skill match, high wage loss, or extended credential timing

GROWING LABOR DEMAND

Human economy evolution expands healthcare, care, and service occupations as the economy grows

Physical economy revival increases demand for construction, energy, and skilled trades

Tech economy acceleration creates digital and technology infrastructure jobs

AI also creates new occupations and expands business creation, innovation, and market efficiency

WHAT SHAPES PATHWAY QUALITY



Skills (accelerators)

Workers' skills determine which occupations they can most easily move into



Barriers

Credentials, wages, geography, and other frictions determine whether pathways are viable

Source: McKinsey Global Institute analysis

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CHAPTER ONE

Why jobs change

While the precise number of jobs that AI may create or displace is uncertain, the technology together with broader economic trends could give rise to 41 million jobs in the United States over the next decade. In our base estimate, automation adoption could reduce labor demand by 21 percent of current work hours, equivalent to about 36 million jobs. For roughly 25 million of these workers, growth in their current occupations could offset the impact of automation, allowing them to stay in the same occupation, although their jobs could change. The remaining 11 million may need to switch occupations entirely. The next decade's challenge is mobility, not scarcity.

Demand for workers shifts because technology changes the number of workers needed to perform existing work. On its own, *artificial intelligence* can have a direct impact on demand for some occupations by automating or augmenting activities, which has raised fear and concern, and it can increase work related to implementation, governance, supervision, and workflow redesign. But AI can also indirectly create jobs by expanding demand for certain work, including in the infrastructure and technology value chain, and can give rise to new products and industries, as well as contributing to economic growth more generally.

Moreover, AI is taking hold as society is aging. People are living longer around the world, and fewer babies are being born, particularly in developed countries. Previous MGI research estimates that at the current rate of demographic decline, advanced economies would need to raise productivity growth by two to four times current rates simply to hold per capita GDP growth steady through 2050. More older people and fewer people of working age are already increasing demand for home healthcare workers, medical technicians, and food service workers, while demand for primary and secondary education, toy manufacturing, and camp counselors is dropping. If the working population is supported in making job transitions, artificial intelligence could greatly accelerate economic growth. But if these transitions are handled poorly, only a few will benefit while the employment outlook for many workers grows dim.



Automation adoption will be faster in office and admin, computer and math, and sales occupations, and slower in healthcare

Early discussions about AI and the workforce focused on its potential impact on white-collar jobs, but in fact automation adoption is likely to be highly uneven in all types of jobs. Historically, automation has taken hold in fits and starts as organizations decide how and where to deploy new technologies, where to wait, and where human work should remain central. Similarly, what AI can do as well as where it can create value with acceptable levels of risk will determine its deployment and use.

Our analysis finds that occupations in office and administrative support will have the highest expected average adoption, roughly 80 percent of current work hours by 2035. Automation could take on 70 percent of the hours currently worked in technology and analytics occupations and 68 percent in retail and sales occupations (Exhibit 2). By contrast, the technology will likely roll out more gradually into 26 percent of work hours in healthcare professionals, and 28 percent of public safety and security occupations.²

Sidebar

Our methodology

We use a methodology consistent with previous McKinsey Global Institute (MGI) research on the future of work to model how labor demand and occupational transitions could evolve from 2025 to 2035. Our analysis probed two questions: (1) How could labor demand grow or decline across occupations as automation, AI, and other structural forces reshape the US economy?; and (2) How readily could workers move from shrinking occupations into expanding ones?

We build on MGI's established automation methodology, which models work activities and occupations using the Standard Occupational Classification (SOC) system from the US Bureau of Labor Statistics (BLS). For this analysis, we map those estimates to the more detailed Lightcast Occupation Taxonomy (LOT) from Lightcast LLC, which includes about 1,800 occupations. This allows us to analyze labor demand at a more granular occupational level while maintaining

consistency with MGI's underlying automation model. Changes in occupational labor demand are in full-time equivalents (FTEs) by 2035 relative to a 2025 baseline.

1. Sizing growing and declining occupations

Our analysis is designed primarily to estimate how the composition of US employment could shift rather than to produce an independent forecast of total employment. We anchor aggregate employment growth to the BLS projection of approximately 3.1 percent over a decade, while our model determines how that demand is distributed across occupations as the forces described above take effect.

For each occupation, we estimate the net change in labor demand by combining forces that could reduce demand—notably automation—with forces that could increase it.

1.1. Labor-demand reductions from automation. We build on MGI's existing

automation model, which estimates the technical automation potential of individual work activities and defines adoption scenarios reflecting how quickly technologies could become feasible and economical and could diffuse over time. We extend that approach in two ways.¹

First, we account for the feasibility of adoption within occupations by selecting a different adoption scenario for each detailed work activity–occupation pair, rather than assuming adoption proceeds at the same speed across occupations. We use a scoring framework that captures factors likely to accelerate or slow adoption, including the codifiability, routineness, and verifiability of the work; required workflow reconfiguration; and regulatory, business, reputational, and social constraints. We also account for the fact that activities within a job are bundled and cannot necessarily be automated independently.²

¹ "The economic potential of generative AI: The next productivity frontier," McKinsey Global Institute, June 14, 2023; "Agents, robots, and us: Skill partnerships in the age of AI," McKinsey Global Institute, November 25, 2025.

² For example, AI can increasingly interpret medical images, but radiologists bundle image interpretation with reviewing difficult cases, coordinating with other clinicians, informing treatment decisions, and taking responsibility for the diagnosis. Automating one activity therefore does not necessarily eliminate the broader bundle of work. For more, see Luis Garicano, Jin Li, and Yanhui Wu, *Weak bundle, strong bundle: How AI redraws job boundaries*, CEPR discussion paper number 21453, Centre for Economic Policy Research, May 2026.



Sidebar (continued)

Our methodology

Second, we distinguish between work hours automated and labor demand reduced. Not every hour freed by automation translates proportionally into less employment. Some capacity may instead be offset by reduced excess working hours, additional demand from productivity gains (“Jevons paradox”), or new activities such as overseeing, managing, and working alongside AI systems. Organizational and regulatory barriers may further limit reductions in head count.³ Together, these adjustments translate projected automation adoption into an estimated reduction in full-time-equivalent labor demand. Two assumptions are particularly uncertain: the pace of automation adoption and the extent to which automation translates into lower labor demand. We therefore test alternative assumptions for both. Faster adoption and greater labor substitution increase transition needs, while slower adoption or greater augmentation reduces them. These scenarios test the sensitivity of our results rather than defining precise upper and lower bounds. For more detail, see the technical appendix.

1.2. Labor-demand increases from AI value chain needs and broader structural trends. We model forces that could increase labor demand in three broad parts of the economy. Each is estimated using primary or third-party sources, while anchoring the total number of jobs in the BLS employment growth projections, and translated into occupational demand using driver-specific relationships rather than assuming employment rises one-for-one with spending or population growth.

- **Human economy.** We model demand for people-centered services as the population ages, shifts in health and healthcare utilization, rising living standards, changes in postsecondary education, and the marketization of unpaid

household work. We adjust overlapping drivers to avoid double counting.

- **Physical economy.** We estimate labor demand associated with construction, infrastructure, and energy investment, drawing on McKinsey research and third-party investment forecasts and translating that investment into occupational demand.
- **Technology economy.** We estimate employment associated with growth in technology spending and the build-out of AI and digital infrastructure, and map that investment to the occupations needed to deliver it.

We use an MGI input-output model to capture indirect effects as additional demand flows through suppliers and their supply chains.

1.3. New occupations created by AI. Based on our analysis of employment associated with previous general-purpose technologies, we include a conservative estimate of potential employment in new AI-related occupations. We do not capture potential additional demand from greater market efficiency, faster R&D and innovation, or higher rates of business creation.

2. Building pathways between occupations

We next assess how readily workers in declining occupations could move into growing ones. We evaluate potential occupation-to-occupation pathways and use an optimization model to identify feasible matches across the US labor market based on four dimensions.

Skill adjacency. We derive the skills associated with each occupation from millions of Lightcast job postings. Using semantic embedding, we measure the similarity between skills in a worker’s current occupation and those required in a potential

destination. These comparisons allow us to estimate how much of the skill set required for a destination occupation is already covered by the source occupation.

Credentials. We identify credential requirements using Lightcast’s taxonomy, supplemented with public licensing information and a structured review of regulated occupations. We distinguish legal or core requirements from credentials strongly preferred by employers, excluding ancillary credentials of limited importance.

Time to train. For each occupation-to-credential pathway, we estimate the minimum realistic time required to obtain necessary qualifications, including prerequisite education, formal training, supervised or clinical hours, and licensing examinations. We estimate training time from three starting points: a high school diploma, an associate degree, and a bachelor’s degree. We used a large language model to identify and synthesize publicly available credential and training requirements and to derive estimated training times for each pathway.

Wages. We use advertised wages from Lightcast job postings to compare pay between source and destination occupations. This reflects posted base pay rather than total compensation.

The optimization combines these dimensions into a transition-cost framework that favors pathways preserving workers’ wages while also accounting for skill gaps, credential requirements, and training time. Based on the resulting transition cost, we classify pathways as straight, winding, or unpaved.

³ Jevons paradox describes how greater efficiency can increase total demand by lowering effective costs. Applied to labor, AI may make a task cheaper to perform, increasing demand for its output enough to offset some or all the labor hours saved.



Exhibit 2

Automation adoption varies substantially within occupational groups, not just between them.

Likely automation adoption by 2035, by occupational group in the US¹

Occupation within each group that represents:

● Lowest adoption ● Average adoption, weighted by full-time equivalent (FTE) workers ● Highest adoption

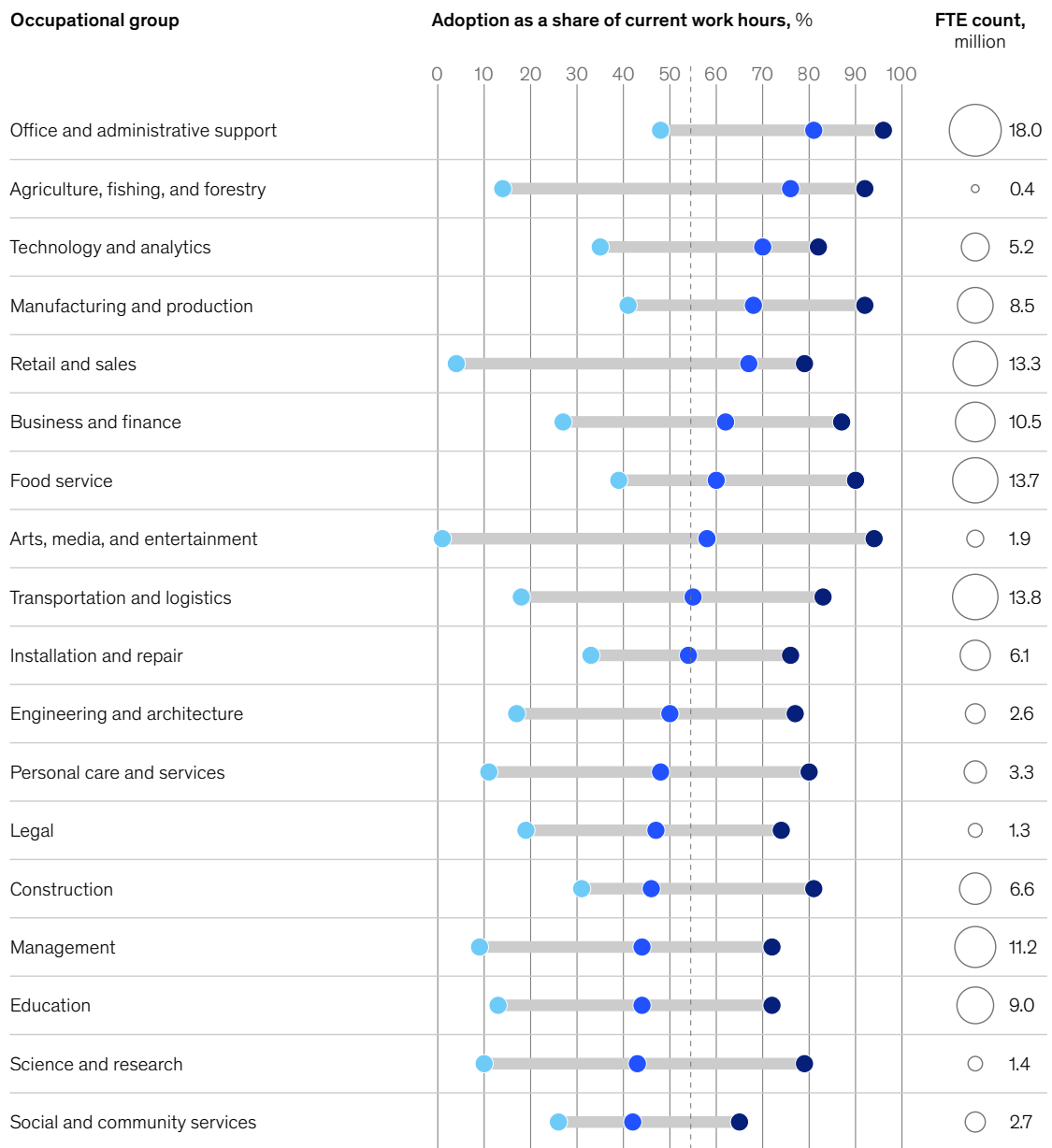




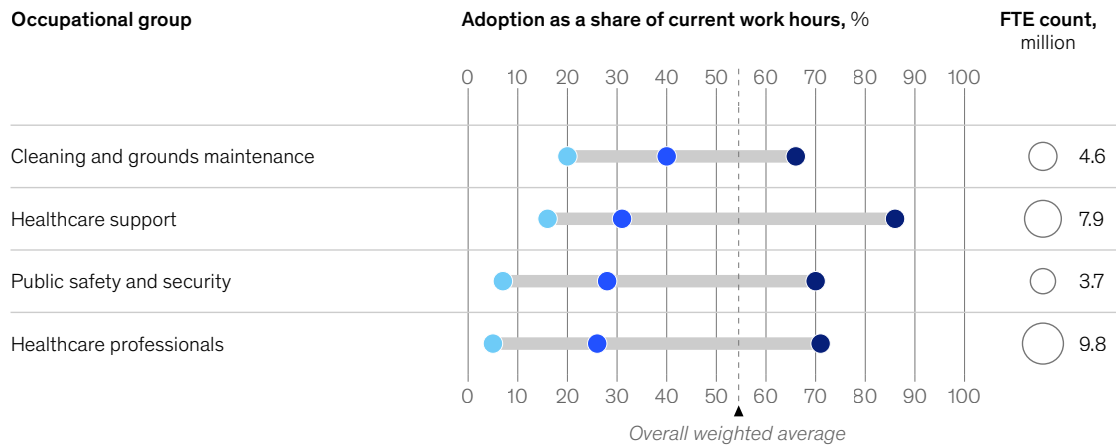
Exhibit 2 (continued)

Automation adoption varies substantially within occupational groups, not just between them.

Likely automation adoption by 2035, by occupational group in the US¹

Occupation within each group that represents:

● Lowest adoption ● Average adoption, weighted by full-time equivalent (FTE) workers ● Highest adoption



¹ Automation adoption is defined as the share of current work hours potentially automated or meaningfully augmented.

Source: US Bureau of Labor Statistics occupational employment data; MGI employment forecast model; McKinsey Global Institute analysis

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Variation of automation adoption within occupational groups is almost as important as variation between them. For example, the expected adoption for office and administrative support roles ranges from roughly 48 percent to 96 percent of current work hours. Similar dispersion appears across most occupational groups, illustrating how the pace of automation adoption is ultimately determined by the activities workers perform.

To capture this variation, we evaluate the potential for automation adoption at the occupational and detailed-work activity level rather than assigning a single score to an entire occupation. Each activity is assessed on eight dimensions that influence the pace of adoption. Four dimensions—codifiability, repetitiveness of task, ease of verification, and degree of reconfiguration required to enable automation—cover the feasibility of automating an occupation with AI.³ The other four—regulatory constraints, social acceptability, business criticality, and reputational risk—encompass challenges to overcome. Activity-level scores are then rolled up into an adoption estimate for each occupation, weighted by the time spent on each activity, which surfaces variation across occupations.

This variation explains why organizations do not necessarily adopt automation even when it is technically feasible. Instead, companies adopt it first where it creates value with acceptable levels of complexity and risk. Activities that are codifiable, are routine, are easy to verify, and require limited workflow redesign are often first to use AI. By contrast, activities involving tacit judgment, physical interaction, regulation, trust, or high business criticality are likely to adopt automation more gradually because the cost of errors is substantially higher.



Our adoption estimates are therefore directional rather than deterministic. They identify the occupations where automation is likely to become economically attractive first, not the speed at which every organization will deploy it. Actual adoption will continue to depend on workflow maturity, data quality, operating discipline, leadership priorities, and business context, so two organizations with similar workforces may experience very different adoption trajectories. Technology determines what is possible, but managerial choices determine how quickly those possibilities become reality.

Higher levels of automation adoption don't necessarily mean fewer jobs

Across the US economy, we estimate that automation technologies could absorb about 54 percent of current work hours by 2035—but that won't translate one-for-one into reduced demand for workers. We estimate that organizational and market mechanisms could offset about 60 percent of the labor impact of automation adoption, reducing labor demand by the equivalent of about 21 percent of current work hours (Exhibit 3). This doesn't take into account the offsetting impact of other forces, such as economic and income growth, demographic shifts, and new jobs created by AI.

Moving from activities to jobs is not straightforward, because occupations are bundles of interdependent activities, not just collections of independent tasks.⁴ When an automated activity requires judgment, coordination, accountability, or other work only a human can do, automation may change the mix of work without eliminating the job.⁵ While automation may reduce the labor required to perform existing activities, four mechanisms can offset its impact on labor demand.

The first mechanism is **overwork alleviation**. In occupations facing chronic labor shortages, excessive workloads, or sustained overtime, productivity gains may allow workers to return to more sustainable working patterns rather than reducing employment.⁶ Employees working overtime are about 60 percent more likely to be injured, and those working more than 55 hours a week have a 35 percent higher risk of a stroke, than colleagues working fewer hours.⁷ Staffing gaps and long hours are often primary constraints in nursing, crane operation, and other occupations⁸ with labor shortages. In these settings, automation may reduce overtime, burnout, and attrition while improving service quality, leaving head count unchanged.⁹ Of course, overtime pay is a key source of household income for some workers, so less overtime may need to be offset with better jobs or higher wages.

The second mechanism is productivity-induced **demand (Jevons effect)**.¹⁰ Higher productivity often lowers the cost or increases the quality of services, encouraging organizations to deliver more of the same work rather than reduce employment. Auditing is one example. A recent study found that employment of auditors increased 4.3 percent after the adoption of AI. Audit quality also improved, suggesting that productivity gains were used to expand audit capacity and quality rather than reduce labor demand.¹¹ Similar dynamics can emerge wherever substantial unmet demand already exists. Productivity expands capacity, increasing output rather than reducing labor.

The third mechanism is **new work activities**.¹² AI rarely reduces human work without also creating new responsibilities. As routine activities become automated, workers spend more time reviewing AI-generated outputs, handling exceptions, assuring quality, coordinating AI-enabled workflows, documenting decisions, and supervising intelligent systems.¹³ A professional who spends less time drafting documents may spend more time advising clients. A customer service agent who answers fewer routine questions may spend more time resolving complex cases. Rather than creating entirely new occupations, these activities often reshape existing ones as work hours done by AI are absorbed by new employee tasks.

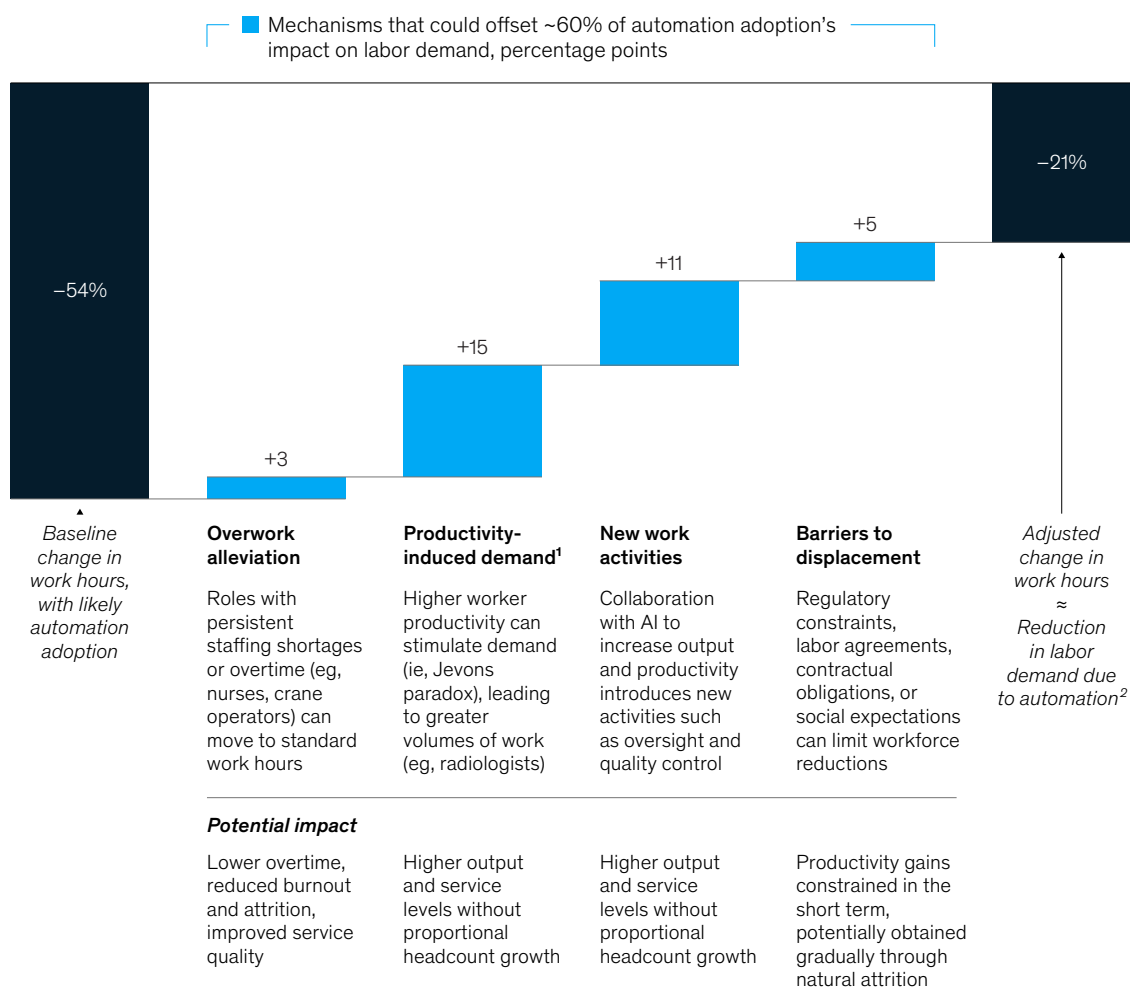


The fourth mechanism is **barriers to displacement**. Even when organizations automate work, regulatory constraints, labor agreements, contractual obligations, or social expectations may require or encourage workers to remain in their roles. Some organizations may adopt automation while retaining workers whose activities have changed, with potential adjustments to workforce levels occurring gradually over time including through natural attrition.

Exhibit 3

About 60 percent of automation adoption may not translate into reduced labor demand.

Change in share of current work hours in the US with likely automation adoption by 2035



¹Based on external and internal demand increase. Includes 0.5% of roles that are indivisible, for which organizations need at least one person (eg, CEO).

²Assuming labor equilibrium from BLS 2024–34 projections, which implies 3.1% growth on current baseline (154 million to 159 million US workers). Source: MGI automation model; MGI labor reduction model; McKinsey Global Institute analysis



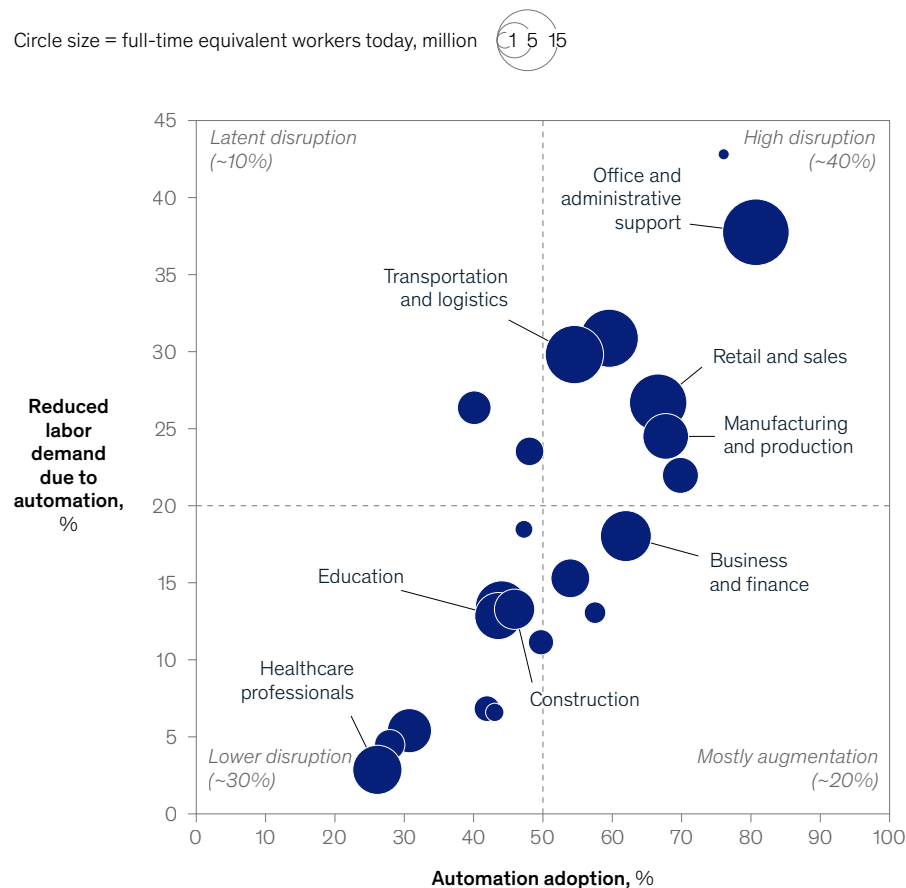
Automation affects labor demand differently across occupations

Some occupations may be highly disrupted, with high adoption translating into substantial labor reduction when work is routine, high volume, and relatively easy to separate. An example is call-center jobs (Exhibit 4). Others may mostly be augmented, with AI changing how work is performed but the need for human judgment, expertise, or accountability continues to limit displacement; examples include insurance sales agents and underwriters. A third group of occupations may experience lower disruption because work in them depends heavily on physical presence, regulation, or human interaction; for example, teachers. Finally, some occupations, like tractor-trailer truck drivers and

Exhibit 4

The impact of automation on labor demand varies widely between occupational groups.

Share of current US work hours that by 2035 can face automation adoption and reduced labor demand, by occupational group



Source: US Bureau of Labor Statistics occupational employment data; MGI employment forecast model; McKinsey Global Institute analysis

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janitors, may experience latent disruption, when long-term automation potential exists but physical variability, implementation complexity, or weak economic incentives may slow adoption.¹⁴

Thus, automation adoption and reduced labor demand are fundamentally different concepts.¹⁵ This distinction materially changes the employment picture and varies considerably across occupations.

Similar levels of automation adoption can have different impacts on labor demand depending on how productivity gains are absorbed. AI and other automation technologies may convert a relatively large share of activities in routine, high-volume occupations such as office and administrative support, retail and sales work, and transportation and logistics into fewer jobs because the activities it can automate are more easily separated from the rest of a role. By contrast, occupations in the legal, management, and engineering and architecture professions may have meaningful automation adoption but substantially lower reduction in labor demand because productivity gains are more often absorbed through augmentation, new AI-enabled work, and human oversight rather than through workforce reduction.

Organizational context further shapes outcomes. Companies with persistent labor shortages may use AI primarily to expand capacity, improve quality, or reduce burnout. Businesses with greater cost pressure and less growth opportunity may convert a larger share of productivity gains into lower labor demand. Company size also matters. Smaller organizations often cannot divide roles even when many tasks are automated, while larger organizations have greater flexibility to reinvent work and adjust head count. Industry characteristics, workflow maturity, operating models, regulation, and leadership choices all influence how much of AI's technical potential ultimately translates into changes in the labor market.

AI expands the frontier of what organizations can accomplish with a given amount of labor. Whether those productivity gains lead to fewer workers, higher output, better quality, shorter turnaround times, less overtime, reduced attrition, or entirely new forms of work depends on how organizations and labor markets absorb the technology. AI has productivity potential, and labor demand reflects how that potential is deployed.

Our base case estimate depends on two uncertain factors, how quickly organizations adopt automation and how much automation reduces labor demand. If automation adoption moves materially faster or reduces demand for labor more, the number of workers needing to change occupations could increase from our base estimate of 11 million to more than 16 million. Conversely, slower automation adoption or less reduction in labor demand could mean only about six million workers need to transition (for more, see the technical appendix).



AI will spur new work in different parts of the US economy

History suggests that periods of major technological change create new work rather than simply replacing existing work. Since the Industrial Revolution, every major general-purpose technology including steam power, electricity, the internal combustion engine, telecommunications, computers, and the internet has enabled entirely new occupations that could not have existed before the technology emerged (Exhibit 5). Steam power created railroad conductors, boilermakers, and locomotive engineers. Electrification required electricians, elevator installers and repairers, and radiology technicians. The internal combustion engine created demand for aircraft pilots, and automotive mechanics. Telecommunications needed telephone operators, broadcast announcers, and equipment installers, while computers and the internet gave rise to occupations such as software developers, computer systems analysts, and information security analysts. Over time, each technology created not only new occupations but also entirely new industries, business models, and supporting services.

Technology is not the only source of new occupations. Aging populations, rising incomes, and changing patterns of consumption have also created entirely new categories of work. As households became wealthier, activities once performed informally in the home became professionalized and commercialized, creating occupations such as personal care aides, childcare workers, yoga instructors, and many other service occupations that support modern lifestyles.¹⁶ These occupations illustrate how structural economic change, not technology alone, has been a powerful engine of job creation.

Occupations resulting from the deployment of successive general-purpose technologies account for about a third of US employment today, while occupations that emerged as incomes rose account for more than one-fifth.¹⁷ The cumulative effect of these transitions is a workforce that looks nothing like the workforce of a century ago.¹⁸ In 1920, roughly one in four US workers was employed in agriculture; today, farming accounts for less than 2 percent of employment.¹⁹ Some of the jobs that replaced farm work demanded more cognitive and technical skills and paid more, while many others were oriented toward services rather than the production of raw goods. We expect AI to extend this trend rather than break it, leading to an economy whose occupational structure looks substantially different a generation from now.

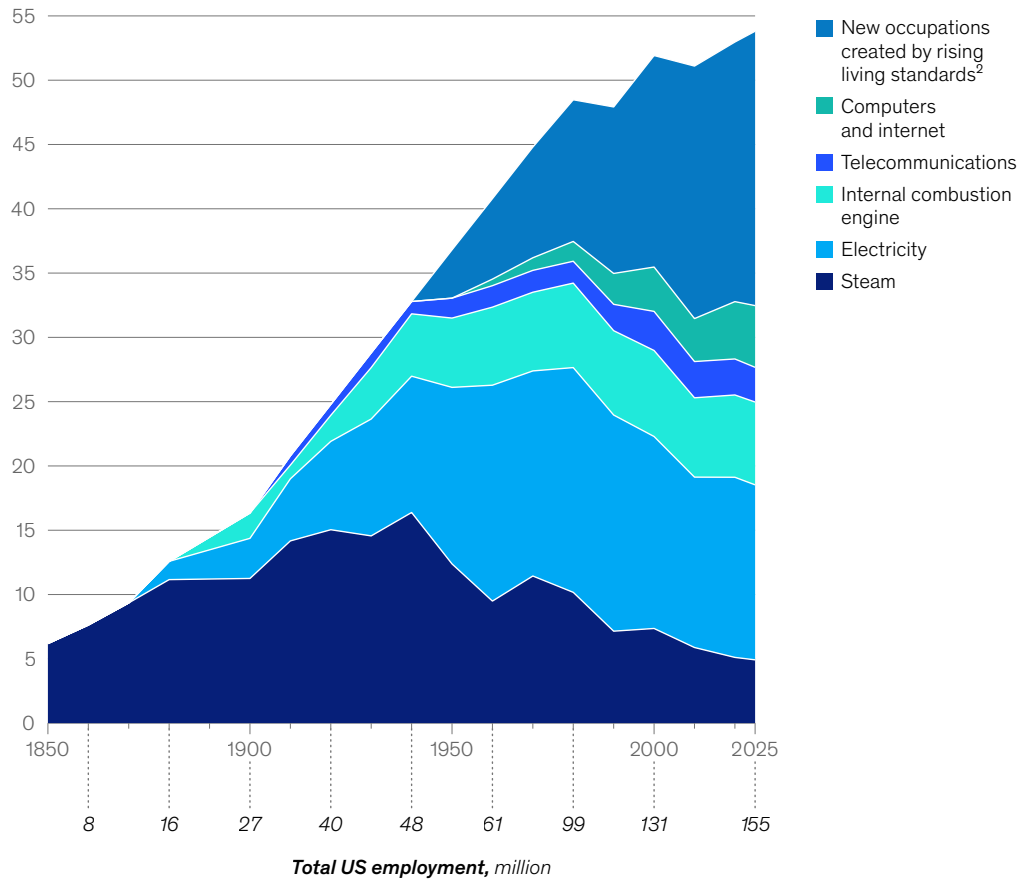
Drawing on the historical rate of annual occupation creation linked to adoption of previous general-purpose technologies in the US economy, we estimate that AI could create roughly 500,000 to two million new jobs in occupations that do not yet exist or are too small to measure today.²⁰ Some of these roles may span the AI value chain, from model development, AI infrastructure, and agent engineering to workflow design, AI governance, human oversight, and evaluation. Other roles could emerge as AI matures and accelerate new business creation and innovation to a much greater extent than previous general-purpose technologies.²¹



Exhibit 5

Every major general-purpose technology has created new occupations, as have rising living standards.

Share of US employment in occupations created by each general-purpose technology,¹%



¹ 2025 figures are estimates from US Bureau of Labor Statistics (BLS) Occupational Employment and Wage Statistics (OEWS) May 2025. IPUMS microdata for 2025 were not available at the time of analysis.

² Occupations that scaled after 1950 through demographic growth and rising incomes. They represent the professionalization of services that support modern life. Source: IPUMS USA microdata (University of Minnesota); US Census Bureau data (1850–2024); BLS OEWS, with workers' own occupation-to-general-purpose-technology wave classification; McKinsey Global Institute analysis

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Macroeconomic forces will shape labor demand as much as or more than AI

We rely on employment projections from the US Bureau of Labor Statistics for 2035 employment levels in this research, modeling various drivers of labor demand to understand how the mix of jobs might change. The largest sources of labor demand may come from broader structural forces such as demographic change, rising living standards, investment in physical infrastructure, and the expanding digital economy (Exhibit 6). Together with the **automation-driven reduction in labor demand** and our estimate of 500,000 to two million jobs in **new AI-era occupations**, these forces account for the overall employment change captured in our analysis.



Exhibit 6

Even as automation reduces demand for labor in some tasks, overall labor demand will expand.**Change in US labor demand, full-time equivalent workers, 2025–35, million**Reduction  Increase 

Macrotrends		Net change		What each includes ¹	
Reduction in labor demand from AI and other automation technologies		-32		A fraction of automation adoption turns into reduced labor demand based on factors such as complexity, risk and new work creation ²	
Human economy evolution	Rising living standards		+18	Higher incomes and education levels, increasing service consumption, and more outsourcing of previously unpaid work	Mostly non-AI driven
	Longer, healthier lives	-0.5	+8	Increasing age of the population, alongside the rise of new drugs and treatments (eg, GLP-1s, biotech) ³	
Physical economy revival	Construction acceleration		+3	Historic wave of capital expenditures to modernize key infrastructure, and improve housing affordability by boosting housing supply	
	Energy buildup		+2	Buildup of energy infrastructure to meet exponential demand of tech acceleration and to increase electrification to combat climate change	
Tech economy acceleration	Tech investment surge	-3	+3	Accelerating investment in AI, software, and digital services as companies scale cloud, ads, e-commerce, streaming, and gaming	Mostly AI driven
	Tech infrastructure boom		+2	Large-scale buildout of physical backbone powering tech acceleration, including semi-conductors, data centers, devices, and robotics	
New occupations of the age of AI			≥1	Completely new jobs created after the advent of AI (eg, AI voice designer), following the expected creation of new roles after every general-purpose technology	
Total		-36	+41	+5	

¹All trends include direct impact as well as higher-order supply chain impact through the MGI Economics Research input output model.²Also includes health impacts of climate change.³This represents 21% of reduction in labor demand driven by automation, over the total size of the workforce in scope.

Source: MGI Employment Forecast Model based on data from UN; World Bank; Oxford Economics; S&P Global Market Intelligence; IDC; MGI automation model and MGI output-job multipliers; McKinsey Global Institute analysis

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The **human economy** is one of the largest growth engines in the United States. Rising living standards may account for approximately eighteen million jobs as households and firms purchase more services, professionalize work that was once informal, and increase demand for management, business operations, hospitality, personal services, workforce training, and other coordination-intensive work. Aging is likely to increase demand for long-term care, chronic and specialty care, home-based support, pharmacy, nutrition, care coordination, household support, and related services. We estimate that demographic shifts will create an additional eight million net additional jobs.

The **physical economy** is another engine of job growth. Housing shortages, infrastructure renewal, grid modernization, electrification, industrial capacity, and reshoring require workers in construction, installation, maintenance, repair, transportation, warehousing, and skilled trades. These jobs are often place based and physical, which can make them less vulnerable to AI substitution but more exposed to geographic mismatches. We estimate that construction needs will add roughly three million full-time equivalents (FTEs), and the energy build-out fueled by AI and other factors will contribute an additional two million.

The **technology economy** is equally important to job creation. Growth in software, cloud computing, e-commerce, advertising, streaming, gaming, data services, and digital operations is expanding labor demand for engineers and data specialists as well as for product managers, customer-support teams, implementation specialists, trust and safety roles, sales operations, content operations, and business functions that keep digital businesses running. We estimate a net increase of roughly three million FTEs from the surge in the digital economy over the next decade before taking account of AI-driven reductions in labor demand in these occupations.

The technology economy also has a physical backbone. Data centers, semiconductors, networking equipment, devices, robotics, cooling systems, grid connections, and backup power all require workers to build, maintain, repair, and operate them. The analysis estimates that the technology infrastructure boom will account for roughly two million additional FTEs. This labor demand may rise and fall with investment cycles, but the need to support the physical infrastructure will likely remain a meaningful source of work.

To be sure, not every job growth engine is equally certain, equally permanent, or equally accessible. Some physical build-out will be project based. Some technology infrastructure demand will depend on investment cycles. Some healthcare demand will be shaped by productivity, care models, pharmaceuticals, public funding, and regulation. The more certain conclusion is that labor demand is already shifting to different occupations, skill sets, wage bands, credentials, and geographies, which will offset falling labor demand in other occupations.

These estimates describe the long-run balance between declining and growing labor demand, not the path the labor market takes to reach it. Over the next decade, businesses may reduce demand for 36 million jobs while simultaneously creating demand for 41 million others as automation, AI, and structural growth reshape work (Exhibit 7). These shifts relate to additional labor-demand adjustments associated with AI and broader structural trends and are incremental to the normal dynamics of the labor market, which includes quitting, retirements, business-as-usual hiring, and cyclical layoffs.

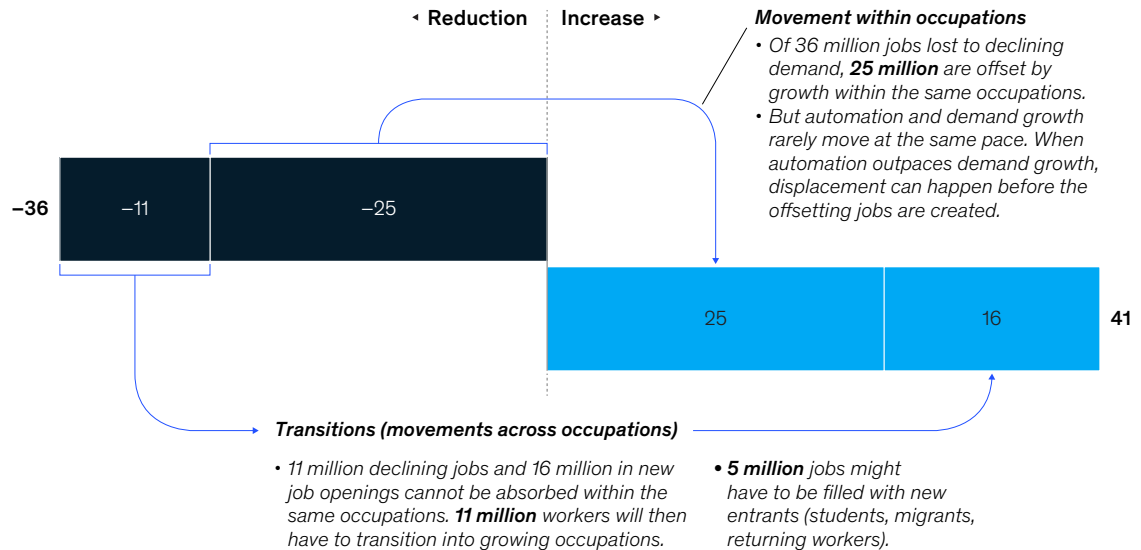
Within occupations, a total of roughly 25 million jobs are likely to “net out” as automation decreases demand for a job while macroeconomic trends increase demand for it. Whether this happens without displacement depends on timing. If automation-driven reductions and macroeconomic-driven



Exhibit 7

Most labor demand reduction could be offset by growth within the same occupations.

Change in US labor demand, full-time equivalent workers, 2025–35, million



Source: MGI employment forecast model; McKinsey Global Institute analysis

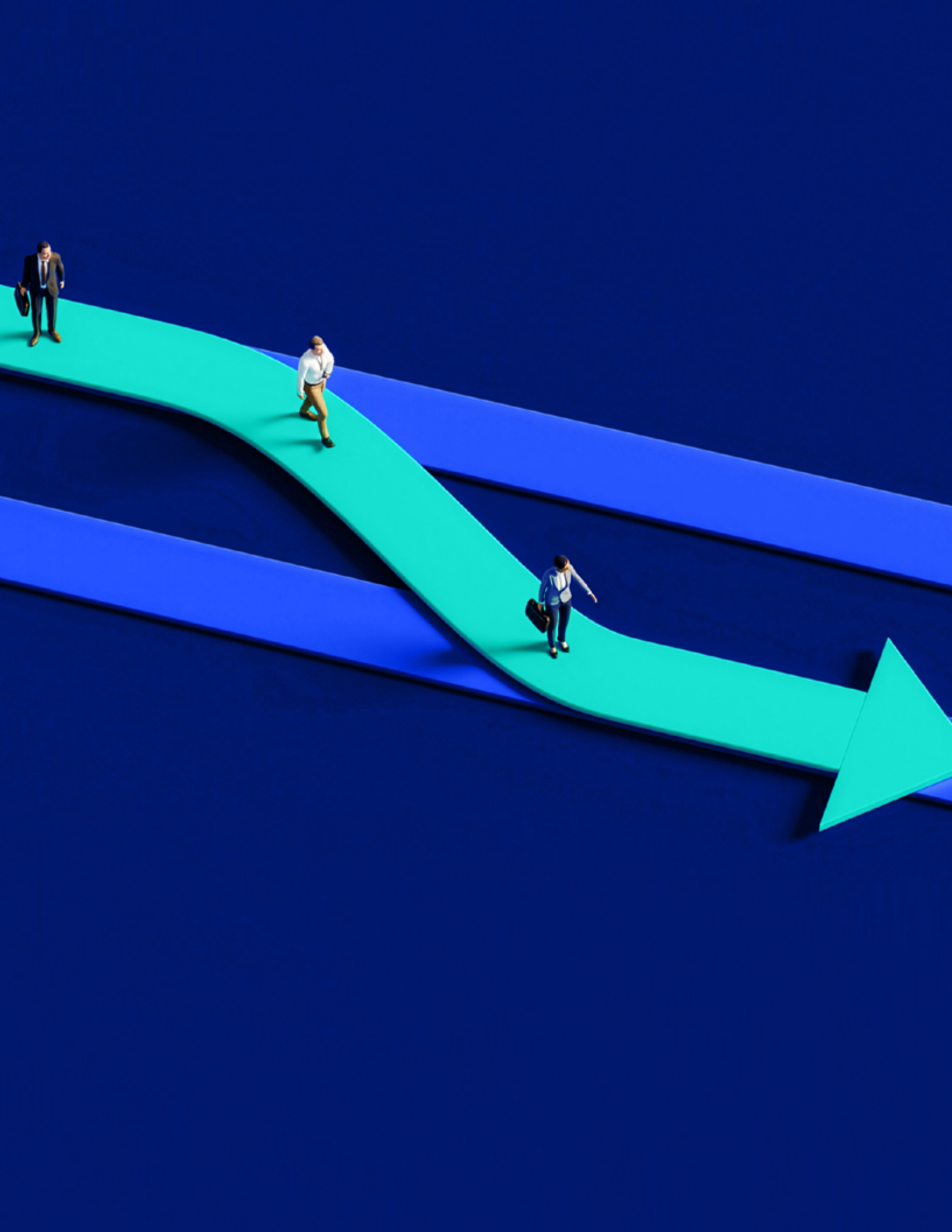
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job creation move at a similar pace, workers can migrate directly into new roles, but if automation outpaces demand growth, displacement may occur before any offsetting jobs materialize.

For example, demand for software developers fell sharply from its peak in 2022 as companies corrected pandemic-era overhiring but also increasingly due to AI's automation of software development tasks. Since early 2025, however, job postings seeking software developers have increased by about 15 percent. Today's gaps are in senior and AI-oriented roles, suggesting that AI is creating demand for new technical capabilities even as it automates others.²²

The remaining 11 million jobs subject to reduced demand and 16 million in new job openings exceed what any single occupation can absorb on its own and may require workers to move into different occupations altogether.

AI is likely to shift labor demand within and between occupations, but to different degrees. Understanding which occupations will experience dwindling demand and which ones will see





CHAPTER TWO

The great workforce reallocation

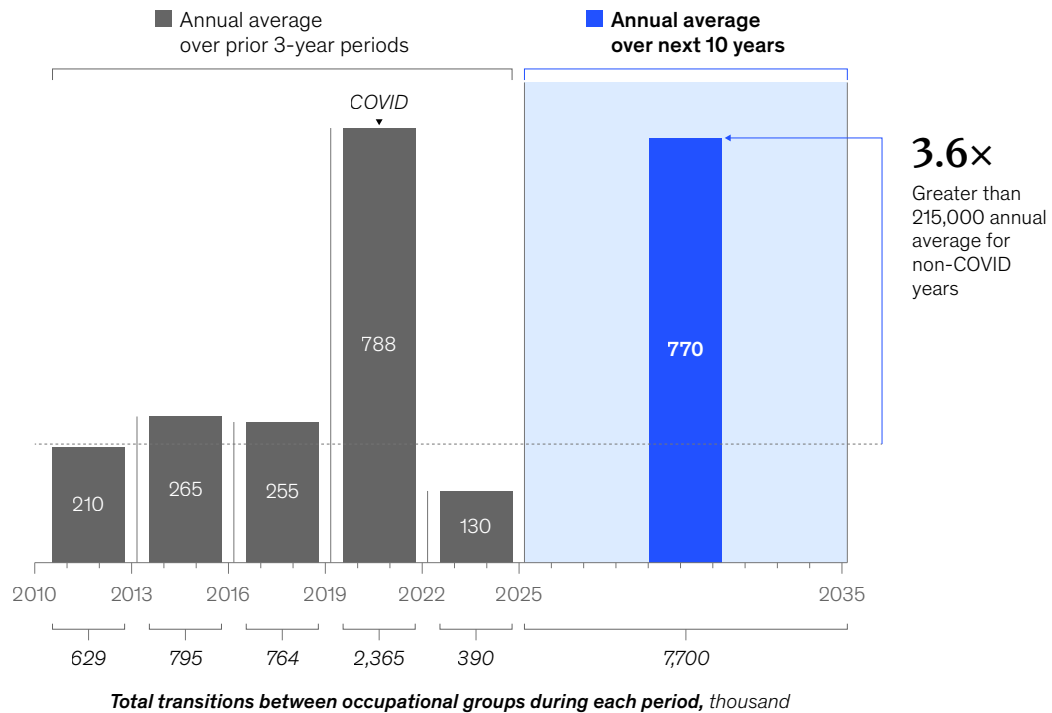
growth can inform efforts to mitigate the impact of AI on the workforce and reshape labor markets with less disruption.



Exhibit 8

Roughly 770,000 workers might need to make cross-group transitions every year, 3.6 times the historical rate.

Workers making transitions between occupational groups in the US, annual average, thousand



Note: Historical analysis based on IPUMS Current Population Survey (2010–25), weighted by final person weights. Occupational transitions are defined as net declines in employment across occupations between two points in time, with gains excluded to avoid double counting and a retirement adjustment applied proportionally by occupation. Transitions are aggregated to 23 SOC occupational groups; the sum of groups with negative net change represents cross-occupational-group transitions.

Source: US Bureau of Labor Statistics; US Census Bureau; IPUMS USA microdata (University of Minnesota); McKinsey Global Institute analysis

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Roughly 11 million US workers may need to transition into new occupations by 2035. Meeting that need will require about 770,000 workers to switch occupational groups each year, roughly 3.6 times the historical average. While 16 million new jobs could open up, filling them will depend on whether workers have the skills those jobs require. Jobs may be plentiful, while direct pathways to them may not.

What makes the workforce shifts coming over the next decade different is not how many workers move but where they need to move; in other words, a story of reallocation. Historically, transitions have occurred either within broad occupational groups requiring similar skills or within a single occupation, lowering barriers to mobility. We expect most of the workers in the 36 million jobs disrupted by automation to follow the latter pattern and transition into a job in the same occupation.



Sidebar

Automation could have a bigger impact on food service jobs

Many analyses of technology's impact on work focus on AI exposure. Under that lens, physical occupations often appear relatively insulated because AI's most direct applications affect cognitive rather than physical activities. Recent OECD analysis, for example, puts food preparation assistants among the occupations least exposed to AI.¹

Our analysis, however, takes a broader view, assessing exposure to automation technologies beyond AI, such as software or robotics, and combinations such as physical AI. Additionally, we analyze how much of capacity freed up by automation reduces labor demand or instead is absorbed by forces such as the Jevons effect. Applying that broader lens changes the picture for food service work.

Many food service activities can be relatively amenable to automation. Preparing ingredients, cooking standardized items, assembling orders, cleaning, and handling dishes are often repetitive, follow defined processes, and produce outputs that are easily checked. Some customer-facing activities can also be automated through

technologies such as self-service ordering and self-checkout. Chain restaurants can further facilitate automation through standardized equipment, ingredients, and workflows. Automation adoption could vary across roles, however: human interaction is often part of the value proposition for servers or baristas, while many repetitive, back-of-house activities face fewer such constraints.

The technology frontier is moving as well. McKinsey's 2026 restaurant research describes automated kitchens, food preparation robots, and the prospect of a largely automated back of house, with humans focused more on hospitality and customer connection.² Restaurant operators are already exploring robotics for dishwashing, fry stations, burger flipping, and line preparation.³ A 2026 robotics demonstration automated not just washing dishes, but loading used dishes onto racks, moving racks into and out of a commercial dishwasher, and unloading clean dishes.⁴

Automation adoption, however, does not translate one-for-one into employment decline. Some of the capacity freed up by

automation may be absorbed by higher demand, although this offset may be limited in food service: automating one activity reduces only a fraction of the total cost of a meal, while restaurant demand is only moderately responsive to price.⁵ Other forces, such as rising incomes and growing demand for food away from home, can also support employment even as individual activities are automated.⁶

Recent employment trends reflect these competing forces, as well as the disruption and recovery from COVID-19. From May 2019 to May 2025, overall food service employment rose about 1 percent, while employment remained below pre-pandemic levels for waiters and waitresses by about 12 percent, short-order cooks by 9 percent, dishwashers by 7 percent, and fast-food and counter workers by 4 percent.⁷ These shifts do not establish automation as the cause, but they illustrate why looking beyond aggregate employment and AI alone can produce a different view of how technology may reshape food service work.

¹ Skills in the AI age, Artificial Intelligence Papers, number 60, OECD, July 2026.

² "A taste of what's next: Perspectives on the future of restaurants," McKinsey, March 10, 2026.

³ "How the world's largest restaurant franchise operator uses AI," McKinsey, January 9, 2026.

⁴ Yoshiki Mori et al., "Design methodology for workspace adjustment of industrial robot arms using a long end-effector: Implementation in a dishwashing robot system," International Journal of Advanced Manufacturing Technology, April 2026, Volume 143.

⁵ James Bessen, "Automation and jobs: when technology boosts employment," Economic Policy, Volume 34, Issue 100, October 2019, pp. 589–626; Ilya Rahkovsky, Young Jo, and Andrea Carlson, Consumers Balance Time and Money in Purchasing Convenience Foods, Economic Research Report No. 251, US Department of Agriculture Economic Research Service, June 2018. Bessen finds that the employment-expanding effects of automation depend on the elasticity of demand. USDA estimates own-price elasticities of -0.92 for fast food and -1.15 for full-service restaurants.

⁶ "Food demand analysis," US Department of Agriculture Economic Research Service, updated August 1, 2025; "What US consumers want from restaurants in 2026," McKinsey, January 8, 2026.

⁷ "Food preparation and serving related occupations," US Bureau of Labor Statistics, May 2019; "Table 1. National employment and wage data from the Occupational Employment and Wage Statistics survey by occupation, May 2025," US Bureau of Labor Statistics, May 15, 2026.



Exhibit 9

About five million jobs could be added in health and construction occupations through 2035.

Net change in jobs in the US, 2025–35

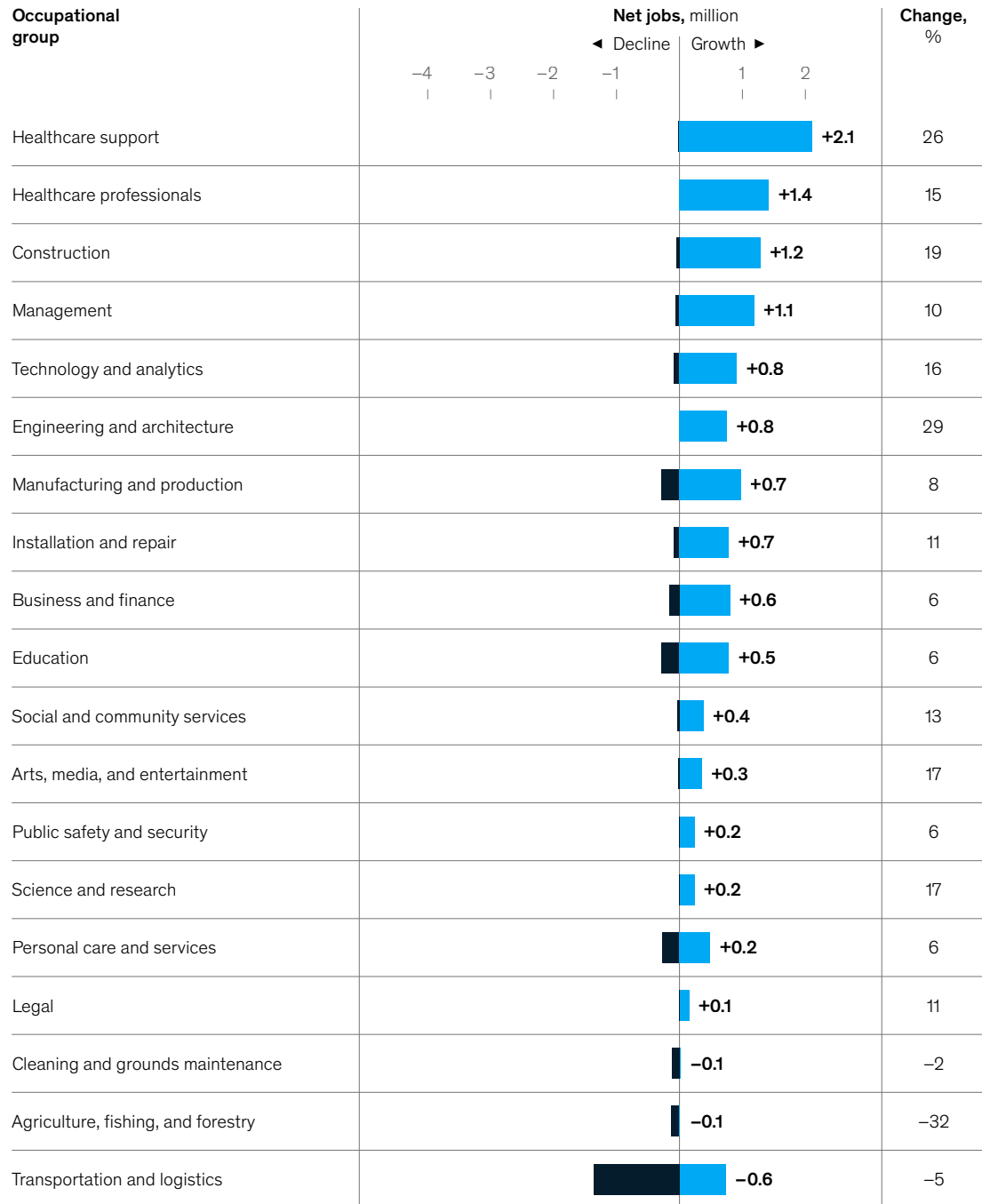
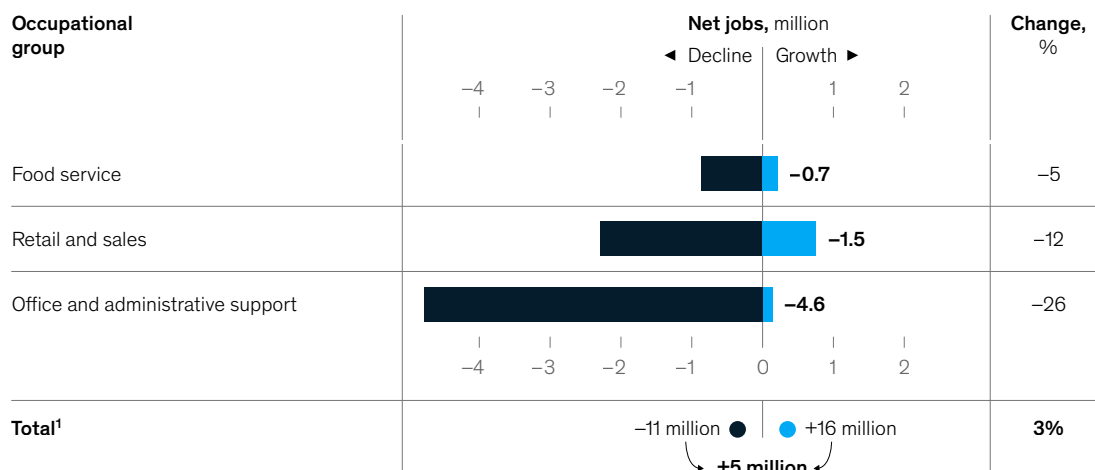




Exhibit 9 (continued)

About five million jobs could be added in health and construction occupations through 2035.**Net change in jobs in the US, 2025–35**

Note: Bars show gross jobs gained and gross jobs lost within each occupation group. Groups are ranked by net change in jobs. Net values to the right of each bar are jobs gained minus jobs lost within the group. The change column gives the net change as a percentage of the group's 2025 employment. Figures may not sum to 100%, because of rounding.

¹ Includes an additional 1 million jobs in new US occupations created by AI, not in the chart.

Source: MGI employment forecast model; McKinsey Global Institute analysis

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However, roughly 11 million US workers may need to transition out of occupations with declining demand into wholly new occupations by 2035. That figure represents about five million fewer workers than will be needed to fill the new jobs opening in growing occupations. These occupational transitions are a smaller but more visible outcome of the much larger labor-market shift, and they could require substantially more movement across occupational groups over a longer period than the US economy has typically sustained (Exhibit 8). Yet workers today move less from one employer to another than they did in the late 1990s and early 2000s, notwithstanding a temporary surge in mobility around the pandemic.²³

Some 215,000 workers have needed to make transitions across occupational groups on average each year, but the next decade may require roughly 3.6 times as many to make that leap annually. To be sure, the labor market grappled with a comparable number of transitions across occupations during and immediately after the COVID-19 pandemic, when about 788,000 workers made such changes annually from 2019 to 2022 without the prolonged dislocation many feared.

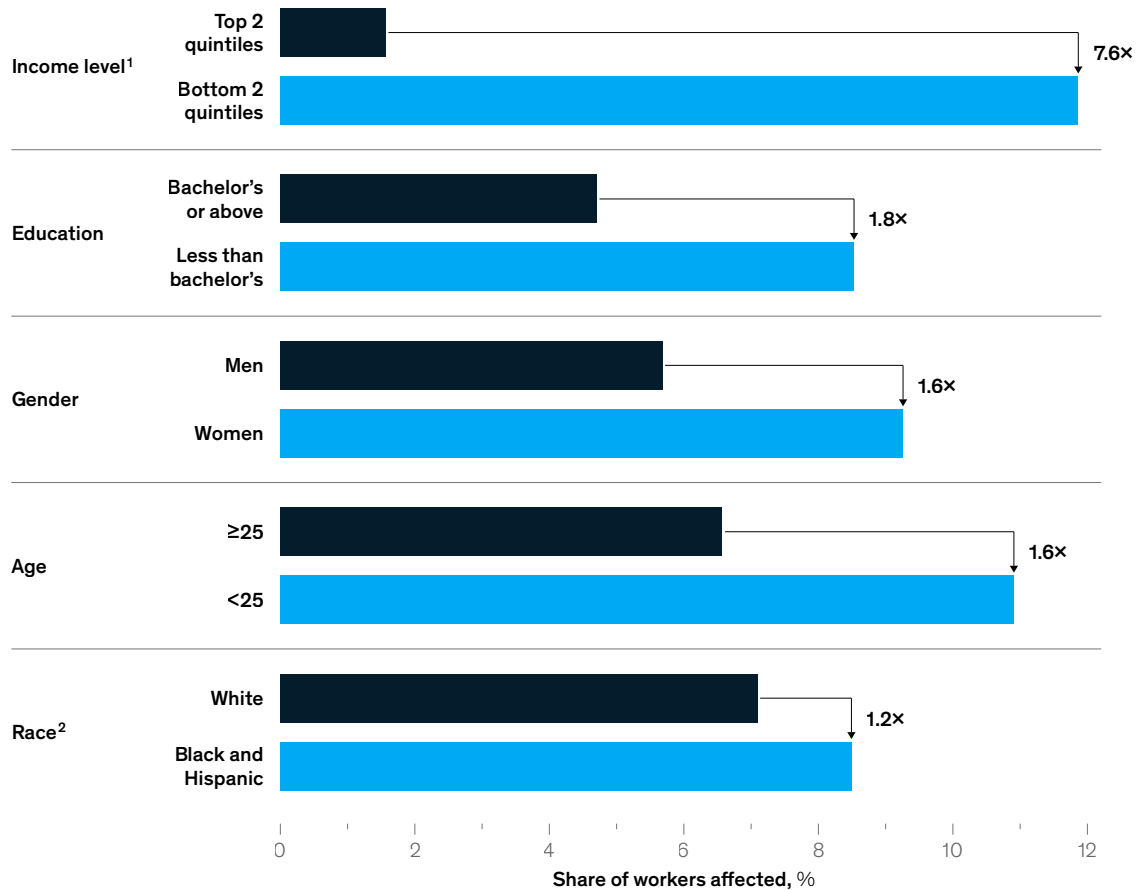
What is different this time is the duration of the shift. A two- to three-year shock is one thing; a decade-long one is another. This sustained demand for transition makes pathway quality the central



Exhibit 10

Lower-income workers are more likely to need to transition into new jobs in the next decade.

Relative likelihood of being affected by transitions, by demographic group, %



¹ Value for middle wage quintile is 9%.

² Value for Asians is 6%, 8% for Native American, 9% for Native Hawaiian, and 7% for 2+ races.

Source: US Bureau of Labor Statistics; Lightcast; MGI employment forecast model; McKinsey Global Institute analysis

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constraint on the current reallocation. Changing occupational groups typically requires workers to acquire more new skills, adapt to different work contexts, and overcome bigger credential, wage, and geographic barriers than transitions within the same occupational group.

Although we project job openings may exceed the number of workers needing to change jobs, that doesn't mean there is a ready match for everyone. Workers don't move around the labor market as interchangeable units. They carry specific skills, wages, credentials, location preferences, experience, and other constraints. The economy can generate more jobs than it loses, and many workers will nonetheless have difficult transitions.



Exhibit 11

Across sectors, employment could increase most in healthcare and construction and could decline most in retail.

US employment growth by sector, 2025–35

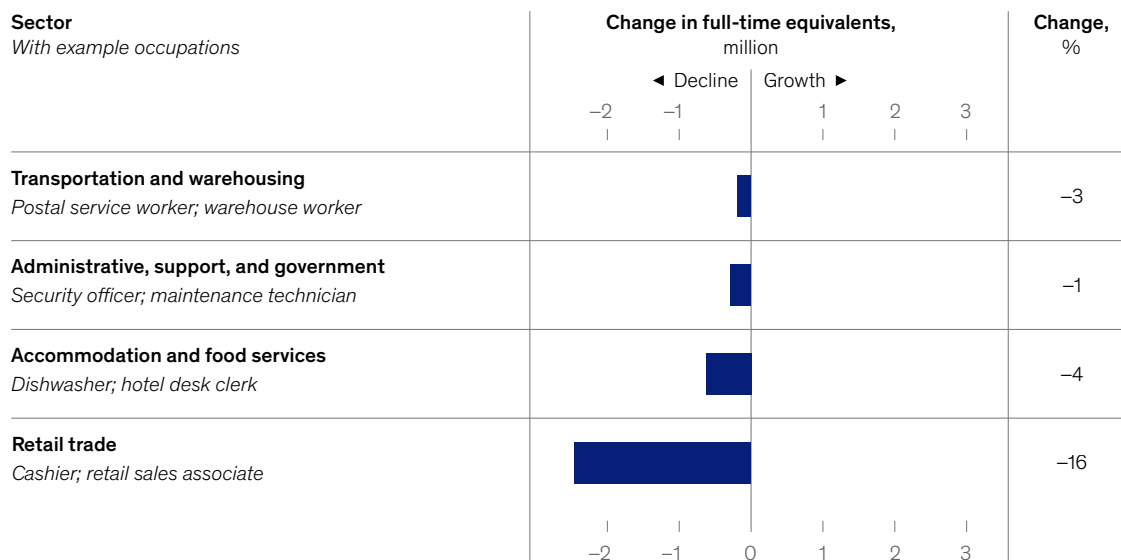
Sector	Change in full-time equivalents, million					Change, %
With example occupations	◀ Decline		Growth ▶			
	-2 	-1 	1 	2 	3 	
Healthcare and social assistance Caregiver; registered nurse						13
Professional, scientific, and technical services Veterinarian; civil engineer						13
Construction Construction worker; electrician						14
Manufacturing Electronics assembler; production assembler						7
Educational services Career counselor; vocational education instructor						3
Information Software QA engineer; telecom field technician						11
Wholesale trade Sales representative; account manager						2
Utilities Utility line technician; plant operator						18
Management of companies and enterprises Project manager; software engineering manager						4
Mining Mining worker; oilfield worker						13
Arts, entertainment, and recreation Entertainment attendant; greeter						1
Other services Administrative assistant; receptionist						-1
Real estate, rental, and leasing Rental clerk; administrative assistant						-4
Agriculture, forestry, fishing, and hunting Farm worker; produce packager						-27
Finance and insurance Teller; customer service representative						-3



Exhibit 11 (continued)

Across sectors, employment could increase most in healthcare and construction and could decline most in retail.

US employment growth by sector, 2025–35



Source: US Bureau of Labor Statistics; Lightcast; MGI employment forecast model; McKinsey Global Institute analysis

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Decline is concentrated in office, retail and sales, and transportation occupations

The decline side of the great reallocation may be highly concentrated (Exhibit 9). More than 75 percent of FTEs who may need to transition into new occupations work in just three of 22 occupational groups: office and administrative support, retail and sales, and transportation and logistics. Within those groups, a small number of occupations account for a disproportionate share of declining jobs due to adoption of automation technologies and other factors. About a third of FTEs transitioning between occupations are in five occupations: customer service representatives, retail sales associates, office assistants, cashiers, and warehouse workers.

This concentration suggests that practical pathways can be built for workers in a small set of occupations where demand could fall, allowing employers, educators, and policymakers to target their efforts.

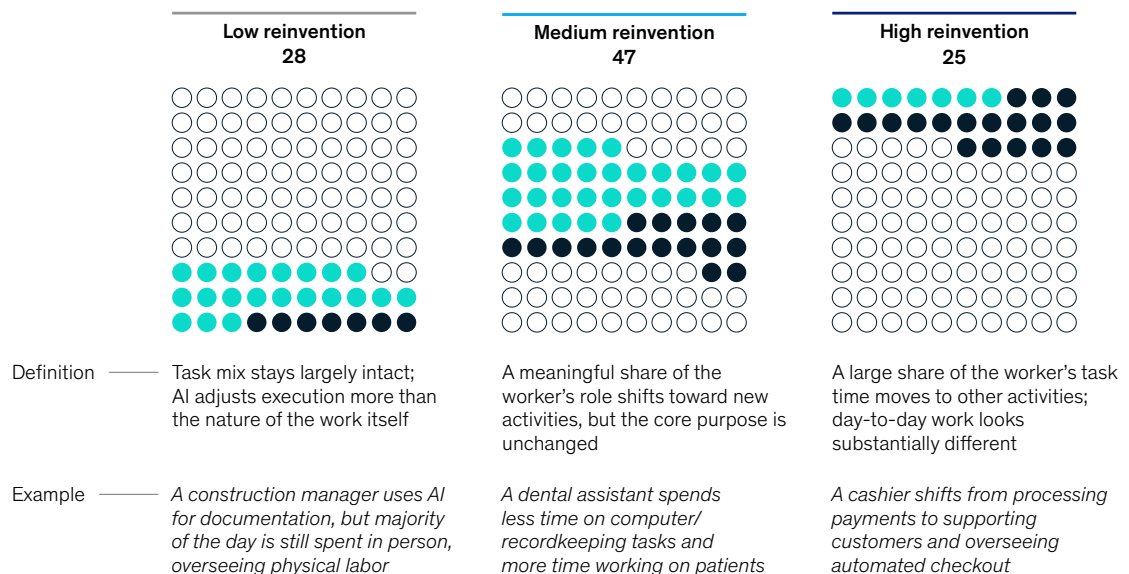
Concentration also means the impact of automation falls unevenly. Lower-wage workers are 7.6 times more likely to need to transition to a wholly new occupation than higher-wage workers (Exhibit 10). Workers without a college degree are about 1.8 times as likely as those with at least a bachelor's degree to need to change occupations, while younger workers are about 1.6 times as likely as prime-age workers, women are about 1.6 times as likely as men, and Hispanic and Black workers about 1.2 times as likely as White workers, a reflection of these groups' representation in occupations in

Exhibit 12

Most of the workforce will go through reinvention, not just grow or shrink.

Share of employment by level of reinvention in the US,¹%

● Workers in growing occupations ● Workers in declining occupations ○ Other reinvention levels



¹ Low reinvention is measured as less than 15% of a worker's task time that is reallocated, either reshuffled within existing activities or shifted to new ones. In moderate reinvention, 15–30% of tasks are reallocated, while more than 30% are reallocated in high reinvention.
Source: MGI automation model, labor reduction model, employment forecast model; McKinsey Global Institute analysis

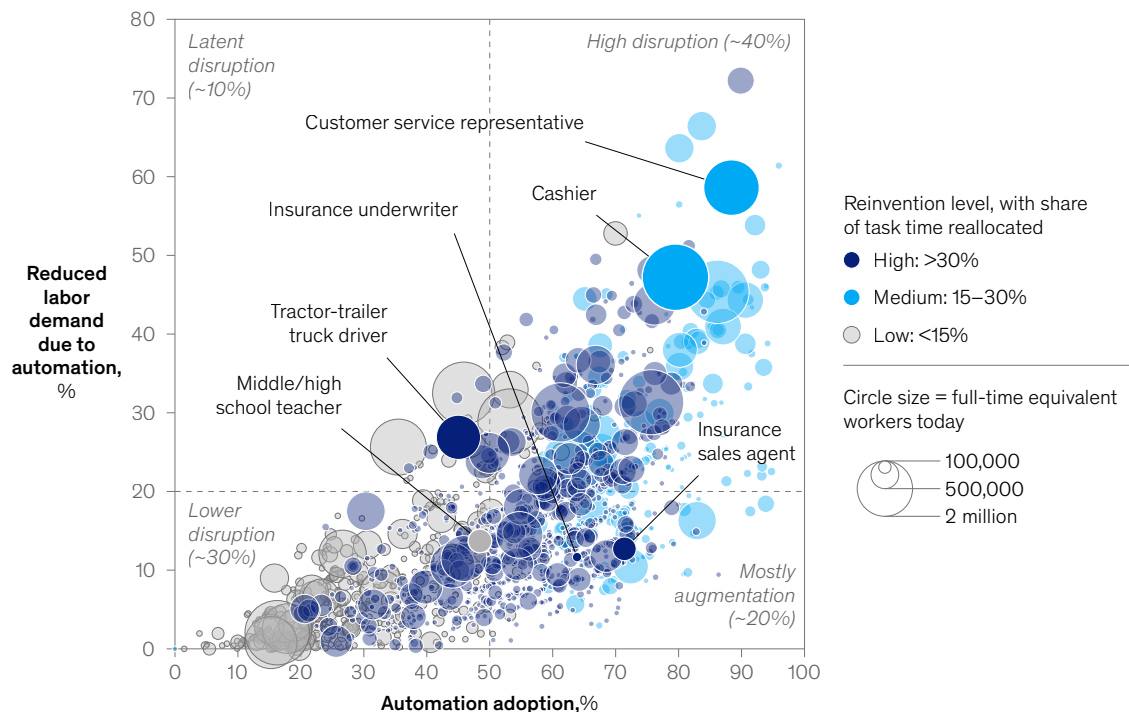


which automation is more likely to reduce labor demand. These estimates illustrate the potential scale and distribution of labor transitions, and actual outcome could vary as technology adoption, labor demand, and broad economic conditions evolve. For example, demographic forces may shift these patterns. As growing numbers of baby boomers retire, replacing them could open doors for younger workers in growing occupations.

Exhibit 13

Greater automation drives the greatest need for reinvention, which extends well beyond the most disrupted occupations.

Occupations' share of work hours in the US facing reduced labor demand and likely automation adoption, 2035



Source: US Bureau of Labor Statistics occupational employment data; MGI employment forecast model; McKinsey Global Institute analysis

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Many occupations could grow

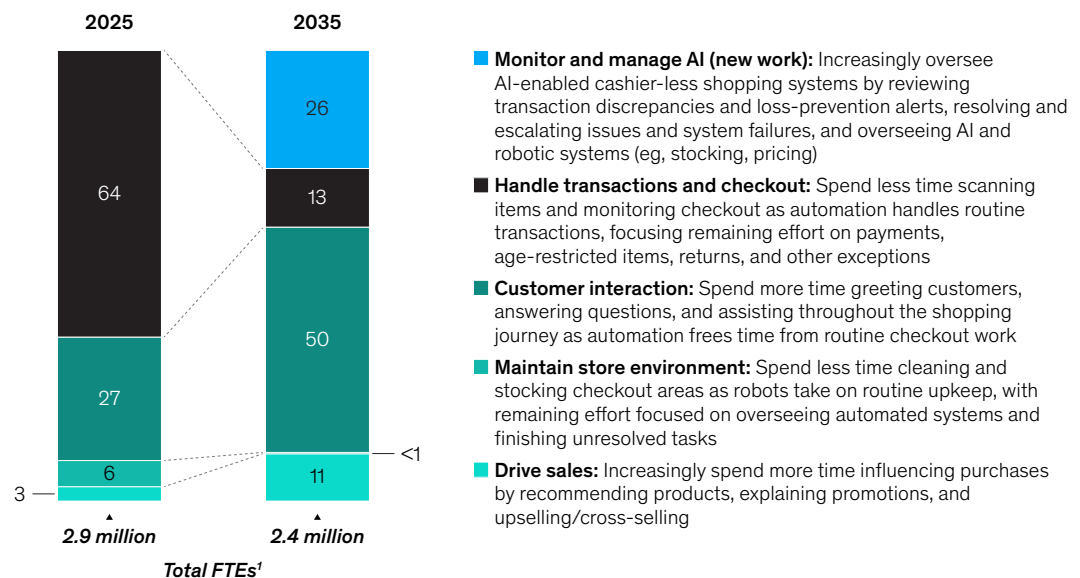
A broader set of occupational groups may increase. More than a third of positions likely to open in growing occupations are concentrated in four of 22 occupational groups—healthcare support, healthcare professionals, construction, and management occupations.

Employment growth from 2025 to 2035 may be concentrated in healthcare, professional and technical services, and construction sectors. Jobs may also increase in manufacturing, education, and information sectors. The largest declines are expected in retail trade and in accommodation and food services, which together could account for most sector-level job losses (Exhibit 11).

Exhibit 14A

Cashiers will move from transaction processing to customer engagement and AI oversight.

Distribution of time across tasks in the US, %



FTEs fall by ~17% as automation reduces routine checkout, payment handling, and transaction recordkeeping faster than customer engagement and AI oversight work grows; remaining work shifts toward exceptions, shrink/fraud prevention, and customer support

¹2035 figure after automation and impact of broader macroeconomic trends.

Source: MGI automation model, labor reduction model, employment forecast model; O*NET; BLS; US Census Bureau American Community Survey; McKinsey Global Institute analysis



The workers most likely to need to transition are often not in the same occupational groups as these growing jobs, creating a matching problem. A cashier may have customer interaction, basic digital, and reliability skills, but jobs are likely to grow in caregiving, construction support, healthcare support, and business operations. An administrative assistant may have coordination, scheduling, documentation, customer interaction, and workflow knowledge, but the most attractive increasing jobs may require management, business operations, technology, or specialized process skills. The challenge is to match skills to the jobs coming online.

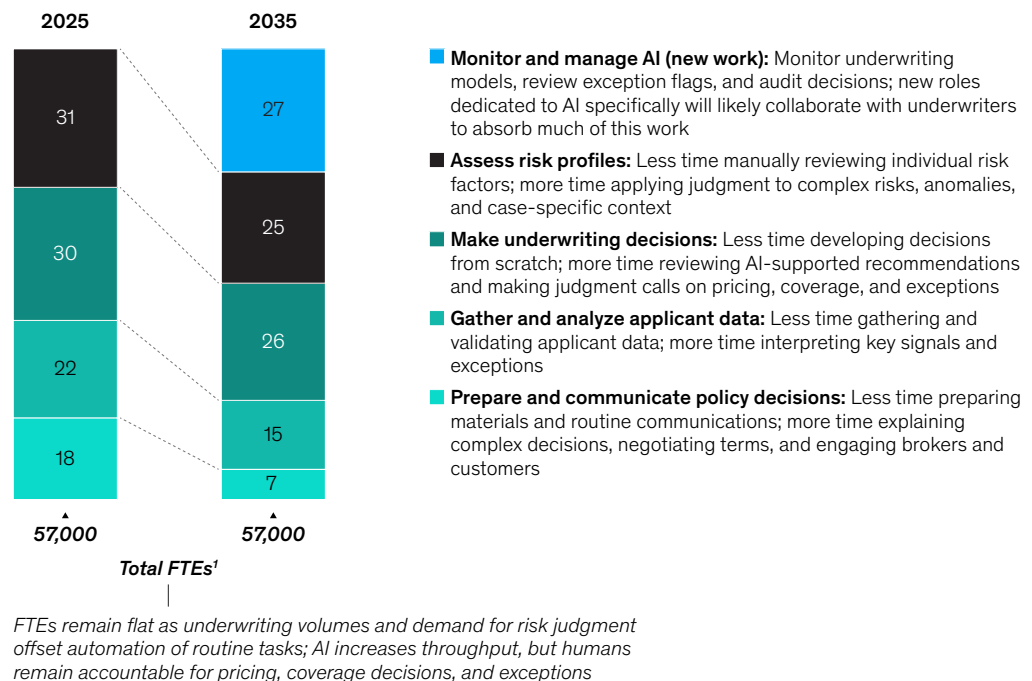
Many occupations will be reinvented altogether, not just grow or shrink

Not every worker falls into either a declining occupation or a growing occupation. For many, the central experience of the next decade could be reinvention on the job. Their occupation may remain

Exhibit 14B

Insurance underwriters will spend less time gathering data and more time judging it.

Distribution of time across tasks in the US, %



¹2035 figure after automation and impact of broader macroeconomic trends.
Source: MGI automation model, labor reduction model, employment forecast model; O*NET; BLS; US Census Bureau American Community Survey; McKinsey Global Institute analysis



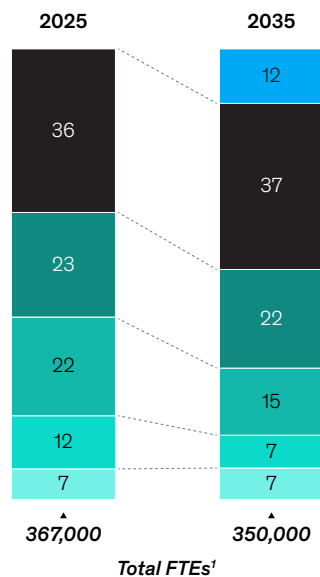
but be reconceived as its task mix, tools, workflows, skill requirements, and sources of value change. These workers could account for much of the change in the labor market, although potential job loss or creation gets more attention. About 25 percent of the workforce could have more than 30 percent of the time needed to do their tasks reallocated, either reshuffled into existing activities or shifted to new ones. Between 15 and 30 percent of the task time in 47 percent of the workforce could be reallocated (Exhibit 12). Some automated hours may reduce the need for labor, while others go into new or expanded activities, changing the mix of work performed by the workers who remain.

Reinvented occupations matter because they shape future mobility. A worker who learns to collaborate with AI systems, redesign workflows, or interpret machine-generated outputs could increase their mobility as technology improves.

Exhibit 14C

Middle and high school teachers will trade curriculum planning and progress tracking for AI oversight and classroom management.

Distribution of time across tasks in the US, %



- **Monitor and manage AI (new work):** Teachers supervise AI use by validating lesson content, grading suggestions, tutoring outputs, and intervention flags for accuracy, bias, and standards alignment
- **Teach and support students:** Focus more on individualized coaching, motivation, and intervention as AI supports practice, explanations, and small-group learning
- **Manage classroom and activities:** Spend more time on student engagement, behavior, participation, and classroom routines as AI reduces coordination and administrative work
- **Plan curriculum and materials:** Create more differentiated lessons, assignments, rubrics, and practice materials as AI drafts first versions aligned to standards for teacher refinement
- **Assess and track progress:** Monitor student learning more continuously as AI surfaces performance patterns, learning gaps, and suggested next steps from assignments
- **Collaborate and develop professionally:** Engage more effectively with parents, counselors, and other teachers as AI summarizes student needs and prepares meeting materials

An aging population shrinks the school-age cohort, offsetting much of the growth from rising educational attainment, leaving demand for teachers roughly flat; modest AI savings in curriculum planning and progress tracking then tip total FTEs down ~5%, as classroom coverage and student support remain labor-bound

¹2035 figure after automation and impact of broader macroeconomic trends.
Source: MGI automation model, labor reduction model, employment forecast model; O*NET; BLS; US Census Bureau American Community Survey; McKinsey Global Institute analysis

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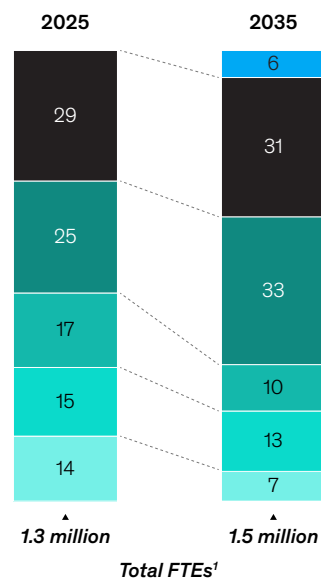
Nor is reinvention limited to occupations where AI augments work without reducing head count. It can occur whether employment in an occupation grows, declines, or remains broadly stable. It occurs across two dimensions that define an occupation's trajectory: the pace of automation adoption and the direction of labor demand (Exhibit 13).

In the most highly disrupted occupations, reinvention happens in tandem with significant reduction in head count, not instead of it. Cashiers are one example. Self-checkout, mobile payment, and increasingly capable point-of-sale systems have already replaced much of the work that once defined the role (Exhibit 14a). However, the remaining cashiers aren't doing a smaller version of their old job. Their work has shifted toward tasks machines still do poorly, such as resolving payment and transaction exceptions, handling customer interactions, influencing purchases, and overseeing AI-enabled systems, tasks that require judgment, interaction, or physical presence. A big drop in

Exhibit 14D

Tractor-trailer truck drivers will shift their time away from paperwork toward driving, cargo handling, and AI oversight.

Distribution of time across tasks in the US, %



- Monitor and manage AI (new work):** Review AI-generated routes, safety alerts, documentation flags, and exception cases; validate outputs before acting on dispatch, compliance, and delivery decisions
- Load, secure, and handle cargo:** Prepare and secure freight, escort high-value loads, prevent theft, and validate in-transit sensor data as drop-and-hook gives way to live loading and direct delivery
- Operate vehicles and plan routes:** More time driving as AI handles navigation, scheduling, and dispatch; autonomy concentrates in long-haul highway segments but is unlikely to scale fast enough this decade to offset e-commerce-driven freight growth
- Handle orders, payments, and compliance:** Meet shipment, payment, and regulatory requirements as AI takes over routine form-filling and standard checks
- Inspect and maintain vehicles:** Run safety checks and respond to vehicle issues as AI diagnostics absorb routine monitoring
- Record data and communicate:** Spend less time on manual logs, status updates, and routine communications as AI drafts records, updates systems, and flags exceptions

FTEs rise as freight and goods-movement demand grows faster than automation reduces driver labor needs; AI reduces paperwork, routing, and coordination tasks, but driving, cargo handling, and on-the-road judgment remain labor-bound

¹2035 figure after automation and impact of broader macroeconomic trends.

Source: MGI automation model, labor reduction model, employment forecast model; O*NET; BLS; US Census Bureau American Community Survey; "Will autonomy usher in the future of truck freight transportation?" McKinsey, Sept 2024; "Where to next? Insights from autonomous-vehicle experts," McKinsey, Jan 2026; McKinsey Global Institute analysis



labor demand and high reinvention could occur simultaneously in this occupation, which may shrink and change at the same time.

When AI mostly augments work in an occupation, reinvention doesn't reduce labor demand as much. AI may do a large share of routine or data-intense parts of an occupation without necessarily reducing demand for it. What fills the time that opens up varies. Some workers may have tasks that didn't exist before; some could spend more time on existing tasks that machines can't do well; and some do their existing tasks differently, reviewing and directing AI output rather than producing work themselves. Insurance underwriters illustrate one version of this (Exhibit 14b). As AI agents increasingly ingest, validate, and synthesize applicant data into decision-ready summaries, underwriters could spend meaningfully less time gathering and verifying information. At the same time, they may spend more time assessing risk and judging AI-generated recommendations and explaining decisions to brokers and customers. For other occupations with high automation adoption and relatively stable labor demand, the shift may be toward relationship management, exception handling, oversight of multiple AI systems, or creative and strategic work.

In occupations with low automation adoption and lower disruption to labor demand, some reinvention can still occur. Teachers are an example (Exhibit 14c). The additional capacity automation may free up by assisting with curriculum planning and administrative work could allow teachers to spend more time on individualized coaching, student support, and classroom engagement, tasks that depend on direct human relationships. Even with low automation adoption, the mix of work can still shift meaningfully.

Some occupations that involve physical, in-person work may have moderate levels of automation adoption and labor-demand reduction. Some of them have latent potential for further disruption as AI takes over routine, back-office aspects of the work, although that could place more emphasis on activities requiring a human. For example, the number of tractor-trailer truck drivers is expected to increase over the next decade, even as AI takes on order handling, routine communications, and aspects of navigation and scheduling (Exhibit 14d). Driving and physically handling cargo may account for a greater share of drivers' work in the future, as such tasks depend on human presence, safety judgment, and on-road execution. Autonomous driving may play a role in labor demand reduction, but over the next decade, that effect might not be large enough to outweigh broader macroeconomic factors supporting industry growth.²⁴ Lower automation adoption does not necessarily mean low reinvention.

Across these cases, the lesson is the same. Reinvention is not distinct from decline and growth; it is present in both. Companies and workers need to understand which tasks are changing and what new skills those changes will require, whether an occupation's head count is falling, flat, or rising.

The occupations most at risk are not necessarily those most exposed to AI

Exposure and transition risk are not the same. A worker in an occupation with high automation adoption may face limited transition if productivity gains are offset by the need for new tasks, if demand grows, or if a worker can move easily into adjacent roles. Conversely, a worker in a moderately exposed occupation may face significant transition risk if demand declines and few pathways lead directly to a new occupation.

Workers face the greatest risk when demand for the work they do is declining and pathways to growing jobs are weak due to limited skill adjacency, credential barriers, geographic mismatch, employer screening, low wages that make training difficult, or limited time or ability to retrain. Nor





CHAPTER THREE

Three types of pathways lead to growing jobs

does pay determine pathway quality at an individual level. A lower-wage worker may have a more direct pathway to a growing job than a higher-income worker whose specialized skills transfer to fewer destination jobs.

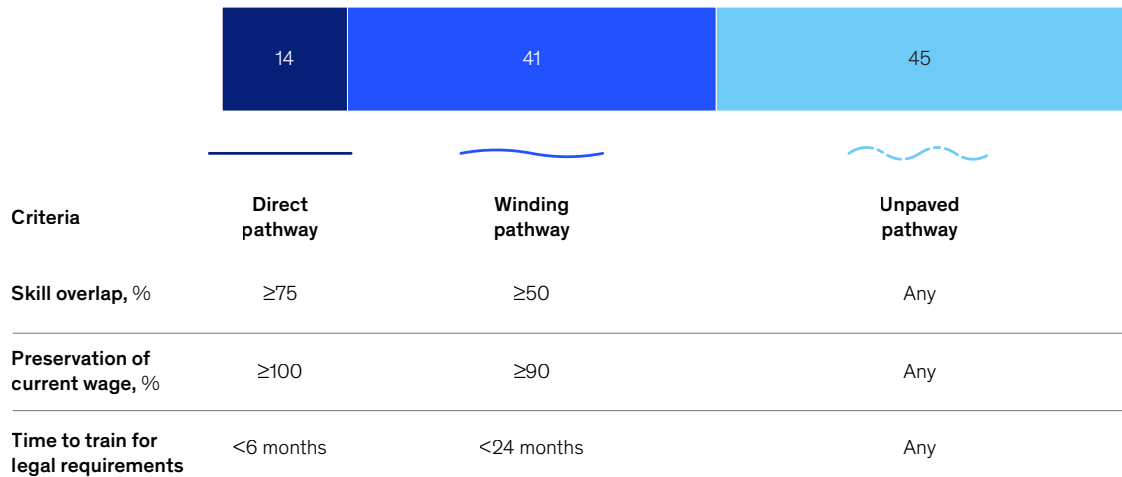
The next chapter introduces a method for assessing pathway quality. Rather than asking whether pathways exist in theory, it examines whether they are direct enough to be practical for workers and scalable for the economy.



Exhibit 15

Only about one in seven workers who need to transition between occupations can follow a direct pathway to new work.

Distribution of US transitions by pathway quality,¹ %



¹Estimates based on a US economy level optimization model, with shares rounded to whole percentage points. Pathways are classified sequentially and mutually exclusively: direct pathways are identified first, followed by winding pathways among those not classified as direct; all remaining pathways are classified as unpaved.

Source: Lightcast; MGI transition pathways model, automation model, and employment forecast model; McKinsey Global Institute analysis

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Nearly every worker needing to change occupations may have a pathway to growing work, but the quality of those pathways varies substantially (Exhibit 15). Only about one in seven workers has a direct pathway requiring minimal retraining and no wage loss. Four in ten face a winding pathway requiring meaningful retraining to navigate, while nearly half will travel an unpaved pathway strewn with larger skill gaps, extensive credentialing requirements, and other barriers. Pathway quality determines whether job growth becomes workforce opportunity.

A direct pathway is set by four conditions. The occupation into which a worker is headed must be growing. The worker's current occupation must require a large share of the skills needed for the destination occupation. The wage in the destination occupation must preserve or improve the worker's current compensation. Finally, obtaining legally required credentials must require minimal time.

On a winding pathway, those conditions are less certain. This pathway may require meaningful reskilling, a modest wage trade-off, or a longer credential timeline. An unpaved pathway is one where

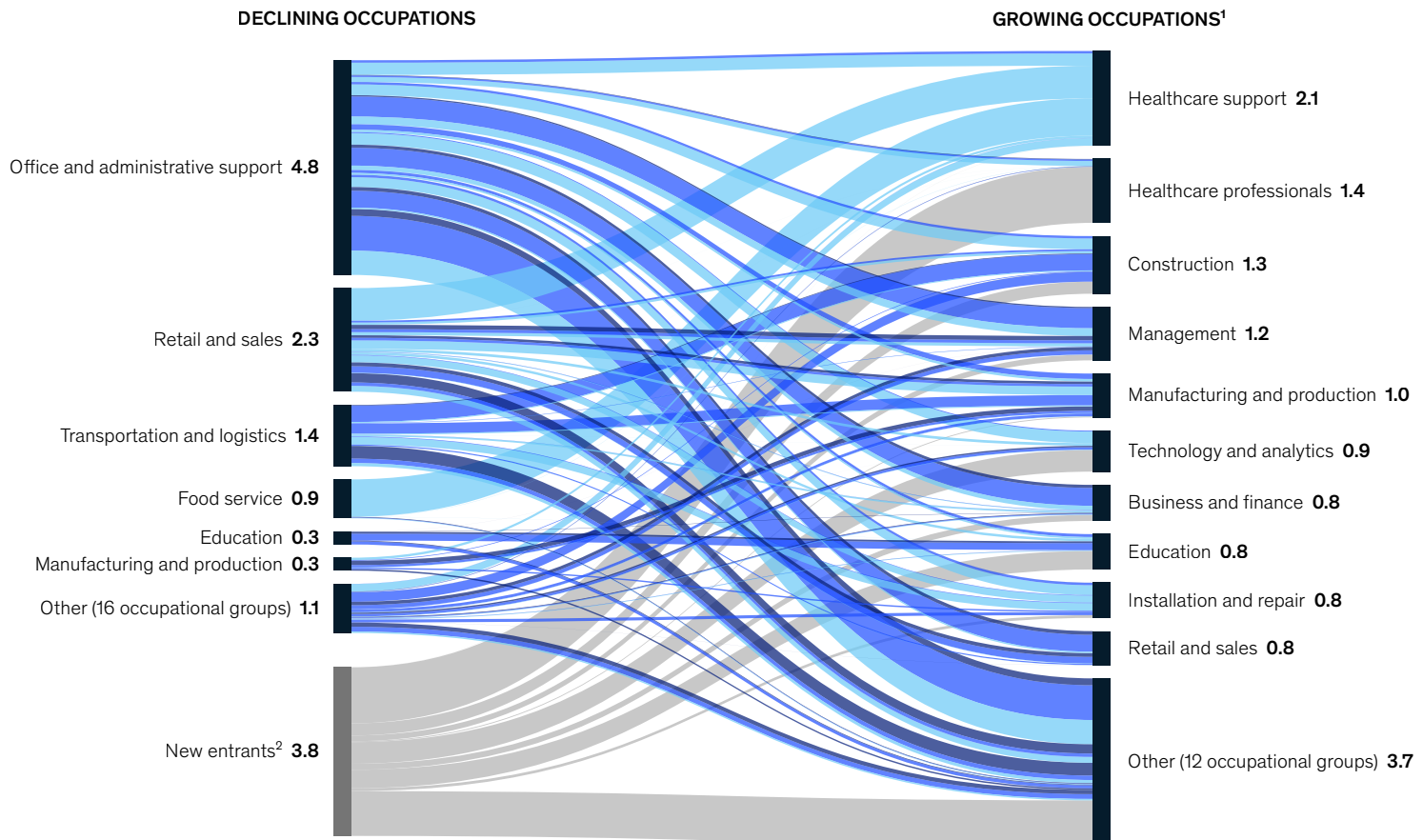


Exhibit 16

Pathway quality varies widely for workers moving from declining to growing occupations.

Reallocation of workers in declining occupations to growing occupation groups in the US, million

Transition pathway: ■ Direct ■ Winding ■ Unpaved



¹ Does not include net new occupations including those created by AI.

² Theoretical new entrants to the workforce who would fill demand for growing occupations and likely would not go into declining occupations.
Source: MGI transition pathways model; McKinsey Global Institute analysis

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the skill gap is even larger, with a potential wage trade-off and unbounded credential timeline. Some pathways may be blocked altogether by insufficient demand, material wage loss, a long credentialing process, geography barriers, language barriers, or employer screening.

Of course, a worker may not follow a pathway determined by their apparent skills at all, because humans have skills beyond those they use at work.



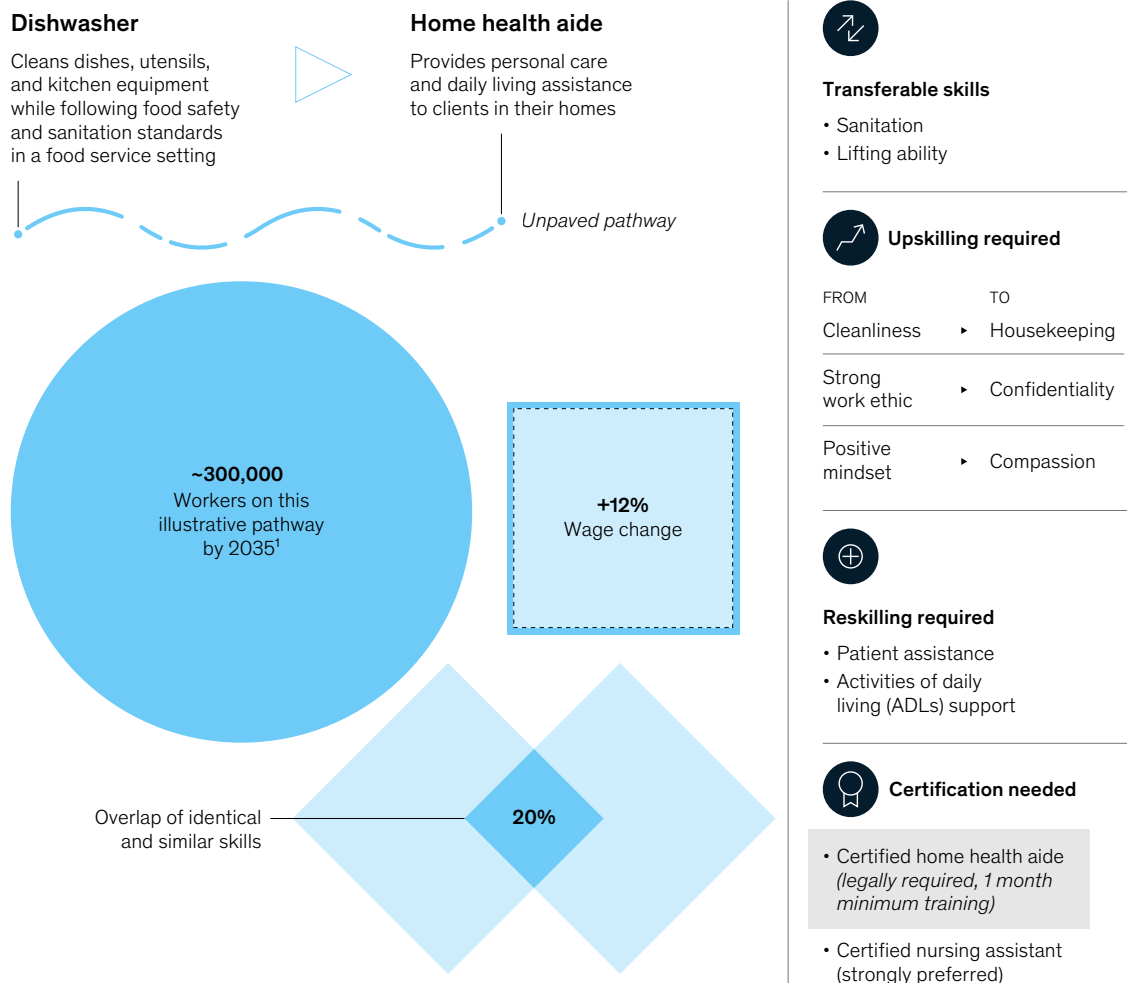
Pathway quality varies for workers needing to transition to new jobs

About 45 percent of the workers displaced by automation could travel more challenging pathways that require larger skill investments, longer credentialing processes, or lower pay, as well as likely substantial changes in work context. The transition challenge is highly concentrated among occupations. Office and administrative support occupations account for the largest share of workers

Exhibit 17A

Dishwashers transitioning to home health aides may require formal certification and reskilling in hands-on caregiving.

Example occupational transition



Key implication: Sanitation and lifting skills provide a starting point, but formal certification and reskilling in patient assistance and ADLs support remain the primary barriers to this transition

¹Illustrative pathways are not predictions of matched worker flows; pathway size reflects the potential scale of workers that could be represented by the transition. Source: Lightcast; MGI transition pathways model, automation model, employment forecast model; McKinsey Global Institute analysis

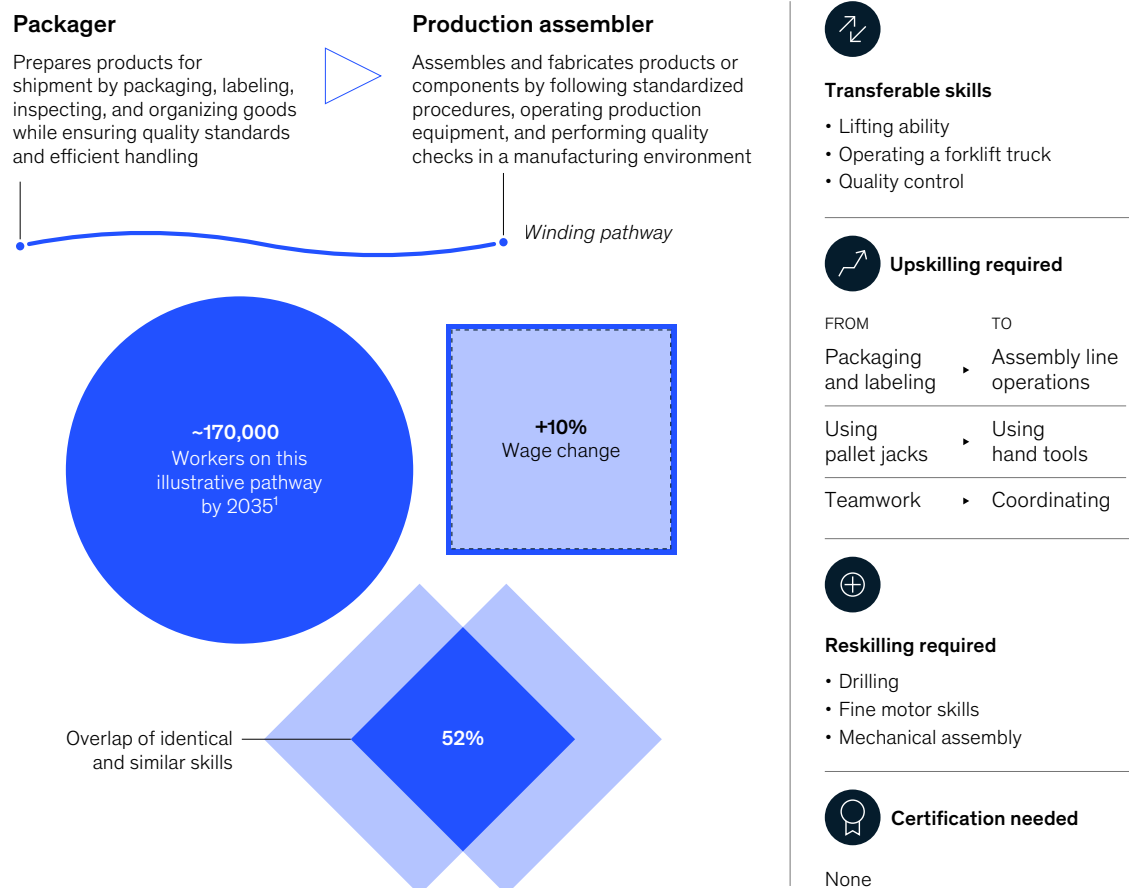


who may need to change jobs, followed by retail and sales, and transportation and logistics. Pathway quality differs sharply across these groups. Almost half of office and administrative support workers may follow winding pathways, and more than 60 percent of retail and sales workers could walk unpaved pathways. Transportation & logistics workers are more likely to have winding or straight pathways. The challenge is driven not only by the number of workers needing to transition but also by the quality of pathways available to them (Exhibit 16).

Exhibit 17B

Packagers transitioning to production assembler roles may require moderate training in skills such as mechanical assembly.

Example occupational transition



Key implication: Packagers have a strong foundation for transitioning into production roles, with many operational skills transferring directly. Targeted upskilling is needed to develop equipment operation, assembly technique, and manufacturing quality control capabilities.

¹Illustrative pathways are not predictions of matched worker flows; pathway size reflects the potential scale of workers that could be represented by the transition. Source: Lightcast; MGI transition pathways model, automation model, employment forecast model; McKinsey Global Institute analysis



Additionally, workers don't move into a single destination occupation. Office and administrative, retail and sales, transportation and logistics, and food service workers are likely to disperse into a wide range of growing occupations including healthcare support, construction, and management roles,

Exhibit 17C

Office and administrative assistants transitioning to project manager roles may need moderate training in project delivery and business management.

Example occupational transition

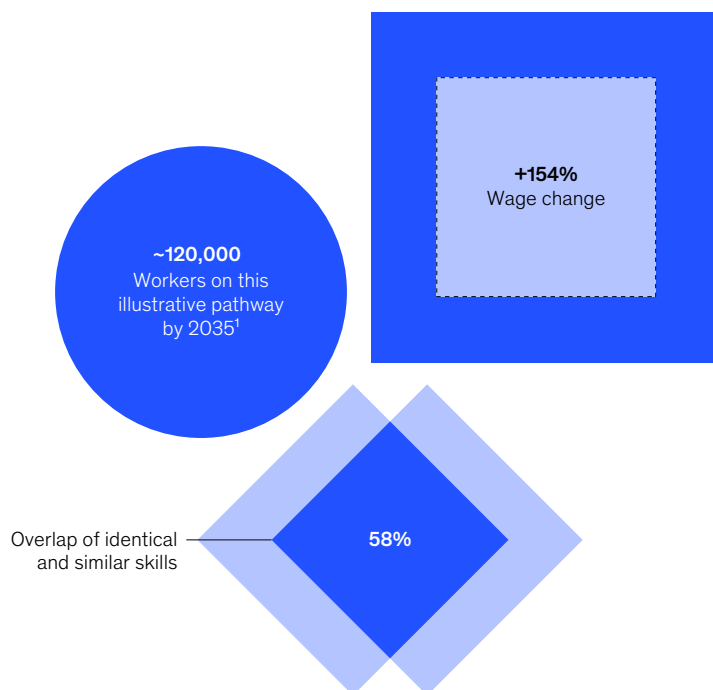
Office and administrative assistant

Coordinates schedules, manages documentation, supports operations, and facilitates day-to-day administrative activities

Project manager

Plans, coordinates, and delivers projects by managing scope, timelines, resources, budgets, and stakeholders

Winding pathway



Transferable skills

- Ability to meet deadlines
- Planning
- Scheduling



Upskilling required

FROM	TO
Scheduling	Project scheduling
Project management	Project delivery
Workflow management	Process improvement



Reskilling required

- Business development
- Forecasting
- Quality management



Certification needed

- Bachelor's degree in business administration or related field (strongly preferred)
- Project management professional certification (strongly preferred)

Key implication: Planning and scheduling skills provide a strong foundation that upskills naturally into project delivery and process improvement, but reskilling in business development, forecasting, and quality management remain the key gaps for a successful transition.

¹Illustrative pathways are not predictions of matched worker flows; pathway size reflects the potential scale of workers that could be represented by the transition. Source: Lightcast; MGI transition pathways model, automation model, and employment forecast model); McKinsey Global Institute analysis



and pathway quality to those destinations varies substantially. Straight pathways exist but are not evenly distributed across the largest declining occupations.

Some potential occupation-to-occupation transitions illustrate the challenge. Dishwashers could become home health aides, for example (Exhibit 17a).²⁵ Other potential pathways include packagers moving into production fabricator and assembler jobs (Exhibit 17b), and office and administrative assistants moving into project manager roles (Exhibit 17c).

The pathways differ substantially in how much reskilling they require. The pathway from dishwashing to home health aide work is unpaved, with a skill overlap of 20 percent. A packager seeking to become a fabricator and an office assistant aiming for project manager will follow a winding pathway with a skill overlap of 52 and 58 percent, respectively.

These three transitions are difficult for different reasons. Dishwashers have sanitation and lifting skills that home health aides use, but they would need to acquire caregiving capabilities such as patient assistance and vital-sign assessment. Additionally, the transition calls for formal instruction to become a certified home health aide, which requires about one month of training. What's more, certified nursing assistant credentials requiring more training are preferred.

A transition from packager to production fabricator presents a different type of challenge. Packagers have a strong operational foundation, including lifting ability, quality control, and experience operating equipment like forklifts. However, the fabricator role requires a greater focus on creation and assembly, which requires mechanical assembly, drilling, and fine motor skills. While the pathway from packager to production fabricator leads to a meaningful wage increase and builds on a reasonable skill overlap, it also requires targeted skill upgrading to capabilities needed for specific manufacturing equipment, assembly techniques, and advanced quality control procedures.

Transitioning from office and administrative assistant to project manager illustrates a barrier of a different kind. Office assistants have a strong foundation in planning, scheduling, and coordinating operations. These skills transfer well to the project manager's role, which also requires workers to lead projects, manage stakeholders, and deliver business outcomes. So in addition to building capabilities in project scheduling, process improvement, business development, forecasting, and quality management, many office assistants may need to obtain a bachelor's degree and professional project management certification. Although this pathway offers one of the largest wage gains among these examples, it also entails one of the greatest investments in education and credentialing.

None of these transitions is impossible. All are feasible and build on meaningful existing capabilities. But feasibility is not the same as ease. These examples illustrate why pathway quality is the relevant measure of transition risk.

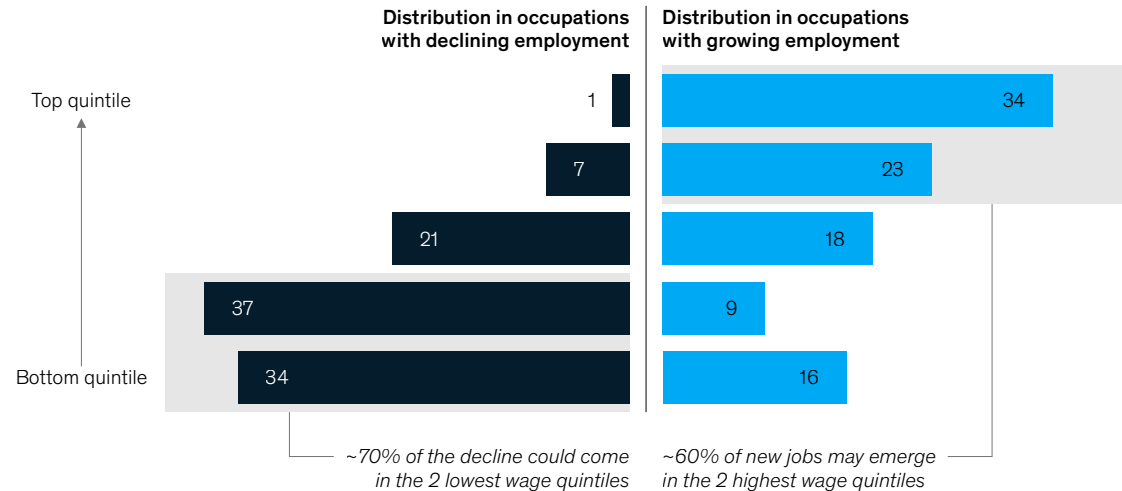
Even if workers successfully navigate these transitions, they are unlikely to meet labor demand on their own. Meeting demand will also require expanding the pool of workers entering the labor market. This includes younger workers entering the workforce for the first time, migrants who help address labor shortages, people returning after career breaks, and older workers who remain economically active. These sources of labor are complementary and not substitutes for effective pathways that help existing workers transition into growing occupations. Worker transitions and new labor-force entrants will both be needed to address the scale of projected workforce demand.



Exhibit 18

At the economy level, the reallocation of employment could support higher average wages.

Workers in US by wage quintile,¹%



¹ Separate distributions of 11 million declining jobs and 16 million growing jobs.

Source: US Bureau of Labor Statistics; Lightcast; MGI transition pathways model, automation model, employment forecast model; McKinsey Global Institute analysis

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Wages may increase as the workforce is reallocated

A transition into growing work is not necessarily a step up. Some accessible jobs may offer flat or lower pay, while some higher-paying jobs may require substantial new skills, credentials, or experience. Understanding the workforce impact of AI requires looking not only at whether workers can move but also at whether those moves preserve or improve their economic prospects.

At the economy level, employment shifts could support higher average wages. Fifty-seven percent of employment in growing occupations will fall in the top two wage quintiles, while more than 70 percent of declining jobs are concentrated in the bottom two quintiles (Exhibit 18). On net, the economy may shed lower-wage work and add higher-wage work. As workers move into growing roles, many may gain higher earnings, with potential benefits for their livelihoods, families, and communities.²⁶

Wage improvement in the aggregate, however, doesn't automatically translate to an individual worker's pocketbook. Workers can only move into occupations for which they have the requisite skills. The good news is that matching transitioning workers to feasible destination occupations suggests that only 3 percent of workers—roughly 305,000 of the 11 million expected to transition—will follow a pathway that requires a pay cut. The pathways of most workers will preserve or improve current earnings, suggesting that the workforce reallocation AI is bringing may be favorable not only in aggregate but also for most workers able to transition. (This analysis holds current wage levels within each occupation constant, which captures changes in earnings as workers move across occupations, but not potential changes in occupational wage levels as labor supply and demand rebalance.)

The occupation examples illustrate why the trajectory of wages cannot be evaluated in isolation. The transition from dishwasher to home health aide broadly preserves earnings but offers limited income



progression, despite requiring meaningful reskilling and a substantial change in work context. By contrast, the transition from office and administrative assistant to project manager offers a clearer wage premium but requires a larger shift in technical capabilities and work environment. The quality of a pathway therefore depends on the combination of skill requirements, wages, credentials, and work context.

Growing jobs require more skills, not just better pay

A greater demand for skills accompanies higher wages. Across occupations, employers seek an average of 64 distinct skills in their job postings.²⁷ In growing occupations, 68 skills are sought, one and a half times as many as the 47 skills needed in declining occupations. Formal education requirements follow the same pattern: 84 percent of growing occupations require postsecondary education, compared with 45 percent of declining occupations.²⁸ Reallocation thus moves workers toward better-paid work and also toward occupations for which employers seek a broader range of skills and educational attainment.

Nor is the difference only in the number of skills required. Many growing jobs demand greater judgment, interpretation, and decision-making, potentially increasing cognitive load even when formal credential requirements are unchanged. The McKinsey Health Institute's work on brain capital suggests that managing this load is increasingly a question for employers, not simply an individual responsibility. Workers cannot build and deploy the capabilities increasingly needed in an AI-enabled workplace on a foundation of burnout or cognitive overload.²⁹

For workers navigating these pathways, training cannot stop at task-specific instruction. They will also need to build the capacity to handle work broader in scope and more variable than in the jobs being left behind, and companies must create conditions that respect growing demands on cognitive capacity.

Pathway quality differs across US demographic groups

Pathway quality is not evenly distributed across the workforce. While nearly all workers likely to transition will have a pathway to a growing occupation, the likelihood of landing on a direct pathway varies substantially across demographic groups. Only 14 percent have a direct pathway, but this share differs markedly by education, earnings, and gender.

Current earnings account for the largest disparities. High earners in the top quintile are four times as likely as a worker in the bottom quintile to have access to a direct pathway. Only 10 percent of workers in the lowest wage quintile, who earn less than \$38,000 a year, are likely to have a direct pathway, compared to almost 40 percent of workers in the fifth quintile.

Educational attainment and gender are also associated with meaningful differences in pathway quality. Workers with more than a bachelor's degree are about 50 percent more likely to have a direct pathway than those with a bachelor's degree or less, and men are about 30 percent more likely than women to have one.

Overall, these findings suggest that workforce transitions will not be uniform. Workers with lower earnings have substantially fewer high-quality pathways into growing occupations and so will require more targeted support including training, career navigation, and other transition assistance to successfully move into expanding roles in the labor market.





CHAPTER FOUR

Essential, enabling, and empowering skills can expand access to more and better pathways

Pathway quality determines the kind of support a worker will need. The workers most at risk are not those in occupations with the highest automation adoption, but those with very winding or even blocked pathways to take them from declining demand to growing demand. That is why skills matter, but also why skills alone are not enough. The next chapter examines the skills that expand mobility and, in some cases, help workers move up the employment ladder.

Demand for empowering skills is already rising: AI fluency is up 11×, adaptability 5×, and resilience, curiosity, and willingness to learn 3×.



Exhibit 19

Skills create value in different ways.

3 major categories of skills

	Essential	Enabling	Empowering
Definition	Skills required in many occupations, widening the range of jobs within reach	Skills that transfer across occupations and are concentrated in higher-paying roles	Skills that help workers adapt and remain employable as technology and work evolve
Example skills	• Problem-solving • Leadership • Interpersonal communications • People and process management • Detail orientation	• Innovation • Influencing others • Decision-making • Collaboration • Critical thinking	• AI fluency • Willingness to learn • Resilience • Adaptability • Curiosity
	>75% of occupations demand essential skills ¹	>\$83,000 Average wage of occupations requiring enabling skills ²	3–11× Increase since 2022 in empowering skills

¹ All figures relevant for the US.

² Average top-quintile wage.

Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

McKinsey & Company

Three categories of skills can enhance the number and the quality of pathways available to workers. Essential skills are required for many occupations and expand workers' career options, while enabling skills have broad applicability but are harder to master and can support upward mobility because they are concentrated in higher-paying work. Empowering skills provide career resilience and help workers continuously adapt to evolving technologies, activities, and skill requirements (Exhibit 19).

Together, these three skill types determine not only whether workers can move but also where they can move and whether they can continue adapting as the labor market changes.

Essential skills open the largest number of opportunities

Some skills are valuable because they are required in occupations that make up a large share of the labor market. These essential skills form the base of workforce mobility because they make it easier for workers to move between occupations without starting from scratch. Prior MGI research identified skills such as problem solving, leadership, interpersonal communications,



people and process management, and detail orientation among the most broadly required skills across occupations.³⁰

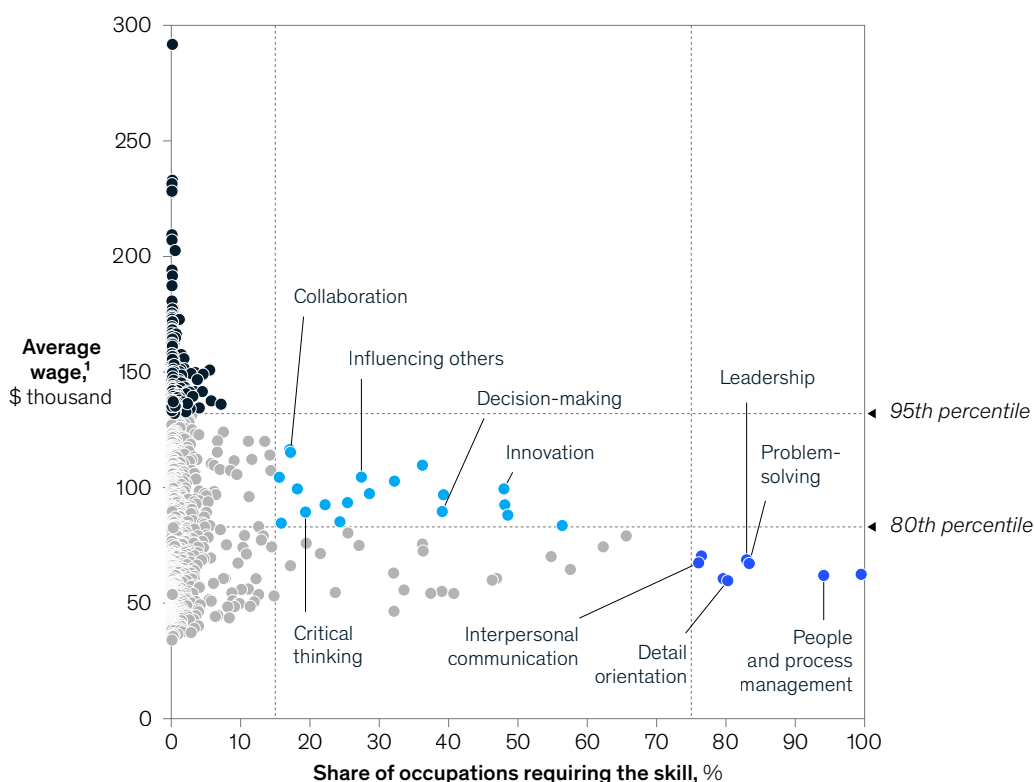
These skills matter because most work transitions are not leaps into entirely unrelated work but rather adjacent moves that build on existing capabilities. A worker with customer relations, problem-solving, and detail orientation skills may be able to move from retail into care, administrative coordination, or operational roles. Similarly, workers with leadership and operations skills may transition between functions, industries, and work settings because those capabilities are valuable in many different contexts.

Exhibit 20

Essential skills are demanded in a broad range of occupations, and enabling skills are concentrated in higher-wage jobs.

Skills by average wage and share of occupations in the US

● Niche high-paying skills ● Enabling skills ● Essential skills ● Others



Note: The exhibit is intended to show the breadth of occupations in which a skill is required and whether less ubiquitous skills are concentrated in higher-paying occupations, not to estimate the wage premium associated with an individual skill.

¹ Average wage of the US occupations that require the skill, weighted by full-time equivalent count. Because the wage measure reflects the average wage of occupations requiring each skill, weighted by employment, skills required in most occupations will mechanically converge toward the economy-wide average wage.

Source: Lightcast; McKinsey Global Institute analysis

McKinsey & Company



Essential skills create optionality because they are required in much of the labor market, so workers who lack them may find many occupations out of reach.

Enabling skills open doors to better opportunities

Not all skills create value in the same way. Some highly specialized skills, particularly in healthcare and other credential-intensive fields, provide access to exceptionally high-paying occupations but are needed in relatively few jobs.

Enabling skills combine broad applicability with access to higher-paying occupations, allowing workers to earn more. Skills such as decision-making, innovation, and critical thinking are associated with occupations that offer higher wages and have broad applicability across industries and business functions. They support transitions from execution-heavy roles into coordination, business operations, project leadership, and other higher-value work (Exhibit 20).

A pathway that preserves employment but locks workers into lower-value work is fundamentally different from one that expands career opportunities and earnings. Enabling skills represent a particularly valuable form of mobility capital because they improve long-term economic opportunity.

Empowering skills are fast becoming economic assets

As technology changes the nature of work itself, a third type of skills has gained importance. Unlike essential skills or enabling skills, which determine where workers can move today, empowering skills influence how well workers continue adapting as occupations evolve. These skills are relevant for workers transitioning between occupations as well as for the much larger share of workers who will remain in their current occupations as those occupations are reshaped by AI and other technologies.

Job postings already point to their importance. Between 2022 and 2026, demand for AI fluency³¹—the ability to work effectively with AI tools and intelligent systems—increased approximately 11-fold, while demand for willingness to learn, resilience, and curiosity roughly tripled, and demand for adaptability increased about fivefold (Exhibit 21). These trends suggest that employers increasingly value not only what workers know today but also how quickly they can acquire new capabilities.

The gap between these five empowering skills is widening rather than closing. The growth in demand for AI fluency isn't just fastest in relative terms; it is present in far more occupations in absolute terms than willingness to learn, resilience, adaptability, or curiosity. Yet those skills aren't secondary to AI fluency. They allow a worker to keep pace with whatever follows the current wave of AI tools. If demand for these empowering skills doesn't match the pace of demand for AI fluency itself, employers risk building a workforce that can use today's AI tools but is no better equipped to adapt to the next set of changes those tools may bring. In this sense, AI fluency is not a destination but a



Sidebar

The proven teachability of empowering skills

As the pace of change accelerates, empowering skills such as AI fluency, willingness to learn, adaptability, resilience, and curiosity will become increasingly important. While AI fluency is already widely recognized as a learnable capability, whether the other empowering skills can be intentionally developed is a subject of greater debate. Yet a growing body of evidence suggests they can.

AI fluency is rapidly becoming a core workforce capability. Pioneering organizations around the world are going beyond ad hoc AI training and investing in structured learning pathways, certifications, and new, role-specific AI skills. Governments are also embedding AI literacy into national skills strategies, lifelong learning systems, and workforce policies. This rapid institutionalization reflects a consensus that structured learning can develop AI fluency systematically, making the primary challenge scaling it across a workforce.¹

The strongest evidence for teaching the other empowering skills comes from childhood and adolescence, when these capabilities are generally most malleable. Experiences at school, at home, and with peers during those years play an important role in shaping empowering skills, laying foundations that influence educational attainment, work, and well-being throughout life. Intentional educational interventions in multiple countries have generally strengthened these skills.²

Although childhood and adolescence are periods when empowering skills are developed, workers continue to enhance these capabilities as adults. Research has found that workplace learning programs produce moderate improvements in many of the skills that enhance resilience, but with considerable heterogeneity regarding the type of intervention.³ OECD and World Bank evidence suggests that strengthening these skills through adult learning programs and workplace training are associated with better labor-market outcomes, including higher employment, earnings, and job satisfaction.⁴

Organizations are increasingly integrating empowering skills into core workforce development strategies. Microsoft has embedded continuous learning in its culture and performance expectations, encouraging employees to build curiosity, adaptability, and AI fluency as part of everyday work.⁵ Bank of America runs skills training for teammates and local communities, publishing structured curricula on adaptability and critical thinking that are free and publicly available.⁶ Unilever has committed to giving every employee a “future-fit skill set,” combining reskilling with individual Future-Fit Plans and mechanisms such as its Flex Experience program, which lets employees spend up to 20 percent of their time working in a different function, as well as a company-wide learning platform. PepsiCo offers all employees a dedicated resilience-building program—a stress-

management app available to employees and their families aims to help them “build their resilience and shift their response to stressful thoughts and situations”—as well as mental health services and a global employee assistance program.⁷

A similar shift is underway in public policy, as many countries incorporate empowering skills into education and workforce development. The OECD recommends embedding many of these skills in vocational training, adult learning, and workplaces. Canada’s Skills for Success framework, administered by Employment and Social Development Canada, defines nine foundational skills ranging from adaptability to innovation, which anchors a publicly available catalogue of free assessment and training tools. The government finances delivery partners that build on it with classroom workbooks and a mobile assessment app used by publicly funded adult education centers, career counselors, and workforce training programs.⁸

Ultimately, empowering skills are capabilities that can be intentionally developed across a life, rather than fixed personal attributes. As technology continues to reshape work, a central challenge for education systems, employers, and workers will be building the learning systems, incentives, and opportunities needed to develop these capabilities continuously and at scale.

¹ *Advancing artificial intelligence education for American youth*, White House Executive Order 14277, April 23, 2025; *Regulation (EU) 2024/1689 (AI Act)*, Article 4, European Union, June 13, 2024, changed and consolidated July 27, 2026; *Regulation (EU) 2024/1689 (AI Act)*, Article 4, European Union, June 13, 2024, changed and consolidated July 27, 2026; European Commission, *AI talent, skills and literacy*, July 27, 2026; Microsoft Learn, Google Skills, IBM Skills, and Oracle University, all of which provide structured AI learning pathways, certifications and role-based AI training.

² OECD, *Social and emotional skills (SES): Latest evidence on teachability and impact on life outcomes*, OECD Education working paper number 304, November 15, 2023.

³ Evidence for teachability of self-control, emotional regulation, stress resistance, persistence, achievement motivation, and self-efficacy is particularly strong. Direct evidence for curiosity is more limited, largely because it has been studied less frequently than other skills rather than because it is inherently less teachable.

⁴ Skills that matter for success and well-being in adulthood: Evidence on adults’ social and emotional skills from the 2023 Survey of Adult Skills, OECD, October 2025; Diego Angel-Urdinola et al., *Do socio-emotional skills pay off and can they be developed through training? A meta-analysis*, World Bank policy research working paper, number 11384, May 2026.

⁵ *Inside Track*, “Accelerating our cultural transformation at Microsoft with Viva and AI,” blog entry by Jason Kellington and Aaron Carey, Microsoft, January 22, 2026; *Inside Track*, “Cultivating a culture of learning at Microsoft with Viva Learning,” blog entry by Jason Kellington, Microsoft, November 3, 2022.

⁶ “Education that’s transforming lives and communities: Adaptability—resource guide,” Bank of America, 2025; “Education that’s transforming lives and communities: Critical Thinking—resource guide,” Bank of America, 2024; “Education & career development resources,” Bank of America, accessed August 2026.

⁷ “Preparing people to adapt and thrive in changing times,” Unilever, January 26, 2021; “Empowering Gen Z with four future-fit skills for the workplace,” Unilever, November 3, 2023; “Employee well-being,” PepsiCo, updated October 2, 2025.

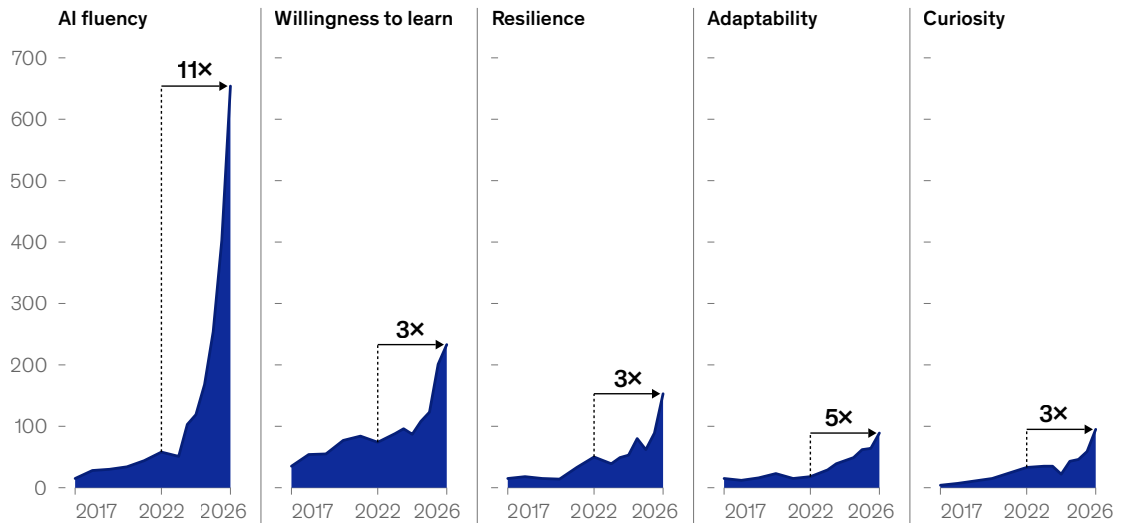
⁸ “Skills for Success,” Employment and Social Development Canada, launched May 2021, accessed August 2026; “Skills for Success—Assessment and training tools,” Employment and Social Development Canada, updated on March 18, 2026; “Skills for Success,” Skills/Compétences Canada. Skills in the AI age, Artificial Intelligence Papers, number 60, OECD, July 2026.



Exhibit 21

Demand for empowering skills has increased exponentially since 2022.

Number of occupations requiring each skill in the US



Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

McKinsey & Company

capability supported by other skills that must be continuously renewed as AI technologies evolve (see sidebar “The proven teachability of empowering skills”).

Workforce reallocation driven by AI will not be a one-time event. Occupations will continue to evolve as technologies advance, business models change, and new ways of working emerge. For many workers, the primary challenge will not be moving into a different occupation but continuously reinventing how they perform their existing one. These skills become a form of long-term mobility capital, helping workers to continuously build new capabilities as the labor market evolves.

Many of the essential, enabling, and empowering skills are also least exposed to automation. MGI's Skill Change Index, which measures how susceptible skills are to automation, suggests that skills such as people and process management, leadership, and the ability to influence others are relatively resilient.³² As AI takes on more structured and repetitive work, these distinctly human capabilities

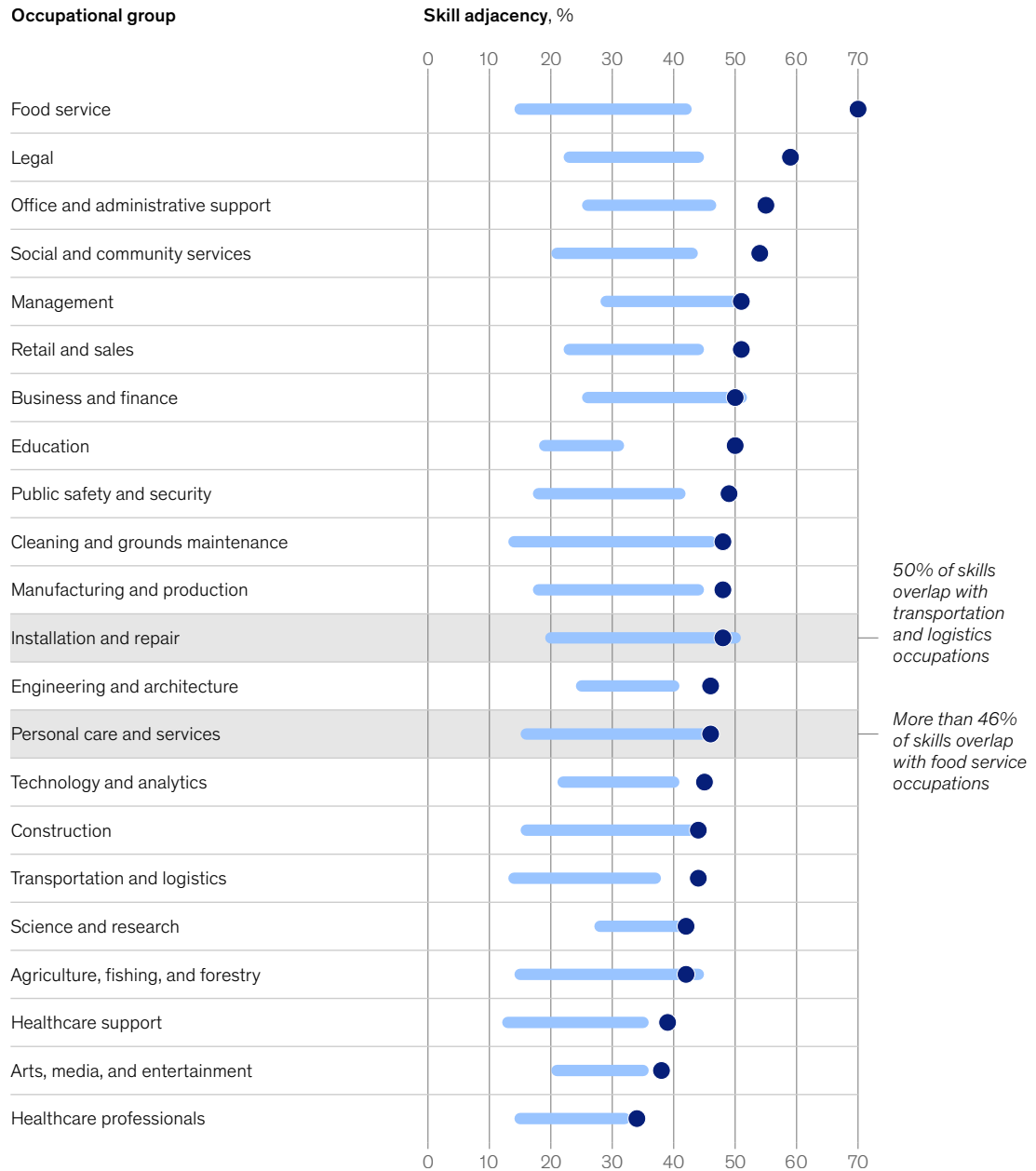


Exhibit 22

Skills overlap most within occupational groups, but strong adjacencies also exist across groups.

Average skill adjacency within occupational groups and range of adjacency to other groups in the US, %

Adjacency: ● Within occupational group ■ To other occupational groups



Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

McKinsey & Company

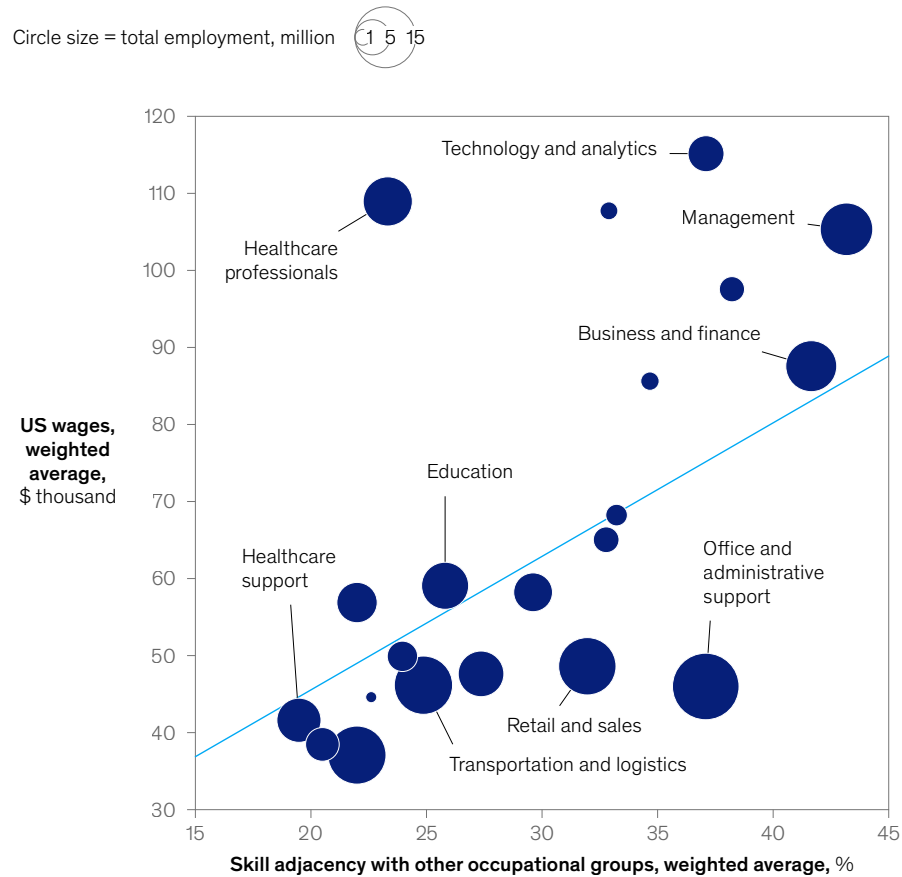


complement technical skills, enabling workers to create value in ways that technology is less well suited to replicate.

Exhibit 23

Higher-wage occupational groups often have greater skill adjacency across the labor market.

US occupational groups by average wage and skill adjacency with other groups



Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

McKinsey & Company



Skills deployable across occupations ensure greater mobility across jobs

Skill adjacency is highest where occupations share a common skill base (Exhibit 22). Many practical transitions are likely to be adjacent moves within occupational groups or into nearby occupation families rather than large leaps across the labor market.

But mobility is not equally strong in all occupational groups. Healthcare is the clearest exception. Healthcare professionals have relatively little internal skills overlap because their roles are highly specialized and require credentials. Even within the same broad healthcare group, different occupations require distinct clinical knowledge, licenses, and work settings. Healthcare shortages are unlikely to be solved with simple redeployment unless pathways are deliberately designed around stepping-stone credentials and training capacity. Redesigning roles, workflows, and staffing models to increase the productivity of scarce clinical talent with technology can also address these shortages.³³

Workers in occupations with higher wages often have more adjacent skill profiles because their work combines analytical, organizational, commercial, managerial, and communication capabilities applicable across business contexts. Roles in management, business and finance, and some professional services may have multiple mobility options. But high wages do not guarantee mobility. Some specialized technical and healthcare roles pay well but require a narrow set of skills and specific credentials and so have limited adjacency across sectors (Exhibit 23).

Profiles with high-skill adjacency are also not solely the possession of high-wage workers, as workers in office and administrative support occupations demonstrate. Even when demand declines, many workers in these roles have coordination, scheduling, customer interaction, problem-solving, and other skills that can transfer to other administrative, operational, customer-facing, or coordination-heavy roles.

The most constrained workers are those in lower-wage, execution-heavy, highly specialized, or context-specific roles in which skills are valuable in a current job but less transferable to growing or higher-wage destinations. Lower-wage occupational groups often have less skill overlap with higher-wage groups, a structural barrier to upward mobility. Moving into better-paid work may require not only job matching but substantial reskilling, credential acquisition, or a shift in work context.

Skills need to be visible and recognized

Workers who have a skill needed for a role may appear less qualified in interviews or on applications. Skills may be discounted or unrecognized, making it harder for employers to identify workers whose skills could transfer to other roles and for qualified people to get hired.³⁴

Employers can reduce this barrier by relying less on subjective signals and instead focusing on structured, skills-based hiring. Consistent interview criteria, practical assessments, and clearer definitions of required skills can help organizations identify talent more accurately.

Skills expand the set of jobs a worker can attain and their access to higher-wage work. But the impact of skills can be narrowed or blocked. The next chapter examines the barriers that determine whether skill-enabled pathways materialize.





CHAPTER FIVE

Reducing barriers could make pathways more direct for workers

Skills enable transitions, but barriers determine whether those transitions are straightforward. In many cases, workers targeting new positions already have the adjacent skills and can move without sacrificing pay, but the job posting requires a qualification they lack. Geography, language, training costs, and employer hiring practices also matter, but credentials are one of the largest barriers to workforce mobility (see sidebar “How barriers look different within and beyond the United States”).

These barriers are widespread. Some 85 percent of growing employment in the United States calls for a credential or certification of some kind, whether legally mandated or required by an employer. Seventy-six percent of those jobs cannot be performed remotely, tying a job to a specific location, and 25 percent are in the bottom two wage quintiles (Exhibit 24).

Such barriers can turn a pathway feasible on paper into one difficult or blocked in practice. Thus, labor-market mobility is not only a training issue. Training can close skill gaps, but training alone cannot remove licensing rules, change employer hiring practices, relocate jobs, compensate workers during training, or make low-wage destination roles attractive. Across the pathways, barriers are often the binding constraint. A worker with adjacent skills is often blocked by a location, a wage, or the need for a credential rather than by inability to do the work a role requires. In this chapter, we examine those gates and illustrate why they must be diagnosed together.



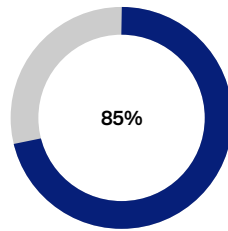
Exhibit 24

Credentials, geography, wages, and language barriers can block pathways even when workers have the required skills.

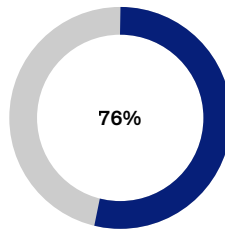
Barriers to entering growing occupations in the US

Share of growing occupations:

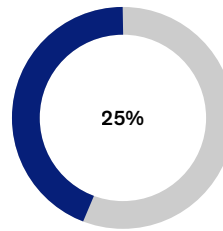
Requiring a credential
or certification¹



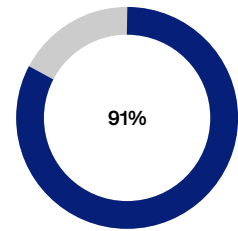
Requiring physical
presence



In bottom 2
wage quintiles



Average English proficiency
among workers in growing
occupations²



Context matters. The same pathway may be viable in one state or country and blocked in another because of licenses, wages, worker protections, language, or mobility constraints.

¹ Legally required, preferred by employer, or both.

² Compared to 72% of Hispanic and Asian workers with average English proficiency, and 99% of white and Black workers.

Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

McKinsey & Company

Legal requirements for credentials can hinder some pathways

Credentials required by law or regulation are among the biggest barriers to mobility. About 38 percent of growing employment has a credential required by law. These requirements are concentrated in areas where safety, liability, professional standards, or public trust are central to the work, such as healthcare professionals, legal, transportation and logistics, education, engineering and architecture, and public safety and security.

Healthcare is a good example. Healthcare professionals are a meaningful source of growing demand, but many of those occupations require specific clinical skills and formal credentials. Ninety-six percent of growing occupations in this group require mandated licenses or certifications. A transitioning worker may have strong communication, service, coordination, or problem-solving skills and be unable to obtain a credentialed healthcare role without completing training and licensing. In some cases, these requirements make direct transitions impossible without formal intervention such as modular or sequential training with financial support.

Employer preferences for credentials can also limit mobility

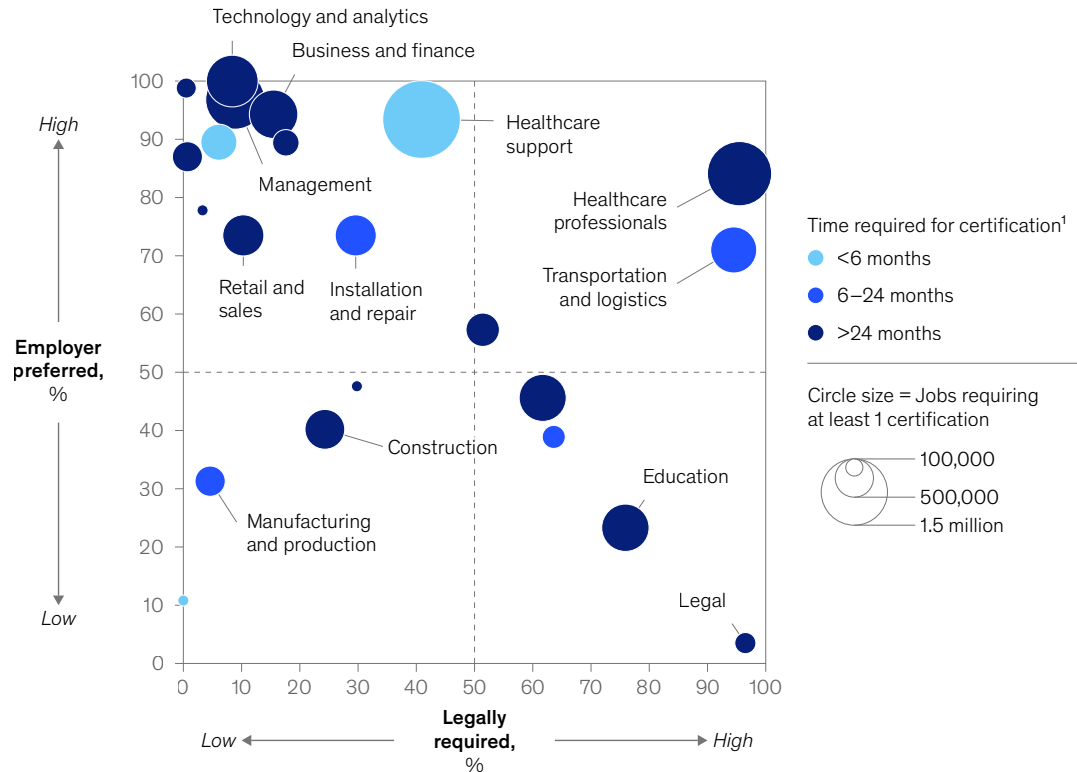
In many cases, employer preferences for degrees, certifications, and prior job titles also can create barriers to job movement. Among jobs that are growing, 47 percent have no legal credential requirement but employers prefer a credential nonetheless, according to job postings (Exhibit 25). Companies can lower these barriers by resetting degree requirements, using skills assessments, recognizing prior experience, and creating apprenticeships. Currently, only 15 percent of growing jobs have no credential requirement whatsoever.



Exhibit 25

Growing occupations differ sharply in the credentials workers need to enter them.

Share of growing employment with legally required vs employer-preferred certifications, by occupational group in the US



¹ Training time for workers with an associate's degree, the weighted average years of schooling in the US civilian labor force. For each occupation, the maximum training duration between legally required and employer-preferred credentials was used. For each occupational group, the employment-weighted average training duration was then calculated.

Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

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Sidebar

How barriers look different within and beyond the United States

The same job can require entirely different qualifications, offer different financial rewards, and be accessible to very different people depending on where in the world it is located. The examples below illustrate some

of those differences; the combinations vary as widely as labor markets themselves.

Whether a credential barrier exists and what form it takes can differ entirely for the same

occupation depending on where in the world a worker is standing. In the United States, the first step to practicing law is passing a state bar examination. Each state administers its own exam and sets its own passing



Sidebar (continued)

How barriers look different within and beyond the United States

score.¹ Other countries have stronger requirements. In Germany, qualifying as a Rechtsanwalt (lawyer) requires passing two examinations and completing two years of supervised training, the Referendariat. The first combines a university examination with a state-administered one and is taken to complete a law degree; the second is a state examination that follows the Referendariat and must be passed before admission to the bar.² In Sweden, by contrast, the title Advokat is reserved for those admitted to the bar association, but legal practice other than criminal defense is open to anyone.³ Across different occupations and countries, credential requirements differ so widely that workers' ability to move into a growing field can depend as much on where they live as on their skills.

The financial pressure a worker experiences during an occupational transition depends not only on the wage gap between jobs but also on the safety net beneath that gap. Net replacement rates in unemployment at six months illustrate the range: the United States replaces about 55 percent of prior net income, compared with 7 percent in Hungary, 65 percent in France, and around 80 percent in Spain and Portugal.⁴ Whether more generous benefits make workers more willing to accept a lower-paying job to complete a

transition is less clear. Those same benefits can delay transitions, as a worker with strong income support may simply wait for an offer closer to their previous salary. Research comparing the United States and West Germany has found that more generous unemployment benefits do reduce wage losses after displacement, but at the cost of longer unemployment spells.⁵

Language can be as big a barrier to getting a job as any formal credential requirement, and in some places, a greater one. In the United States, language barriers are concentrated among specific populations, primarily recent immigrants and non-English speakers. In Europe, they are structural. Citizens of the European Union can work in any member state without a visa or work permit, yet only 4 percent of working-age EU residents were born in another member state.⁶ There are 24 official languages across the EU, and so language is a central reason for lower mobility in the EU. A Spanish engineer who doesn't speak German cannot easily take a job in Germany, and a Polish nurse faces the same barrier in France.⁷ Lack of host-country language skills is the most commonly cited obstacle to finding suitable work, and linguistic distance strongly shapes where Europeans move even without legal barriers.⁸ Where workers speak different languages

than jobs require, pathways exist on paper but not in practice.

Informality changes the impact of barriers entirely. Informal employment accounts for less than 10 percent of jobs in the United States and Canada. By contrast, more than 50 percent of workers in Latin America and the Caribbean, and more than 85 percent in Southern Asia and Sub-Saharan Africa work informally.⁹ Without documented work histories or recognized credentials, informal workers cannot easily prove their skills to formal employers, making the transition into formal occupations far harder regardless of capability. India illustrates this issue. Nearly 90 percent of its workforce is informal, and formal-sector jobs are heavily skewed toward highly educated workers. Only 16 percent of workers who completed high school hold a formal-sector job, compared with more than half of those with postgraduate degrees.¹⁰

Barriers are local, and so are remedies. The same transition can be blocked by a license in one country, by an income gap the worker cannot absorb in another, and by the absence of any documented work history in a third. Each barrier calls for a different response. Understanding the local context can separate pathways that look viable on paper from the ones a worker can actually take.

¹ Comprehensive guide to bar admission requirements, National Conference of Bar Examiners and American Bar Association Section of Legal Education and Admissions to the Bar, 2026; "Bar admission guide: Jurisdiction information," National Conference of Bar Examiners, accessed August 2026.

² Deutsches Richtergesetz (German Judiciary Act), sections 5 and 5b; Bundesrechtsanwaltsordnung (Federal Lawyers' Act), section 4; "Doing legal business in Germany," Law Society, March 7, 2023. "Doing legal business in Germany," Law Society, March 7, 2023.

³ Rättegångsbalken (Swedish Code of Judicial Procedure), chapter 8; "Membership and registration," Swedish Bar A Swedish Bar Association (Sveriges advokatsamfund), accessed August 28, 2026. Mandy Turner, "Who can practice law in Sweden?," LegalKnowledgeBase, July 29, 2022.

⁴ "Net replacement rates in unemployment," OECD Data Explorer, updated January 15, 2026. Benefits and Wages (TaxBEN), 2025; single person, no children, previous earnings at 67 percent of the average wage, six months of unemployment, social assistance claimed, no housing supplement. The United States is modeled on the State of Michigan, the OECD reference state. Portugal's rate rises to 96 percent if a rent supplement is claimed.

⁵ Markus Gangl, "Welfare states and the scar effects of unemployment: A comparative analysis of the United States and West Germany," *American Journal of Sociology*, May 2004, Volume 109, Number 6.

⁶ "Annual report on intra-EU labour mobility 2023 published," European Commission, March 12, 2024; "Migration, mobility and the EU labour market," European Commission Directorate-General for Economic and Financial Affairs, accessed August 28, 2026; American Community Survey 2024 one-year estimates, table GCT0601, US Census Bureau.

⁷ "Languages," European Union, accessed August 2026.

⁸ "Main obstacles for foreign-born people to enter the labour market," Eurostat Statistics Explained, EU Labour Force Survey 2021 ad hoc module, data extracted January 2023; Ekaterina Sprenger, "What makes us move, what makes us stay: The role of language and culture in intra-EU mobility," *Journal of International Migration and Integration*, 2024, Volume 25.

⁹ "Informality regional statistical profiles," International Labour Organization, 2025; ILO modeled estimates, SDG indicator 8.3.1 (13th ICLS), reference year 2024. The Northern America figure is a modeled estimate; ILOSTAT publishes no survey-based country estimate for the US or Canada.

¹⁰ Abhishek Waghmare, "India's informal sector," Data For India, May 15, 2026.



Training time determines whether credentials are realistic

The impact of a credential barrier also depends on how long the credential takes to obtain. In occupations requiring a credential by law, the average training time for someone graduating from high school is roughly 32 months, and for someone graduating with a bachelor's degree, 17 months. Those figures mask wide variation. Some legally required credentials can be earned with short training times, while others require years of education, supervised experience, or other advanced credentials.

For example, training requirements take less than six months on average for growing occupations in healthcare support. By contrast, growing occupations with credential requirements in education, engineering and architecture, and healthcare professionals require more than two years of training on average. The length of training, not just the presence of a requirement, is what separates a direct pathway from a winding or unpaved one.

Credentials requiring less training time can support faster mobility. Medication aides and technicians, for example, require credentials such as certified nursing assistant or certified medication technician that can be obtained in months rather than years. Tractor-trailer truck drivers generally require a driver's license and a commercial driver's license, which can be obtained relatively quickly. Occupations in engineering and architecture, legal, and social and community service roles require time-consuming credentialing, but mobility can be enhanced with early-career pipelines, longer-term training investments, or stepping-stone pathways.

Healthcare again illustrates why averages can mislead. While medication aide and technician roles may be accessible through short-cycle credentials, many practitioners require long education and licensing. A workforce strategy that treats healthcare as a single destination may fail unless it accounts for short-cycle care pathways, mid-cycle technician roles, and long-cycle professional roles.

Wage friction can make accessible jobs unattractive

A theoretically viable pathway can still fail to deliver a worker to a growing job in practice. As noted in Chapter 3, wage loss on the way to a job in a growing occupation is rare. But avoiding a pay cut is not the same as finding a wage high enough to justify a transition. Many destination roles pay no less than the job a worker is leaving, yet that isn't enough in absolute terms to compensate for the disruption, risk, and cost of making a change.

Two financial issues make or break a transition. The first is the wage in the destination job. About 25 percent of growing employment is in the bottom two wage quintiles. For example, 97 percent of jobs in food service occupations and 92 percent of growing employment in healthcare support are in the bottom two wage quintiles (Exhibit 26). These roles might preserve pay relative to many declining occupations, but workers may be less attracted to them once differences in physical or emotional demands and the costs of transitioning are taken into account. Redeployment can fail even when demand is strong because an offered wage is a constraint, not compared to a worker's existing job but relative to other options.

The second issue is the income gap created by training. Even a destination job with an attractive wage can be out of reach if the pathway to it first winds through weeks or months of reduced income or unpaid training. Workers with limited savings, caregiving responsibilities, or no access to paid training may rationally decline a pathway that looks favorable on paper because they cannot absorb the interruption in income it requires. This barrier is largely invisible in a pathway's steady-state wage comparison but can be decisive to whether a worker starts a transition at all.

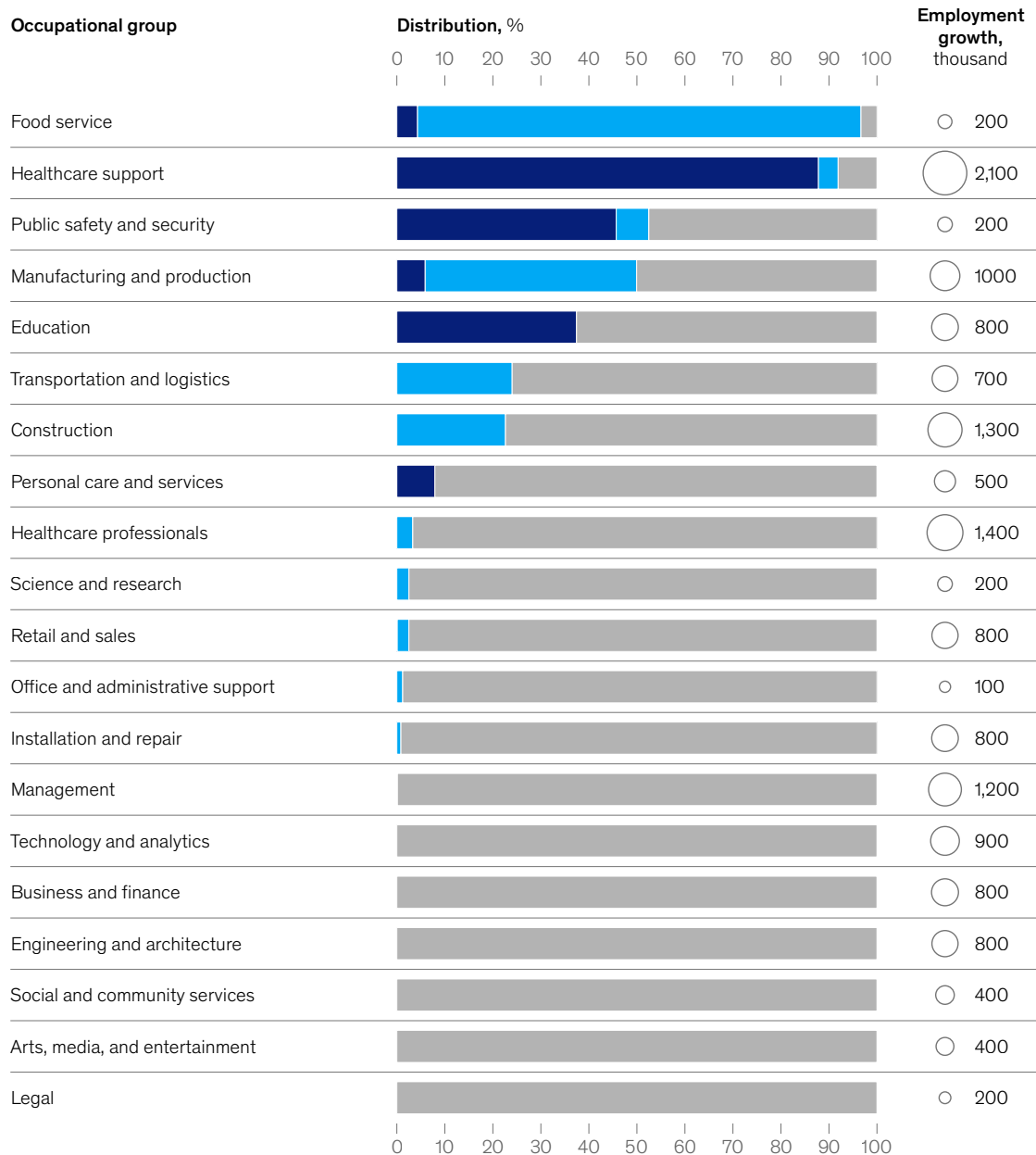


Exhibit 26

Most growing employment is higher wage, with lower-wage growth concentrated in a few occupational groups.

Distribution of workers in growing occupations by wage quintile in the US, %

Wage quintiles: ■ Bottom ■ 2nd ■ 3rd–5th



Source: US Bureau of Labor Statistics; Lightcast; McKinsey Global Institute analysis

McKinsey & Company



Geography can separate workers from opportunity

Pathways are also shaped by where workers and jobs are located. A transition that seems feasible at the national level may disappear in the labor markets where workers live. Many occupations in installation and repair, healthcare, and manufacturing and production are inherently place based and cannot be done remotely. Even when workers have adjacent skills and destination wages are attractive, geographic mismatch can prevent a transition. Relocation may be costly or undesirable; family responsibilities, housing constraints, transportation, and local labor-market conditions can further limit mobility.

We find that geography could reduce transition opportunities. When matched only to growing occupations in the state where they live, the number of workers with access to direct pathways falls by 5 percent because fewer destination occupations are available there.

Some geographic barriers can be reduced by changing how work is delivered rather than by moving workers. Seventy-six percent of growing jobs require physical presence (Exhibit 24).³⁵ At the same time, from 2019 to 2024, the average distance between workers and their employer's worksite increased by more than 70 percent, illustrating employers' ability to recruit from a wider geographic area without requiring relocation.³⁶ However, these gains have been concentrated in higher-paying, office-based roles such as business and finance, and technology and analytics, while geographic constraints remain largely unchanged for occupations that require physical presence.

Where remote work is possible, employers could fill demand without requiring relocation. More than 90 percent of workers in technology and analytics, business and finance, and office and administrative support occupations can do remote work, while healthcare support, education, installation and repair, and food service occupations offer essentially no opportunity to work remotely (Exhibit 27).

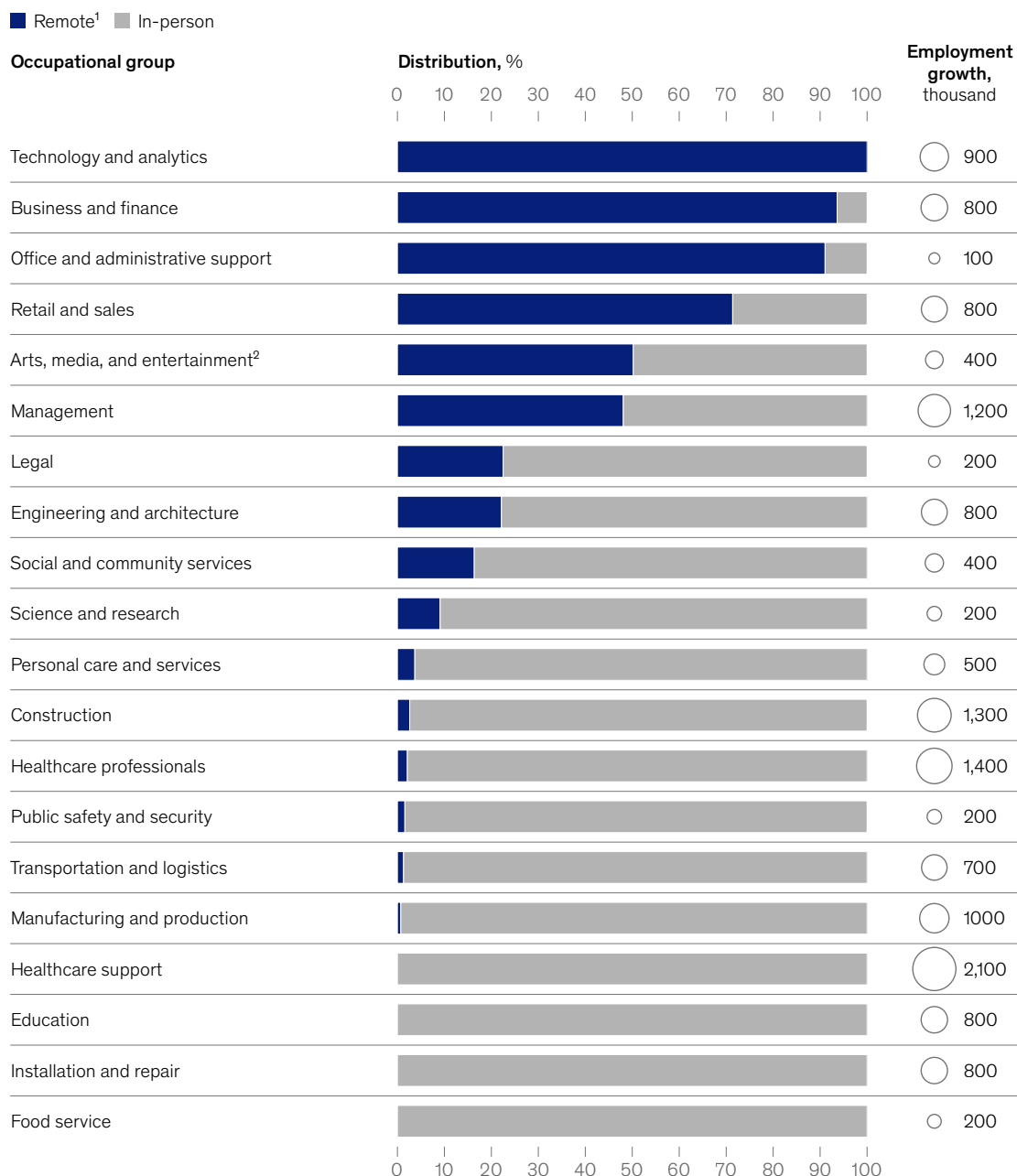
Redesigned production models can reduce other barriers. For example, many construction jobs remain inherently place based, but modular construction can shift part of the work from dispersed building sites to centralized manufacturing facilities located closer to available labor pools. Similar opportunities may exist for remote monitoring, centralized diagnostics, virtual customer support, distributed back-office operations, and other models in which work is done in a location separate from the location where services are delivered. Such approaches may not eliminate geographic mismatch but can increase the number of workers able to do a job without relocating.



Exhibit 27

Remote work can expand access to some fast-growing occupations, while others remain inherently place-based.

Distribution of workers in growing occupations by work mode in the US, %



¹ Remote mode applies to occupations with a nontrivial share of employees spending a large majority of work hours on telework.

² Growing remote occupations include designers, translators, and writers.

Source: Current Population Survey July 2024–June 2026; McKinsey Global Institute analysis

McKinsey & Company



Language proficiency can limit access to some growing occupations

Language can be a meaningful barrier to occupational mobility even when workers possess the skills required in a growing occupation. English proficiency is rarely mandated by regulation. Employers may explicitly require English proficiency in job postings, but more often, language expectations are implicit in the need to communicate with customers, collaborate with colleagues, and understand instructions, among other requirements. The composition of the US workforce today suggests English proficiency could be particularly important to obtain some occupations expected to grow.

While roughly one-third of growing jobs explicitly mention English proficiency in job postings, on average, 91 percent of current workers in growing jobs are proficient in English, rising to between 96 and 98 percent in groups such as healthcare professionals, business and finance, and management (Exhibit 28).³⁷ By contrast, jobs in areas such as construction, manufacturing and production, and food service have substantially lower rates of English proficiency among current workers. This gap between explicit requirements in job postings and the characteristics of workers currently employed in these occupations suggests that language may be an implicit barrier to entry in some growing roles.

Exposure to the language barrier is not evenly distributed across the workforce. Nationally, 91 percent of workers are proficient in English, although that varies across demographic groups. While proficiency is nearly universal among White and Black workers, it is roughly 72 percent among Latino and Asian workers.³⁸ These differences matter for occupational mobility because workers with lower English proficiency may have a narrower set of accessible pathways to growing occupations, particularly if communication is central to the work. Language may compound other skill, credential, wage, and geographic barriers for some workers.

Language barriers are also addressable. Occupation-specific English instruction, bilingual onboarding, workplace language support, and integrated language-and-skills training could expand access to growing occupations without changing underlying technical requirements. When language is a barrier, these approaches could broaden the set of viable transition pathways.

All these barriers overlap, compounding their impact in several ways. For example, jobs in healthcare support and in food service occupations are largely low-wage and also have almost no potential for remote work. Transportation and logistics occupations, which account for a meaningful share of low-wage work, may require extensive legal credentialing and have almost no potential for remote work, suggesting that multiple constraints together can affect pathways, including credential requirements, compensation, and geographic access. These cases illustrate why understanding barriers together is important. A moderately winding pathway on any single dimension can be blocked by compounding barriers.

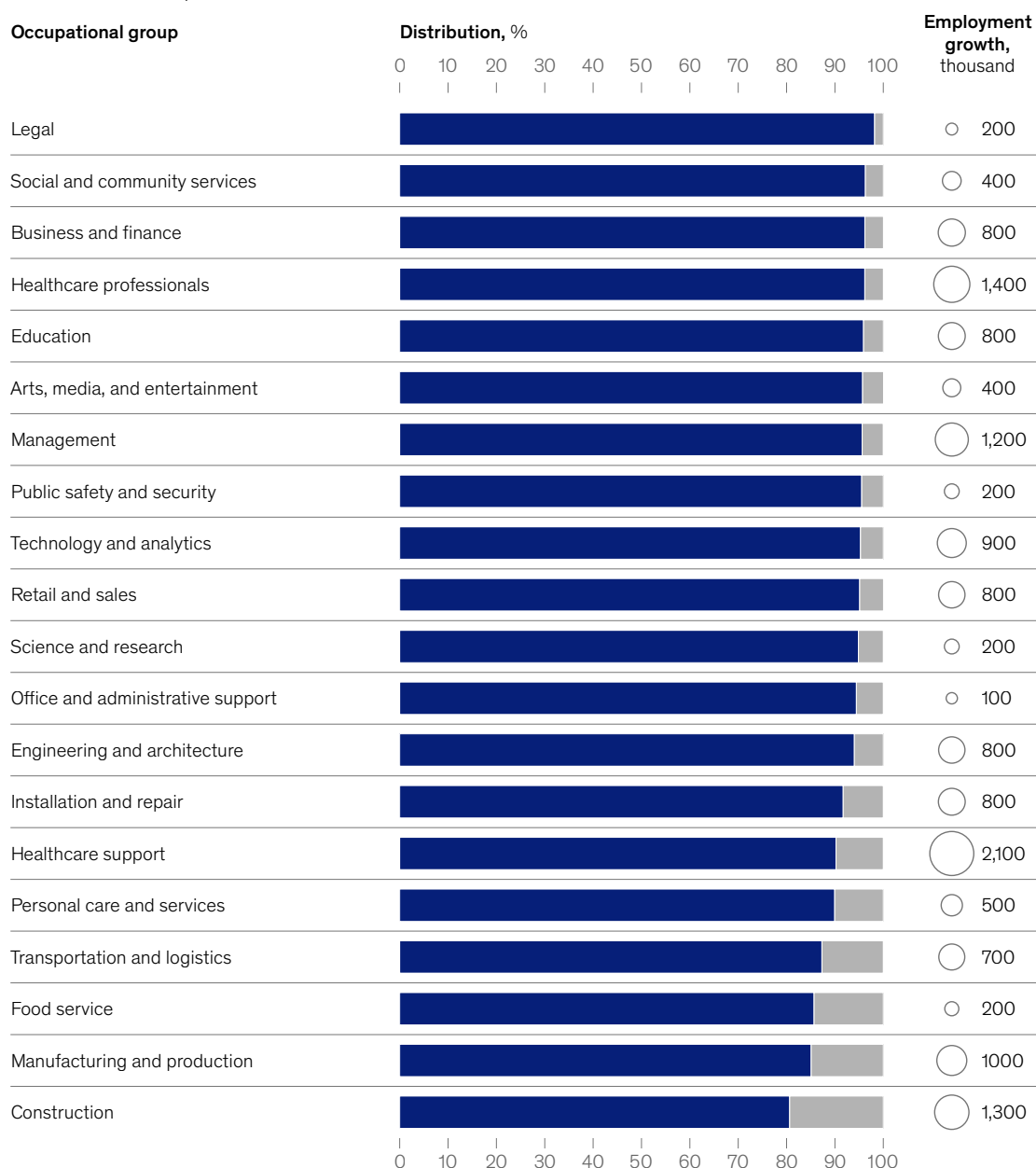


Exhibit 28

Language could be a barrier in several growing occupations that require high levels of English proficiency.

Distribution of current workers in growing occupations by English proficiency in the US,¹%

■ Proficient ■ Not proficient

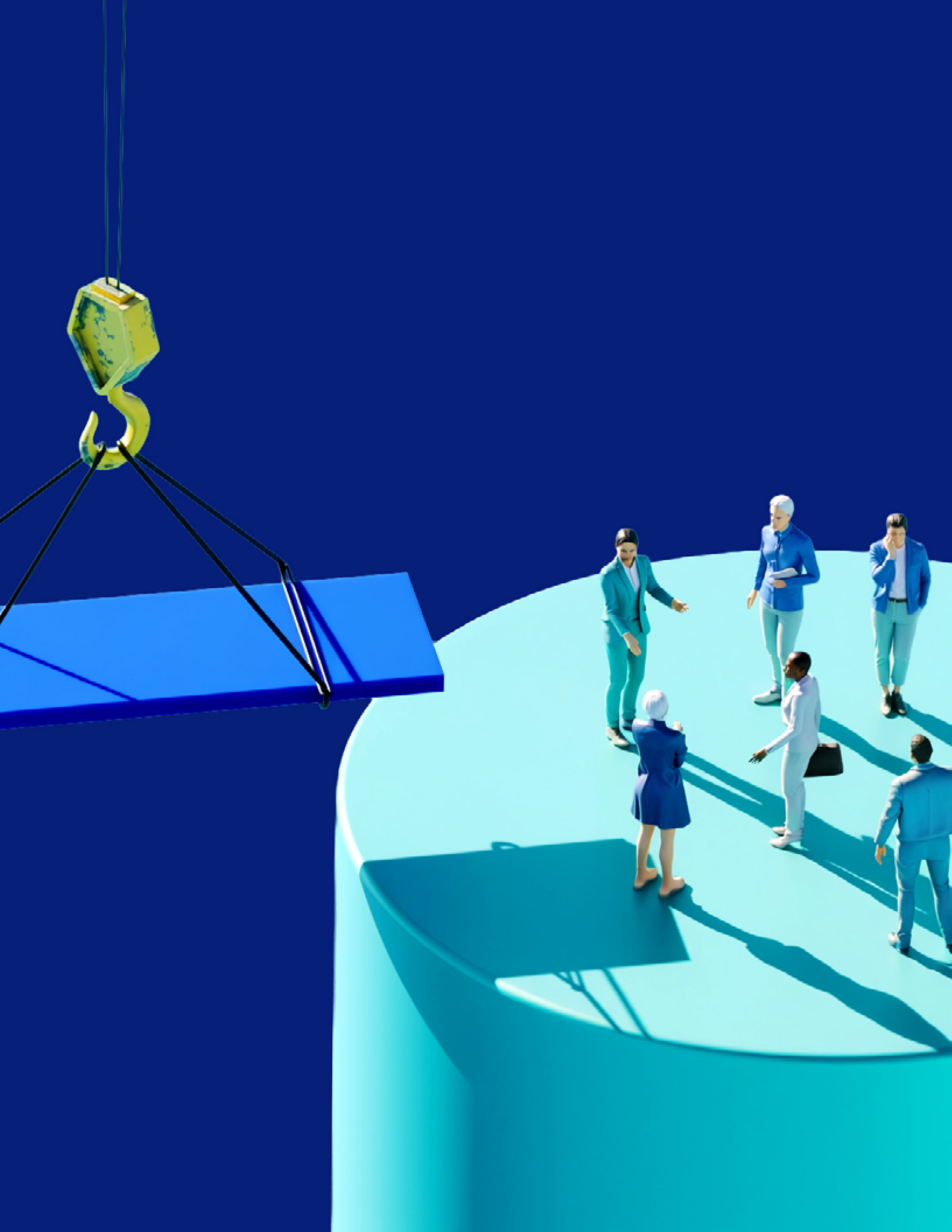


¹ English proficiency is defined as speaking only English at home or speaking English "very well."
Source: US Bureau of Labor Statistics IPUMS; McKinsey Global Institute analysis

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Barriers present challenges to worker reallocation that the United States will need to overcome in the era of AI. The next chapter examines the core tasks for companies, policymakers, educators, and workers who need to build workforce resilience and enhance the ability to move talent toward opportunity before the labor market forces abrupt adjustment.





CHAPTER SIX

Enabling workforce transitions

Supporting workforce reallocation requires multiple actors, including companies, governments, educators, and workers. Retraining and reallocating workers isn't new, but the scale and duration of the challenge is much bigger in the AI era and comes from both ends of the labor market. Workers in declining occupations might need support to access new opportunities, while employers need the skills required in growing jobs.

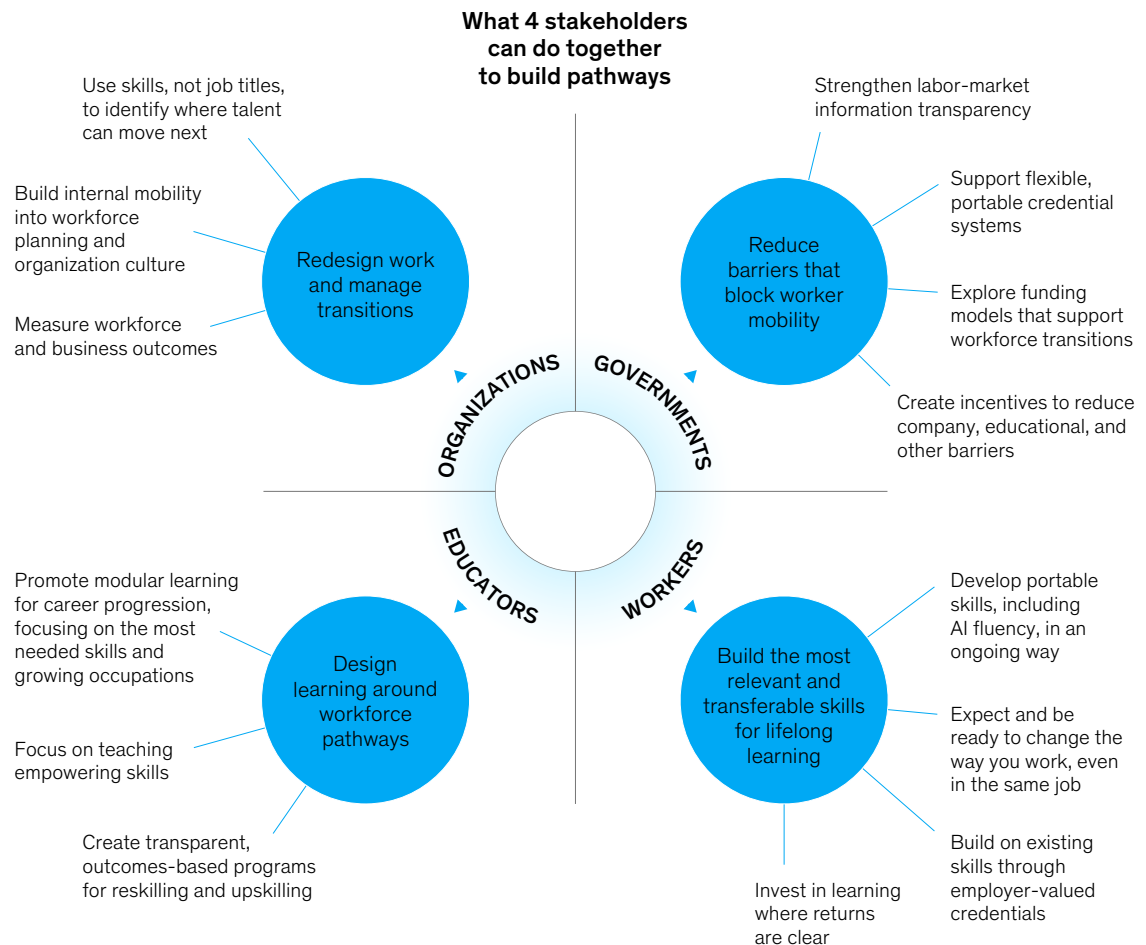
No single actor can build these pathways alone. Companies, governments, educators, and workers each have a role in improving workforce transitions. Working together, they can support more direct pathways, reduce unnecessary barriers, and help workers adapt as occupations continue to evolve (Exhibit 29).

No single actor can build these pathways alone. Companies, governments, educators, and workers each have a role.



Exhibit 29

Enabling workforce transitions will require action by multiple stakeholders.



Source: McKinsey Global Institute analysis

McKinsey & Company

Implications for companies

As AI reshapes workflows, it also changes the demand for work and skills. Understanding how work is changing and identifying existing skills in their workforce³⁹ helps organizations determine which occupations will grow or decline, which employees are equipped to move into growing roles, and when additional hiring or retraining is needed.

This increasingly shifts the focus of workforce management from job titles toward skills. Companies can distinguish between employees able to migrate quickly into growing roles, those who need targeted upskilling, those requiring longer transition pathways, and roles that cannot be filled internally.⁴⁰ Companies' culture and workforce incentives will be key determinants of the skills employees develop and how prepared they are to adapt.⁴¹ Helping workers navigate those changes



also requires transparent communication, structured learning, and involving employees in reinventing how work evolves in tandem with AI.⁴²

The mechanisms for supporting these transitions will vary by company size and organizational context. For example, large enterprises may be better positioned to build internal mobility mechanisms, such as talent marketplaces, and invest in skill development, while smaller companies with less scale may rely more on skills-based hiring and external partnerships.⁴³

Finally, workforce transitions can become a core business metric alongside productivity. Measuring redeployment, internal fill rates, and employee outcomes and not just cost savings can ensure that AI strengthens business performance and workforce resilience.⁴⁴ Companies that use agile talent management programs will have an edge as skill requirements shift.

Implications for governments

Governments can't specify the occupations that will grow, but they have a range of levers to create conditions in which workers, employers, and educators can respond more effectively to job changes. Governments can also help create incentives and support for reskilling at scale. They also often track data and have early signals of what is working or not working and of the pace of change in occupations, industries, and geographies.

Better labor-market information is one lever. Timely, granular information on growing occupations, transferable skills, training requirements, and wages can help workers identify viable pathways into growing roles, help employers make more informed workforce planning and talent management decisions, and help educators design programs that reflect current demand.⁴⁵

In addition, credential systems can support more flexible workforce pathways. Modular and stackable credentials, which allow smaller qualifications to accumulate toward broader credentials, and formal recognition of prior learning can help make pathways more direct and help maintain professional standards.⁴⁶ Governments can strengthen collaboration between employers and educators in designing these systems, helping ensure that credentials remain aligned with labor-market needs.

The way workforce transition programs are funded also matters. Policy approaches in different markets include public funding that can help workers pay for training, replace lost income, and combine learning with employment.⁴⁷ Some governments also direct funding toward programs with demonstrated employment outcomes, including sustained employment and placement in growing occupations. The effectiveness of these approaches depends on program design, implementation, and local labor market conditions.

Finally, governments can reduce practical barriers to make otherwise viable transitions possible. Housing, transportation, childcare, relocation support, and regional development policies shape whether workers have access to opportunities in new geographies.

Implications for educators

Educational institutions cannot simply expand existing programs to address the workforce impact of AI. Training can instead be designed backward by identifying the skills needed in a growing occupation, the capabilities workers already possess, and any gaps that must be closed.⁴⁸ The goal is to build more direct pathways from today's jobs to tomorrow's opportunities by helping workers develop and signal the skills employers increasingly value.



This requires more flexible, demand-driven learning models and close collaboration with employers to ensure that training reflects evolving labor-market needs. Short-cycle programs can support transitions where skill gaps are narrow, while longer pathways are essential for professions requiring extensive preparation. Modular and stackable credentials help workers build capabilities progressively throughout their careers rather than treating education as a one-off event.⁴⁹ Equally important, educators can publish outcomes including employment rates, wages, and career progression so workers can make informed decisions about investing their time and effort.⁵⁰

Implications for workers

Workers will increasingly need to build new skills as occupations evolve and demand shifts from old jobs to new ones. Even workers who remain in the same occupation will need to continually update their skills as AI reshapes work, making ongoing upskilling, not just reskilling, increasingly important. This demands time, money, confidence, and a belief that effort will lead to better opportunities. The time, financial, and practical demands of building new skills can be more burdensome for lower-wage workers, older workers, caregivers, and others with fewer resources, contributing to lower participation in retraining and learning new, more valuable skills.⁵¹

Successful mobility requires more than just access to courses. Workers need clear destination roles, credible future wages, and confidence that employers will recognize the skills they acquire. Learning opportunities are ideally modular, flexible, and compatible with work and caregiving responsibilities, and help workers develop empowering skills such as resilience that support repeated adaptation as work evolves. Governments, employers, and educators can reduce financial and practical barriers to participation.⁵² Ultimately, building a more resilient workforce will require workers to continuously develop new capabilities, but also easier ways to make investing in those capabilities worthwhile.

The future of work is not predetermined. AI has the potential to create more and better jobs, but realizing that opportunity will depend on how effectively workers can move into them. Helping millions of workers make that transition will be one of the defining workforce challenges, and one of the great opportunities, of the AI era.



Final thoughts

History suggests that major technological revolutions have ultimately created more jobs than they destroyed. Artificial intelligence has the potential to do the same, but only if people have what's needed to perform the work it creates. The economies and organizations that realize AI's full potential will be those that move talent as effectively as they deploy technology. Creating high-quality pathways that help workers move into new opportunities quickly will turn AI's productivity into sustained growth and expanded prosperity.

The economic stakes are rising. Aging populations will slow labor-force growth, and rising dependency ratios mean future prosperity will increasingly depend on making better use of available talent. AI could increase productivity, but capturing those gains will depend on how effectively workers can secure jobs and master in-demand activities. In the age of AI, people and institutions matter as much as the technology itself.

That is why the quality of pathways to jobs is critical. Nearly every transitioning worker has at least one pathway into growing work. For about one in seven workers, that pathway is already direct. Other workers will likely need additional support along pathways that are more winding. Skills remain the bridge between declining and growing work but are only part of the equation. Credentials, training time, wages, geography, language, hiring practices, and access to learning determine whether a pathway that looks possible on paper is walkable in practice.

Realizing that future will require more than better technology. It will require leaders who invest in people as boldly as they invest in AI, educators who prepare learners not just for their first job but for a lifetime of adaptation, governments that help make transitions faster and fairer, and workers who continue to cultivate curiosity, adaptability, resilience, and the willingness to learn. The great workforce reallocation is already underway. Our challenge is to ensure that it becomes the next great expansion of human opportunity.



Glossary

Artificial intelligence (AI): The ability of software to perform tasks that traditionally require human intelligence, potentially augmenting or substituting people's capabilities.

Automation: The use of technology to perform work activities that would otherwise require human effort.

Automation adoption: The deployment of AI and other automation technologies into real work activities and workflows within an organization or labor-force context, determining how much of the automation potential is captured, how fast, and how broadly.

Barriers: Factors that make an otherwise feasible occupational transition harder or impossible, degrading the quality of a pathway or blocking it outright.

Credential: A qualification, certification, license, or degree associated with entering or performing an occupation. Credentials may be legally required, preferred by employers, or both; the two carry different implications for mobility, since employer-preferred requirements can be changed by companies while legally required ones typically entail policy or regulatory action.

General-purpose technology (GPT): A technology whose effects are broad enough to reshape multiple industries and create entirely new occupations.

Labor demand: The number of workers employers require to perform work, expressed as full-time equivalent (FTE) employment.

Occupational group: One of 23 broad categories used to aggregate occupations in this research, based on the Bureau of Labor Statistics Major Occupational Groups classification, with labels simplified for readability. (This research, however, covers 22 of those categories, as it exclude the military group.)

Pathway: A potential transition from one occupation to another, evaluated according to destination demand, skill overlap, wage preservation, and time to acquire legally required credentials.

Pathway quality: The strength of an occupational pathway (direct, winding, or unpaved) based on four conditions: demand for the destination occupation, skill adjacency, wage preservation, and time required to obtain legally required credentials.

Reallocation: The movement of labor demand and, ultimately, workers from declining occupations to growing occupations as technology and structural forces reshape the economy.

Reskilling: The acquisition of new skills required to move into a different occupation or perform substantially different work within an existing one.

Skills: Knowledge, competencies, and attributes that people deploy to perform work activities, often acquired through formal education, training, or work experience. Lightcast and ESCO provide a market-driven classification system for skills.

Skill adjacency (skill overlap): The degree to which a worker's existing skills match those required in a destination occupation, expressed as the share of required skills already held.

Transitioning worker: A worker who moves into a different occupation after labor demand declines in the worker's existing occupation.

Upskilling: The development of more advanced skills needed to progress within an occupation or move into another occupation.



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Endnotes

Introduction

- ¹ These are model outputs under a base set of assumptions, not measurements of observed change. See the technical appendix for more detail.

Chapter one

- ² Throughout this research, occupations are aggregated using the Bureau of Labor Statistics (BLS) Major Occupational Groups classification. Group labels have been simplified for readability while preserving the underlying BLS classification.
- ³ Reconfiguration is defined as the extent to which existing workflows, systems, roles, or physical environments need to change to enable automation.
- ⁴ Some roles are also inherently indivisible. Every school still requires a principal. Every hospital still needs a medical director. Every small business still needs someone responsible for finance, operations, and customer relationships. This effect is particularly pronounced in smaller organizations, where individual employees perform a broad range of activities. Automating some of those activities may change how work is performed without eliminating a role altogether.
- ⁵ See Luis Garicano, Jin Li, and Yanhui Wu, *Weak bundle, strong bundle: How AI redraws job boundaries*, CEPR discussion paper number 21453, Centre for Economic Policy Research, May 2026.
- ⁶ Hours of Work (Industry) Convention, 1919 (No. 1), International Labour Organization, November 28, 1919.
- ⁷ Allard E. Dembe et al., "The impact of overtime and long work hours on occupational injuries and illnesses: New evidence from the United States," *Occupational and Environmental Medicine*, September 2005, Volume 62, Number 9; Frank Pega et al., "Global, regional, and national burdens of ischemic heart disease and stroke attributable to exposure to long working hours for 194 countries, 2000–2016: A systematic analysis from the WHO/ILO joint estimates of the work-related burden of disease and injury," *Environment International*, September 2021, Volume 154; "Long working hours increasing deaths from heart disease and stroke: WHO, ILO," World Health Organization and International Labour Organization, May 17, 2021.
- ⁸ Teachers are an example of this pattern. Research finds that teachers work an average of 53 hours per week, compared with 46 hours by other working adults, with substantial time devoted to administrative and assessment activities. A Gallup survey found that teachers using AI tools saved an average of 5.9 hours a week, and majorities of them reported improvements in the quality of administrative and grading work. For more, see Elizabeth D. Steiner, Ashley Woo, and Sy Doan, *All work and no pay—teachers' perceptions of their pay and hours worked: Findings from the 2023 State of the American Teacher Survey*, RAND Corporation, September 12, 2023, and Andrea Malek Ash, "Three in 10 teachers use AI weekly, saving six weeks a year," Gallup, June 24, 2025.
- ⁹ "Long working hours increasing deaths from heart disease and stroke: WHO, ILO," World Health Organization and International Labour Organization, May 17, 2021; Kelsie George, "Addressing nursing shortages: Options for states," National Conference of State Legislatures, updated April 8, 2026; "Spring construction surge reveals shortage of licensed crane operators," K2 Staffing, April 20, 2026.
- ¹⁰ Jevons paradox describes how greater efficiency can increase total demand by lowering effective costs. Applied to labor, AI may make a task cheaper to perform, increasing demand for its output enough to offset some or all the labor hours saved.
- ¹¹ Kelvin K. F. Law and Michael Shen, "How does artificial intelligence shape audit firms?" *Management Science*, May 2025, Volume 71, Number 5.
- ¹² OECD case studies similarly find that AI primarily reorganizes work rather than replacing it, shifting workers toward complementary tasks such as reviewing AI outputs, validating AI-generated recommendations, and investigating flagged issues. Anna Milanez, *The impact of AI on the workplace: Evidence from OECD case studies of AI implementation*, OECD Social, Employment and Migration Working Papers, number 289, OECD, March 2023.
- ¹³ Although some AI experts have predicted that technology would replace most if not all radiologists, evidence shows a more subtle shift. In a clinical trial, AI-generated report drafts reduced the reading time needed by junior radiologists by 18.5 percent and improved report quality, shifting human work from initial drafting to reviewing, validating, and correcting AI output. Other research documents radiologists taking on additional activities associated with AI deployment, including model development, validation, monitoring, and labeling training data. For more, see Yaowei Bai et al., "A DeepSeek-powered AI system for automated chest radiograph interpretation in clinical practice," *Nature Communications*, May 7, 2026, Volume 17, Number 1, and Reabal Najjar, "Redefining radiology: A review of artificial intelligence integration in medical imaging," *Diagnostics*, August 25, 2023, Volume 13, Number 17.
- ¹⁴ "Will autonomy usher in the future of truck freight transportation?" McKinsey, September 25, 2024.
- ¹⁵ Automation adoption is the share of work hours potentially automated or meaningfully augmented, while reduced labor demand is the portion of those automated work hours that reduces the need for human labor.

- ¹⁶ Representative occupations selected from IPUMS—Census occupation codes classified to each general-purpose technology wave.
- ¹⁷ Total employment levels from BLS Occupational Employment and Wage Statistics (OEWS), May 2025. The remaining 45 percent corresponds to occupations not attributable to any particular technology, which existed long before the Industrial Revolution, such as farmers, carpenters, construction laborers, and bakers.
- ¹⁸ Our estimate is broadly consistent with research that finds that roughly 60 percent of 2018 employment was in job titles that emerged after 1940. For more, see, David Autor et al., "New frontiers: The origins and content of new work, 1940–2018," *The Quarterly Journal of Economics*, August 2024, Volume 139, Number 3.
- ¹⁹ Brahim Coulibaly, *Changes in job quality and trends in labor hours*, Board of Governors of the Federal Reserve System International Finance Discussion Papers, number 882, October 2006; Kathleen Kassel, "Agriculture and its related industries provide 10.4 percent of U.S. employment," US Department of Agriculture Economic Research Service, November 3, 2023.
- ²⁰ In previous general-purpose technology waves, newly created occupations added employment equivalent to approximately 0.3 to 1.3 percent of the workforce per decade. Applying this historical range to the US workforce yields approximately 500,000 to two million new jobs.
- ²¹ "New Nasdaq report finds that AI is driving entrepreneurship," Nasdaq Newsroom, July 2, 2026; Edoardo Marchesi and Sixun Tang, *When AI meets entrepreneurship: Evidence from the commercialization of ChatGPT*, April 14, 2025.
- ²² Guillermo Gallacher, "AI and job postings: From destruction to creation?" Indeed Hiring Lab, July 8, 2026.

Chapter two

- ²³ Longitudinal Employer-Household Dynamics Data, US Census Bureau, accessed September 14, 2026. Census describes J2J as national statistics on job mobility, including job-to-job transition rates and worker movements across employers.
- ²⁴ Ani Kelkar, Kersten Heineke, Martin Kellner, and Timo Möller, "Will autonomy usher in the future of truck freight transportation?" McKinsey, September 25, 2024.

Chapter three

- ²⁵ While commercial dishwashing machines have existed for a long time, newer systems can automate not only washing but also the handling of dishes



around the machine, including loading, unloading, sorting, and related tasks.

²⁶ “A better life everyone can afford: Lifting a quarter billion people to economic empowerment,” McKinsey Global Institute, May 20, 2024.

²⁷ Skill counts are based on Lightcast job-posting data and include skills appearing in more than 5 percent of postings for a given occupation. Job postings reflect the skills employers seek rather than the actual work employees perform but nonetheless provide a detailed and consistent view of employer skill demand. For more, see “Agents, robots, and us: Skill partnerships in the age of AI,” McKinsey Global Institute, November 25, 2025.

²⁸ Education requirements are inferred from credential requirements for each occupation, whether legally mandated or preferred by employers.

²⁹ Erica Coe, Jacqueline Brassey, Kana Enomoto, and Lucy Pérez, “The human advantage: Stronger brains in the age of AI,” McKinsey Health Institute, January 15, 2026.

Chapter four

³⁰ “Agents, robots, and us: Skill partnerships in the age of AI,” McKinsey Global Institute, November 25, 2025.

³¹ See “AI fluency: The next foundation of US economic competitiveness,” McKinsey, August 7, 2026. Differences in the estimated increase in AI fluency primarily reflect differences in the unit of analysis—total employment in the earlier analysis versus occupations in this report—as well as differences in the time periods covered.

³² “Agents, robots, and us: Skill partnerships in the age of AI,” McKinsey Global Institute, November 25, 2025.

³³ For more see Li Han, Michael Elliott, Pooja Kumar, and Yenli Wong, “The real future of work in healthcare,” McKinsey, July 2, 2026.

³⁴ Research suggests that traditional hiring processes can overlook qualified workers when their skills are not reflected in the credentials, work histories, or other signals employers expect. See Joseph B. Fuller et al., *Hidden workers: Untapped talent*, Harvard Business School Project on Managing the Future of Work and Accenture, September 2021.

Chapter five

³⁵ Share of growing occupations in which at least a quarter of employees report working remotely most of the time, based on data from the Current Population Survey, US Census Bureau and US Bureau of Labor Statistics, accessed August 24, 2026.

³⁶ Mert Akan et al., *The new geography of labor markets*, National Bureau of Economic Research

working paper number 33582, November 2025.

³⁷ IPUMS USA, University of Minnesota, accessed August 24, 2026. English proficiency is defined as speaking only English at home or speaking English “very well.”

³⁸ IPUMS USA, University of Minnesota, accessed August 24, 2026.

Chapter six

³⁹ “A new future of work: The race to deploy AI and raise skills in Europe and beyond,” McKinsey Global Institute, May 21, 2024.

⁴⁰ Recent McKinsey research finds that companies expect to retrain nearly one-third of their workforce in response to AI-driven skill mismatches while complementing internal mobility with external hiring, contract talent, mentoring, and on-the-job learning. For more, see “A new future of work: The race to deploy AI and raise skills in Europe and beyond,” McKinsey Global Institute, May 21, 2024.

⁴¹ As an example, companies can foster adaptability through internal mobility, job rotations, and incentives that encourage continuous learning. Research suggests that lateral moves broaden employees’ skills and increase opportunities for subsequent career advancement, illustrating how internal mobility can support workforce adaptability. For more, see Matthew Bidwell and J. R. Keller, “Stepping sideways to step up: Lateral mobility and career advancement inside organizations,” *Management Science*, January 2025, Volume 71, Number 1. OECD analysis also finds that employer financial support is one of the strongest predictors of participation in adult learning. For more, see *Trends in adult learning: New data from the 2023 Survey of Adult Skills*, OECD, 2025.

⁴² McKinsey research finds that 88 percent of organizations have adopted AI in at least one business function, yet formal guidance remains limited, and more than half of US workers report not being consulted on how AI will integrate into their roles. For more, see Dan Tinkoff, Lieven Van der Veken, Michael Chui, and Tara Balakrishnan, “The state of AI in 2026: On the road to ROI,” McKinsey, August 25, 2026; “The state of AI in 2025: Agents, innovation, and transformation,” McKinsey, November 5, 2025; and “AI is getting real, but the real work is still ahead,” *Jobs for the Future*, 2026.

⁴³ OECD analysis finds that approaches to addressing skill gaps vary systematically by firm size, with larger firms relying more on training and smaller firms more often adapting work practices or other external mechanisms. For more, see *Understanding skill gaps in firms: Results of the PIAAC Employer Module*, OECD, December 10, 2024.

⁴⁴ Research shows that AI creates the greatest value when organizations redesign end-to-end workflows and redeploy people toward higher-value work rather than simply automating individual tasks. Kristin Burnham, “How AI is reshaping workflows and redefining jobs,” MIT Sloan, April 22, 2026.

⁴⁵ The OECD concludes that fragmented skills taxonomies and labor-market information systems reduce the ability of workers, employers, educators, and policymakers to identify emerging skill needs and connect learning with jobs. It recommends strengthening common skills languages and integrated labor-market information systems. For more, see *Empowering the workforce in the context of a skills-first approach*, OECD, June 2025. Decentralized systems such as the structure in the United States also highlight the importance of effective coordination and data sharing by federal, state, and local institutions to provide workers and employers with more integrated labor-market information. For example, see *Older workers: Department of Labor should help state and local partners share promising practices*, US Government Accountability Office, January 2026.

⁴⁶ Examples from abroad include Singapore’s Skills Frameworks, labor-market intelligence, and career guidance system; Ireland’s employer-designed microcredentials; and OECD efforts to expand microcredentials, stackable credentials, and recognition of prior learning. For more, see “Frameworks,” Job-Skills Portal, Government of Singapore, accessed August 31, 2026; *Empowering the workforce in the context of a skills-first approach*, OECD, June 24, 2025; and *Micro-credentials for lifelong learning and employability: Uses and possibilities*, OECD Education Policy Perspectives, number 66, OECD, March 2023.

⁴⁷ Examples from abroad include individual learning accounts and portable training credits (such as Singapore’s SkillsFuture Credit and France’s Compte personnel de formation) as well as income-replacement programs during training (such as Sweden’s Transition Study Support). SkillsFuture Singapore, Government of Singapore, accessed August 24, 2026; “Qu’est-ce que Mon Compte Formation?” [What is Mon Compte Formation?], Mon Compte Formation, Caisse des Dépôts, accessed August 31, 2026; *Council Recommendation of 16 June 2022 on individual learning accounts (2022/C 243/03)*, Council of the European Union, June 2022; “Student finance for transition and retraining—for people already established in the labour market,” CSN (Swedish Board of Student Finance), updated June 18, 2026; *Trends in adult learning: New data from the 2023 Survey of Adult Skills*, OECD, July 2025.



⁴⁸ Examples from abroad include partnerships between educators and employers to design modular credentials in Ireland as well as competency-based training developed jointly by employers, vocational education providers, and the public employment service in Belgium. For more, see *Trends in adult learning: New data from the 2023 Survey of Adult Skills*, OECD, July 2025, and *Agile occupational and training standards for responsive skills policies*, Getting Skills Right, OECD, December 2024.

⁴⁹ Indeed, recent research suggests that investing in learning throughout the working life can generate substantial returns by helping workers acquire skills that are aligned with changing labor-market needs. João M. Souto-Maior and Mitchell L. Stevens,

"Bending the Heckman curve: Competing declines in learning capacity and skill relevance over the life course," *Sociological Science*, August 4, 2026, Volume 13.

⁵⁰ Outcome transparency initiatives include the US College Scorecard and the UK's Longitudinal Education Outcomes data set, which allow prospective learners to compare education pathways based on employment and earnings outcomes rather than credentials alone. For more, see João M. Souto-Maior and Mitchell L. Stevens, "Bending the Heckman curve: Competing declines in learning capacity and skill relevance over the life course," *Sociological Science*, August 4, 2026, Volume 13; "College scorecard," US Department

of Education, accessed August 31, 2026; and "Longitudinal Education Outcomes (LEO) data," UK Department for Education, April 17, 2024.

⁵¹ *Trends in adult learning: New data from the 2023 Survey of Adult Skills*, OECD, July 2025.

⁵² OECD experience suggests that barriers can be reduced by a combination of individual learning accounts or training grants, paid training leave and income replacement, and public financing or wage subsidies that encourage employers to invest in workforce development, particularly for those workers most at risk of having to transition in the era of AI. For more, see *Trends in adult learning: New data from the 2023 Survey of Adult Skills*, OECD, July 2025.

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