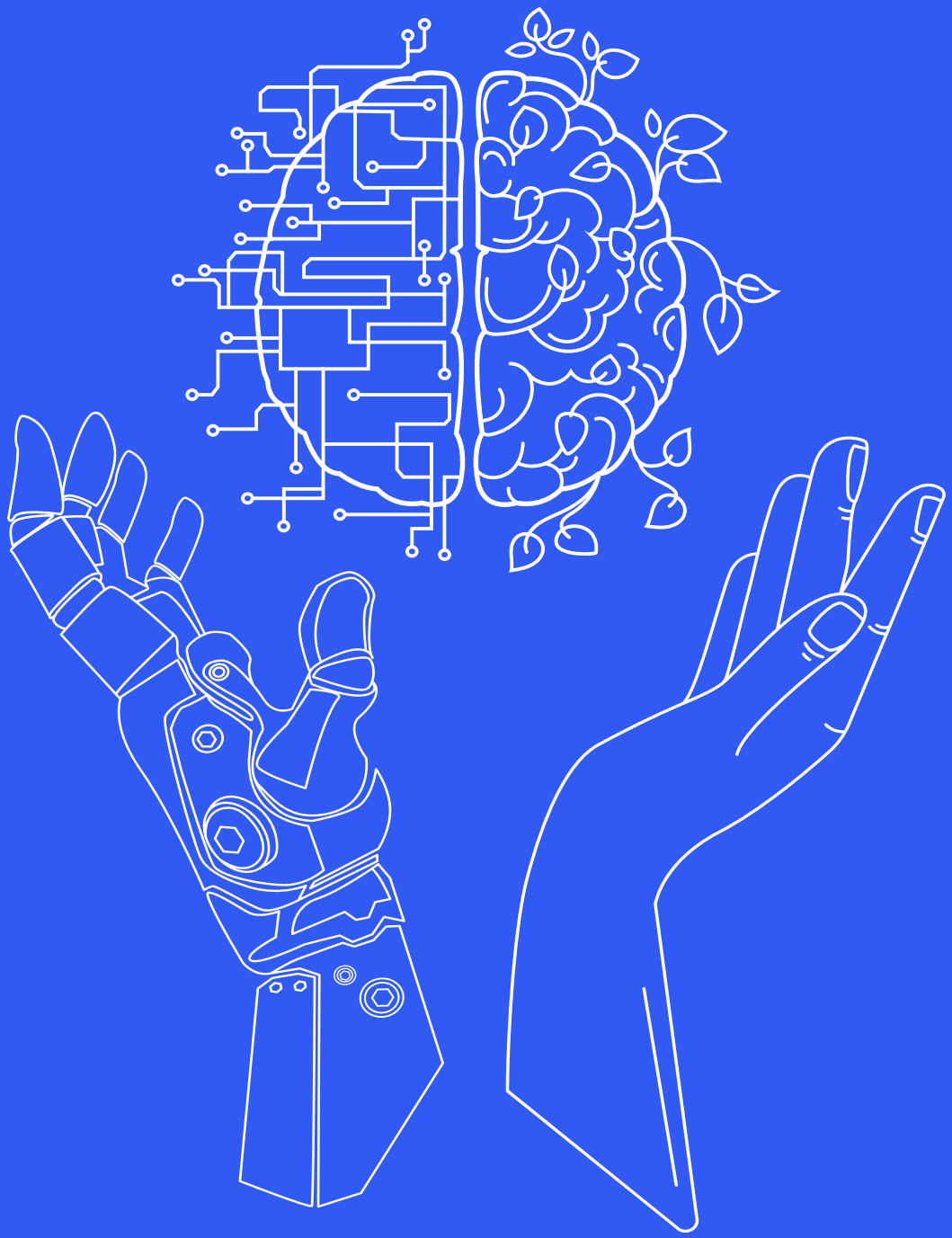
INSIGHTS BRIEF

AI and the future of work

Reshaping the landscape of human work



TIAA Institute

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Executive summary

The TIAA Institute initiated research to explore AI's impact on work through a human-centered lens. In this context, human-centered AI prioritizes human well-being and agency throughout the AI lifecycle. The objective was to understand how AI, a transformation comparable to the Industrial Revolution, is reshaping workforce structures and capabilities, with a focus on providing actionable insights for workforce development and organizational planning that centers on human work. The study examined implications across industries, skills, business functions, and ethics. The research brief was compiled using publicly available information from multiple sources, including leading consulting firms (McKinsey), NGOs (IMF, OECD), academic institutions (Stanford, Wharton, MIT), and think tanks (The Brookings Institution).

Scale of impact

Artificial intelligence (AI) represents a transformation comparable to the Industrial Revolution, with the World Economic Forum (2023) projecting that AI and information processing will drive 86% of labor market transformation by 2030. Transamerica reported that in the United States, more than 70% of private sector companies either currently use or plan to use AI to augment their workforce—in other words, to use AI tools to enhance human capabilities (Transamerica, 2025).

Human resources departments stand poised to realize substantial operational transformations through AI integration, with potential productivity enhancements of 20% to 40% productivity gains across knowledge work domains (Mayer et al., 2025).

Anticipated workforce disruptions

By 2030, WEF predicts 170 million jobs will be created and 92 million jobs will be displaced. Currently, humans perform 47% of work tasks independently, while technology handles 22%, and human-technology collaboration accounts for 30%. By 2030, these proportions are expected to equalize across all three categories of human-only tasks, technology-only tasks, and human-technology collaboration (Ellingrud et al., 2023). This shift toward balancing human-technology collaboration exemplifies human-centered AI, where technology complements in addition to replacing human work.

Job impact distribution

Up to 30% of hours worked today could be automated by 2030 (Ellingrud et al., 2023), and roughly half of existing work tasks could be automated (Kinder et al., 2024). Globally, this forces at least 14% of the global workforce to switch careers due to the impacts of AI (Illanes et al., 2018).

Skills evolution

McKinsey predicts a workforce skill evolution would impact 59% of the workforce by 2030. Of that, 29% would be upskilled in their current role, 19% would be upskilled and redeployed, but 11% would be unlikely to upskill and vulnerable to unemployment. According to WEF, by 2030, 39% of workers' core skills will need updating. Employee participation in long-term learning has risen from 41% to 50%, a trend consistent across industries.

Business function applications

AI adoption varies across business functions, with 71% of organizations now using generative AI in at least one area, up from 65% in early 2024. IT and marketing/sales lead adoption, according to McKinsey (Singla et al., 2025). Key applications include customer service chatbots and personalization engines, finance and accounting tools for fraud detection and bookkeeping, and various HR applications, including workforce planning.

Human resources specific impact

The proportion of technology skills listed in HR job postings rose to 5.2% in March 2025, a 23% increase from the previous year (Popera, 2024). Administrative and professional HR roles face significant transformation potential. While these efficiencies are significant, 73% of organizations emphasize data governance concerns, necessitating robust compliance frameworks for fair hiring and data protection (MIT, 2023).

AI IS ON THE RISE

More than 70% of private companies in the U.S. use or plan to use it to support their workforce.

Training and development priorities

Business leaders' expectation for on-the-job skill acquisition has increased from 65% in 2018 to 94% in 2025 (WEF, 2025). The majority of U.S. workers face some degree of impact by AI. McKinsey reports that although 48% of employees prioritize AI training, nearly half report receiving inadequate support. As technology outpaces policy development, leaders must implement transparent, human-centered design approaches that prioritize continuous learning and inclusive career development (Mayer et al., 2025).

Demographic considerations

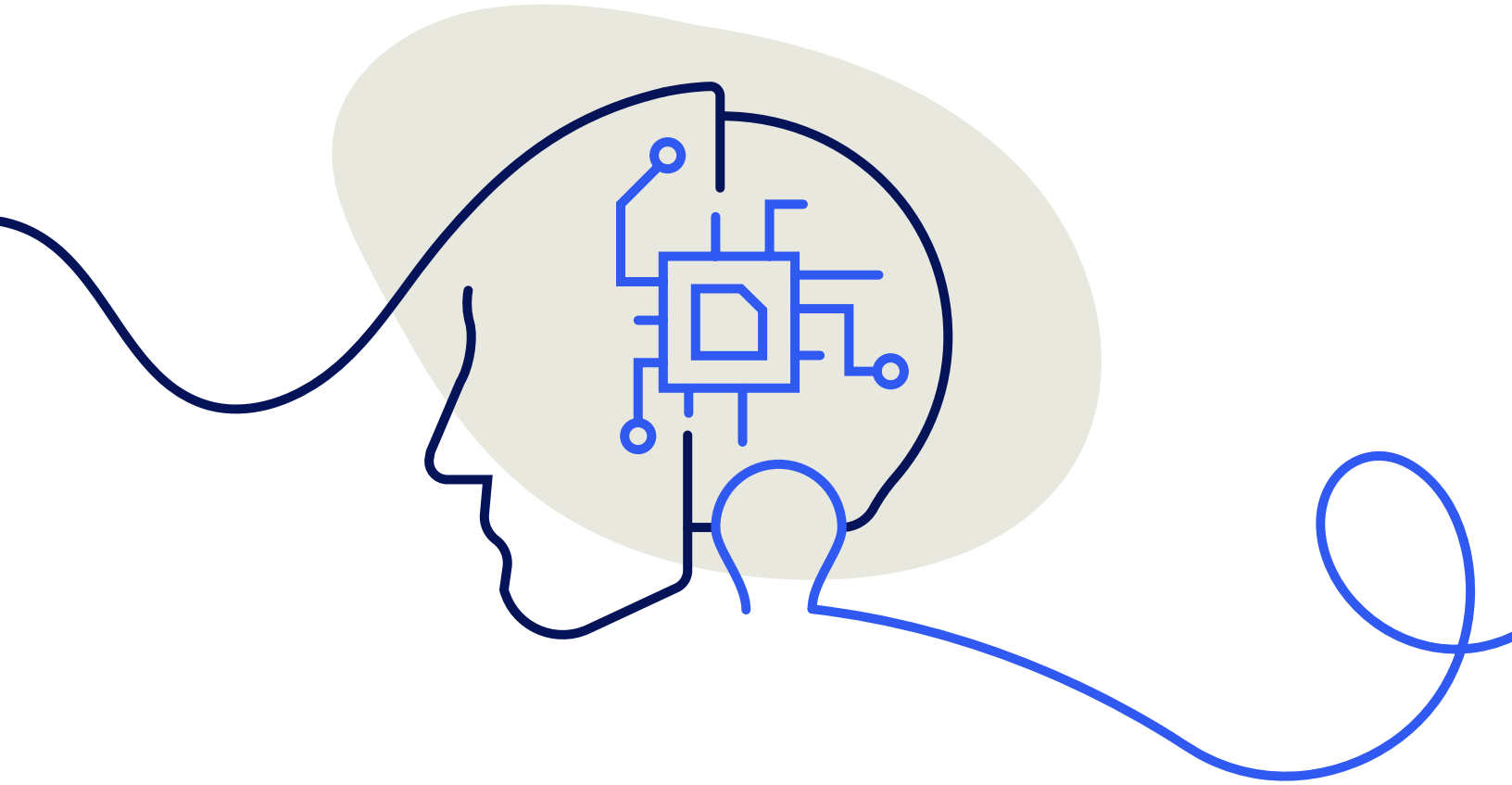
Interestingly, higher-educated workers are more exposed but also better positioned to benefit from AI, while older workers face greater challenges in adaptation and reemployment (Richardson, 2025). Furthermore, women show higher exposure to AI impacts in most countries (ILO, 2023), while millennials (35–44) show highest AI expertise across age groups at 62% (Mayer et al., 2025).

Implementation strategy

As technology races ahead of policy development, success requires transparent communication, phased training programs, and inclusive implementation strategies that consider multigenerational workforce needs and worker preferences for AI collaboration from the planning stage onward (Appleby et al., 2025).

Organizational change requirements

Successful AI implementation requires tailored change management that builds internal champions, establishes clear communication, and aligns metrics with organizational values. Human-centered AI deployment recognizes that technology adoption is fundamentally a human and organizational challenge, not merely a technical one. Organizations must establish robust risk protocols, including ethical reviews and privacy assessments, particularly for sensitive data handling. All of which must be coupled with clear communication and alignment of metrics with organizational values.



Introduction

Artificial intelligence (AI) represents a transformation comparable to the Industrial Revolution, with the World Economic Forum (2023) projecting that AI and information processing will drive 86% of labor market transformation by 2030.

In recent decades, the pace of technological adoption has dramatically accelerated, with platforms such as ChatGPT achieving widespread use in mere months compared to personal computers, which required two decades, and smartphones, which took six to seven years to become a pervasive presence (Kinder et al., 2024). From its origins in 1940s' mathematical models to today's sophisticated systems, AI's evolution is drastically reshaping the workforce, with Goldman Sachs estimating that two-thirds of U.S. occupations will be affected by AI automation (Goldman Sachs, 2023). Furthermore, many may already feel the effects, with Transamerica reporting that in the United States, more than 70% of private sector companies either currently use or plan to use AI to augment their workforce (Transamerica, 2025). A human-centered approach emphasizes augmentation, ensuring AI systems enhance human capabilities while preserving meaningful work opportunities. The impacts will continue to vary by industry, business areas, job type, and skill set.

Technology evolution outpaces organizational change, requiring agile and nimble workplace strategies. While the pace of change is unprecedented, successful AI transformation requires:

- Swift action from policymakers, employers, and managers
- Ethical adoption of AI tools
- Human-centered design approaches (Auernhammer, 2020)

To harness the full potential of AI, its integration must be implemented through deliberate, inclusive, and urgent action. AI's capabilities can build a future where human ingenuity flourishes and where individuals are empowered to thrive in a constantly evolving environment.

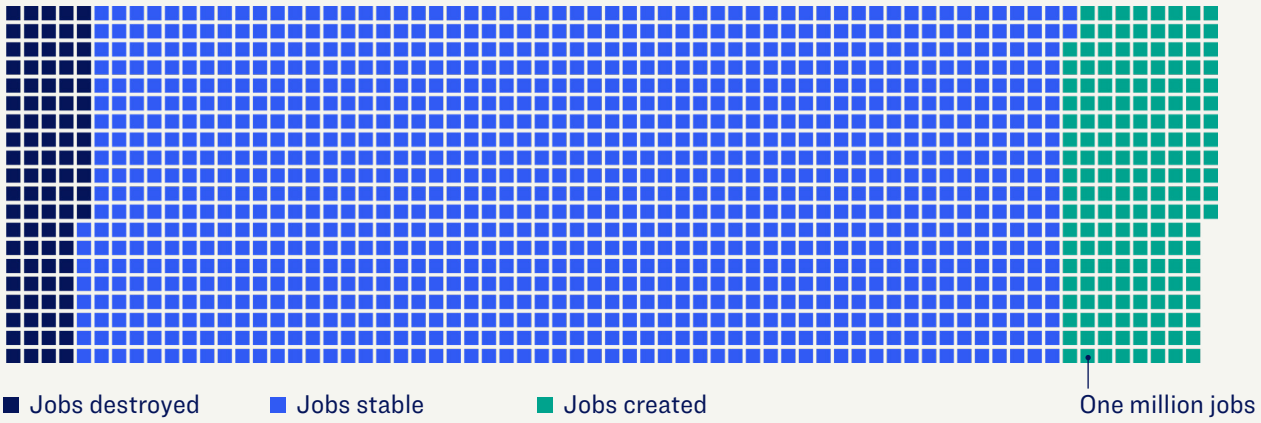
"The implications of AI on the future of work are both complex and immense. Across industries, human-centered AI technology has great potential to be used to the benefit of human workers—to be collaborative, interactive, and ultimately augmentative of human capabilities. But the human impact can be profound both positively and negatively. To this end, we must continue to invest in and promote interdisciplinary research that can help our society deeply understand and capably guide the human impact of AI on the future of work."

Fei-Fei Li
Denning Co-Director of the Stanford Institute for Human-Centered Artificial Intelligence (HAI)

Anticipated workforce disruptions

In the next five years (by 2030), World Economic Forum (WEF) predicts 170 million jobs will be created around the world and 92 million jobs will be displaced, representing a structural labor market churn of 22% of the 1.2 billion formal jobs. This amounts to a net employment increase of 7% (78 million jobs).[1] The impact is significant, with Accenture (2023) predicting that 40% of working hours across industries around the globe could be automated or augmented by generative AI. However, Singla et al. (2025) out of McKinsey note that only 1% of companies report "mature" AI deployment. At a glance, the impact is as follows:

FIGURE 1. EMPLOYMENT CHANGES EXPECTED BY 2030



Source: World Economic Forum, *The Future of Jobs Report 2025*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

Worldwide

- 14% of jobs worldwide may be created and 8% lost (WEF, 2023)
- 21% of organizations using generative AI have already redesigned key workflows (Singla et al., 2025)

United States

- More than 30% of all workers are likely to experience major augmentation (50% of their work tasks impacted) (Kinder et al., 2024)
- 85% of workers are likely to experience minor augmentation (10% of their work tasks impacted) (Kinder et al., 2024)

Recent analysis shows 92% of employers implementing or planning AI/robotics systems are preparing for significant workforce changes. These changes will manifest in three key ways: automation of repetitive tasks through self-improving software, augmentation of human expertise with AI assistance, and creation of new AI management roles. Currently, humans perform 47% of work tasks independently, while technology handles 22%, and human-technology collaboration accounts for 30%. By 2030, these proportions are expected to equalize across all three categories of human-only tasks, technology-only tasks, and human-technology collaboration (MIT, 2023). This shift toward balancing human-technology collaboration exemplifies human-centered AI, where technology complements in addition to replacing human work.

1 WEF identified five macrotrends driving labor-market transformation with technological change being primary, geoeconomic fragmentation, green transition, demographic shifts, and economic uncertainty, which are expected to influence skill evolution by 2030. WEF pg. 43

Job impact distribution

Up to 30% of hours worked today could be automated by 2030 (Ellingrud et al., 2023), and roughly half of existing work tasks could be automated (Kinder et al., 2024). Globally, this means that at least 14% of the global workforce will need to switch careers due to the impacts of AI (Illanes et al., 2018).

Job automation

Unlike previous automation technologies that primarily affected routine, blue-collar work, generative AI is likely to disrupt a different array of "cognitive" and "nonroutine" tasks, especially in middle- to higher-paid professions with advanced degree requirements such as STEM occupations, business and finance, architecture and engineering, and law (Kinder et al., 2024) (See Figure 2). For example, in lower-paying customer service roles, AI agents now handle routine tasks like payments, fraud checks, and shipping, allowing human agents to focus on complex cases.

BY 2030

30% of hours worked today could be automated.

FIGURE 2. JOBS WITH HIGH AI EXPOSURE

Occupations	% of tasks more likely automated	% Women	Number of jobs, 2023
Office and administrative support occupations	**71%**	**71%**	**18,553,450**
Bookkeeping, accounting, and auditing clerks	100%	86%	1,501,910
Customer service representatives	86%	65%	2,858,710
Office clerks, general	84%	81%	2,496,370
Secretaries and administrative assistants, except legal, medical, and executive	78%	92%	1,785,430
Business and financial operations occupations	**44%**	**54%**	**10,087,830**
Insurance underwriters	100%	57%	101,310
Insurance claims and policy processing clerks	100%	80%	241,650
Tax preparers	83%	66%	81,650
Sales and related occupations	**46%**	**49%**	**13,380,660**
Travel agents	88%	80%	58,250
Securities, commodities, and financial services sales agents	80%	25%	479,630
Sales representatives of services, except advertising, insurance, financial services, and travel	67%	32%	1,142,020
Legal occupations	**49%**	**52%**	**1,240,630**
Legal secretaries and administrative assistants	88%	96%	152,790
Lawyers	32%	40%	731,340
Paralegals and legal assistants	58%	83%	354,890
Computer and mathematical occupations	**45%**	**27%**	**5,177,400**
Database architects	67%	–	59,920
Data scientists	66%	–	192,710
Computer programmers	66%	22%	120,370

Source: Brookings (Kinder et al., 2024). *Generative AI, the American worker, and the future of work*. https://www.brookings.edu/articles/generative-ai-the-american-worker-and-the-future-of-work/

Job augmentation

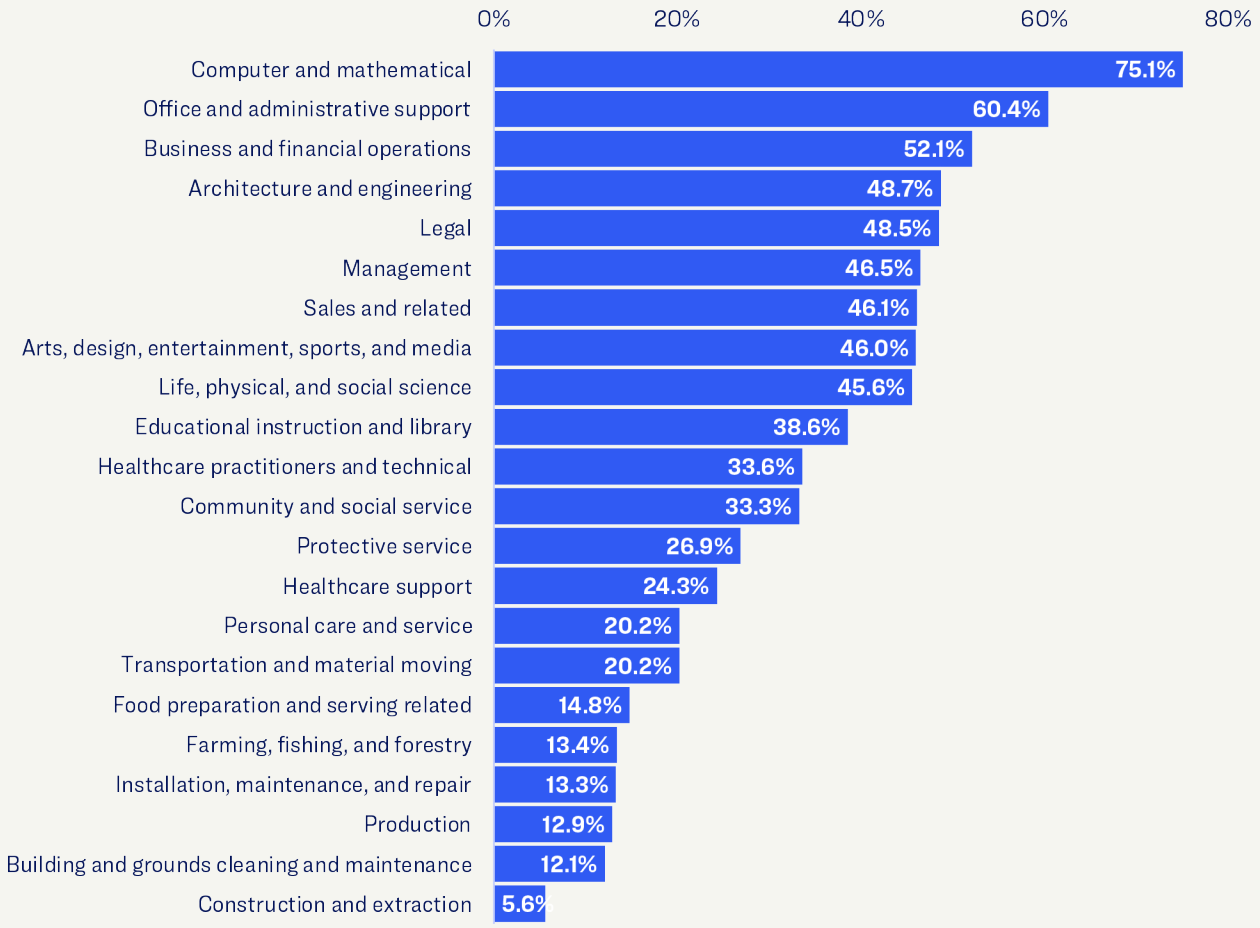
Human resource development, reskilling, and upskilling strategies can be redesigned to enhance human-machine collaboration, as seen in the medical and healthcare services and government and public sectors, where almost half of work tasks currently done by humans alone are expected to be decreased by augmentation (WEF, 2023).

The professions with medium exposure to AI (the occupations that have 20.2% to 48.7% exposure in Figure 3) within education, health care, and community and social services exhibit positive approval for the transformative potential of generative AI (Coughlin et al., 2025).

Consider, for example, the roles of elementary school teachers and registered nurses. Brookings indicates that approximately one-third of tasks undertaken by these professionals could experience substantial time savings through the integration of generative AI technologies. For educators, this could translate to efficiencies in areas such as grading, lesson planning, test administration, recordkeeping, and report preparation. Similarly, registered nurses may find generative AI beneficial for tasks like evaluating diagnostic tests, recording patient information, modifying treatment plans, maintaining records, recommending treatments, and performing administrative and managerial functions (Kinder et al., 2024).

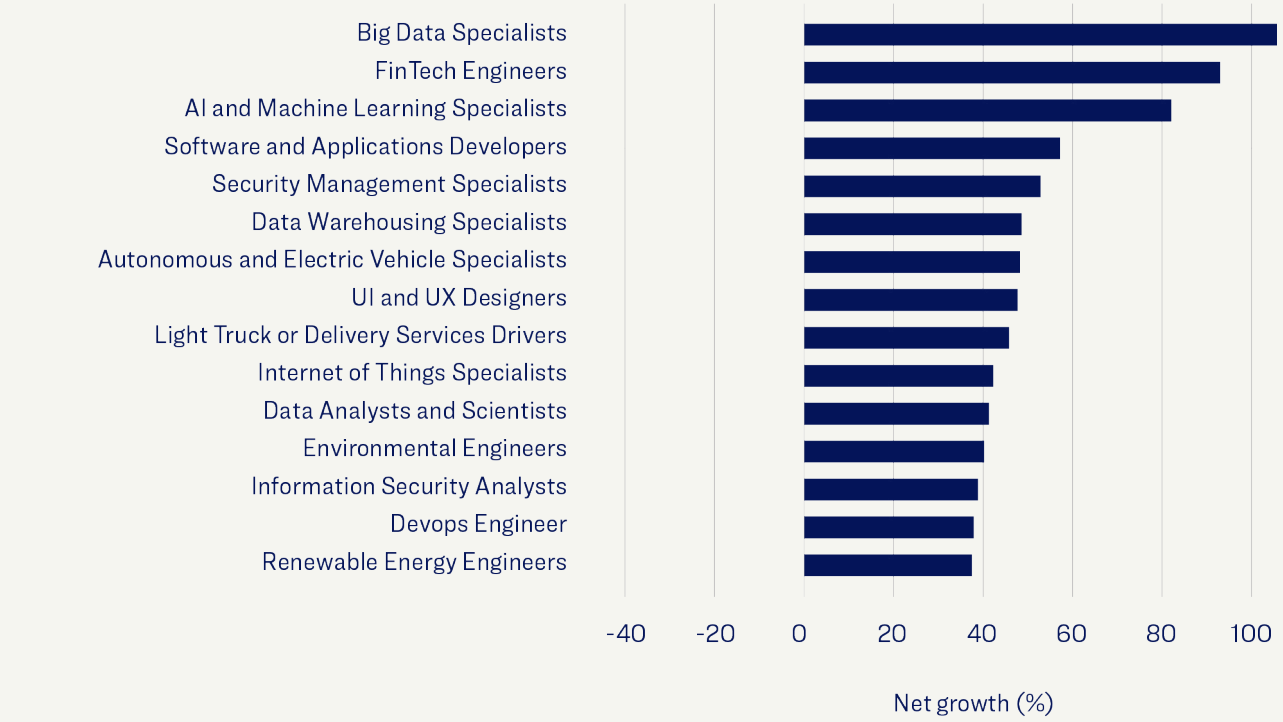
It's important to note, however, that manually intensive tasks requiring in-person interaction (14.8% exposure and below in Figure 3), such as performing physical exams, conducting lab tests, or administering intravenous treatments, are expected to experience minimal impact from generative AI. This underscores the continued importance of human expertise and direct patient care in healthcare settings (Kinder et al., 2024).

FIGURE 3. AI EXPOSURE

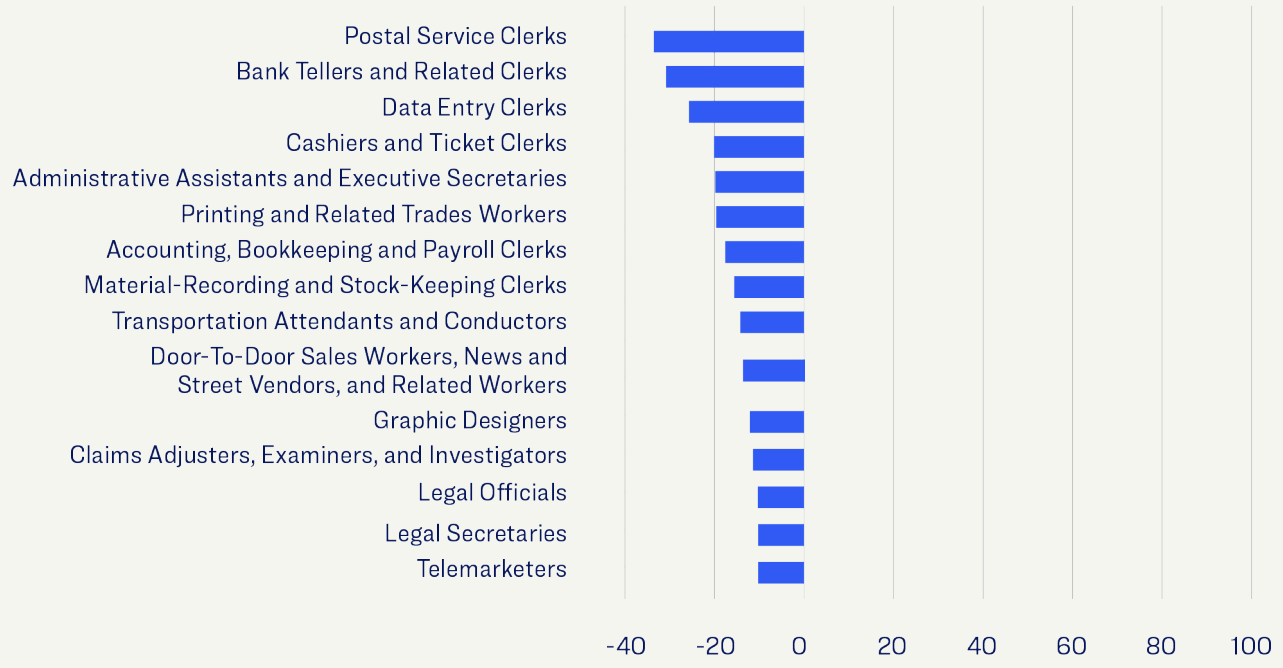


Source: Brookings (Kinder et al., 2024). *Generative AI, the American worker, and the future of work*. https://www.brookings.edu/articles/generative-ai-the-american-worker-and-the-future-of-work/

FIGURE 4. GROWING AND DECLINING JOBS 2025–2030



Top fastest declining jobs



Source: World Economic Forum, *The Future of Jobs Report 2025*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

Research indicates that emerging job categories will center around roles such as AI and machine learning specialists, data analysts and scientists, digital transformation specialists, big data specialists, FinTech engineers, and others. (Appleby et al., 2025; OECD, 2025). This transformation presents opportunities for both individuals and employers. Success will depend on adaptability, skill acquisition, and thoughtful implementation of workforce training and updated systems.

These insights underscore the imperative for individuals and organizations to proactively embrace continuous learning and strategic workforce development to thrive in the evolving landscape of work.

Skills evolution

Recent workforce data reveals a significant shift in expectations around skill development and continuous learning related to AI. Notably, McKinsey predicts a workforce skill evolution that would impact 59% of the workforce by 2030. Of that, 29% would be upskilled in their current role, 19% would be upskilled and redeployed, but 11% would be unlikely to upskill and vulnerable to unemployment. Furthermore, business leaders' expectation for on-the-job skill acquisition has increased from 65% in 2018 to 94% currently. According to WEF, by 2030, 39% of workers' core skills will need updating down from 44% projected in 2023. Employee participation in long-term learning has risen from 41% to 50%, a trend consistent across industries. Analytical thinking remains the most sought-after core skill among employers, with seven out of 10 companies considering it as essential in 2025 (WEF, 2025). Most core skills remain nontechnical (58%) (Oschinski et al., 2024), including resilience, flexibility and agility, along with leadership and social influence (WEF, 2024). This transformation requires cross-sector collaboration to establish best practices and success metrics aligned with societal benefits.

Analytical thinking is the top core skill for 2025. **Seven in 10 employers consider it essential.**

BY 2030

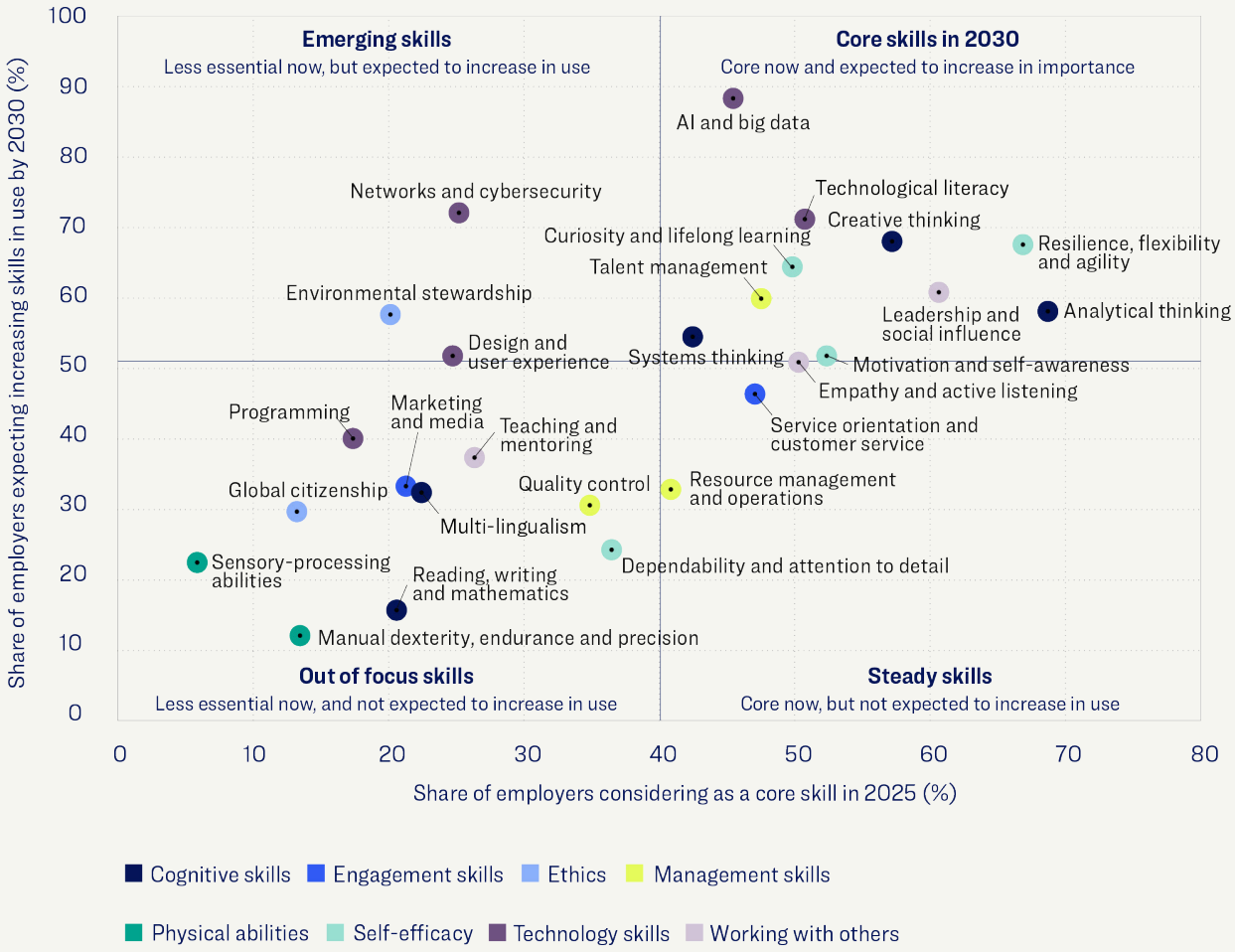
39%

of workers' core skills will need updating.

Reskilling and upskilling

AI is presenting both disruption and opportunities in new ways. Unlike previous technological shifts that primarily affected blue-collar workers, AI is transforming roles across all levels, especially knowledge workers with advanced education. On average, workers can expect that two-fifths (39%) of their existing skill sets will be transformed by 2030. White-collar and service/administrative positions face the most immediate impact, particularly because their occupations rely on skills such as reading, writing, mathematics, teaching, and marketing. While college-educated workers face the highest exposure to AI disruption, they're also best positioned to adapt to these changes (Richardson, 2025). These shifts are reflected in Figure 5.

FIGURE 5. SHIFTING SKILLS DEMAND



Source: World Economic Forum, *The Future of Jobs Report 2025*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

Growth areas

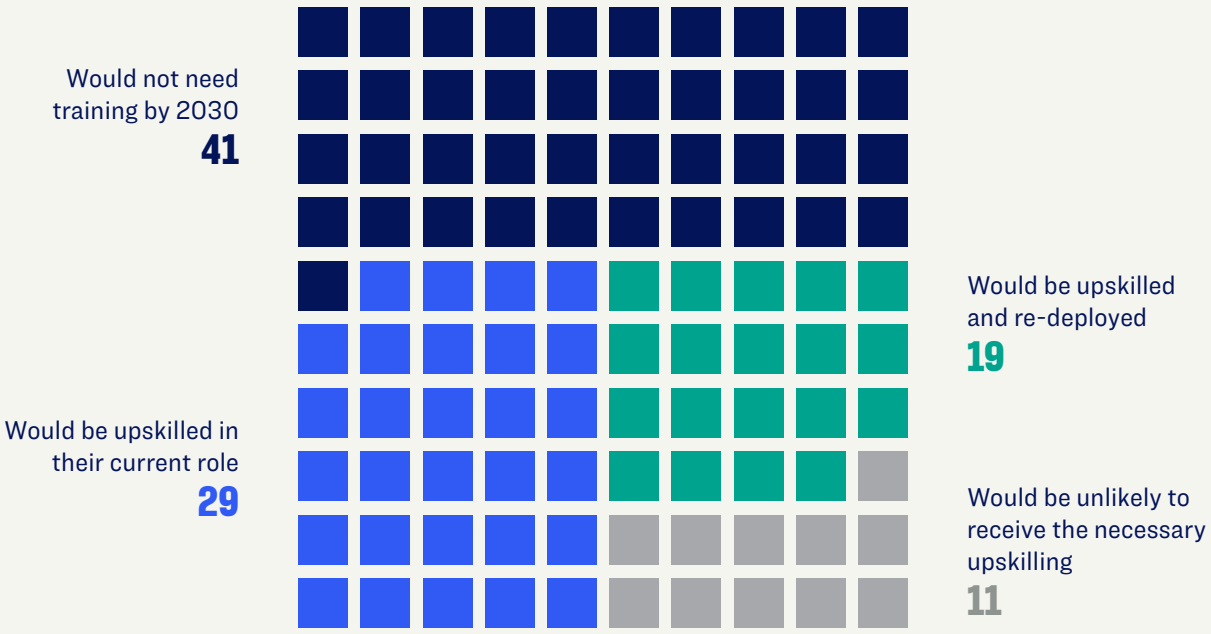
The majority of U.S. workers face some degree of impact by AI. Research from WEF notes 41% would not need training by 2030.As technology outpaces policy development, leaders must implement transparent, human-centered design approaches that prioritize continuous learning and inclusive career development (Mayer et al., 2025). A growing body of research (Shao et al., 2025) highlights the benefits of incorporating workers into the design and rollout of new technologies compared with top-down implementation, which does not incorporate workers' unique knowledge and insights (Kinder et al., 2024).

Close alignment with higher education institutions across industry partnerships will be key to a cohesive societal reskilling for an AI-powered future state of work. With 55% of jobs requiring degrees by 2031, higher education institutions are uniquely positioned to address this disparity through industry partnerships, workforce reskilling programs, and adaptive curricula that respond to emerging fields (Appleby et al., 2025). Research shows that while 40% of employees worry about AI's impact on their jobs, they're generally comfortable with automating routine tasks. (Transamerica, 2025; Basiouny, 2023).

Business function applications

The rapid advancement and adoption of AI, particularly generative AI, are profoundly reshaping operational landscapes across various business functions. Recent data, including McKinsey's latest global survey, reveals a significant increase in the integration of generative AI within organizations, rising from 65% in early 2024 to 71% currently, according to McKinsey (Singla et al., 2025). While the initial impetus for AI integration often originated in areas like IT and marketing/sales, the technology's influence is expanding rapidly, driving transformational shifts in how institutions serve clients, manage risk, and optimize internal operations.

FIGURE 6. EMPLOYERS ASSESSMENT OF SKILLS EVOLUTION 2025–2030



Source: World Economic Forum, *The Future of Jobs Report 2025*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

How can HR leaders plan and drive change in the face of AI?

The Human Resources function at any organization faces impacts from AI through several paths, including integration into their own HR roles, broader enterprise hiring strategies, and learning and development approaches.

The proportion of technology skills listed in HR job postings rose to 5.2% in March 2025, a 23% increase from the previous year (Popera, 2024). Administrative and professional HR roles face significant transformation potential. While these efficiencies are significant, 73% of organizations emphasize data governance concerns, necessitating robust compliance frameworks for fair hiring and data protection (MIT, 2023). Beyond efficiency, AI creates strategic value through data-driven workforce planning, personalized employee development, and enhanced compliance monitoring. AI streamlines HR operations through process automation of résumé screening, interview scheduling, and documentation, while AI-powered chatbots handle routine queries and employee transitions. Advanced analytics provide data-driven insights for workforce planning, predict employee retention risks, and identify engagement patterns, enabling more strategic talent management.

Human Resources departments stand poised to realize substantial operational transformations through AI integration, with potential productivity enhancements of 20% to 40% productivity gains across knowledge work domains (Mayer et al., 2025), including 25% faster hiring (Stanford, 2025), 33% reduction in administrative tasks (MIT, 2023), and 43% higher hiring prediction accuracy (Mayer et al., 2025). While these efficiencies are significant, 73% of organizations emphasize data governance concerns, necessitating robust compliance frameworks for fair hiring and data protection (MIT, 2023). Beyond efficiencies and processes adjustments, AI also creates strategic value to enhance tools that inform data-driven workforce planning, personalized employee development, and enhanced risk monitoring.

20% to 40%

potential productivity gains in HR through AI-driven operational transformation.

Successful AI implementation requires tailored change management that builds internal champions, establishes clear communication, and aligns metrics with organizational values. To fully leverage AI's capabilities, HR leaders must move beyond a narrow focus on efficiency and embrace the imperative to redefine work, establish and adhere to ethical frameworks for sensitive data handling, implement robust risk protocols, and continuously invest in workforce development to ensure sustained and equitable growth.

Training and development priorities

Recent workforce data reveals a significant shift in expectations around skill development and continuous learning related to AI. Business leaders' expectation for on-the-job skill acquisition has increased from 65% in 2018 to 94% currently (WEF, 2025). The majority of U.S. workers face some degree of impact by AI. In "growth areas", we note the dispersion of upskilling and reskilling needed. Yet, McKinsey reports that although 48% of employees prioritize AI training, nearly half report receiving inadequate support. As technology outpaces policy development, leaders must implement transparent, human-centered design approaches that prioritize inclusivity, continuous learning and inclusive career development (Mayer et al., 2025).

Demographic considerations

Organizations should be mindful of their employee populations as they build out AI tools, strategies, and training. Various segments of the workforce will be impacted differently and will require unique considerations. Interestingly, women show higher exposure to AI impacts in most countries (ILO, 2023) (see Figure 2), while millennials (35–44) show highest AI expertise across age groups at 62% (Mayer et al., 2025).

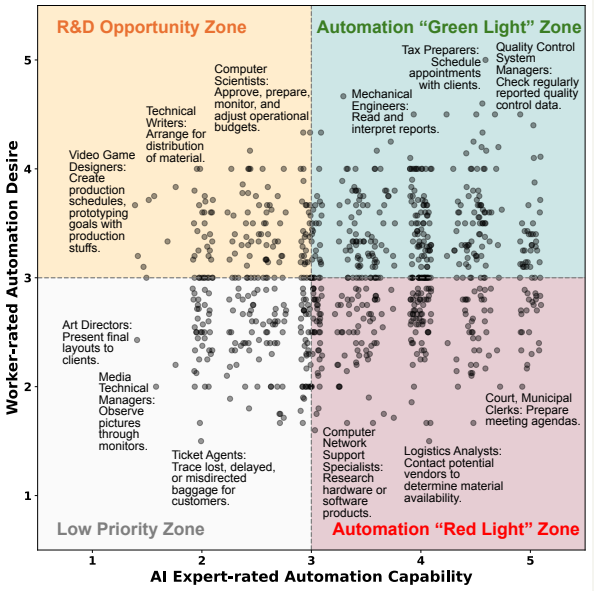
Implementation strategy

As technology races ahead of policy development, success requires transparent communication, phased training programs, and inclusive implementation strategies that consider multigenerational workforce needs and diverse perspectives from the planning stage onward (Appleby et al., 2025).

Stanford researchers developed a map of gaps between worker desires for AI automation and AI's abilities (Figure 7), which incorporates workers' input into strategic AI deployment. They found much of AI application across industries is either unwanted or not possible (in the "red light" zone in Figure 7), and overall, workers prefer a collaboration with AI (represented by the "green light" zone in Figure 7), where automation is desired and feasible. Other tasks fell into the "R&D Opportunity Zone"—desired but not technically feasible. "These findings suggest AI agents can play a supportive role in the workplace, relieving workers of low-value or tedious tasks rather than displacing workers," said Erik Brynjolfsson, an author of the study and director of the Stanford Digital Economy Lab (Shao, 2025).

Aligning AI implementation with worker preferences for collaboration moves beyond simple "automate or not" dichotomy and helps identify where AI can truly benefit workers and transform workplaces effectively.

FIGURE 7. WORKERS' AI DESIRES VS. AI CAPABILITIES



Source: Stanford Institute for Human-Centered AI and the Digital Economy Lab. (2025) *Future of Work with AI Agents: Auditing Automation and Augmentation Potential across the U.S. Workforce.* https://hai.stanford.edu/news/what-workers-really-want-from-artificial-intelligence

Organizational change requirements

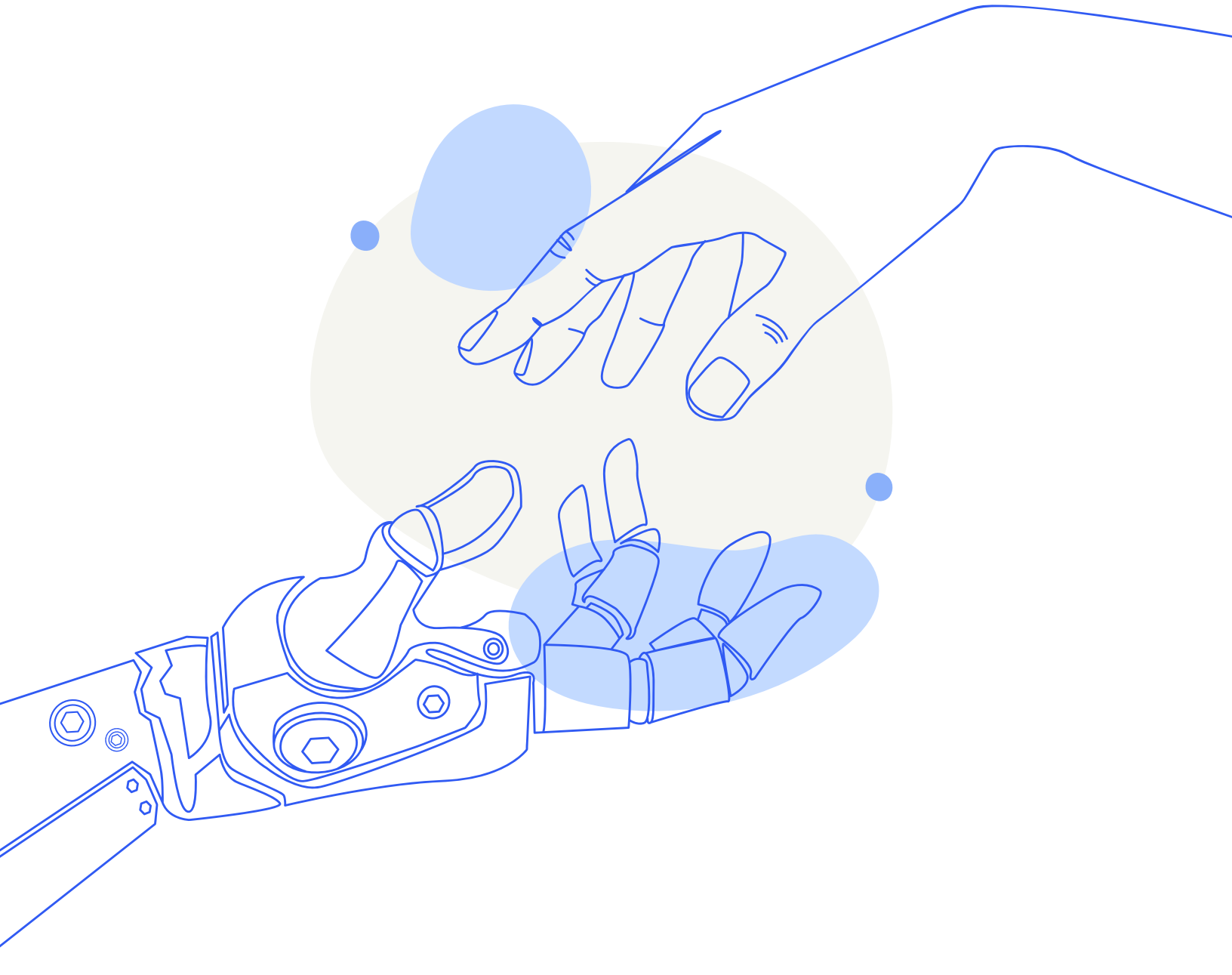
Successful AI implementation requires tailored change management that builds internal champions, establishes clear communication, and aligns metrics with organizational values. Human-centered AI deployment recognizes that technology adoption is fundamentally a human and organizational challenge, not merely a technical one. Organizations must establish robust risk protocols, including ethical reviews and privacy assessments, particularly for sensitive data handling. All of which must be coupled with clear communication and alignment of metrics with organizational values.

As technology outpaces policy, leaders must adopt transparent, human-centered designs that **prioritize inclusivity and continuous learning.**

Conclusion

As AI reshapes the global economy, organizations must bridge the emerging digital divide through strategic, inclusive workforce development. Successful implementation requires continuous learning programs, understanding worker preferences, robust governance, technical infrastructure, transparent policies, and bridging diverse perspectives. The key is developing nimble systems that enhance human capabilities while adapting to technological change.

To democratize AI's benefits, urgent collaboration between higher education, employers, and policymakers is essential. This partnership must create inclusive learning pathways reaching underserved and at-risk workforce populations. Through human-centered design principles and intentional reskilling efforts (Stanford, 2025), AI can evolve from a potential source of inequality to a tool for widespread empowerment.



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