CompTIA

AI's Impact on Productivity and the Workforce

2025

CompTIA.org

Trends

1 AI utilization pervasive, but uneven

2 Corporate leadership sets sights on AI-driven productivity gains, despite backtracking when AI performance falls short

3 AI skilling strategies still more reactive than proactive

4 Untangling AI's direct and indirect impact on the workforce

5 Career ladder conundrum in the age of AI

Spotlights

82%

Companies reporting growing expectations (net) for enterprise AI implementations to deliver value

79%

Companies reporting incidence of backtracking (net) to a human-centered solution after AI failed to meet business objectives

85%

Companies providing or planning to provide (net) staff AI compliance and security training

2x

Employer job listings for hiring positions specifying an AI skill requirement more than doubled (+107%) year-over-year[1]

85%

Companies seek validation (net) of AI knowledge, skill and task completion (TSK) through industry-recognized technical certifications for staff

64%

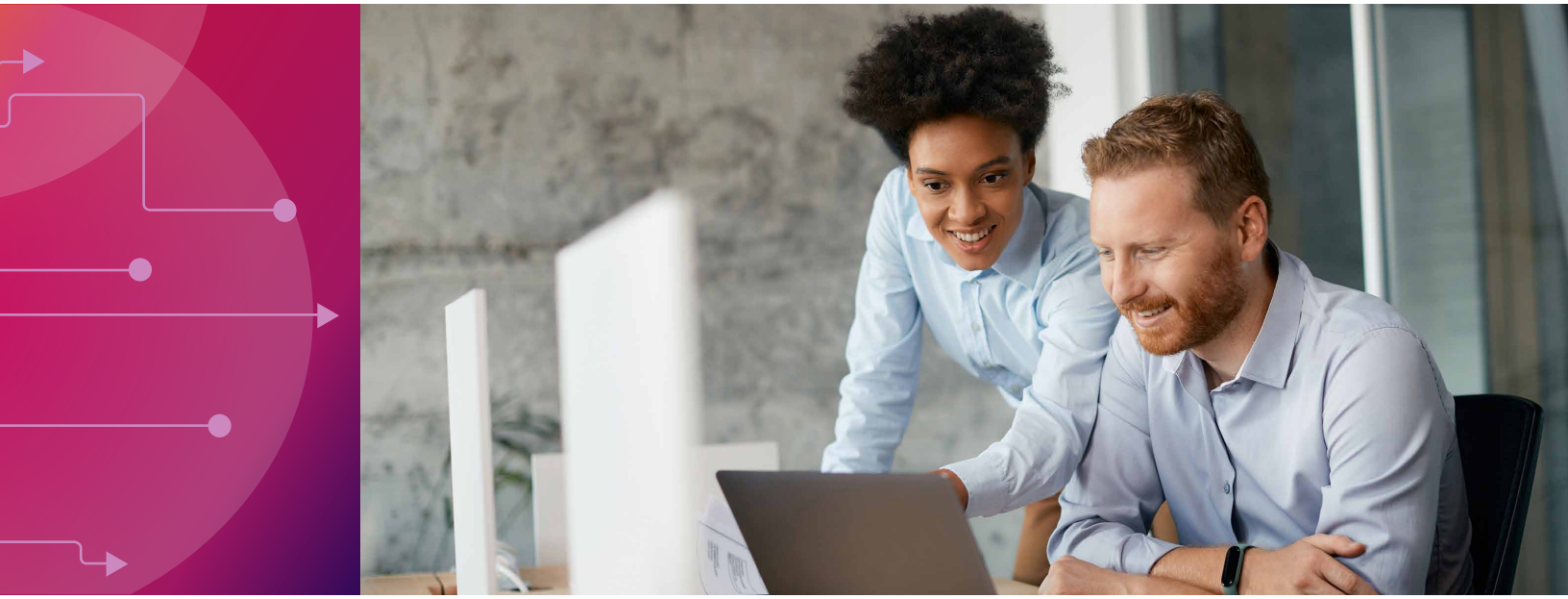
Not so fast...companies acknowledge using AI as an excuse for unpopular business decisions, such as cost cutting or layoffs[2]

[1] September 2025 vs. September 2024 | CompTIA analysis of Lightcast job listing data

[2] Among companies that made staffing changes they attributed to AI

Introduction

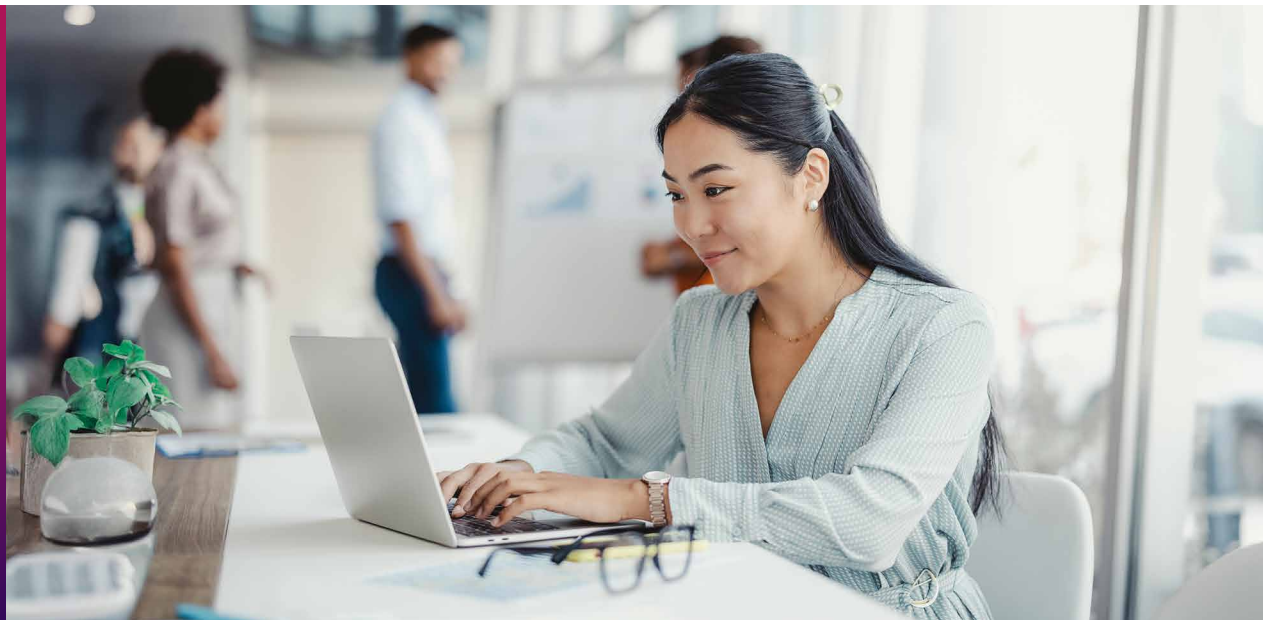
Since the emergence of the modern artificial intelligence (AI) era, it often seems as if AI has already gone through more Hype Cycle peaks and valleys than most technologies experience in a lifetime. Announcements of profound breakthroughs, such as besting the Turing Test, inflate expectations to lofty heights; only to follow with the disillusionment that comes with puzzling AI hallucinations or results that underwhelm.



This dynamic inevitably leads to endless corporate anxiety as leaders attempt to keep their fear of missing out (FOMO) or fear of making the wrong AI bet in check. Despite the lessons learned from prior waves of era-defining innovation – notably, transformative change is harder and takes longer, organizations face the reality of having to answer to investors, boards, staff, and customers. The status quo of inaction is usually not an option.

This latest research from CompTIA is part corroboration and part exploration. A quantitative survey commissioned by CompTIA of more than 1,100 U.S. business respondents seeks to corroborate established patterns of AI use, while exploring new facets of the challenges companies face in navigating the many moving parts of AI deployments in the enterprise. This research provides a glimpse into how the average company contends with AI developments. The most advanced, niche, or theoretical uses at the artificial general intelligence (AGI) frontier are beyond the scope of this report.

1 AI utilization pervasive, but uneven



Adoption rates are a key barometer in assessing user uptake of emerging technologies. This seemingly straight forward measure, however, may show vastly different results due to varying definitions of what constitutes use and varying degrees of representation among user and company types.

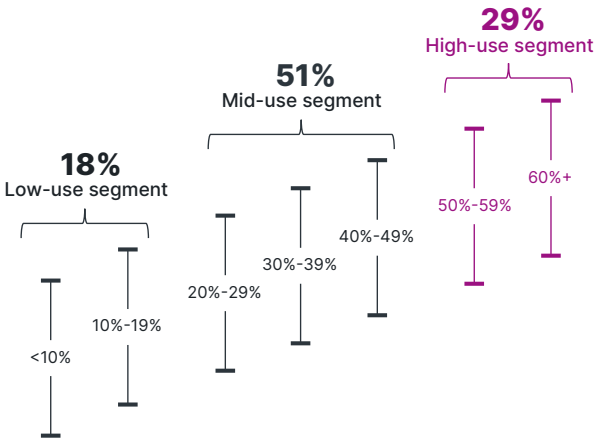
One measure from the U.S. Census Bureau's Business Trends and Outlook survey pegs AI adoption among U.S. business at approximately 12% as of August 2025[1]. This study includes a heavier weighting of very small businesses (<10 employees), which provides important context when comparing to other adoption rate sources.

Another measure from the consulting firm McKinsey & Company asserts 78% of U.S. companies used AI in at least one business function during the first quarter of 2025. This study skews toward larger companies, so not directly comparable to the U.S. Census Bureau's figures.

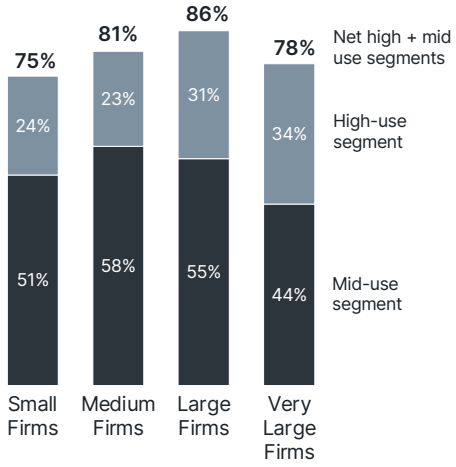
According to data compiled from disclosures by the major AI platforms, the global base of AI users is around 379 million, with a base of 133 million in the U.S. Analysis of OpenAI's ChatGPT usage reveals approximately 30% of engagements are work-related with the remaining 70% non-work. With this type of data it's important to remember a 'user' may include both active users and inactive users (someone that set up an account but uses the application sparingly or not at all).

AI utilization pervasive, but uneven

Reported rate of AI use among corporate workforces



Segmentation of AI use by firm size



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies | unsure responses excluded

CompTIA's research uses an estimation approach to group AI usage into three tiers. The overall weighted average adoption rate across all respondents works out to about 37%. The middle tier translates to 20% to 49% of workers using AI on the job and accounts for 51% of the total.

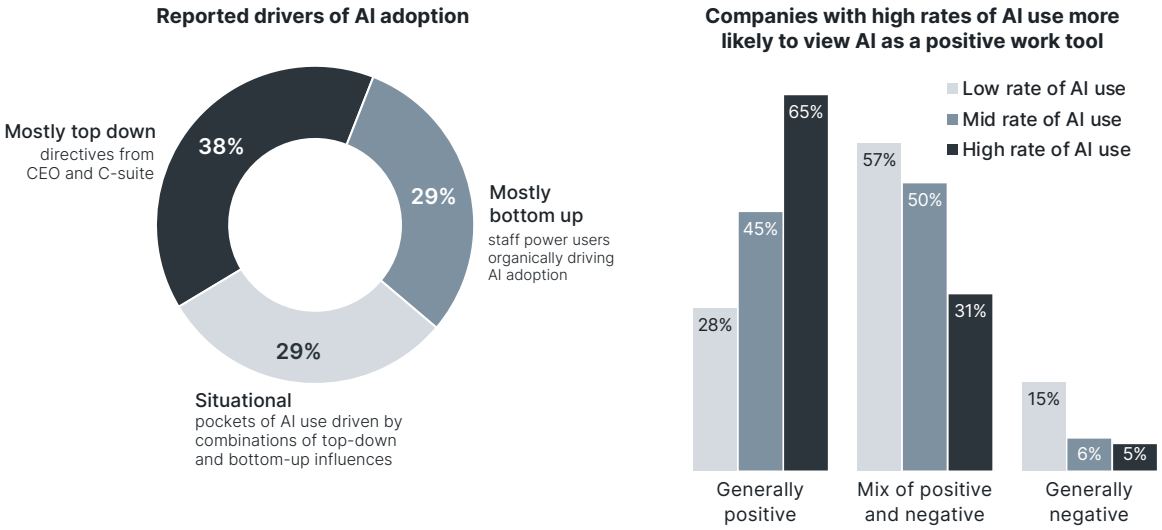
Employee use at most companies tends to follow a traditional long-tail model. A small subset of AI power users leveraging AI tools daily, followed by varying degrees of intermittent use, down to those employees using AI minimally, such as once every few months.

As expected, at larger firms the driver of AI adoption is more likely to be top down, such as directives from the CEO, CIO or CMO to implement AI tools.

Overall impressions of AI in the workplace are generally positive, according to the CompTIA survey. A positive correlation exists with firms reporting high rates of AI use viewing AI more favorably as a tool to enhance worker productivity and efficiency.

It will require further research to explain the views of the business segment using AI at lower rates. Do they view AI in the workplace less positively because they have not experienced any of the benefits of productivity or efficiency gains? Or, do they view AI in the workplace less positively because they have experienced AI and found it to be lacking for their business needs?

Corporate AI adoption a function of top-down and bottom-up influences



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

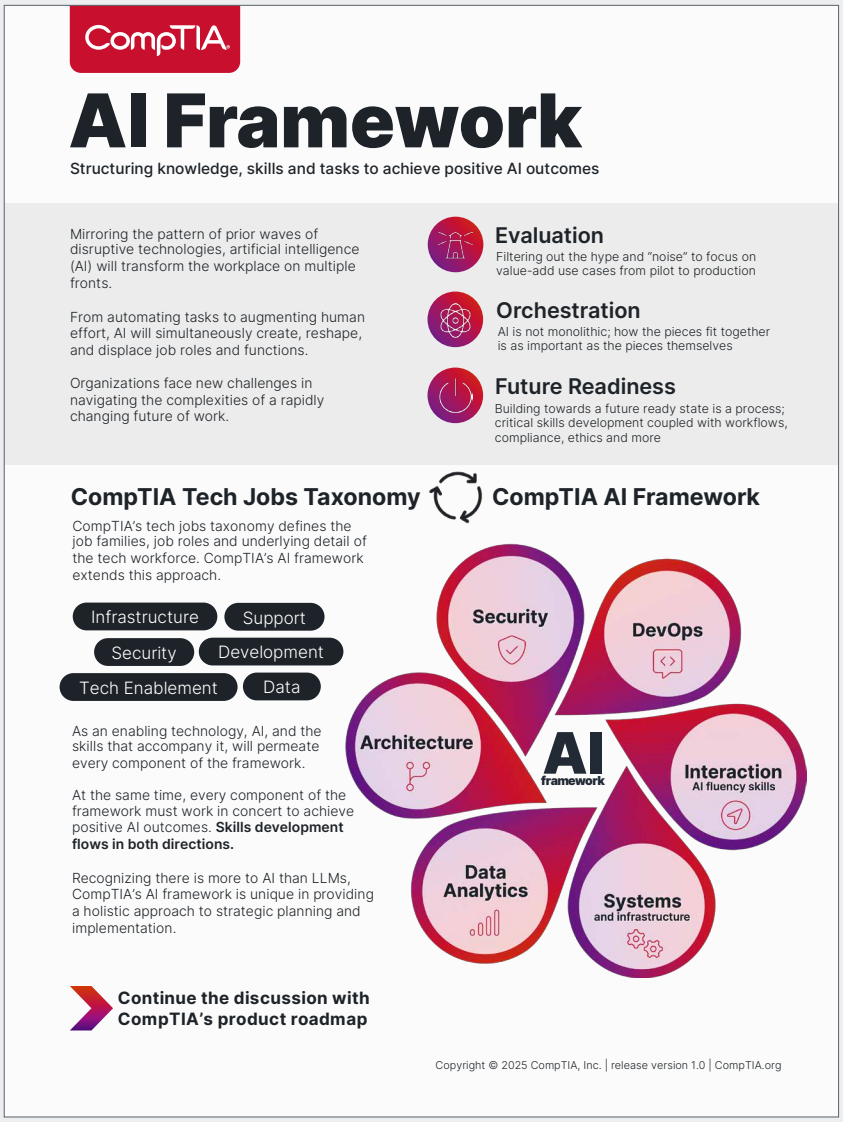
CompTIA AI Framework

Although commonly used as shorthand, artificial intelligence (AI) is not "one thing," but rather an umbrella concept. AI is a stack of technologies, data, infrastructure and processes working in concert to achieve an outcome.

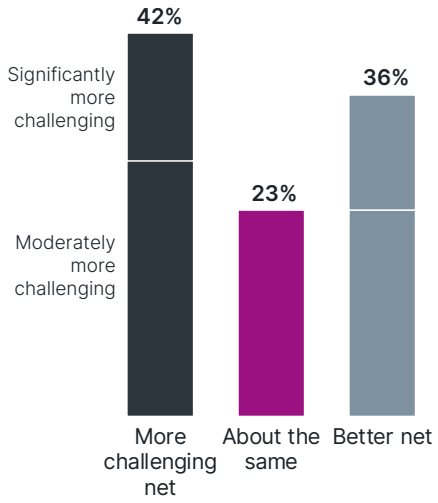
With so many moving parts and interdependencies to the AI discussion, meaningful strategic planning requires a framework to break down these complex concepts. As organizations transition from pilot projects to full production AI-enabled implementations, many come face-to-face with the hard reality checks of orchestration across the people-process-technology continuum.

CompTIA played an early role in introducing an AI framework to facilitate discussion and planning. Recognizing there is more to AI than LLMs and algorithms, CompTIA embraces a structured, yet flexible model from a technical, market and skills perspective.

See CompTIA AI Framework page a nd AI skills certifications for more detail.



A challenging business environment for many companies and sectors



Top actions taken in response to challenging business conditions

Small firms

1. Operational expense cuts
2. Hiring freezes
3. Investment cuts
4. Layoffs
5. Downward revision to sales projections

Medium firms

1. Operational expense cuts
2. Hiring freezes
3. Downward revision to sales projections
4. Investment cuts
5. Outsourced more work to lower cost providers

Large firms

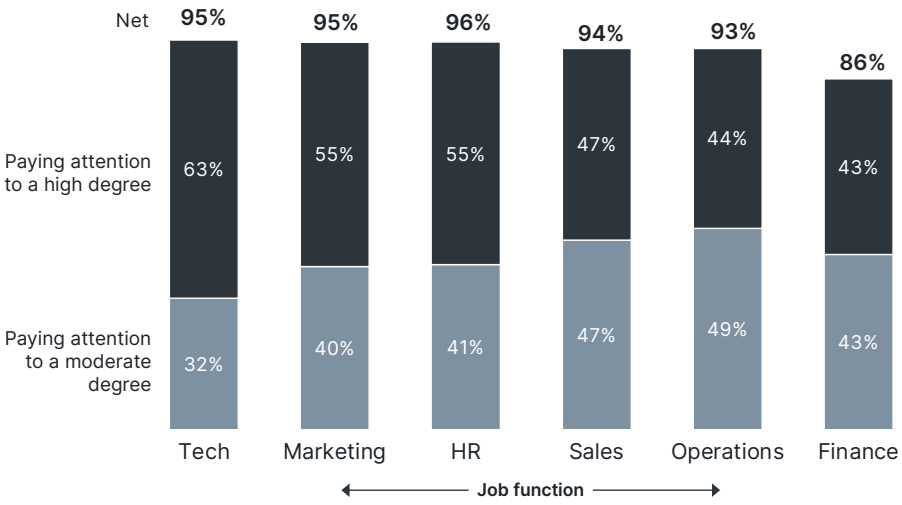
1. Operational expense cuts
2. Downward revision to sales projections
3. Investment cuts
4. Hiring freezes
5. Vendor, partner or contractor cuts

Very large firms

1. Operational expense cuts
2. Hiring freezes
3. Investment cuts
4. Downward revision to sales projections
5. Layoffs

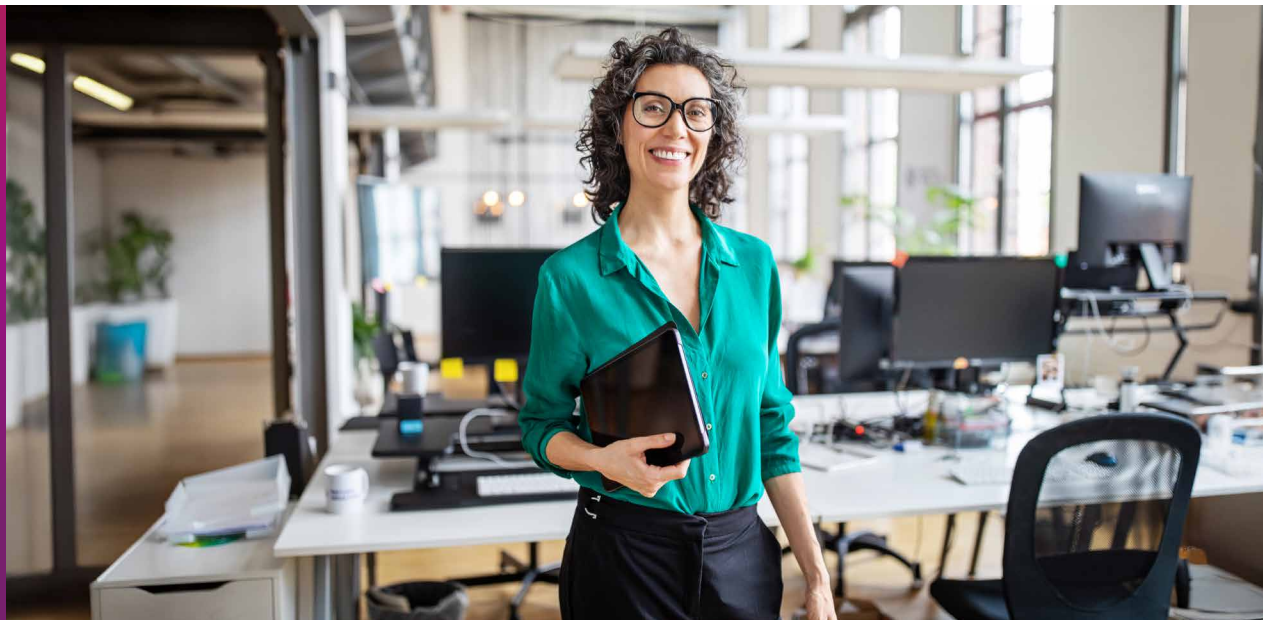
Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Business functions are paying close attention to AI news and developments



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

2 Corporate leadership sets sights on AI-driven productivity gains, despite backtracking when AI results falls short



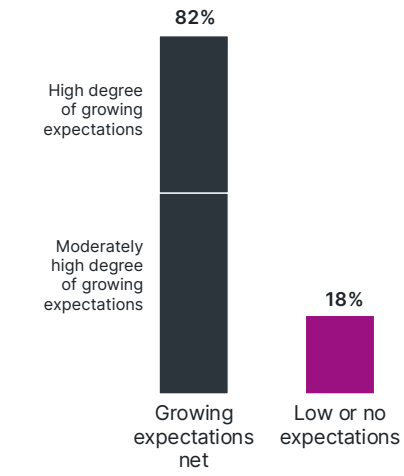
Varying rates of AI adoption aside, most sources share the same directional trend of a growing AI user base. In some cases, this is a function of businesses or users actively deciding to use AI tools, while in others, it may be passive adoption whereby AI components are infused into applications, web browsers or devices and essentially thrust onto users.

Higher rates of adoption equates to higher levels of direct or indirect investment in AI. Expectations are growing among corporate leadership with more than 8 in 10 (net) indicating urgency to see results. Among the high-use AI segment, a net 92% report growing expectations for AI to deliver productivity and efficiency gains in their business.

The most ambitious corporate users are thinking broadly about the possible transformative effects of AI across every facet of their organization. AI roadmaps discussions go well beyond the technical and encompass customer expectations, staffing decisions, budget prioritization, and competitive positioning.

High expectations for AI-driven productivity and efficiency gains

Reported expectations among corporate leadership



Pursuing AI-driven productivity and efficiency gains introduces new evaluation factors

1. Evaluating what it means to remain competitive in the AI era
2. Re-assessing customer expectations and needs in the AI era
3. Right-sizing staffing levels for the AI era
4. Re-aligning budget priorities for the AI era
5. Re-assessing product development roadmaps for the AI era

Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

The counterpoints to elevated and growing AI expectations are twofold. The first is the AI "solution in search of problem" scenario. This may stem from companies not having the right business use cases where it makes sense to deploy AI; or, not having the right expertise to integrate and appropriately harness the capabilities of AI. These companies may have a defined challenge, such as data siloes with their CRM and financial system resulting in inefficiencies in servicing customers; but naively throwing AI at the problem on its own may fall short of expectations.

The second counterpoint falls under the catchall category dismissively referred to as "workslop." As described most pointedly in studies by MIT's Media Lab and Harvard, many companies experience high fail rates with AI deployments. This is not unique to AI. Prior waves of innovation, such as cloud, big data, and blockchain, went through similar growing pains. Even as the technology matures, if the people and process variables of the equation do not advance at the same pace, businesses more often than not experience an underwhelming outcome.

One step forward, two steps back

8 in 10

Companies reporting backtracking to a human-centered solution after AI failed to meet business criteria

Net % of respondents rating a degree of backtracking from AI occurred (44% significant backtracking + 35% moderate backtracking)

Calculated among the subset of companies that attempted to substitute AI for human work. When calculated as an overall percent, the rate of back-tracking translates to 22%

With any endeavor to advance technical capabilities in the enterprise, there are corresponding risk and return on investment unknowns. Simply put, some projects will work out and some will not.

The data from this research indicates most companies experience a mix of success and failure with AI deployments. This is not necessarily a negative, but rather, a healthy dynamic in the evaluation process as companies experiment with AI pilot projects in planned, and sometimes, unplanned ways.

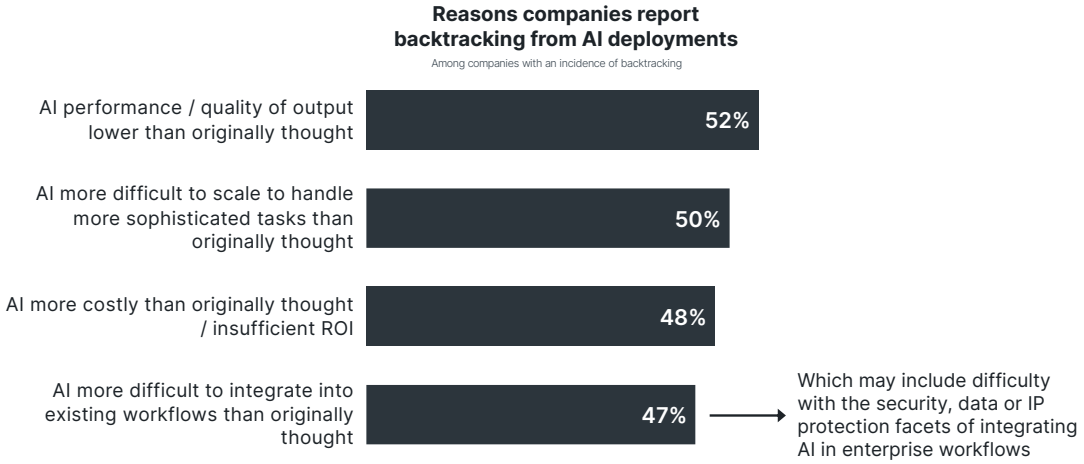
A majority of companies (79%) in this research report backtracking from an AI solution that did not work out as expected when attempting to substitute AI for human work.[2] This may entail relatively minor backtracking, such as a scenario whereby a marketing team tests a gen AI tool to assist in generating content for the company's blog. They may find some of the output of an acceptable quality, while other portions of it may not meet editorial standards. The marketing team may backtrack to reassess finding the right AI tool for the job, along with user training to finetune prompts, and a process playbook to operationalize output reviews.

More significant backtracks from AI deployments may entail scenarios involving security risks, legal exposure, compromised intellectual property, or lost revenue due to a poor customer experience.

While performance and technical challenges top the list of reasons companies report backtracking from an AI deployment, cost is also a factor. The AI solution may work perfectly, but the return on investment may not justify the direct cost or the opportunity cost.

> "AI deployments that fall short tend to signify more than technology shortcomings. Sufficient attention to workflow processes and skills training for staff are equally important to successful implementations."

Backtracking from AI deployments a function of performance, execution and cost



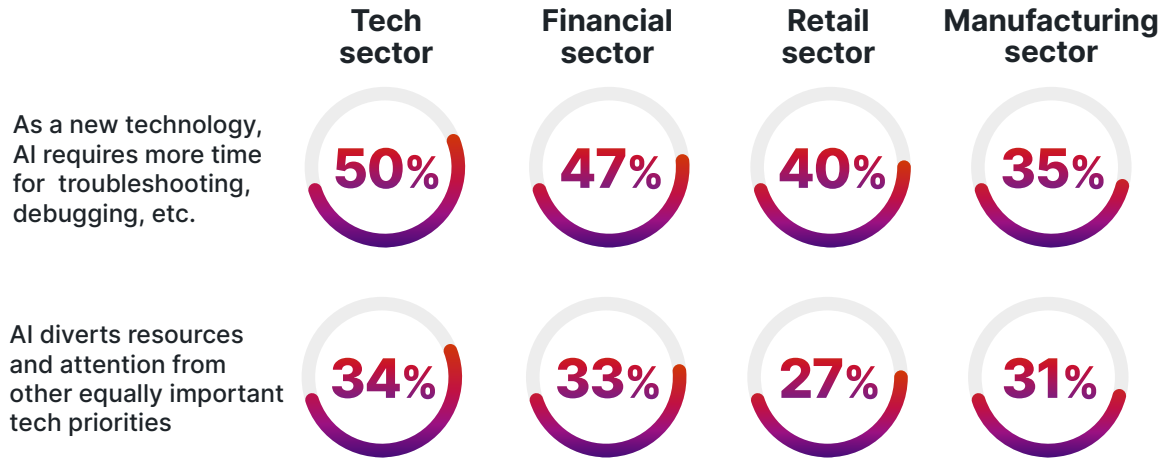
Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Overcoming these obstacles starts with a structured approach to innovation, from initial pilots to full production implementations. The CompTIA research finds a solid percent of companies measuring the effects of their AI investments across several dimensions.

Reading between the lines, it is likely a portion of respondents in the study are using measuring approaches that lack rigor, consistency, or documentation. This may include those essentially "eye-balling" the results of AI without fully accounting for all the input costs of an AI deployment and all the possible value generated on the backend.

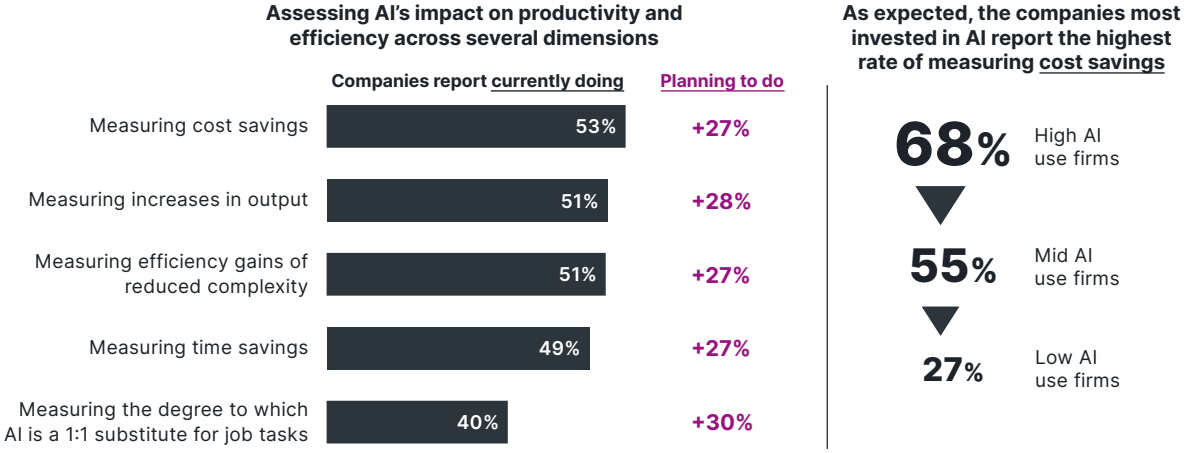
Quantifying productivity gains is never easy, and all the more challenging in service industries or business functions where output is not a simple calculation of counting widgets. In 1987, Nobel prize-winning economist, Robert Solow, observed "you can see the computer age everywhere but in the productivity statistics." There is a clear dotted line connection to today, with signs of the AI age everywhere. It remains to be seen just how much AI will boost productivity over the long-term and the degree to which it will be statistically measurable.

AI's impact on corporate time and attention



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

AI-driven productivity and efficiency gains only count when measured



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

What is agentic AI and what role will it play in enterprise workflows?

Agentic AI refers to artificial intelligence systems capable of more autonomous, more complex, multi-step actions with less human supervision. The goal is a more capable tool that can operate independently to complete assigned tasks and adapt to the unstructured environments of the business world. In many ways agentic AI is an extension – or, perhaps rebranding, of the robotic process automation (RPA) concept from years ago.

Because most business tasks are either multi-step or entail degrees of ambiguous complexity, agentic AI represents one evolutionary step in advancing the capabilities and value of AI. From a workflow perspective, it may mean a need for more cross-functional team collaboration to pinpoint where AI agents add value and where AI augments human activity. This has implications for skills development as covered in trend #3 of this report.

3 AI skilling strategies still more reactive than proactive

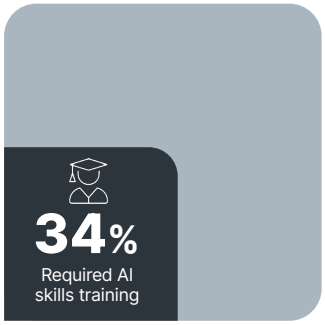
An underlying theme of this report is the parallel seen in AI's progression as an emerging technology and prior waves of evolutionary technologies. This pattern continues with the approach many companies take with training their employees in AI skills.

To date, about 1 in 3 companies report mandating AI training for staff. Think of this as the proactive segment of companies seeking to get out in front of identifying and addressing skills gaps. Modest investments of time and resources in industry-recognized training and certification almost always has a multiplier effect in returning value via productivity gains, better performance, and more engaged staff.

Among the majority of companies in what can be characterized as the reactive camp for AI skills training, one or more factors may be at play. The data suggests a certain "chicken or the egg" paradox. Forty-six percent of companies report being in the early stages of AI, so they believe skills training for staff is not needed yet. But the reason they may be in that position is because staff do not possess the AI skills to move AI deployments forward. Waiting and reacting with a skills development plan when there is a crisis moment puts strain on the business and staff.

AI skilling strategies more reactive than proactive

Most companies do not mandate AI skills training for staff



REACTIVE

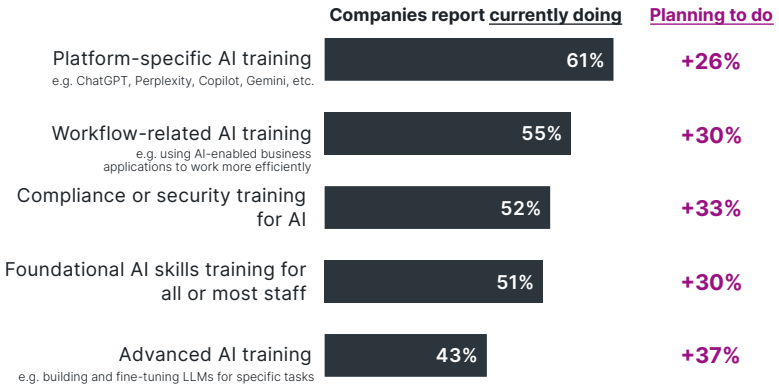
- **36%** **Optional**. AI skills training made available, but left to staff to pursue
- **16%** **Unsure, still deciding**. May offer some type of of AI skills training in the coming year
- **14%** **None**. No AI skills training planned or unsure

Reasons companies report not requiring AI skills training for staff

46%	AI adoption still in early phases at our company, so staff training not needed yet
37%	Unsure of the value of AI training in improving worker productivity
31%	Still evaluating training providers to find the right fit
29%	Cost of AI training
23%	Sufficient free training resources that staff can develop AI skills on their own

Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Companies plan AI skills training along foundational to advanced-skills continuum



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Nearly half of companies (49%) report taking a harder look at their competitive position in the market against the backdrop of AI. Executives at most companies are well aware of textbook examples of market leaders that slip gradually, and then all at once[3] due to techno-savvy disrupters.

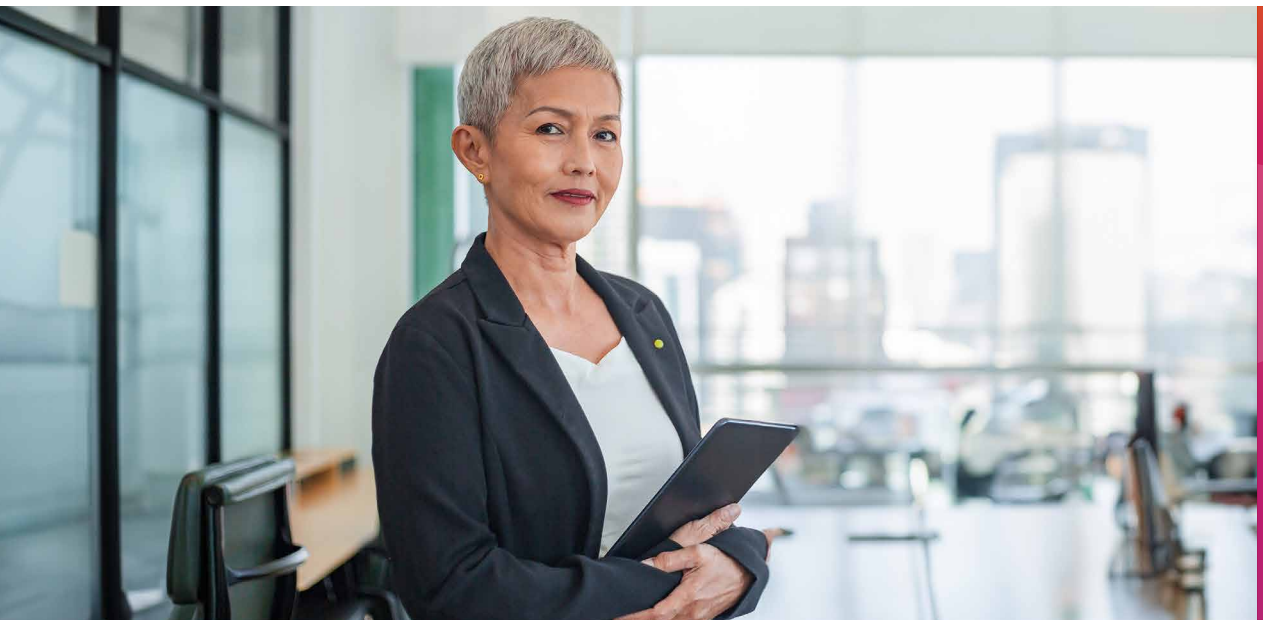
Employer job listing data provides a useful lens into the competitive landscape for AI talent. Companies wanting to gauge demand for specific AI job roles, as well as AI skills needs across functional areas, can glean insights from aggregate job listing data from sources such as Lightcast. CompTIA's AI hiring index, developed with job listing data from Lightcast, confirms the significant run-up in demand for AI skills, with a tripling of job listing volumes in comparison to overall tech job listing volumes.

Certifications validate AI knowledge, skill and task completion (TSK)

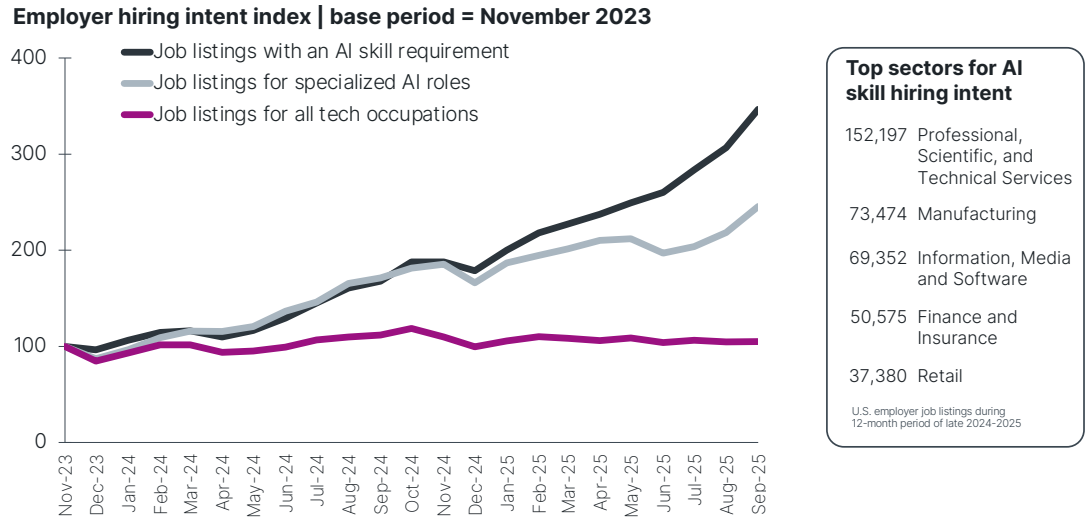
85%

Companies seek validation of AI knowledge, skill and task completion (TSK) through industry-recognized technical certifications

Net % of respondents rating the importance of industry-recognized technical certifications (53% very important + 32% somewhat important)



AI hiring intent index confirms relative growth of employer demand for AI talent



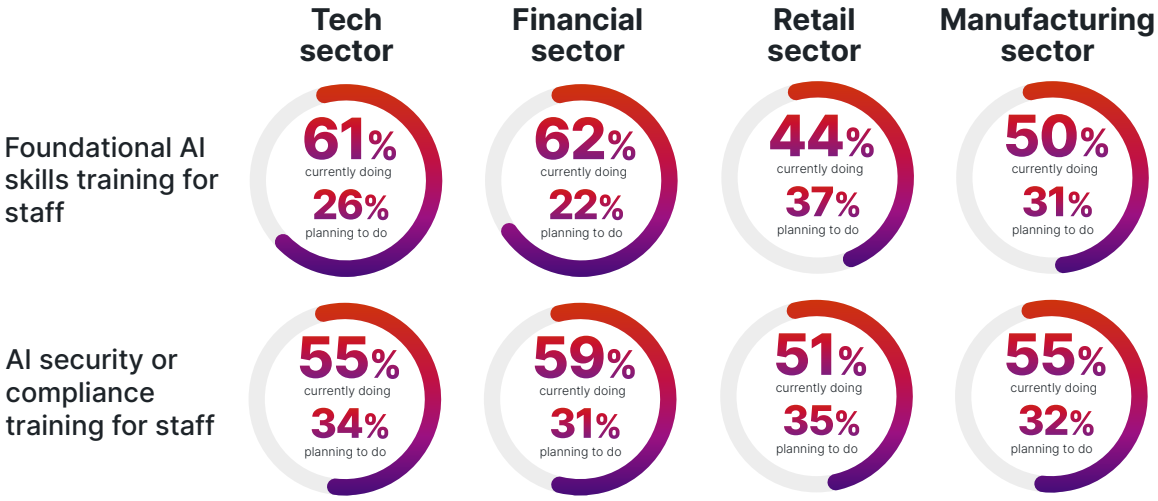
Top sectors for AI skill hiring intent

152,197	Professional, Scientific, and Technical Services
73,474	Manufacturing
69,352	Information, Media and Software
50,575	Finance and Insurance
37,380	Retail

U.S. employer job listings during 12-month period of late 2024-2025

Source: CompTIA AI's Impact on Productivity and the Workforce study | CompTIA analysis of Lightcast job posting data | US market

AI skills training for staff segmentation by industry sector



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Phases of enterprise AI implementation will guide skills development planning

Deploying and using AI chatbots

- Empowering employees to innovate
- Training in genAI basics
- Encouraging experimentation and personal automation

Automating + augmenting functions

- Build and/or buy AI capabilities for teams/departments
- Building shared GPTs/agents or bespoke AI tools
- Adopting AI powered point solutions or features in apps

Innovating in products + services

- Embed AI into customer-facing offerings, digital or physical
- Developing new AI-powered features or products

Source: CompTIA Training and Certification Product Development Team

4 Untangling AI's direct and indirect impact on the workforce

In 1930, one of the giants in the field of economics, John Maynard Keynes, wrote about the concept of technological unemployment[4]. He expressed both concern for the negative effects of technological advances outrunning the labor market's ability to absorb the changes, and a recognition of the positive upsides of higher living standards across society.

Fast forward 50 years to the dawn of the personal computer era; and then again to the internet and ecommerce era; mobile device and app era; cloud era, data era; blockchain era; and now, the AI era. The concept pondered by John Maynard Keynes nearly 100-years-ago has waxed and waned during each era, with varying degrees of debate over how to make sense of the positives and negatives of technological advancements.

One school of thought asserts AI will ultimately conform to historical patterns. AI's relationship to human effort via automating and augmenting workflows will mean many job roles will change; new job roles will emerge and some job roles will fade.

The more concerning school of thought argues "this time will be different." On a regular basis, news headlines report startling predictions of AI-induced doom. Everything from dark humor nods to sci-fi plots of the "robots taking over," to tech industry luminaries rather casually predicting mass layoffs and essentially the collapse of the labor market.

The fact is no one knows for sure how the next decade, or even the next year, will unfold with AI.

As discussed previously in this report, there is a high degree of enterprise backtracking with AI projects for myriad reasons. Another factor that probably does not get enough attention is the lack of understanding of how work actually gets done.

Consider the scenario of an AI startup led by AI engineers that use generic skills taxonomies and position descriptions to size up job roles, such as a junior accountant, marketing specialist or customer service rep. Their data models may create a false confidence in knowing enough about the knowledge, skills and task completion of the job role to fully automate it with an AI solution.

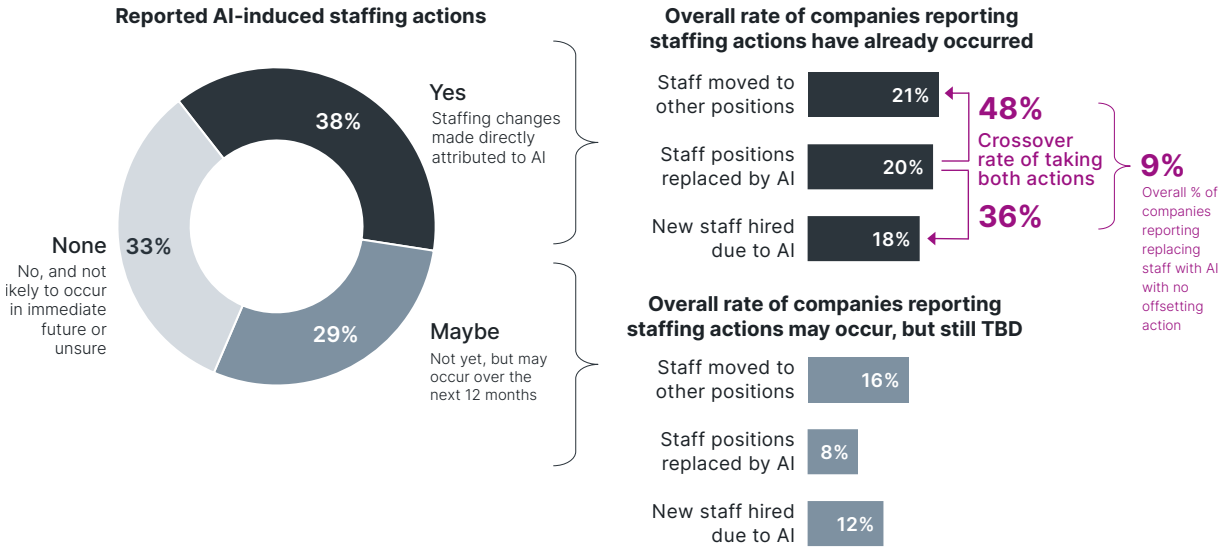
Or, a C-suite executive at a large company not having a truly deep understanding of the written and unwritten rules of how rank and file staff complete work tasks. With this blind spot, a C-suite executive may view AI automation as a viable substitute for certain employees. The company deploys an AI solution and quickly discovers there is far more complexity and ambiguity in the job role requiring human-level judgement not well suited for AI.

The CompTIA research in this area attempts to understand the actions companies report taking or plan to take over the next 12 months. Survey research should never be viewed the same way as an audit or other verifiable method of analysis. Even with careful survey design and strict methodological controls, self-reported data always comes with a degree of known and unknown variability.

According to the data, 38% of companies overall indicate they had taken some type of staffing action directly attributed to AI. Another 29% indicate they may take action in the coming year. Given the reported AI utilization rates within companies, these figures do not seem unreasonable.

The dynamic described previously of AI having the potential to simultaneously change jobs, add jobs, and displace jobs is apparent in the survey data. Among the 20% of companies reporting an incidence of replacing staff positions with AI[5], 48% also moved staff to other positions. Another 36% added new staff due to AI. The net of companies that only eliminated staff to replace with AI works out to approximately 9%, so a relatively small percent of companies versus the assertions of the most alarmist headlines.

Assessing the net effect of staffing actions attributed to AI



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Among the 20% of companies reporting an incidence of replacing staff with AI, with incidence potentially meaning a single replacement, the data points to AI's reach across business functions. Again, the data in the accompanying chart depicts incidence rates, which could mean a single headcount affected by the substitution of an AI solution. The data should not be interpreted as the percent of all positions displaced.

With most companies reporting offsetting staffing actions of either shifting staff to other roles or hiring new staff, the net effect is more neutral than what could be perceived if viewing the staff reduction incidence data without appropriate context.

Taking this one step further, suppose the 20% incidence rate companies reported in the survey was applied to the total base of companies in the U.S. For 2025, the U.S. Bureau of Labor Statistics estimates there are approximately 11 million establishments with payroll, meaning they have paid employees[6]. Applying the 20% incidence rate, which assumes a 1:1 staff reduction ratio, yields nearly 2.4 million workers displaced by AI. A big number that does not pass the eyeball test in the context of the still low U.S. unemployment rate.

If narrowing the focus to establishments with 10 or more employees, applying the 20% incidence rate reported by companies in the survey to a base of 2.3 million yields about 460,000 worker displacements due to AI. Again, that is a 1:1 ratio and there are inevitably situations where segments of companies are reducing their staffing levels due to AI by more than one. When accounting for the scenarios of companies shifting workers to other roles or adding new workers, the net remainder of a 9% incidence rate yields about 200,000 worker displacements due to AI across the entire U.S. workforce. That is still a big number and obviously always a difficult situation for the workers displaced, but in the context of the overall U.S. workforce it's less than a tenth of a percent (0.1%).

> "The numbers don't quite add up. There are disconnects between the staffing actions companies say they are making due to AI and what is observable in the labor market data."

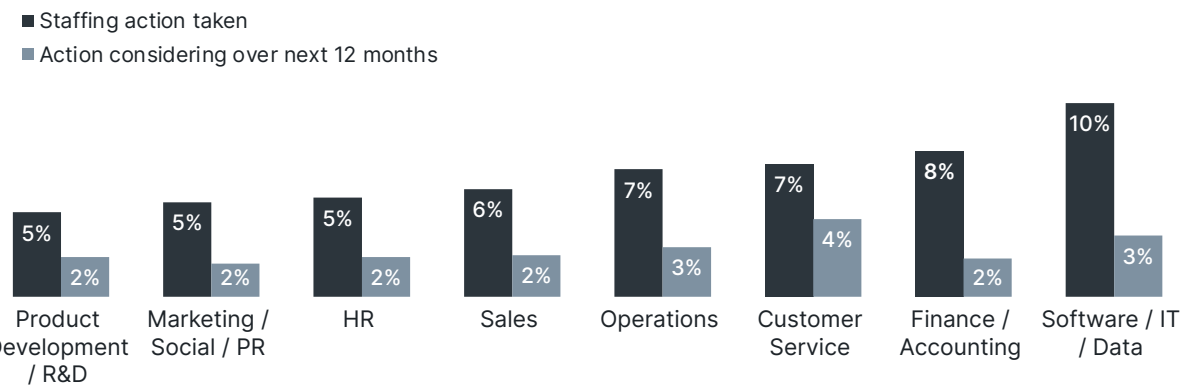
In reviewing analysis of job roles most likely to be affected by AI, software development positions stand as a flash point in many discussions. Because coding-related jobs have been such a large, fast growing, and prestigious component of the workforce, any potential diminishing of these positions raises concern. A large-scale survey conducted by StackOverflow found 81% of professional software developer respondents use AI tools in some way on the job[7]. Junior developers in the early stage of their career reported the highest rates of AI-enabled coding assistants.

Similar to the findings for many job roles where there is the potential for an AI substitute, there are two sides to the story. On the one hand, AI has clearly shaken up both the existing and future software development workforce. On the other, the data is still murky in quantifying the impact[8]. The overall incidence rate of 10% falls lower when accounting for the offsetting actions of companies moving workers to other positions or hiring new workers.

Staff reduction incidence rate companies report attributing to AI

Job role categories with at least one incidence of a staffing reduction

IMPORTANT METHODOLOGICAL NOTE: the percentages represent incidence rates, meaning a company have have eliminated a single staff person or multiple staff due to AI. The percentages should not be interpreted as the total volume of staff reductions.



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies | Calculated as percent of overall base of respondent companies

To complicate the issue even further, nearly two-thirds of companies acknowledge some degree of using AI to provide cover for business decisions, such as staff reductions or cost cutting. Put another way, segments of companies imply they were going to make staff reductions or pursue cost cutting with or without the presence of AI.

In fairness, though, just about every business decisions is multi-faceted with various intertwined factors involving the revenue or cost components of profitability.

Not so fast...companies using AI as an excuse for unpopular business decisions

64%

Among companies that made staffing changes, 64% acknowledge some degree of using AI to provide cover for unpopular business decisions, such as staff reductions or cost cutting

5 Career ladder conundrum in the age of AI

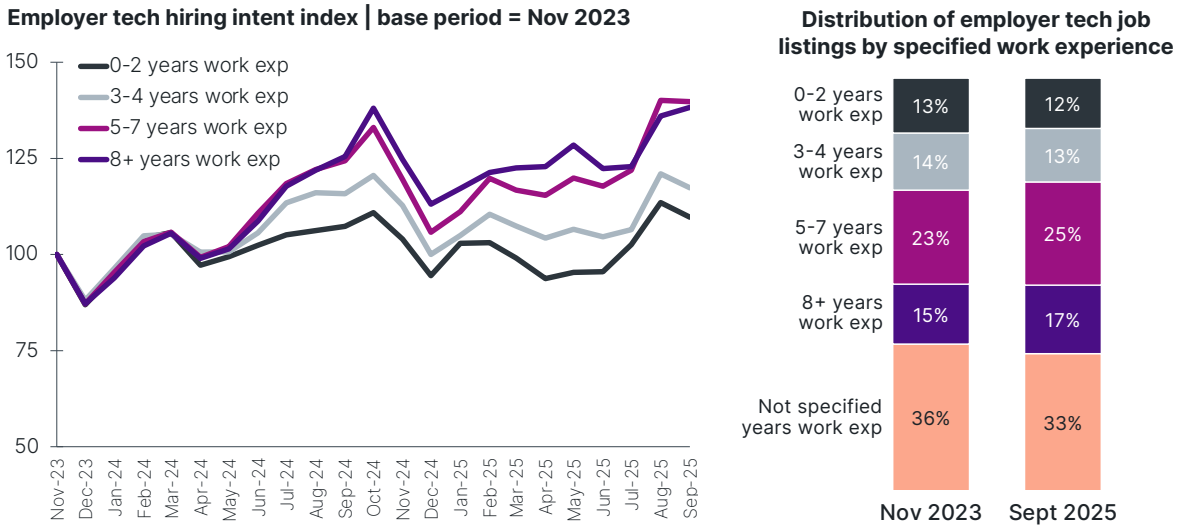
The career ladder model is a useful concept in evaluating the factors that influence career progression over time. Picture workers reaching for the first rung of an entry-level job and then striving to get ahead with the next rung, and so on. In an ideal model each subsequent job role propels the worker to higher rungs of expertise, responsibility, earnings or job satisfaction.

In times of low unemployment and strong employer demand for labor, "first rung" jobs may be plentiful. Even if not always apparent, all jobs provide valuable building block skills, such as time management, discipline, fortitude, and interpersonal skills, to name a few. From "boring" summer jobs during high school to internships to volunteering, career ladder first rungs may take many forms.

When the pendulum swings the other way, such as during periods of economic weakness or geopolitical uncertainty, segments of employers may hunker down with hiring freezes or layoffs. This, of course, means fewer "first rung" job opportunities for workers looking to get a start. During extreme periods of economic duress, such as the Great Recession of 2008 or the COVID pandemic, large numbers of eager entrants into the workforce may have missed their window and faced a situation of playing catch-up to get their career progression back on track.

CompTIA analysis of employer job listing data indicates a modest downward shift in the composition of hiring intent for early-stage workers. The question is to what degree this shift is due to AI versus other factors, such as companies scaling back hiring in general. As discussed previously, lots of gray areas exist with intertwining factors making it difficult to assign attribution to a single, isolated cause.

Employer tech hiring intent by specified work experience levels



Source: CompTIA AI's Impact on Productivity and the Workforce study | CompTIA analysis of Lightcast job posting data | US market

From the survey research, among companies reporting some degree of staff reductions attributed directly or indirectly to AI, junior-level and mid-level staff are most affected. Although, it is worth pointing out that 28% of senior-level staff were also affected, so much more of a bottom-to-top effect than commonly portrayed in the prevailing narrative.

Career ladder disruption threatens talent pipeline

9 in 10

Companies reporting concern over the possibility of AI threatening early-stage career ladder opportunities and talent pipeline

Net % of respondents indicating concern (57% very concerned + 34% somewhat concerned). Calculated among base of companies reporting taking staffing action due to AI.

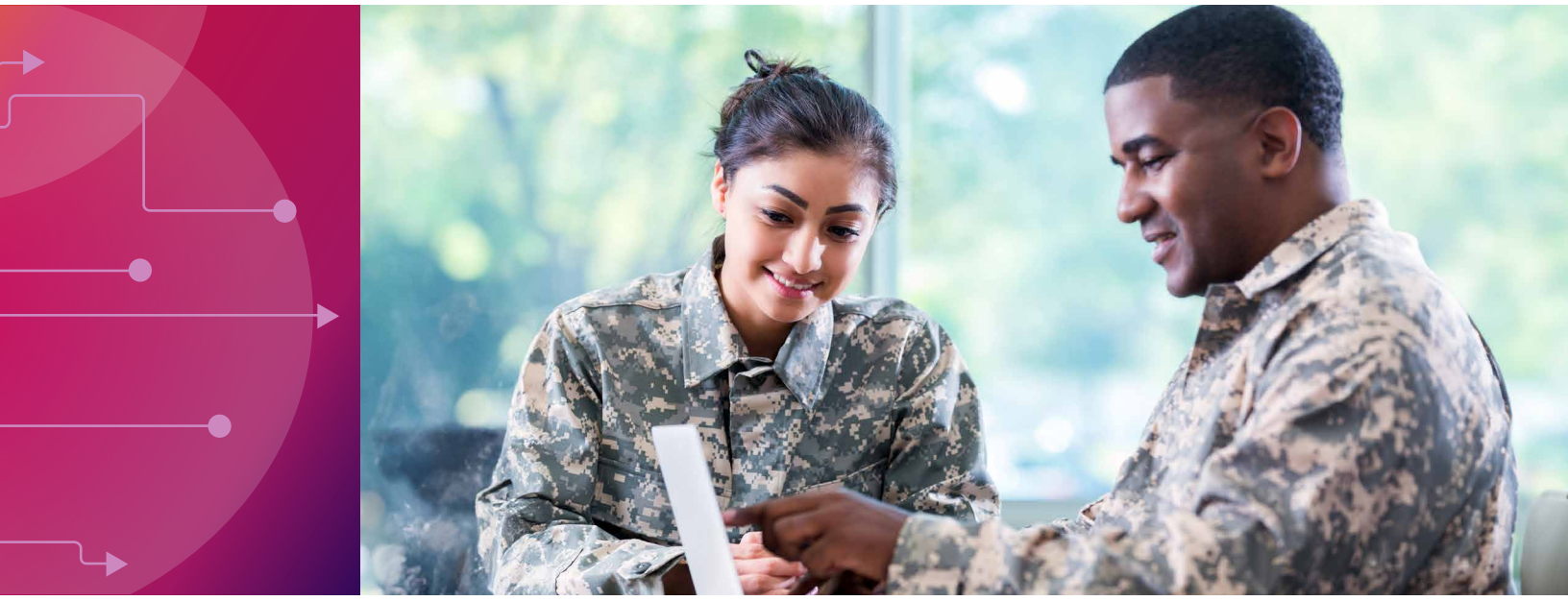
Companies acknowledge a number of unfortunate realities with the first rung segment of the workforce. With little seniority, experience and on-the-job expertise, junior-level workers can be vulnerable on many fronts. Whether hiring freezes or cost-cutting staff reductions, some companies will decide it makes the most business sense to start with junior-level staff. Others may focus on the most expensive staff, which tend to be those in senior positions.

In the context of AI, the survey data suggests multiple factors at play (again). Among companies making staffing moves affecting junior-level workers due to AI, they cite factors ranging from skill to replaceability to perceived value to the organization.

While these actions may meet the short-term goals of cost or headcount reduction, there are obvious long-term risks. An overwhelming number of companies (91%) express concern over compromising the early stages of the talent pipeline – despite their own culpability in contributing to the problem.

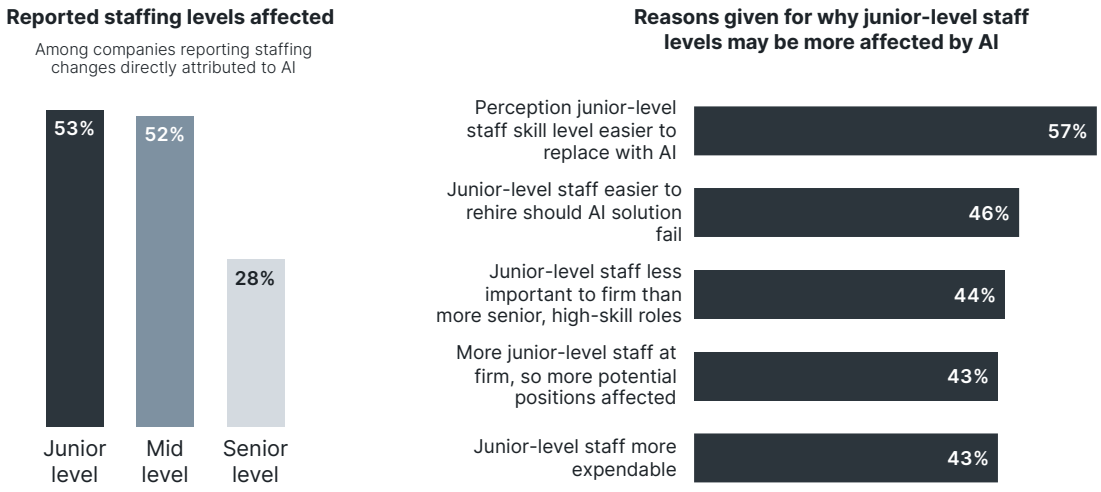
A smaller pool of junior-level staff means a smaller pool of workers developing their skills, expertise, and experience to progress to more advanced roles. The effects may not be felt immediately, but over time, companies may find themselves competing intensely to recruit from the same limited field of workers with the desired levels of skill, expertise and experience.

The traditional pyramid-shape of the labor market provided a large base of workers to develop and mold into future high-skill, high-experience employees. Diminishing the base could result in more of a diamond-shape labor market, whereby there are fewer feeder roles at the base and relatively larger middle segment. Again, a tough model to sustain over the long-term.



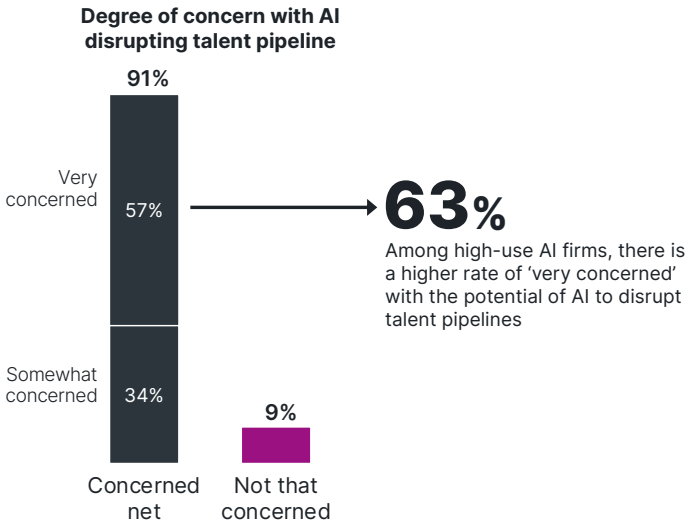
There are no easy answers to this potential scenario. Will the labor market correct itself and revert to historical norms? Will companies collectively recognize the need to invest in workforce development strategies? Will new skills-based models emerge in hiring and career ladder progression? Will post-secondary educators and training providers find new ways to work with employers to ensure student knowledge, skill and task completion (KST) align with market needs? Much work remains across key stakeholders and society at large in finding viable solutions to these critical future of work challenges.

AI-induced staffing changes affect all levels of staffing to some degree



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Concern over long-term implications of AI's impact on early rungs of career ladder



Source: CompTIA AI's Impact on Productivity and the Workforce study | n = 1,200 respondents employed with US companies

Methodology

CompTIA's *AI's Impact on Productivity and the Workforce* study was conducted via a quantitative survey fielded online during the period September 9th through 30th, 2025. The full survey sample of n=1,133 was segmented across target U.S. industry sectors and U.S. job roles. The full sample will have a margin of error proxy of approximately +/- 2.7 percentage points. Subsegments of the data will have higher margin of error.

As with any survey, sampling error is present and will be higher for subsegments of the dataset. While non-sampling error cannot be accurately calculated, precautionary steps were taken in all phases of the survey design, collection and processing of the data to minimize its influence.

Firm size classification by staffing count used in this report:

10-99	Small firms
100-499	Medium firms
500-999	Large firms
1,000+	Very large firms

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Sources

1 U.S. Census Bureau's Business Trends and Outlook survey

2 The 79% is calculated among this subset of companies; when calculating among the entire base, it works out to 22%

3 Paraphrasing a quote attributed to Ernest Hemingway

4 Technological unemployment and John Maynard Keynes

5 Calculated on the total base of companies

6 U.S. Bureau of Labor Statistics QCEW data series

7 Stack Overflow 2025 Developer Survey

8 Carnegie Mellon University School of Computer Science, Will AI Make Software Engineers Obsolete? Here's the Reality

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