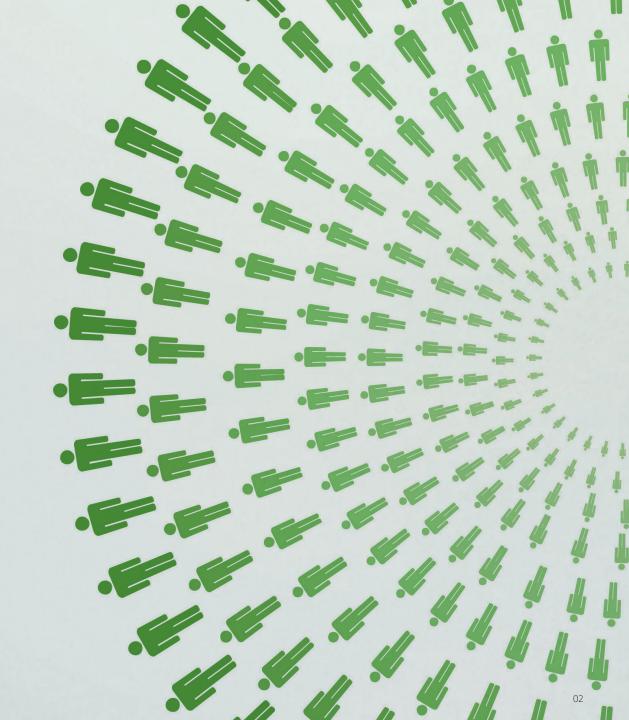


Organizations not investing in the human edge through work redesign may lose their competitive edge as AI scales.

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Introduction

Artificial intelligence (AI) is dominating everyone's attention—from executives and workers to investors and governments. Organizations are betting on the technology, with 78 percent saying they expect to increase their overall AI spending in the next fiscal year.¹

While some organizations are seeing phenomenal results, most aren't realizing a return on their investments at the speed they need.² The potential for AI to create exponentially better outcomes is real—so how can it be realized?

78% of organizations expect to increase their overall AI spending in the next fiscal year.

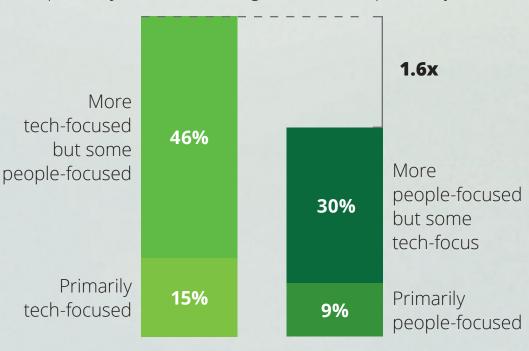
The problem for most organizations is that while they are making investments in AI, they aren't making commensurate investments in their people and work design. An examination of Deloitte client expenditures on AI initiatives found that most organizations are devoting 93 percent of their spending to data, technology, and infrastructure and only 7 percent on people-related issues such as redesigning work, training, change management, and reimagining roles and career paths to reflect the impact of AI.³

In a recent Deloitte survey of 100 CXOs, the majority of organizations (59 percent) are taking a tech-focused approach.⁴ But those taking such an approach are not realizing returns on Al investments that exceed expectations, according to our research. Companies that prioritize human-machine collaboration through redesigned roles, processes, and operating models are significantly more likely to realize measurable returns on Al compared to those taking a technology-first approach.

In a recent Deloitte survey of 100 CXOs, the majority (59%) report that their organizations are taking a tech-focused approach to Al.

Organizations with a tech-focused approach aren't exceeding ROI expections from AI

% of companies with a people-first or tech-first approach to AI who report they are not exceeding their initital expections from AI



Source: Deloitte survey of 100 U.S. CXOs, 2025.

Al's value isn't realized at the speed of technology—it will only move at the speed of people.

Indeed, when asked about the leading obstacles to scaling AI value, C-suite executives cite primarily people factors—including leadership alignment, workforce readiness, and lack of work redesign. Trust is an important factor, too; workers that trust the agents they work with are 10 times more likely to say that agents are critical to their ability to create value.⁵

Al's value isn't realized at the speed of technology—it will only move at the speed of people.

Challenges to realizing sustainable value from AI at scale

What are the biggest barriers to realizing sustainable value from AI at scale? (Select all that apply.)

51%

Leadership / strategic misalignment

47%

Limitations of technology integration and data

41%

Workforce readiness (skills, training)

39%

Lack of work redesign and human-machine integration

38%

Lack of worker buy-in, adoption, or understanding

37%

Governance, risk, and compliance concerns



None of these

Source: Deloitte survey of 100 U.S. CXOs, 2025.



Why a tech-focused approach leaves value on the table

Based on analysis of 18 months of conversations with CXOs related to AI, three sets of common concerns stand out: finding measurable ROI from investments, breaking free from related decision paralysis, and getting execution right. Analysis also reveals the root causes and assumptions holding organizations back.

Technology-first thinking is one of many *antipatterns* we identified: repeated, learned responses to common problems that may seem useful at first but reliably produce poor outcomes.⁶ Taking a tech-only approach in which AI is layered onto legacy processes can limit adoption, create inefficiencies, and leave significant value out of reach. Instead, strategy must be value-led—keeping an organization's ultimate outcomes always in mind. Strategy can't be only technology-first, it must incorporate a human focus because trust, experience, and thoughtful work design are key to AI value realization.



Technology-first thinking

Training vs. learning

Process traps

Siloed implementations

Leader decision paralysis

Shadow adoption

What's stopping organizations from seeing the expected value of AI? Antipatterns.

Prioritizing technology over everything else can lead to ineffective solutions and implementation failures.

Relying on one-time, step-based training can hinder a technology that shifts and adapts at every use.

Believing consistent steps guarantee good outcomes runs counter to Al's capacity to achieve them through variable paths.

Implementing technology in silos can hinder collaboration and create inconsistencies across departments.

Succumbing to the fear of unknowns without fully understanding Al's capabilities and constraints can keep pilots from scaling.

Using unauthorized AI tools or not disclosing AI tool use (a common problem at all levels of the organization) creates risks like data leaks, exposure to sensitive information, and the spread of biased or inaccurate AI outputs.

Where do these antipatterns come from? They emerge when organizations repeat practices that have been useful with prior technology implementations when implementing Al. But Al is fundamentally different in its nature, adoption, and impact than virtually any other technology solution organizations have encountered. Unlike prior technologies that apply fixed, rule-based logic, Al makes predictions or decisions using probabilistic models based on statistical patterns from data that reflect confidence levels, not certainties. And it may not produce the same output every time—even with the same input.

Yet organizations are still playing by deterministic rules, and that mismatch is what triggers antipatterns such as the process trap. A focus on consistency and defined steps can be a hindrance because Al doesn't produce consistency—its power is in finding new and better paths to outcomes. Forcing Al into rigid workflows kills its advantage.

Al also does something that all previous waves of technology didn't: it learns, evolves, and interacts. Every new study on Al ROI says the same thing: realizing its value requires intention, time, and thought—and a significant supply of imagination and endurance.⁷

To put it simply, where previous tech solutions were systems of record, Al solutions are systems of *intelligence*. Where ERP and cloud technologies focus on integration, Al unlocks *innovation* and *iteration*. And where previous technologies had specific use cases, Al is a general-purpose solution with nearly endless applications.

Despite these fundamental differences, only 24 percent of C-suite executives say AI is very different from other tech implementations. To truly stand out, organizations must focus on how that fundamentally different technology is used—not just implemented—to change the way work is done and develop a scalable *human edge* that multiplies the value humans and machines create when working in synergy.

Organizations must use AI to to fundamentally change the way work is done and develop a scalable human edge that humans and machines create when working in synergy.



Al's value starts with humans

Al's potential is transformative. The capabilities in engineering, data, and infrastructure required to realize that potential are significant. Yet any technology—especially something as increasingly ubiquitous as Al—is replicable. People aren't. Humans create competitive differentiation through adaptivity, creativity, and judgment amid uncertainty. Many have feared Al might erode these uniquely human strengths, but these are precisely the capabilities that can never be commoditized—and they're essential to unlocking Al's value. While Al can amplify uniquely human strengths, it can't replace them.

While AI can amplify uniquely human strengths, it can't replace them.

Any organization can invest in AI, but without a commensurate investment in the people using it, the result is just the table-stakes tools of a level (and overpopulated) playing field. When everyone has the same technology and uses it in the same way, AI can become a commodity—with even the fastest movers soon becoming one of many. To achieve enduring differentiation through AI in an increasingly democratized landscape, organizations must scale the human edge.

Value with AI comes through the thoughtful design of work and human-machine interactions at the ground level, coupled with the invention of new business models, products and services, partnerships, and ways of working at the macro level—all based on a reimagination of work that brings the best of humans and machines together in concert. Uniquely human capabilities like imagination are a critical—yet often overlooked and underestimated—source of advantage.⁹

It's people who provide the vision, experience, and confidence necessary to develop AI as a competitive advantage. Accordingly, organizations must approach the relationship between humans and machines as a discipline of design: one that holds trust as a core tenet and weaves the work of humans and machines together as an exponential driver of value.



Humans x Machines: A value multiplier

A common narrative surrounding AI today sees humans and machines working alongside each other as colleagues. Deloitte's 2025 Global Human Capital Trends report finds the workforce is ready for that partnership: 6 in 10 workers already think of AI as a coworker.¹⁰ In this model, humans and AI each do what they do best, with a clear division of labor. Often, this takes the form of AI performing more routine tasks so that humans are freed up to perform higher-level work.

6 in 10 workers already think of Al as a coworker.

Ultimately, the real, differentiating value of AI solutions lies in the combination and synergies that arise when people work *with* AI with intention and skill. It's the difference between humans

plus machines and humans times machines. Beyond automating, augmenting, or collaborating with humans to perform work, in this next step of human and machine convergence, AI becomes woven into the fabric of work itself, with people working with AI iteratively together.

As AI permeates both work and the workforce like never before, common wisdom is that AI—in particular Generative AI—acts as a great equalizer, empowering individuals to perform at higher levels, regardless of background or formal expertise. The idea is that AI can scale and democratize knowledge and accelerate individual decision-making and execution, leveling the playing field for less experienced or expert workers and enabling them and their organizations to go further, faster, and at less cost.

However, emerging research¹¹ suggests Al is more amplifier than equalizer, magnifying both the best and worst of existing processes, data, and people. The already-expert, the experienced, the creatives—these workers do amazing things when they learn how best to work with Al, recognizing the "jagged frontier" of what it can and can't do well.¹² Workers who are less experienced are most at risk of low-effort, passable-looking

work that ends up creating more work for their coworkers and that lacks the substance to meaningfully advance a given task.¹³ They are also at risk of short circuiting their own growth and development in the process.¹⁴

Without commensurate investments in designing human and machine interactions in a way that ensures high-value outputs, the potential of humans times machines can move in the wrong direction—multiplying poor outcomes instead of positive ones.

Effective human and machine interaction is not intuitive. It won't happen by accident or default. The organizations that master this level of work design will likely outperform those that do not. For example, one study finds that humans working closely and iteratively with AI can boost performance by up to 29 percent when compared to people and AI working on their own.¹⁵ The human element makes that difference.

So, how can organizations reach the value-driven nexus of humans *times* machines? Realizing Al's ROI isn't a technology problem—it's a work-design problem.

Medtronic: Reimagining the function of HR with Al

When Medtronic set out to reinvent HR, it didn't ask how to add AI to today's work—it reimagined what the function could become with agentic systems at its core. HR leaders set a digital vision informed by the latest tech, then kicked off a three–year program to create scaled capacity so people could make faster, data-driven decisions and execute work effortlessly using agentic capabilities.

Instead of bolting AI onto legacy workflows, Medtronic organized around outcomes, skills, and intelligent collaboration—mapping 13 end-to-end experiences and prioritizing over 170 discrete, actionable use cases. The company selected Moveworks as the agentic AI platform to deliver most of those, with an agile roadmap that first frees up capacity, then reinvests it into higher-value capabilities. That way, AI agents handle high-volume execution, while humans manage exceptions, experience, and strategy.

Crucially, this was never a technology-first initiative. Medtronic started with a conservative value case showing up to a 5x financial return potential, with clear governance, transparency, and continuous learning built in from day one. The company is on track to realize the first tranche of value in early 2026 and is starting to evaluate where to reinvest capacity versus where to deliver hard-dollar cost savings.

Realizing Al's ROI isn't a technology problem—it's a work-design problem.



Unlocking greater value through work design

It's only by changing the work itself that organizations will make the fundamental shifts that can unlock Al's real value. Think of it is this way: Al adoption without work redesign is like putting a jet engine on a horse-drawn carriage. Al adoption with work redesign is like redesigning the entire vehicle to enable the engine to operate at full power.

However, few organizations today—only 16 percent—are fully integrating work design in their Al implementation strategy, which means most are sacrificing key results. Our research reveals that those that embrace work design are twice as likely to exceed their ROI expectations when it comes to Al compared to those that don't.

Consider the one study that found 95 percent of organizations fail to see a return on investment on their Al pilots—what are the remaining 5 percent doing right? They are paying attention to

the role of managers in integrating AI deeply into the work itself, reimagining how work is done aided by GenAI that has memory and ongoing learning loops.¹⁷

Work design is all about the choices we make in the journeys of work—and there are many, many choices to be made. Work design is about shaping what work looks like—not just what gets done, but how it gets done, by whom, and under what conditions. Organizations already design work for technology and people separately—it's time to design and build work for both, interacting together.

Organizations that embrace work design are twice as likely to exceed their ROI expectations when it comes to AI compared to those that don't.

In general, decisions in work design can be grouped into the following broad categories:



Scope and outcomes of work

It's crucial that organizations consider and define what they're trying to achieve from work design in terms of outcomes—and not outputs. That means examining the results of designing work with AI that move the business (e.g., revenue, margin, risk) rather than the completion of steps or tasks.



Who, what, when

Once organizations define the outcomes they want to achieve and the work that needs to be done to get to these outcomes, they should then ask who does the work—humans, machines, or some combination of both? What distinct roles do each play, and what tasks do they perform? How will Al affect team composition, and how will humans and machines work together?



Shaping the work environment

Questions about work design don't stop at who does the work—they also cover *where* the work happens. Machines continue to change the fabric of physical and remote locations, and many organizations are utilizing design firms to help optimize office spaces that involve human-machine collaboration.¹⁸

Leaders seek a wide array of business and human outcomes from AI.

How does your company expect to capture value from AI projects? (Select all that apply.)

55%

Improved efficiency / cost reduction

52%

Improved speed / agility

52%

Improved customer relationships

51%

Improved organizational growth or innovation

49%

Improved workforce development and growth

41%

Improved workforce wellbeing

1%

Other

Perhaps one of the most critical—yet most commonly overlooked—elements of work design is the human-to-machine relationship. Organizations intentionally design human-to-human relationships by making choices around spans of control for managers and the degree of autonomy for workers. And increasingly, organizations are starting to pay attention to the ways machines interact with each other, especially amid the proliferation of agentic Al. Humans' relationships with machines deserve just as much attention.

Underprioritizing the design of human-machine interactions can have serious consequences. Deployed without intention, Al can suboptimize not only business outcomes but human outcomes, as well. Mismanaged human-machine relationships can also contribute to burnout (for example, when people need to teach machines on top of their existing workloads), reduce trust, and erode critical thinking skills.¹⁹

To optimize the relationship between people and AI, organizations should explicitly define the types of interactions they want workers to have with AI and support them in achieving healthy, productive relationships with the technology. For example, organizations may choose to have AI take a first pass

at a task, with humans reviewing and refining the initial output. As Al takes on rote and routine tasks, organizations may need to help people develop deeper problem-solving skills and reward them for the more difficult work required to best support this type of relationship.

The design of human-machine collaboration is a spectrum with seemingly endless outputs. The table on the following page details some of the many ways organizations can tailor those relationships.²⁰

The design of human-machine collaboration is a spectrum with seemingly endless outputs.

Lemonade: The human-agentic workforce in action²¹

When insurance provider Lemonade launched in 2015, it anticipated the Al-powered future of work. Long before agentic Al became a boardroom priority, Lemonade embedded Al agents into the very core of how the business operates. Today, the company's experience is a powerful testament to what's possible when human and agentic systems are designed to perform as one.

From the start, Lemonade chose not to merely digitize insurance but to reinvent it, building an Al-native enterprise where digital agents weren't experiments at the edge but central to the company's strategy. Lemonade didn't bolt Al on to legacy workflows. Nor did it replace people. Instead, the company designed roles and operating models to enable scalable performance through human-agent collaboration by design. Rather than focusing on task-based roles and job descriptions, the company organized work around outcomes, skills, and intelligent collaboration.

This was never a technology-first initiative. The company's leaders approach AI not as a solution to implement but as a lever to drive speed, transparency, and trust—putting human impact and customer experience at the center with AI as the enabler. The result: a radically simplified, customer-centric model in which AI enables (not replaces) human value.

The many ways to design Human x Machine interactions	
Type of interaction	Definition
The Supervisor	An algorithm allocates tasks—for example, a ridesharing company dispatching rides to drivers who have a few seconds to accept or reject a request without knowing the destination or fare. Performance and pay are determined by Al. An algorithm also decides when morale-boosting motivational messages are needed.
The Prioritizer	An algorithm addresses a list of tasks—sales leads to be pursued, medical problems to solve, fundraising opportunities to follow up on—and ranks them in terms of their importance or potential value. The human worker then pursues them in order, sometimes with suggestions from the machine about how to do so.
The Personal Coach	Al discovers the human worker's strengths and opportunities for improvement on a specific task (e.g., a telephone or video sales call), resulting in a continuous engagement with Al to improve the person's performance.
The Muse	Multiple creative suggestions are prompted by a human, generated by a machine, and developed in an ongoing collaboration. Examples include design suggestions based on architect prompts and Al-driven generative design.
The Collaborative Decision-Maker	Complex decisions (e.g., medical diagnoses) are made in a dialogue between AI and humans. In places where AI can improve decisions by enumerating available options, it helps people weigh them objectively and suggests the highest probability of successful action.
First Pass at a Task	A machine performs the first pass at a task—a life insurance application, a medical coding categorization, an analysis of an MRI scan—and makes a preliminary decision or judgment. The human worker reviews the analysis and determines if it is correct. The order of this sequence could also be reversed.
The Triage Nurse	Al assesses the problem (e.g., medical symptoms) and decides whether a human consultation is necessary; if not, it dispenses advice to address the relatively minor problem.
The Doppelganger	Machines learn from a human or group of humans to mimic their behaviors and decisions so that the human(s) can be replicated digitally.
The Subordinate	Al systems perform menial, structured tasks (e.g., extracting key data from documents or faxes) under human supervision and review.



Work design as a discipline

As organizations think intentionally about the ways in which humans and machines collaborate, work design must be approached as a discipline that requires skills and expertise, informed by data.

Human-centered design is not new—it's guided machine interfaces since the industrial revolution. Few organizations, however, design for optimal human-machine interactions. According to a Deloitte survey, only half of leaders say they recognize the need to study how different types of workers interface with AI to help create better human and business outcomes.²²

HR has a critical role in bringing the human dimension into work design. Yet according to our survey of CXOs, the IT function is over three times more likely than HR to lead Al-driven work redesign.²³

The IT function is over three times more likely than the HR function to lead Al-driven work redesign.

Designing work for the AI era may become the defining imperative for the HR function: according to a Deloitte survey, 72 percent of business and HR leaders believe that the function will shift beyond managing traditional employment activities to orchestrating work.²⁴ Another 11 percent say they believe that the role of chief human resource officer should shift to being "chief human and machine resource officer."²⁵

Other disciplines will be needed as well, including IT, finance, strategy, and operations—all combining their expertise to shape the ways work gets done. In many ways, work should be owned, iterated, and measured like a product, with a clear roadmap, user feedback, and adoption goals. And as a product, work design must center around the people who know it best—the managers and workers who do the work and experiment with it every day.

IT and operations lead Al-driven work design the most

Which of these disciplines at your company are leading work redesign as a result of implementing AI the most? (Rank order of disciplines that are involved.)



Source: Deloitte survey of 100 U.S. CXOs, 2025.



The new frontier of Humans x Machines

Any work reinvention—especially one at the scale of the Al revolution—brings impact beyond just the scope of work itself. As organizations redesign work to maximize the collaborative relationship between people and Al, it's important to remember that work isn't the only thing changing—the organization will, too. New structures will be needed to bend (and not restrain) capabilities yielded by the humans-times-machines relationship. Decision-making and management will be similarly transformed; as machines are given more autonomy, human oversight must scale to match.

As machines are given more autonomy, human oversight must scale to match.

Al is a non-linear technology that can offer non-linear results. Unlike previous technologies, its impact, learning, and value creation do not scale in a straight, proportional way with inputs like time or resources spent. Al is non-linear because it compounds, scales, and transforms—not because it merely improves.

But simply adding AI on top of existing workflows doesn't unlock the potential for the compound returns that the technology can power. Nor does adding it as another performer of work alongside humans without engaging humans in how to work best with it.

To generate the kinds of non-linear returns AI is capable of, organizations need to consider redesigning work so that humans and machines create a multiplier effect on one another. The difference between "Humans + Machines" and "Humans × Machines" lies in whether the technology simply assists humans or amplifies them. Because the future belongs to those who use AI to design work with the human edge in mind.

The future belongs to those who use AI to design work with the human edge in mind.

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End notes

- Now decides next: Generating a new future, Deloitte Insights / Jim Rowan, Beena Ammanath, and Costi Perricos, 2025.
- 2. See, for example, a study that found that 95 percent of investments in GenAl have produced zero returns: *State of Al in Business 2025*, MIT NANDA / Aditya Callapally et al., 2025. See also a study that found that while private GenAl investment alone hit \$33.9 billion globally, the measurable financial return so far is limited: *Artificial Intelligence Index Report 2025*, Stanford Institute for Human-Centered Artificial Intelligence, 2025.
- 3. Analysis of Deloitte U.S. client expenditures on Al initiatives during the time period June–August, 2025.
- 4. Deloitte survey of 100 U.S. CXOs, 2025.
- 5. TrustID Workforce Al Index, May–July, 2025.
- 6. My Unwavering Fascination with Anti-Patterns, LinkedIn / Andrew Greiner, 2023.
- 7. For further reading, see: (1) Cost, productivity gains and the human factor a CFO's guide to Al investment, World Economic Forum / Jatin Dalal, 2025; (2) Beyond the hype: Capturing the potential of Al and gen Al in tech, media, and telecom, McKinsey & Company / Venkat Atluri et al., 2024.
- 8. Deloitte survey of 100 U.S. CXOs, 2025.
- What do organizations need most in a disrupted, boundaryless age? More Imagination, Deloitte Insights / David Mallon et al., 2024.
- 10. Al is revolutionizing work. You need a human value proposition for the age of Al, Deloitte Insights / Sue Cantrell, Jason Flynn, and Nic Scoble-Williams, 2025.
- 11. Why Al Will Widen the Gap Between Superstars and Everybody Else, The Wall Street Journal / Matthew Call, 2025.
- 12. Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality, Harvard Business School / Fabrizio Dell'Acqua et al., 2023.
- 13. Al-Generated "Workslop" Is Destroying Productivity, Harvard Business Review / Kate Niederhoffer et al., 2025.

- 14. Predicts 2025: Al and the Future of Work, Gartner / Arun Chandrasekaran et al., 2025.
- 15. Quantifying Human-Al Synergy, PsyArXiv, / Christoph Riedl and Ben Weidmann, 2025.
- 16. Deloitte survey of 100 U.S. CXOs, 2025.
- 17. State of Al in Business 2025, MIT NANDA / Aditya Callapally et al., 2025.
- 18. What Is an Office For?, Harvard Business Review / Scott Berinato, 2020.
- 19. *Al is revolutionizing work. You need a human value proposition for the age of Al*, Deloitte Insights / Sue Cantrell, Jason Flynn, and Nic Scoble-Williams, 2025.
- 20. Strengthening the bonds of human and machine collaboration, Deloitte Insights / Sue Cantrell, Thomas H. Davenport, and Brad Kreit, 2022.
- 21. Work, Reworked: What it Takes to Win in the Age of Agentic AI, Deloitte Touche Tohmatsu Limited (DTTL) / Steve Elliott et al., 2025.
- 22. Al and the workforce: Navigating Al adoption and workforce impacts, Deloitte webinar / Sue Cantrell and Kyle Forrest, 2024.
- 23. Deloitte survey of 100 U.S. CXOs, 2025.
- 24. The skills-based organization: A new operating model for work and the workforce, Deloitte / Sue Cantrell, Michael Griffiths, and Robin Jones, 2022.
- 25. Al and the workforce: Navigating Al adoption and workforce impacts, Deloitte webinar / Sue Cantrell and Kyle Forrest, 2024.

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