



Hybrid expertise: Building the next-gen workforce



The big picture:

The workforce challenge isn't a hiring problem, but a knowledge problem.

Industrial organizations are facing two shifts: a **surge in retirements**, and an **accelerated wave of AI adoption**. One removes decades of operational expertise from the workforce. The other increases the value of that expertise by embedding it in digital systems. To maintain operational stability, leaders must move beyond simple tech adoption and prioritize upskilling a new generation of hybrid industrial workers. Blending digital intelligence with physical frontline know-how.

In light of this drastic workforce transformation, industrial organizations must be proactive. The coming wave of retirements is only the beginning. As staffers face heightened expectations for productivity, the challenge for decision-makers will be ensuring that undocumented expertise isn't forgotten. AI offers a disruptive opportunity to meet this crisis head-on.

This requires more than an updated hiring strategy. It's an ongoing, high-stakes project that demands continuous skill-building to keep pace with evolving technologies and applications. With AI adjusting who's working and how, the industrial space needs platforms capable of collecting and organizing tacit institutional knowledge that goes deeper than data to maintain stability through widespread uncertainty and economic headwinds.

AI is creating a workforce comfortable moving between data, technology and frontline operations. Organizations developing these talents today will be best placed to succeed in the future.



Despite the fast-approaching wave of retirements,

less than a third

(28%) of organizations have fully digitized their critical operational knowledge.

The imminent demographic cliff

Frontline industrial workers are staring down a [demographic cliff](#). Companies will be expected to accomplish more with fewer hands on deck. Without the proper preparation, they risk a failed handover and the loss of valuable unwritten expertise.

On the whole,

seven in ten

organizations are not retaining the knowledge that actually matters for the future operation of these critical facilities.

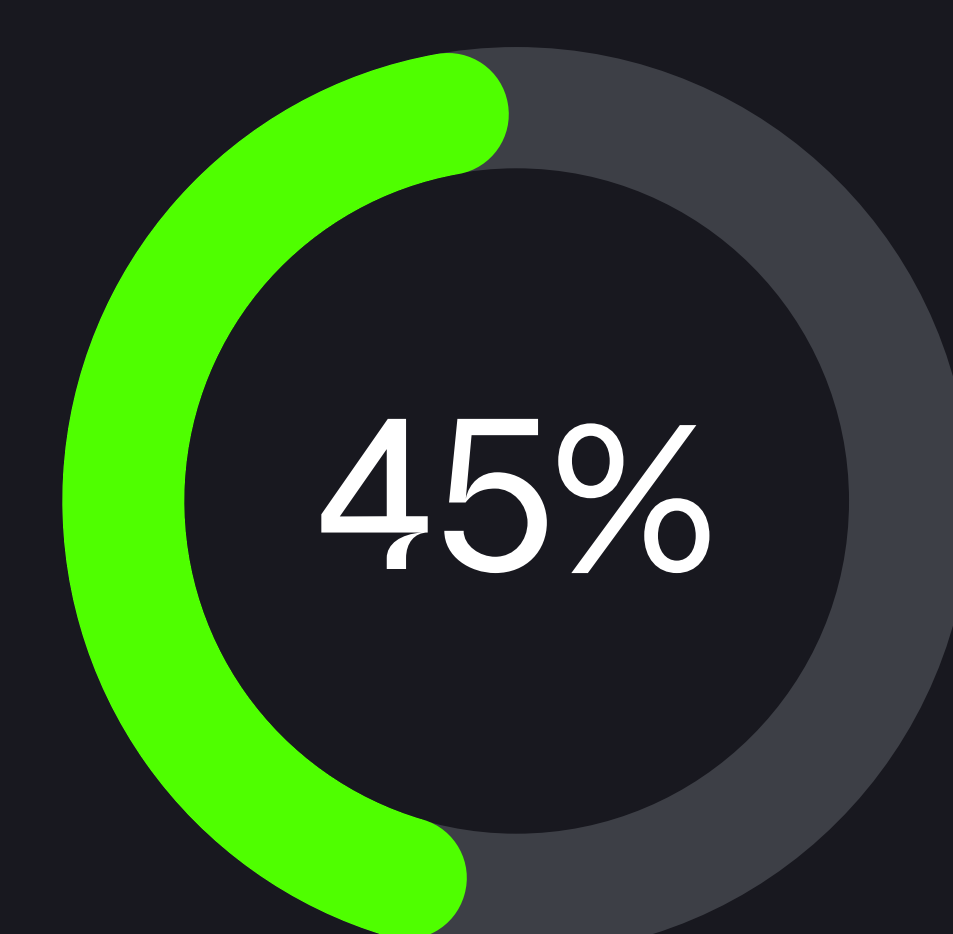
47%

say core processes are recorded but nuanced know-how is not.

22%

pass knowledge down verbally.

There's also a perception disparity between IT and ops, with **67% of IT leaders claiming operational knowledge is not fully documented** versus **81% of OT leaders**. The majority of people holding the knowledge don't see it preserved in the system, and the IT side doesn't recognize the full severity of the issue. When the frontline hasn't been equipped with internal intelligence, that gap becomes a serious business risk.



To fight this degradation of organizational memory, **45% of companies use AI-powered tools like digital twins and behavioral analysis for storing and organizing knowledge.**

For industrial leaders, this transition is a high-stakes acquisition process for data and crucial context, with a **majority of organizations (57%) currently relying on direct financial incentives** to encourage retiring professionals to document their know-how. **29% still rely on shadowing to capture this expertise, which presents a novel problem in requiring the veteran to be on site.**

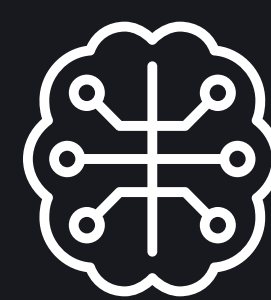
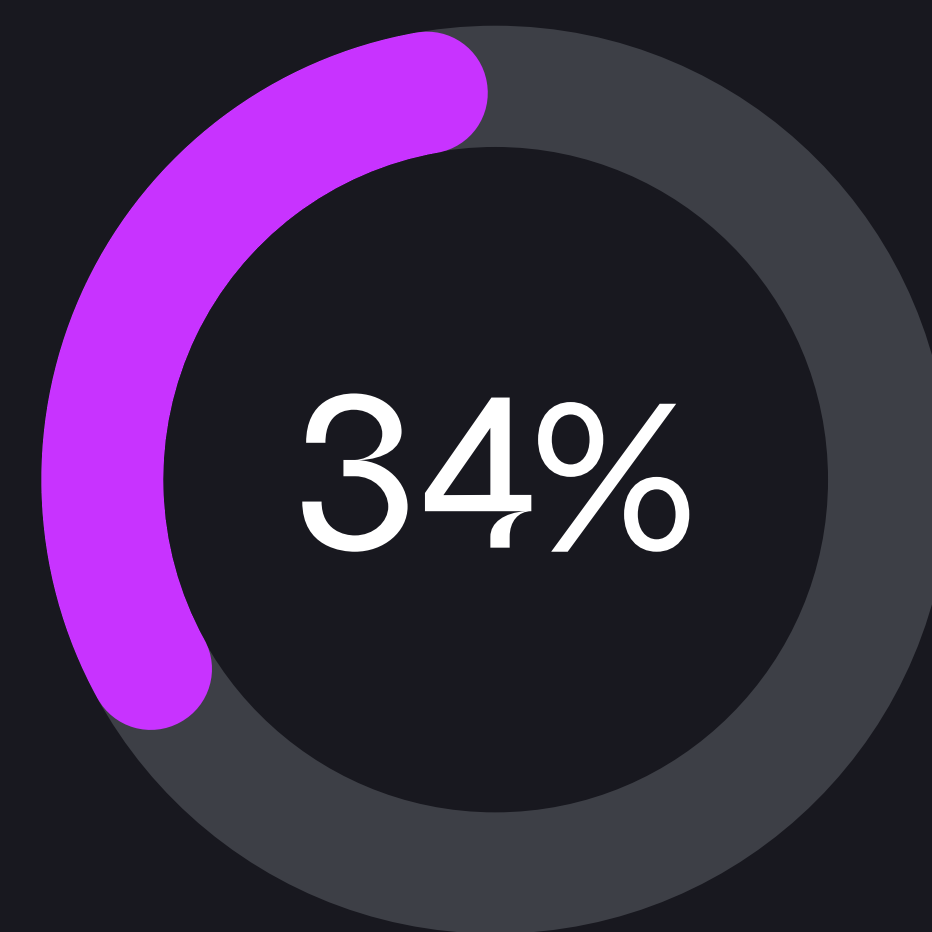
→ The legacy perspective is vital, but recording the outgoing generation's intelligence is the baseline. Because industry standards and software are both advancing so rapidly, having a static account of the knowledge is no longer enough to sustain a competitive edge. Intelligence can only go so far without a workforce that knows how to leverage it.



Upskilling to fully harness intelligence technology

The current race for industrial AI is exposing a vulnerability in readiness among today's workforce. A business can equip itself with the latest tools, but lack the proper training. Purchasing the right software is only half the battle. There is a deep, industry-wide recognition that human skills and judgement must scale along with technical deployments.

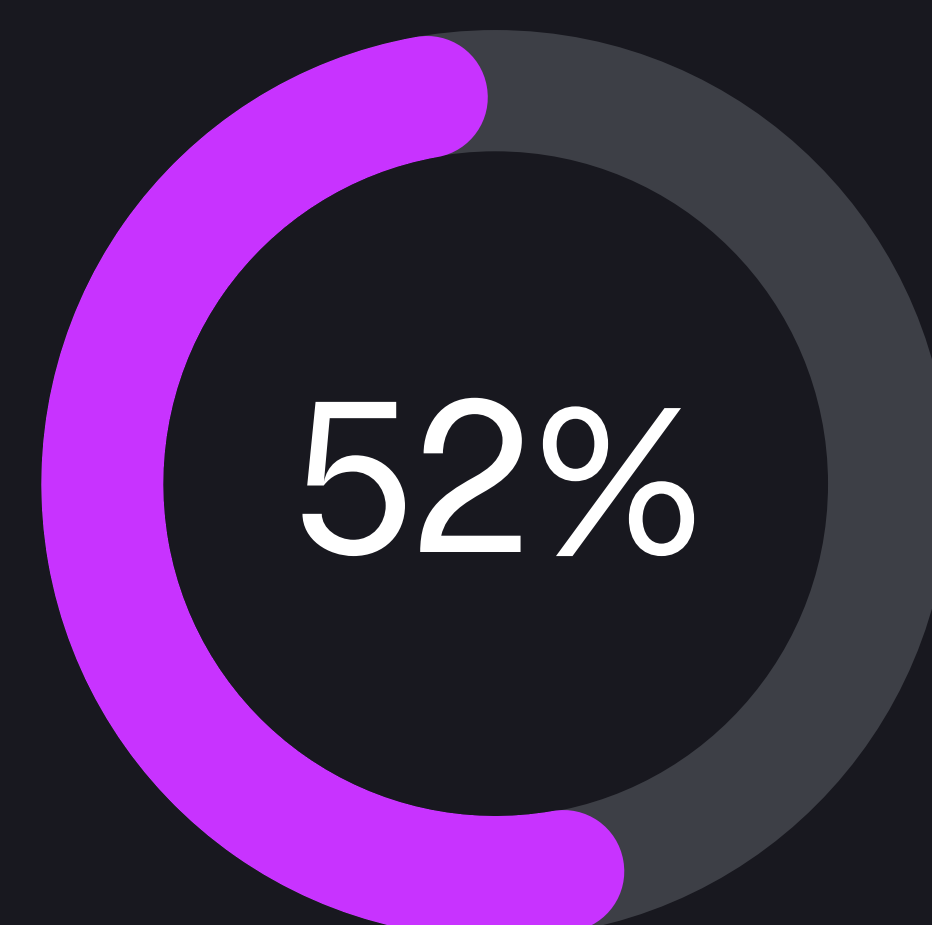
New tech requires an operator who knows how to realize its fullest potential.



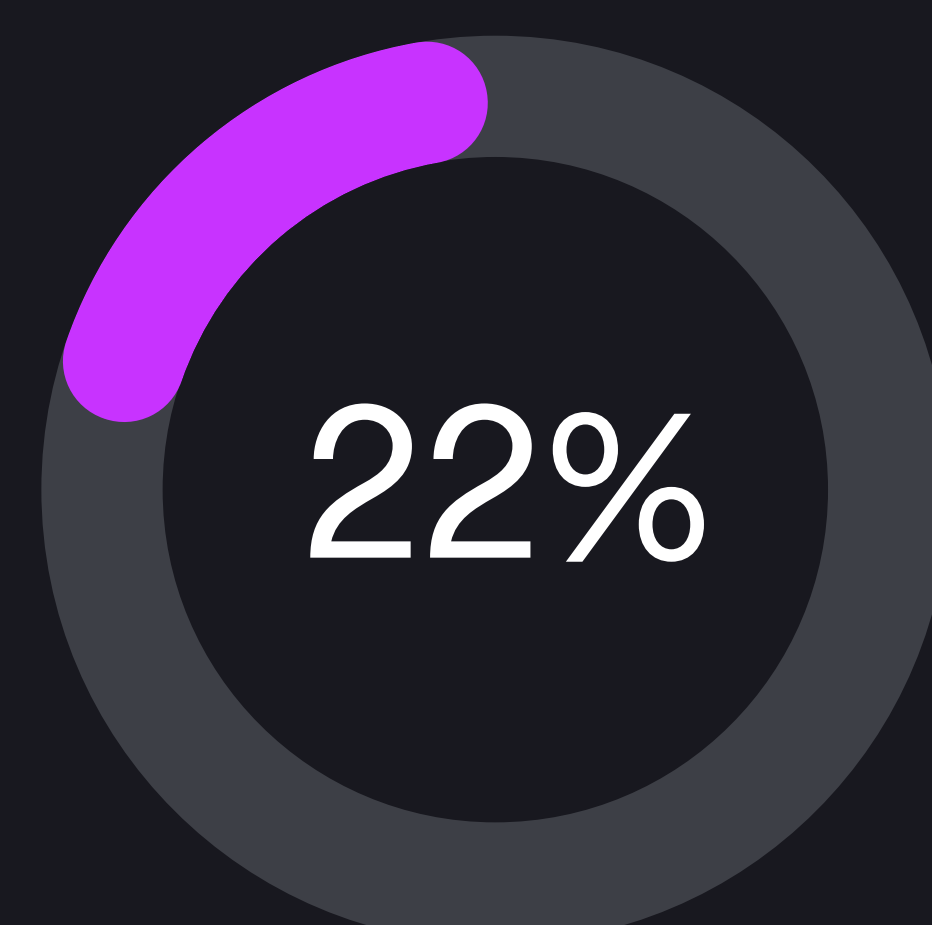
34% of organizations cite "having the technology but failing to upskill the workforce to use it" as one of the greatest risks they face over the next five years.

This outranks concerns about adopting AI too fast, indicating that organizations are focused on human-level impact and a possible loss of intuition rather than misgivings over the tech itself. Elevating the skills of the workforce is their most pressing long-term goal.

This knowledge gap has a particularly hazardous effect within system governance, where companies currently operate under a "human-in-the-loop" model entirely dependent on personal expertise.



More than half of industrial organizations (52%) rely on AI systems that flag low-confidence scenarios for human intervention.



Despite this, only 22% of leaders rank critical thinking as the most important frontline skill.

This built-in safety net depends on the exact skill being undervalued, and it can only work if its human users possess the combination of data and operational skills required to oversee detailed AI outputs.

→ Without the two-pronged IT/OT training to make sense of what the AI is flagging, the whole system breaks down.



Refocusing on the hybrid industrial worker

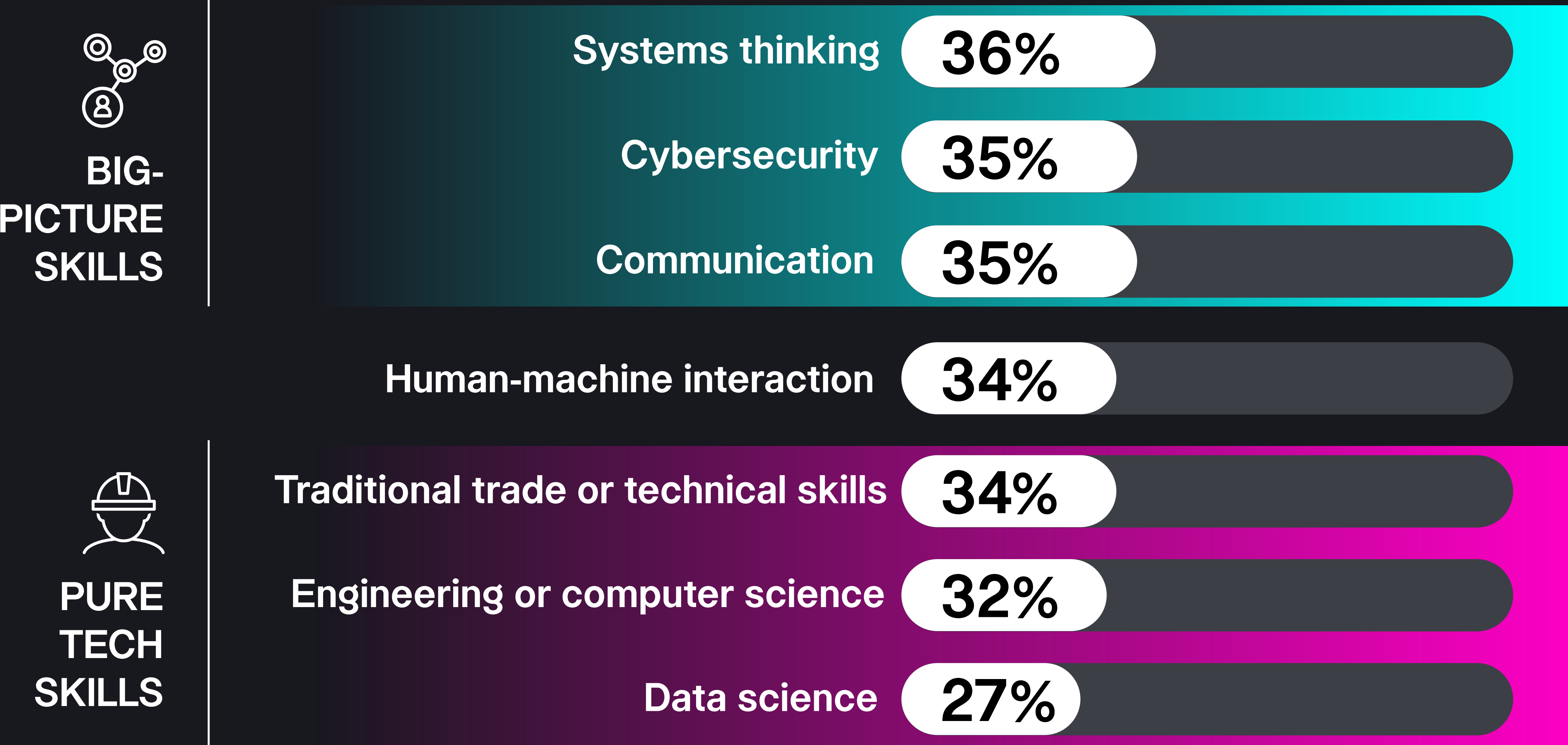
In the industrial space, everyone has an opinion on the value of technical data-science expertise versus operational judgement. But on the factory floor and in processing plants, the reality portrays an industry prioritizing big-picture skills rather than specialized programming acumen.

Responses suggest that the next-generation shift will be toward the hybrid industrial worker: agile orchestrators who intuitively understand how to connect digital intelligence with physical execution. When looking at preferred areas of study and frontline requirements, greater value is placed on practical application than pure mathematics.



Valuable areas of study for workers

36% of organizations identified “systems thinking” as their highest-priority area of study and 35% responded “cybersecurity,” whereas only 27% named “data science”—dead last among the seven given options.



➔ Despite a seemingly close spread of data, big-picture thinking is valued more highly than pure proficiency in data science, on-the-job flexibility being indispensable to a worker navigating the new landscape of AI. And on the front lines in specific, the necessity of versatile abilities is even clearer, with “adaptability” taking precedence over “systems thinking,” “communication” and “critical thinking” as the highest-valued skill set.



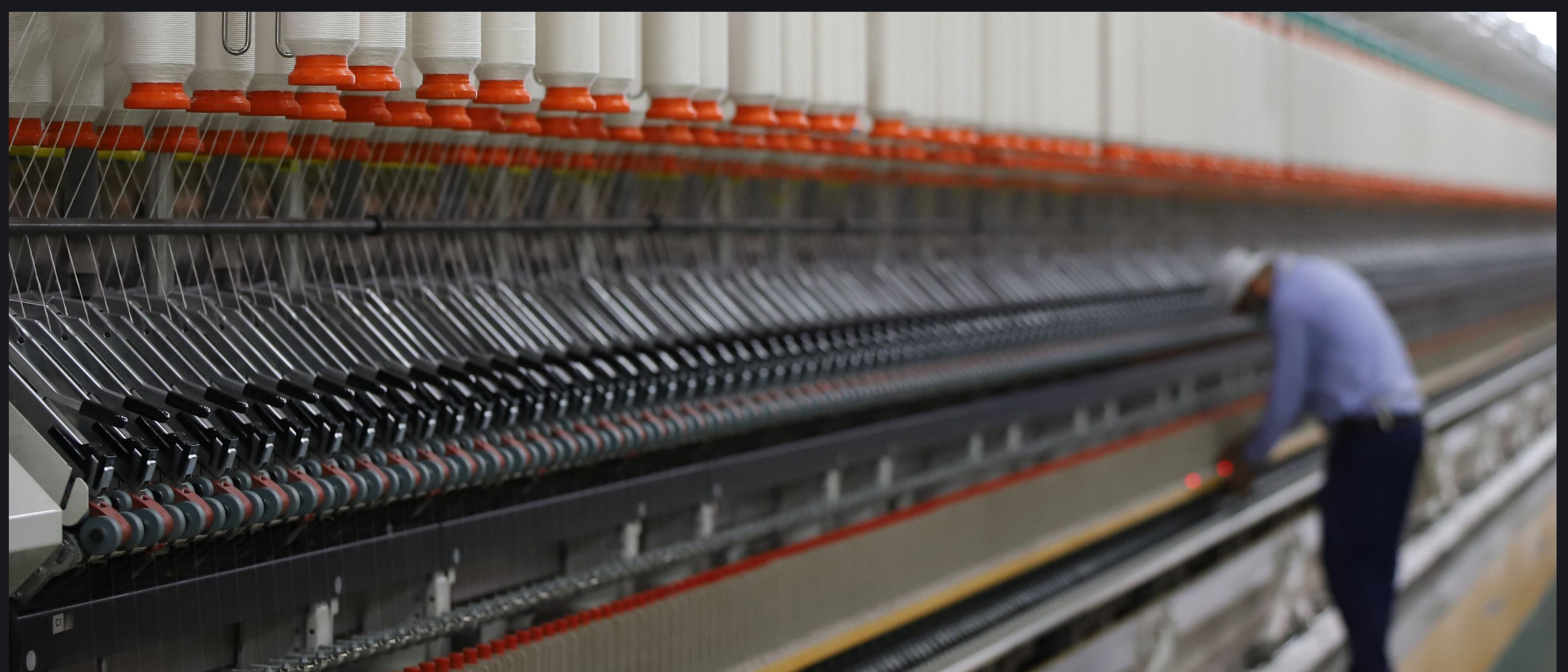
Bridging the data-operations gap

Where AI presents disruptive workforce challenges, it also serves as the solution. While any new technology carries a learning curve, modern industrial AI platforms can bridge the gap between data silos and daily operations. By condensing decades of veteran knowledge into intuitive, context-based tools, these platforms upskill the workers who'll meet the quickening pace of AI.

The result is a professional pool whose area of expertise is located right where hands-on operational experience meets modern data management. This way, people's abilities scale symmetrically with the capabilities of the AI itself.

"Industrial leaders cannot afford a passive stance. To survive the demographic shift and get the most from technology investments, they must assume a forward-thinking stance to talent strategies. By investing in systems thinking and capturing upper-level knowledge while they can, these organizations can build the hybrid talent model that such necessary work deserves."

Jay Allardyce, Chief product officer





Methodology

The research was conducted by Censuswide among a sample of 756 respondents across the UK, US, Canada, India, Australia, France, Germany, Italy, Saudi Arabia, UAE, Japan, South Korea, and Brazil (minimum of 50 per market).

Industry: CPG, Oil & gas / chemical, Pharma, Power, Manufacturing.

Respondents: Technology decision-makers in \$1B+ businesses that own and operate industrial facilities and/or infrastructure, spanning IT, operations, information security, engineering and capital projects.

The data was collected between April 14 and May 1, 2026. Censuswide is a member of the Market Research Society (MRS) and the British Polling Council (BPC), and a signatory of the Global Data Quality Pledge. This survey adheres to the MRS Code of Conduct and ESOMAR principles.

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