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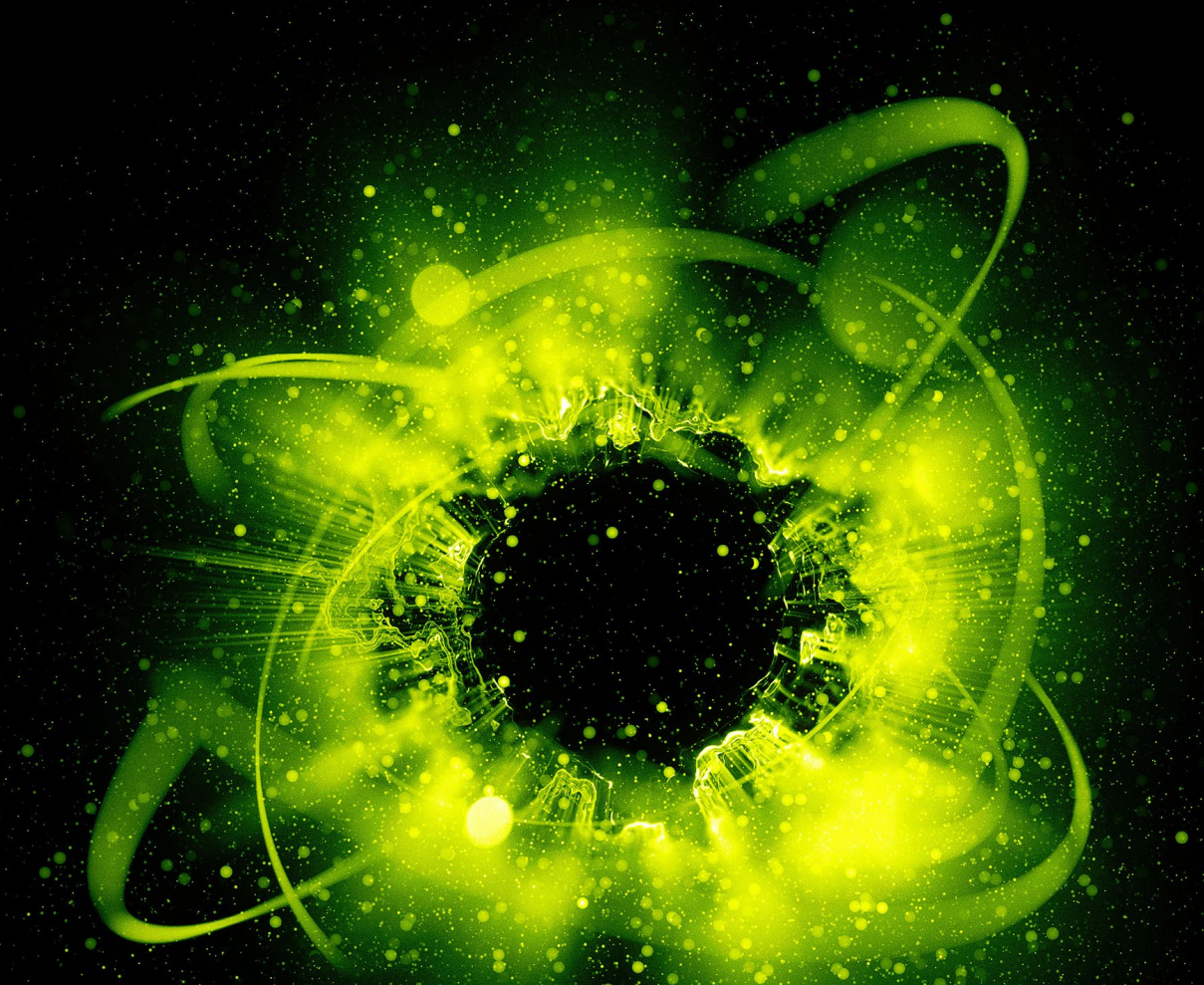


Emerging Technology Trends in the Enterprise Survey

November 2025

Objective

Gather executive insights on the prevalence, engagement, and perceptions surrounding the adoption of emerging technologies, evaluating recognition and implementation of key trends and measuring barriers to adoption, as well as organizational preparedness and anticipated impact.

Methodology

Deloitte's study was conducted as an online survey of 500 corporate executives by an independent research company between June 12 and July 5, 2025. Respondents represented C-level, president/senior vice president, managing director/director and owner roles at companies in the U.S.

Executive Summary: Emerging Technology Trends

Leaders Are Emerging in the Race to Adopt Emerging Technologies*

Challenges Are Widespread, But Optimism Around AI Remains High

Deep Investment Drives Advanced Adoption and Organizational Readiness

Emerging Technologies Are Driving Workforce Transformation

*For the purposes of this survey, “Emerging technologies” refer to advanced or rapidly evolving technologies that are not yet widely adopted but are expected to significantly impact organizational operations within the next 2-5 years. Examples include generative AI, quantum computing, spatial computing, etc

Executive Summary: Emerging Technology Trends

Leaders Are Emerging in the Race to Adopt Emerging Technologies*

Organizations are engaging with emerging technologies at varying levels of maturity, with a distinct gap forming between high and low adopters.

Deep Investment Drives Advanced Adoption and Organizational Readiness

Financial investment is the strongest indicator of how far along an organization is in its tech adoption journey. Organizations investing more than 5% of their annual revenue in emerging technologies show much higher levels of technology usage, infrastructure modernization, and organizational preparedness. For instance, 28% of high investors have already fully modernized their infrastructure, compared to only 6% of those investing less.

These organizations are also more confident and capable: 83% report strong cybersecurity preparedness, and 73% feel ready to integrate emerging technologies across business units. High investment also correlates with a preference for third-party solutions and co-development models, enabling greater speed and scalability over in-house builds.

Challenges Are Widespread, But Optimism Around AI Remains High

Despite optimism, organizations continue to face significant technical, regulatory, and resource-related barriers to adoption.

54% of respondents cite unclear ROI and cost justification, while 53% point to data privacy, cybersecurity risks, or regulatory compliance as top external hurdles. Internally, the most pressing issues include budget/resource constraints (63%) and lack of in-house talent (42%).

Emerging Technologies Are Driving Workforce Transformation

As emerging tech becomes more embedded in enterprise strategy, organizations are actively reshaping their workforce models.

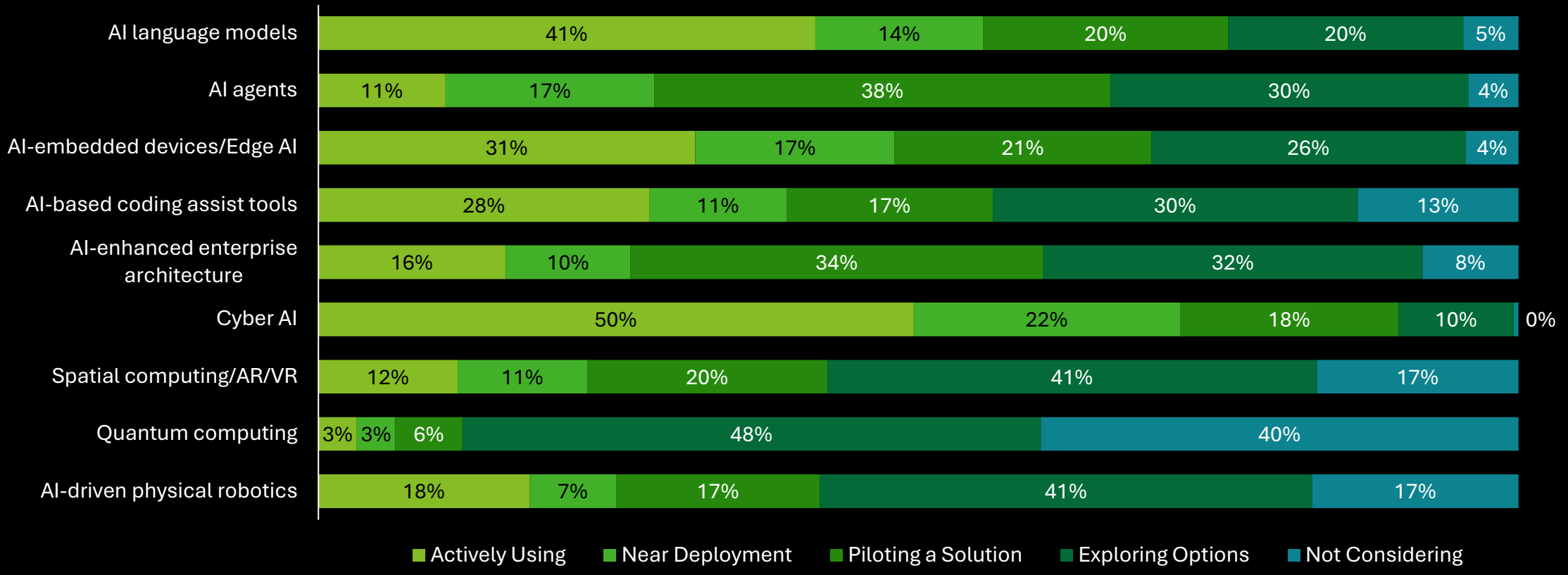
34% of respondents anticipate widespread upskilling or reskilling as the biggest workforce change, followed by creation of new tech-focused roles (25%) and increased employee productivity (21%).Specific roles expected to gain traction include Human-AI collaboration designers (50%) and Edge AI or embedded systems engineers (48%). These roles reflect a shift toward automation-driven workflows and AI-human co-creation.

Adoption levels vary widely across emerging technologies

Organizations are adopting emerging technologies at different rates, with the most active use seen in Cyber AI (50%) and AI language models (41%), followed by growing traction for Edge AI (31%) and coding assist tools (28%).

In contrast, many are still exploring or not yet considering quantum computing (88%) and spatial computing/AR/VR (58%).

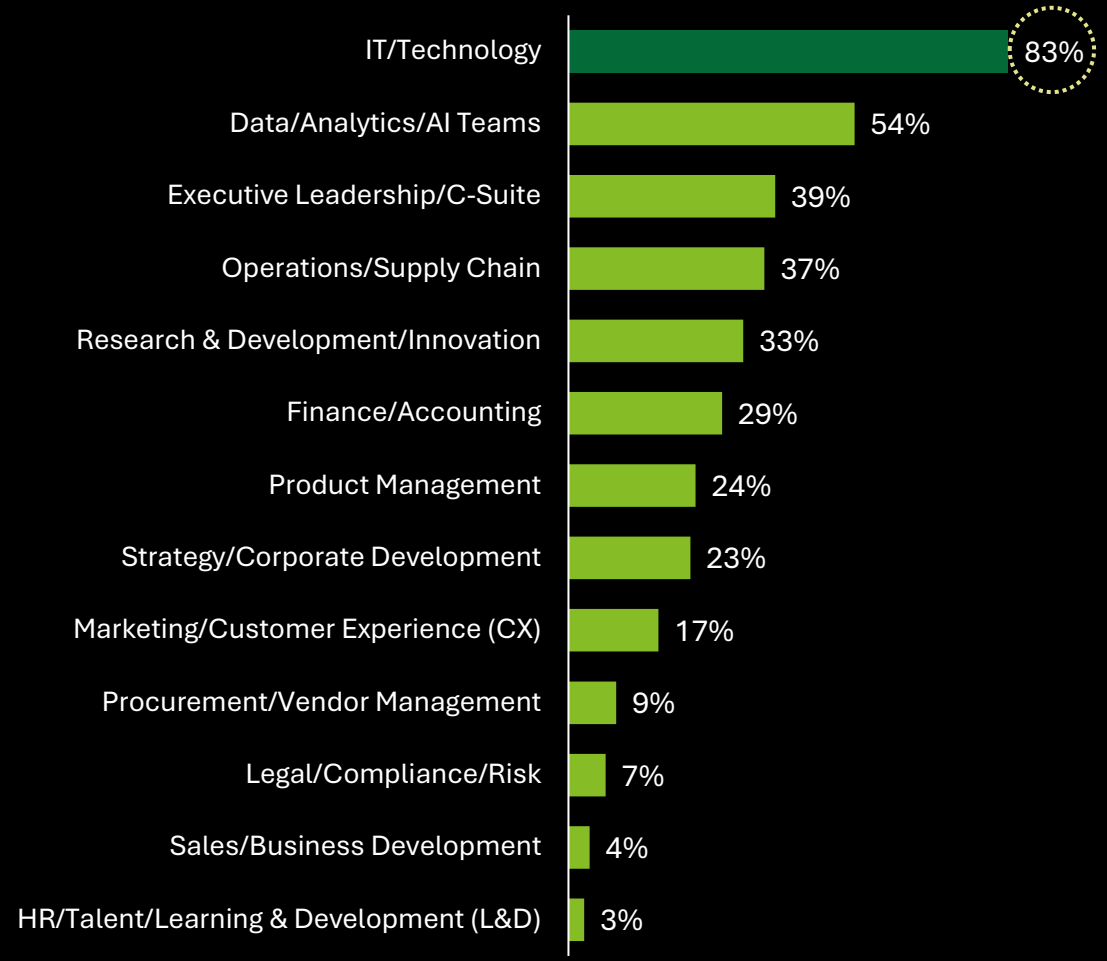
What is your organization's current stage of adoption for each technology?



95% confident @ +/-4.4

IT and data teams are leading engagement

Which departments are most actively exploring or using these emerging technologies?



- IT/Technology (83%) and Data/Analytics/AI teams (54%) are the most actively engaged departments in exploring or using emerging technologies.
- Executive leadership (39%) and Operations (37%) also play key roles, while departments like R&D/Innovation (33%) and Finance (29%) show moderate involvement.
- Engagement is notably lower in areas such as HR (3%), Sales (4%), and Legal/Compliance (7%), suggesting a more limited role in early-stage adoption.

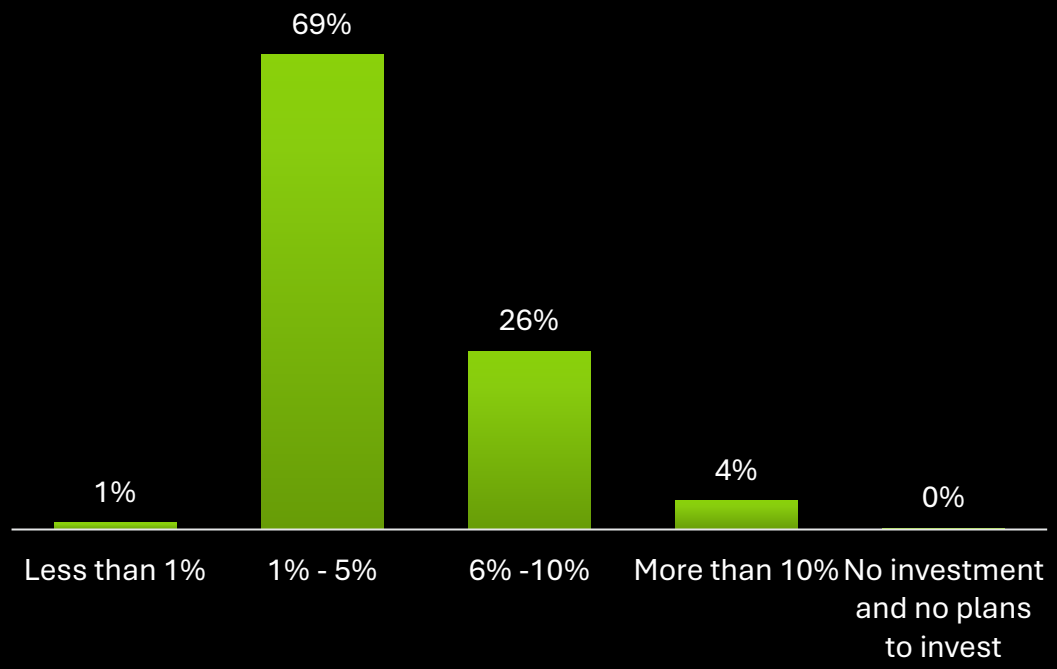
95% confident @ +/-4.4

Organizations with higher tech spends are doubling down on investment

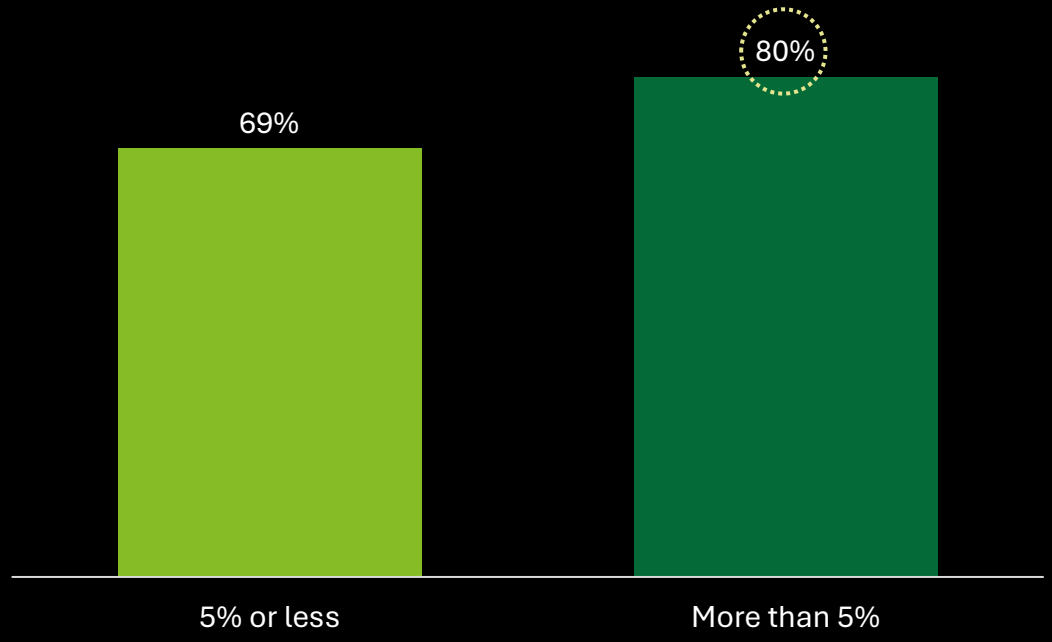
A majority of organizations are allocating up to 5% of their revenue toward emerging technologies, with 26% investing between 6% and 10%, and a smaller group exceeding 10%.

Importantly, organizations already investing more than 5% are showing even stronger commitment, with 80% reporting slight or significant increases in their technology budgets.

What is your organization's level of financial investment in these emerging technologies as a percentage of revenue?



Over the next 12 months, how do you anticipate your organization's investments to change in these emerging technologies?



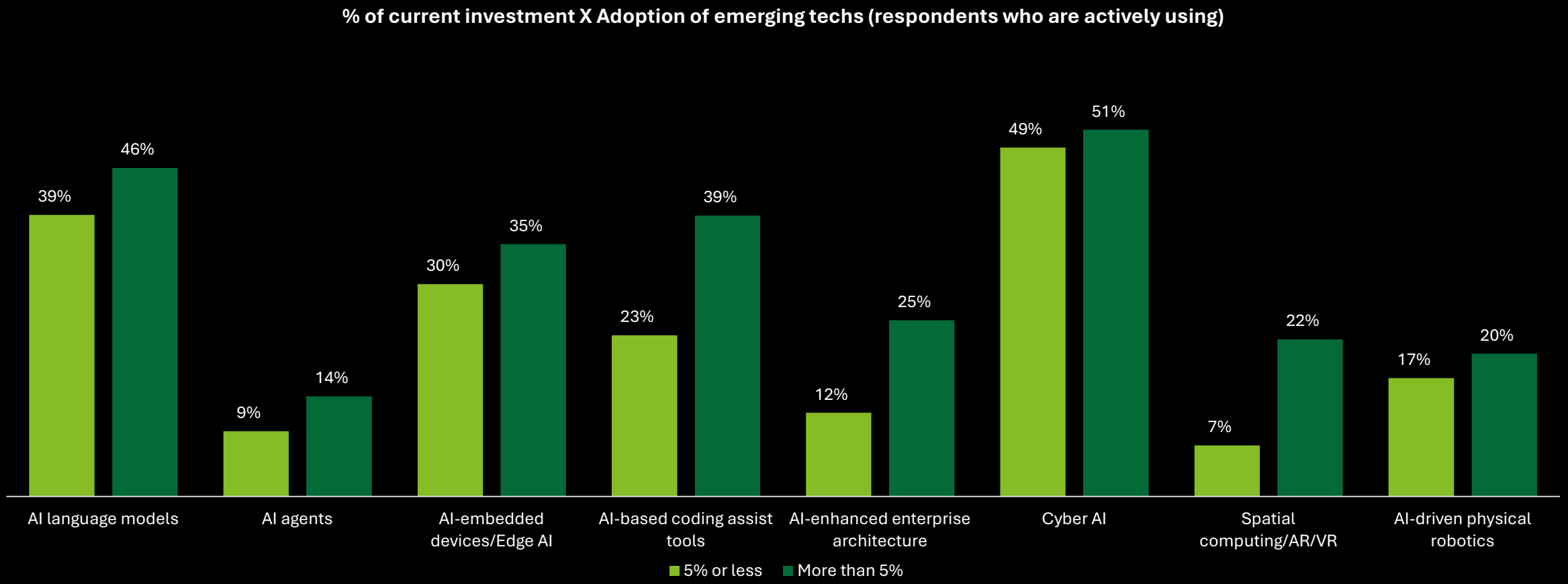
95% confident @ +/-4.4

Higher financial commitment aligns with greater adoption of emerging technology

Organizations investing more than 5% of revenue in emerging technologies show higher adoption of emerging technologies—51% are using Cyber AI, 46% use AI language models, 39% use AI coding assistants, and 25% have adopted AI-enhanced enterprise architecture.

In contrast, lower-investing organizations report more limited adoption across most technologies.

This suggests that deeper financial investment goes hand-in-hand with broader and more advanced technology adoption.



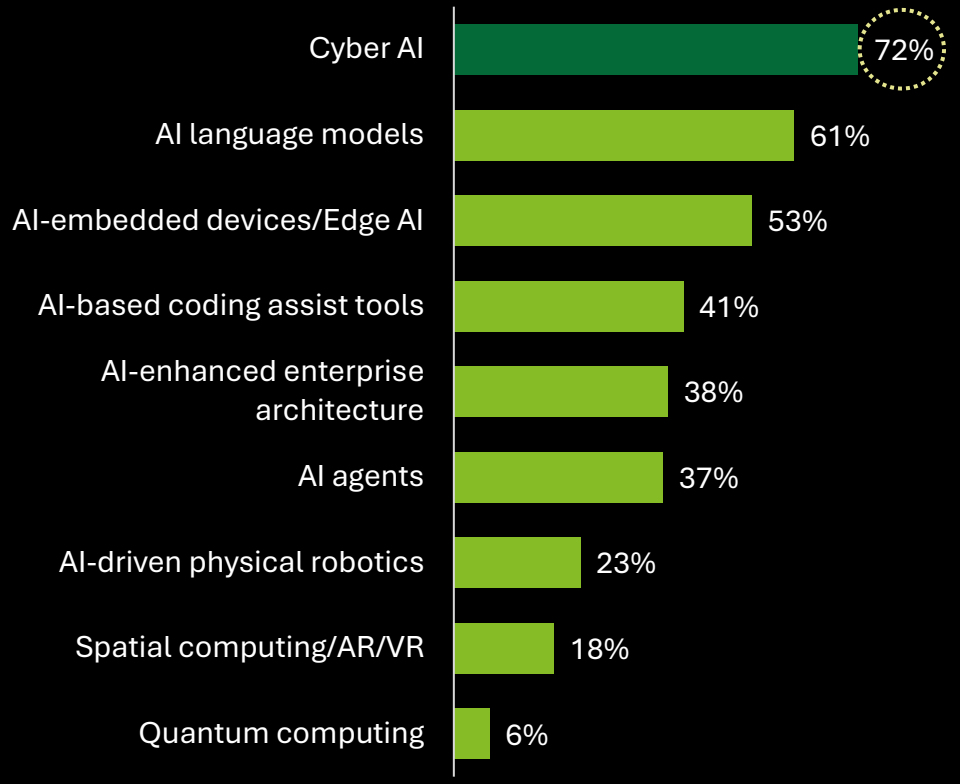
95% confident @ +/-4.4

Growing investors prioritize cyber AI, AI language models & edge AI in the year ahead

Over the next 12 months, how do you anticipate your organization's investments to change in emerging technologies? (Slight or significantly increased investment)

Which of these emerging technologies has your organization prioritized over the next 12 months? Please select all that apply.

% of investment increase vs specific emerging technologies



95% confident @ +/-4.4

- Organizations expecting to increase investment in emerging technologies over the next 12 months are prioritizing Cyber AI (72%), AI language models (61%), and Edge AI (53%).
- In contrast, spatial computing (18%) and quantum computing (6%) rank lower on the priority list, suggesting these technologies remain on the back burner.

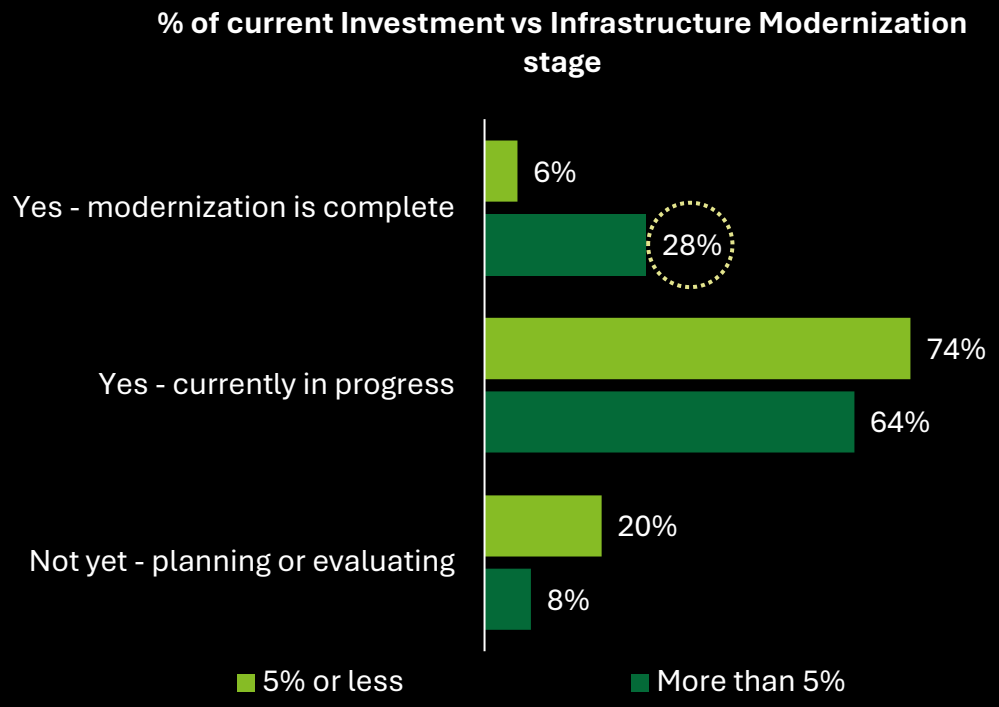
95% confident @ +/-4.4

High investing organizations are further ahead in modernizing core infrastructure

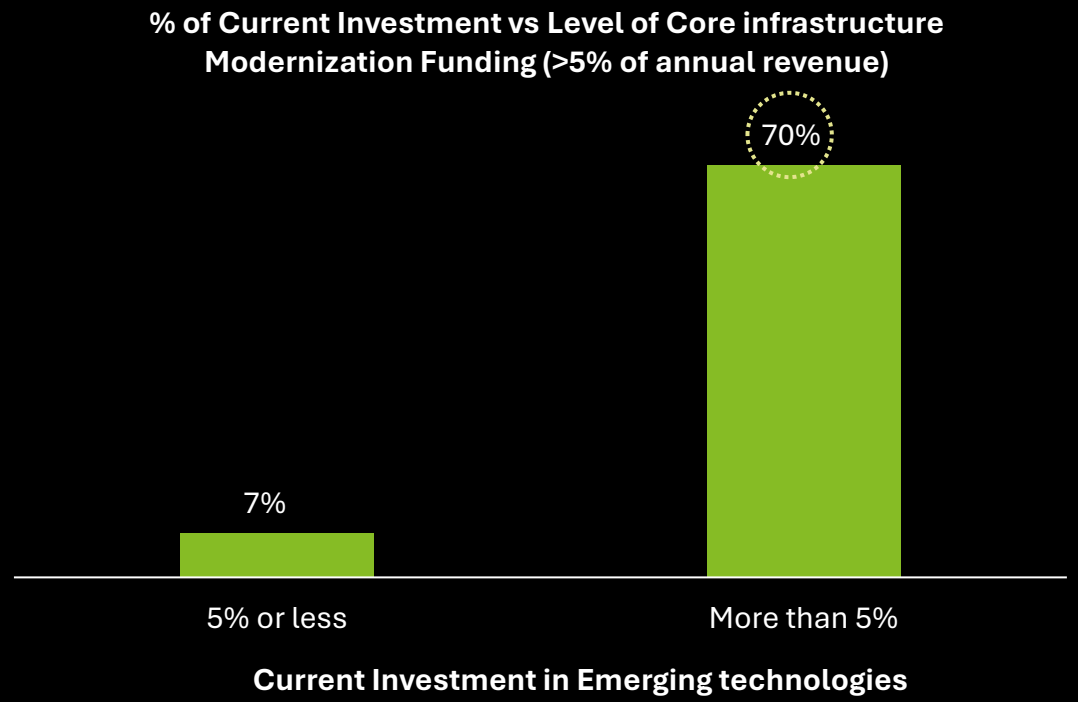
Organizations investing more than 5% of revenue in emerging technologies are significantly more advanced in modernizing for AI—28% report fully modernized infrastructure, compared to just 6% of lower-investing peers.

They're also more likely to be prioritizing modernization of core enterprise systems, with 70% allocating over 5% of their budget to this effort, versus only 7% among those investing less. In contrast, lower-investing organizations remain largely in planning or early implementation stages.

Has your organization modernized its core infrastructure to support AI implementation?



What level of financial investment (as a percentage of annual revenue) is your organization allocating toward modernizing core enterprise systems to support emerging technologies and minimize technical debt?



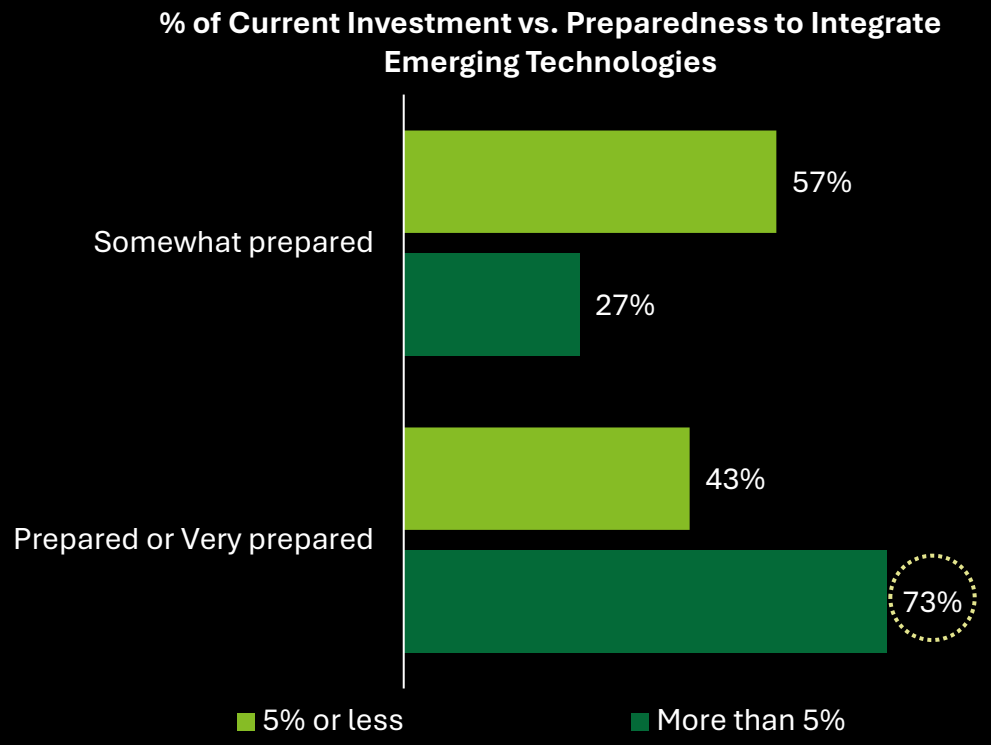
95% confident @ +/-4.4

Higher technology investment boosts cybersecurity confidence and preparedness

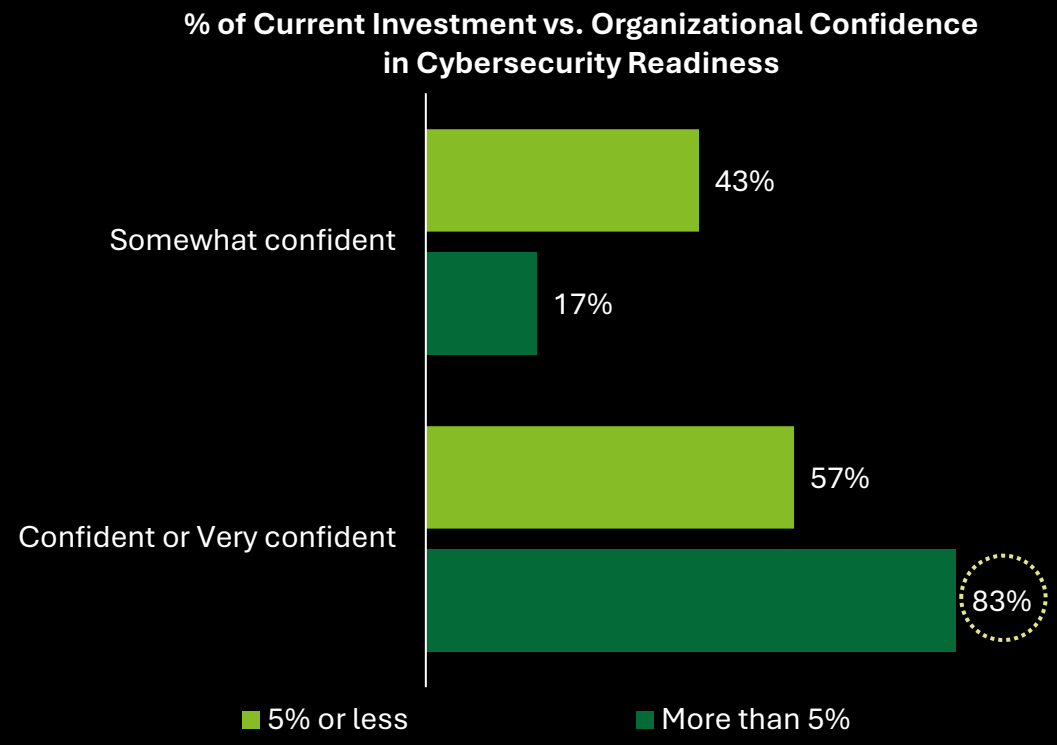
Organizations allocating more than 5% of revenue to emerging technologies demonstrate substantially higher confidence in their cybersecurity capabilities (83%) and greater readiness to integrate new technologies across business units (73%).

Conversely, organizations with lower investment levels report notably lower confidence and preparedness, underscoring the strong correlation between proactive investment and organizational resilience.

How prepared is your organization to integrate emerging technologies across business units?



How confident are you in your organization's ability to prevent, detect, and respond to cybersecurity threats?



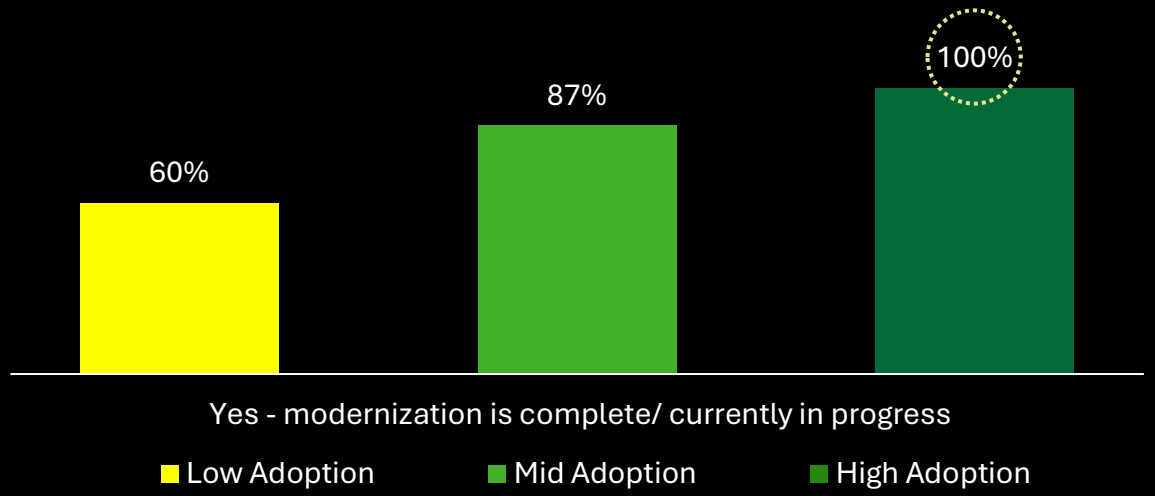
95% confident @ +/-4.4

High tech adopters fully committed to infrastructure modernization and investment

All organizations with high emerging tech adoption (100%) have completed or are actively modernizing their core infrastructure, compared to 87% of mid adopters and 60% of low adopters.

Has your organization modernized its core infrastructure to support AI implementation?

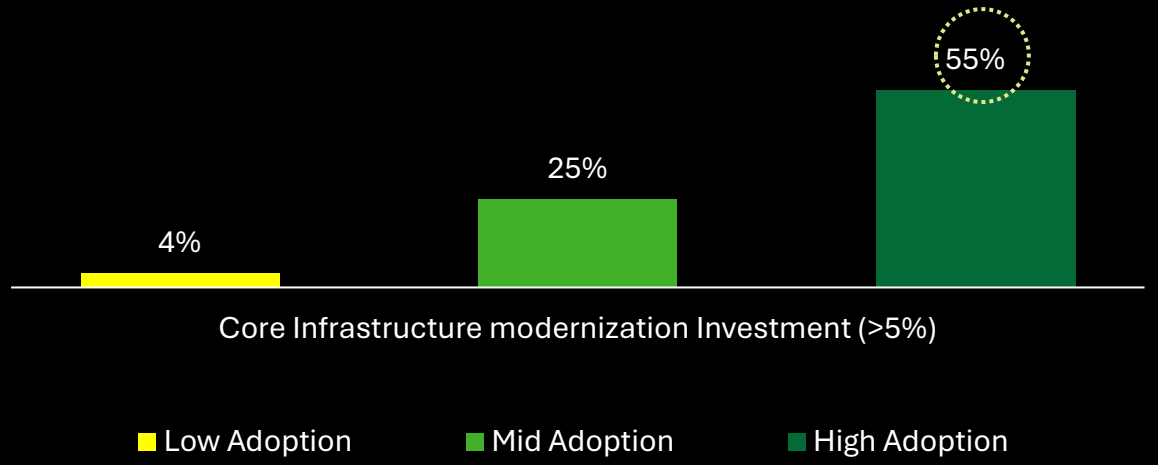
% of Tech Adoption score vs. AI Infrastructure Modernization Status (complete/ in progress)



Over half (55%) of high adopters invest more than 5% of annual revenue in modernizing enterprise systems, significantly more than mid (25%) and low adopters (4%).

What level of financial investment is your organization allocating toward modernizing core enterprise systems to support emerging technologies and minimize technical debt?

% of Tech Adoption score vs. Core Infrastructure modernization Investment (>5% of annual revenue)



This highlights that organizations leading in tech adoption are also prioritizing modernizing core infrastructure and committing greater financial resources to support ongoing innovation and reduce technical debt.

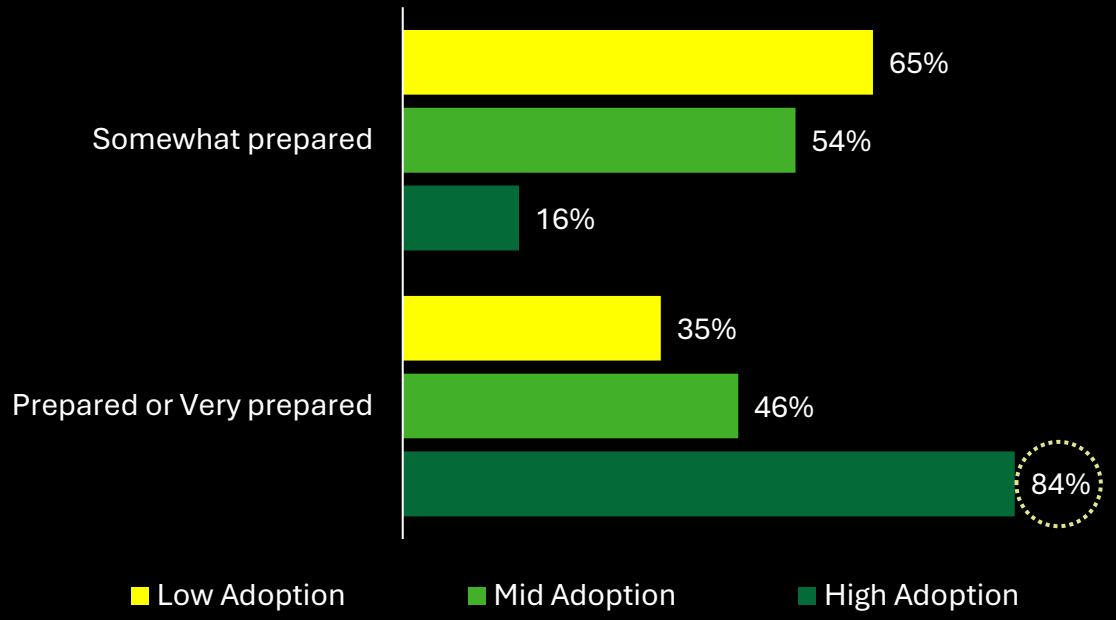
High tech adopters show greater preparedness and cyber resilience

A strong majority of High adopters (84%) say they are prepared or very prepared to integrate emerging technologies across business units—compared to 46% of mid adopters and just 35% of low adopters.

Cybersecurity confidence rises with adoption as 92% of High adopters feel confident or very confident in their ability to respond to threats, versus 63% of mid and only 43% of low adopters.

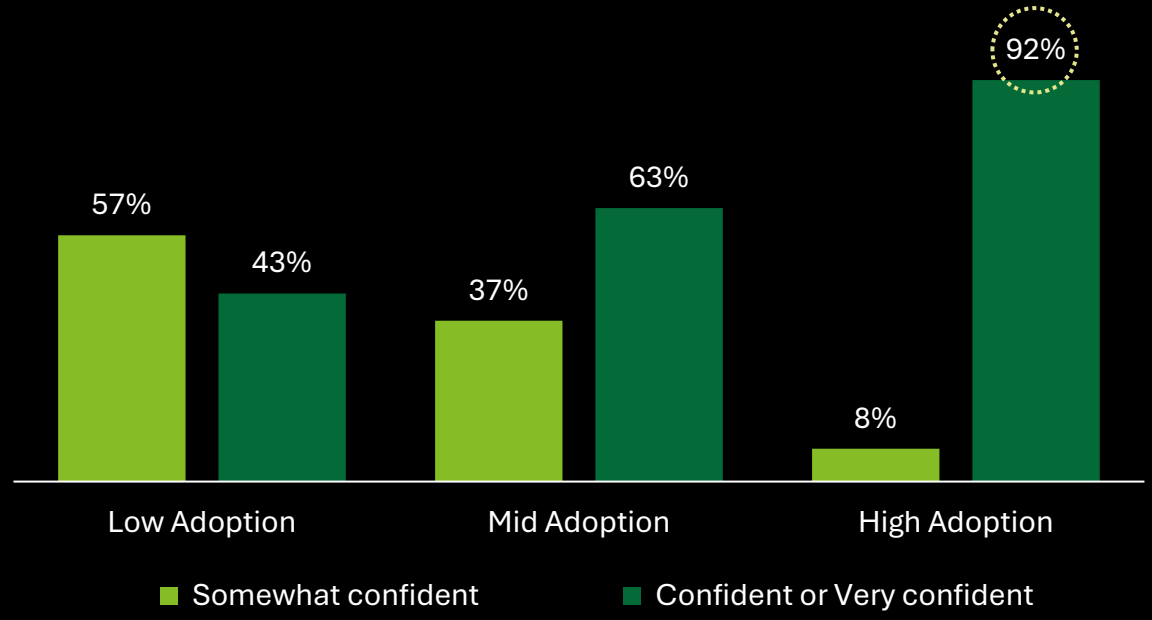
How prepared is your organization to integrate emerging technologies across business units?

Tech Adoption Score by Preparedness to Integrate Emerging Technologies (Somewhat prepared and Prepared/Very prepared)



How confident are you in your organization's ability to prevent, detect, and respond to cybersecurity threats?

% of Tech Adoption Score vs. Confidence in Cybersecurity Capabilities (Somewhat confident and Confident/Very confident)



This highlights that organizations further along in their tech adoption journey are not only better equipped for integration but also more resilient against cyber risks.

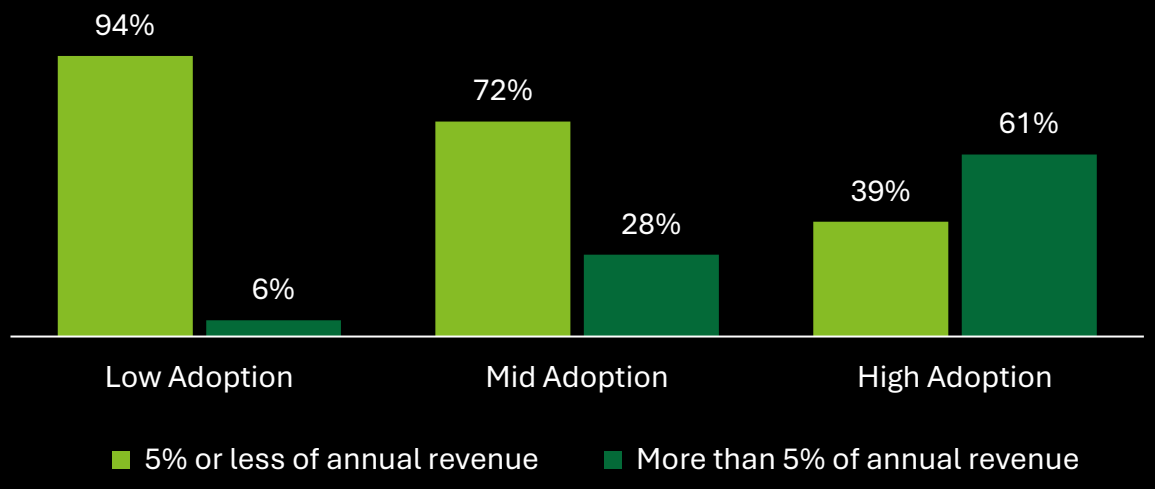
High tech adopters lead in spending and future commitment

The vast majority of low adopters (94%) invest 5% or less of their revenue in emerging technologies, signaling limited financial commitment.

In contrast, 61% of high adopters exceed the 5% threshold—highlighting a strong correlation between higher adoption and greater financial investment.

What is your organization's level of financial investment in these emerging technologies as a percentage of revenue?

% of Tech Adoption Score vs. Current investment in Emerging Technologies

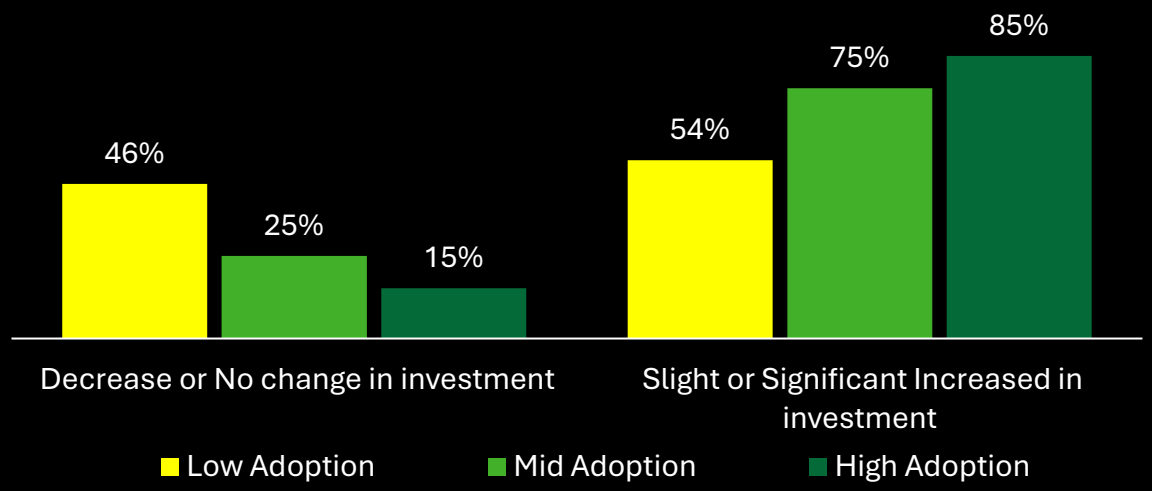


85% of high adopters expect to increase investment in the next 12 months, compared to only 54% of low adopters.

Meanwhile, 46% of low adopters anticipate no change or a decrease in investment—indicating that many may fall further behind as technology leaders push forward.

Over the next 12 months, how do you anticipate your organization's investments to change in these emerging technologies?

% of Tech Adoption Score vs. Expected Change in Emerging Tech Investment



This suggests high adopters are pulling ahead—investing more now and accelerating further, while others risk falling behind.

95% confident @ +/-4.4

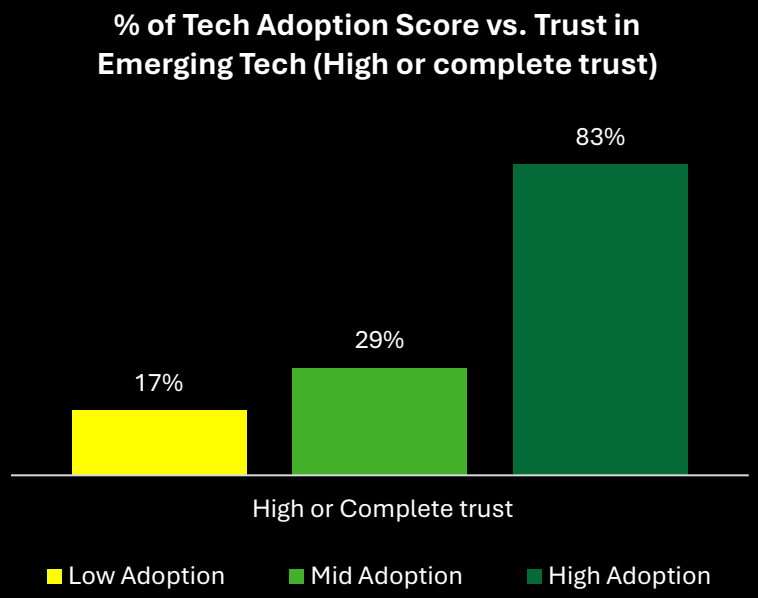
Trust and ROI drive increased investment among emerging tech leaders

Organizations with high emerging tech adoption show significantly greater trust in these technologies—83% express high or complete confidence, compared to just 17% among low adopters.

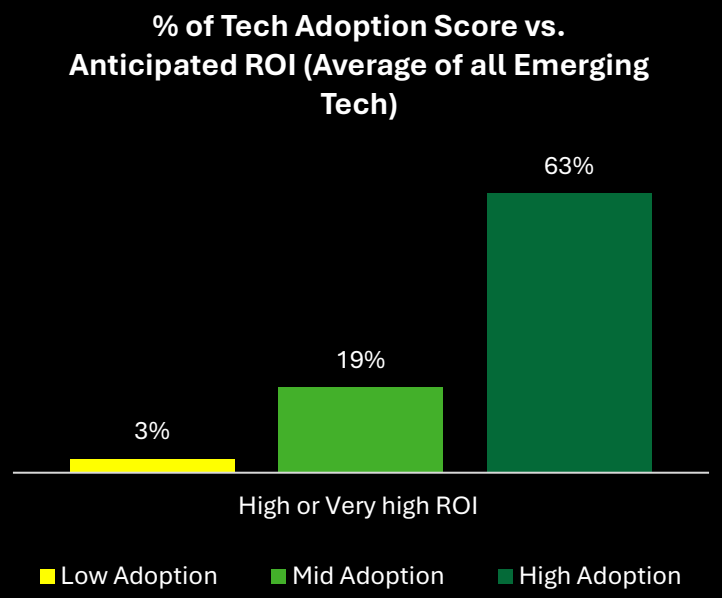
This trust translates into higher expectations for ROI, with 63% of high adopters anticipating high or very high returns, versus only 3% in low adopters.

Furthermore, these high adopters report stronger business outcomes, with 31% experiencing revenue growth of more than 10% compared to last year, highlighting the financial benefits of embracing emerging technologies.

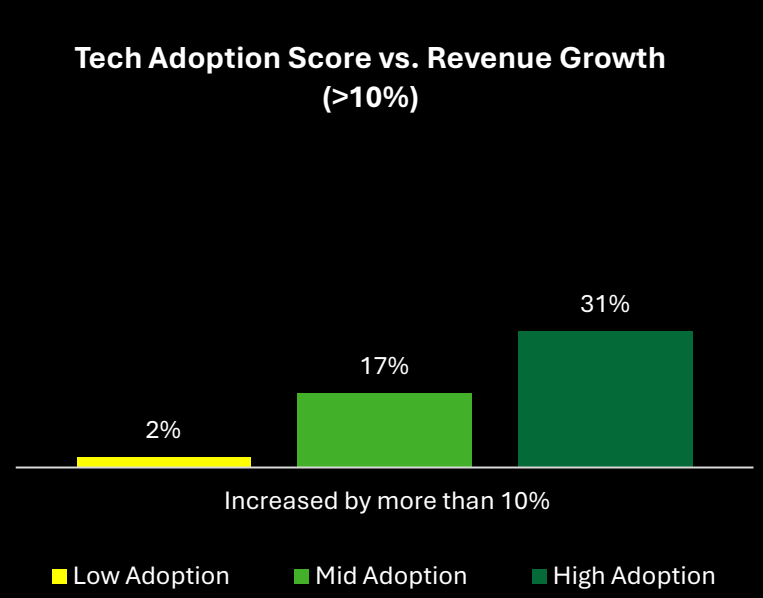
How much trust does your organization have in emerging technologies to deliver reliable, ethical, and effective outcomes?



What is your organization's expected return on investment (ROI) on the following emerging technologies? (Average of all techs)



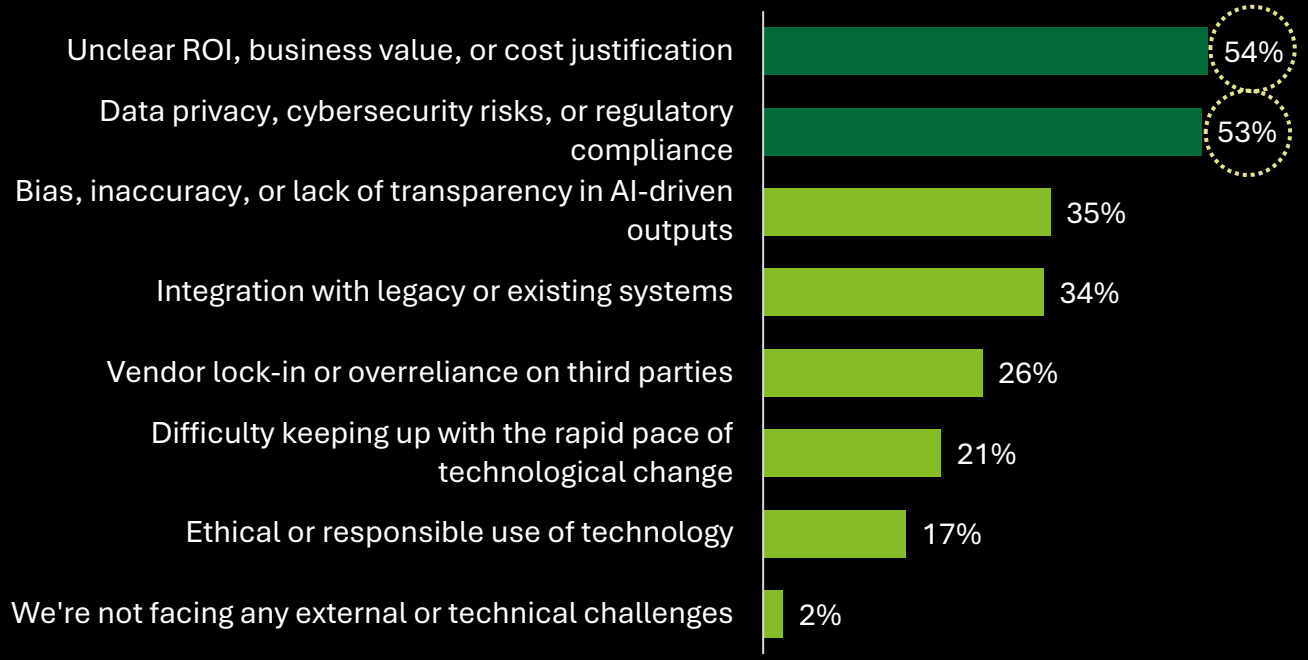
Compared to last year's performance, your organization's revenue has:

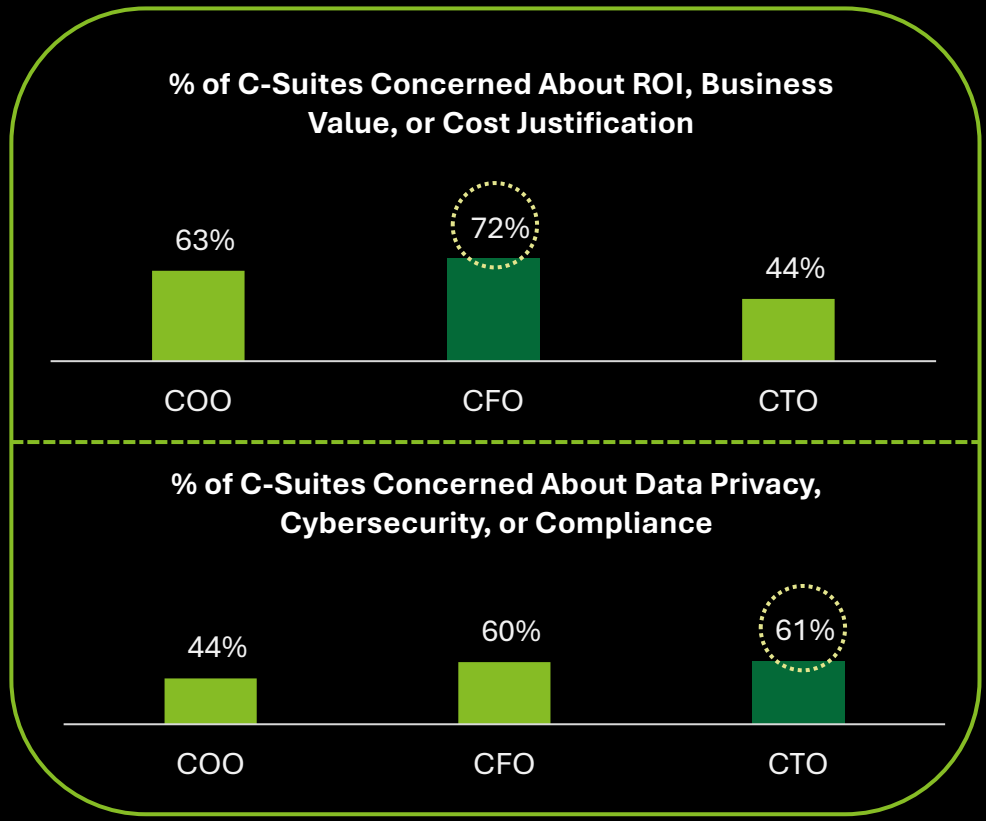


These trends suggest that strong trust in emerging technologies, combined with higher expected ROI, is driving increased investment among leading adopters, resulting in stronger business growth.

ROI, cost, and compliance top external challenges in emerging tech adoption

What are the biggest external or technical challenges your organization faces when adopting emerging technologies?



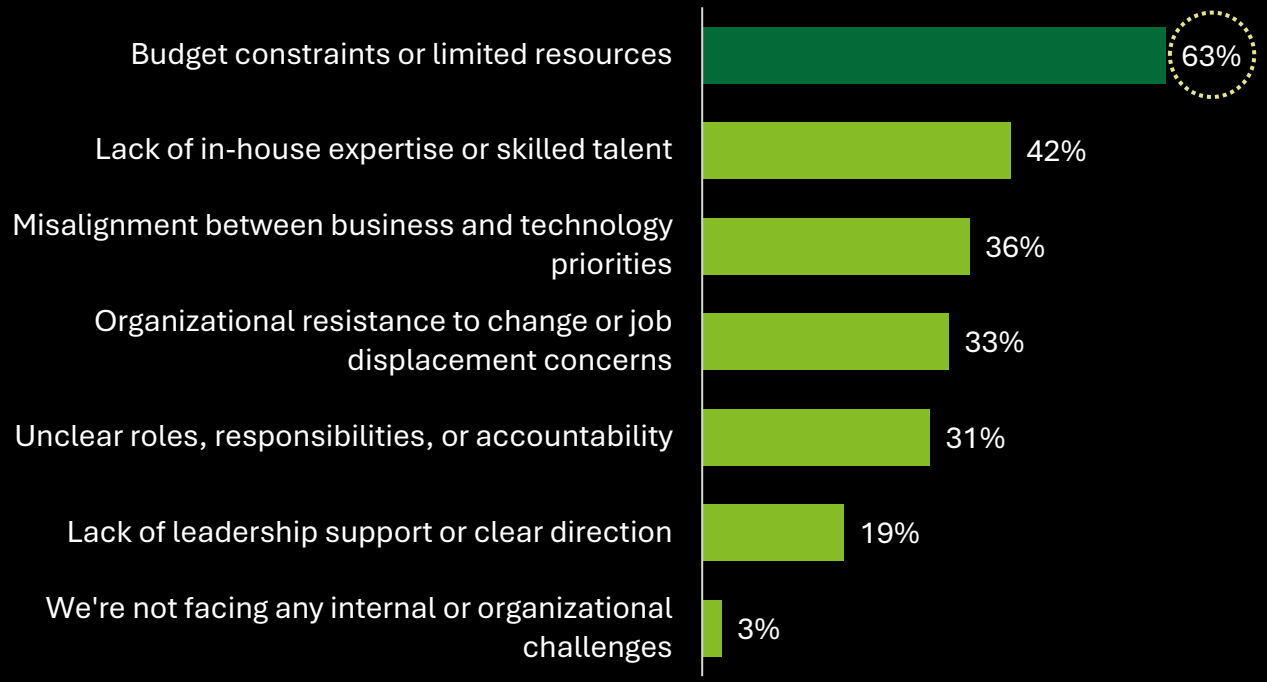


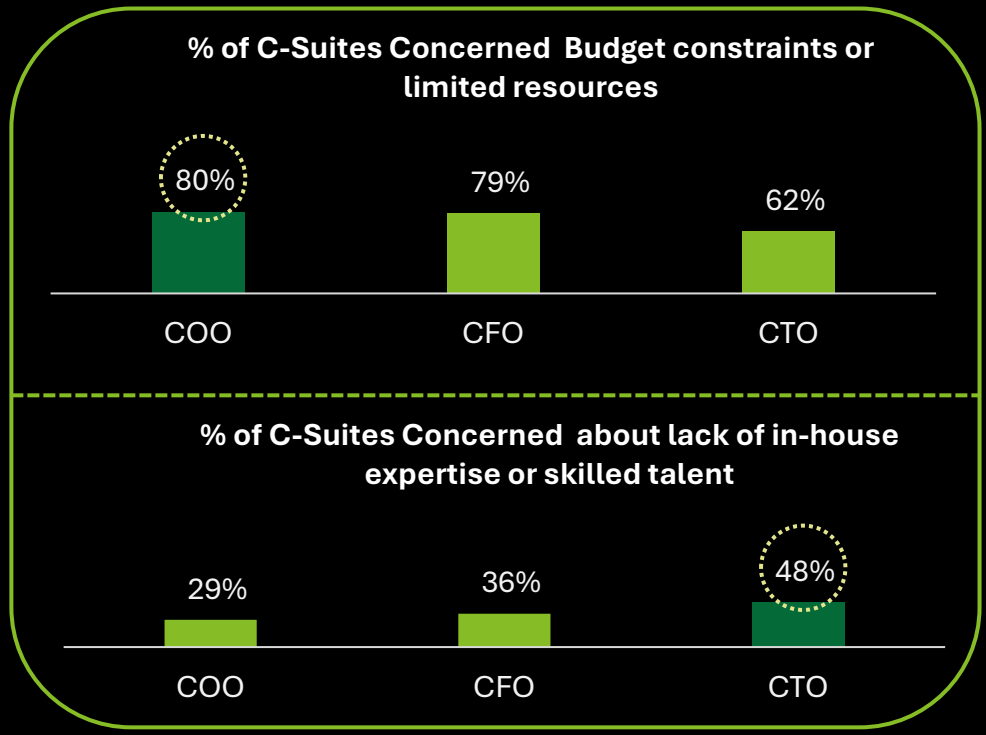
More than half of respondents report unclear ROI or cost justification (54%) and data privacy, cybersecurity risks, or regulatory compliance (53%) as the most significant external or technical challenges their organizations face when adopting emerging technologies. In contrast, ethical or responsible use of technology is the least reported challenge their organization faces, mentioned by only 17% of respondents.
Unclear ROI is the top external or technical challenge for CFOs (72%) and COOs (63%) when adopting emerging technologies, reflecting strong concerns over business value and cost justification. Meanwhile, CTOs are more focused on technical challenges like AI transparency (50%) and legacy system integration (46%), revealing a sharp contrast in C-suite priorities.

95% confident @ +/-4.4

Budget and talent gaps remain the key internal barriers to adoption

What are the biggest internal or organizational challenges your organization faces when adopting emerging technologies? Please select all that apply.





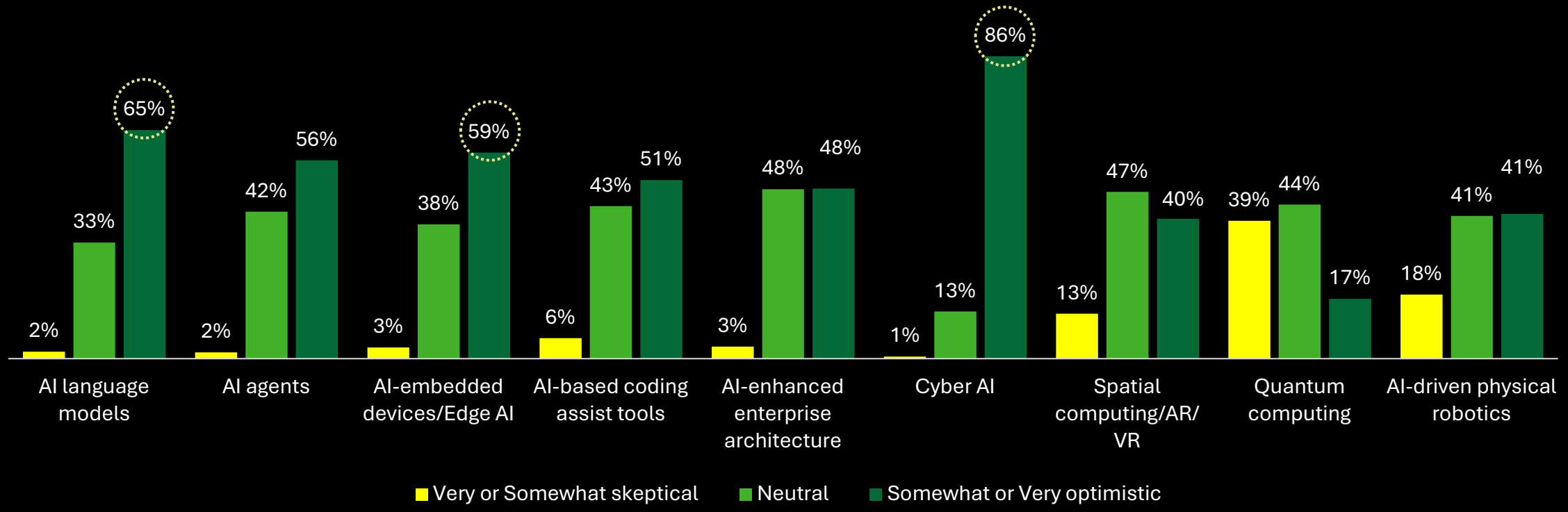
Nearly two-thirds of respondents (63%) report budget constraints or limited resources as the most significant internal challenge their organization faces when adopting emerging technologies, followed by lack of in-house expertise or skilled talent (42%).In contrast, lack of leadership support or clear direction is the least reported internal challenge, mentioned by just 19% of respondents.
Budget constraints are the top internal or organizational challenge for COOs (80%) and CFOs (79%) when adopting emerging technologies, underscoring financial limitations as a major barrier. In contrast, CTOs cite lack of expertise (48%) and misalignment between business and tech priorities (41%) as key hurdles, pointing to deeper structural and capability gaps.

95% confident @ +/-4.4

Organizations stay highly optimistic about emerging technologies despite challenges

Majority of respondents (86%) report a strong optimism that Cyber AI/AI-enhanced cybersecurity has the potential to transform their industry. In addition, 65% of the respondents are somewhat or very optimistic about AI language models, and 59% for AI-embedded devices/Edge AI. In contrast, 39% of respondents are skeptical about quantum computing.

How optimistic are you about the potential of each of the following emerging technologies to transform your industry?

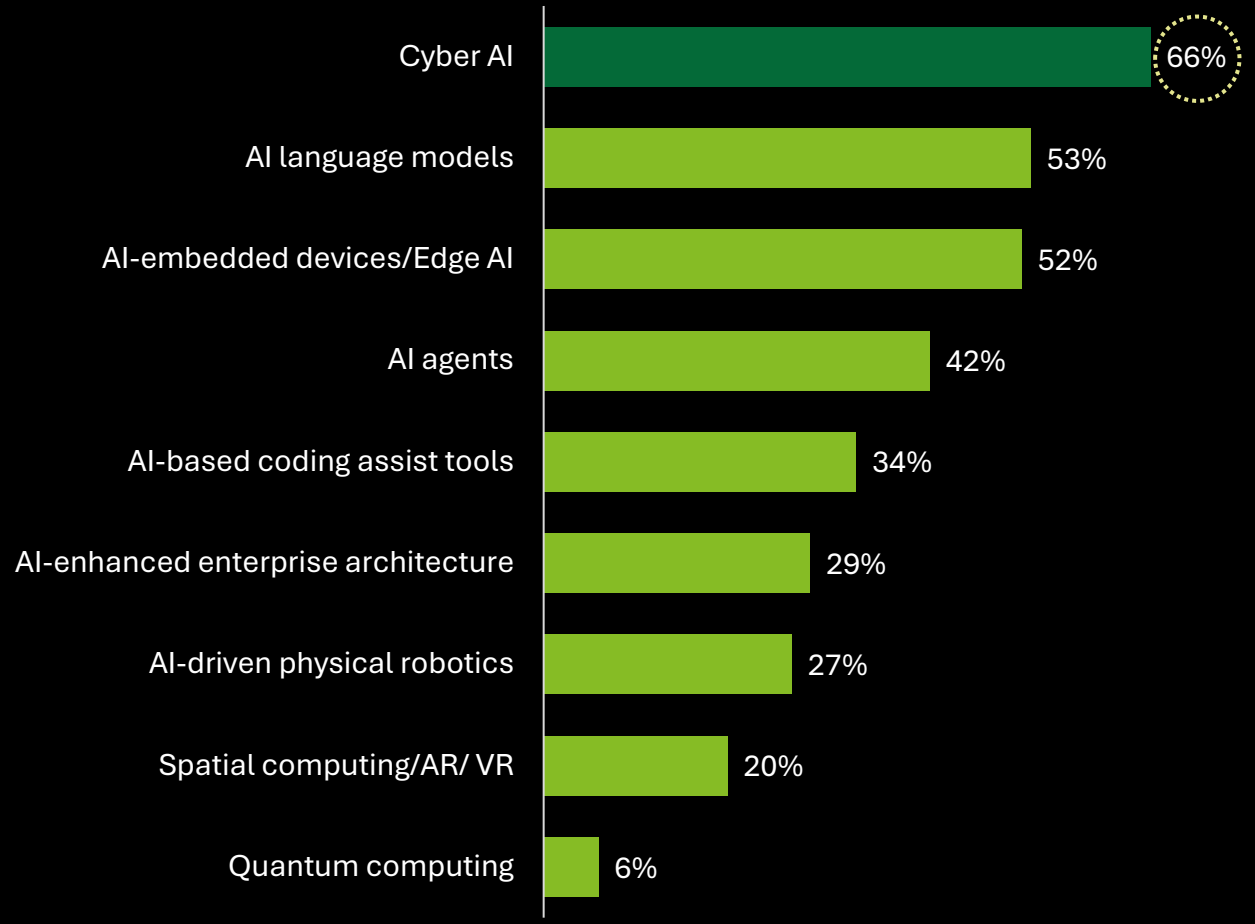


This suggests that while organizations face both external and internal hurdles, confidence in the transformative potential of emerging technologies remains strong.

Optimism and anticipated impact align for key emerging technologies

Cyber AI, AI language models and Edge AI lead near-term impact expectations

Which of the following emerging technologies do you believe will have the most significant impact on your organization over the next two years?



More respondents report that their organizations expect Cyber AI/AI-enhanced cybersecurity (66%), AI language models (53%), and AI-embedded devices/Edge AI (52%) to have the most significant impact over the next two years.

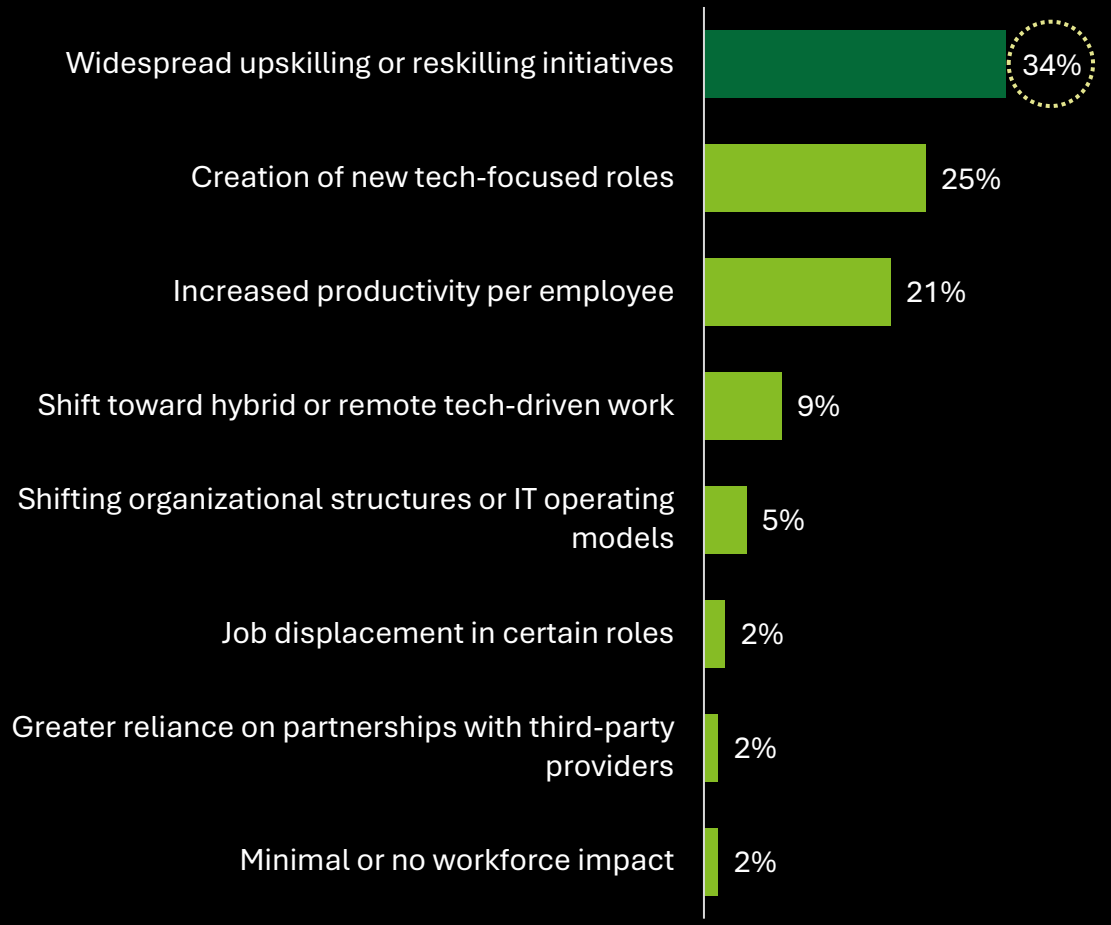
On the other hand, Quantum computing is believed to have the least impact over the next 2 years, with only 6% anticipating it to be significant.

95% confident @ +/-4.4

Workforce impact of emerging technologies

Upskilling and new tech-focused roles will reshape the workforce

What will be the biggest change you anticipate to your organization's workforce from adopting emerging technologies?



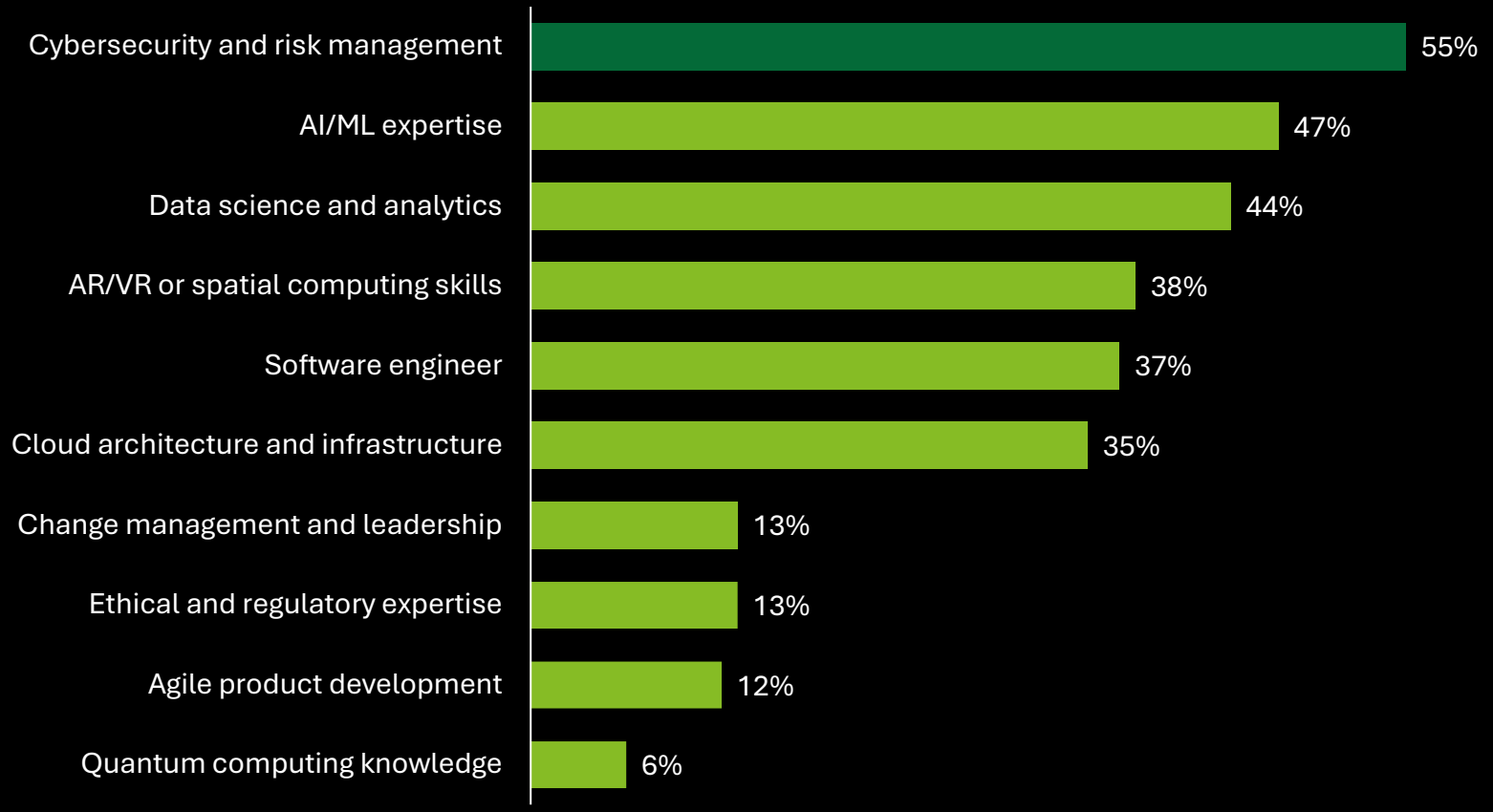
Over a third of respondents (34%) report ‘Widespread upskilling or reskilling initiatives’, as the biggest change they anticipate to their organization’s workforce from adopting emerging technologies followed by the ‘Creation of new tech-focused roles’ (25%) and ‘Increased employee productivity’ (21%).

95% confident @ +/-4.4

Top skills needed to implement emerging technologies & gain value

Cybersecurity and risk management (55%), AI/ML expertise (47%), and data science and analytics (44%) are the top three skills respondents report are most needed by their organizations to successfully implement and gain value from emerging technologies.

Which of the following skills or capabilities does your organization need most to successfully implement and gain value from emerging technologies?

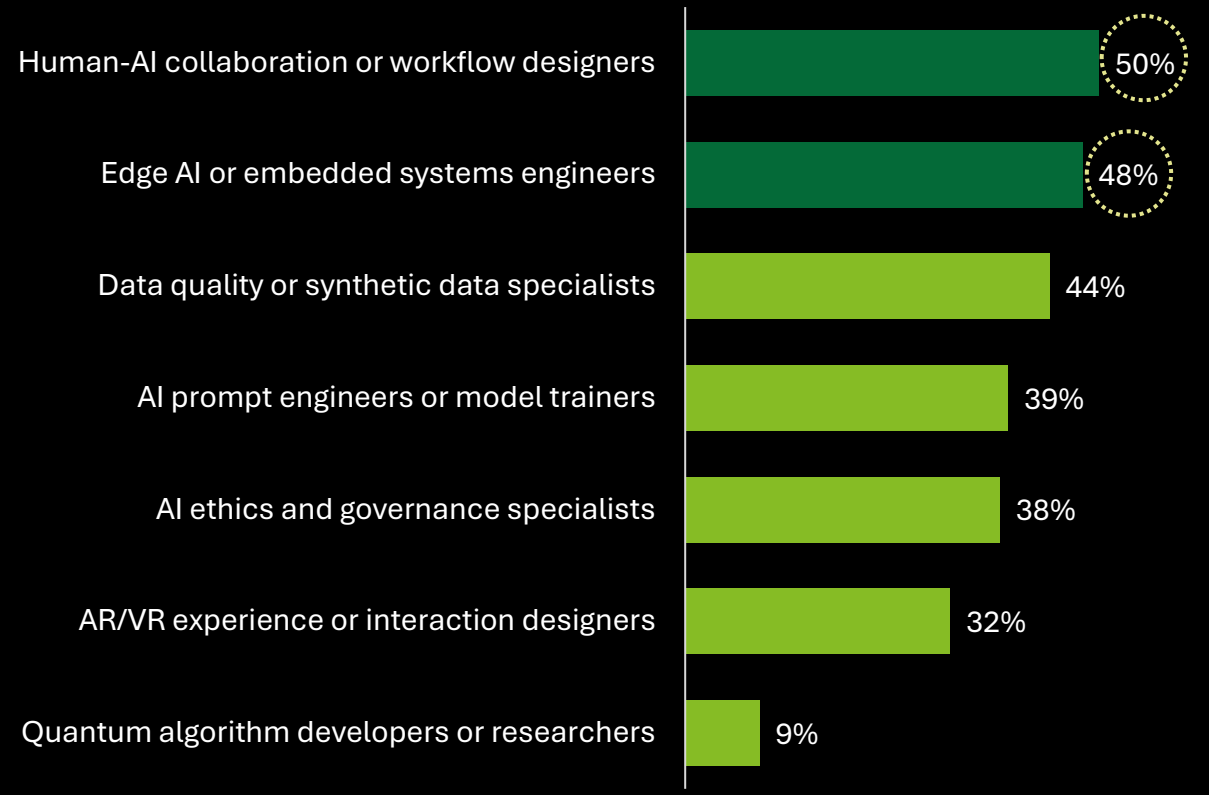


Workforce impact of emerging technologies

Upskilling and new tech-focused roles will reshape the workforce

What will be the biggest change you anticipate to your organization's workforce from adopting emerging technologies?

% of Organizations Anticipating New Roles from Emerging Technologies



Human-AI collaboration or workflow designers (50%), and Edge AI or embedded systems engineers (48%) are the most anticipated new roles to emerge as organizations adopt emerging technologies.

In contrast, quantum algorithm developers or researchers (9%) are expected to emerge in fewer organizations, reflecting the more nascent state of quantum technology adoption.

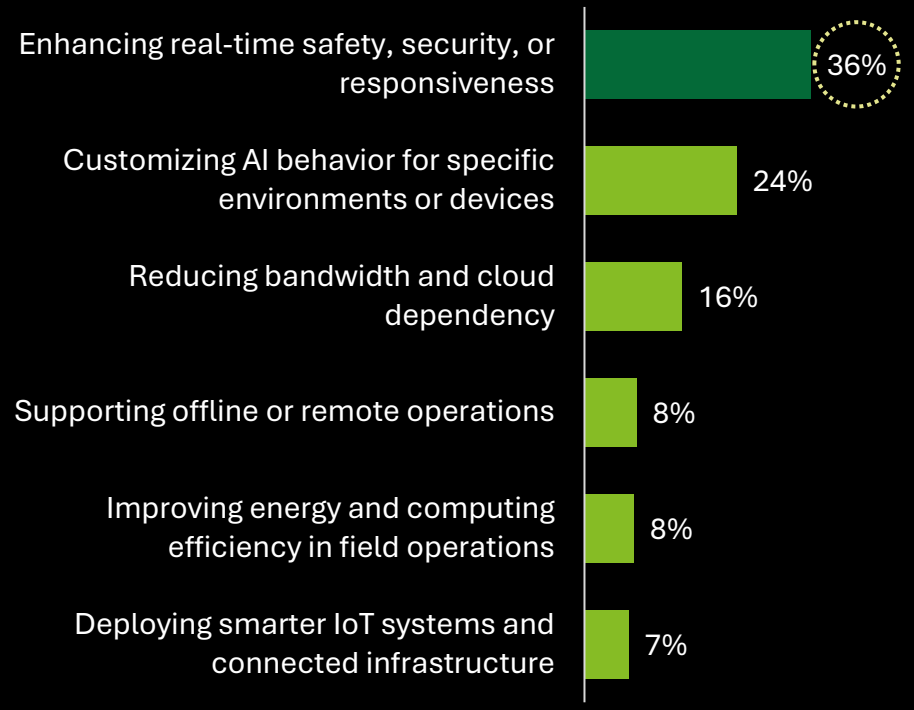
These trends highlight how emerging technologies are reshaping the workforce, emphasizing new roles in AI collaboration, data management, and specialized engineering.

Organizations are deploying edge AI to enhance real-time responsiveness, operational efficiency, and environment-specific intelligence.

Adoption is driven by enhancing real-time safety, security, or responsiveness (36%) and customizing AI for specific devices or environments (24%), enabling smarter, adaptive operations.

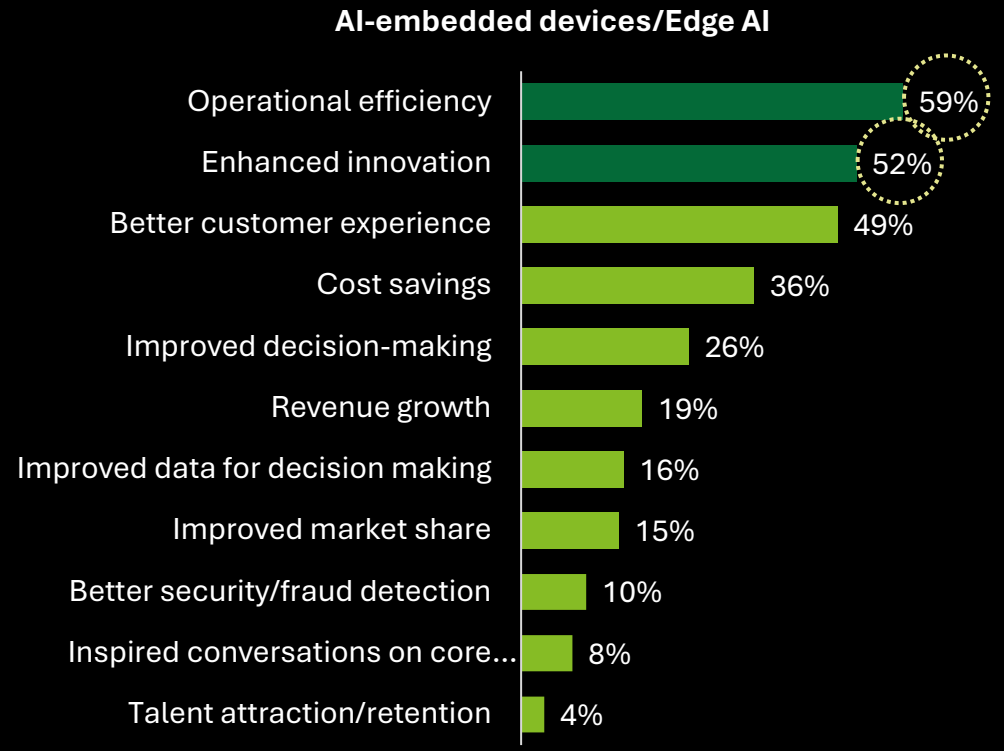
Benefits include operational efficiency (59%), enhanced innovation (52%), and better customer experiences (49%), highlighting tangible impact on both performance and outcomes.

What is the primary reason your organization is exploring or deploying AI-embedded devices or Edge AI?



95% confident @ +/-4.4

How has your organization benefited from implementing emerging technologies?

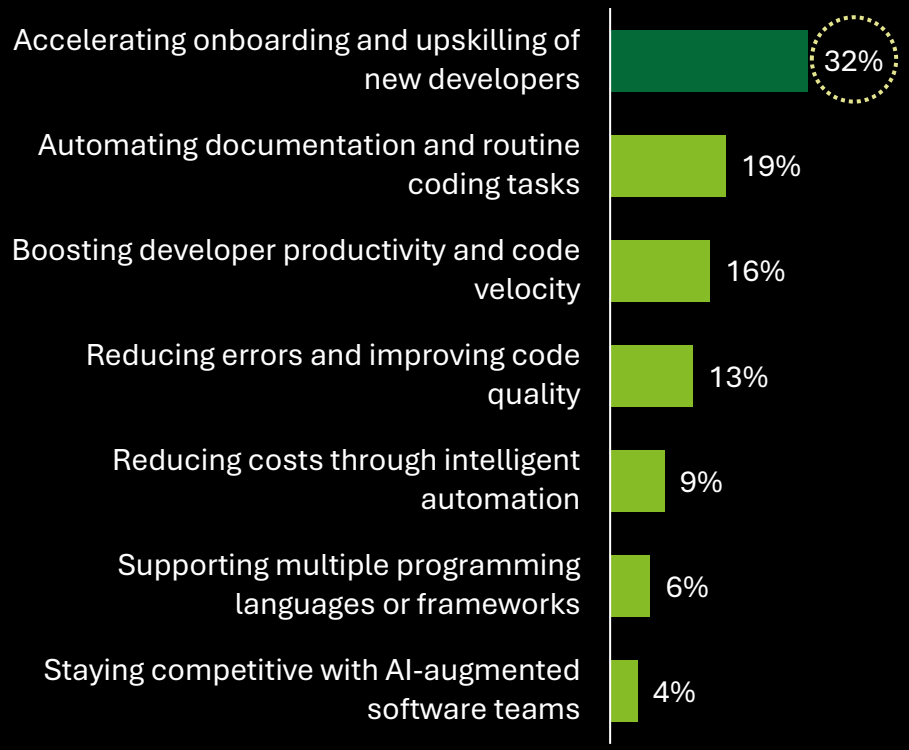


Organizations are adopting AI-based coding tools mainly to accelerate developer productivity and onboarding while improving code quality.

Adoption is primarily driven by accelerating onboarding and upskilling of new developers (32%) and automating documentation and routine coding tasks (19%), helping teams work faster and more efficiently.

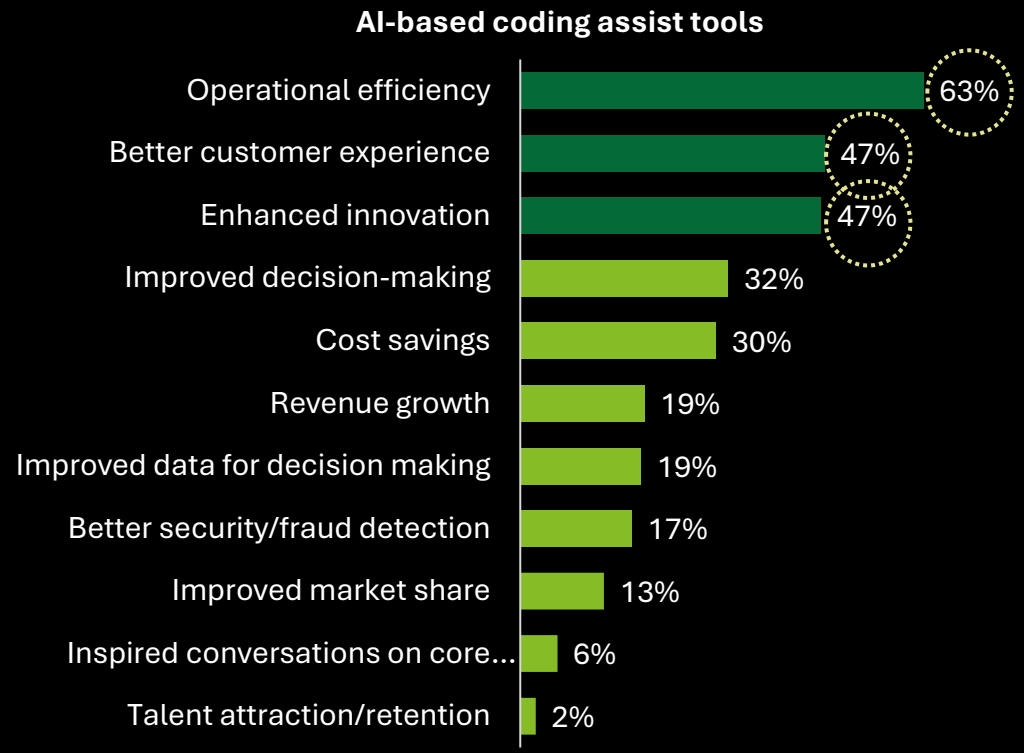
Benefits include operational efficiency (63%), better customer experiences (47%), and enhanced innovation (47%), showing clear impact on both development performance and business outcomes.

What is the primary reason your organization is exploring or adopting AI-based coding assist tools?



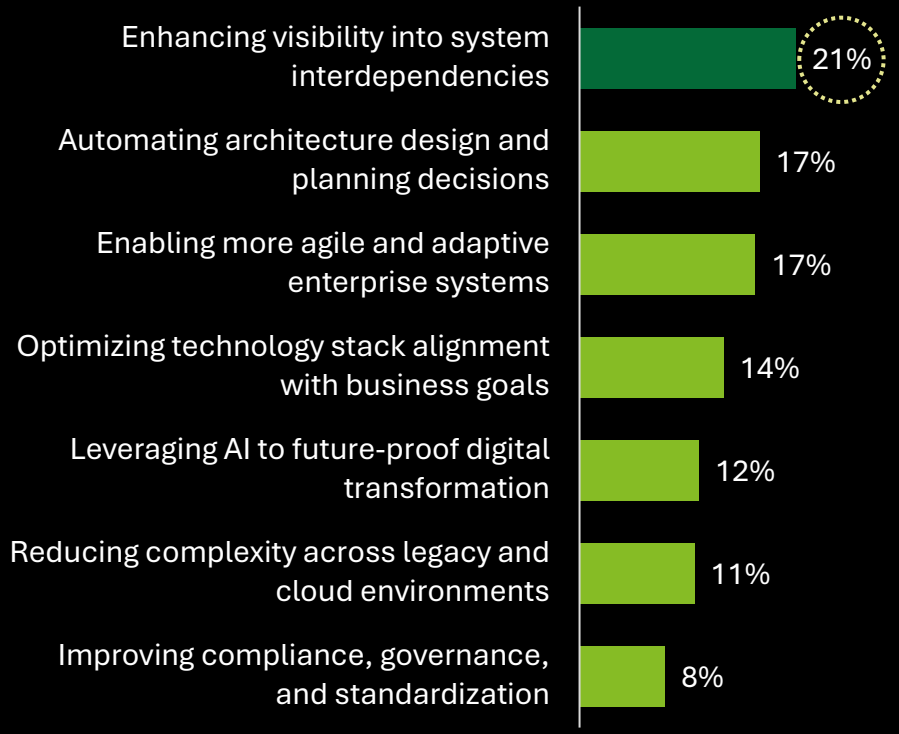
95% confident @ +/-4.4

How has your organization benefited from implementing emerging technologies? Please select up to three benefits.

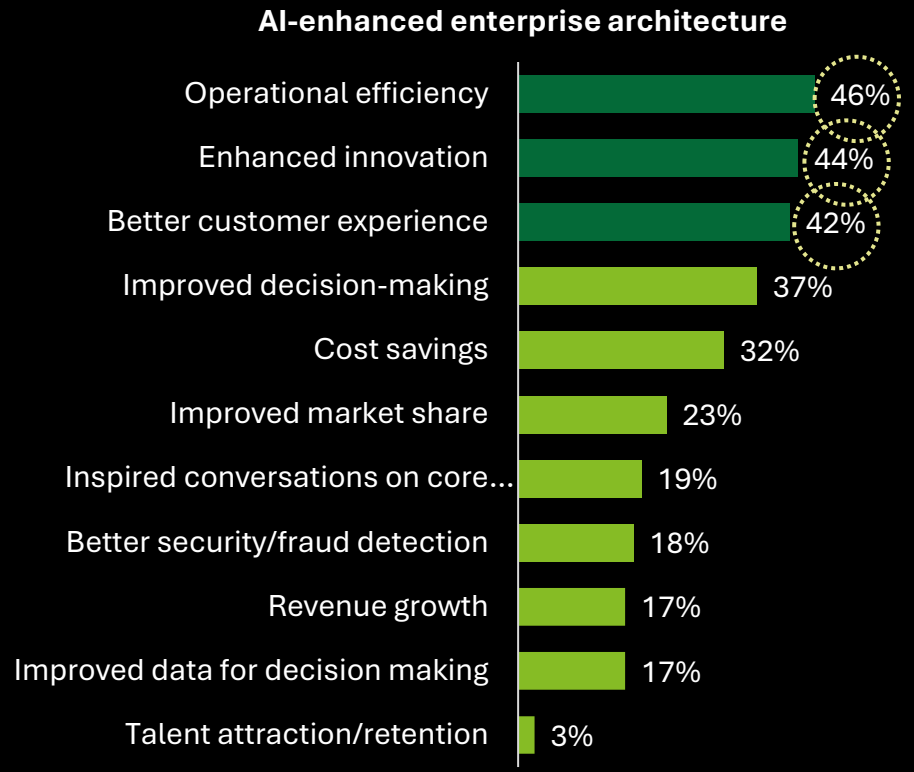


Organizations are adopting AI-enhanced enterprise architecture to improve system visibility, agility, and alignment with business goals.

What is the primary reason your organization is exploring or adopting AI-enhanced enterprise architecture?



How has your organization benefited from implementing emerging technologies?



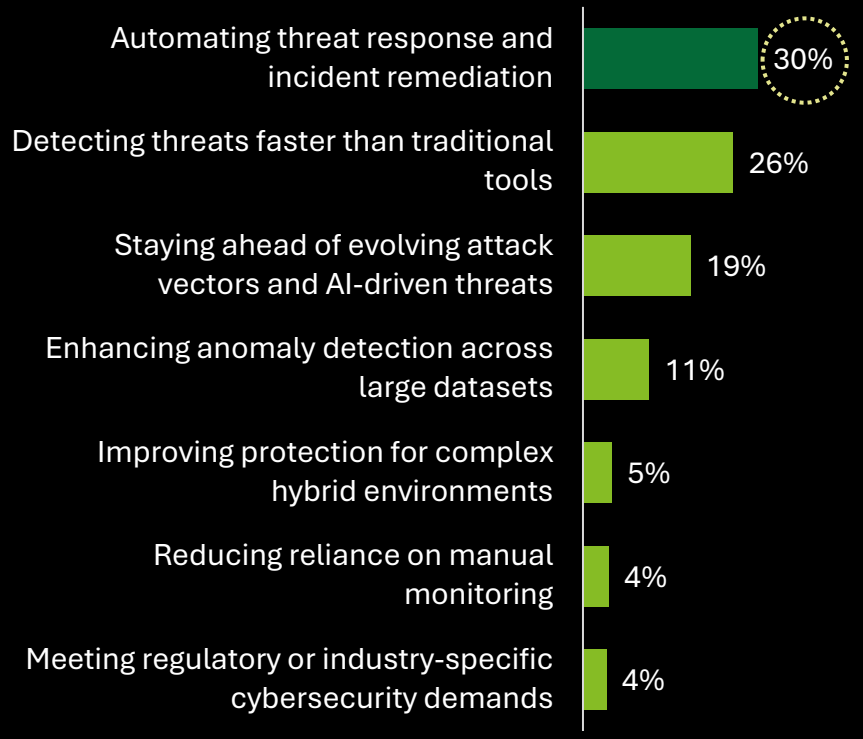
95% confident @ +/-4.4

Organizations are adopting cyber AI to detect threats faster, automate responses, and stay ahead of evolving risks.

Adoption is primarily driven by automating threat response and incident remediation (30%) and detecting threats faster than traditional tools (26%), improving security efficiency and speed.

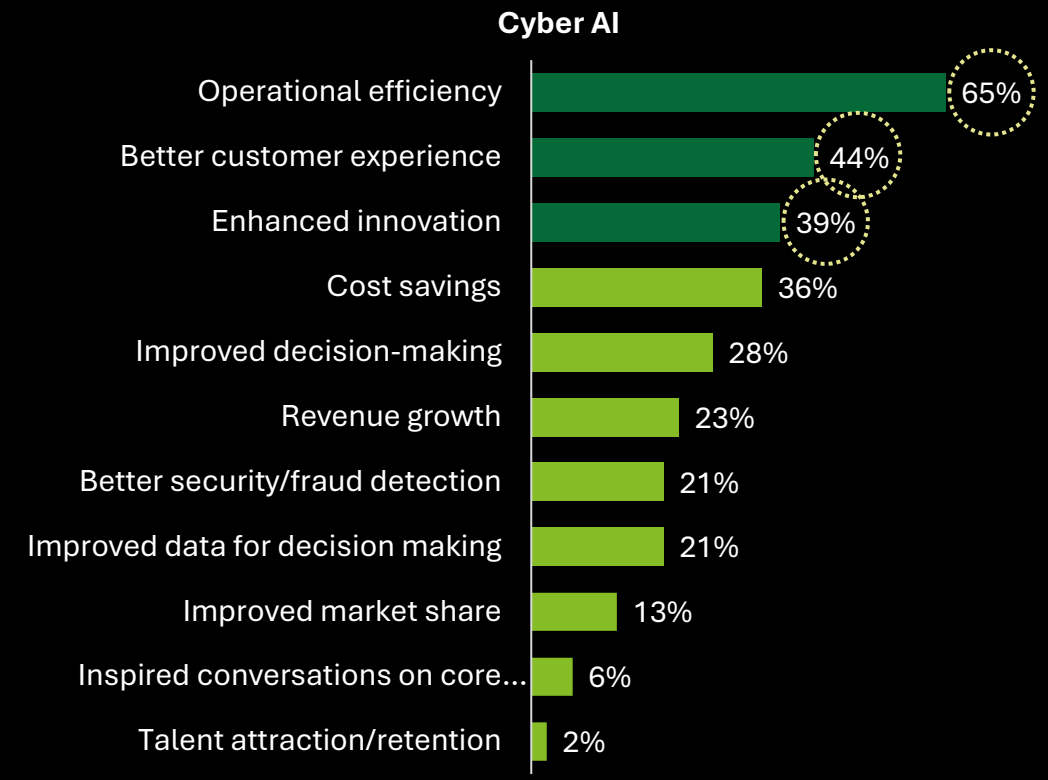
Benefits include operational efficiency (65%), better customer experiences (44%), and enhanced innovation (39%), showing clear impact on both security posture and overall business performance.

What is the primary reason your organization is exploring or adopting AI-enhanced cybersecurity/Cyber AI?



95% confident @ +/-4.4

How has your organization benefited from implementing emerging technologies?

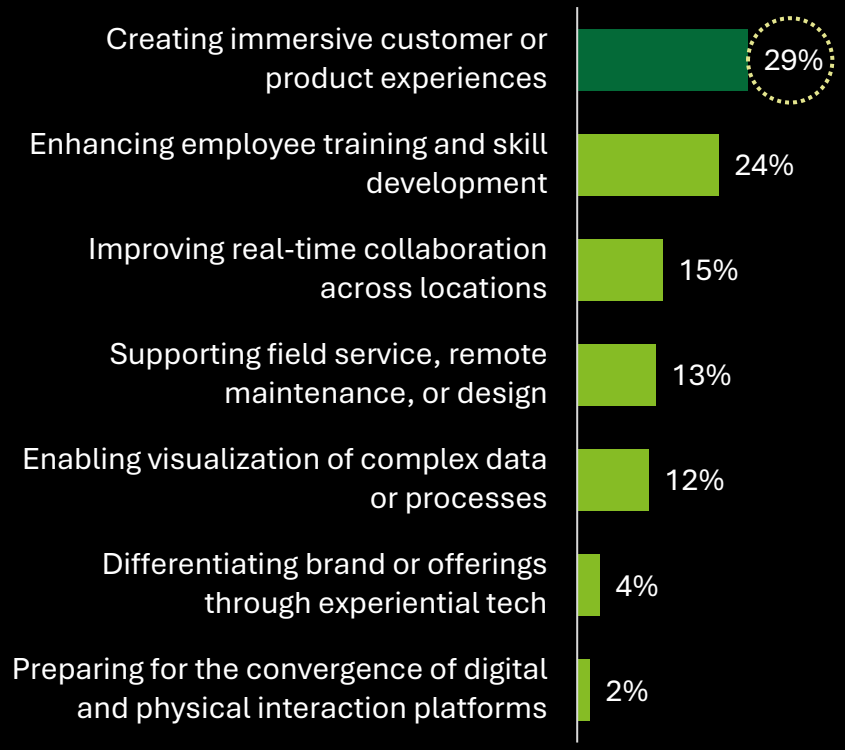


Organizations are adopting spatial computing to create immersive experiences and enhance employee development.

Reasons for adoption are mixed but creating immersive customer or product experiences (29%) and enhancing employee training and skill development lead (24%).

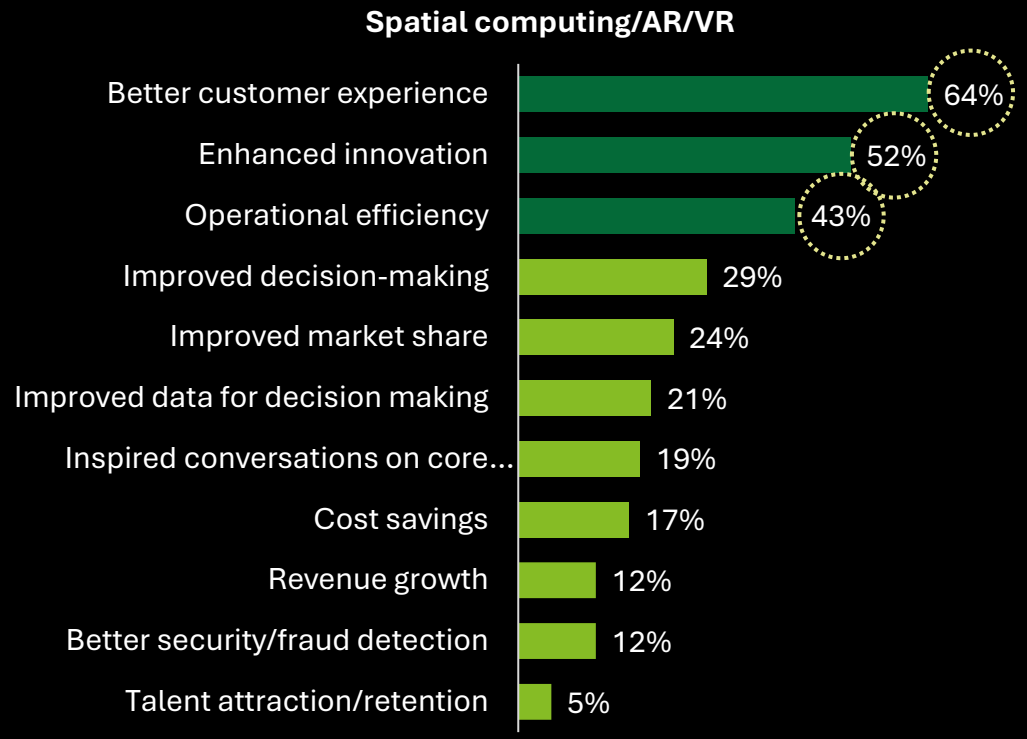
Benefits include better customer experience (64%), enhanced innovation (52%), and operational efficiency (43%), showing clear impact on those who are using it.

What is the primary reason your organization is exploring or adopting spatial computing or augmented reality/virtual reality?



95% confident @ +/-4.4

How has your organization benefited from implementing emerging technologies?

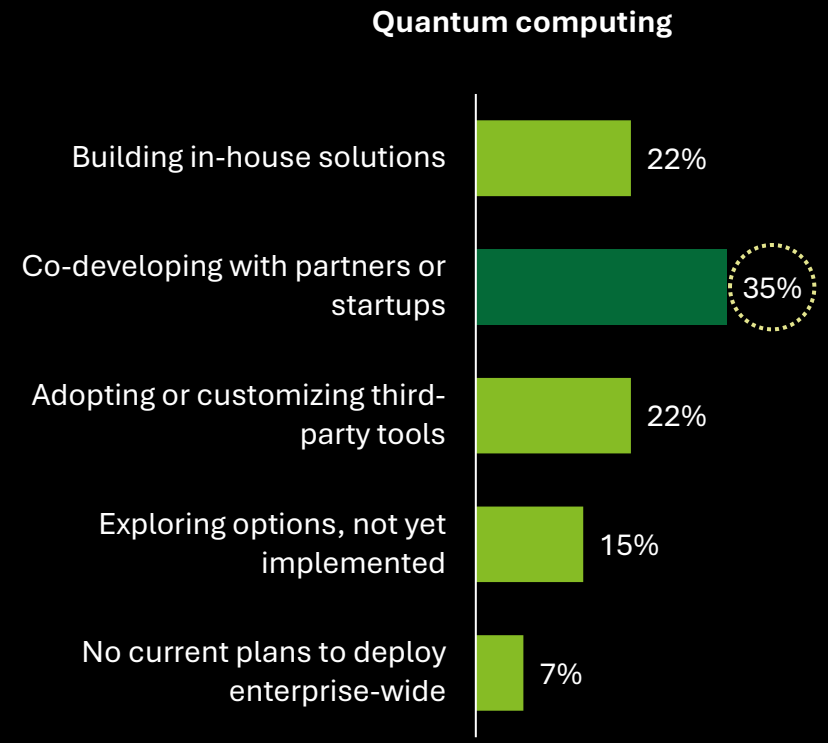


Early-stage deployment focused on co-development, strategy still forming for quantum computing

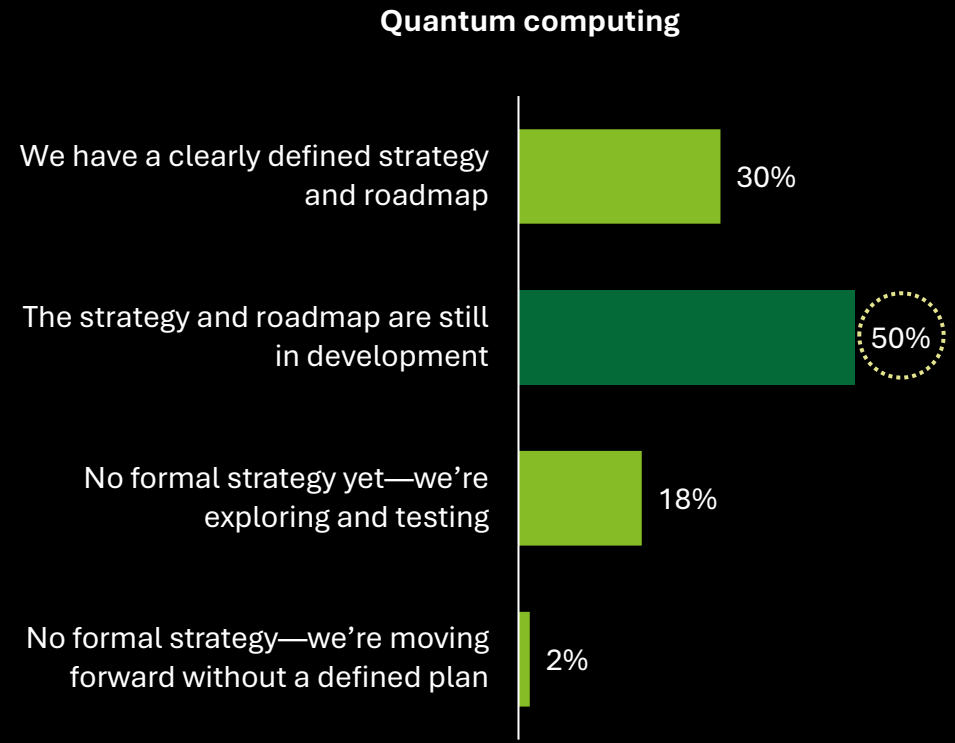
35% are co-developing solutions, and 22% are building in-house.

30% have a clearly defined strategy, while 50% are still finalizing their roadmap.

What approach is your organization taking for deploying each of the following technologies?



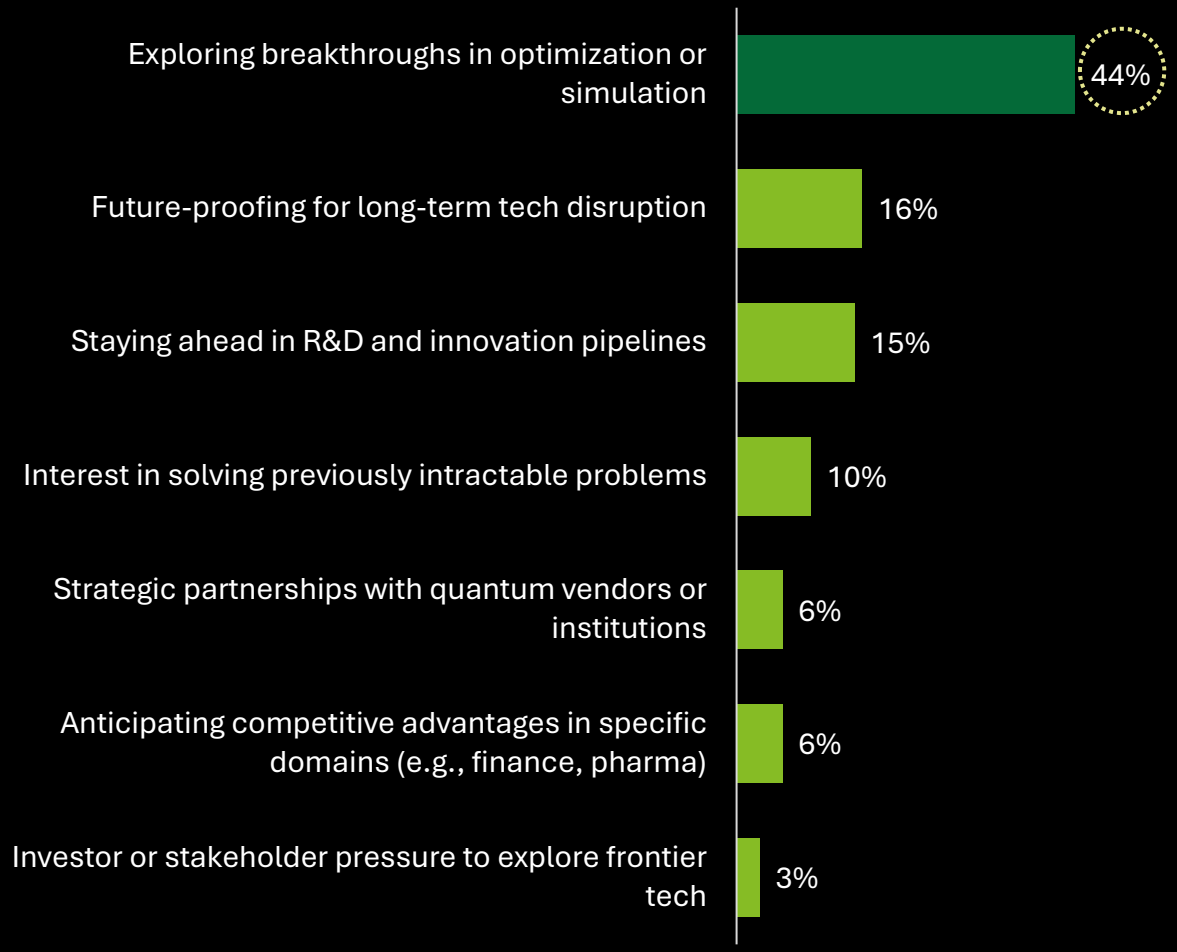
How would you describe your organization's current strategic approach to integrating the following emerging technologies?



95% confident @ +/-4.4

Organizations are investing in quantum computing to drive breakthroughs in optimization, simulation, and next-generation problem solving.

What is the primary reason your organization is exploring or investing in quantum computing?



95% confident @ +/-4.4

The primary reason for adoption Quantum computing is exploring breakthroughs in optimization or simulation (44%), enabling advanced capabilities and strategic positioning.

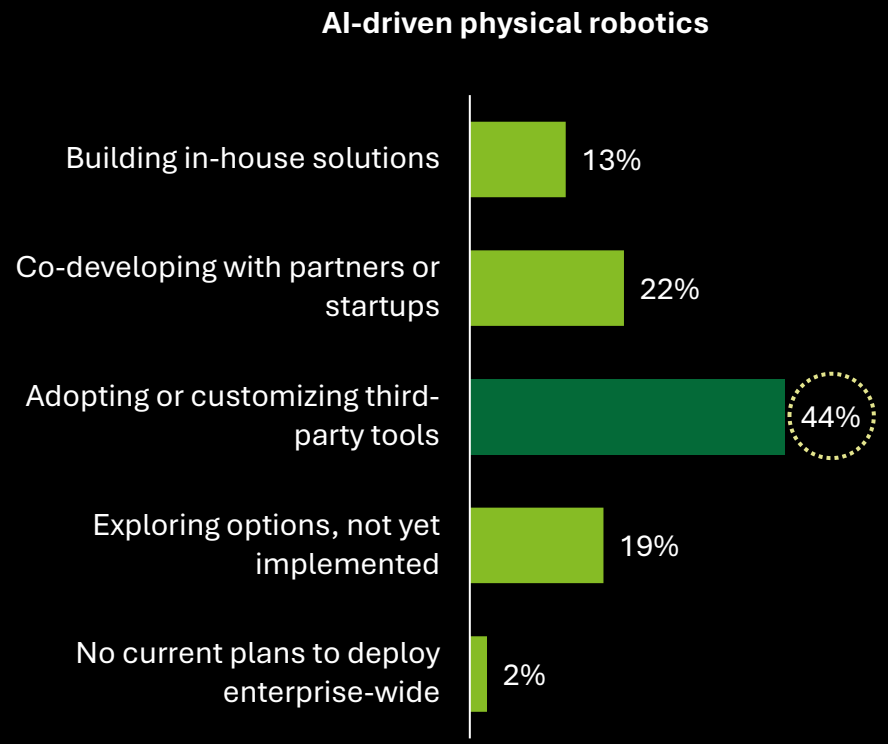
Other drivers include future-proofing for long-term technological disruption (16%) and staying ahead in R&D pipelines (15%), preparing for competitive advantages in high-impact domains.

Third-party adoption and co-development drive deployment, most roadmaps still developing for AI-driven physical robotics

44% adopt or customize third-party solutions, while 22% co-develop with partners.

22% have a clearly defined strategy, with 57% still developing their roadmap for broader deployment.

What approach is your organization taking for deploying each of the following technologies?



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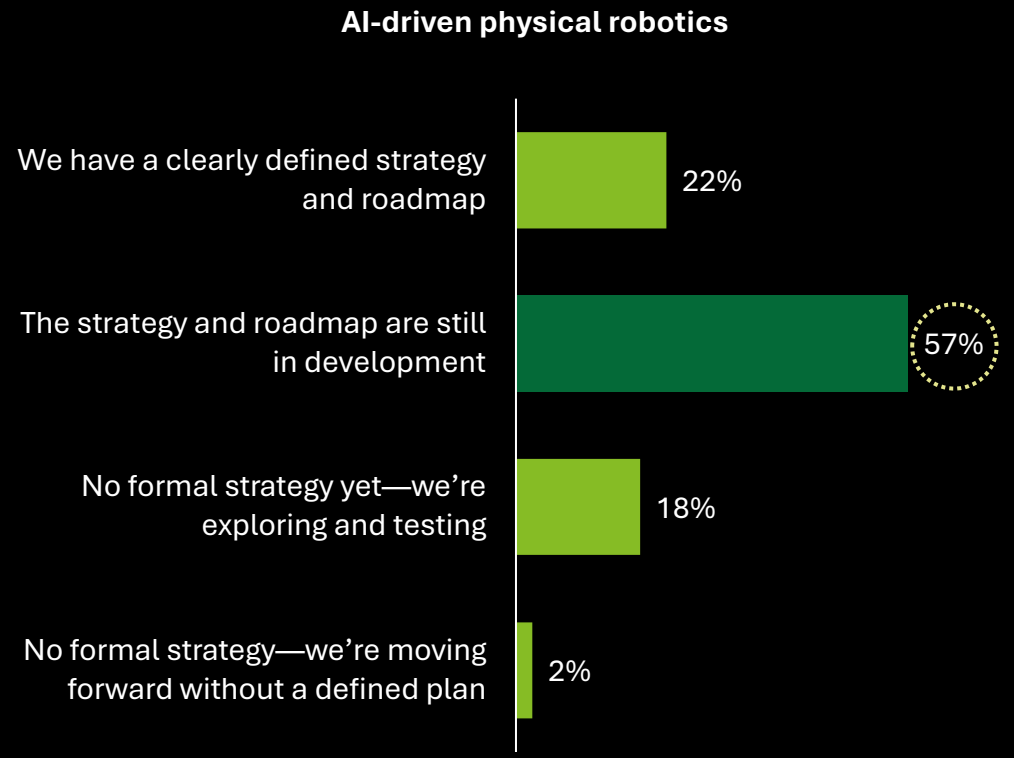


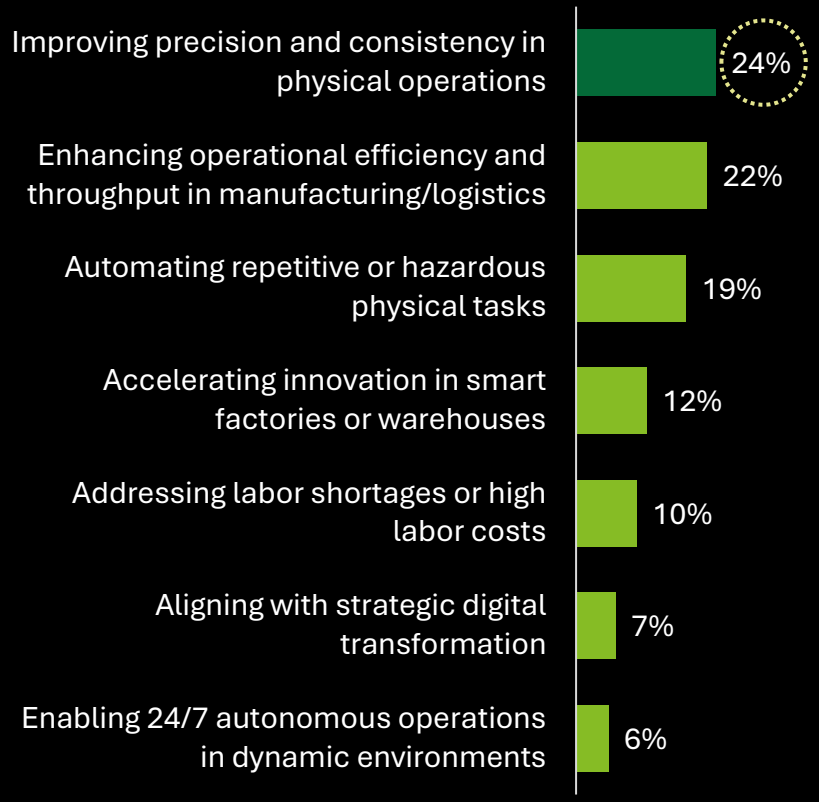
95% confident @ +/-4.4

Organizations are adopting AI-driven robotics to boost efficiency, precision, and automation.

Adoption is primarily driven by improving precision and consistency in physical operations (24%) and enhancing efficiency in manufacturing and logistics (22%), addressing both productivity and safety.

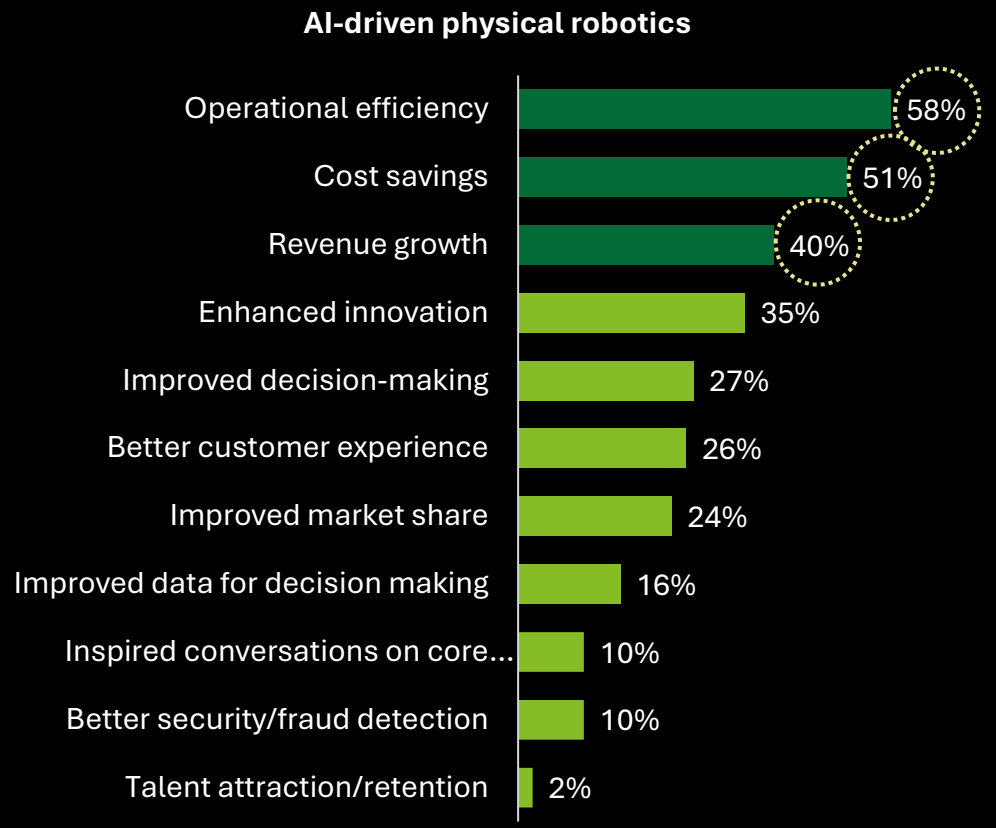
Benefits include better customer experiences (64%), enhanced innovation (52%), and operational efficiency (43%), demonstrating tangible impact on performance and business outcomes.

What is the primary reason your organization is exploring or adopting AI-driven physical robotics?



95% confident @ +/-4.4

How has your organization benefited from implementing emerging technologies?

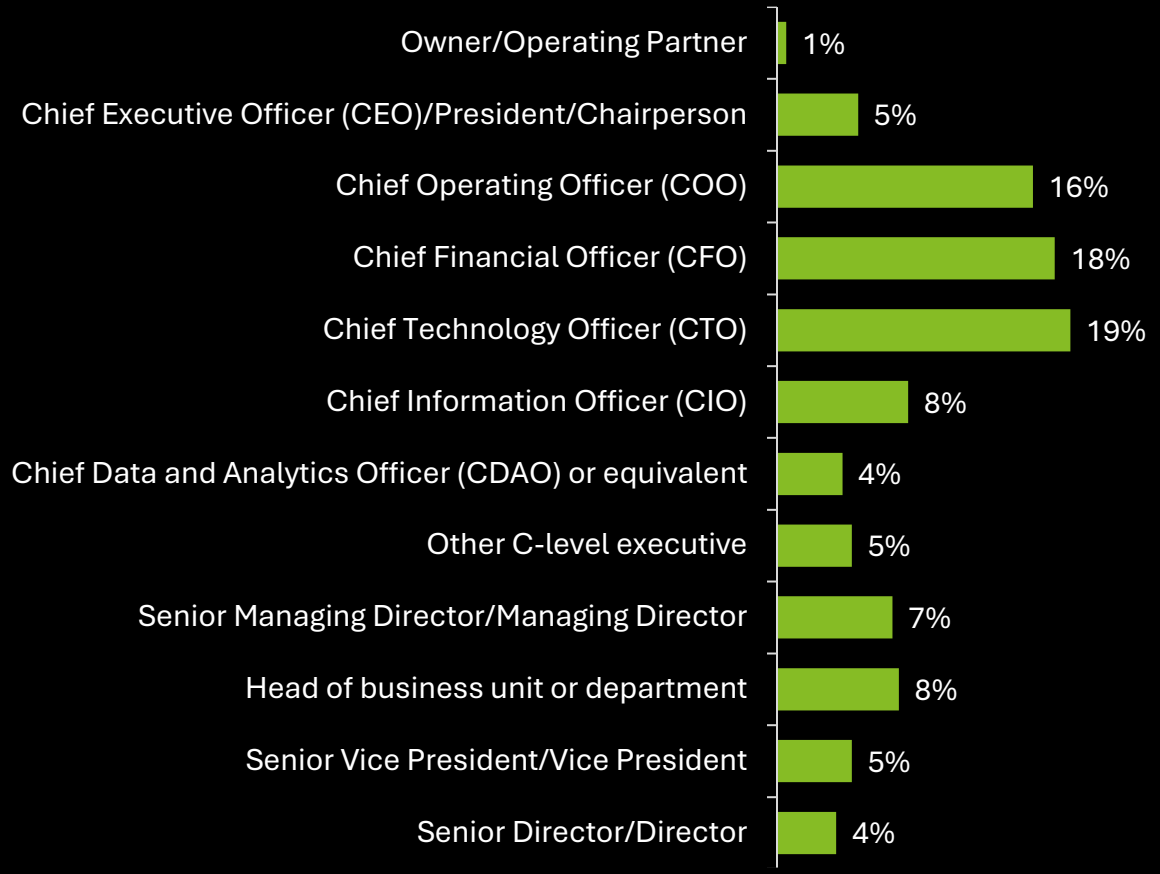


Respondent’s Title/Job Role

76% of respondents had C-Suite positions and the remaining 24% had Non-C-Suite position.

In addition, over half of the respondents were CTOs, CFOs and COOs.

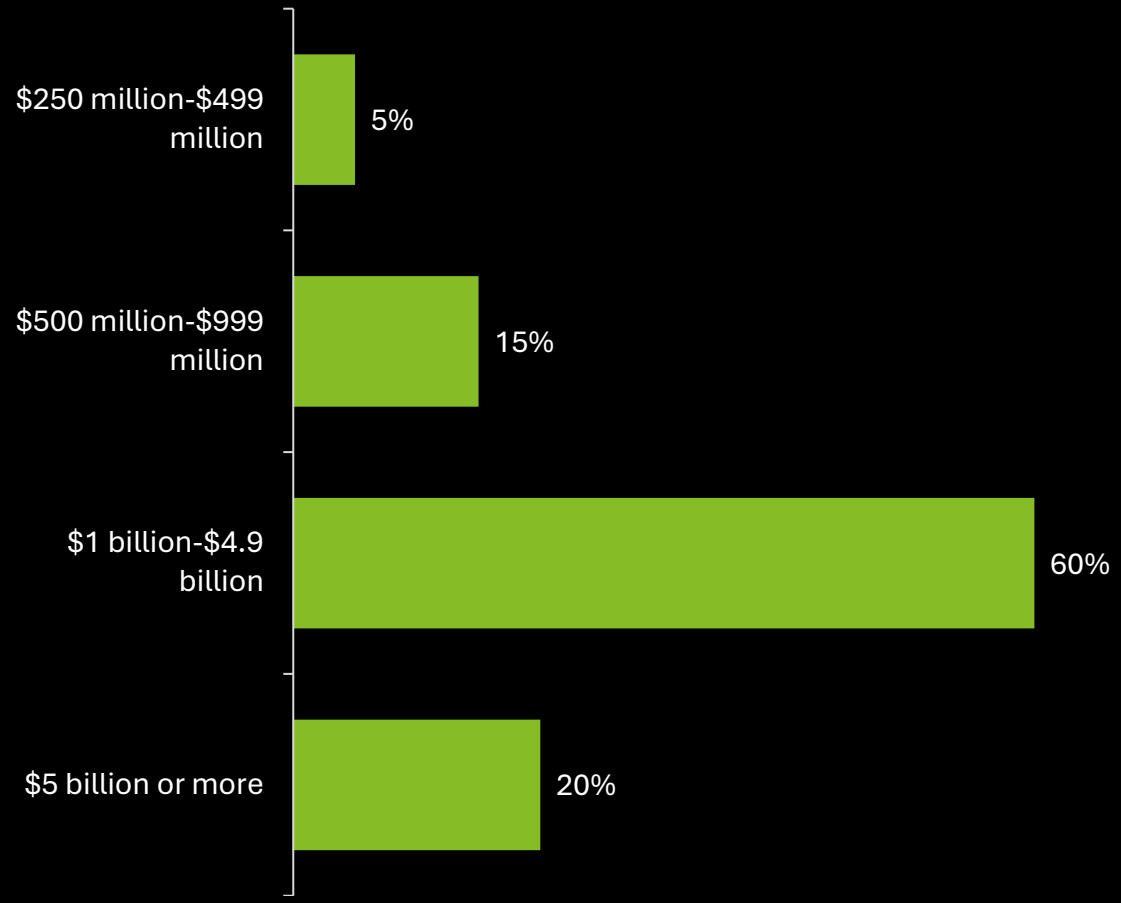
Which of the following best describes your current title or role at your organization?



Organization’s annual revenue breakdown

Most respondents (60%) reported revenue between $1 billion and $4.9 billion. 20% reported revenue under $1 billion and 20% reported revenue greater than $5 billion.

What was the annual revenue of your organization last year?



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