

2026

State of Industrial AI

Report

How connectivity, security & collaboration
enable scaled industrial AI



Introduction

Over 1,000 respondents participated in the 2026 State of Industrial AI Report.

Following the success of the inaugural 2024 State of Industrial Networking Report, this edition looks at how firms operating in industrial sectors worldwide are adopting Artificial Intelligence; the challenges they face; and the opportunities for AI-powered transformation. We spoke to decision-makers at firms in 19 countries, operating in 21 industrial sectors including manufacturing, utilities and transportation.

Here are the aggregated findings from companies with annual revenues over \$100 million. We examine the nuances by maturity level – and delve into respondents' most pressing concerns.

Cisco, in association with Sapio Research, undertook this study to establish levels of AI adoption in industrial networking; the operational outcomes organizations are achieving from AI investments; barriers to scale; and how to align for success.



Executive Summary



Industrial AI demands network modernization

AI implementation is placing unprecedented demands on underlying infrastructure.

- 51% of organizations expect significant increases in connectivity and reliability requirements
- 96% of decision-makers say reliable wireless networks are vital for enabling AI
- Greater edge compute capacity (44%), bandwidth (42%), and mobility (40%) are top network requirements for AI at scale

Network readiness now determines AI success, with infrastructure limitations directly constraining the ability to scale deployments.



Cybersecurity is both the #1 barrier and the #1 asset

Expanding AI adoption elevates cybersecurity risk across industrial environments.

- 40% cite cybersecurity concerns as a top obstacle to AI adoption
- 48% identify security as their biggest networking challenge
- 85% expect AI to improve their cybersecurity posture

While security gaps are limiting AI scale today, organizations view AI as a tool to strengthen detection, monitoring, and resilience.



IT/OT collaboration is critical to AI at scale

Effective collaboration between IT and OT teams directly impacts AI outcomes.

- 43% continue to operate with limited or no IT/OT cooperation
- 90% report wireless instability with siloed teams (vs. 61% with collaboration)
- Only 72% are confident in scaling AI without collaboration (vs. 83% with alignment)

While disparate teams slow AI deployment and increase operational risk, IT/OT alignment accelerates scalability, stability, and security.

Table of Contents

Introduction	2	Section 4: Cybersecurity & industrial AI interconnectedness	20
Executive Summary	3	Cybersecurity is now the #1 obstacle to AI adoption	21
Introduction Letter	5	Cybersecurity as a foundational requirement	22
Section 1: The state of industrial AI adoption	6	IT/OT collaboration on cybersecurity remains constrained	23
AI adoption has reached active deployment	7	AI as a cybersecurity enabler	24
AI adoption evolves from efficiency to resilience	8	Cyber-maturity & AI scalability	25
Operational efficiency drives AI adoption	9	Section 5: IT/OT convergence - the operating model for scaling AI	26
Cybersecurity concerns limit AI adoption	10	IT/OT collaboration remains uneven	27
Section 2: AI outcomes, ROI & investment priorities	11	Independent teams undermine AI confidence & outcomes	28
Firms expect AI to deliver operational gains	12	The converged operating model for AI-ready enterprises	29
AI investments bring high expectations	13	Section 6: Future outlook - scaling AI across industrial operations	30
Investment priorities for enabling AI	14	What the next 3-5 years will bring	31
AI investment priorities shift with maturity	15	Section 7: Key takeaways for industrial AI leaders	32
Section 3: AI runs on the network: infrastructure as the foundation for scale	16	Priorities for industrial leaders	33
AI adoption rewrites industrial infrastructure requirements	17	Guidance for accelerating AI deployment and impact	34
Network readiness is the primary constraint to AI scale	18	Section 8: Industrial AI partner considerations	35
Scaled AI adoption requires a network evolution	19	Section 9: Demographics & firmographics	37

Introduction Letter

I'm excited to introduce Cisco's 2026 State of Industrial AI Report - an evolution of our State of Industrial Networking Report. As industrial operations continue to transform, artificial intelligence is rapidly emerging as a gamechanger across manufacturing, utilities, transportation, and beyond. 2025 has been the year for many to experiment with AI in industrial settings; 2026 promises to be the year when many organizations move from pilots to real, production-ready AI projects.

This year's report is informed by the perspectives of 1,000 operational leaders across 19 countries and 21 industries. It highlights not only the tremendous potential of AI to enhance productivity, resilience, and safety, but also explores the challenges organizations face as they integrate AI into their industrial networking strategies - from data management to cybersecurity to IT/OT collaboration.

At Cisco, we remain committed to supporting our customers' digital transformation journeys. Our deep expertise in both IT and OT has positioned us to help organizations harness AI, enabling smarter, more secure, and more agile industrial networks at scale. Listening to our customers continues to be our top priority, and this year's survey reveals powerful insights about how industrial leaders are approaching AI adoption - and what's on their minds for the year ahead.

We're seeing companies bring AI to life in impactful ways: from deploying machine vision to ensure product quality in manufacturing, to rolling out AI-powered automated guided vehicles (AGVs) and autonomous mobile robots (AMRs) that are reshaping material handling and logistics, to leveraging agentic operations that drive more autonomous, adaptive, and efficient workflows across industrial environments. Additionally, AI is playing an increasingly critical role in cybersecurity for OT, where the scale and complexity of machine data demand intelligent, automated approaches that go beyond human capabilities.

We hope this report serves as a valuable resource, offering context and benchmarks to guide your strategy, partnerships, and innovation initiatives. By working together, we've already seen the extraordinary business outcomes that industrial networking for AI use cases can deliver. As the critical infrastructure for the AI era, Cisco is dedicated to empowering organizations to realize the full potential of industrial AI. We look forward to helping you unlock even more possibilities in the coming year.

Vikas Butaney

Senior Vice President and General Manager
Cisco Secure Routing and Industrial IoT



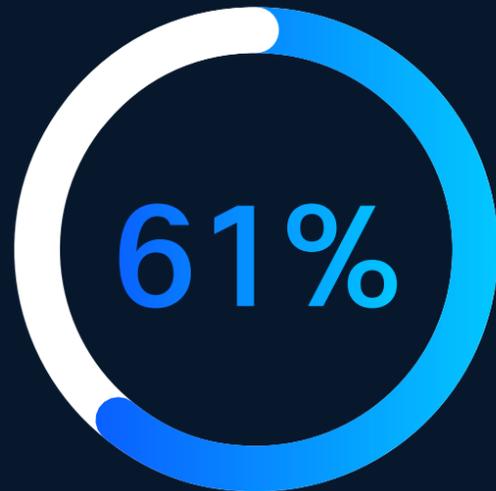
A futuristic industrial AI laboratory with a robotic arm and data screens. Three people are gathered around a table, looking at a robotic arm. In the background, there are large monitors displaying data and charts. The scene is lit with a cool blue light, creating a high-tech atmosphere.

Section 1

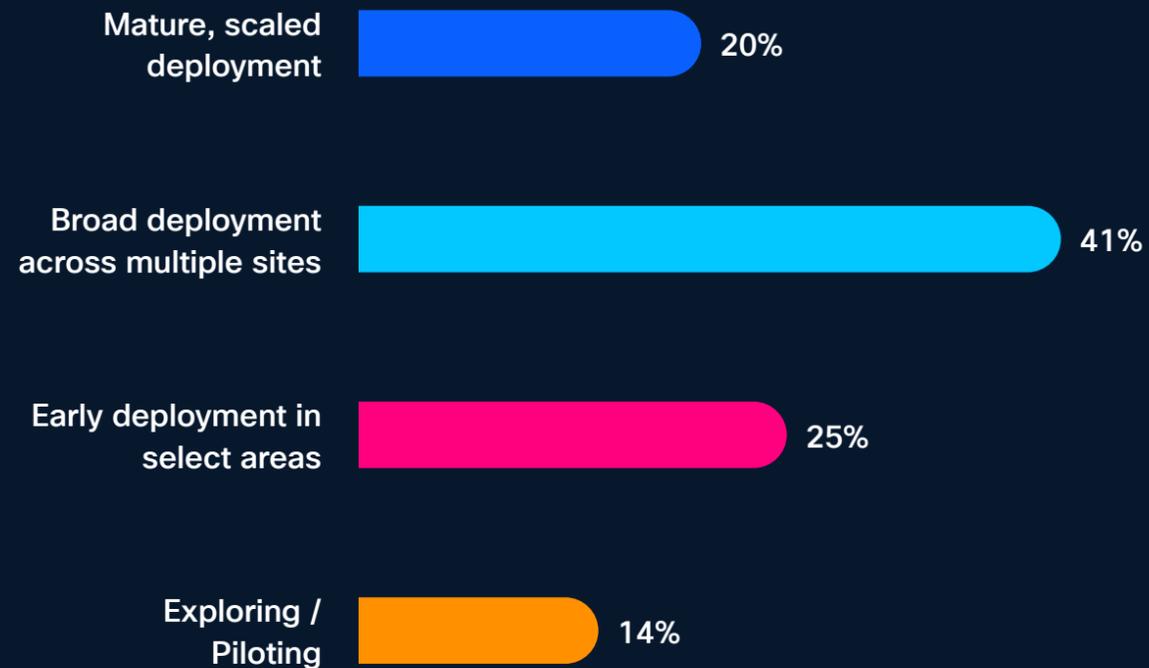
The state of industrial AI adoption

AI adoption has reached active deployment

AI adoption in industrial operations is established and broad, rather than experimental.



of organizations are actively deploying AI at scale.



Q. Which of the following best describes your organization's current stage of AI adoption in industrial operations? Select one



“

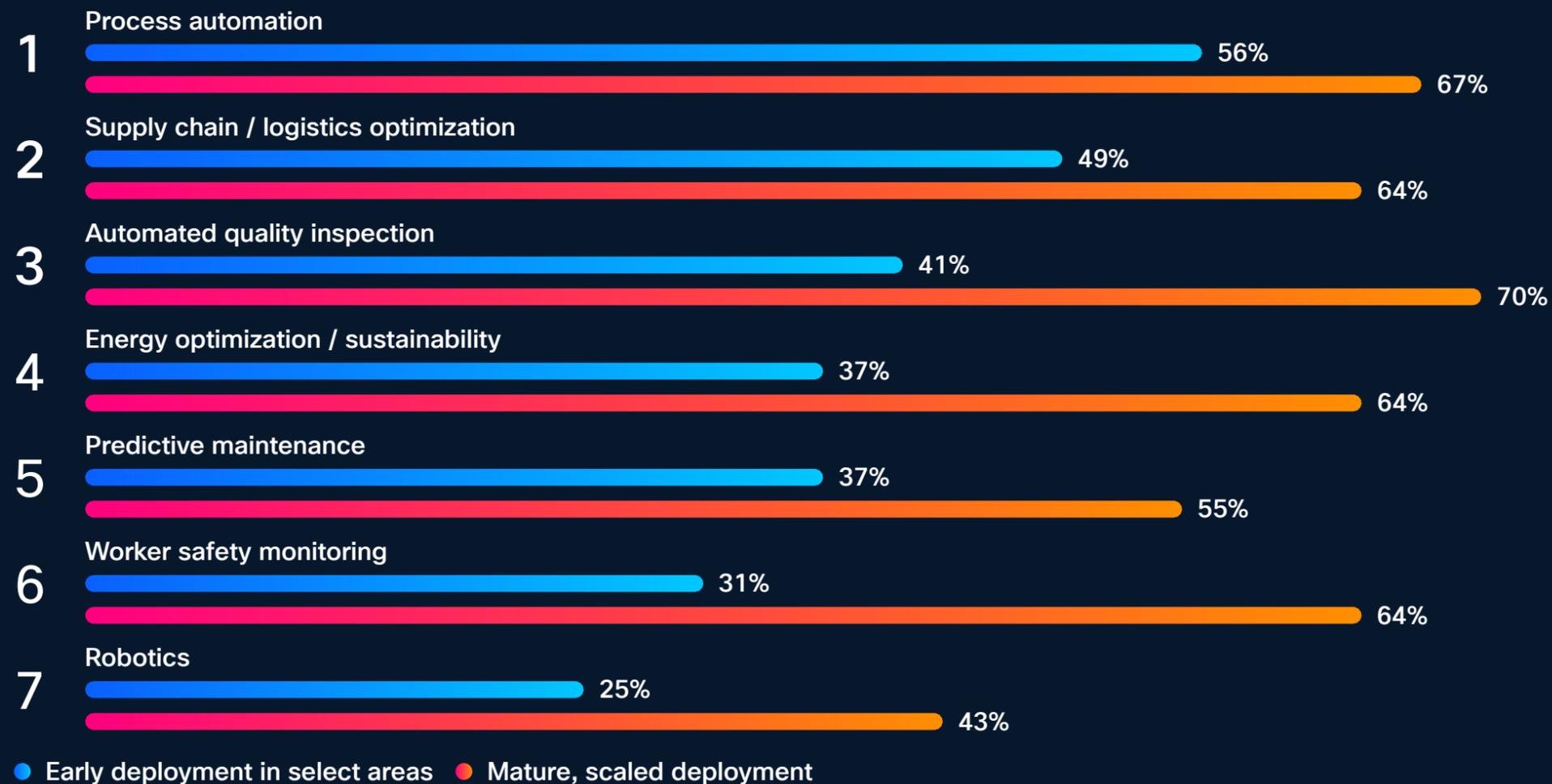
AI transformation reveals productivity for most, business reimagination for a few.

AI's real-world business impact is rising fast, with 25% of leaders now reporting that AI is having a transformative effect on their companies— more than double from 12% a year ago. Yet, most companies are only at the edge of large-scale AI-driven transformation.

Source: Deloitte "State of AI in the Enterprise", January 2026 - <https://www.deloitte.com/content/dam/assets-zone3/us/en/docs/services/consulting/2026/state-of-ai-2026.pdf>

AI adoption evolves from efficiency to resilience

Early adoption is characterized by efficiency-focused use cases, with AI widely deployed to support process consistency and throughput improvement.



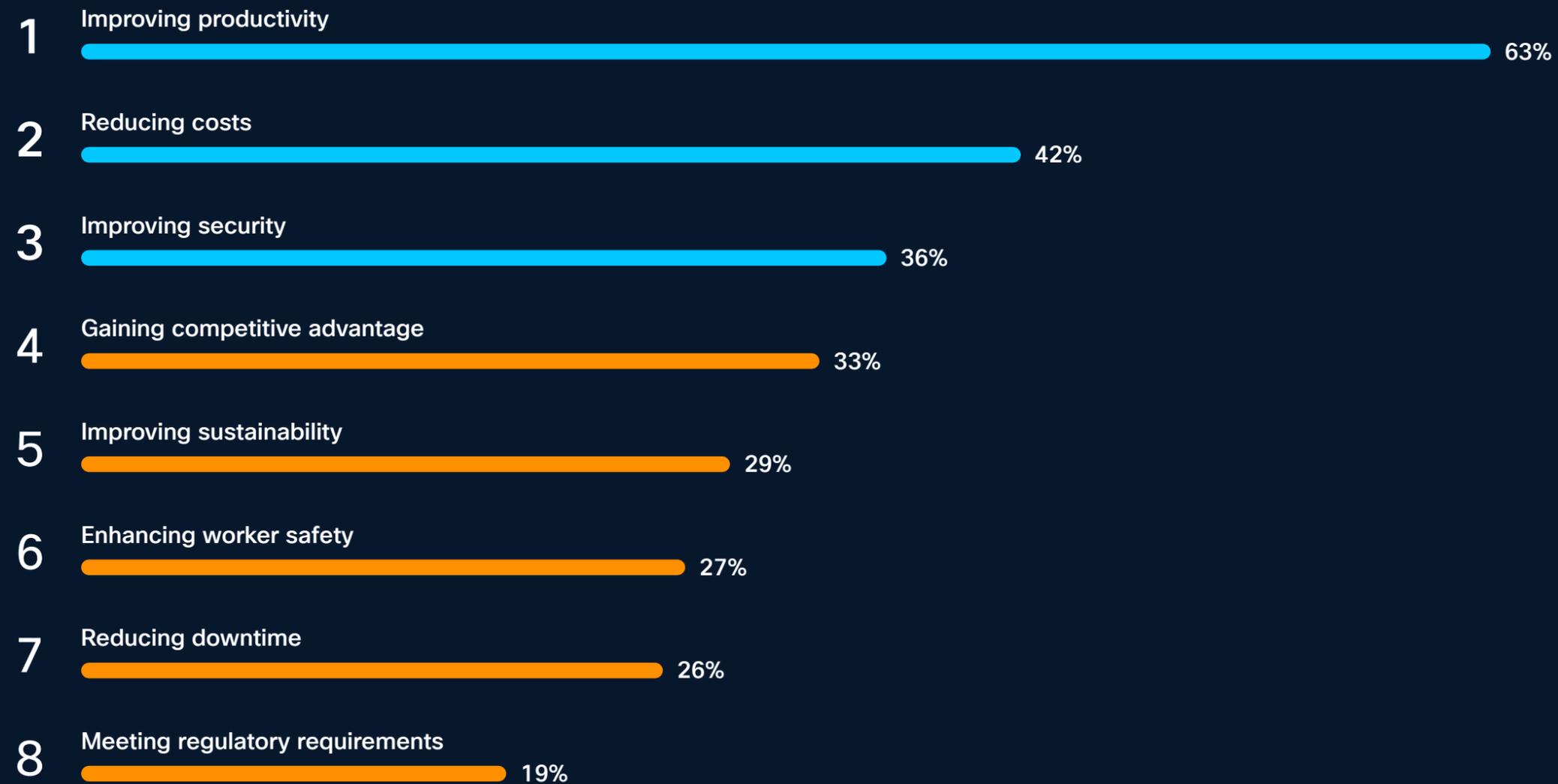
2 out of 3

organizations plan to expand AI into resilience-focused use cases.

Q. Which AI use cases are you currently exploring or deploying in your industrial operations? Select all that apply

Operational efficiency drives AI adoption

For most organizations, AI adoption begins as a productivity and cost-efficiency initiative – establishing a practical foundation for broader transformation over time.



expect AI outcomes within two years, reinforcing efficiency as the top starting point.

Q. What are the primary drivers behind your organization's interest in AI? Select up to three

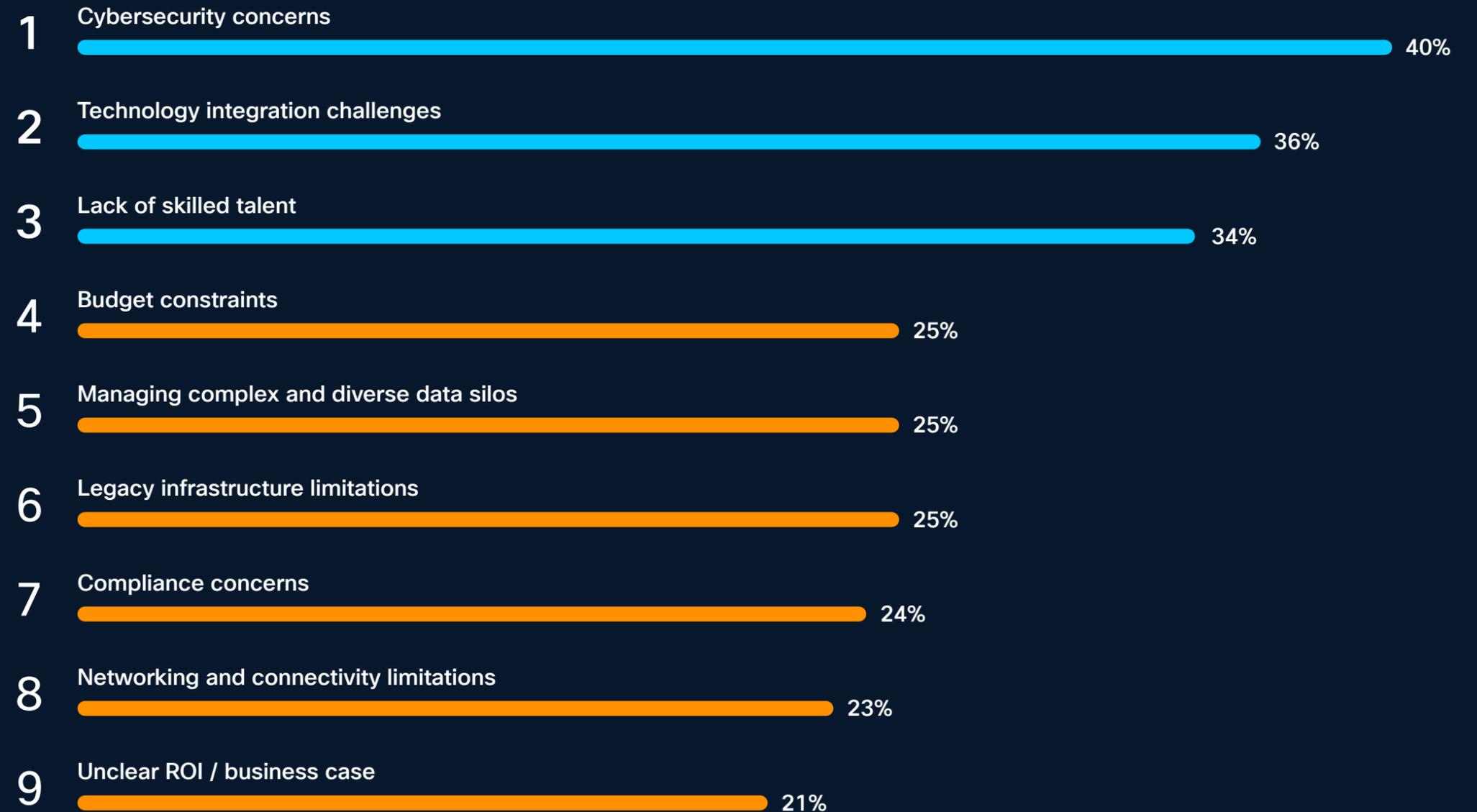
Cybersecurity concerns limit AI adoption

Despite rising adoption, infrastructure- and security-related barriers are limiting AI scalability.



Cybersecurity concerns are significantly limiting AI adoption by creating a “trust deficit” and introducing new, complex risks that outpace traditional security measures. A recent Forrester report cited that, “among AI decision-makers, 29% identify trust as the single largest barrier to generative AI adoption in their organizations.”

Source: <https://www.forrester.com/technology/generative-ai/>



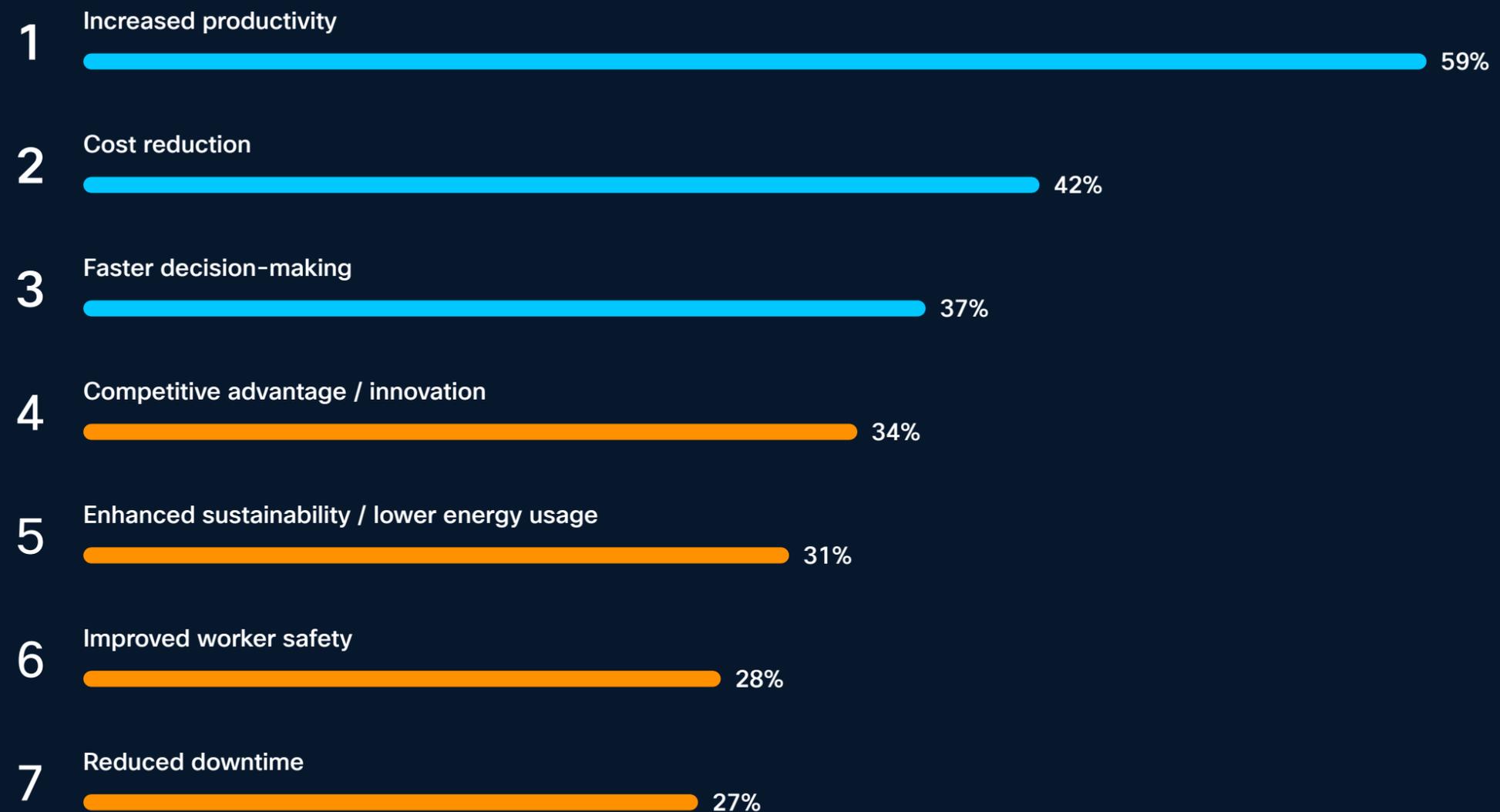
Q. What are the biggest obstacles your organization faces in adopting AI? Select up to three

Section 2

AI outcomes, ROI & investment priorities

Firms expect AI to deliver operational gains

Organizations' expectations remain closely aligned with investment drivers—primarily associated with near-term operational gains.



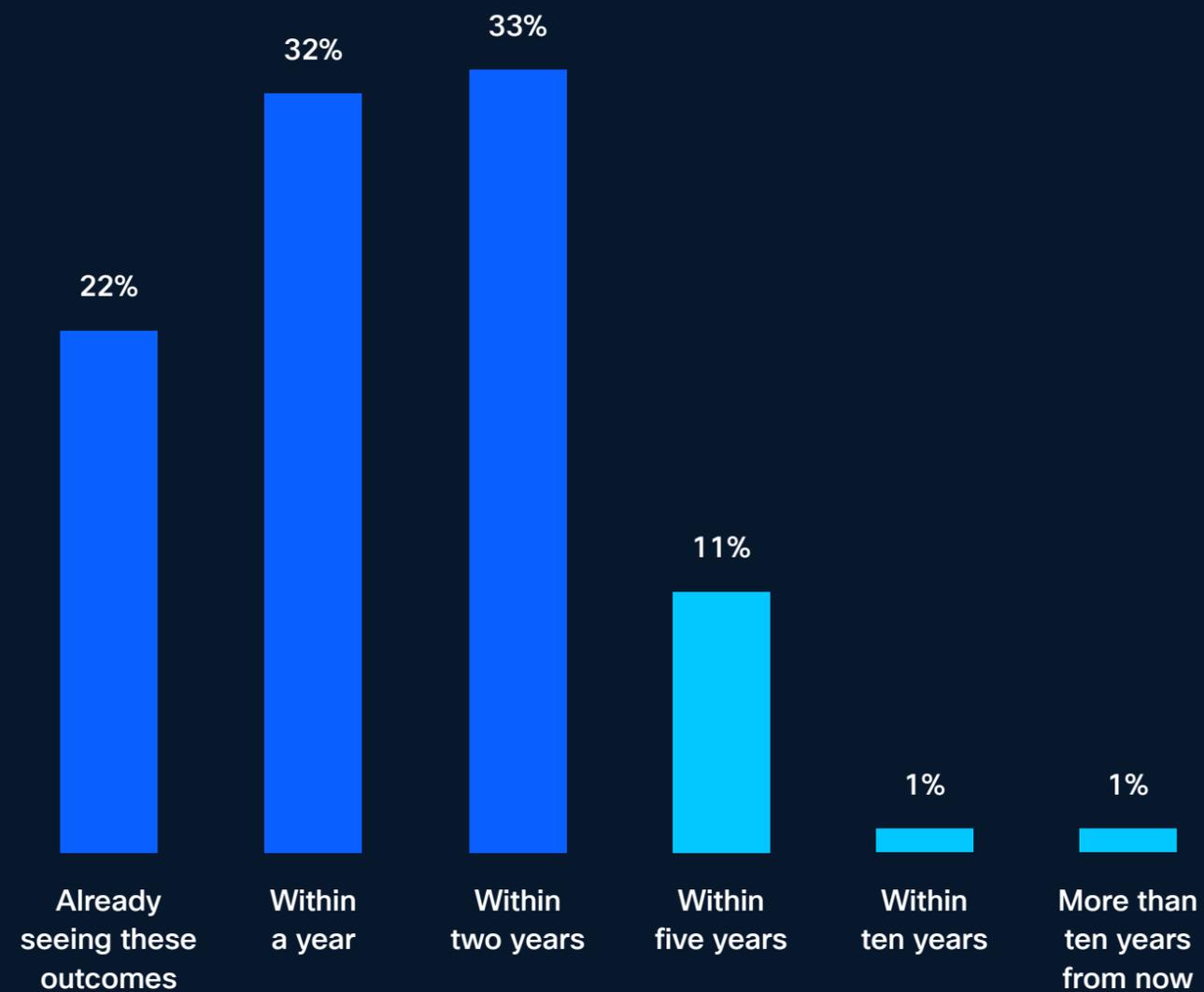
More advanced adopters are more likely to associate AI with resilience, safety, and long-term operational improvement, indicating a shift from tactical efficiency toward strategic value creation.

AI success is currently defined by fast, operational wins.

Q. What outcomes would you most like to achieve from AI investments? Select up to three

AI investments bring high expectations

The short timeframe in which decision-makers expect outcomes shows strong belief in AI's near-term payoff.



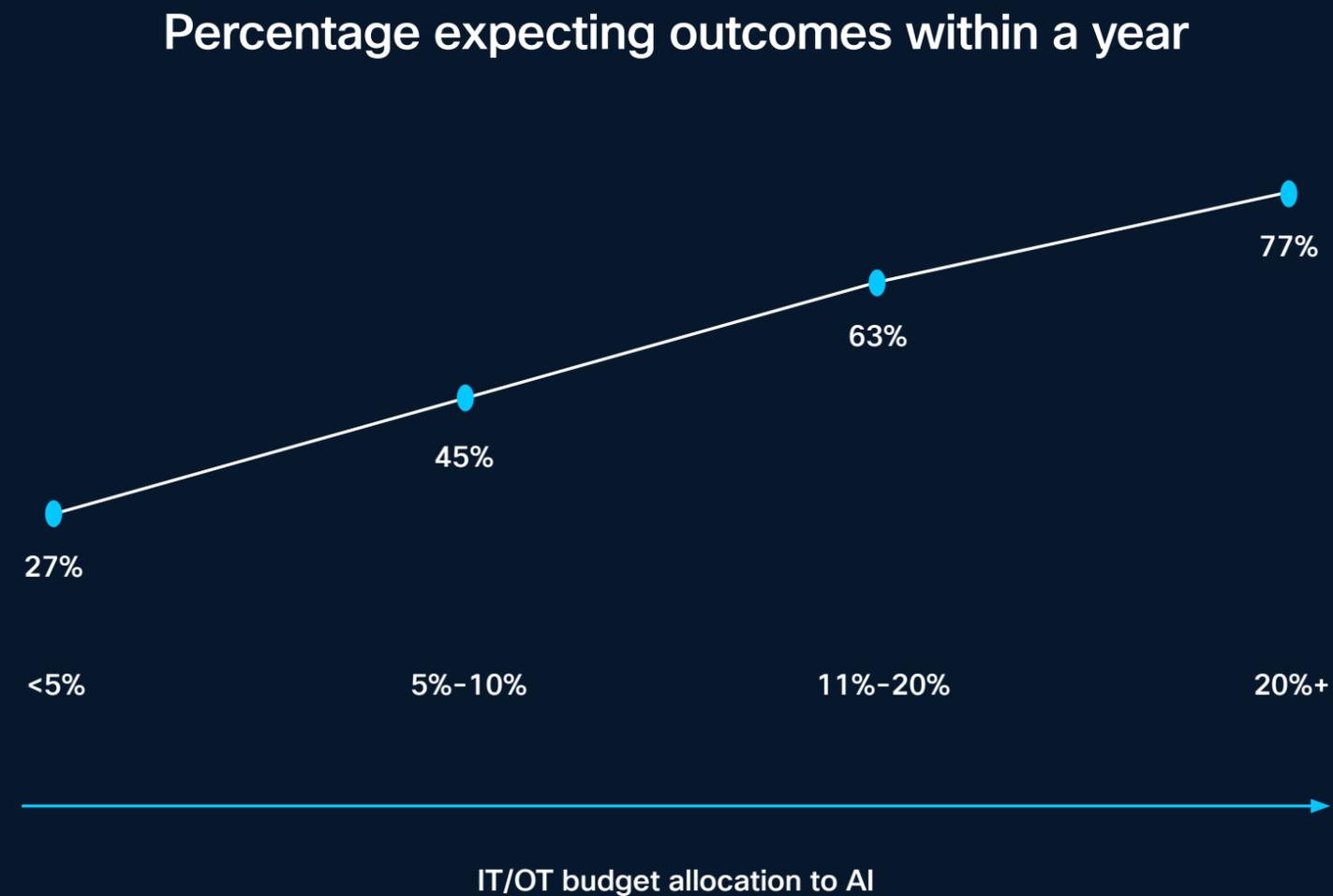
Q. When do you expect to see these outcomes? Select one



Short time-to-value expectations favor use cases that can prove impact quickly.

Investment priorities for enabling AI

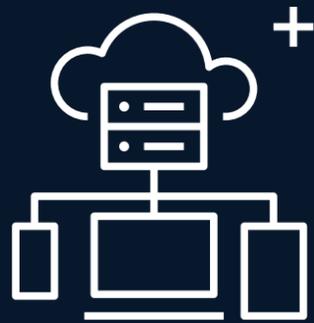
As AI spending increases, expectations for speed and consistency rise—requiring infrastructure, security, and operating models that support rapid, scaled deployment.



AI already accounts for 13% of networking budgets, and 83% of organizations plan to increase that investment—raising expectations for scalable, production-ready deployments.

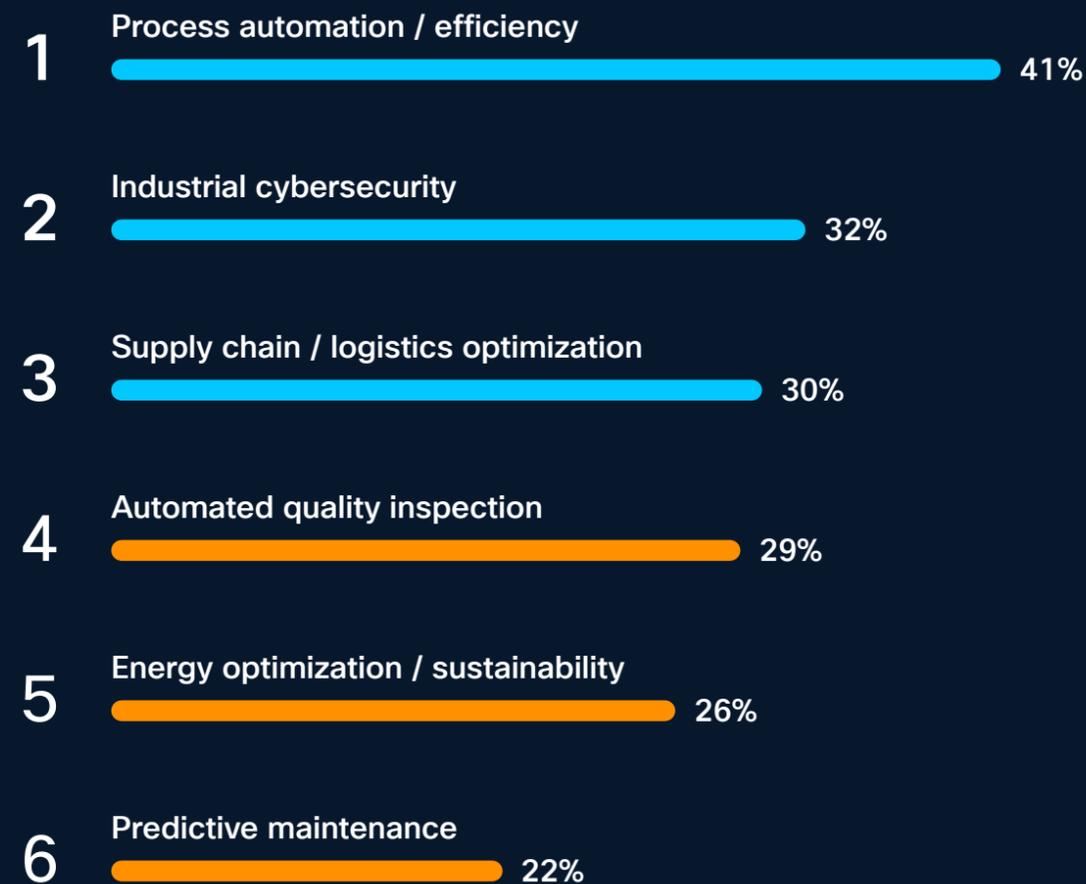
AI investment priorities shift with maturity

AI investment starts with efficiency, but maturity reveals the real shift: machine-to-machine decisioning enabled by sensors, connectivity, and edge compute.



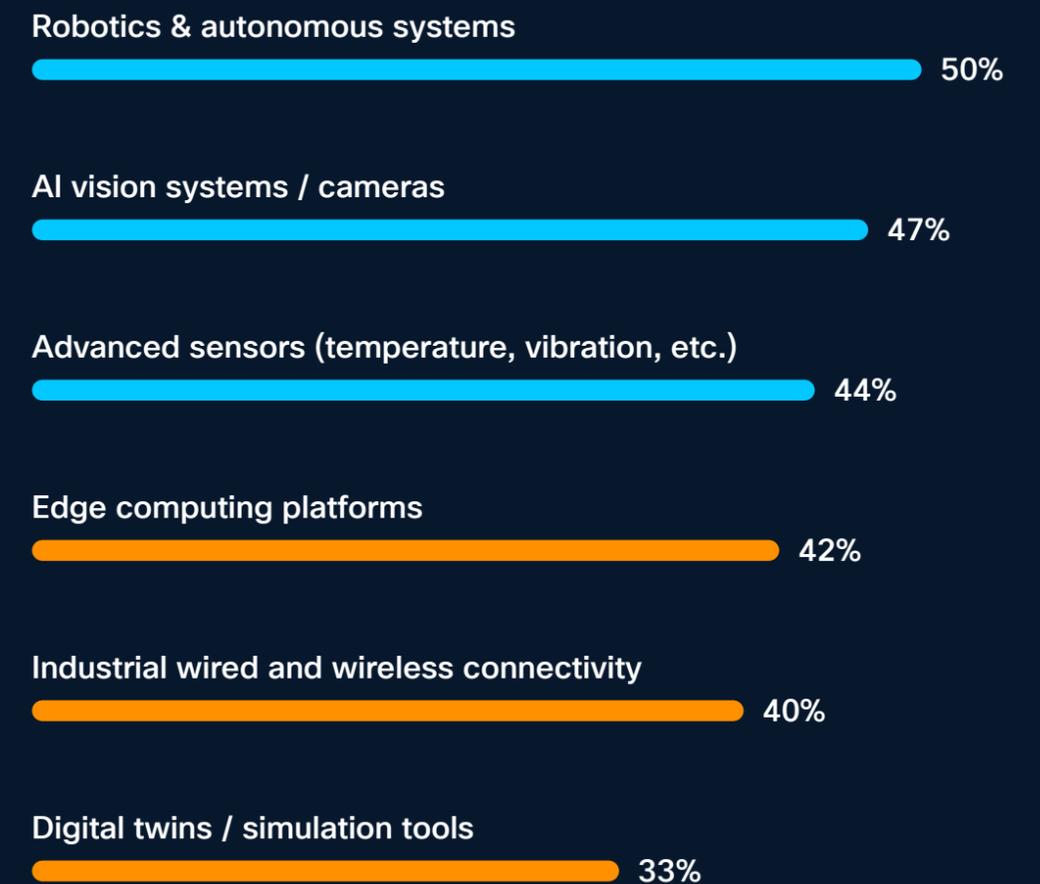
Scaling AI requires shifting from human-in-the-loop workflows to machine-to-machine decisioning—driving investment in connectivity, edge, and data infrastructure.

Investment priorities:



Q. What are your top priority areas for AI investment in industrial operations?
Select up to three

New technologies:



Q. What new technologies are most critical to enable AI in your industrial operations?
Select up to three

Section 3

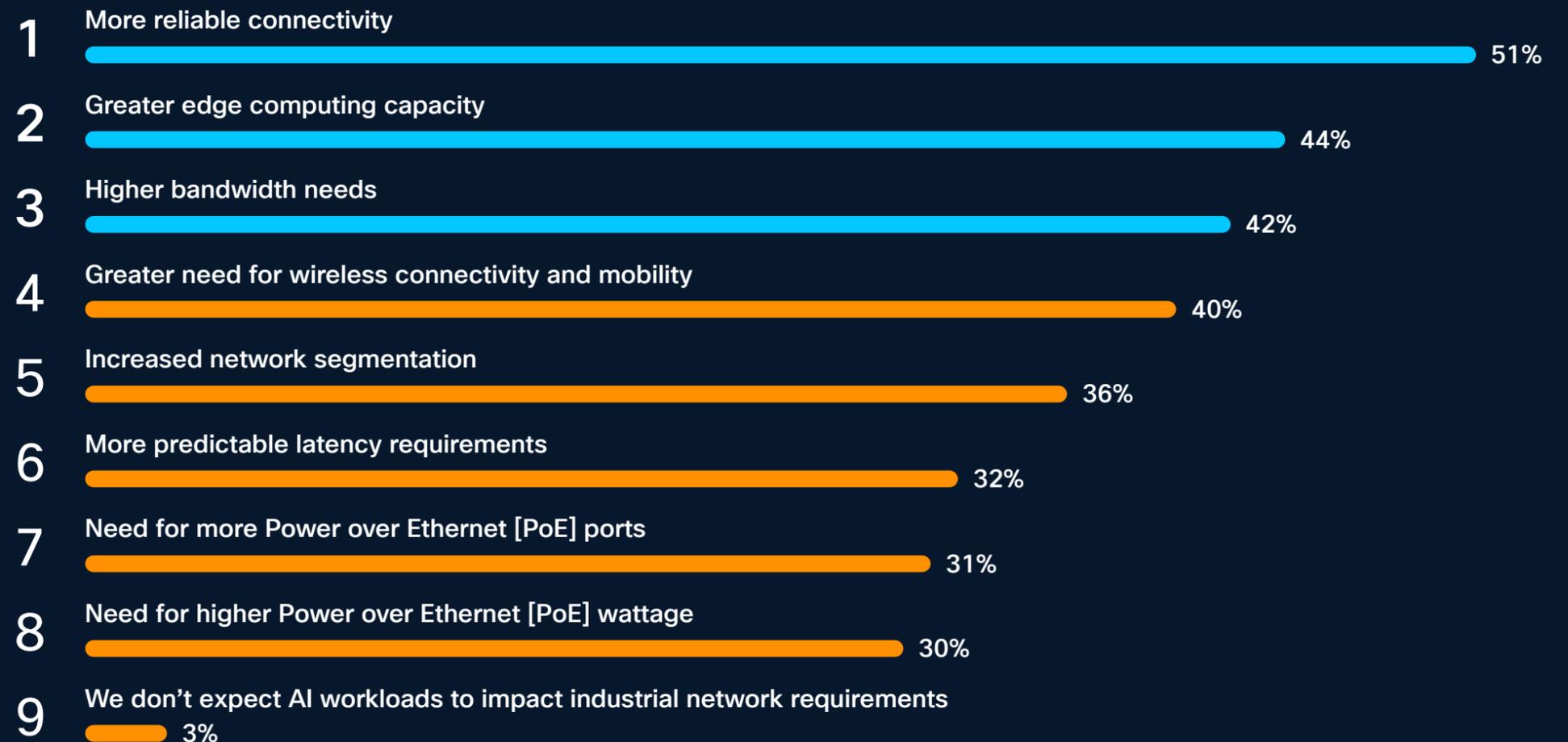
AI runs on the network: infrastructure as the foundation for scale

AI adoption rewrites industrial infrastructure requirements

AI workloads introduce new performance, power, and reliability requirements that exceed traditional industrial network design assumptions.



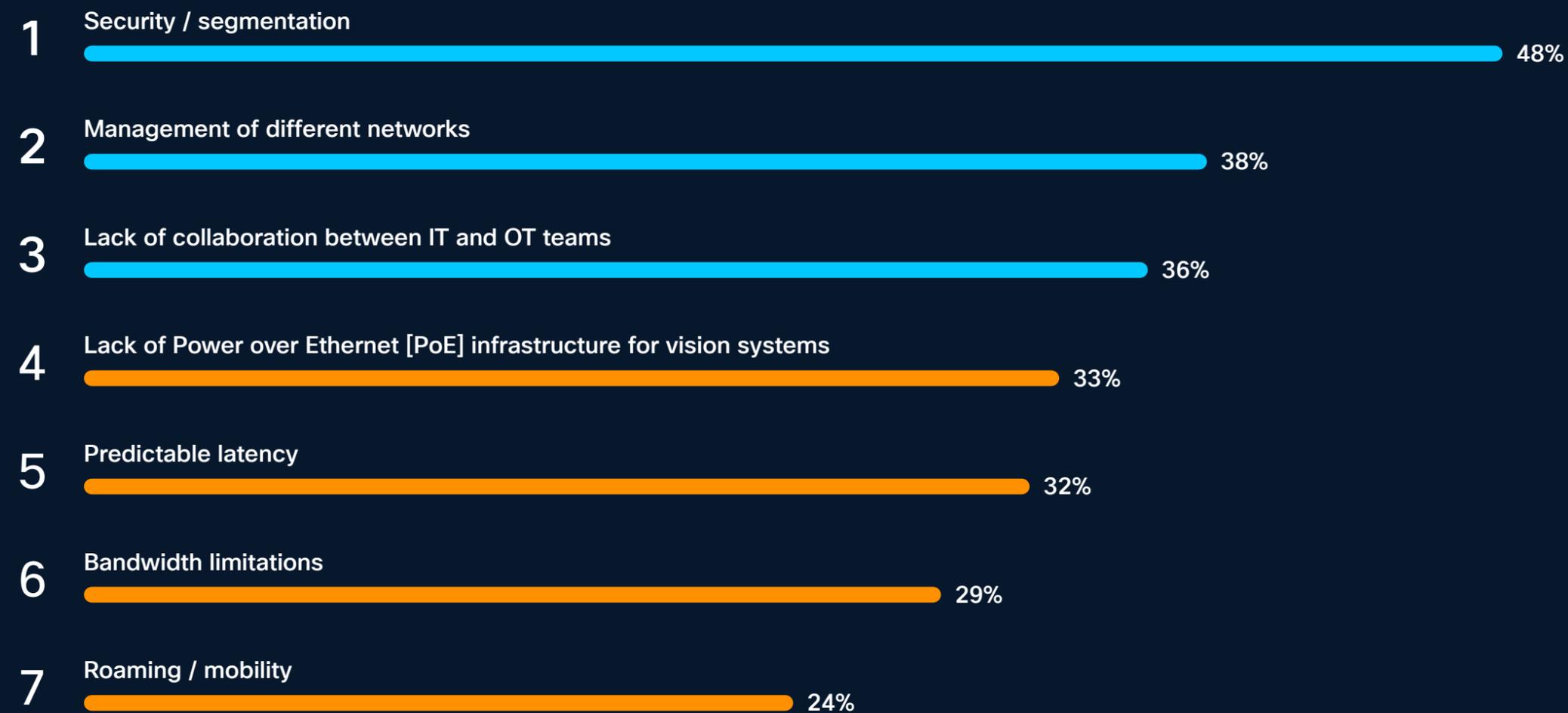
expect AI workloads to have an impact on their industrial networks.



Q. How do you expect AI workloads to impact your industrial network requirements? Select all that apply

Network readiness is the primary constraint to AI scale

As AI moves into production, network performance and reliability determine whether deployments can scale across industrial environments.



Q. What are your biggest networking challenges in supporting AI-enabled operations? Select up to three



Scaled AI adoption requires a network evolution

Organizations are moving toward AI-capable industrial network infrastructure. Sustained AI impact is determined by the readiness of the network on which it runs.

Network evolution:



Section 4

Cybersecurity & industrial AI interconnectedness

Cybersecurity is now the #1 obstacle to AI adoption

As organizations connect more assets and systems to support AI, security becomes a critical concern, raising the stakes for how industrial environments are protected.



In 2024, cybersecurity emerged as a growing priority for industrial networking teams; today, it has become the leading concern, with 48% of organizations citing security as their top networking challenge.

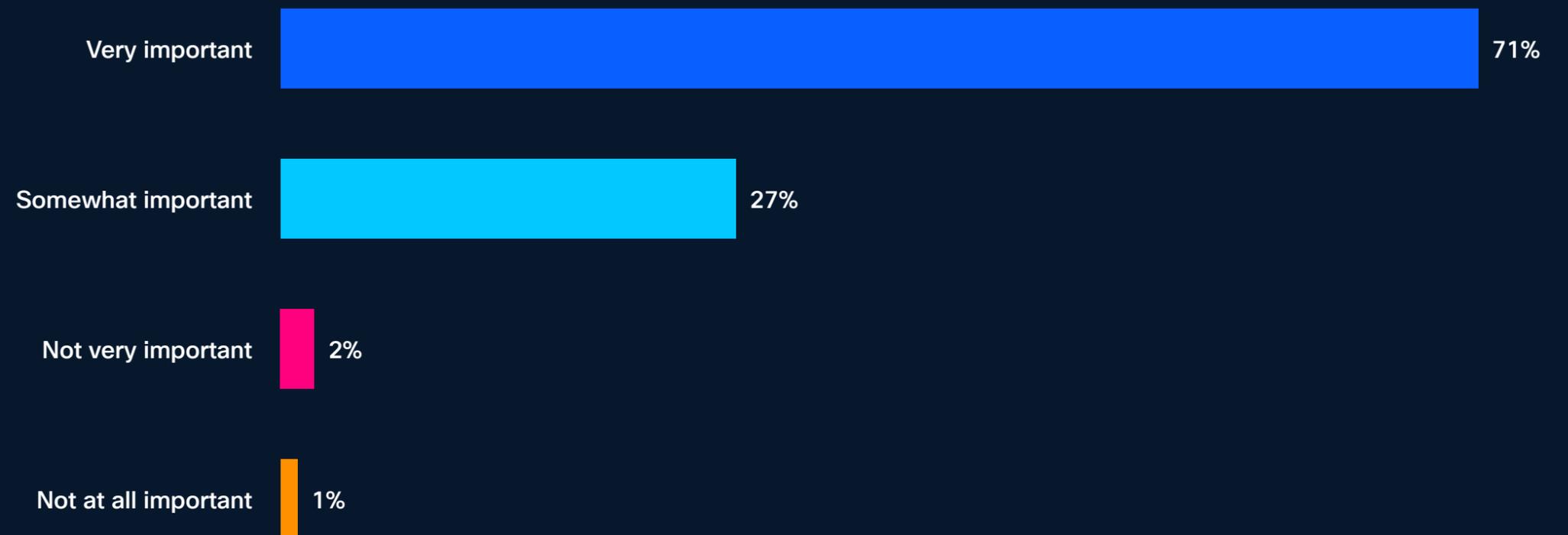
Cybersecurity as a foundational requirement

While cybersecurity is a significant barrier to AI at scale, its importance as a foundational requirement for AI-ready infrastructure is more pronounced than ever.



overall say it is 'somewhat' or 'very important'.

Q. How important is cybersecurity in your AI-ready infrastructure deployment? Select one



This emphasis strengthens with AI maturity, as organizations further along in adoption increasingly view cybersecurity as a core enabler of AI-ready infrastructure.

IT/OT collaboration on cybersecurity remains constrained

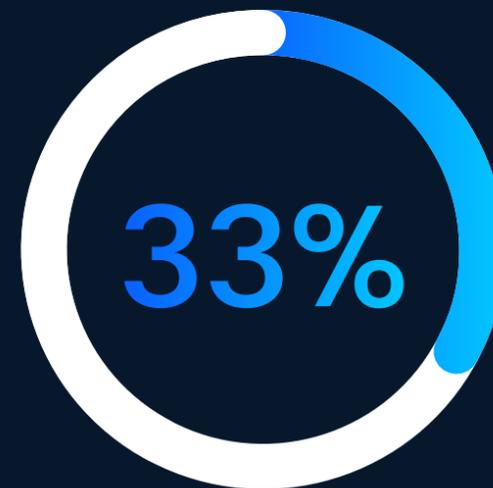
Effective cybersecurity in industrial environments depends on collaboration between IT and OT teams.

Today, only 20% of organizations report fully collaborative IT/OT interworking on cybersecurity, while 43% remain either neutral or operationally independent, pointing to persistent organizational and governance gaps.

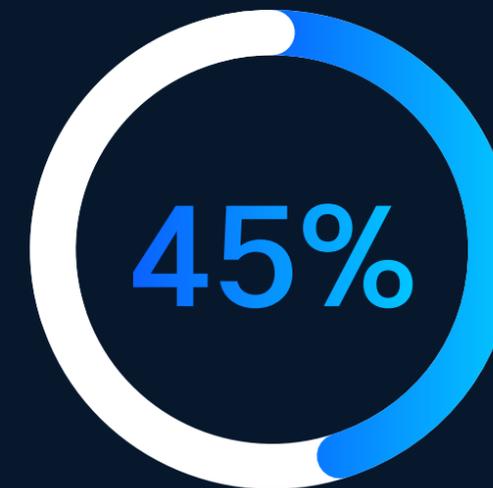
The data reveals an interesting pattern: as IT/OT collaboration increases, reported levels of cybersecurity concern also increase: 12% more collaborative organizations cite cybersecurity as a primary obstacle to AI adoption than those operating independently.

Cybersecurity concerns

From respondents who rate their IT/OT collaboration as completely independent and completely collaborative



Completely independent



Completely collaborative

This divergence suggests a maturity gap. As IT and OT teams work more closely together, cyber risks become more visible, not smaller—an essential step toward building resilient, AI-ready industrial environments.

AI as a cybersecurity enabler

As cybersecurity becomes more critical to AI adoption, organizations increasingly view AI as part of the solution—not just a source of new risk. AI is being applied to strengthen detection, monitoring, and response across industrial environments.



85% expect AI to improve their cybersecurity capabilities.

Industrial cybersecurity ranks as the second most important area for AI investment. This prioritization indicates that organizations are investing in AI to improve cyber resilience.

AI will play a dual role in industrial environments: increasing the need for secure-by-design architectures while also enabling stronger, more adaptive defenses at scale.



Cyber-maturity & AI scalability

Organizations with higher cybersecurity maturity consistency, visibility, and resilience across IT and OT environments.

Consistency & control



Unified IT/OT security governance



Zero-trust architectures



Consistent network segmentation

Visibility & resilience



Secure-by-design infrastructure

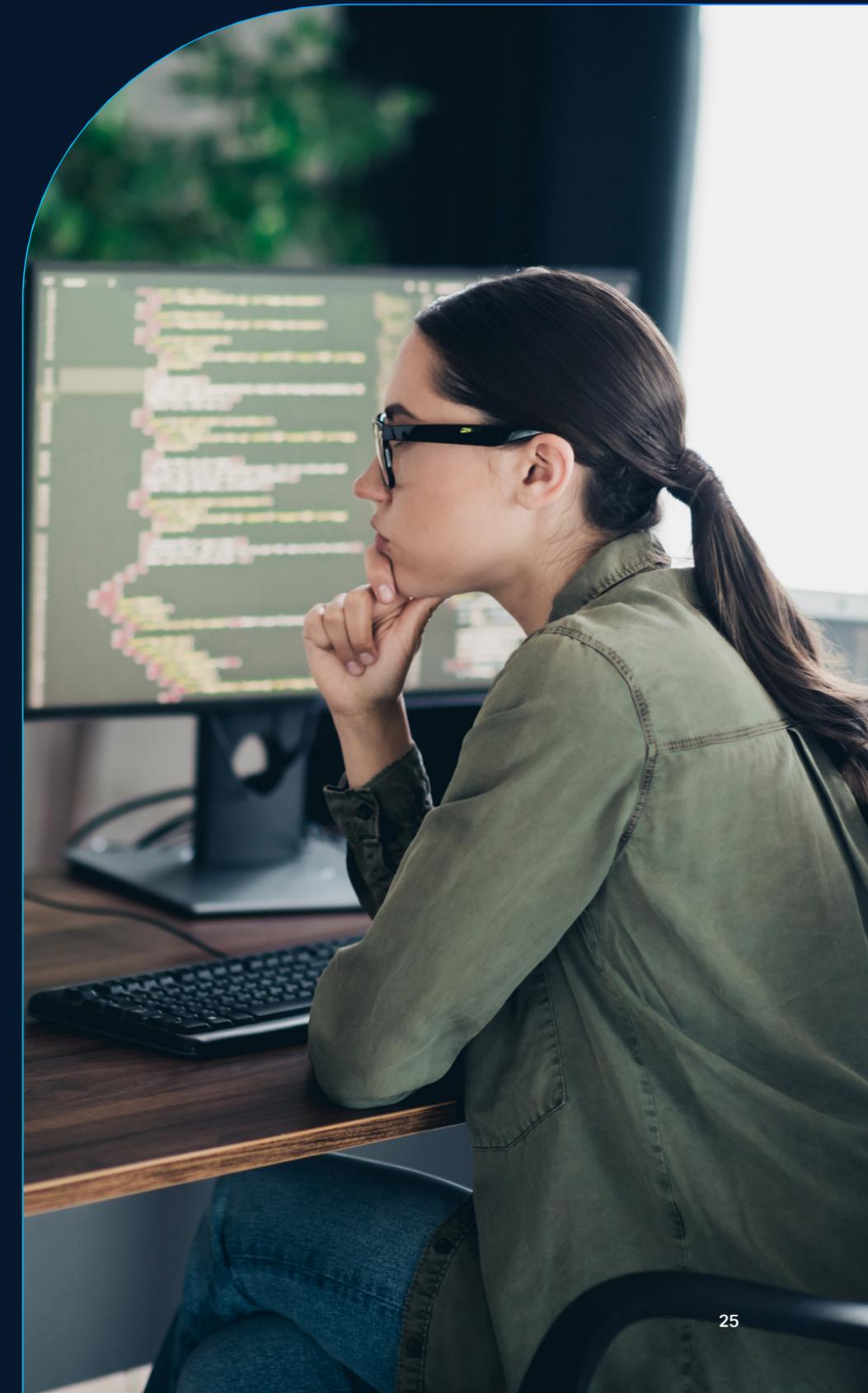


End-to-end visibility



Resilient connectivity

These practices enable AI to scale across critical operations while reducing cyber risk, underscoring the close relationship between cyber and AI maturity.





Section 5

IT/OT convergence – the operating model for scaling AI

IT/OT collaboration remains uneven

Collaboration between IT and OT teams remains uneven across industrial organizations, though progress is evident year on year.

Comparison of IT/OT inter-working in relation to cybersecurity



While progressive, fully converged IT/OT operating models remain the exception, at 1 in 5.



A recent MarketsandMarkets study found that the OT security market is projected to grow from USD 23.47 billion in 2025 to USD 50.29 billion by 2030.

Similarly, by 2025, 52% of organizations have shifted responsibility for OT security to the CISO, up from 16% in 2022 – treating it as a top-level business risk.

Source: https://www.fortinet.com/resources/reports/state-ot-cybersecurity?utm_content=blog-cta-ot-security

Independent teams undermine AI confidence & outcomes

IT/OT collaboration has a direct impact on confidence in scaling AI and on operational performance.

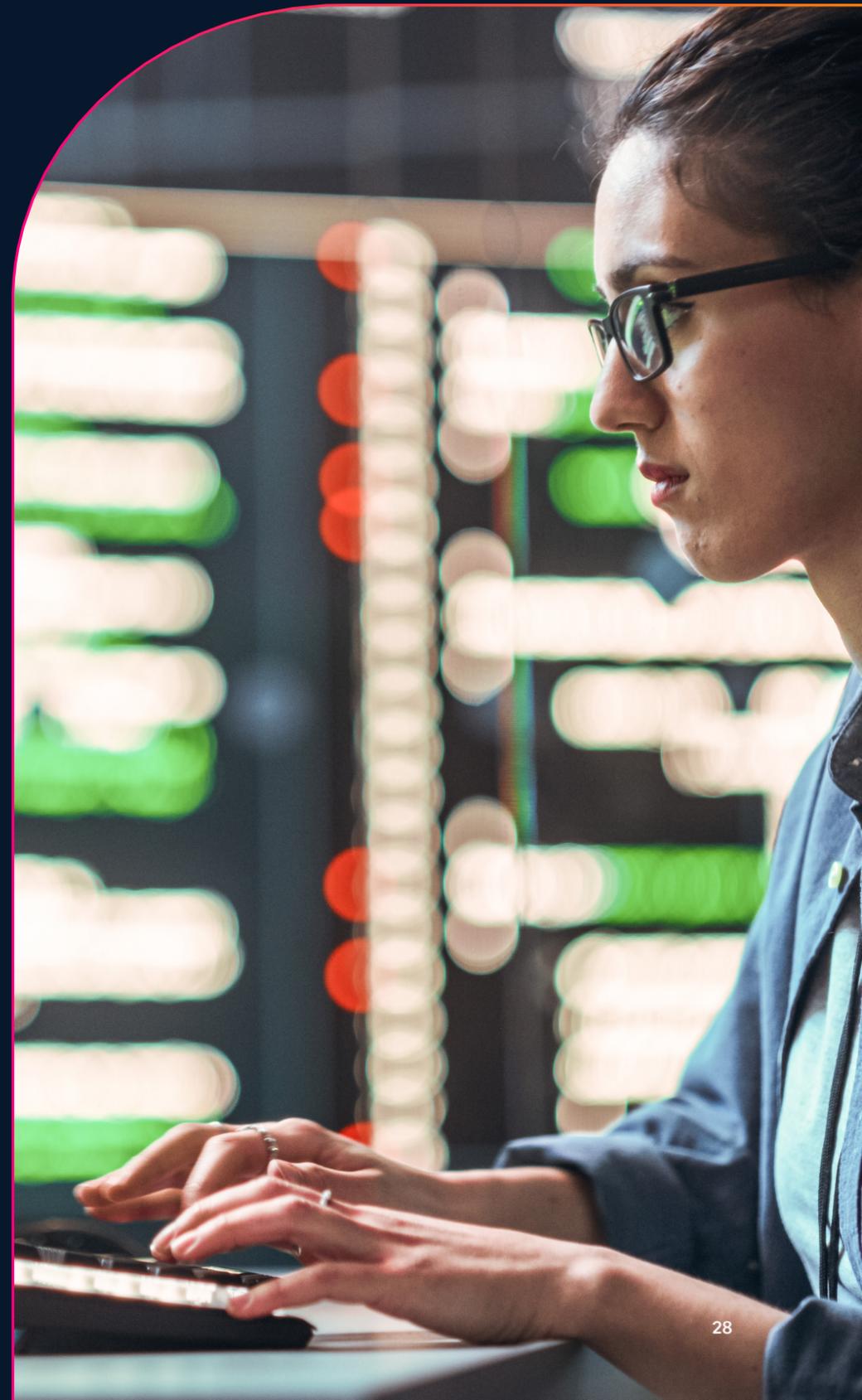
Collaborative organizations report:

- Higher confidence in scaling and integrating AI
- Stronger alignment on cybersecurity as a foundational requirement

Organizations with limited IT/OT collaboration experience:

- Greater wireless instability and lower network reliability
- Slower deployment timelines driven by fragmented ownership

These findings demonstrate that organizational structure influences confidence, performance and deployment as AI adoption accelerates.



The converged operating model for AI-ready enterprises

Organizations that report higher AI maturity operate under a collaborative IT/OT model. AI readiness is associated with unified ownership, shared visibility, and coordinated governance.

Key characteristics of the collaborative operating model include:



People

Shared IT/OT ownership and accountability



Processes

Unified governance and change management



Platforms

Shared network, security, and observability foundations

AI maturity and IT/OT collaboration advance together—making collaboration a prerequisite for scaling AI across industrial operations.



Section 6

Future outlook - scaling AI across industrial operations

What the next 3–5 years will bring



High confidence, uneven transformation

Over the next three to five years, industrial AI is expected to expand beyond selective deployments toward broader, organization-wide use. Confidence is high—but expectations for transformation remain uneven.



Scaling confidence is high

93% of organizations report confidence in their ability to scale AI. Confidence rises further with higher AI budget allocation and deployment maturity. However, confidence doesn't translate to reality.



Transformation expectations lag

Only one-third expect enterprise-wide or end-to-end operational transformation. Most continue to view AI as a way to improve existing processes rather than redesign operations.



AI is still being used tactically

Productivity gains, cost reduction, and fast time-to-value dominate AI decision-making. 54% are already seeing—or expect to see—AI outcomes within 12 months.



Structural limits are holding AI back

Despite strong belief in AI's potential, deployments remain constrained by infrastructure readiness, cybersecurity, skills, and operating models—separating incremental use from scaled impact.

Section 7

Key takeaways for industrial AI leaders



Priorities for industrial leaders

The findings of The 2026 State of Industrial AI Report point to three clear priorities for industrial leaders as AI adoption accelerates but scale remains uneven.

1

Foundational readiness determines AI scale

Industrial AI does not stall due to lack of ideas—it stalls when networks, compute, and operating models are not built for scale.

2

Cybersecurity is the biggest constraint and the greatest enabler

Cybersecurity must be treated as a baseline requirement for AI-ready environments, not a downstream control.

3

IT/OT collaboration is essential for AI impact

AI scale is as much an organizational challenge as a technical one: collaboration enables speed, confidence, and repeatability.



Guidance for accelerating AI deployment and impact

The following characteristics reflect the learnings from more mature adopters on their path to broader operational impact.

Network and Infrastructure Readiness

Organizations with more mature AI deployments report modernized industrial networks designed to support AI workloads reliably at scale.

Security and Visibility Foundations

Mature adopters place greater emphasis on cybersecurity as a prerequisite for AI scale.

Compute and Edge Capability

As AI adoption advances, mature deployments are supported by greater on-site compute capacity.

IT/OT Convergence and Governance

Organizations further along in their AI journey are more likely to operate under collaborative IT/OT governance models, including shared accountability, aligned policies, and coordinated operations.

Workforce Readiness

Mature adopters report stronger alignment between technology investment and workforce capability, supporting sustained AI operations beyond initial deployment.



Section 8

Industrial AI partner considerations



Industrial AI partner considerations

As industrial organizations look to scale AI across increasingly complex environments, partner choice becomes a strategic decision.

#1 Partners should be able to support:

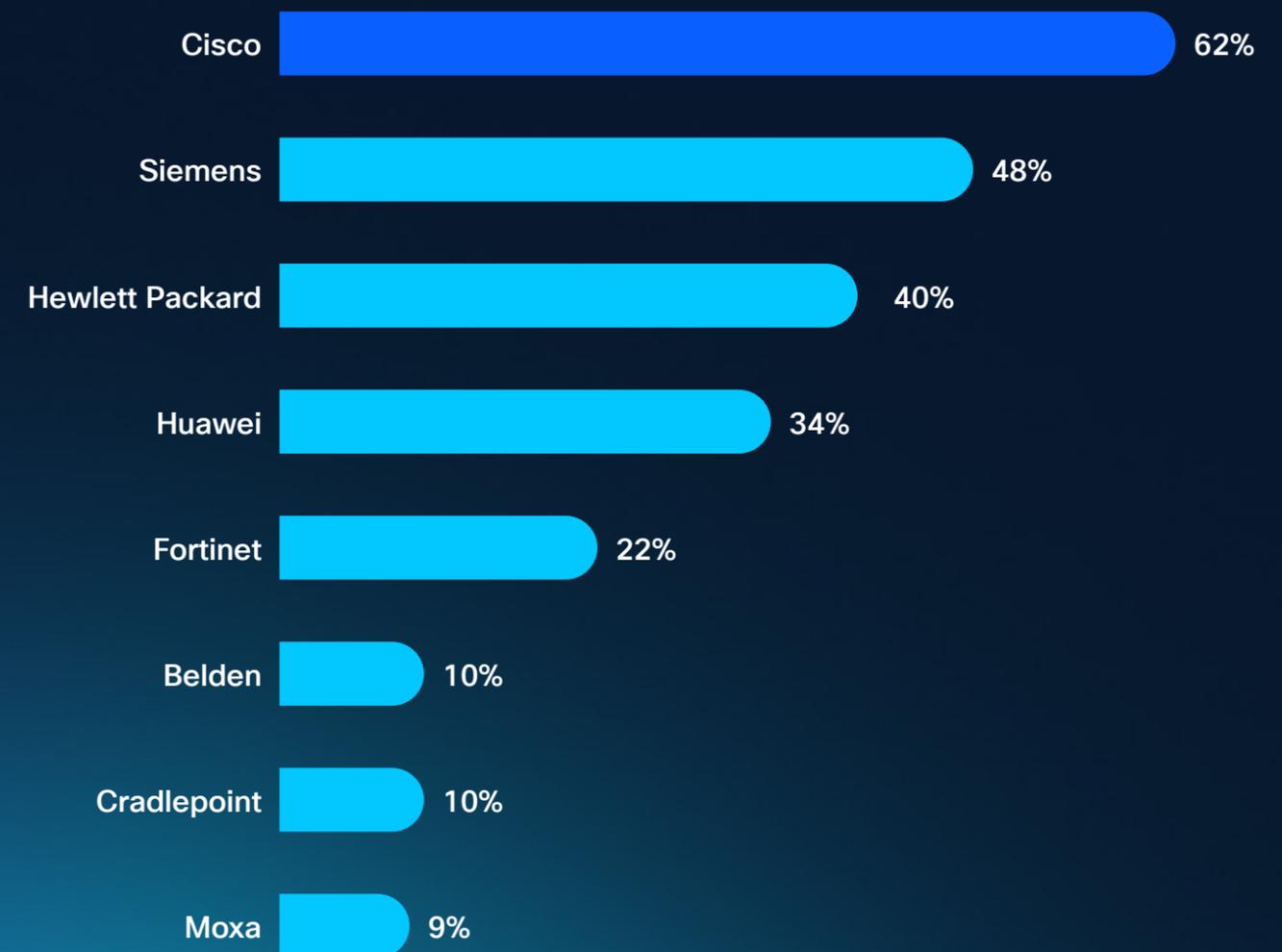
- Reliable, high-performance connectivity
- Secure, segmented architectures
- Predictable operations in production environments

#2 Prioritize partners with deep expertise in:

- Industrial networking
- Cybersecurity and segmentation
- Edge compute and mobility
- Visibility across IT and OT environments

#3 Select a partner with recognized high trust:

- Respondents to our survey ranked Cisco as the most-trusted to provide AI-ready networking infrastructure

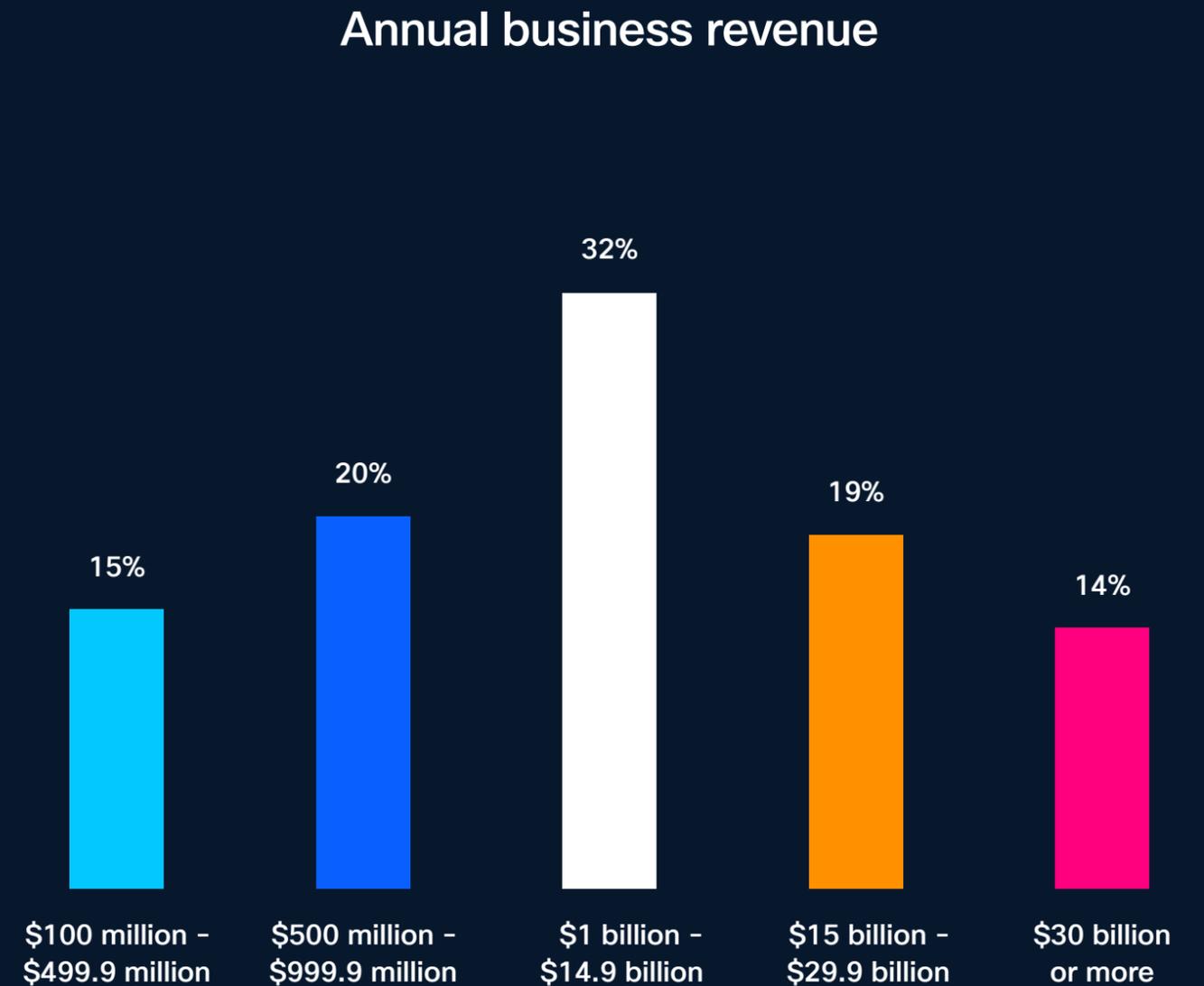
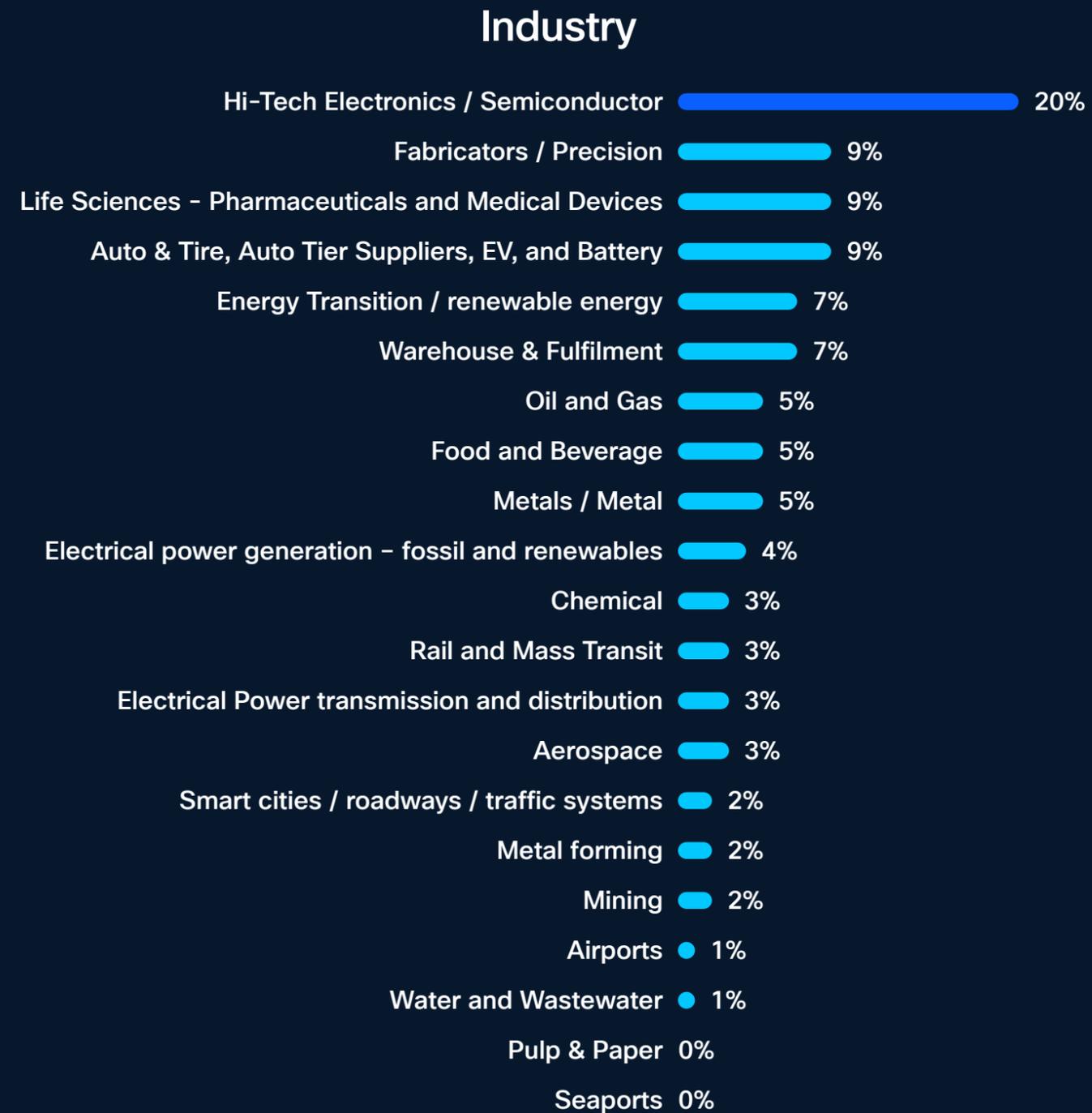


Q. Which of the following vendors do you most trust to provide AI-ready networking infrastructure to enable your industrial AI use cases? Select up to three

Section 9

Demographics & firmographics

Demographics & firmographics



Demographics & firmographics

Job role



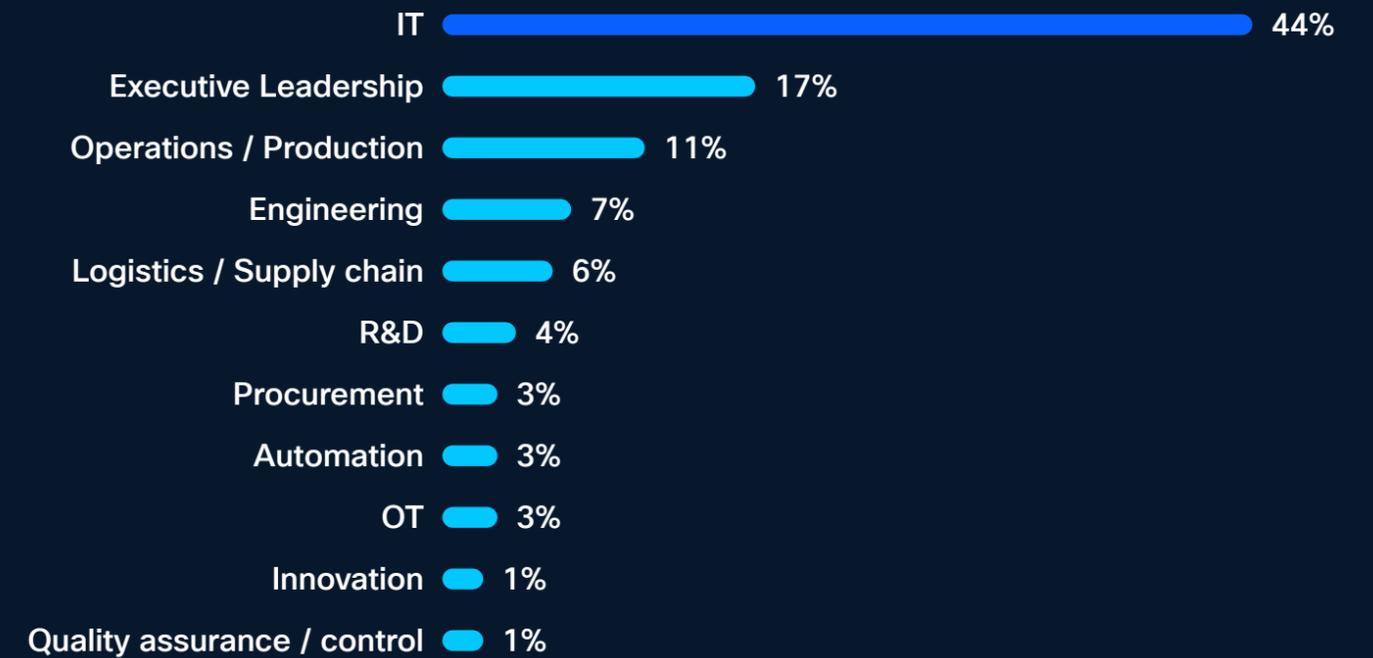
● Manager	41%
● Director	23%
● Head of department	13%
● Vice President / Senior Vice President	8%
● C-Suite	15%

Employment



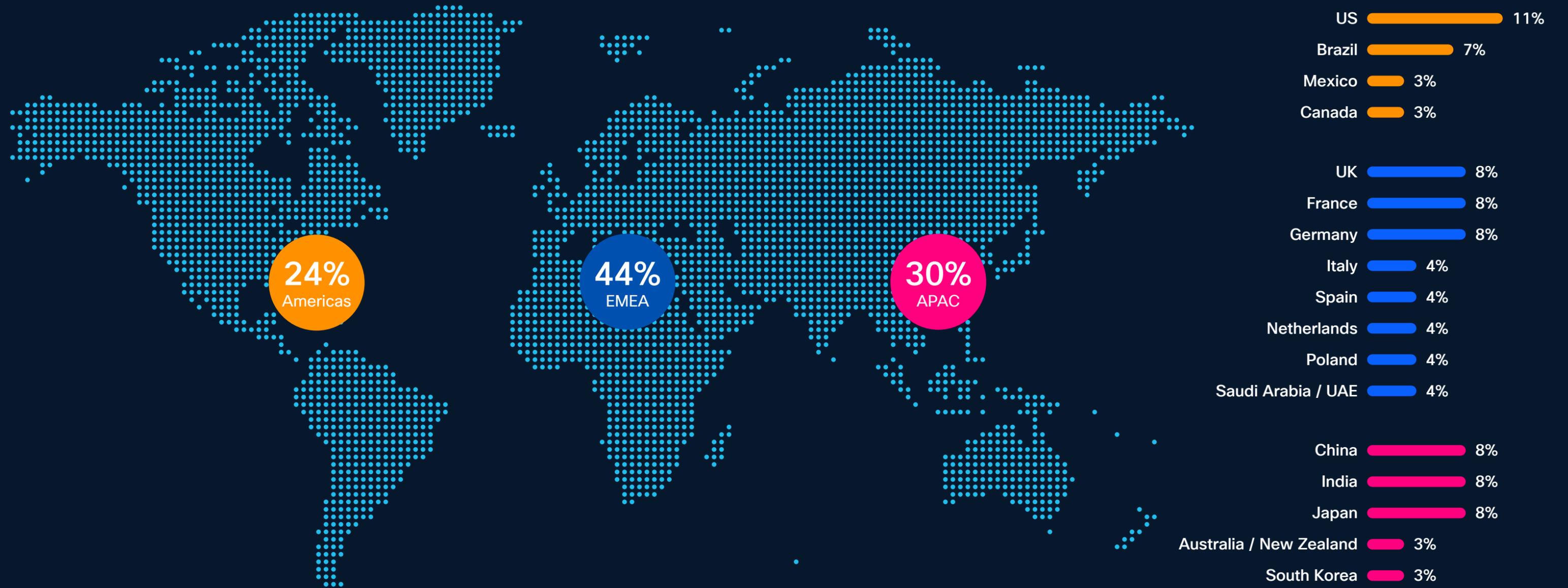
● Employed full-time	99%
● Employed part-time	2%

Department



Demographics & firmographics

Country



About Cisco

Cisco is the worldwide technology leader that securely connects everything to make anything possible. Our purpose is to power an inclusive future for all by helping our customers reimagine their applications, power hybrid work, secure their enterprise, transform their industrial infrastructure, and meet their sustainability goals.

About Sapio Research

Sapio Research is a full-service B2B and tech market research agency that helps businesses grow thanks to high quality, efficient and honest research solutions.

We deliver valuable insights to support our clients understand their audience, build powerful brands, cut through the noise with great content and thought leadership. We're based in the UK and have access to over 149 million people across 130 countries, working with clients that range from top tech companies to global consultancies, Marketing/PR agencies and household name brands.

Our purpose-driven team of expert market researchers is passionate about providing data confidence for all and performing research that makes a difference. We're here to support our clients every step of the way in all areas of quantitative and qualitative research, so they can save time and thinking space, deliver with confidence, and unlock more value with their research.

For more information, visit sapioresearch.com.

