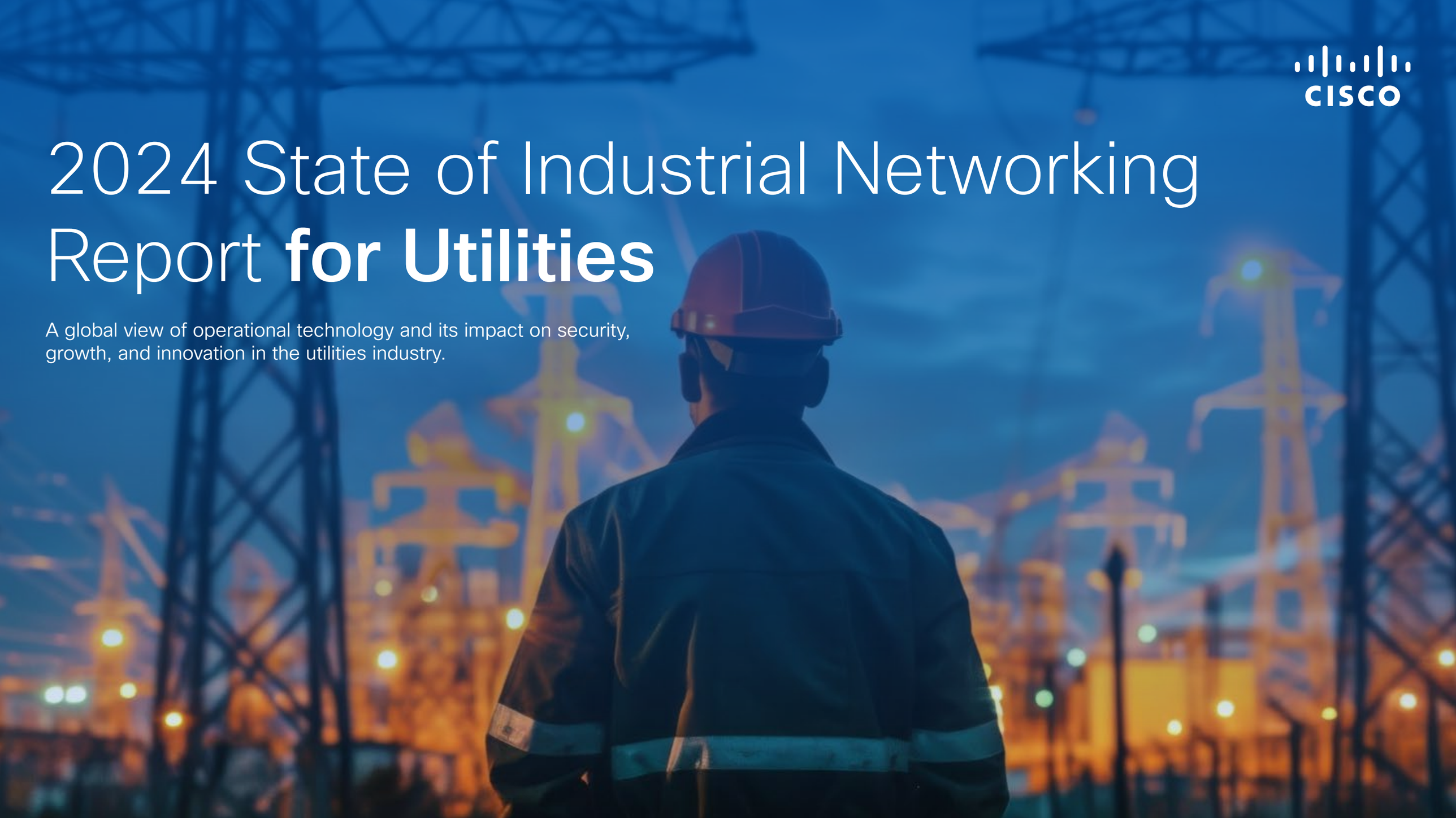

2024 State of Industrial Networking Report **for Utilities**

A global view of operational technology and its impact on security, growth, and innovation in the utilities industry.

Introduction

This report reveals how utility firms worldwide are designing and deploying their operational technology estate to improve performance, efficiency, compliance and cybersecurity.

We spoke to **145 industry professionals** from management to the C-suite, at firms with annual revenues of over **$100 million**, in **17 countries**.

Cisco, in association with Sapio Research, commissioned this study to establish the highest business and technical priorities for industrial networks today. It reveals how utility firms are overcoming challenges, where the opportunities lie, and how to align resources for success.

Executive Summary

Security and efficiency drive investment

Firms are investing in industrial networking to protect and maintain dispersed substations, distribution grids, and distributed energy resources (DER). 90% of utility firms are maintaining or increasing OT expenditure.

- **Cybersecurity is the top spending priority** for almost half (48%) of utility firms over the next two years
- **32% more respondents said cybersecurity compliance was extremely important** in their operational network this year compared to last year
- **Improving efficiency is the #1 driver for investment** among utility firms, followed by increasing automation

Growing urgency for IT/OT collaboration

Collaboration between IT and OT teams is seen as the 2nd most important measure for overcoming internal obstacles to growth. And, currently, a lack of collaboration with IT is hampering the optimization of industrial infrastructure.

- **40% are increasing collaboration between IT and OT** to overcome obstacles to growth
- The **#1 benefit of IT/OT collaboration is better cybersecurity**, followed by compliance with regulatory standards
- **A lack of standardization across industrial infrastructure is the #2 challenge** faced when running industrial infrastructure

OT data insights and AI are predicted to deliver better performance

The utilities sector is hungry for future-focused solutions. Coping with the rising demand for energy, the introduction of more stringent regulations, and adaptations for renewable energy sources demands an infrastructure refresh.

- 43% of utility firms use **insights generated through OT data to improve energy management**
- 48% expect **AI to make industrial networking more reliable** and secure
- 45% anticipate **AI will support better collaboration across IT and OT**

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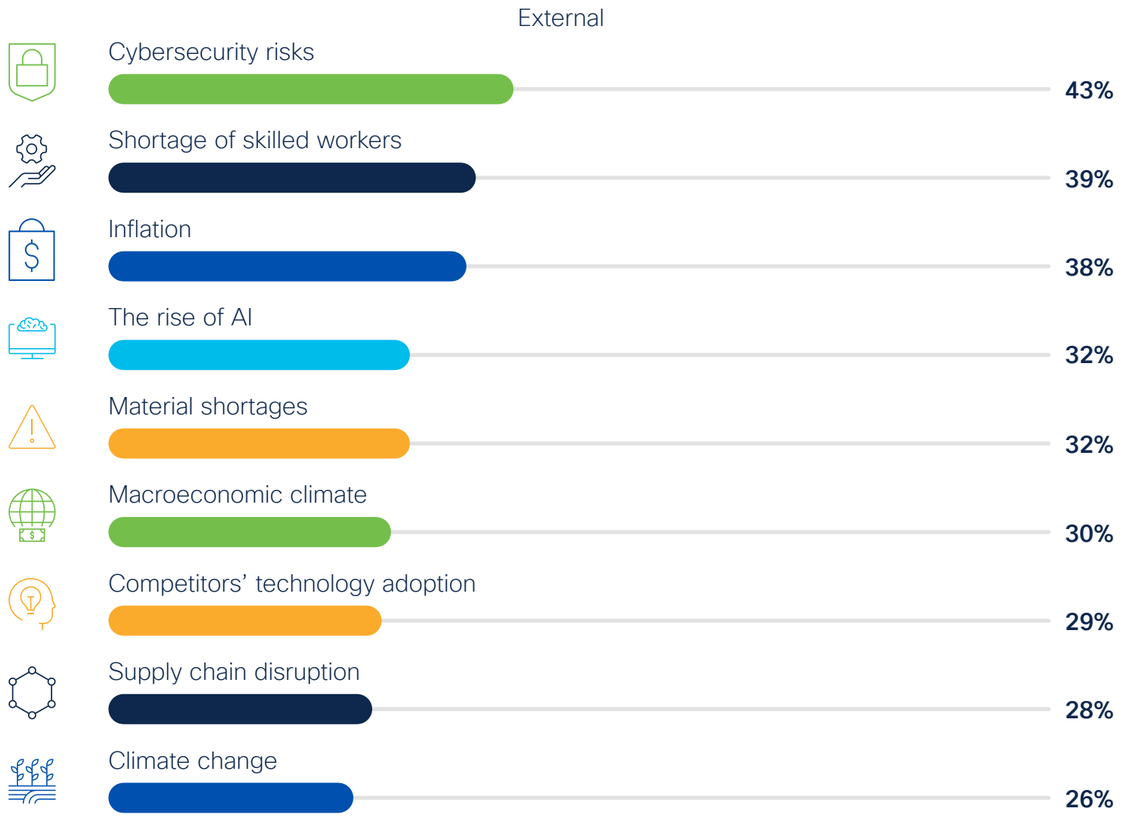
Section 1

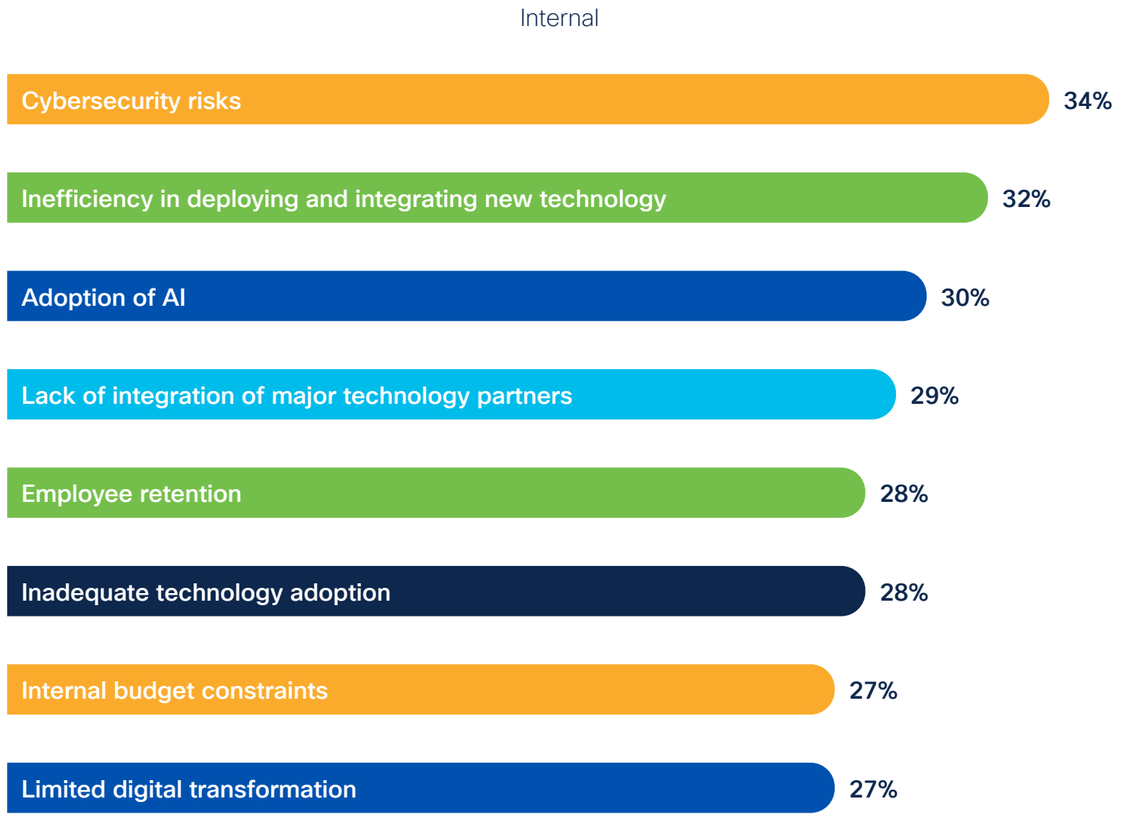
Industry overview

Obstacles to growth

Cybersecurity risks are the top external (43%) and internal (34%) obstacles to growth for utility firms.

Shortages of skills, resources, and budget to deploy and integrate new technology are also constricting growth.





Q. What do you believe are the biggest external obstacles to your organization's growth? Select all that apply

Q. What do you believe are the biggest internal obstacles to your organization's growth? Select all that apply

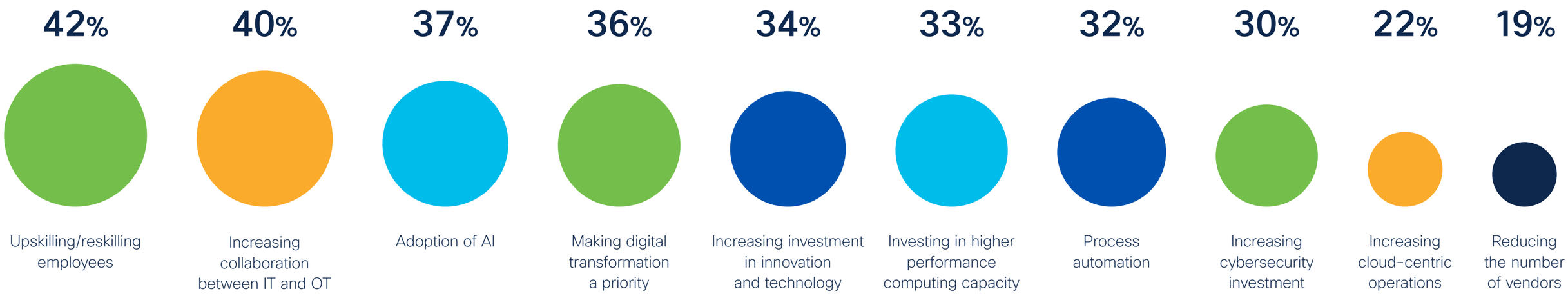
IT/OT collaboration mitigates risk

Utility firms are increasing collaboration between IT and OT (40%) to overcome obstacles to growth.

This mitigation strategy is second only in priority to upskilling or reskilling employees (42%).

81%

have no plans to reduce the number of vendors they work with, indicating a preference to optimize existing technology rather than attempt to shed and consolidate platforms.



Q. How is your organization mitigating these internal obstacles? Select all that apply

Majority maintain or increase investment in OT

The vast majority of utility firms (90%) are maintaining or increasing OT investment.

Improving efficiency was, by some margin, the #1 reason for investment. Increasing automation and production were also cited as priorities for participants, who need to capitalize on the opportunities offered by Industry 4.0 to maximize internal resources.

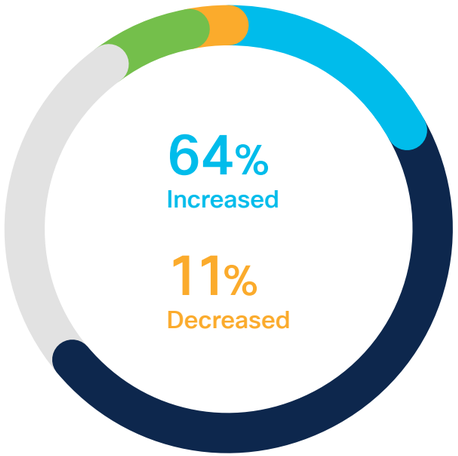
17%
Increased significantly

47%
Increased slightly

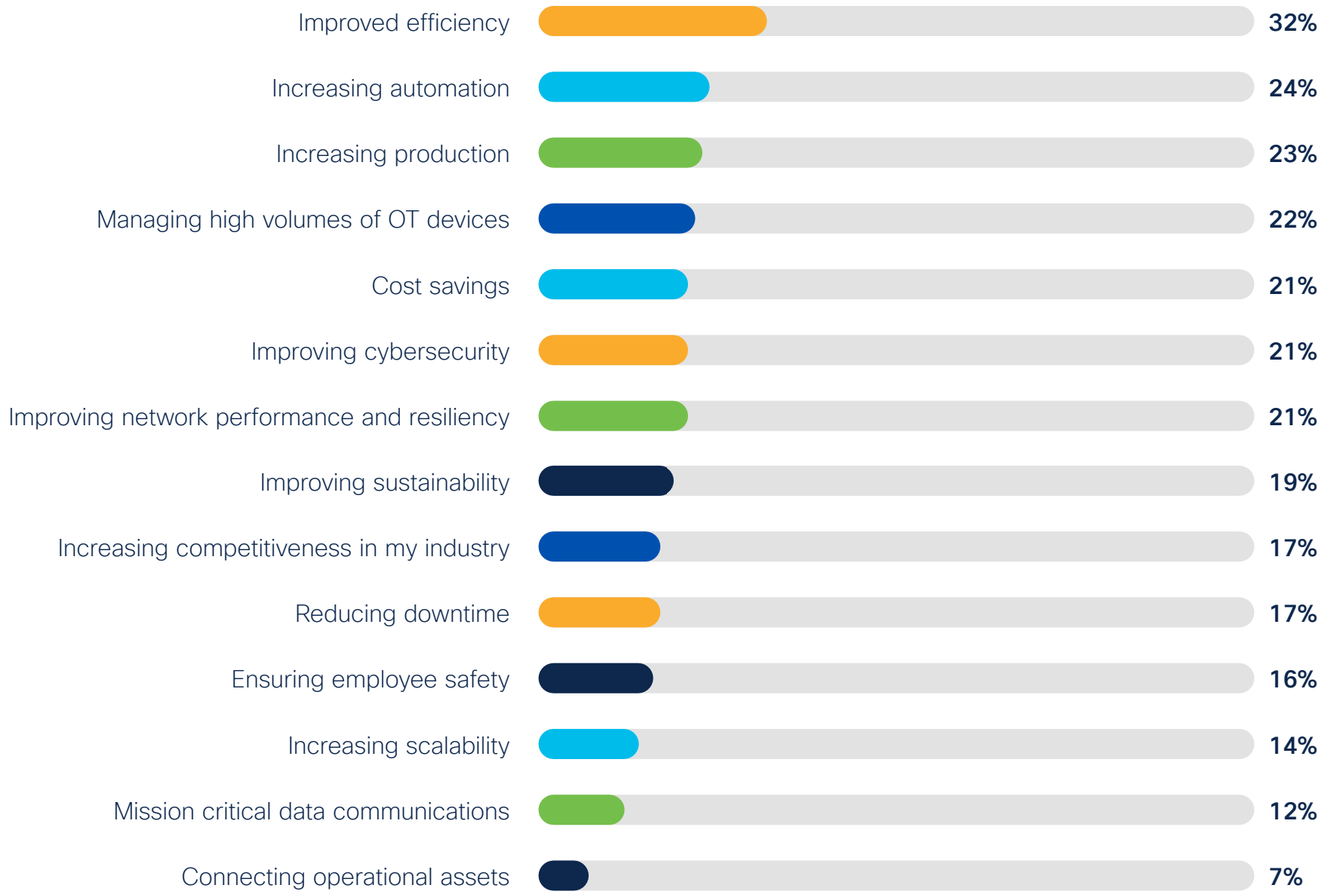
26%
Remained the same

7%
Decreased slightly

4%
Decreased significantly



Q. How did your industrial/OT infrastructure spend change in the past year? Select one

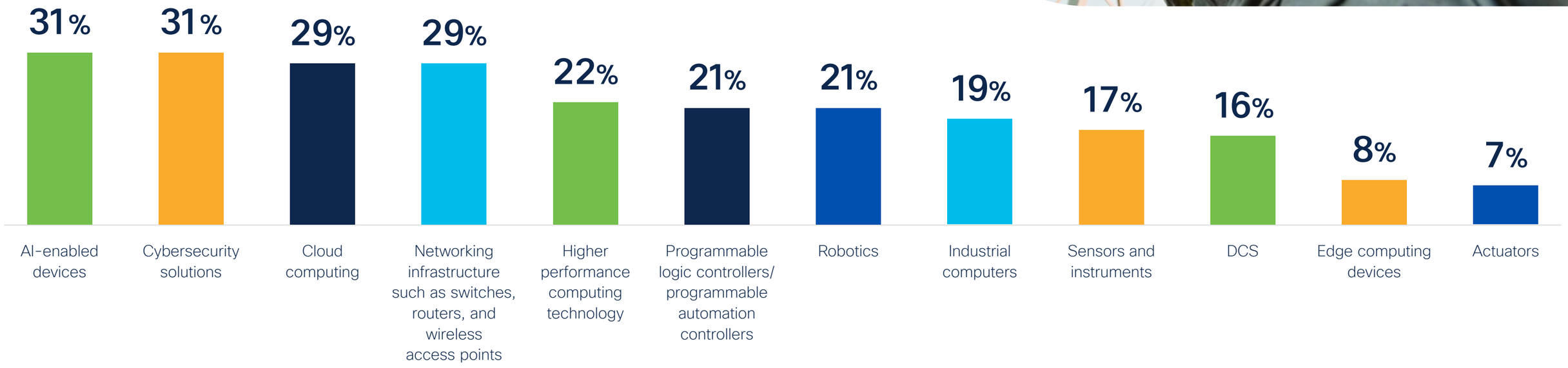


Q. Which of the following are the key drivers for investment in industrial infrastructure within your organization? Select up to three

Firms bolster cybersecurity and AI capabilties

The top investment priorities for utility firms are AI-enabled devices and cybersecurity solutions.

Networking infrastructure, such as switches, routers, and wireless access points, ranks third alongside cloud computing. Operating across scattered, remote locations and distributed grids makes robust infrastructure imperative.



Q. Which types of industrial/OT infrastructure are receiving the most investment in your organization currently? Select up to three

Section 2

Challenges & opportunities

Engineering teams make OT decisions

The utility sector is prioritizing collaboration between IT and OT to overcome internal obstacles, as we saw earlier in this report.

Despite this, **the ultimate OT decision-makers are most often engineering departments** – representing an opportunity for utility firms to review roles and responsibilities.

- **22%** Engineering department
- **19%** Collaborative OT/IT team
- **15%** IT department
- **15%** CTO
- **14%** Dedicated OT team
- **14%** CISO

Q. Who is the ultimate decision-maker or decision-making unit responsible for industrial/OT infrastructure operations in your organization? Select one

Lack of standardization creates challenges

When it comes to the challenges faced in operating industrial infrastructure, utility firms are most worried about implementing robust cybersecurity measures, mitigating cyber threats, and a lack of standardization across industrial infrastructure.

#1 39%
Implementing robust cybersecurity measures and mitigating cyber threats

#2 37%
Lack of standardization across industrial infrastructure

#3 36%
Managing multiple vendors, including strategic partners and point solutions

#4 33%
Lack of collaboration and efficiencies with IT

#5 31%
Meeting regulatory compliance requirements

#6 28%
Addressing equipment maintenance and aging infrastructure

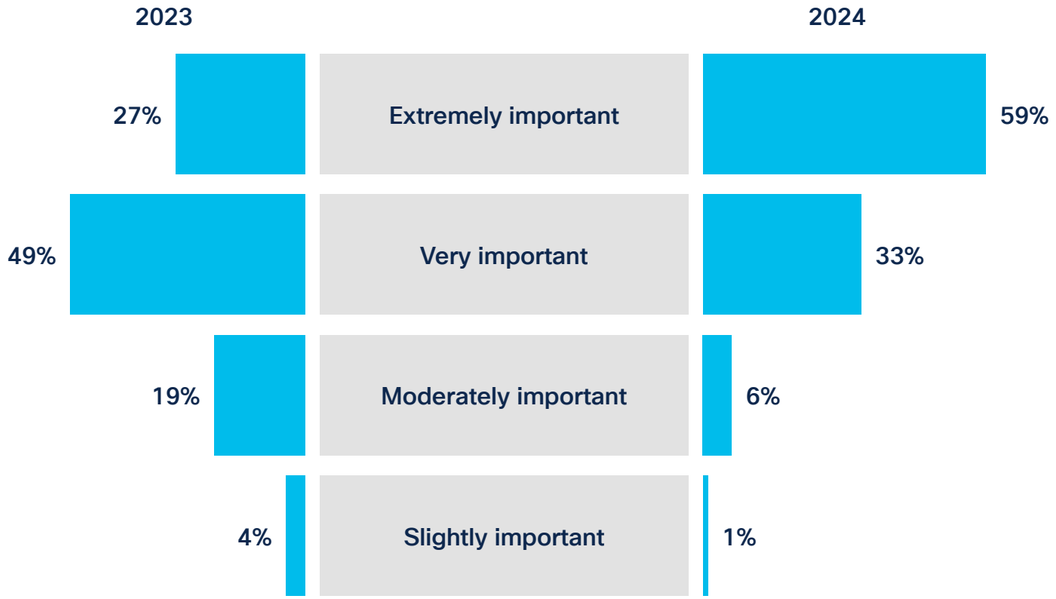
#7 25%
Lack of visibility and inventory of connected assets

Q. What are the biggest challenges your company faces in the optimal running and maintenance of its industrial infrastructure? Select all that apply

A leap in cybersecurity importance

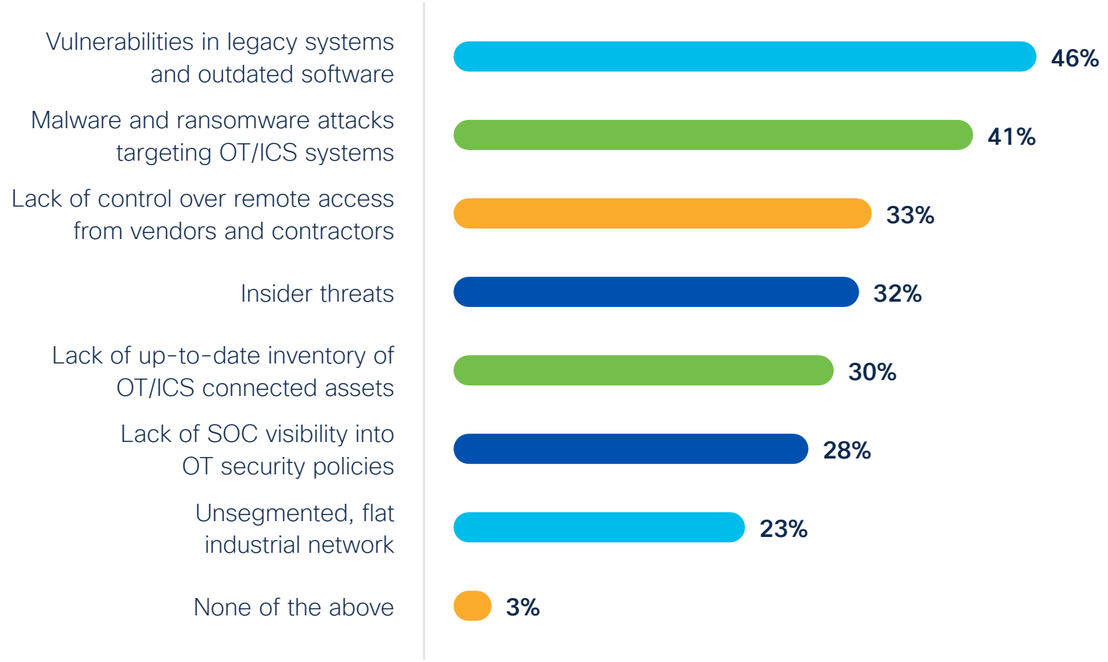
Ensuring cybersecurity compliance in operational networks is a global priority, and is growing year on year.

Nearly a third more **(32%) said cybersecurity compliance was extremely important in their operational network this year, compared to in 2023.** This compared to only 22% of industry professionals in other sectors.



Q. How would you describe the importance of cybersecurity compliance in your operational network?

The main industrial infrastructure cybersecurity challenges are **vulnerabilities in legacy systems and outdated software (46%), and malware or ransomware attacks specifically targeting operational technology (41%).**



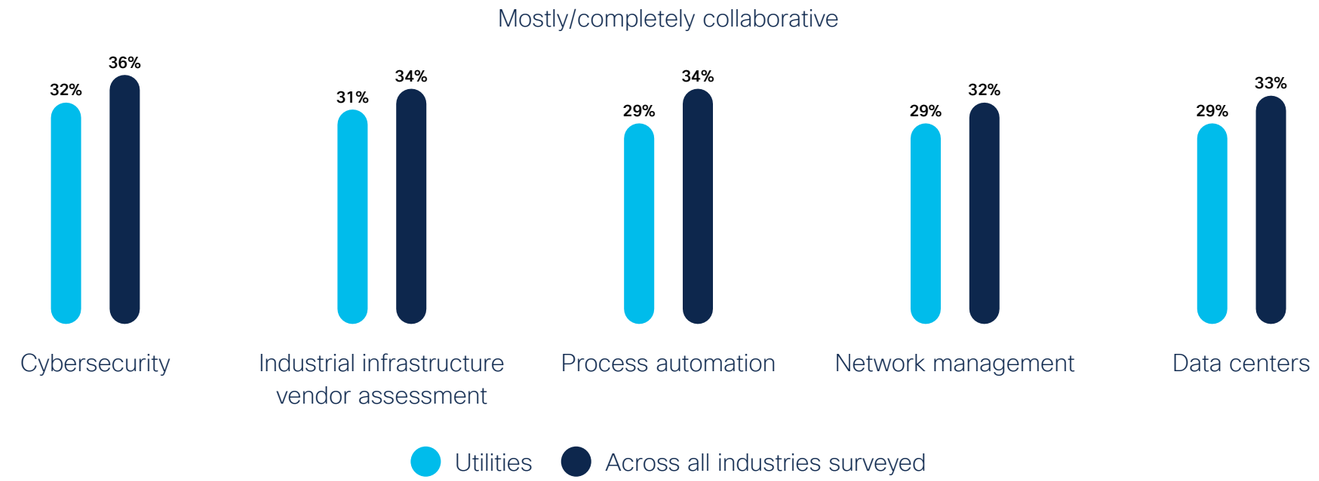
Q. What specific cybersecurity challenges have you encountered in your industrial networks? Select all that apply

Opportunities to improve collaboration

On every potential area of collaboration between IT and OT teams measured in our survey, utility firms lag behind the average cross-sector respondent.

Cybersecurity is the area of most collaboration for utility companies, with process automation, network management, and data centers seeing the two teams work together the least.

With collaboration between IT and OT paramount to improve performance, operate more efficiently, and protect more effectively against cybersecurity threats, this delta represents an action opportunity for firms in the utilities sector.



Q. On a scale of 1 to 5, with 1 being completely independent and 5 being completely collaborative, how would you rate the state of inter-working between IT and OT in relation to your organization's... [cybersecurity, industrial infrastructure vendor assessment, process automation, network management, data centers]?

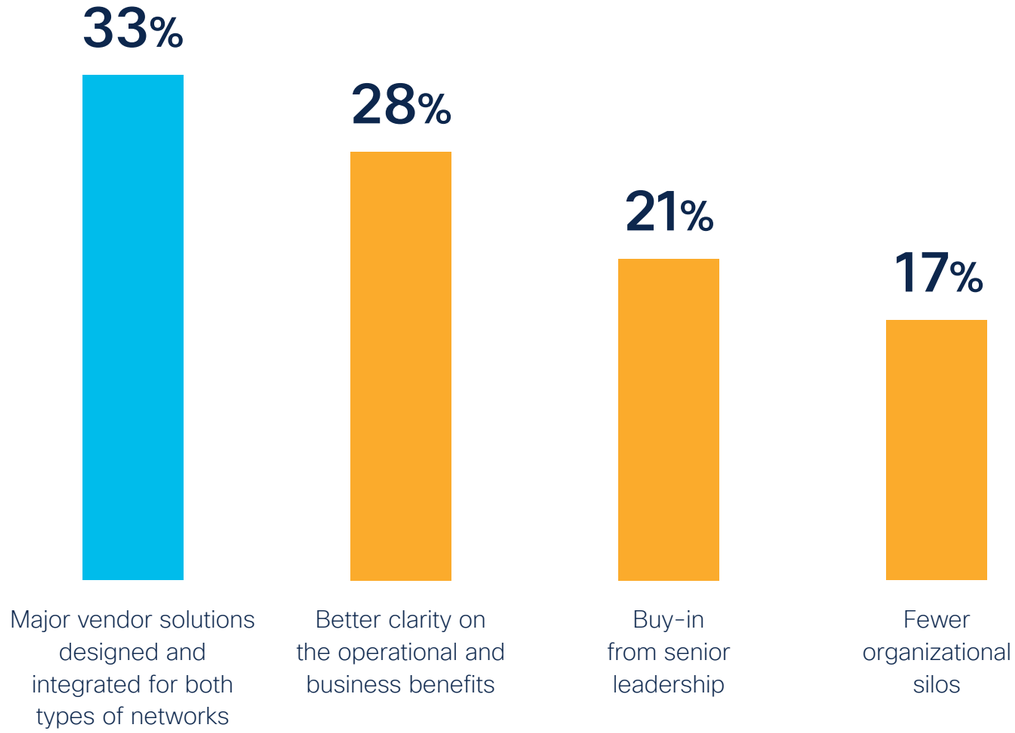
Organizational silos hamper alignment

A lack of understanding of how to design IT/OT collaboration (41%) and siloed organizations (40%) are the top two reasons utility firms struggle to bring these teams into closer alignment.

Outdated technology also plays a part.

Q. What's holding your organization back from further collaboration between of OT and IT? Select all that apply

It's perhaps unsurprising, then, that **one-third (33%) say major vendor solutions designed and integrated for both types of networks would speed up IT/OT collaboration.**

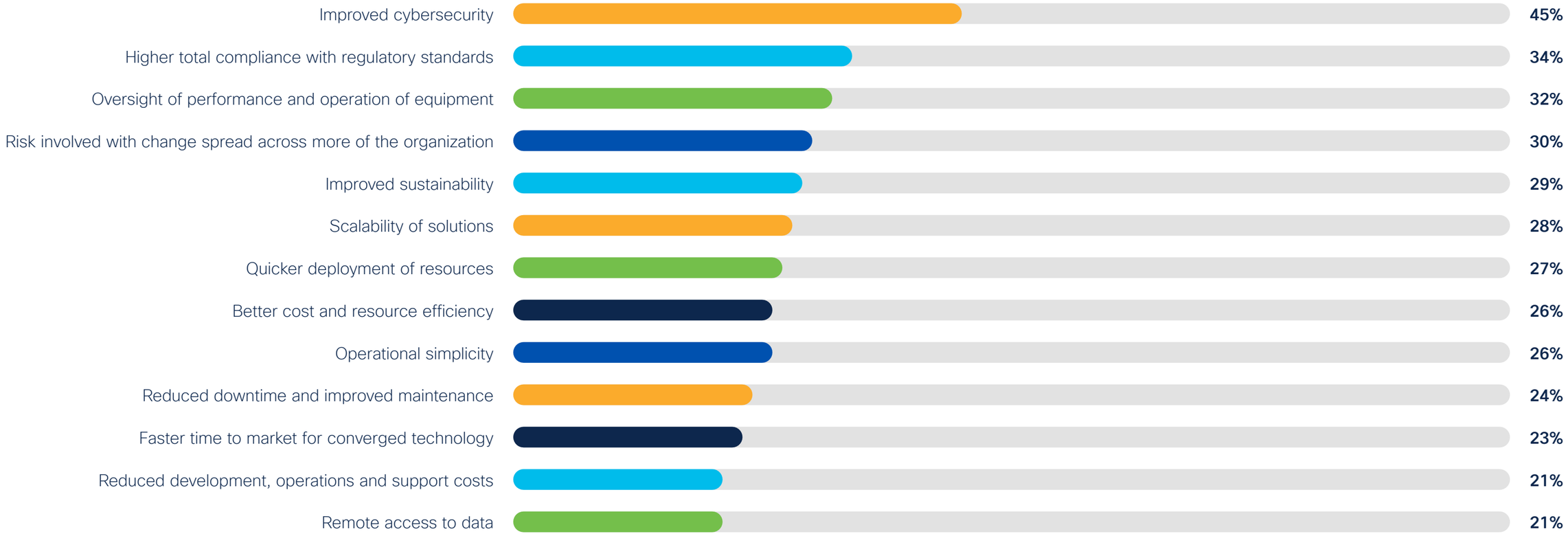


Q. What would accelerate the rate of OT and IT collaboration most within your organization? Select one

Closer IT/OT improves security and compliance

The number one benefit of IT/OT collaboration is better cybersecurity.

Utility businesses are also seeing a significant impact on compliance – considered the 2nd biggest benefit, compared to a ranking of 6th place among other sectors surveyed. Managing the risk associated with change was the 4th largest benefit, ranked way down in 12th place among non-utility survey respondents.



Q. What do you think are the main benefits of IT and OT collaboration? Select all that apply

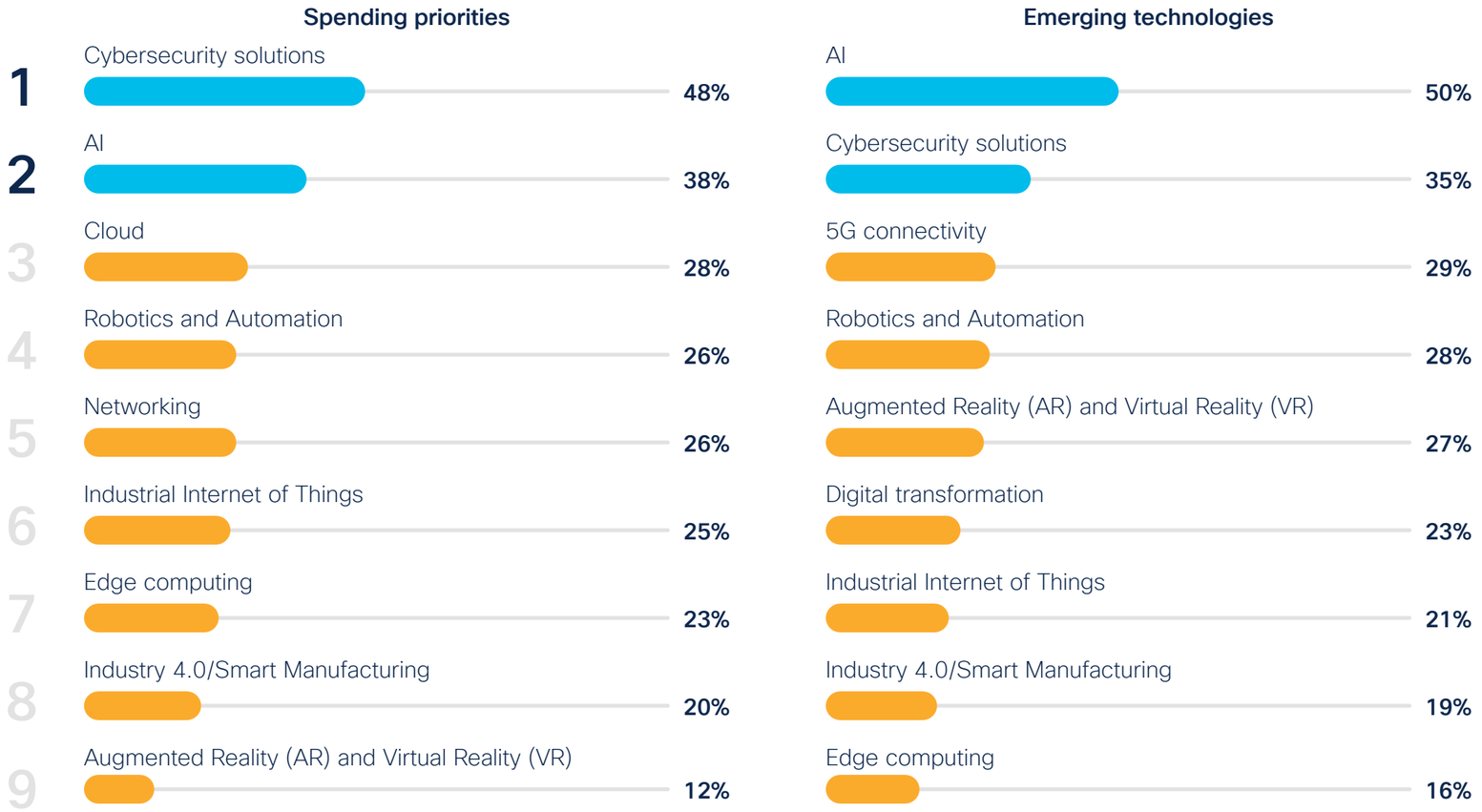
Section 3

Looking ahead

Utility firms plan more cybersecurity spend

Almost half (48%) say cybersecurity tops their list of planned investments for the next one to two years, with AI next in importance.

Half of respondents (50%) believe that AI will be one of the three most impactful emerging technologies in utilities industrial networking over the next five years, followed by cybersecurity solutions and 5G connectivity.

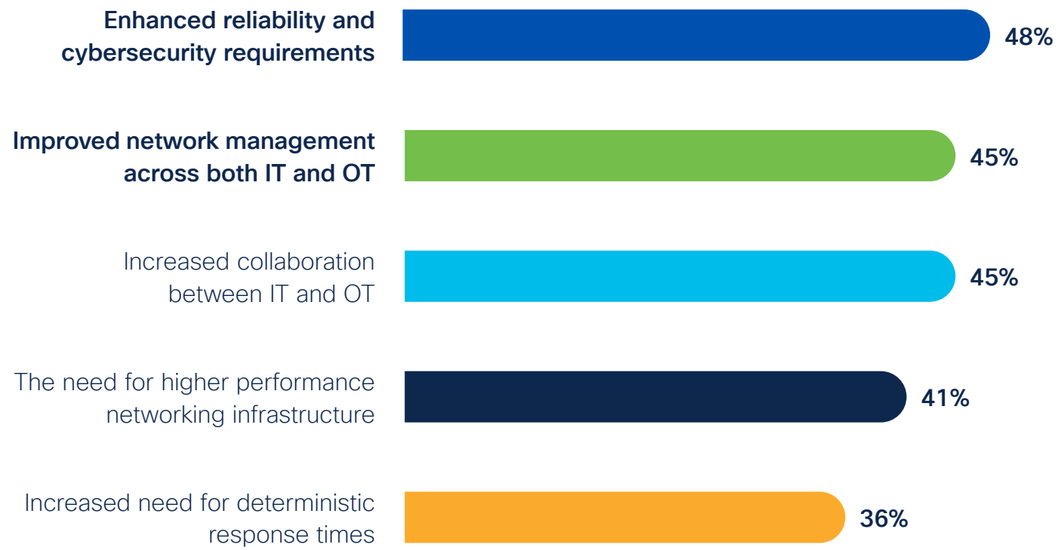


Q. What are your organization's main technology spending priorities for the next 12-24 months? Select up to three
Q. What emerging technologies do you believe will have the most significant impact on industrial networking over the next 5 years? Select up to three

AI expected to improve cybersecurity

Forty-eight percent of respondents expect AI deployment to enhance reliability and cybersecurity in their organizations' industrial networking.

A further 45% anticipate it leading to better network management and collaboration across IT and OT.



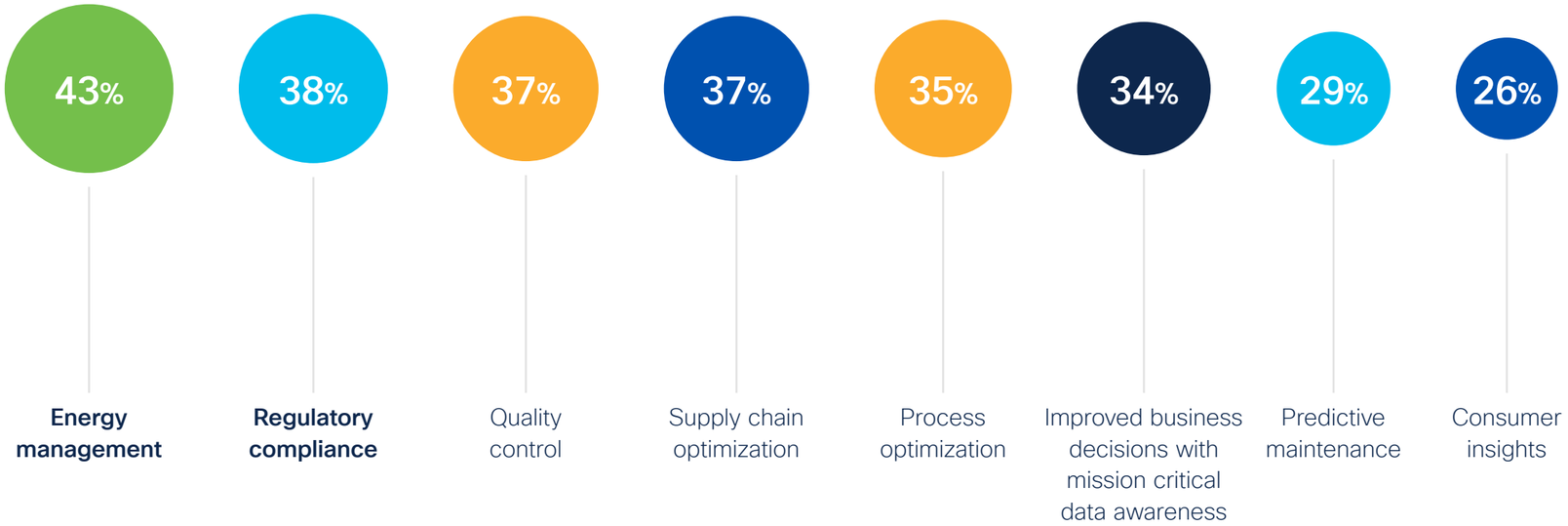
Q. What impact, if any, do you think the deployment of AI will have on industrial networking within your organization? Select all that apply

OT data fuels energy management

Utility firms are using OT data insights to improve energy management and comply with regulations.

Energy management is a priority for 43% of utility firms, who cited it as their top use case, compared to only 32% of businesses in other sectors.

Another 38% are using the data to support regulatory compliance, against a backdrop of increasingly strict environmental and competition/antitrust legislation.

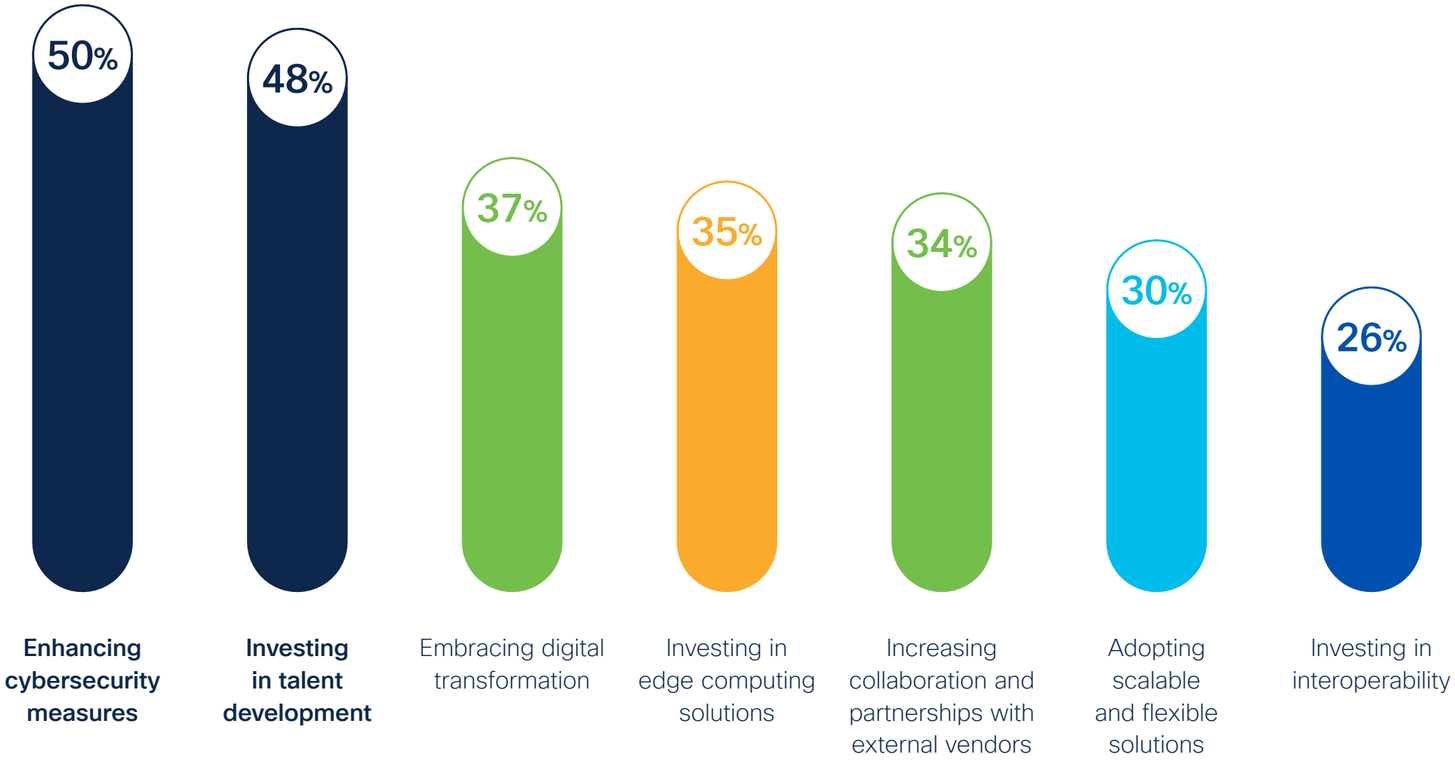


Q. How is your organization leveraging or planning to leverage the data obtained from operational technology (OT)? Select all that apply

Future-proofing through people and cybersecurity

Half (50%) of respondents are planning on enhancing cybersecurity measures to future-proof their OT infrastructure over the next two years.

Nearly as many (48%) will prioritize investments in talent development.



Q. What strategies is your organization looking to implement in the next two years to future proof their OT infrastructure? Select all that apply

Key takeaways

The industrial operational networking landscape is a place of enormous change and opportunity for utility firms who can overcome its inherent challenges.

1 Prioritize cybersecurity in your OT plans

In an industry with mounting costs on all sides, bolstering cyber defenses is imperative not only to maintain operations and avoid reputational damage, but to reduce the expenditure incurred when defenses are breached. Cybersecurity considerations must be prioritized in industrial networking strategies.

2 Introduce measures to encourage IT/OT collaboration

OT and IT can no longer work in isolation as their skills and domains increasingly overlap. A combination of human and organizational factors, alongside unified technological solutions, will be required to optimize and protect data and assets.

3 Harness AI for competitive advantage

Leaders in the utilities sector are embracing AI to improve cyber security, increase efficiency, support the workforce, and power innovation. Organizations who fail to refresh their industrial networking infrastructure for AI will struggle to compete.

Industrial networking partner considerations

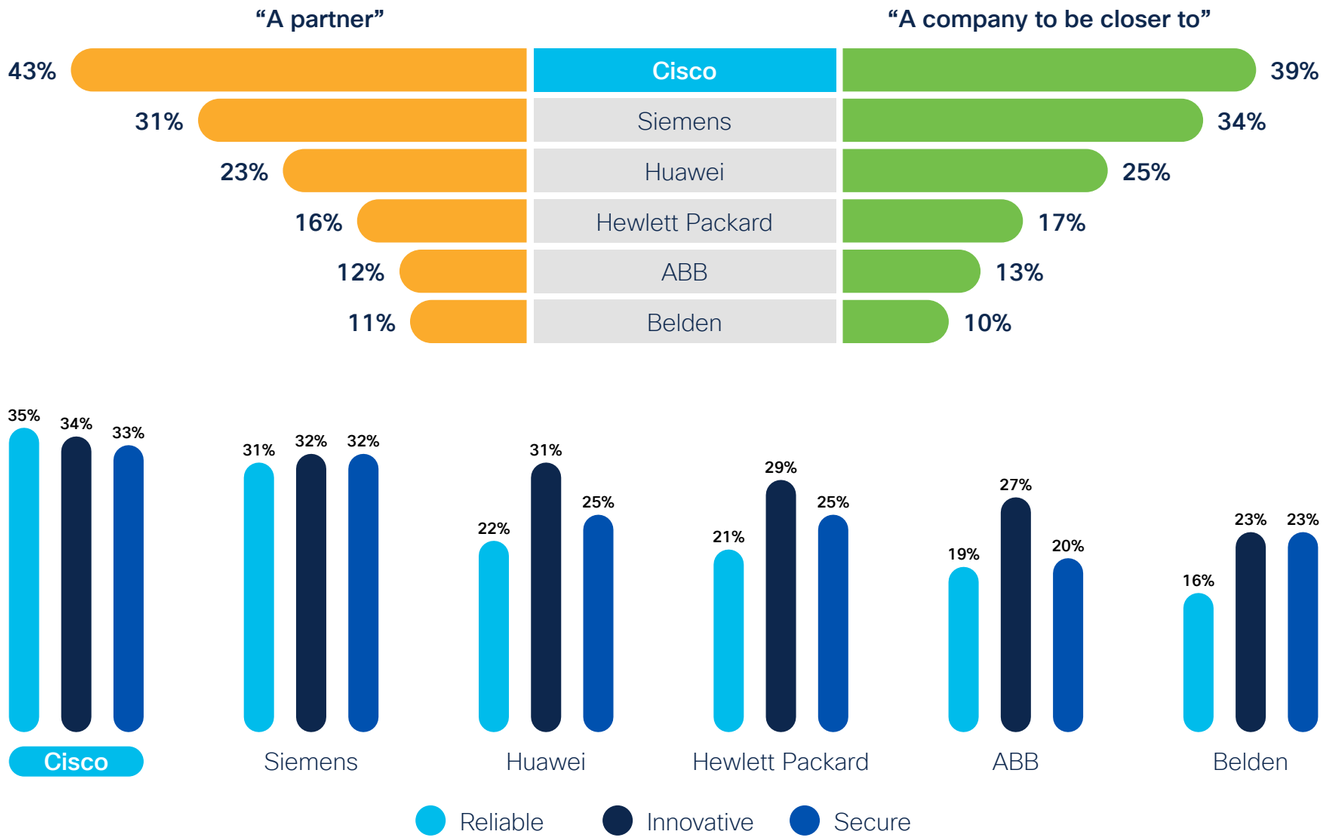
As you outline your industrial networking strategy and select a partner to support you on that journey, consider four important factors.

#1
A major vendor solution, designed for both IT and OT, can support better collaboration between these two teams (while, conversely, siloed point solutions can have the opposite effect).

#2
In order to maximize AI potential via fit-for-purpose infrastructure, it's important to partner with a provider such as Cisco, that is consistently named a networking leader by analysts including Gartner and Forrester.

#3
A strong, open relationship with a partner naturally leads to more successful deployments. Respondents to our global survey were more likely to describe Cisco as a 'partner' (43%) or a company they were 'closer to' (39%) than five other named providers.

#4
Reputation matters when it comes to choosing the right partner. Against five other named providers, Cisco was named top by survey respondents for reliability, innovation, and security.



Q. Of the following suppliers, which do you consider to be a partner/closer to? Select all that apply
Q. Which of these attributes do you associate most with each of these suppliers? Select all that apply

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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.

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