2024

Data Center & Infrastructure Report

Introduction

As a global data center and infrastructure solutions provider, Service Express is interested in how organizations worldwide manage their data centers and infrastructure effectively. We launched our first annual survey and report in 2018 to discover more about IT decision-making, actions and plans.

The primary objective of these reports is to provide context and insights into data center and infrastructure management with feedback from various IT roles.

This year, we've compiled responses from over 1,000 IT professionals on infrastructure priorities, workload deployment methods, sustainability practices and more to share how IT teams prepare and adapt for the future.

Meet our experts

Jake Blough

Chief Technology Officer

Jake drives innovation, sets the company's technology direction, and leads research and development for new products, services and data science.

in

Nick Ockwell

Chief Information Officer

Nick develops global IT strategies, transforming processes and leveraging technology to guide the road map, vision and plans for company growth.

in

Chad Peters

Director of Infrastructure Solutions

Chad identifies how customers can best meet performance, security and cost control demands by evaluating infrastructure trends, IT practices, reliability data and emerging OEM technologies.

in

Table of contents

Key findings

#1

Master your budget management expertise

Despite ongoing budgetary constraints, IT leaders are expected to deliver more services every year. This expectation poses major challenges as complexity increases for staffing demands, infrastructure investments and cloud costs.

#2

Find the right balance in your hybrid deployment strategy

As IT leaders draw on more firsthand hybrid experience, they're reevaluating where to house workloads, where to achieve the best performance and how to implement the most cost-efficient environment.
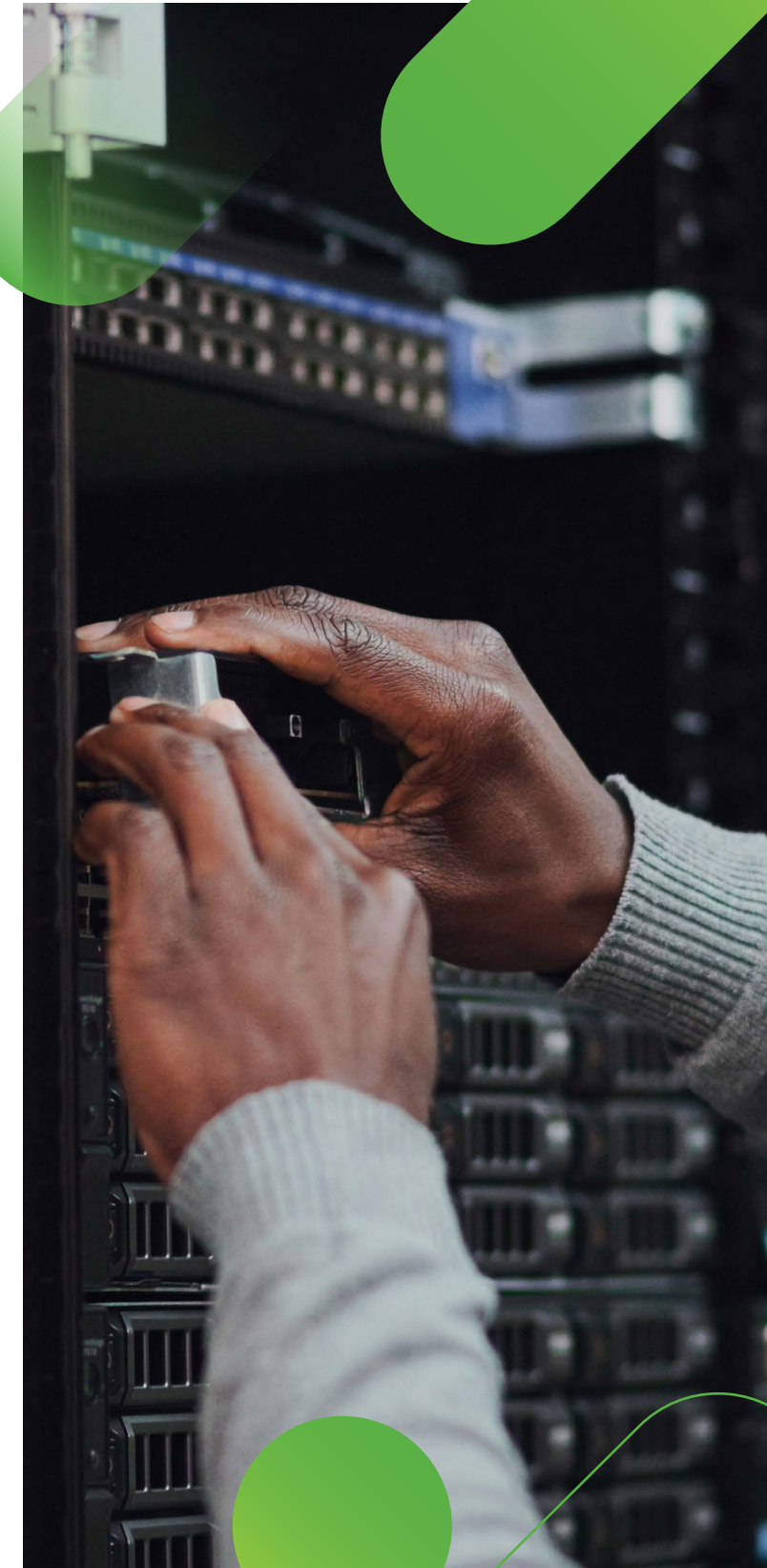
#3

Act on the growing commitment to sustainability

The impact of data center and infrastructure sustainability is directing more IT decisions toward alignment with business needs, corporate responsibility and environmental goals.

Top priorities

The top priorities — strengthening security, improving internal processes, developing IT team members and reducing IT costs — have stayed consistent since 2019. With many IT departments facing workforce reductions, leaders must commit to investing in employee well-being, training and growth. Implementing automation can streamline processes to free up limited staff resources and IT budgets; the savings can help fund security efforts and employee initiatives.
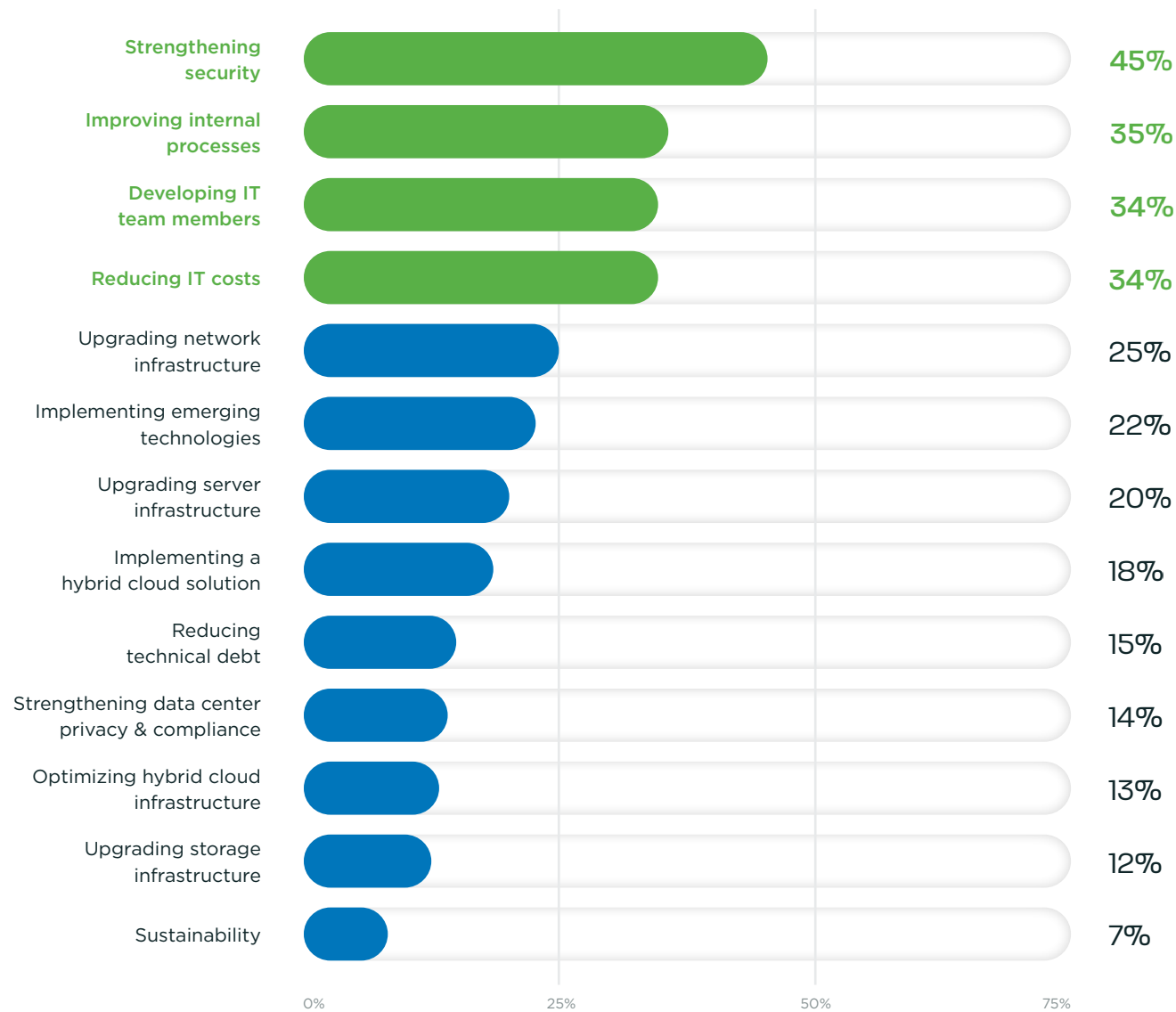
Top priority

Strengthening security

45%

Participants ranked their top three priorities for the next 12 months

Priority	%
Strengthening security	45%
Improving internal processes	35%
Developing IT team members	34%
Reducing IT costs	34%
Upgrading network infrastructure	25%
Implementing emerging technologies	22%
Upgrading server infrastructure	20%
Implementing a hybrid cloud solution	18%
Reducing technical debt	15%
Strengthening data center privacy & compliance	14%
Optimizing hybrid cloud infrastructure	13%
Upgrading storage infrastructure	12%
Sustainability	7%

0%   25%   50%   75%

Top challenges

Security

Protecting data and operations requires a singular focus to invest in reinforcing and upgrading security measures. The rise in security incidents and the significant business impact on organizations demonstrate how challenging and necessary it is to defend against threats and attacks.
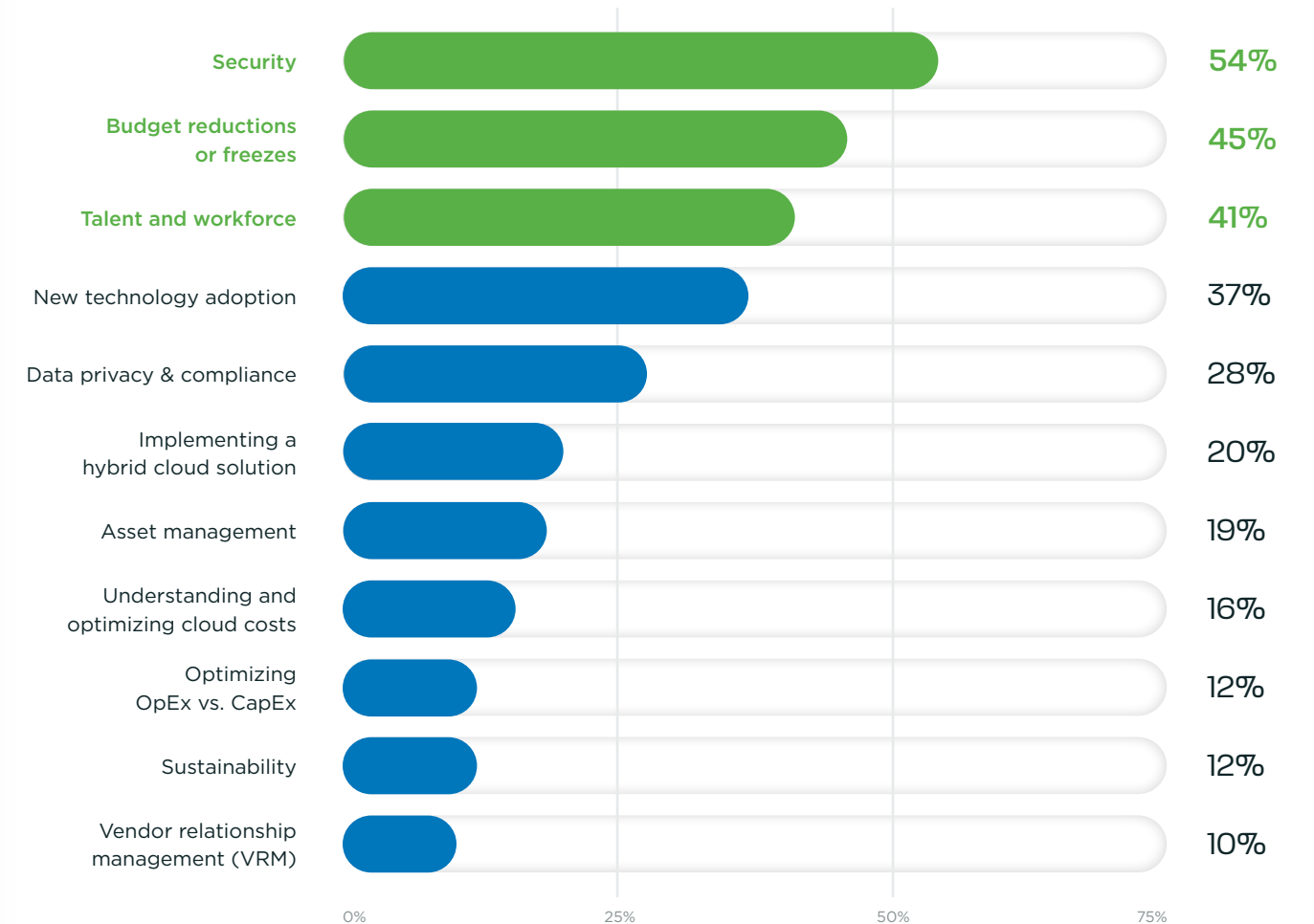
Talent and workforce

Companies operating with limited IT budgets must find creative, cost-effective ways — such as flexible hours, career development opportunities and greater employee autonomy — to provide an engaging work environment that can attract and retain talent.

New technology adoption

IT teams must continue to adapt and adopt new technologies. Artificial intelligence (AI) offers multiple use cases and must be leveraged to gain competitive advantages, improve productivity and reduce costs. Companies must be diligent in their approach and selection of technology partners, specifically focusing on what rights the partner has to data usage and ownership.

Participants ranked their top three challenges for the next 12 months

Challenge	%
Security	54%
Budget reductions or freezes	45%
Talent and workforce	41%
New technology adoption	37%
Data privacy & compliance	28%
Implementing a hybrid cloud solution	20%
Asset management	19%
Understanding and optimizing cloud costs	16%
Optimizing OpEx vs. CapEx	12%
Sustainability	12%
Vendor relationship management (VRM)	10%

0%   25%   50%   75%

IT budget changes 🔑

Nearly half of respondents forecasted IT budget increases in 2024. Rising labor and software contract costs will drive up spending as suppliers look to maintain margins in an inflationary world. IT management must scrutinize expenses and look for alternative ways to optimize budgets to maintain and grow the bottom line. Budget increases will only be sustainable if goals are met and additional spending improves company profitability.

Top change

Budget increase by 10% or less

28%

How do you see your IT budget changing in 2024?

Increase by 26% or more
4%

Decrease by 10% or less
16%

Increase between 11–25%
17%

Decrease between 11–25%
5%

Increase by 10% or less
28%

Decrease by 26% or more
2%

No change
26%

Cost-saving measures

As a result of persistent supply chain issues, companies delayed hardware refreshes and controlled costs by using equipment far longer than initially planned. IT leaders can further reduce capital budgets and operating expenses using third-party maintenance (TPM) solutions to extend the equipment life cycle.
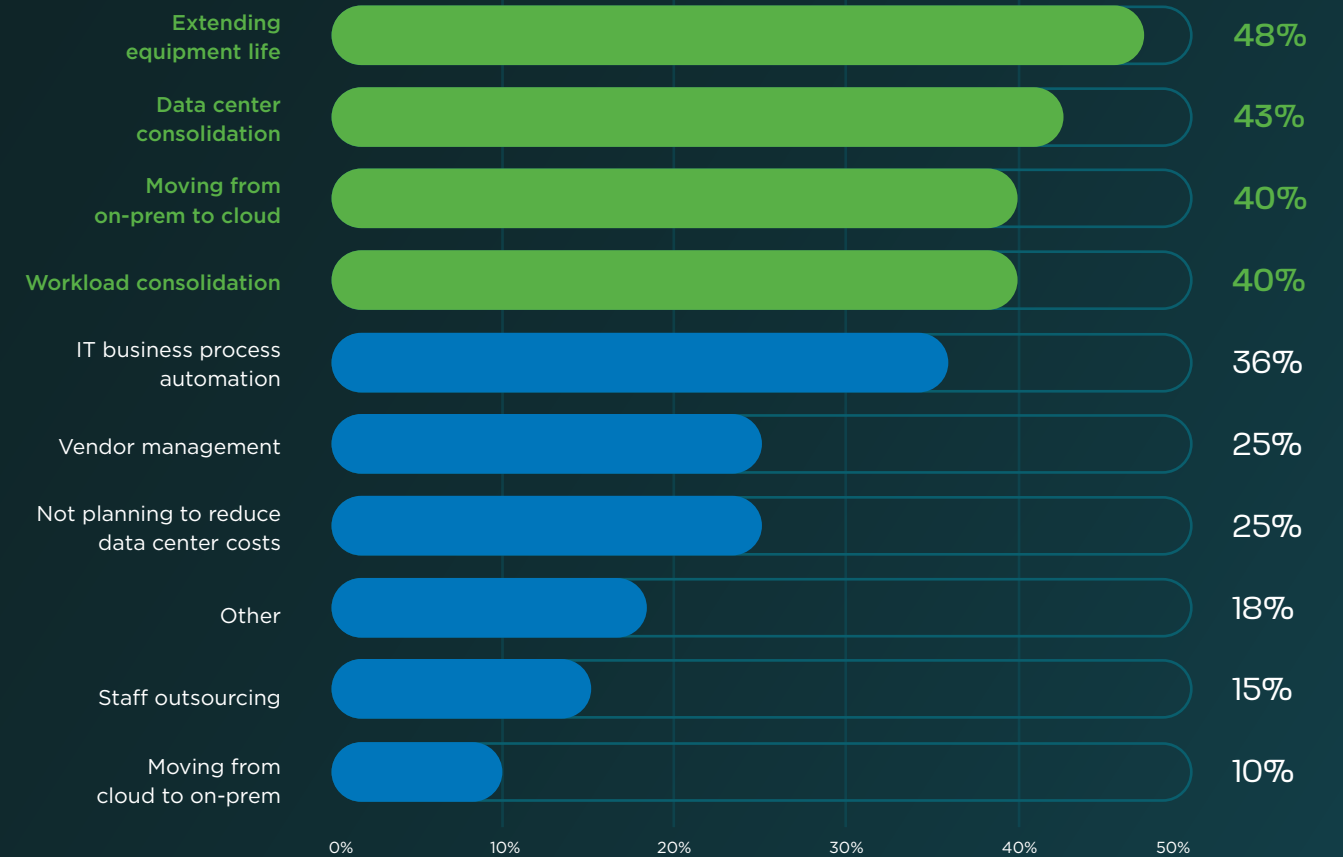
IT teams are also consolidating workloads and exploring hybrid, public and private cloud solutions to reduce spending in 2024. Companies should approach this evaluation from a capital budget, operating expense, IT skills and resource perspective. Moving workloads from on-prem to alternative hosting strategies with specialist providers can allow companies to focus their IT resources on value-added initiatives rather than managing infrastructure and data centers.

Top measure

Extending equipment life

48%

Participants ranked their top three cost-saving measures for the next 12 months

Measure	Percentage
Extending equipment life	48%
Data center consolidation	43%
Moving from on-prem to cloud	40%
Workload consolidation	40%
IT business process automation	36%
Vendor management	25%
Not planning to reduce data center costs	25%
Other	18%
Staff outsourcing	15%
Moving from cloud to on-prem	10%

0%   10%   20%   30%   40%   50%

Workload environment

On-premises data centers are still the predominant hosting option at 47%. Companies are taking a methodical approach to their hosting strategies that includes evaluating capital and operating budgets and finding a hybrid solution for their IT resources. Other workloads are distributed fairly evenly among colocation, public and private cloud providers. Over the last four years of reporting, we've seen a small shift from on-prem to these three other strategies; in absolute terms, workloads are still growing in all four areas.

What percentage of your current environment is in the following?

On-prem data center
47%

Hosted private cloud
18%

Public cloud
18%

Colocation
17%

Off-premises drivers 🔑

Companies are migrating off-prem to improve disaster recovery and business continuity measures and to offset the significant capital and operating spend needed to run on-prem data centers.
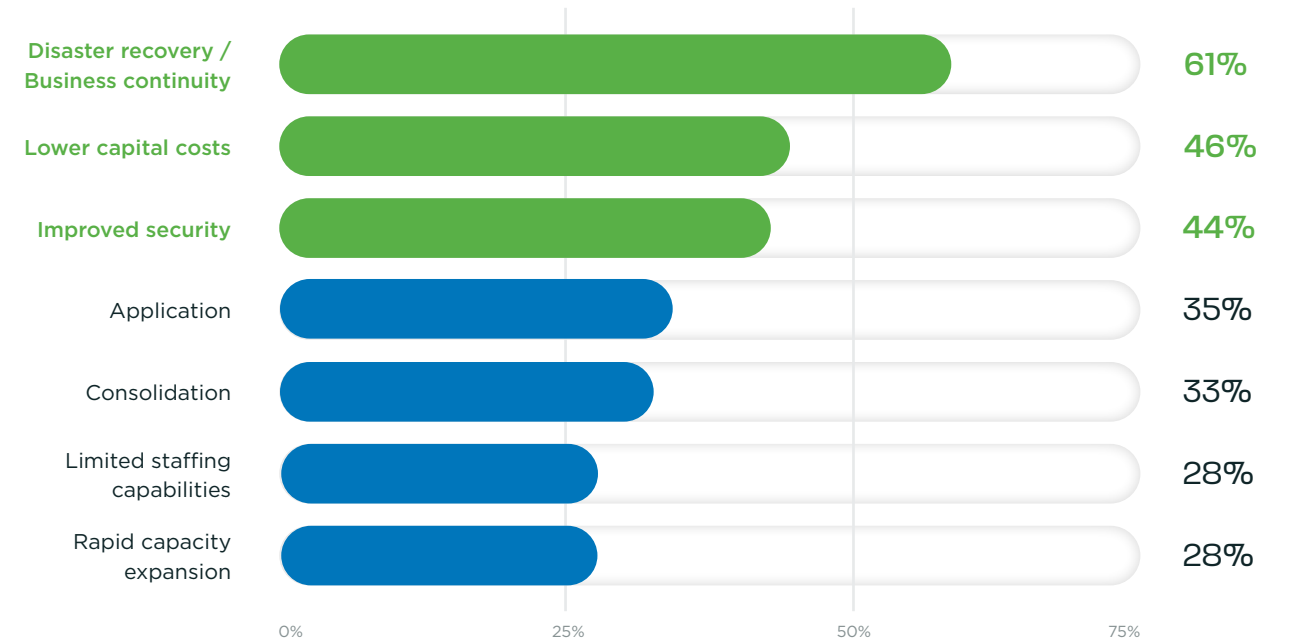
Maintaining a secure on-prem data center requires an array of resources. The security investments, processes and dedicated skills of specialized third-party hosting partners provide additional benefits to moving off-prem.

Top driver

Disaster recovery / Business continuity
61%

Participants ranked the top three drivers impacting their company's decision to move workloads off-prem over the next 12 months

Driver	Percentage
Disaster recovery / Business continuity	61%
Lower capital costs	46%
Improved security	44%
Application	35%
Consolidation	33%
Limited staffing capabilities	28%
Rapid capacity expansion	28%

From the expert

"While third-party IT providers can enhance security, the key lies in due diligence and collaboration. *Trust but verify* continues to be the security mantra, ensuring that your company's security standards are in line and supported by your IT providers."

Nick Ockwell
CIO

Public cloud challenges

While public cloud offers flexible environments, recruiting and retaining qualified cloud engineers and unpredictable costs are problematic. In addition, many applications and environments aren't optimized to leverage the full benefit of cloud technologies and deliver the desired return. Reengineering workloads for specific applications typically requires more investment, time and resources.
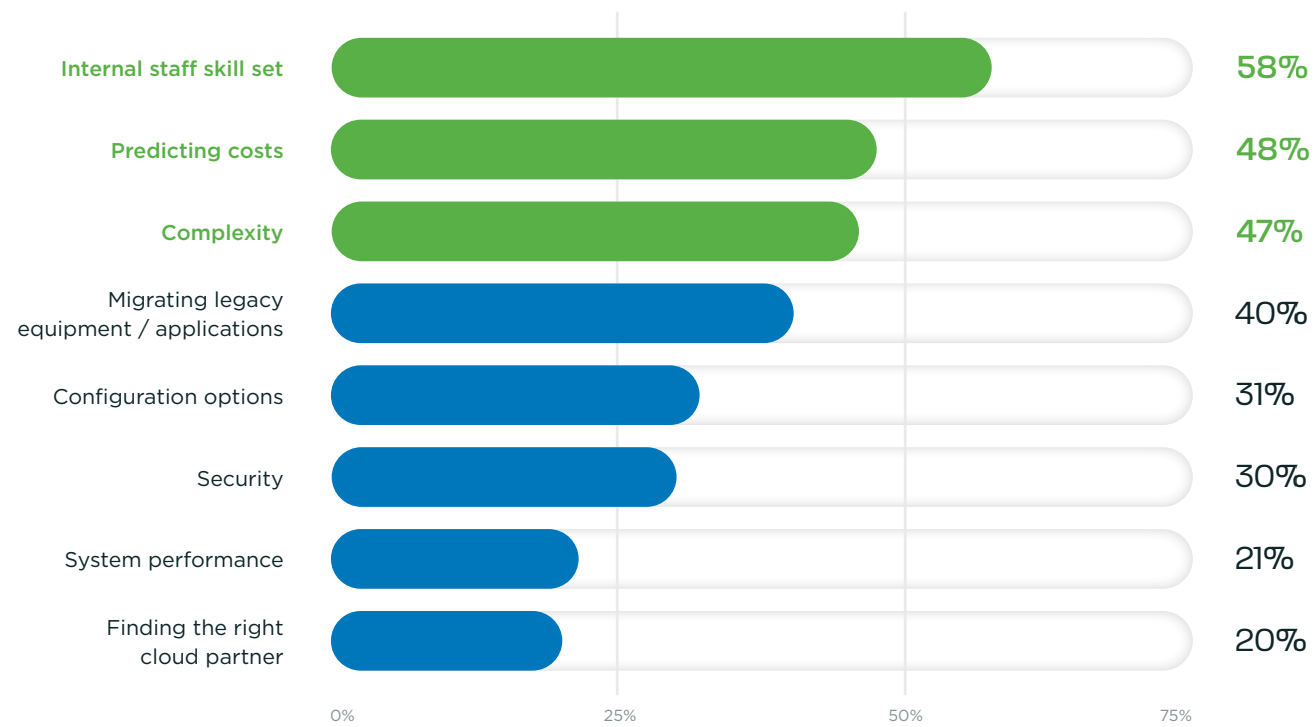
A hybrid mindset considers on-prem, private and public cloud options to best serve the company's business model and needs. For example, public cloud provides significant flexibility for compute capacity; private cloud and on-prem solutions provide more predictable, steady volume increases.

Top challenge

Internal staff skill set

58%

Participants ranked the top three challenges they've experienced with their public cloud solution

Challenge	%
Internal staff skill set	58%
Predicting costs	48%
Complexity	47%
Migrating legacy equipment / applications	40%
Configuration options	31%
Security	30%
System performance	21%
Finding the right cloud partner	20%

From the expert

"Ultimately, choosing a hybrid hosting sourcing strategy depends on your organization's specific needs, existing infrastructure and long-term goals. Rather than focusing on a quick win, you need to consider the ongoing costs of each solution. Pay careful attention to flexibility, cost optimization, security, regulatory compliance, scalability, disaster recovery and risk mitigation."
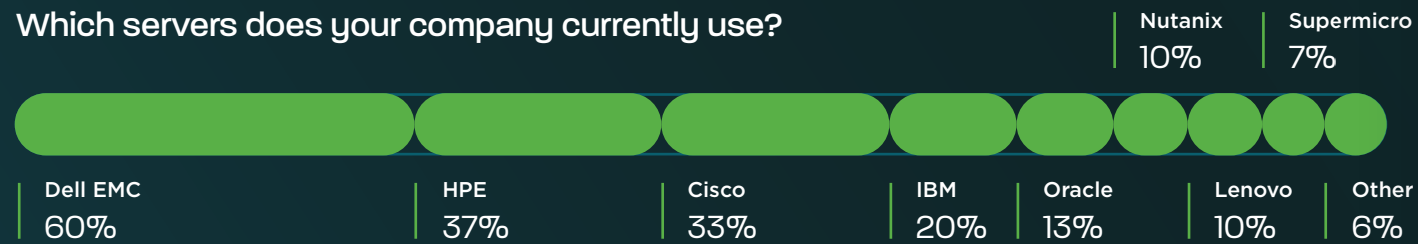
Nick Ockwell
CIO

Servers, storage and network

Servers

Dell EMC maintains the largest market share ahead of HPE and Cisco. The Dell PowerEdge server is widely recognized for its value, ease of use and open access to updates, making it a popular option for large organizations.

Which servers does your company currently use?

| | | | | Nutanix 10% | Supermicro 7% |

| Dell EMC 60% | HPE 37% | Cisco 33% | IBM 20% | Oracle 13% | Lenovo 10% | Other 6% |

Storage

Dell EMC's dominance in the storage market will likely persist due to its broad portfolio that serves a variety of use cases. A growing number of companies are adopting Pure Storage as a less costly alternative to other options.
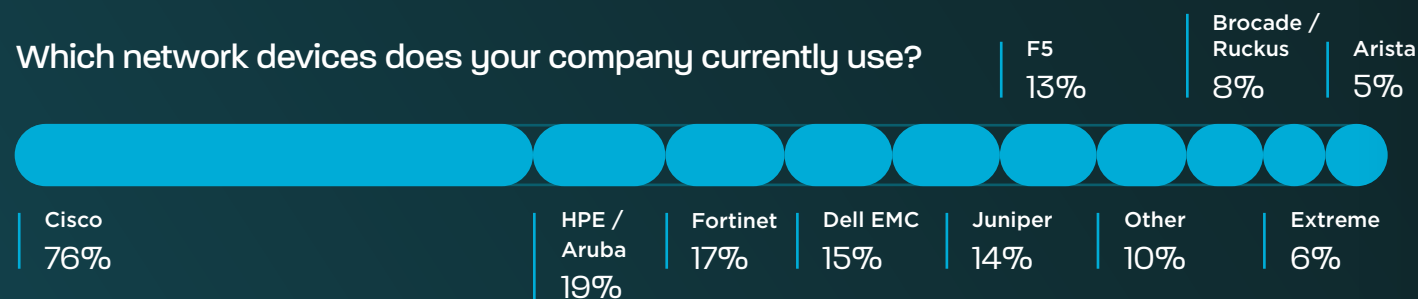
Which storage equipment does your company currently use?

| | | | | | Other 14% |

| Dell EMC 53% | HPE 24% | NetApp 23% | IBM 18% | Pure Storage 15% | Hitachi 6% |
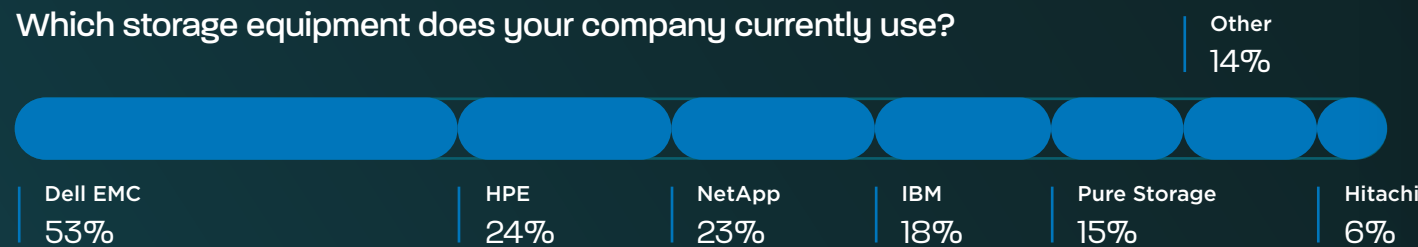
Network

Since its inception, Cisco continues to be a leader in the network ecosystem space. However, IT teams are beginning to adopt a broader network strategy, including other manufacturers specializing in firewalls, WAN and edge use cases.
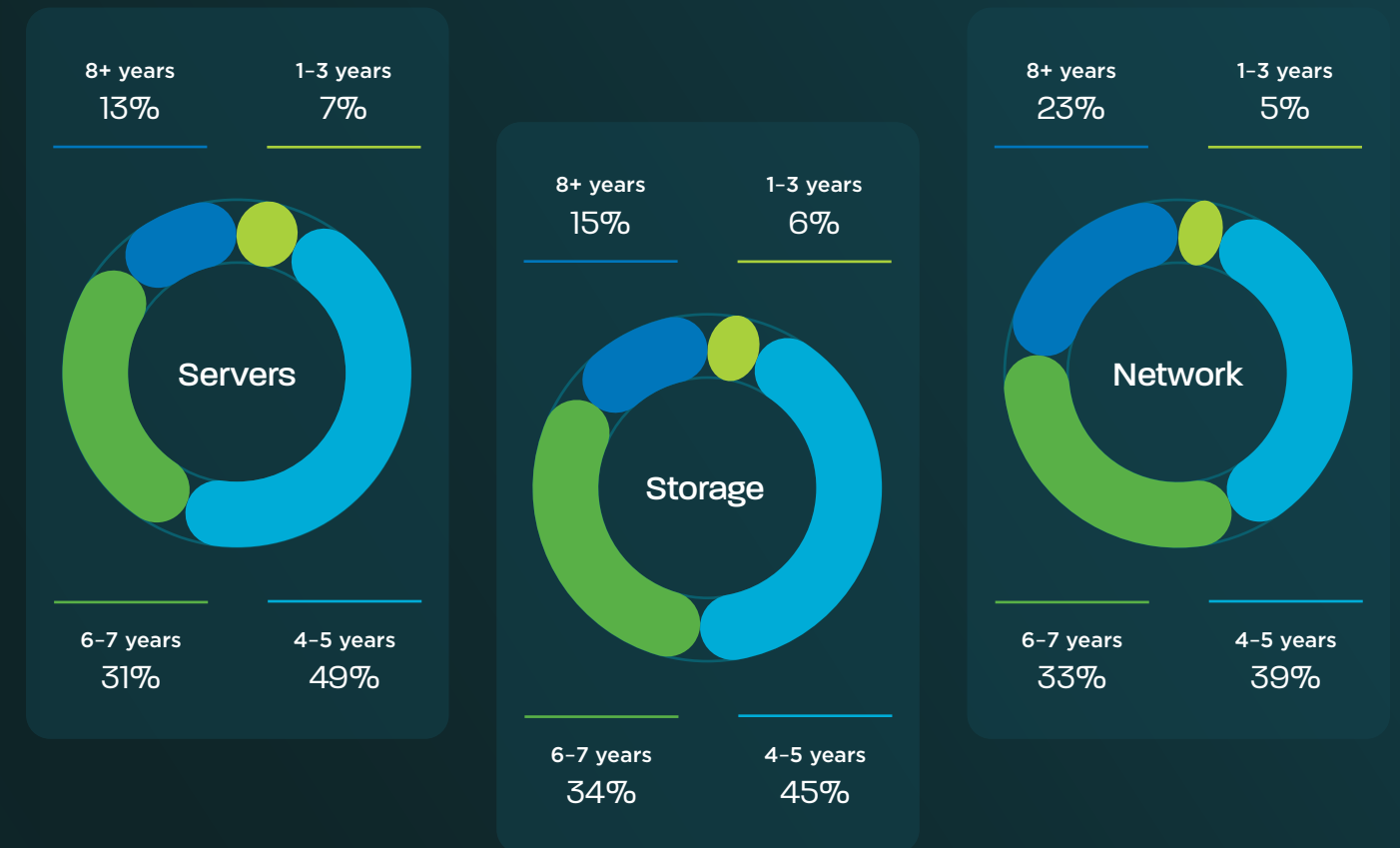
Which network devices does your company currently use?

| | | F5 13% | Brocade / Ruckus 8% | Arista 5% |

| Cisco 76% | HPE / Aruba 19% | Fortinet 17% | Dell EMC 15% | Juniper 14% | Other 10% | Extreme 6% |

Hardware investment

The global supply chain crisis, tightening budgets and economic uncertainty pushed many companies to delay refreshes and extend their equipment life. The shift to longer refresh cycles continues growing for multiple reasons, including a better understanding of long-term hardware reliability and equipment performance, the pressure to reduce spending and a greater commitment to sustainability. When existing infrastructure meets demands, a CapEx-intensive refresh should be reevaluated.

What is your current refresh cycle for your data center equipment?

Servers
- 8+ years: 13%
- 1–3 years: 7%
- 6–7 years: 31%
- 4–5 years: 49%

Storage
- 8+ years: 15%
- 1–3 years: 6%
- 6–7 years: 34%
- 4–5 years: 45%

Network
- 8+ years: 23%
- 1–3 years: 5%
- 6–7 years: 33%
- 4–5 years: 39%

From the expert

"Large cloud hyperscalers have made news by moving from a three-year to a four-to-five-year refresh cycle. As we meet with customers, we review reliability and longevity data to show that the useful life of equipment extends beyond seven to ten years for most products."

Jake Blough
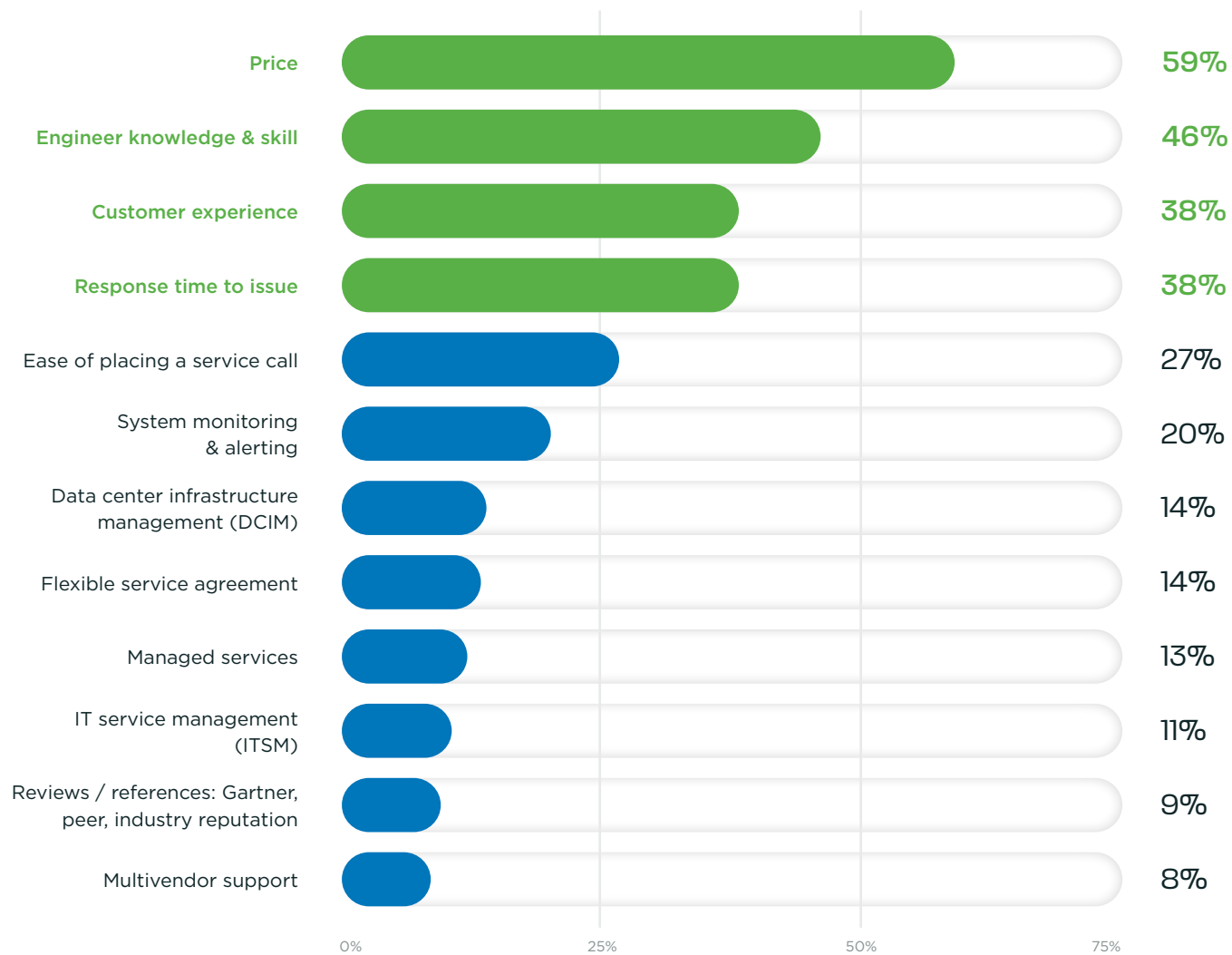CTO

Maintenance decision drivers

In considering the many factors influencing their maintenance decisions, IT professionals rank price, quality service and resolution time as the most important. Equipment failures and downtime impact business efficiency and results. Increasingly, companies are looking for infrastructure management and support automation to reduce spending while improving support and customer experience.

Top driver

Price

59%

Participants ranked the top three drivers that influence the decision-making process regarding their organization's server, storage or networking maintenance support

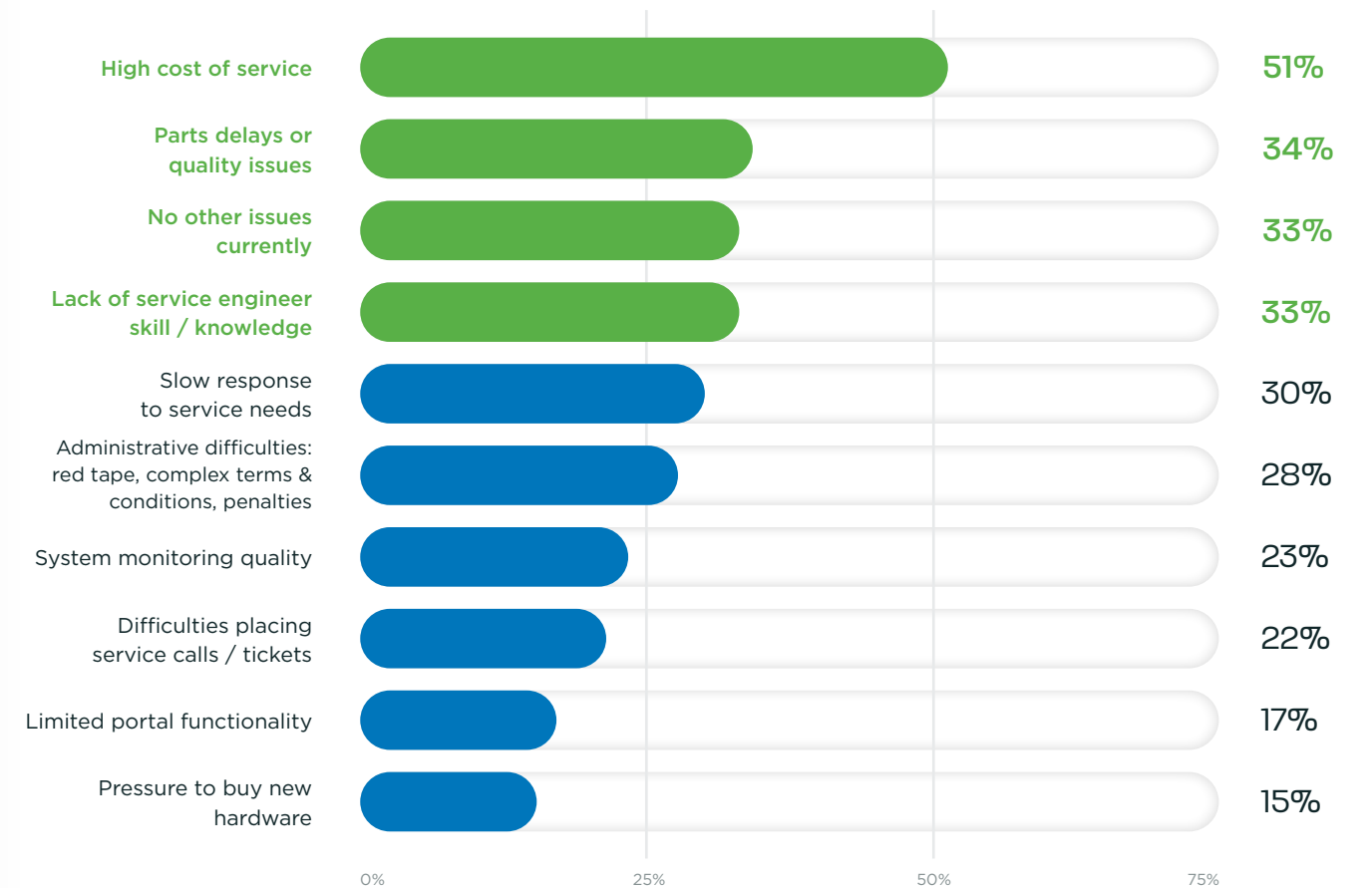|	
Price	59%
Engineer knowledge & skill	46%
Customer experience	38%
Response time to issue	38%
Ease of placing a service call	27%
System monitoring & alerting	20%
Data center infrastructure management (DCIM)	14%
Flexible service agreement	14%
Managed services	13%
IT service management (ITSM)	11%
Reviews / references: Gartner, peer, industry reputation	9%
Multivendor support	8%

Maintenance challenges

Maintenance issues have changed little in the past five years of our reporting. High costs, engineer concerns, parts availability and administrative difficulties persist. Despite continually raising prices, the manufacturers have reduced investment in service delivery and limited warranty coverage options. Success for the manufacturer relies on selling new equipment, not servicing it post-sale.

Top challenge

High cost of service

51%

Participants ranked the top three challenges they experience when working with their current maintenance provider

High cost of service	51%
Parts delays or quality issues	34%
No other issues currently	33%
Lack of service engineer skill / knowledge	33%
Slow response to service needs	30%
Administrative difficulties: red tape, complex terms & conditions, penalties	28%
System monitoring quality	23%
Difficulties placing service calls / tickets	22%
Limited portal functionality	17%
Pressure to buy new hardware	15%

Third-party maintenance (TPM)

Companies are increasingly recognizing the many advantages of third-party maintenance, including streamlined service, broad engineer knowledge and lower costs. IT teams seeking alternatives to manufacturer support must find improved service and value with TPM providers to meet their IT infrastructure and budget needs.

Top value

Knowledgeable engineers

49%

What do you value most about a third-party maintenance provider?

Knowledgeable engineers	49%
Better service experience	44%
Value for the price	38%
Extended equipment life cycle	36%
Legacy equipment support	35%
Multivendor support	23%
More flexible coverage options	22%
Less administrative complexity	20%
Helps meet sustainability measures	15%
Speedier parts delivery	13%

From the expert

"Our TPM solutions extend beyond cost-savings, technical expertise and quick resolutions. We empower our customers to optimize their CapEx and OpEx budgets by sharing valuable insights using a variety of resources, including our longevity and reliability studies."

Chad Peters
Director of Infrastructure Solutions

Strategic outsourcing

Cloud computing, security, and backup and recovery are the most common service areas organizations look to outsource to specialized companies for needed skills and resources.
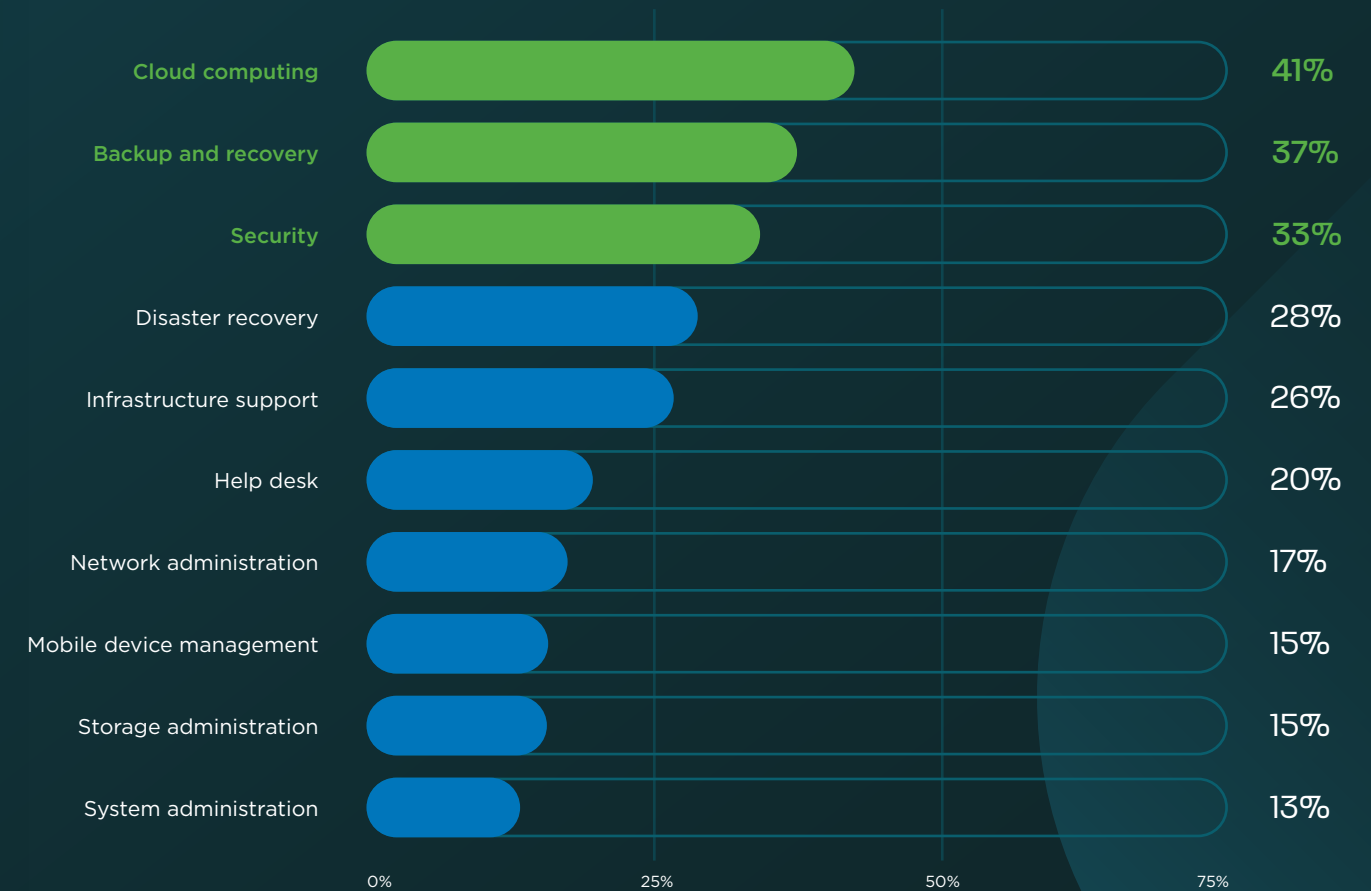
Potential security vulnerabilities and disasters threaten financial and reputational integrity. For many small to medium-sized enterprises, the cost of recruiting and retaining specialists while providing qualified IT security resources is prohibitive. Due to economies of scale and targeted expertise, a managed service provider can offer a reliable, cost-effective alternative. Third-party solutions enable IT leaders to lower costs and allocate scarce resources to other business-facing initiatives.

Top service

Cloud computing

41%

Which managed services are you using or planning to use in the next 12 months?

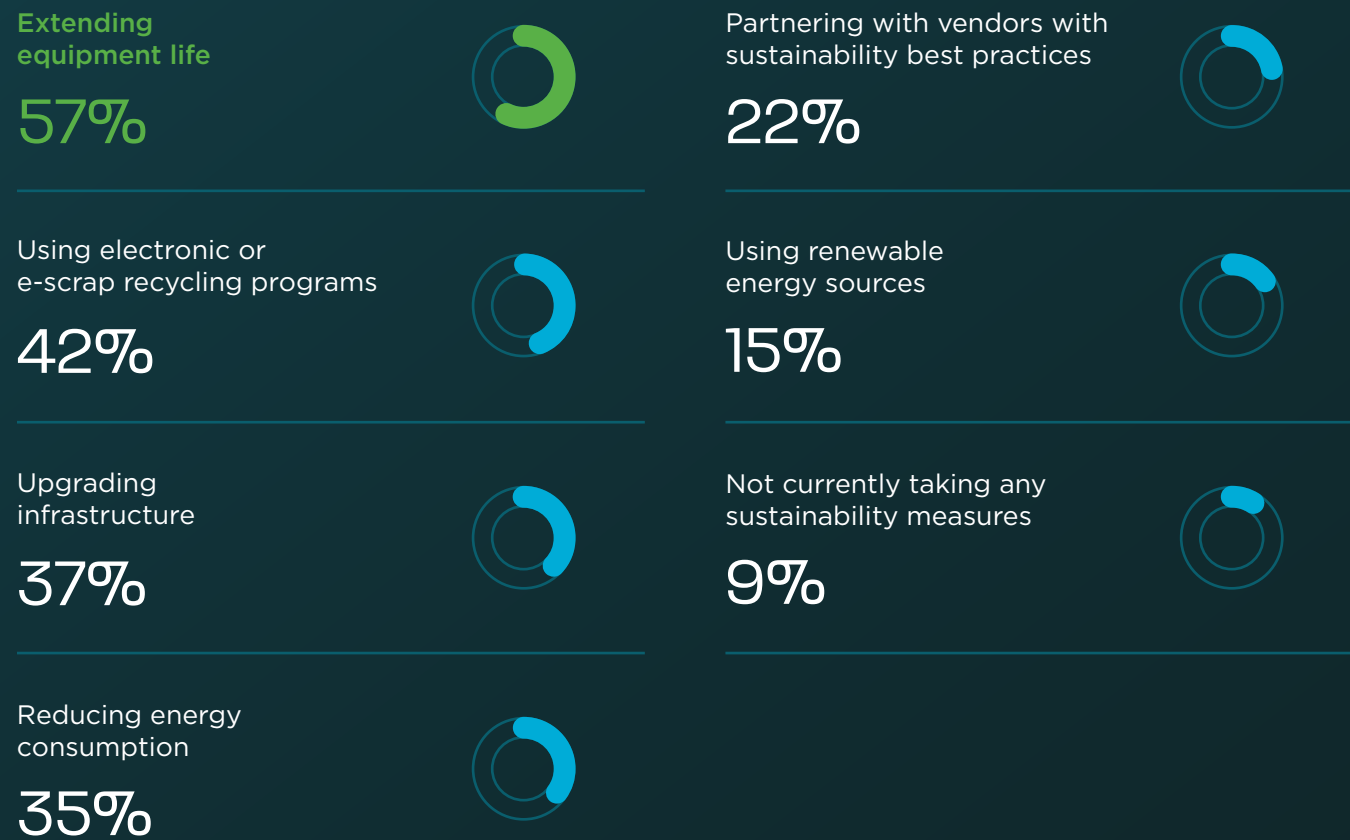|	
Cloud computing	41%
Backup and recovery	37%
Security	33%
Disaster recovery	28%
Infrastructure support	26%
Help desk	20%
Network administration	17%
Mobile device management	15%
Storage administration	15%
System administration	13%

Environmental responsibility 🔑

For years, sustainability was a minor concern for most companies; it's now becoming a mainstay for corporate governance. Organizations are switching from *nice-to-have* to *must-have* practices to reflect the shift in business priorities. In anticipation of future environmental regulations, leaders are preparing for new and stronger sustainability demands. IT teams continue taking steps to limit carbon emissions by extending equipment life cycles, reducing e-waste and optimizing energy usage.

Top measure

Extending equipment life

57%

What sustainability measures are part of your IT operations or strategy?

Extending equipment life

57%

Partnering with vendors with sustainability best practices

22%

Using electronic or e-scrap recycling programs

42%

Using renewable energy sources

15%

Upgrading infrastructure

37%

Not currently taking any sustainability measures

9%

Reducing energy consumption

35%

From the expert

"Although reducing power consumption is an obvious target for sustainability, consider the overall impact. The bulk of carbon emissions comes from the manufacture and transport of the product. A company can show more progress in carbon avoidance or total carbon emission by extending equipment life across the board instead of upgrading to a newer energy-efficient model."
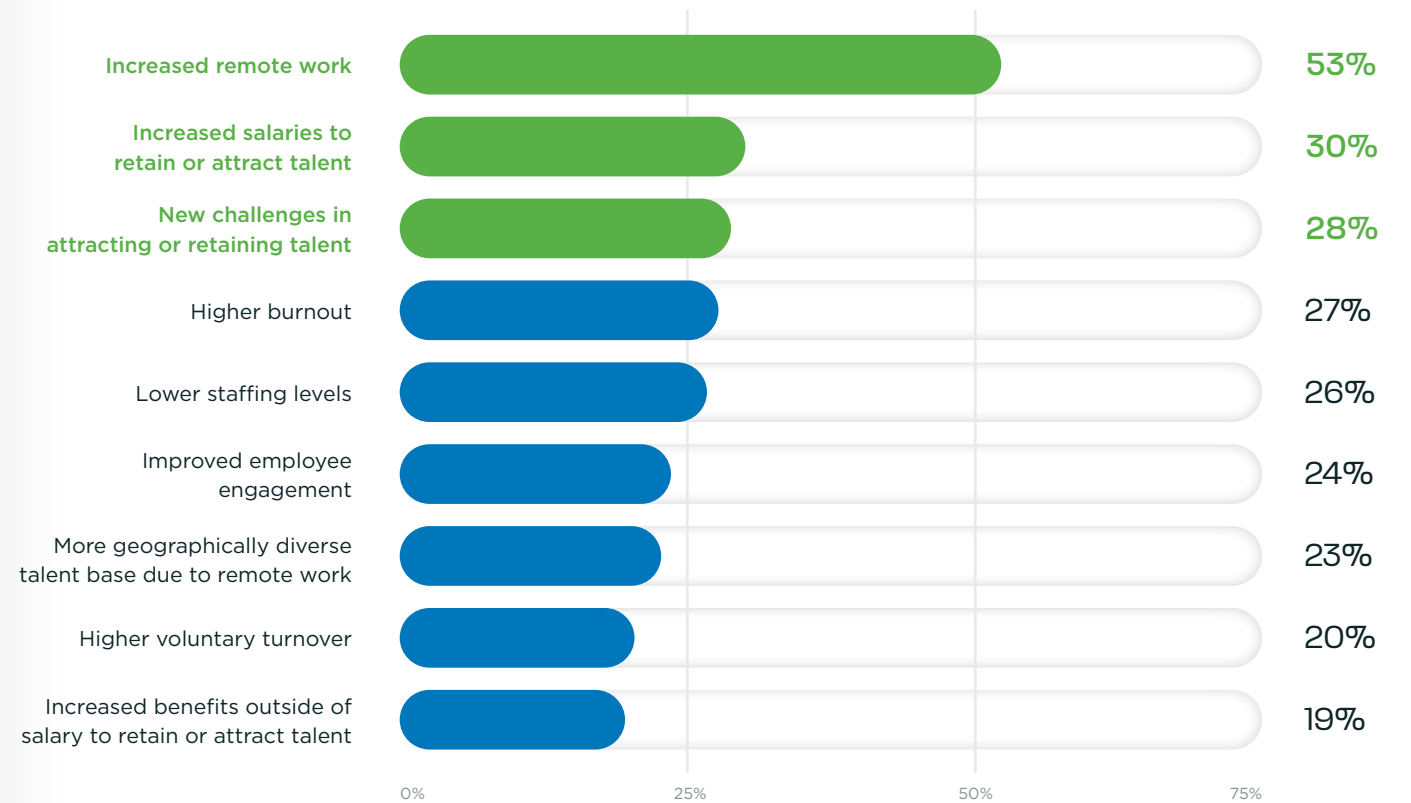
Jake Blough
CTO

Talent trends

How can IT leaders address the employee experience? Ideas include establishing a hybrid balance of remote and in-office work by bringing teams in on specific days to advance engagement, collaboration and team building while mitigating the need to return to the office full time. Build and retain talent with training and development programs to support the pursuit of new technology skills and specialty certifications. Support individual growth with opportunities to work on new initiatives and technologies for job satisfaction and career enhancement.

Top experience

Increased remote work

53%

In your IT role, are you experiencing any of the following?

Category	Value
Increased remote work	53%
Increased salaries to retain or attract talent	30%
New challenges in attracting or retaining talent	28%
Higher burnout	27%
Lower staffing levels	26%
Improved employee engagement	24%
More geographically diverse talent base due to remote work	23%
Higher voluntary turnover	20%
Increased benefits outside of salary to retain or attract talent	19%

Automation, staffing and training

We concluded the survey by asking participants this open-ended question:

Aside from an extra four hours a day, an unlimited budget or a genie in a bottle, what would make your job easier?

Within the many clever, creative and thoughtful responses, we've identified and addressed three central themes.

Automation

Automation technology has made substantial progress in the past several years. Companies should and are taking advantage of three main tools of automation:

- Robotic Process Automation (RPA)
- Machine Learning (ML)
- Artificial Intelligence (AI)

Strategic implementation of these tools greatly enhances your productivity and employee engagement by removing mundane tasks from overworked teams. RPA is a great fit for repetitive tasks within a user interface (UI), such as closing help desk tickets or making changes to a ticket based on email or chat. Data science combines experience with ML techniques to make predictions and automate tasks and report generation. AI with Large Language Models (LLM) is still in its infancy but is rapidly transforming work tasks. It quickly and easily generates answers from existing knowledge bases or applications without needing to access or scan reports or require immediate staff support. Be ever vigilant with AI security. A thorough corporate AI usage policy is necessary to ensure the confidentiality of your customer and company data.

Staffing

Staffing is typically one of the largest costs in any organization. Recruiting and retaining top talent is critical to the health of your workforce. The considerable cost and disruption of losing top performers reduce your company's ability to achieve its goals. Focus on career development opportunities, training, work-life balance and providing purpose to promote and maintain talent engagement.

Leadership skills are essential for all IT managers. Ensure that your management teams are engaged with their team members, creating aligned goals and expectations, learning how to support individuals and providing timely and constructive feedback. Never underestimate the impact of good and bad leaders.

From the expert

"While companies may view training and career development as non-essential business expenses, losing the expertise and productivity of a single individual requires considerable effort and budget to recruit, hire and onboard a new team member."

Nick Ockwell, CIO

Training

Always invest in your workforce and, subsequently, your company's success. Organizations that provide high-quality training programs empower employees to keep pace with changes, build quality products and deliver excellent service. In addition, training programs expand the talent pool to include those candidates who can power your company culture and succeed as they learn instead of relying only on specific technical abilities. People can learn new skills with the right resources and support, but changing a mindset or attitude is often much more challenging.

Prioritize the essentials

Below are the 2024 priorities I've shortlisted for Chief Information Officers (CIOs) with the understanding that the specifics will vary based on your organization's industry and goals. You should focus on these key areas to effectively lead your organization's IT strategy and achieve greater business value:

Nick Ockwell
CIO

#1

Cybersecurity

With the increasing frequency and sophistication of cyber threats, CIOs must prioritize cybersecurity measures to protect sensitive data, maintain the trust of customers and stakeholders, and minimize the impact to the organization when, not if, a security attack occurs.

#2

AI implementation

Invest in AI and automation technologies to keep pace with business expectations, improve operational efficiency and enhance customer experiences. As you make these changes with AI, pay particular attention to regulatory and contractual risks, specifically in terms of data use and ownership.

#3

Hybrid hosting strategy

Develop a robust hybrid hosting strategy that aligns with your organization's goals, whether on-prem, public, private or hybrid cloud adoption.

#4

Employee engagement and talent development

Foster a culture of continuous learning and career development. Invest in your workforce to retain staff and avoid the cost and disruption of employee turnover.

#5

Strategic partnerships

Collaborate with technology partners and specialist third-party providers to introduce innovation. Using partner expertise, create competitive advantages, resolve business and IT issues, and address organizational gaps, such as disaster recovery.

#6
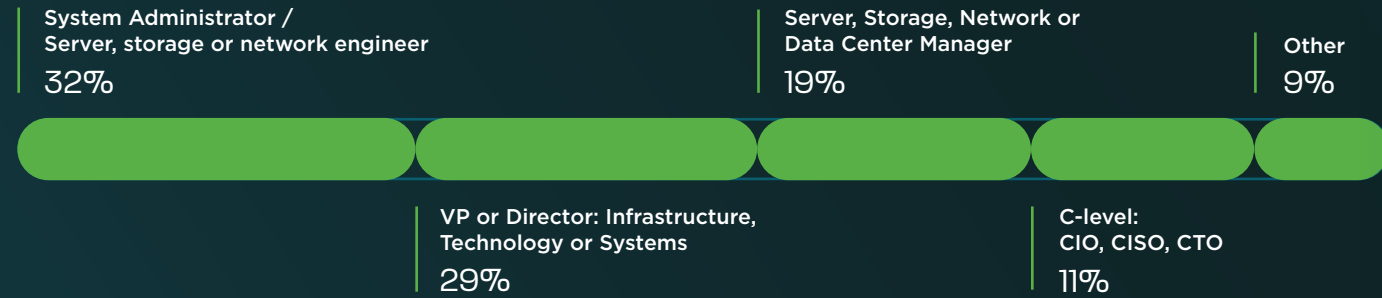
Customer-centric approach

Keep the customer at the center of all your IT decisions. Focus on enhancing their experience and meeting their evolving needs to provide continual value and support.
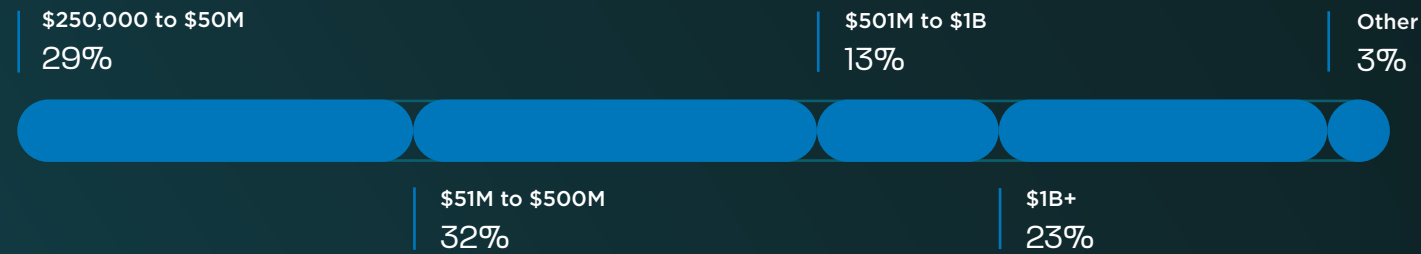
Survey demographics

Service Express surveyed 1,006 IT professionals throughout the US and Europe from April–July 2023 to create this report.
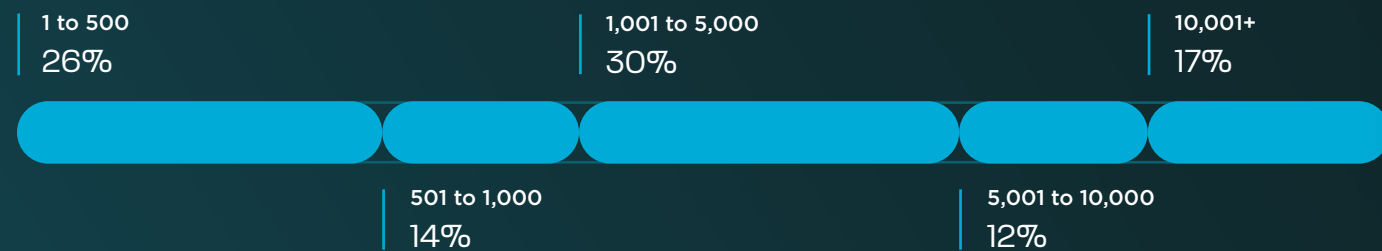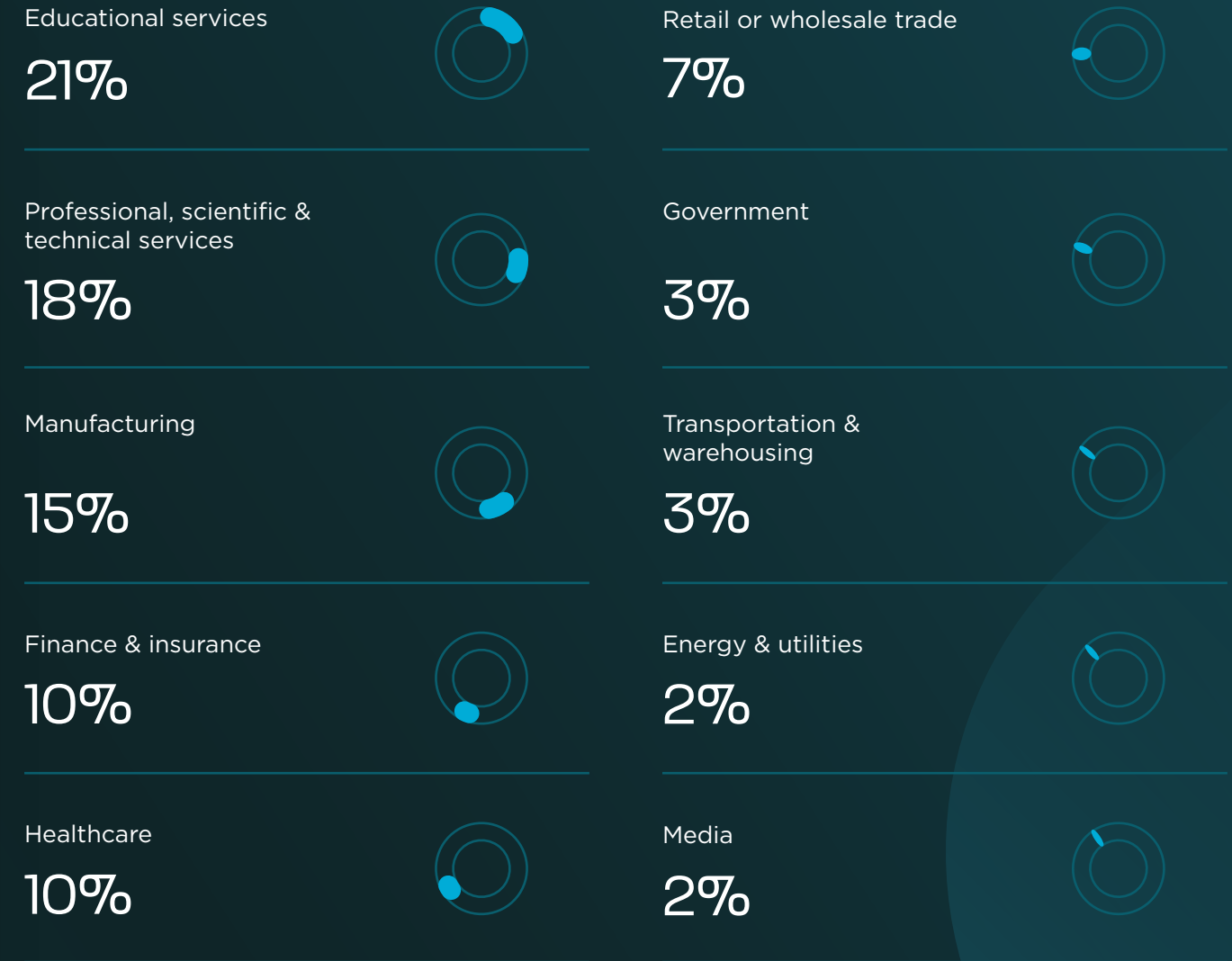
Responsibility

System Administrator / Server, storage or network engineer 32%		Server, Storage, Network or Data Center Manager 19%		Other 9%

VP or Director: Infrastructure, Technology or Systems
29%

C-level: CIO, CISO, CTO
11%

Revenue

$250,000 to $50M
29%

$501M to $1B
13%

Other
3%

$51M to $500M
32%

$1B+
23%

Employee count

1 to 500
26%

1,001 to 5,000
30%

10,001+
17%

501 to 1,000
14%

5,001 to 10,000
12%

Industry

Educational services
21%

Retail or wholesale trade
7%

Professional, scientific & technical services
18%

Government
3%

Manufacturing
15%

Transportation & warehousing
3%

Finance & insurance
10%

Energy & utilities
2%

Healthcare
10%

Media
2%

Industry categories that measured at less than 1% are not listed.

About Service Express

Service Express is an industry-leading data center solutions provider specializing in global multivendor maintenance and managed infrastructure services. Companies around the globe trust Service Express to deliver reliable end-to-end support. Service Express' flagship technology, ExpressConnect®, simplifies maintenance for IT teams with support automation, hardware monitoring, account management and more.

Let's connect

For more information, visit **serviceexpress.com**.

US: **844-734-6833**   Europe: **+44 808 196 5828**