2021

Data Center & Infrastructure Report

Presented by **SERVICE** EXPRESS

Introduction

Responding to new challenges and preparing for what's around the corner while protecting and improving the performance of data centers and infrastructure is a constant for IT teams. 2021 plans and projections are still being shaped by the far-reaching effects of the COVID-19 pandemic. Overall, IT has found new avenues to keep organizations operational and growing with resources and agility.

Service Express surveyed IT professionals nationwide for their insights into their current and future actions on a variety of topics from IT budgets to workload deployments. We have compiled the following responses and data to provide helpful insight into how the IT industry is taking action today and planning for the future.

Survey Objectives

The following research is based on the annual Service Express Data Center & Infrastructure Survey. Results were gathered between May and October 2020 from over 500 IT professionals in the US.

▸ Examine the current outlook on strategic planning for data center infrastructure

▸ Identify the top priorities and challenges that IT professionals will encounter in the next 12-month cycle

▸ Share insights into workload deployment and cost reduction methods

Meet Todd & Jake

Todd Piper
CIO, Service Express

Todd drives the development and execution of IT strategy, ensuring alignment with overall business objectives and direction for design, development, operation, security and support of IT systems and business applications. He is also an Experts Panel member on the Forbes Technology Council.

Jake Blough
CTO, Service Express

Jake leads research and development for new products, services and data science, provides technical analysis for M&A projects and sets the technical direction for Service Express. He is a frequent speaker on data center trends and advises our customers on their infrastructure strategy.

The top priority for today's IT professionals

Strengthening security & privacy

The primary challenge for IT professionals

Budget & cost reductions

The most influential driver affecting IT decision-makers

Price

The most significant hardware maintenance challenge

High cost of service

The most important driver behind off-premises deployment

Disaster recovery & business continuity

The top cost reduction method in 2020

Consolidation

Top Priorities

The Focus in the Data Center

Security will always lead or stay near the top of the IT priority list. 17 There is a constant race to safeguard systems, data, and employees from attacks. To protect these critical assets, businesses need to keep pace with their defense and equip themselves with a robust security stack that includes a variety of platform layers to help keep the bad actors out.

Top Priority by Organization Revenue

$1 billion+:
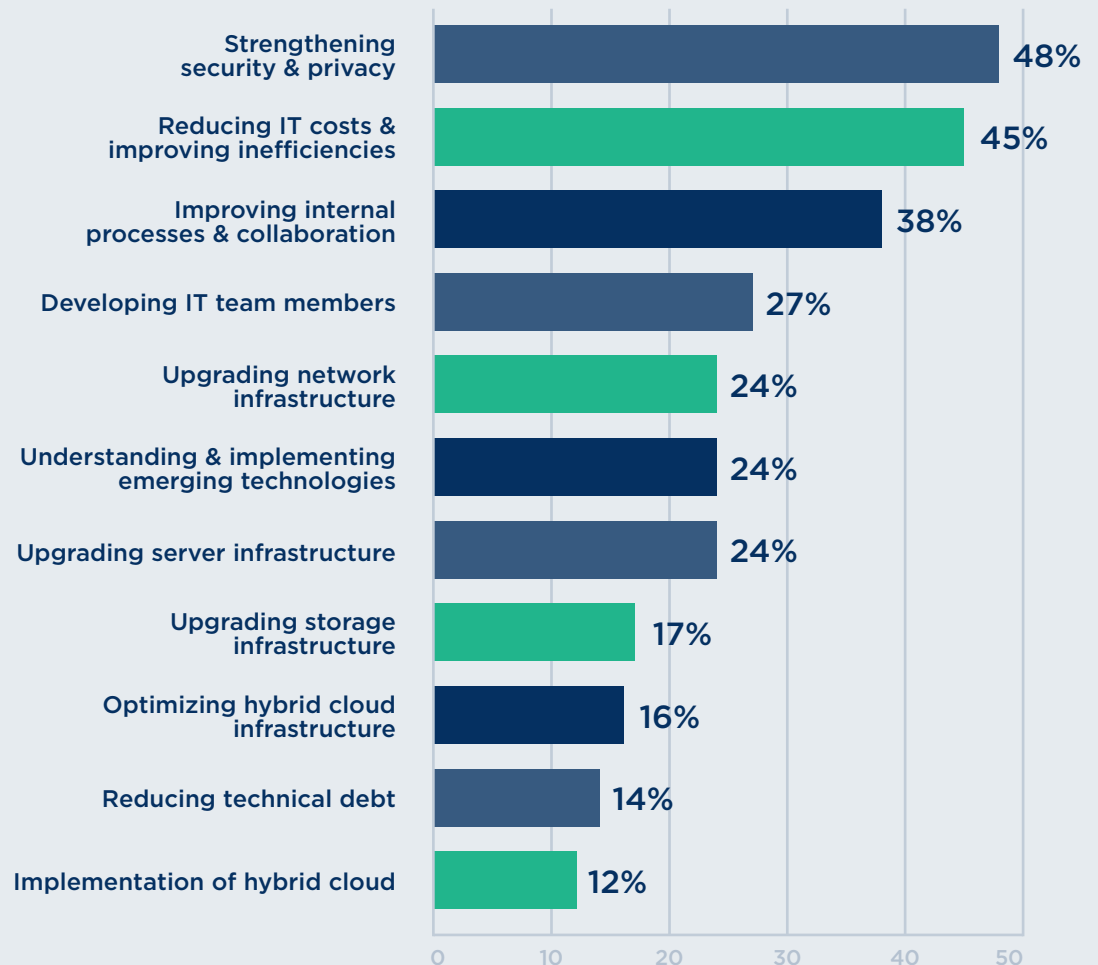Reducing IT costs & improving inefficiencies

$501m - $1b:
Strengthening security & privacy

$51 - $500 million:
Strengthening security & privacy

$250k - $50m:
Strengthening security & privacy

Top Priorities
Participants identified their top three priorities for the next 12 months.

Priority	Percent
Strengthening security & privacy	48%
Reducing IT costs & improving inefficiencies	45%
Improving internal processes & collaboration	38%
Developing IT team members	27%
Upgrading network infrastructure	24%
Understanding & implementing emerging technologies	24%
Upgrading server infrastructure	24%
Upgrading storage infrastructure	17%
Optimizing hybrid cloud infrastructure	16%
Reducing technical debt	14%
Implementation of hybrid cloud	12%

From the CIO
Todd Piper

"Despite gains in security technology, threats evolve to find new ways to cause damage by stealing data, lowering productivity and locking company information. To limit risk, it is absolutely essential to focus on strengthening the human firewall. This is even more true with the massive shift to remote work due to COVID-19. Establishing employee security education programs and protocols, plus communicating security measures on a regular basis are effective in reducing individual-caused security issues and closing the window on breaches."

Top Challenges

What IT Is Facing

Budget limitations and cost reductions are not new to the world of IT. Budgets are rarely large enough to meet all the required technology and business demands. To counter limited CapEx and OpEx dollars, CIOs must find the means to balance business priorities with the realities of revenues, economic outlook and technological advances.

In response to COVID-19, challenges increased and business objectives shifted rapidly. Spending was redirected to support the immediate needs of transitioning to a remote workforce and managing supply chain disruptions. Finding additional success with new technology adoption and the promise of vaccination options, companies are beginning to adjust their budgets in anticipation of better news. 2021 IT spending appears ready to rebound according to our COVID-19 IT Response & Recovery Report.

Top Challenges by Organization Revenue

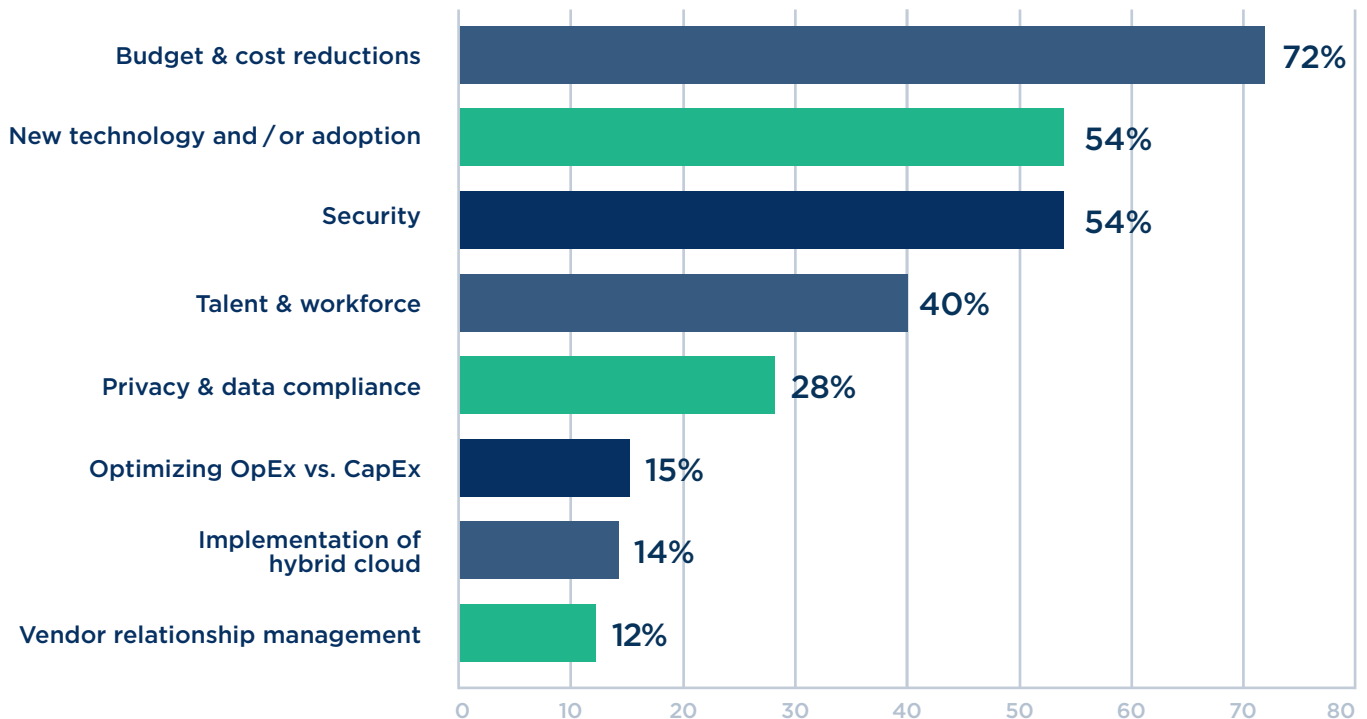**$1 billion+:**
New technology and / or adoption

$501m - $1b:
Budget & cost reductions

$51 - $500 million:
Budget & cost reductions

$250k - $50m:
Budget & cost reductions

Top Challenges

Participants selected the top three challenges they anticipated facing in the next 12 months.

| Challenge	Percentage
Budget & cost reductions	72%
New technology and / or adoption	54%
Security	54%
Talent & workforce	40%
Privacy & data compliance	28%
Optimizing OpEx vs. CapEx	15%
Implementation of hybrid cloud	14%
Vendor relationship management	12%

Workload Deployment Methods

In the Data Center

IT continues to use on-prem data centers for a majority of workload needs. Consolidation of footprint, especially in systems housed in a colocation environment, offers flexibility and cost-effectiveness.

With a keen eye toward decreasing power consumption, in part due to the goal of reducing carbon emissions and avoiding unpredictable energy expenses, there is a gradual migration to both on and off-prem options: private and public cloud.

Percentage of Respondents

58%
15%
14%
13%
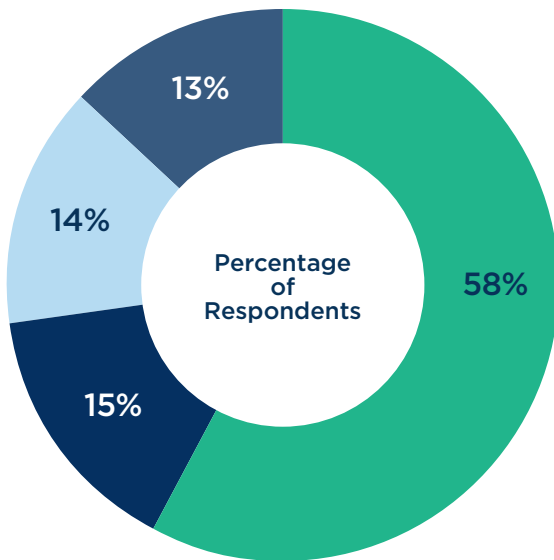
Top Workload Deployment Methods

Participants allocated the percentage of workload in their current environment.

- On-premises data center
- Public cloud
- Colocation
- Hosted private cloud
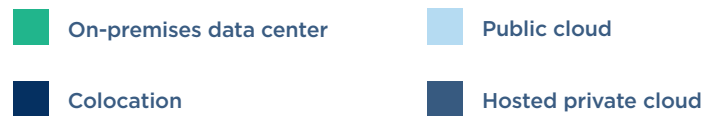
Top workload deployment method

58% On-premises data center

From the CTO
Jake Blough

"We are seeing more and more of our early adopter enterprise customers beginning to build flexible private cloud architectures in-house as a way to service multiple lines of the business without the complexity and cost of a move to public cloud."

Off-Premises Drivers
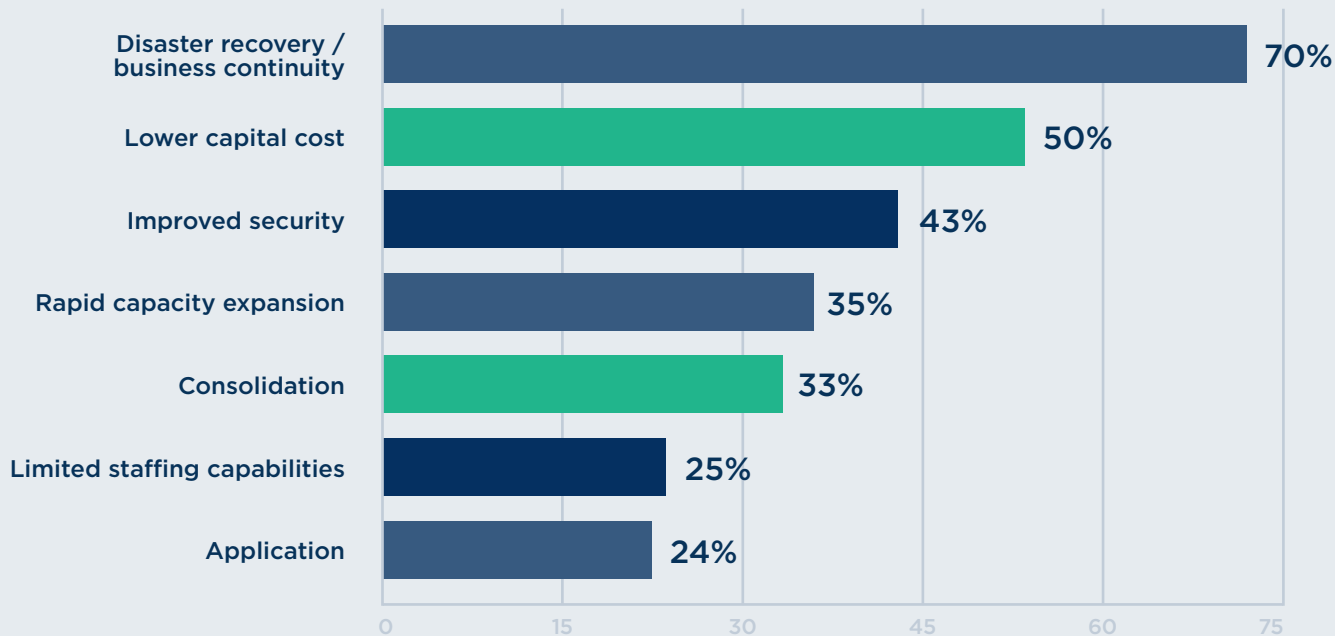
Responding to Demands

Disaster recovery is a top off-prem driver as organizations are continually pushed to deal with more uncertain global environments. COVID-19 spotlights these ongoing vulnerabilities and need for control, as well as the challenges to international travel, supply chain lockdowns and remote work.

Organizations struggled to find the most effective response to 2020's downward revenues, especially companies in the retail and hospitality sectors. In many cases, infrastructure teams implemented new solutions and completed projects ahead of schedule. **To reduce CapEx exposure** and launch products faster in light of global supply chain issues, IT leaders moved workloads to private or public clouds.

Security is always on the radar and the focus needs to include not just physical protections. Network security is a large driver for moves to colocation and private cloud environments. Enterprise companies are also becoming more savvy about public cloud security by ensuring that IT teams have the final say on setup and security for business units that want to independently spin up a public cloud resource.

Top Off-Premises Drivers

What do IT professionals prioritize when deciding to deploy off-prem?
Participants selected drivers from a list that included:

Driver	Percentage
Disaster recovery / business continuity	70%
Lower capital cost	50%
Improved security	43%
Rapid capacity expansion	35%
Consolidation	33%
Limited staffing capabilities	25%
Application	24%

Infrastructure Decision Drivers

Evaluating Data Center Support

There is an increasing business argument for IT to pivot from the traditional OEM hardware model, with its high post-warranty support expenses and premature refresh cycles, to an alternative solution. Support costs can be reduced by half or more by using third-party maintenance (TPM). Lower long-term support spend provides more control of equipment life cycles and helps meet budget demands. Research shows that equipment longevity is compatible with performance. Many TPM companies also rate highly for service responsiveness and a positive customer experience.

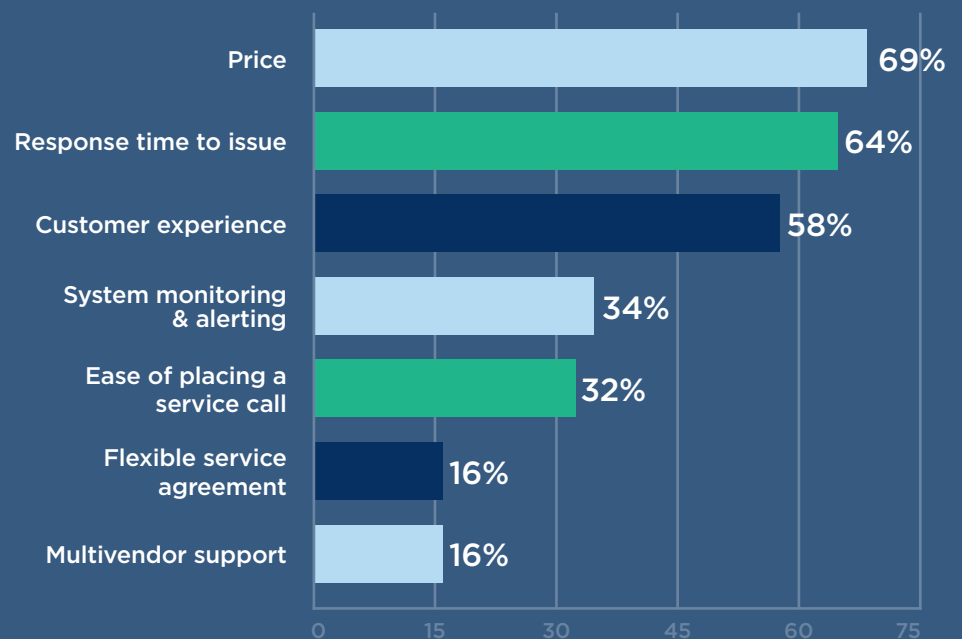## Top Decision Drivers by Organization Revenue

$1 billion+:
Price

$501m - $1b:
Price

$51 - $500 million:
Response time to issue and Price

$250k - $50m:
Price

Top Decision Drivers

Participants selected their top three decision drivers when considering their organization's IT infrastructure support.

Decision Driver	Percentage
Price	69%
Response time to issue	64%
Customer experience	58%
System monitoring & alerting	34%
Ease of placing a service call	32%
Flexible service agreement	16%
Multivendor support	16%

From the CIO
Todd Piper

"During annual budget time and even at more frequent intervals, IT leaders evaluate their infrastructure strategy to adjust and optimize the cost of maintaining uptime. How does support impact overall productivity? What steps are taken to control costs and still meet business goals? Whether the challenge is to reduce CapEx (warranty support bundled in new equipment purchases) or OpEx (post-warranty and long-term support), the most effective solutions are a combination of OEM and alternative support options."
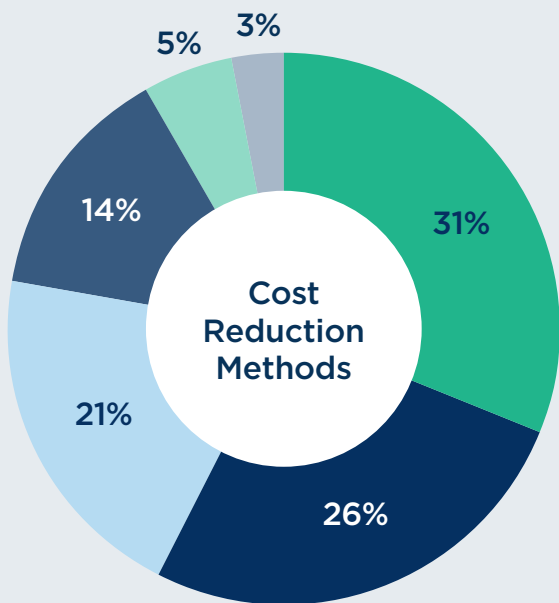
Cost Reduction Methods

How IT Is Saving

IT professionals are beginning to take a harder look at the hype of mass migration to the cloud. In reality, more organizations are implementing a hybrid approach.

Leveraging a longer useful equipment life is a straightforward and reliable means to increase ROI with the opportunity to significantly lower maintenance costs.

Moving from on-prem to the cloud quickly provides scalability options for key applications and business activities. However, this transition does not always result in cost reductions.

Larger organizations are focusing more on consolidation because it does not make sense to run everything in the cloud. Costs and security control play a decisive role in how well cloud options deliver on expectations. Consolidation delivers improved OpEx and CapEx savings. In addition, repurposed equipment can also be leveraged at edge computing sites.

Cost Reduction Methods

- 3%
- 5%
- 14%
- 21%
- 26%
- 31%

Top Cost Reduction Methods

Participants indicated what cost reduction tools they are implementing, as well as what shifts could take place in 2021.

- Consolidation
- Moving from on-prem to cloud
- Leveraging a longer useful equipment life
- Vendor management
- Staff augmentation
- Moving from cloud to on-prem

Top cost reduction method

31% Consolidation

Maintenance Challenges

The Need for Improvement

IT professionals contend with maintenance challenges that stem from high costs and service quality.
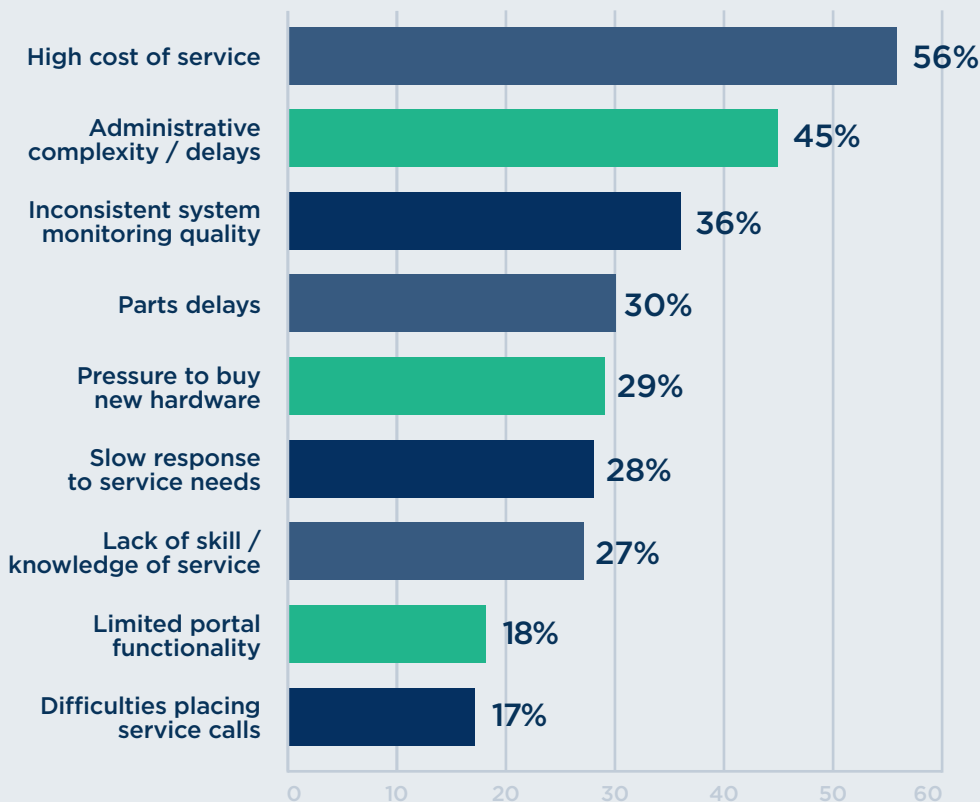
Administrative Complexity / Delays

It's the age-old story of phone trees, tiresome penalties and lack of flexibility. In response, IT teams are increasingly exploring alternative support options, including third-party maintenance.

Inconsistent System Monitoring Quality

Automating and centralizing manual processes for hardware maintenance frees up valuable time and effort for system admins to focus on strategic priorities.

Top Maintenance Challenges

Participants identified the challenges faced when working with their current maintenance provider(s).

Challenge	Percentage
High cost of service	56%
Administrative complexity / delays	45%
Inconsistent system monitoring quality	36%
Parts delays	30%
Pressure to buy new hardware	29%
Slow response to service needs	28%
Lack of skill / knowledge of service	27%
Limited portal functionality	18%
Difficulties placing service calls	17%

Top hardware maintenance challenge

56%
High Cost of Service

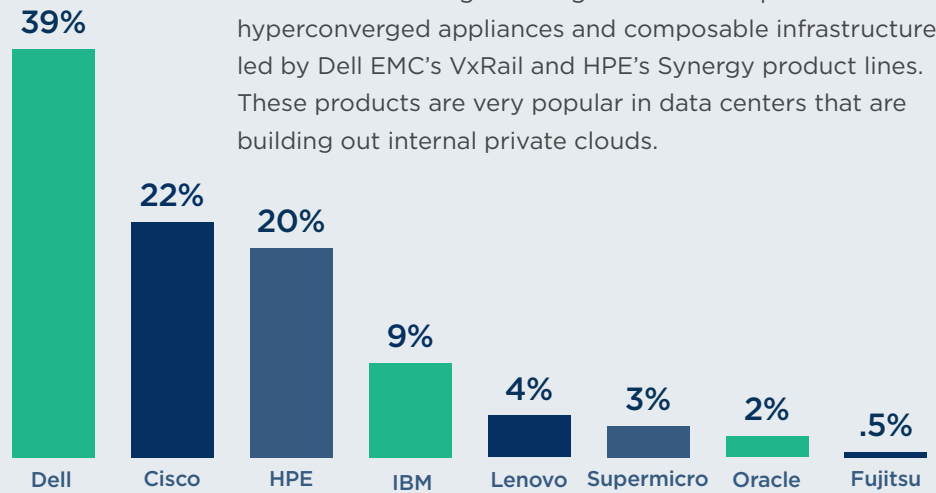OEM post-warranty costs remain painfully high and show no sign of abating.

From the CIO
Todd Piper

"No matter the size of the organization, the high cost of hardware maintenance continues to impose obstacles within every IT budget. By leveraging a blend of OEM and third-party maintenance (TPM), organizations can realize immediate OpEx savings. In turn, this hybrid approach delivers CapEx savings, as well as extends hardware refresh cycles, allowing IT teams to focus on more strategic initiatives."
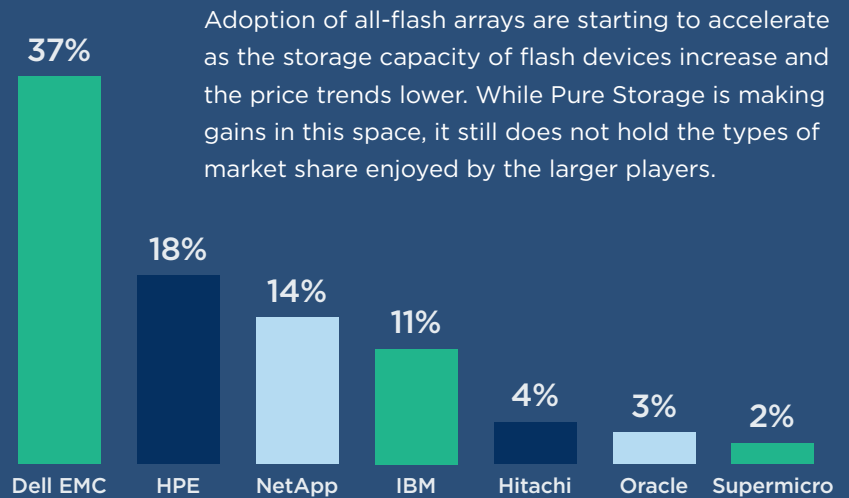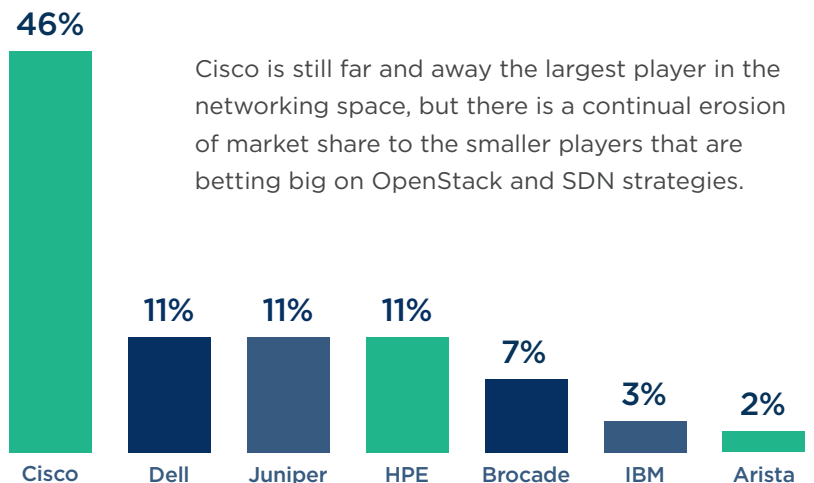
Infrastructure Hardware

Powering the Data Center

Which servers does your company currently use?

There have been significant gains in the adoption of hyperconverged appliances and composable infrastructures, led by Dell EMC's VxRail and HPE's Synergy product lines. These products are very popular in data centers that are building out internal private clouds.

Dell	Cisco	HPE	IBM	Lenovo	Supermicro	Oracle	Fujitsu
39%	22%	20%	9%	4%	3%	2%	.5%

Which storage equipment does your company currently use?

Adoption of all-flash arrays are starting to accelerate as the storage capacity of flash devices increase and the price trends lower. While Pure Storage is making gains in this space, it still does not hold the types of market share enjoyed by the larger players.

Dell EMC	HPE	NetApp	IBM	Hitachi	Oracle	Supermicro
37%	18%	14%	11%	4%	3%	2%

Which network devices does your company currently use?

Cisco is still far and away the largest player in the networking space, but there is a continual erosion of market share to the smaller players that are betting big on OpenStack and SDN strategies.

Cisco	Dell	Juniper	HPE	Brocade	IBM	Arista
46%	11%	11%	11%	7%	3%	2%

Todd's Insights

2020 was a challenging year–presenting a combination of uncertainty and economic disruption of which IT leaders have not faced in decades. The scope and sustained impact of the pandemic forced organizations to pivot rapidly to remote work, take action to increase security, optimize budgets and implement cost saving initiatives.

Strengthening Security

Security demands have increased as did IT's focus on addressing new ways to prevent cyberattacks. Implementing employee phishing training and best practices needs to be central to all CISO's security strategies.

Hybrid Data Center Hardware Maintenance

IT leaders are taking a hybrid approach to their hardware maintenance strategy. By leveraging a blend of OEM and third-party maintenance (TPM), organizations can realize immediate OpEx savings. In turn, this hybrid approach delivers CapEx savings, helping to extend hardware refresh cycles and allowing IT teams to focus on more strategic initiatives.

Budget & Cost Optimization

Even as 2021 IT budgets start to expand, CIO's will continue to focus on cost saving initiatives to help fund large scale strategic solutions.

Moving forward, 2021 will be a year of accelerated digital transformation. The effects of COVID-19 have shown organizations the value of digitizing key processes, improving the customer experience and leveraging technology to increase revenue and customer success.

Survey Background

Methodology

Five-hundred and three participants took part in the Data Center & Infrastructure Survey conducted by Service Express from May to October 2020.

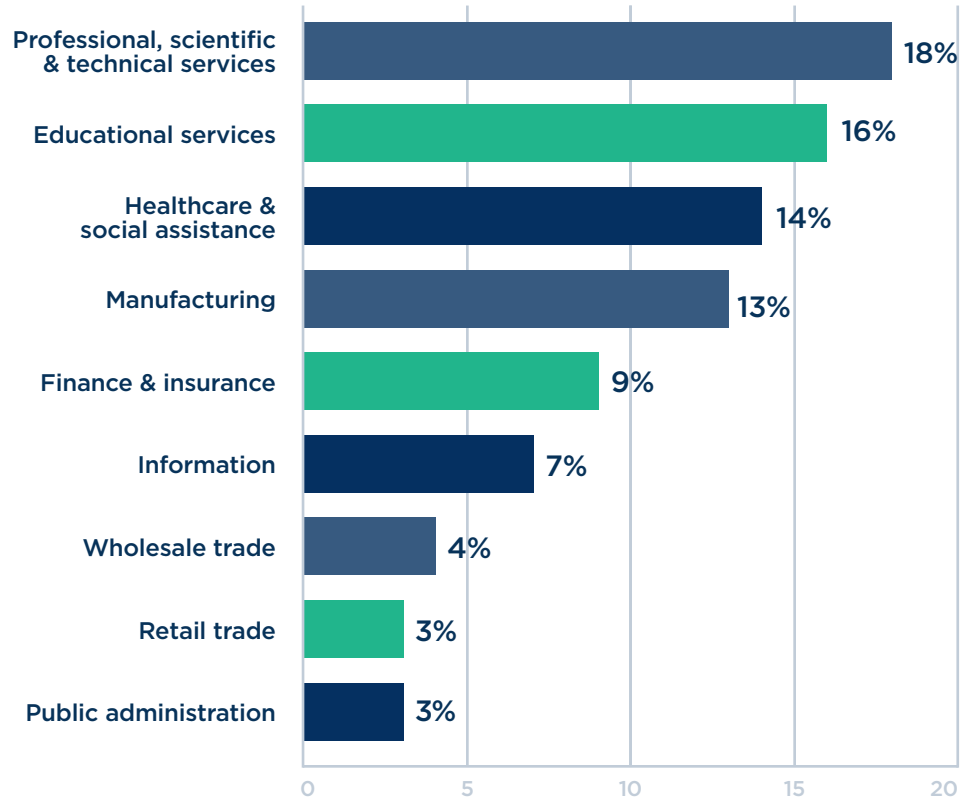## Participants by Responsibility

31% of Participants: Responsible for implementing and maintaining an organization's data center and technological infrastructure.

25% of Participants: Responsible for the upkeep, configuration and reliable operation of an organization's computer systems.
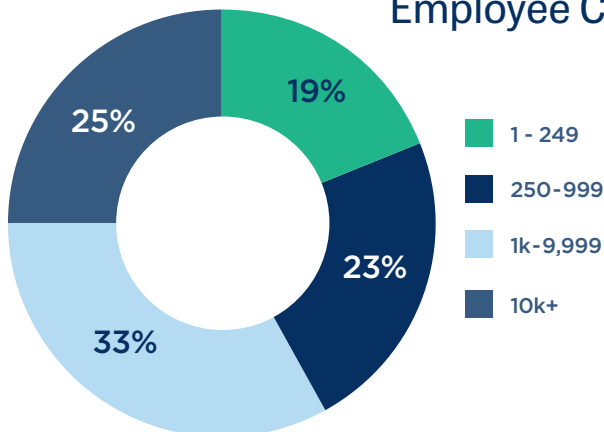
22% of Participants: Oversee the information technology strategy for an organization.

22% of Participants: Administrative and / or supervisory authority of IT in an organization.
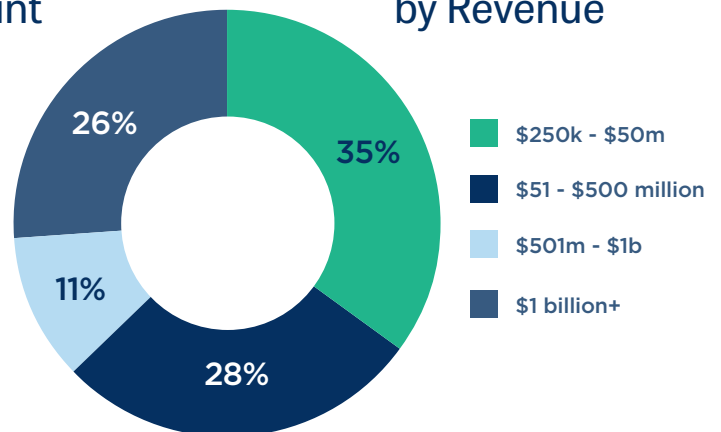
Participants by Industry

Industry	Percentage
Professional, scientific & technical services	18%
Educational services	16%
Healthcare & social assistance	14%
Manufacturing	13%
Finance & insurance	9%
Information	7%
Wholesale trade	4%
Retail trade	3%
Public administration	3%

Participants by Employee Count

- 1 - 249: 19%
- 250-999: 23%
- 1k-9,999: 33%
- 10k+: 25%

Participants by Revenue

- $250k - $50m: 35%
- $51 - $500 million: 28%
- $501m - $1b: 11%
- $1 billion+: 26%

About Service Express

The leader in providing third-party maintenance (TPM), Service Express specializes in onsite data center support for server, storage and network equipment to help IT teams control costs and optimize infrastructure strategy. Customers can manage, monitor and automate support with ExpressConnect®. Founded in 1993, Service Express maintains multivendor data center equipment for healthcare, manufacturing, education, finance, government, technology and other Fortune 500 companies worldwide.

In addition to post-warranty maintenance, Service Express offers hardware system and sales solutions, OS support, IT asset disposition and data center relocations. For more information, visit serviceexpress.com.

SERVICE EXPRESS