InfoWorld

NETWORKWORLD
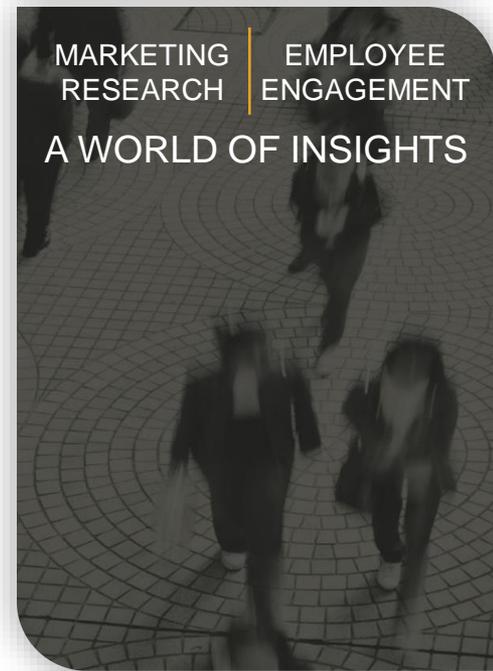
Market Pulse:
10GbE Adoption

March 2014

**Presented on behalf of
Intel and HP**

IDG Research Services

METHODOLOGY & RESEARCH OBJECTIVES

Sample

Field Work	March 3, 2014 - March 13, 2014
Total Qualified Respondents	183
Qualifiers	Have deployed or plan to deploy 10GbE products
Audience	InfoWorld, Network World

Method

Collection	Online Questionnaire
Number of Questions	15 (including screeners and demographics)

Survey Goals

The goal of this research is to determine the extent to which organizations are have deployed, or plan to deploy, 10 Gigabit Ethernet (10GbE), as well as the adoption drivers, specific products/vendors in use, and potential benefits organizations have experienced or expect as a result of deploying 10GbE.

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KEY FINDINGS

- **Increases in data volume, Virtual Machine (VM) sprawl, and the inability of bandwidth to keep up with faster servers are the top challenges with regard to data centers and private cloud networks.**
  - Nearly all respondents (93%) expect their organizations' bandwidth to grow over the next twelve months, by 28% on average
  - Organizations that have already deployed 10GbE products are significantly less likely to report that the network is a bottleneck compared to those who are only in the planning stages of 10GbE deployment (31% vs. 45%, respectively).

- **Among all respondents, the majority (80%) have deployed or have plans to deploy 10GbE**. (Only those who have deployed or have plans to deploy were allowed to continue with the survey.)
  - The desire to boost data center agility and virtualization/private cloud deployments are most often driving the deployment of 10GbE at respondents' organizations.
  - Organizations with 1,000 or more employees are significantly more likely than smaller organizations to cite a desire to consolidate multiple GbE connections to 10GbE, and deployments of applications that require more network bandwidth (e.g., Big Data/Analytics), as drivers of 10GbE deployment.
  - Among those who have already deployed 10GbE, the large majority chose the media SFP+ optics. Among those who are considering future 10GbE deployments, the 10GBASE-T media is the most preferred.

- **Being a trusted name in the industry is of the highest importance when organizations are evaluating vendors of 10GbE.** Having products that are optimized for virtualization, and offering backwards compatible technology for easier transition to 10GbE are also highly important for vendors under consideration to have.
  - Respondents indicate there is room for improvement with regard to important vendor attributes. Though the majority of respondents highly rate the importance of products optimized for virtualization, just one-half assign high marks to current vendors in this area.
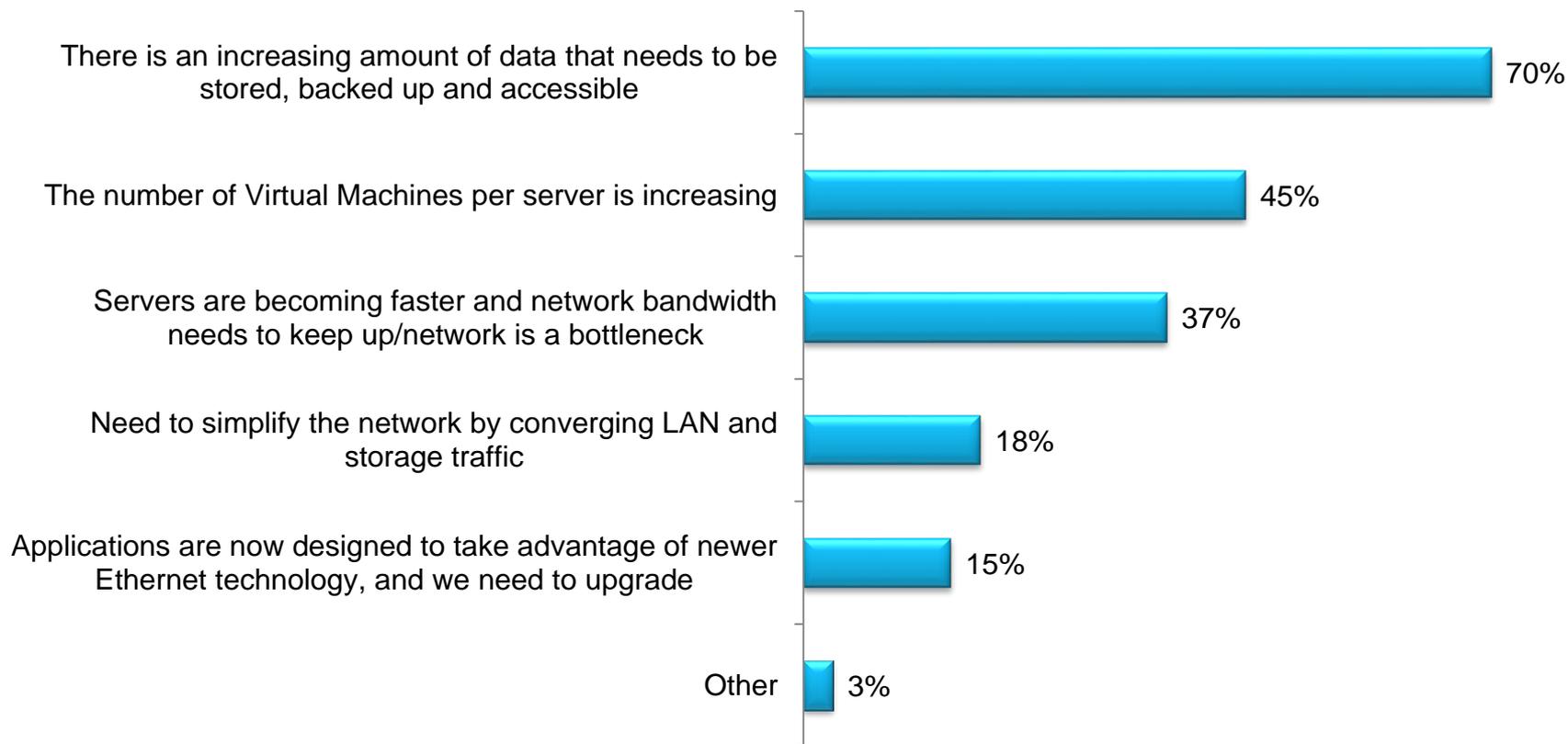
KEY FINDINGS *(continued)*

- **Today, the majority of respondents report their organizations use Cisco's 10GbE Converged Network Adapter brand, followed by HP (30%), and Dell (26%).** A slight increase in the use of the HP brand is expected over the next 12 months.

- **Flexible LOM is expected to be widely adopted within a few years.** Half of the respondents report that their organizations already use flexible LOM (31%) or are planning to use flexible LOM in 12 or more months (20%). Only about one quarter (26%) indicate their organizations have no plans to implement flexible LOM.
    - Adoption of flexible LOM is more prevalent among larger organizations (39% among those at companies with 1,000 employees versus 17% among smaller organizations).
    - Among those who are using or plan to use flexible LOM, respondents cite simplified server/network manageability and the flexibility of 1GbE/10GbE speeds as the top two primary attractions of flexible LOM.

- **According to the respondents, organizations are most excited about the potential for increased application performance as a potential benefit of 10GbE.** In fact, among those who have already deployed 10GbE, the majority say their organizations are already experiencing increases in application performance (77%). Over two-thirds (67%) also say that their organizations have experienced a more simplified network infrastructure (by the reduction of cabling complexity, and unifying traffic on a single connection).

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SURVEY RESULTS

70% cite an increasing amount of data that needs to be stored, backed up and accessible as a top pain point with regard to their data center or private cloud network. Nearly one half (45%) are challenged by an increase in the number of VMs per server, while more than one-third (37%) report the network is a bottleneck.

Top Data Center Pain Points

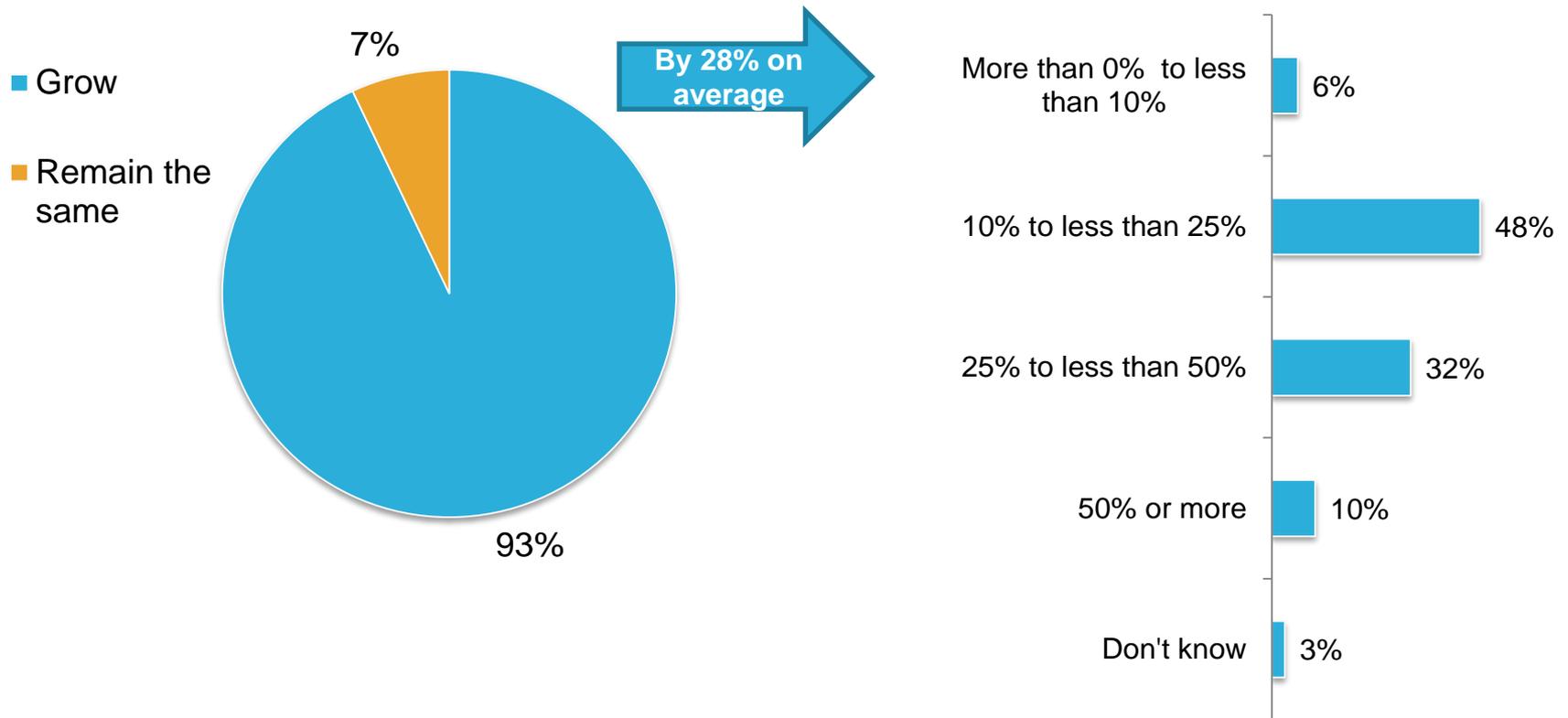| Pain Point	Percentage
There is an increasing amount of data that needs to be stored, backed up and accessible	70%
The number of Virtual Machines per server is increasing	45%
Servers are becoming faster and network bandwidth needs to keep up/network is a bottleneck	37%
Need to simplify the network by converging LAN and storage traffic	18%
Applications are now designed to take advantage of newer Ethernet technology, and we need to upgrade	15%
Other	3%

Q1: What are the <u>top two</u> pain points that your organization is facing today with regards to its data center or private cloud network? (Please select the top two.)   Base: 183 qualified respondents

Nearly all respondents expect their organizations' bandwidth to grow over the next twelve months, by about 28% on average.

Over next 12 months bandwidth demand to:

- Grow
- Remain the same

7%

93%

By 28% on average

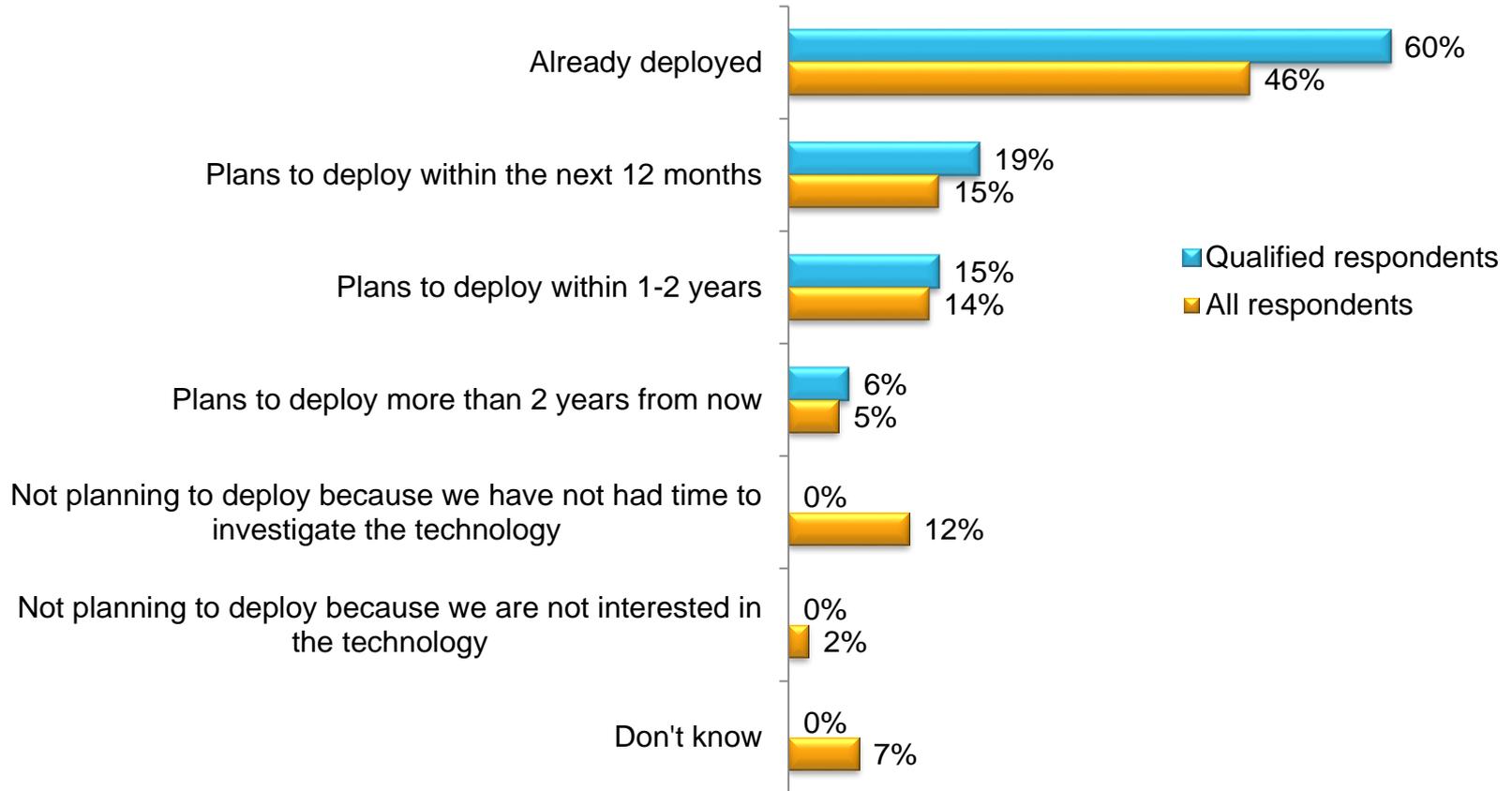|	
More than 0% to less than 10%	6%
10% to less than 25%	48%
25% to less than 50%	32%
50% or more	10%
Don't know	3%

Q1a: Over the next 12 months, I expect my organization's bandwidth demand to: Base: 183 qualified respondents
Q2: By what percent do you expect your organization's bandwidth demand will grow over the next 12 months?
Base: 170 respondents who expect bandwidth demand to grow

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Respondents were required to have already deployed 10GbE products, and 60% have already deployed. Among all respondents who answered the question, the majority (80%) have deployed or have plans to deploy 10GbE.

The **10 Gigabit Ethernet** (10GbE-) standard defines a version of Ethernet with a nominal data rate of 10 GBs, ten times as fast as gigabit Ethernet.

	Qualified respondents	All respondents
Already deployed	60%	46%
Plans to deploy within the next 12 months	19%	15%
Plans to deploy within 1-2 years	15%	14%
Plans to deploy more than 2 years from now	6%	5%
Not planning to deploy because we have not had time to investigate the technology	0%	12%
Not planning to deploy because we are not interested in the technology	0%	2%
Don't know	0%	7%

Q3: What are your organization's plans for deployment of 10 Gigabit Ethernet (10GbE) products? Base: 183 qualified respondents; 260 respondents

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The top two drivers of 10GbE deployment are the desire to boost data center agility and virtualization/private cloud deployments.

Drivers of 10GbE Deployment

- Boosting data center agility including faster VM transfers, storage access and backup — **60%**
- Virtualization and/or private cloud deployments — **56%**
- Desire to consolidate multiple GbE connections to 10GbE — **45%**
- Deployment of applications that require more network bandwidth (e.g., Big Data/analytics) — **38%**
- Consolidating LAN and SAN networks with iSCSI or FCoE — **37%**
- Desire to maximize processor performance — **28%**
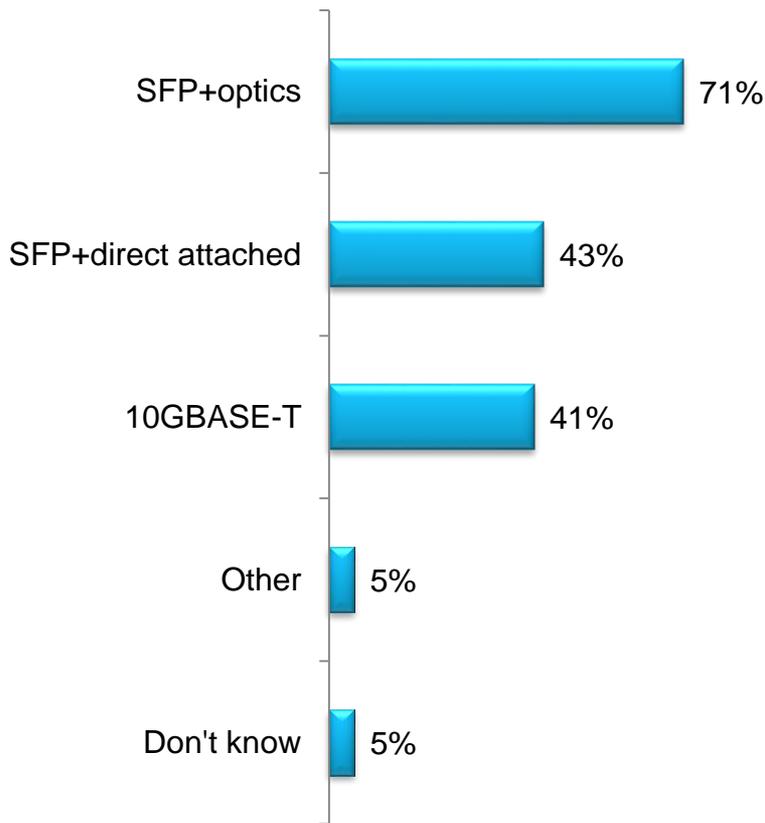- Other — **5%**

Q4: Which of the following did or will drive deployment of 10GbE at your organization? (Please select all that apply.)
Base: 183 qualified respondents

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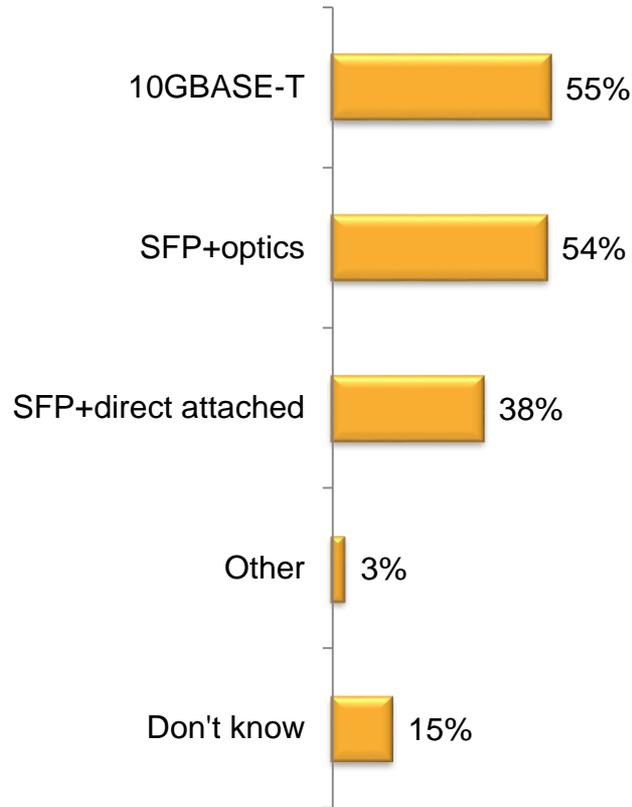
Among those who have already deployed 10GbE, the large majority chose to use SFP+optics. Among those who are considering future 10GbE deployments, 10GBASE-T is most often preferred.

Current 10GbE Deployments:

Media	Percentage
SFP+optics	71%
SFP+direct attached	43%
10GBASE-T	41%
Other	5%
Don't know	5%

Future 10GbE Deployments:

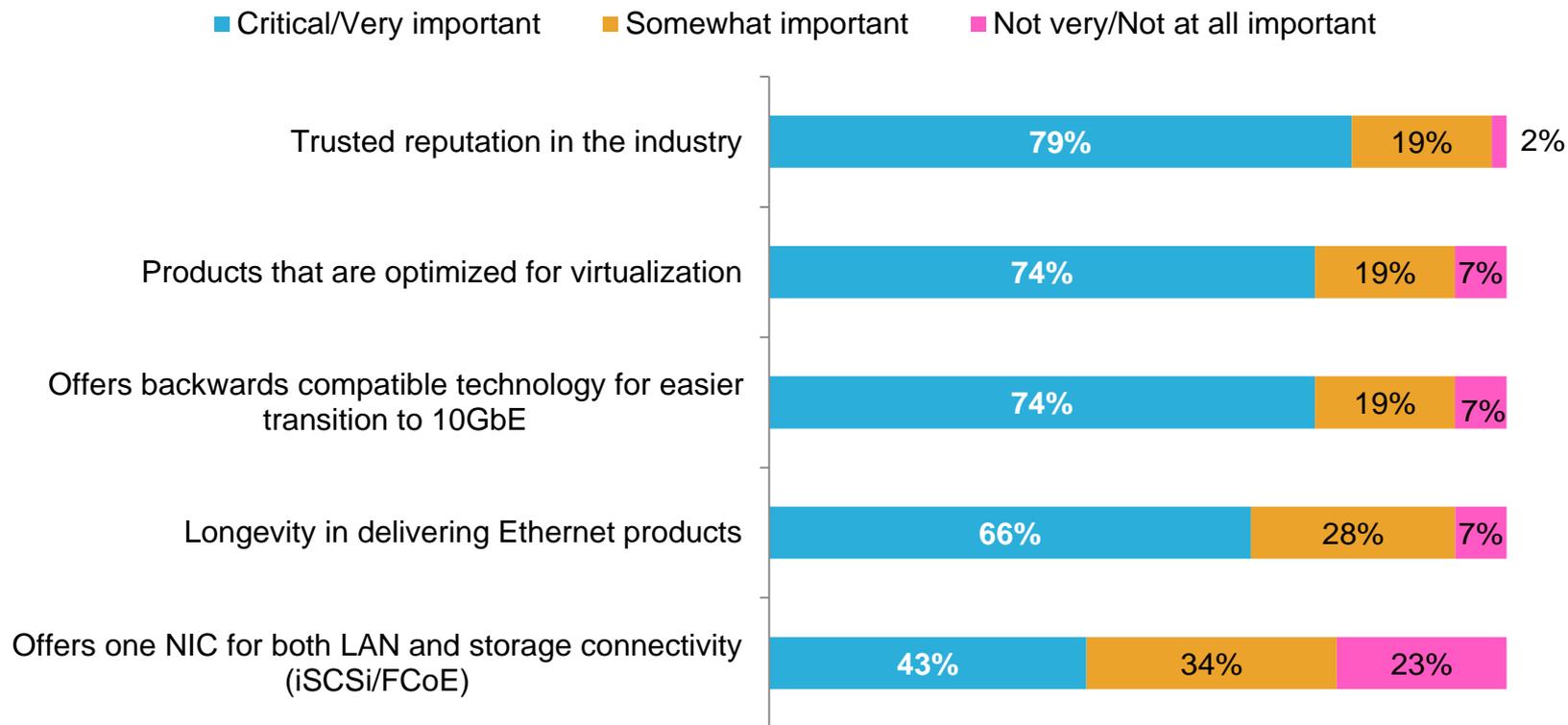| Media	Percentage
10GBASE-T	55%
SFP+optics	54%
SFP+direct attached	38%
Other	3%
Don't know	15%

Q5a: You mentioned your organization has already deployed 10GbE. Which media did you choose? (Please select all that apply.)
Base: 110 respondents who have already deployed
Q5b: Which media is under consideration for future 10GbE deployments? (Please select all that apply.)
Base: 183 qualified respondents

Being a trusted name in the industry is of the highest importance when organizations are evaluating vendors of 10GbE. Products that are optimized for virtualization and offering backwards compatible technology for easier transition to 10GbE are also highly important attributes for vendors under consideration.

■ Critical/Very important   ■ Somewhat important   ■ Not very/Not at all important

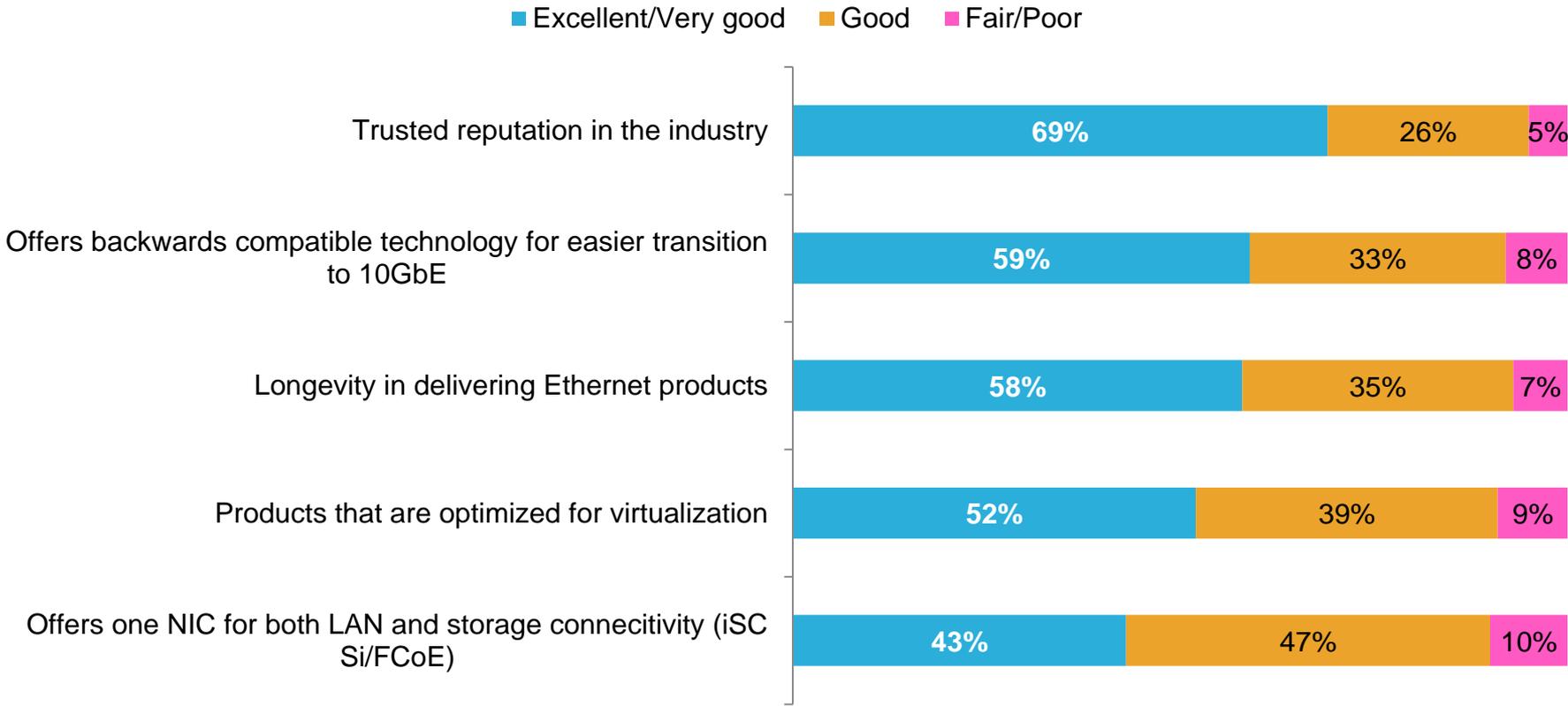| Attribute	Critical/Very important	Somewhat important	Not very/Not at all important
Trusted reputation in the industry	79%	19%	2%
Products that are optimized for virtualization	74%	19%	7%
Offers backwards compatible technology for easier transition to 10GbE	74%	19%	7%
Longevity in delivering Ethernet products	66%	28%	7%
Offers one NIC for both LAN and storage connectivity (iSCSi/FCoE)	43%	34%	23%

Q6: When evaluating 10GbE vendors, how important are the following criteria?
Base: 183 qualified respondents

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Respondents indicate there is room for improvement with regard to important vendor attributes. Though the majority of respondents highly rate the importance of products optimized for virtualization, just one-half assign high marks to current vendors in this area.

Legend: ■ Excellent/Very good ■ Good ■ Fair/Poor

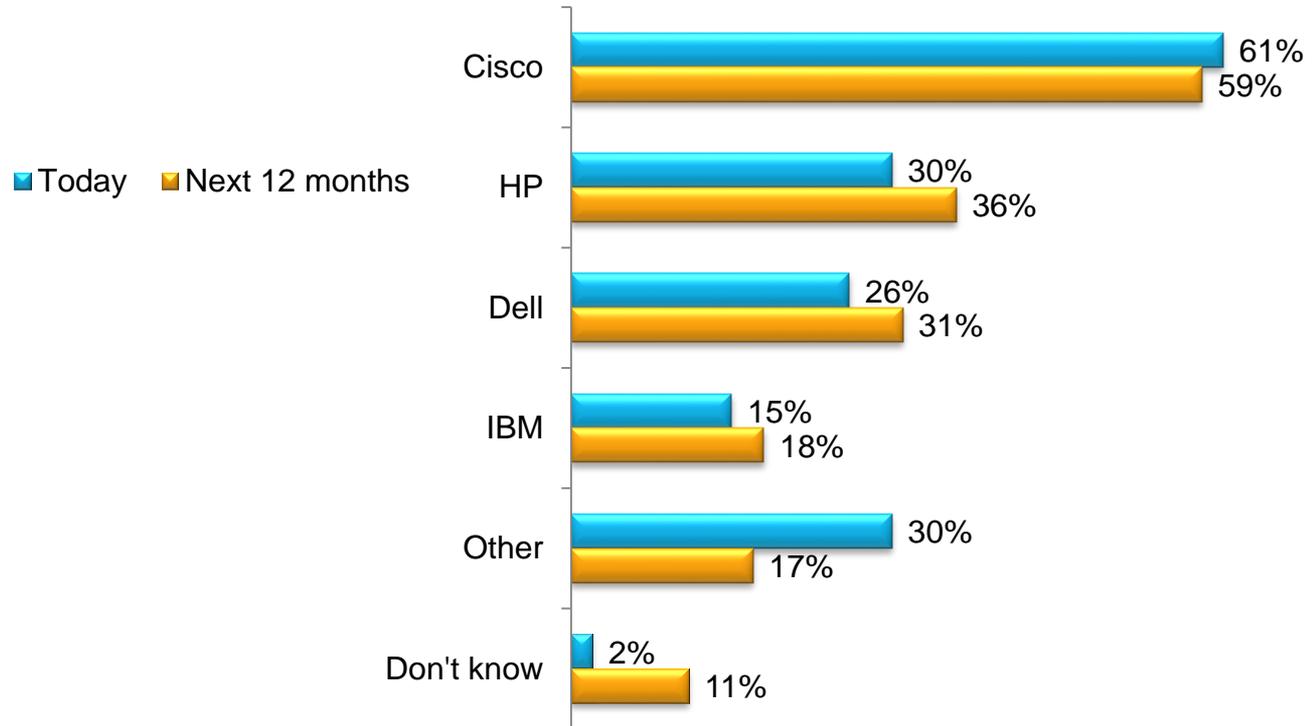| Attribute	Excellent/Very good	Good	Fair/Poor
Trusted reputation in the industry	69%	26%	5%
Offers backwards compatible technology for easier transition to 10GbE	59%	33%	8%
Longevity in delivering Ethernet products	58%	35%	7%
Products that are optimized for virtualization	52%	39%	9%
Offers one NIC for both LAN and storage connecitivity (iSC Si/FCoE)	43%	47%	10%

Q7: How would you rate 10GbE vendors in the market today as far as their ability to meet the following criteria?
Base: 183 qualified respondents

Today, the majority of respondents report their organizations use Cisco's 10GbE Converged Network Adapter brand, followed by HP (30%), and Dell (26%). A slight increase in the use of the HP brand is expected over the next 12 months.

10GbE Converged Network Adapter Brands in Use

Legend: ■ Today   ■ Next 12 months

Brand	Today	Next 12 months
Cisco	61%	59%
HP	30%	36%
Dell	26%	31%
IBM	15%	18%
Other	30%	17%
Don't know	2%	11%

Q8a: Which of the following 10GbE Converged Network Adapter brands are in use at your organization today? (Please select all that apply.) Base: 110 respondents who have already deployed

Q8b: Which of the following 10GbE Converged Network Adapter brands is your organization considering over the next 12 months? (Please select all that apply.) Base: 183 qualified respondents

A WORLD OF INSIGHTS   13

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Half of respondents report that their organizations already use flexible LOM (LAN-on-Motherboard) or are planning to implement flexible LOM 12 or more months from now.

Use of Flexible LOM

31%

Already/Plans (NET) 50%

26%

23%

16%

4%

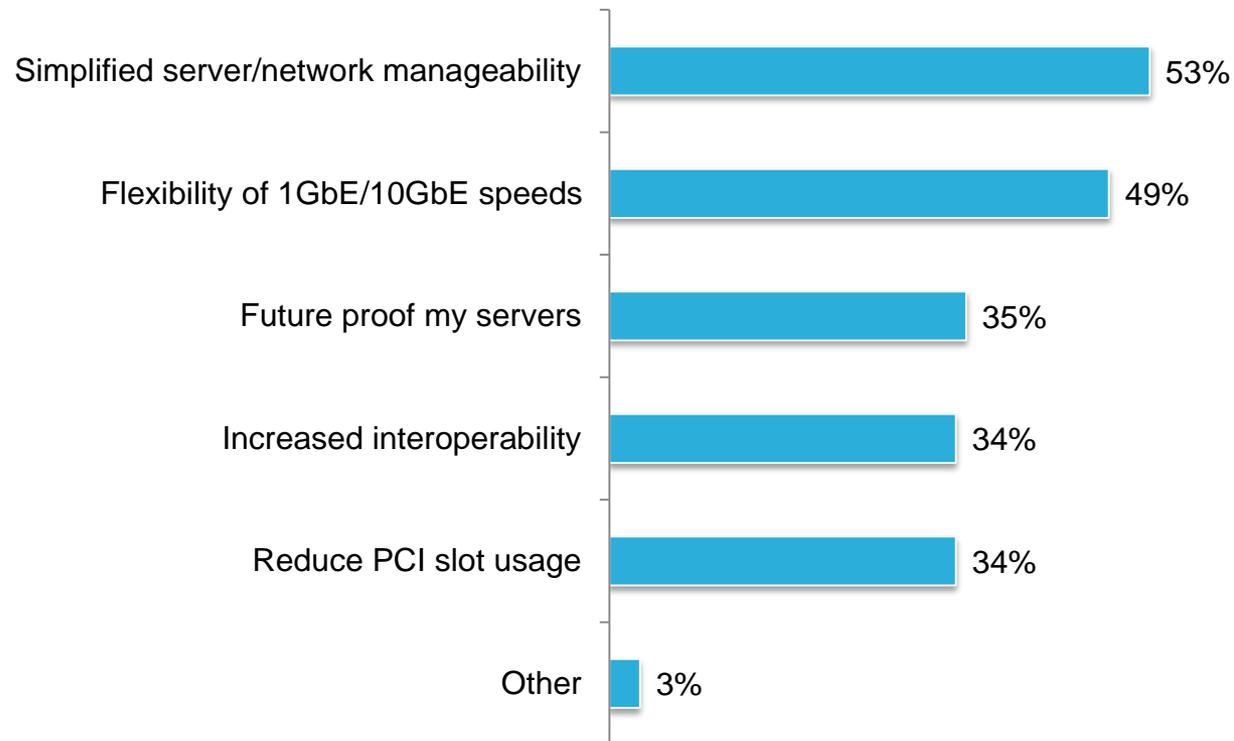| Already in use | Plans to implement within the next 12 months | Plans to implement more than 12 months from now | No plans to implement | Don't know |
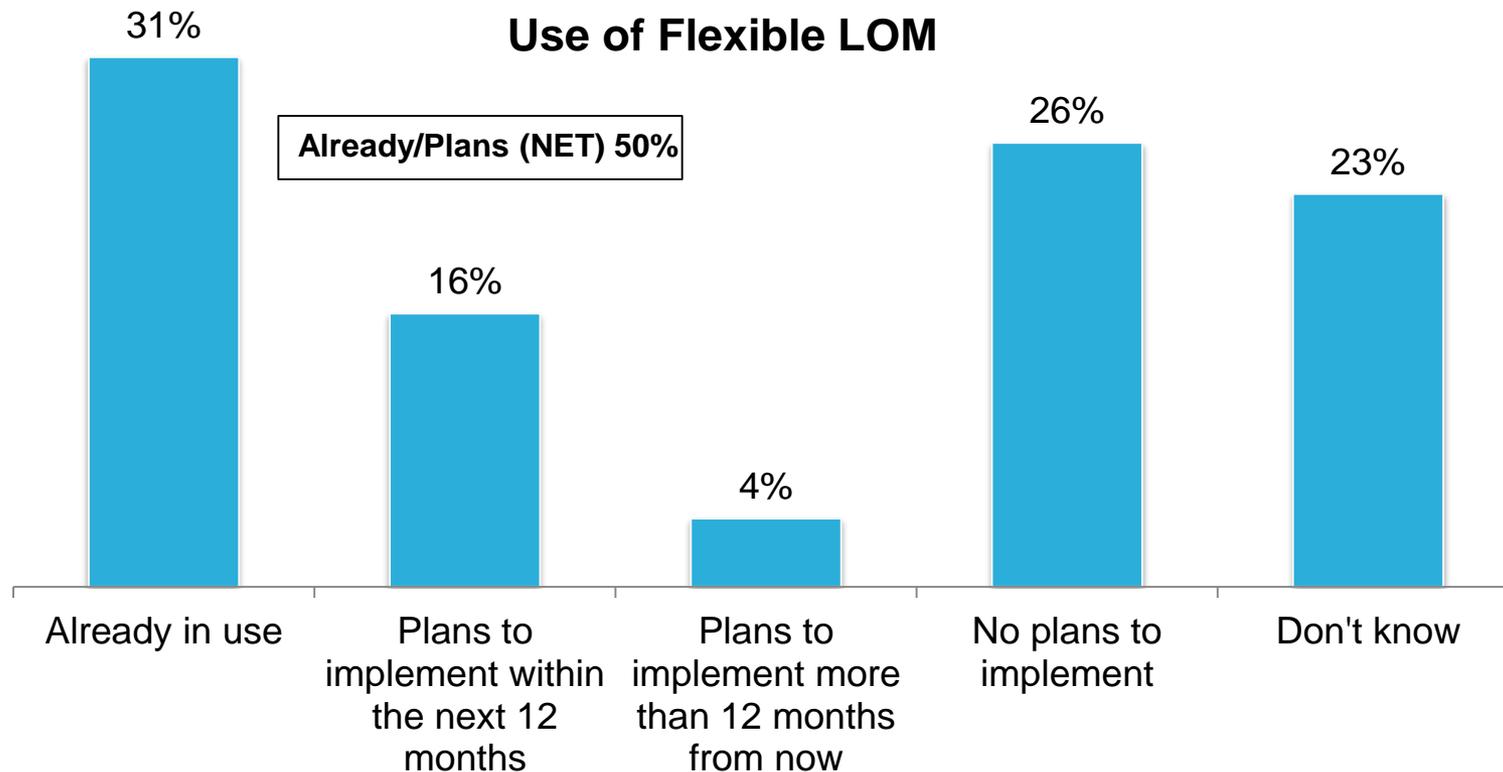
Q9a: Which of the following best describes your organization's use of flexible LOM (LAN-on-Motherboard)?
Base: 183 qualified respondents

Among those who are using or planning to implement flexible LOM, respondents cite the simplified server/network manageability and the flexibility of 1GbE/10GbE speeds as the primary attractions.

Primary Attractions of Flexible LOM

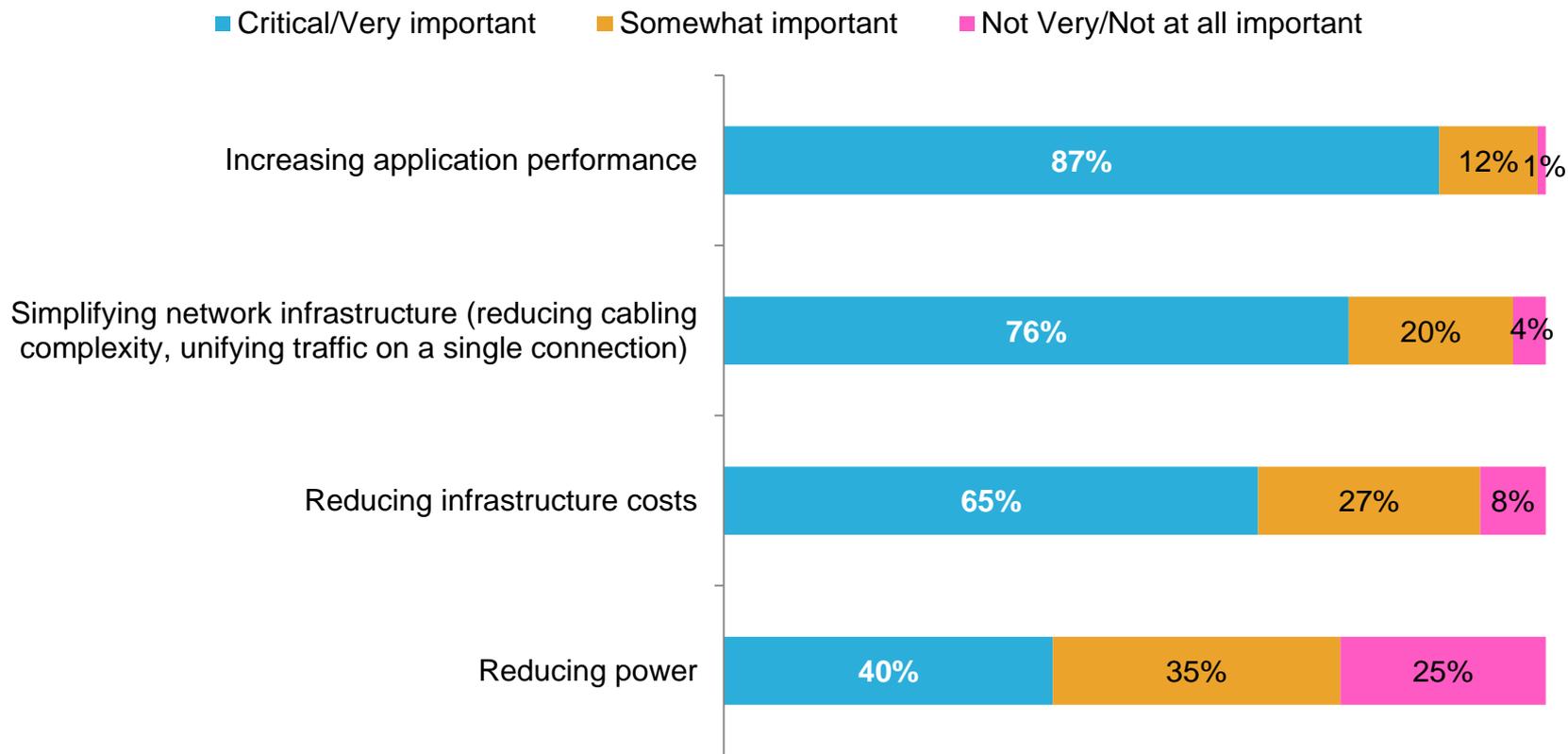| Attraction	Percentage
Simplified server/network manageability	53%
Flexibility of 1GbE/10GbE speeds	49%
Future proof my servers	35%
Increased interoperability	34%
Reduce PCI slot usage	34%
Other	3%

Q9b: What are the primary attractions of flexible LOM for your organization? (Please select all that apply.)
Base: 92 respondents where Flexible LOM is already in use or have plans implemented

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Increasing application performance is rated as the most important potential benefit of 10GbE deployment, closely followed by simplification of the network infrastructure.

■ Critical/Very important   ■ Somewhat important   ■ Not Very/Not at all important

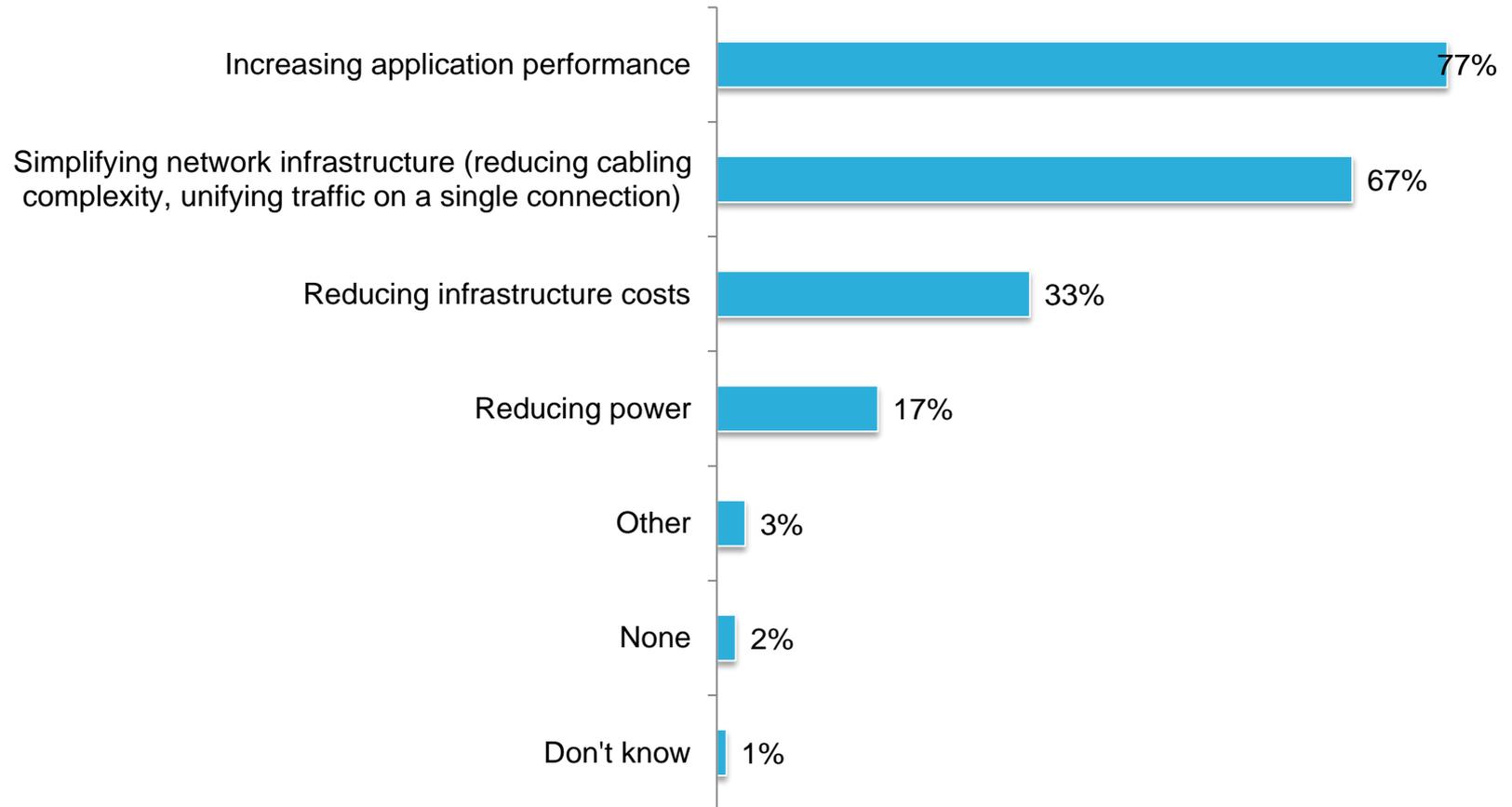| Benefit	Critical/Very important	Somewhat important	Not Very/Not at all important
Increasing application performance	87%	12%	1%
Simplifying network infrastructure (reducing cabling complexity, unifying traffic on a single connection)	76%	20%	4%
Reducing infrastructure costs	65%	27%	8%
Reducing power	40%	35%	25%

Q10: How important are the following potential benefits of 10GbE deployment at your organization?
Base: 183 qualified respondents

Among those who have already deployed 10GbE, the majority say their organizations are already experiencing increases in application performance, and more than two-thirds have experienced and a more simplified network infrastructure.

Benefits Resulting from 10GbE Deployment

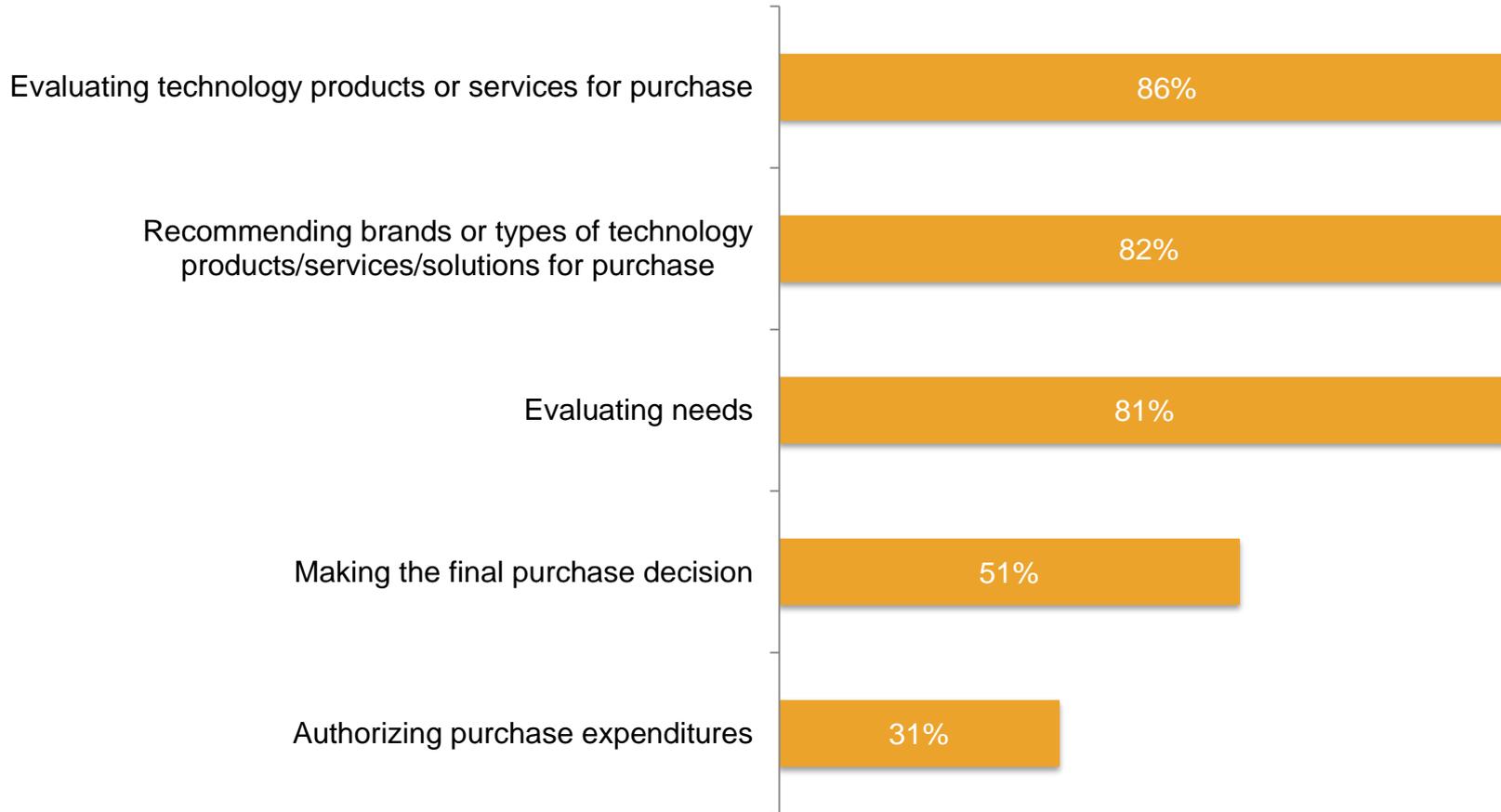| Benefit	Percentage
Increasing application performance	77%
Simplifying network infrastructure (reducing cabling complexity, unifying traffic on a single connection)	67%
Reducing infrastructure costs	33%
Reducing power	17%
Other	3%
None	2%
Don't know	1%

Q11: Which of the following benefits has your organization already experienced as a result of 10GbE deployments? (Please select all that apply.) Base: 110 respondents who have already deployed

A WORLD OF INSIGHTS   17

RESPONDENT PROFILE

Respondent Profile
Involvement in Data Center Network Decisions

Evaluating technology products or services for purchase — 86%

Recommending brands or types of technology products/services/solutions for purchase — 82%

Evaluating needs — 81%

Making the final purchase decision — 51%

Authorizing purchase expenditures — 31%

QS1: How are you personally involved in data center network decisions at your organization? (Please select all that apply.) Base: 183 qualified respondents

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Respondent Profile
Company Size: Number of Employees

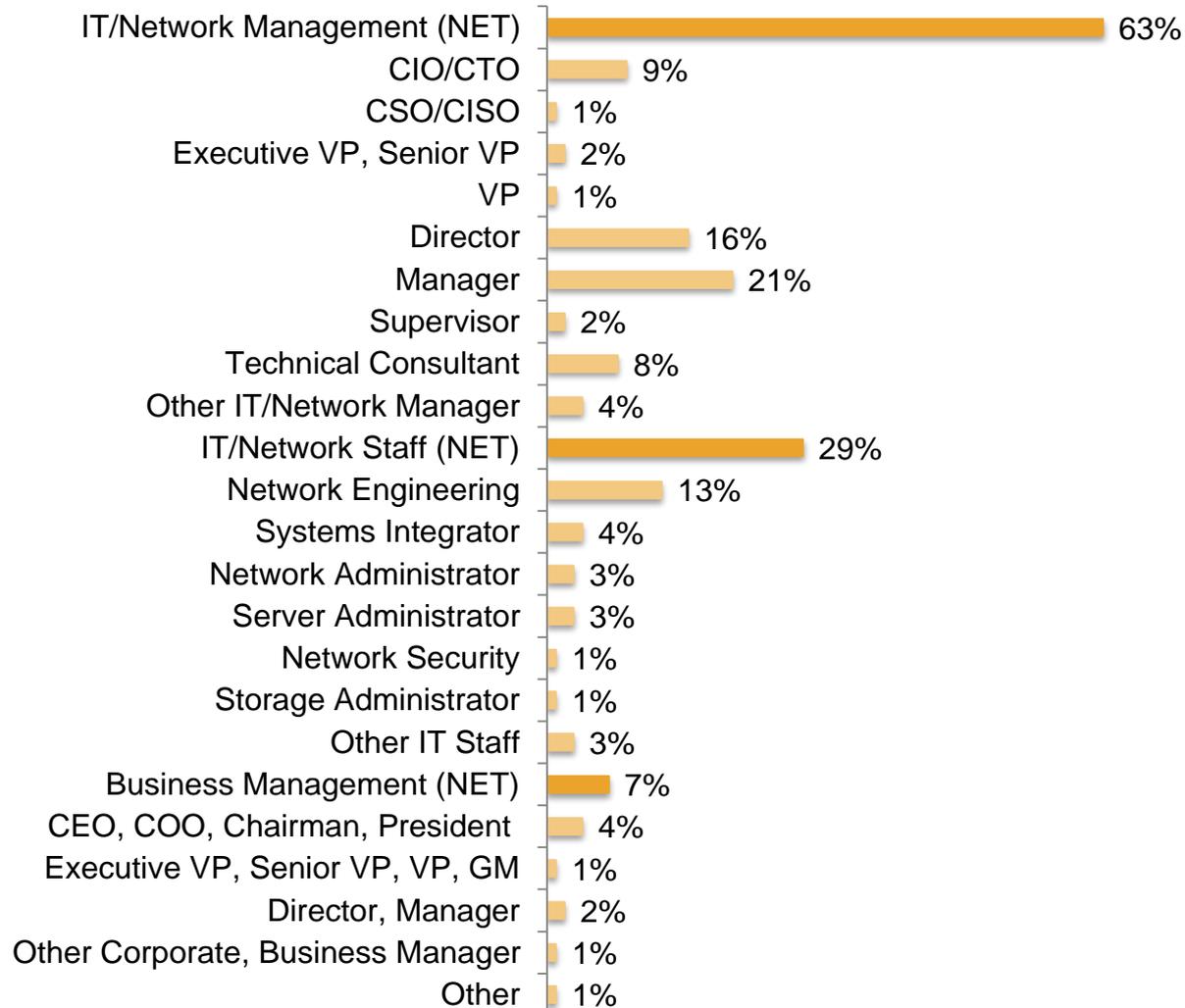| Company Size	Percentage
10,000 or more	26%
5,000 - 9,999	9%
2,500 - 4,999	10%
1,000 - 2,499	13%
500 - 999	16%
Less than 500	26%
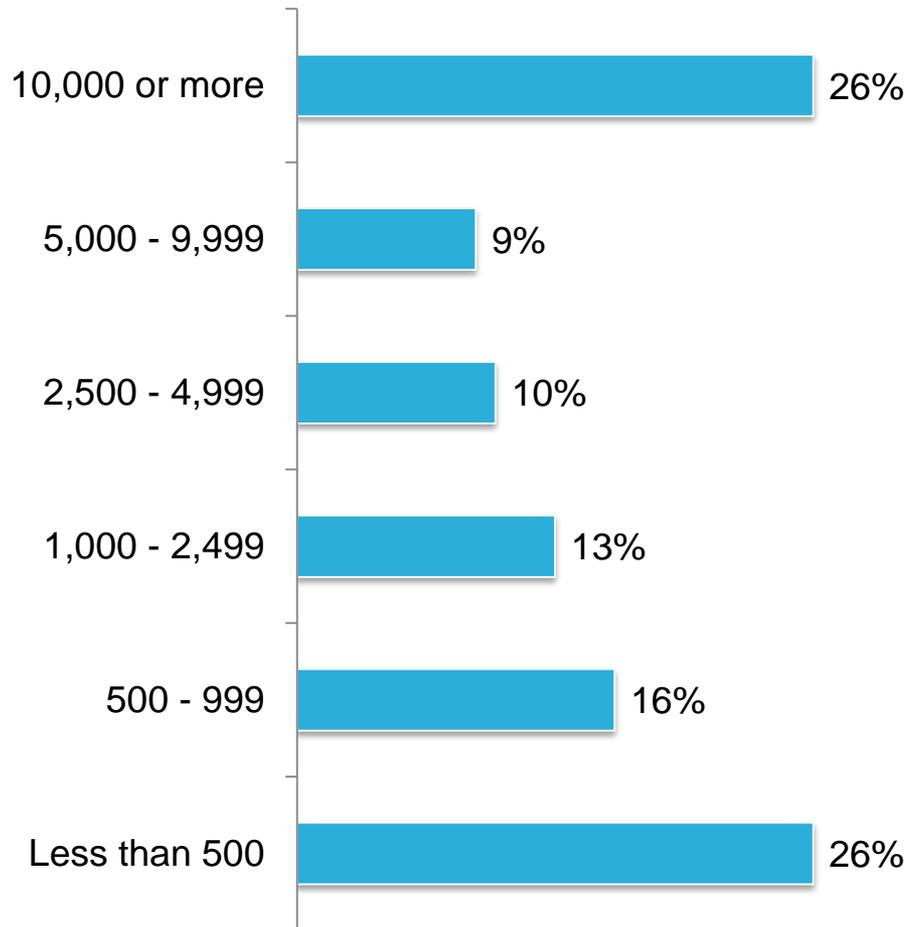
QD2: Approximately how many people are employed in your entire company or enterprise? (Please include all plants, divisions, branches, parents and subsidiaries worldwide.)
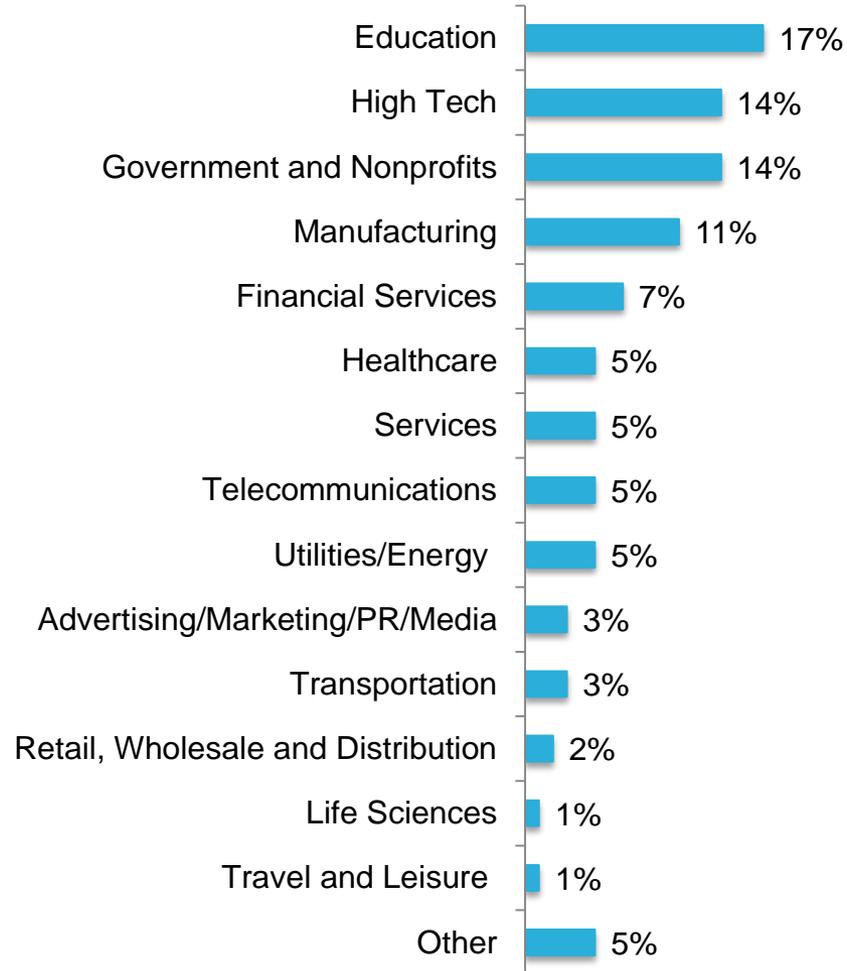*Base: 183 qualified respondents*

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Respondent Profile
Job Title

Job Title	Percentage
IT/Network Management (NET)	63%
CIO/CTO	9%
CSO/CISO	1%
Executive VP, Senior VP	2%
VP	1%
Director	16%
Manager	21%
Supervisor	2%
Technical Consultant	8%
Other IT/Network Manager	4%
IT/Network Staff (NET)	29%
Network Engineering	13%
Systems Integrator	4%
Network Administrator	3%
Server Administrator	3%
Network Security	1%
Storage Administrator	1%
Other IT Staff	3%
Business Management (NET)	7%
CEO, COO, Chairman, President	4%
Executive VP, Senior VP, VP, GM	1%
Director, Manager	2%
Other Corporate, Business Manager	1%
Other	1%

QD1: Which of the following best describes your title within your organization?
Base: 183 qualified respondents

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Respondent Profile
Industry

Industry	Percentage
Education	17%
High Tech	14%
Government and Nonprofits	14%
Manufacturing	11%
Financial Services	7%
Healthcare	5%
Services	5%
Telecommunications	5%
Utilities/Energy	5%
Advertising/Marketing/PR/Media	3%
Transportation	3%
Retail, Wholesale and Distribution	2%
Life Sciences	1%
Travel and Leisure	1%
Other	5%

QD3: Which of the following best describes your organization's industry or function?
Base: 183 qualified respondents

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