Corporate IT Buying Behavior and Customer Satisfaction Study

x86-based Servers

Fourth Quarter 2015

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Contributors: Angela Lambert (angela.lambert@tbri.com), Engagement Manager/Senior Analyst; Matt Bowden, Analyst; Amanda Darcangelo, Research Analyst; Greg Richardson, Practice Manager, Engagement Services

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Executive Summary

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Lenovo is distancing itself from competitors as HP's and Dell's scores declined in the TBR weighted satisfaction index

TBR builds its index from four key attribute areas comprising 24 total factors

Rolling 6-Month Mean Satisfaction

Attribute	Dell	HP	Lenovo (System x)
Sales Mean Satisfaction			
Purchase Price/Acquisition Cost	5.1	5.1	**5.3**
One-time Services and Setup	5.0	5.0	**5.3**
Delivery Time and Product Availability	5.2	5.1	**5.3**
Sales Responsiveness	5.0	4.9	**5.2**
Post-purchase Customer Care	5.0	5.0	**5.3**
Online Product Information	5.1	4.9	**5.2**
Product Mean Satisfaction			
Initial Hardware Quality	5.4	5.4	**5.5**
Ongoing Hardware Reliability	5.3	5.4	**5.6**
Performance	5.4	5.4	**5.6**
Virtualization, Efficiency, Scalability	5.3	5.4	**5.5**
Total Cost of Ownership	5.2	5.2	**5.3**
Management Capabilities	5.1	5.2	**5.4**
Product Design/Features	5.2	5.3	**5.5**
Service Mean Satisfaction			
Phone Support Availability	5.1	5.1	**5.4**
Phone Support Technical Expertise	5.1	5.0	**5.3**
On-site Response Time	5.0	5.1	**5.4**
On-site Technical Expertise	5.0	5.1	**5.3**
Online Technical Support	5.1	5.0	**5.3**
Ongoing Services and Maintenance	5.2	5.1	**5.4**
Replacement Parts Availability	5.3	5.2	**5.4**
Self-support/Automated Support	5.0	5.0	**5.3**
Social Media Support	4.4	4.4	**4.8**
Loyalty Index			
Will Buy Again	82.6	**88.8**	84.1
Would Recommend	81.3	**85.3**	82.8

SOURCE: TBR 4Q15

Rolling 6-Month Satisfaction Index

	Dell	HP	Lenovo (System x)
Sales Satisfaction Index	72.5	71.2	**75.2**
Product Satisfaction Index	75.4	76.1	**78.4**
Service Satisfaction Index	71.7	71.6	**75.4**
Loyalty Index	82.0	**87.1**	83.5
Importance Multiplier	**99.7%**	**98.5%**	**101.8%**
TBR Weighted Satisfaction Index	73.9	73.4	**78.3**

SOURCE: TBR 4Q15

Note: Detailed explanation of methodology and calculations can be found in the technical appendix (slide 98).

Lenovo (System x) represents respondents who have purchased System x servers.

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Lenovo reigns as the No. 1 vendor for the fourth consecutive quarter as its acquisition of System x had little impact on customers

IT decision makers place high importance on performance, reliability and quality attributes

Rolling 6-Month Mean Satisfaction

Attribute	Dell	HP	Lenovo (System x)
	Sales Mean Satisfaction		
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One-time Services and Setup	5.0	5.0	**5.3**
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Post-purchase Customer Care	5.0	5.0	**5.3**
Online Product Information	5.1	4.9	**5.2**
	Product Mean Satisfaction		
Initial Hardware Quality	5.4	5.4	**5.5**
Ongoing Hardware Reliability	5.3	5.4	**5.6**
Performance	5.4	5.4	**5.6**
Virtualization, Efficiency, Scalability	5.3	5.4	**5.5**
Total Cost of Ownership	5.2	5.2	**5.3**
Management Capabilities	5.1	5.2	**5.4**
Product Design/Features	5.2	5.3	**5.5**
	Service Mean Satisfaction		
Phone Support Availability	5.1	5.1	**5.4**
Phone Support Technical Expertise	5.1	5.0	**5.3**
On-site Response Time	5.0	5.1	**5.4**
On-site Technical Expertise	5.0	5.1	**5.3**
Online Technical Support	5.1	5.0	**5.3**
Ongoing Services and Maintenance	5.2	5.1	**5.4**
Replacement Parts Availability	5.3	5.2	**5.4**
Self-support/Automated Support	5.0	5.0	**5.3**
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	Loyalty Index		
Will Buy Again	82.6	**88.8**	84.1
Would Recommend	81.3	**85.3**	82.8

SOURCE: TBR 4Q15

Dell

While Dell customers reported increased satisfaction with five of the six sales attributes, Dell's overall mean satisfaction score declined compared with 3Q15, driven by lower levels of satisfaction with product and service attributes. Additionally, Dell was the only vendor that had a lower percentage of customers indicate they would buy again compared to the previous quarter.

HP

HP customers continue to report they will buy HP servers again and recommend HP servers to their peers more often than Dell and Lenovo customers do; nonetheless, HP received the lowest overall mean satisfaction score, finishing in last place for both sales and service attribute satisfaction.

Lenovo (System x)

Lenovo's improved satisfaction in sales, product and service attributes, combined with increased loyalty to the brand, helped the vendor increase its TBR weighted satisfaction index score and distance itself from Dell and HP. Additionally, the percentage of Lenovo customers likely to buy again reached its highest level in the past year, returning to a level similar to before the acquisition of IBM's x86 server business.

Lenovo (System x) represents respondents who have purchased System x servers.

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Customers desire competitive prices and quick responses to issues, but poor on-site experiences can lead companies to consider other vendors

Purchase price and speed in responding to problems add value

Customers continue to consider product attributes most important; however, commoditization of server hardware shifts importance to attributes such as purchase price, on-site response time and phone support availability. These attributes provide vendors with an opportunity to differentiate their offerings and provide customers with the value and responsiveness they desire.

Issues with on-site support reduce brand loyalty

Customers who were unlikely to buy again cited dissatisfaction with on-site support as one of the top reasons to consider other brands. With server breakdowns potentially disrupting business operations for customers, it is critical for customers to be able to resolve problems quickly, resulting in a need for high-quality support services from their x86 server vendor.

Acquisitions and breakups create uncertainty among customers

While acquisitions and breakups have limited effects on customer satisfaction, the news of potential changes makes customers uncertain if they want to remain with their current vendor. The announcement of Lenovo's acquisition of IBM's x86 server business and HP's split into Hewlett Packard Inc. (HPI), and Hewlett Packard Enterprise (HPE) led to lower brand loyalty in the following quarters. The trend continues with Dell's announcement of its acquisition of EMC. This uncertainty provides competitors with an opportunity to target customers, a scenario vendors should prepare to overcome by reassuring customers of the value these changes add.

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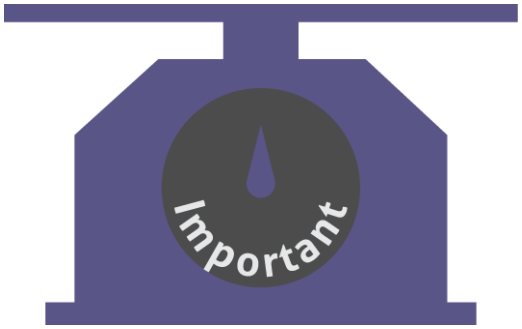
Customers increasingly focus on purchase price and the timeliness of services due to perceptions of commoditizing hardware across vendors

Customers rated attributes as critical, important or less important

- Customers consider product attributes critical to their purchase decisions, as organizations require x86 servers that can support their business processes and limit interruptions to operations. However compared with results in 3Q15, customers are placing more importance on purchase price, suggesting the perceived commoditization of servers makes customers more price sensitive as they aim to ensure they are getting the most value from their purchase.
- While many services are important to customers' purchase decisions, customers reported an increase in the importance of the response time and availability of on-site and phone support services, indicating the need for server vendors to quickly help customers resolve their problems.

- Performance
- Ongoing Hardware Reliability
- Initial Hardware Quality
- Virtualization, Efficiency, Scalability
- Total Cost of Ownership (TCO)
- Purchase Price/Acquisition Cost
- Product Design/Features
- Replacement Parts Availability

- Ongoing Services and Maintenance
- On-site Response Time
- Management Capabilities
- On-site Technical Expertise
- Phone Support Availability
- Delivery Time and Product Availability
- Phone Support Technical Expertise
- Online Technical Support



- Post-purchase Customer Care
- One-time Services and Setup
- Self-support/Automated Support
- Online Product Information
- Sales Responsiveness
- Social Media Support

The stacks of attributes shown on the scales above are listed in order of the importance of each attribute to overall customer satisfaction this quarter, with the most important attributes at the top of each stack.

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Key Findings

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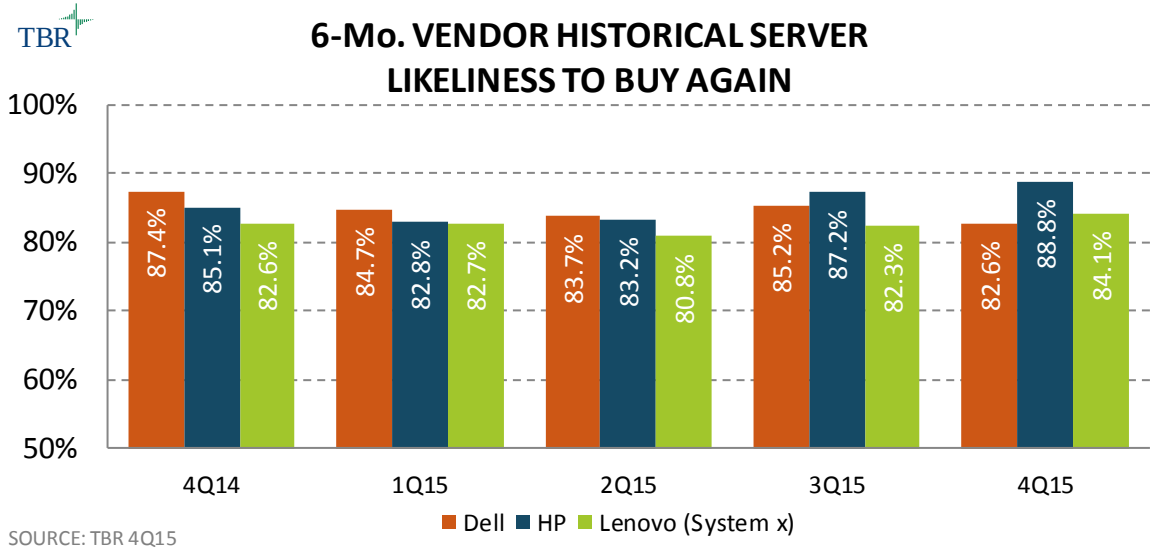
HP continues to lead in brand loyalty; however, Lenovo's buy-again percentage returned to pre-IBM acquisition levels



SOURCE: TBR 4Q15

TBR perspective

- Vendor loyalty continued to increase for HP and Lenovo. Dell customers reported the lowest likelihood to buy again in the last year, with 17.4% of customers indicating they may not or will not purchase again.
- While customers cited reliability, performance and integration as their top reasons to buy again, issues with energy consumption and on-site support prompted customers to consider other vendors.

Lenovo (System x) represents respondents who have purchased System x servers.

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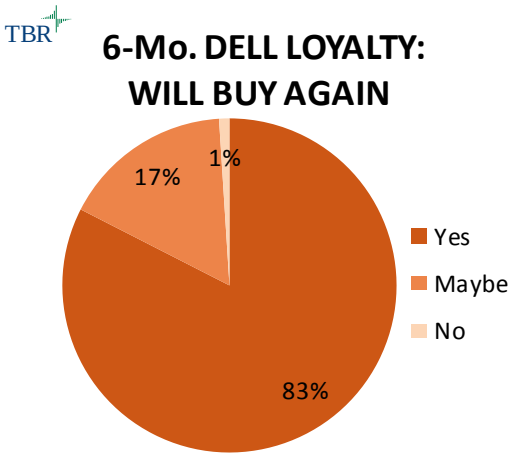
Many Dell customers perceived Dell servers to be inefficient, an attribute other vendors' customers did not mention

Top criteria for customers buying again and considering switching



SOURCE: TBR 4Q15
*Percentages may not add to 100% due to rounding

Yes — Will buy again	% of Yes
Servers are reliable	**71.9%**
Server performance meets our expectations	**56.6%**
Servers integrate well with our IT environment	**41.4%**

Maybe/Will not buy again	% of Maybe/No
Server efficiency did not meet our expectations	**18.5%**
Servers use too much energy	**16.7%**
We are buying another brand of servers instead	**16.7%**
We are using cloud computing/on-demand services	**16.7%**

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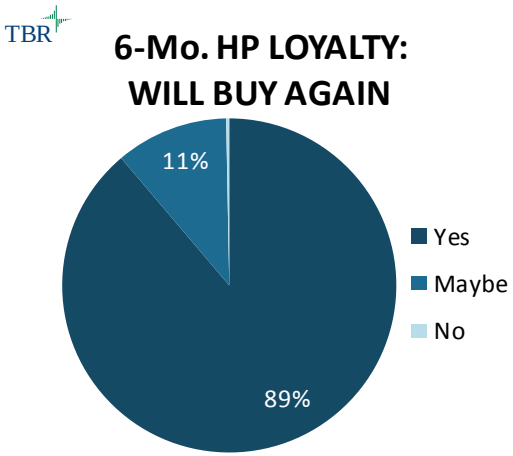
HP customers cited unresponsive sales staff and lack of server reliability as reasons to not repurchase

Top criteria for customers buying again and considering switching



SOURCE: TBR 4Q15

Yes — Will buy again	% of Yes
Servers are reliable	**77.6%**
Server performance meets our expectations	**60.5%**
Servers integrate well with our IT environment	**39.7%**

Maybe/Will not buy again	% of Maybe/No
Servers are not reliable enough	**20%**
Sales staff is not responsive enough	**20%**
Dissatisfied with on-site support	**20%**

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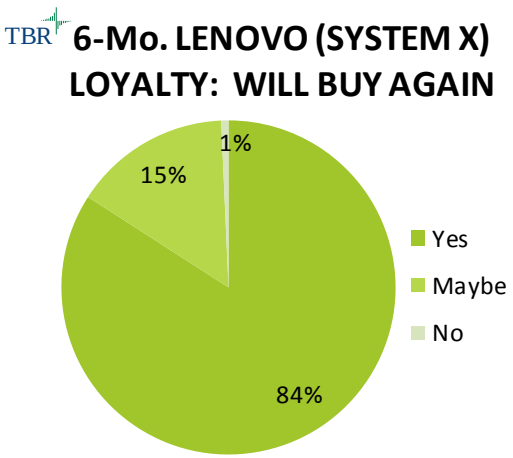
Lenovo System x customers cited long delivery times as the top attribute influencing the decision to not repurchase

Top criteria for customers buying again and considering switching



SOURCE: TBR 4Q15
*Percentages may not add to 100% due to rounding

Yes — Will buy again	% of Yes
Servers are reliable	**68.3%**
Server performance meets our expectations	**52.6%**
Servers integrate well with our IT environment	**43.4%**
Maybe/Will not buy again	**% of Maybe/No**
Servers have long delivery times	**19.1%**
Dissatisfied with on-site support	**14.9%**
Servers use too much energy	**14.9%**

Lenovo (System x) represents respondents who have purchased System x servers.

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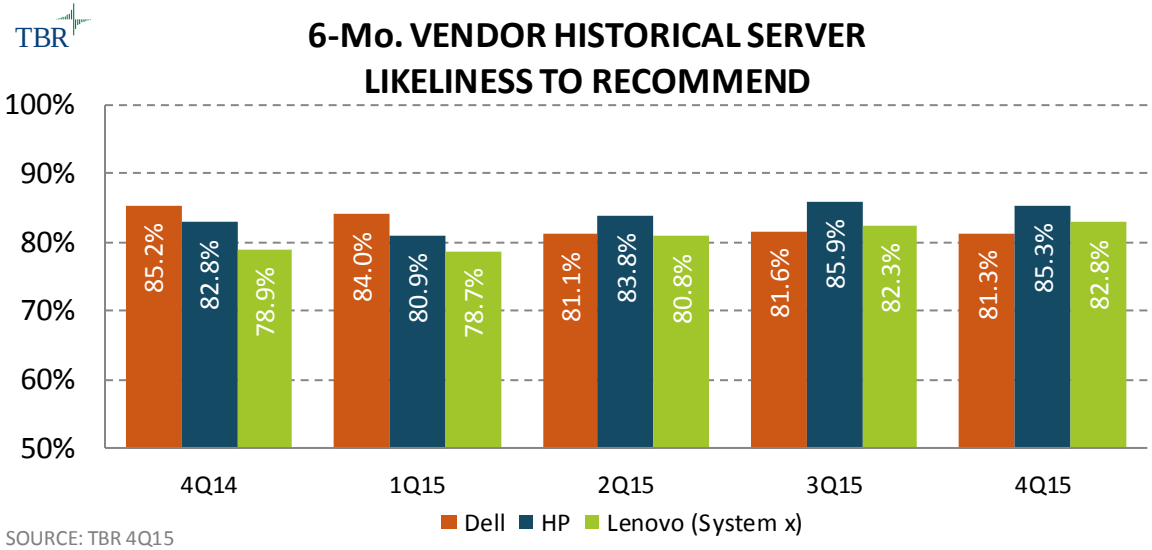
Despite Lenovo customers citing a higher likelihood to recommend than any time in the past 4 quarters, HP customers remain the most likely



Top customer recommendations

Lenovo was the only vendor for which likeliness to recommend increased from 3Q15 to 4Q15, as both HP and Dell suffered small declines with customers citing issues with efficiency and delivery times.

Dell customer *"Dell provides all of the tools and reading materials through its support or its website."*

HP customer *"We have not seen the same issues with [our] HP servers that we have with other vendors we have used in the past. Additionally, HP servers come with a set of tools that are very useful with troubleshooting."*

Lenovo customer *"They integrate well with our systems that are in place. Rarely do we have any problems, and those experienced have been minor, with limited downtime."*

Lenovo (System x) represents respondents who have purchased System x servers.

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Dell's improvements in satisfaction were muted by declines in 7 of 22 attributes, with product attributes bearing the brunt of the decline

Dell: 6-Mo. Server Performance Dashboard

Attribute	4Q15 Satisfaction	Industry Rank	Satisfaction vs. 3Q15
Purchase Price/Acquisition Cost	5.1	▼ 2	-0.4%
One-time Services and Setup	5.0	— 2	1.0%
Delivery Time and Product Availability	5.2	▼ 2	1.0%
Sales Responsiveness	5.0	— 2	1.2%
Post-purchase Customer Care	5.0	— 2	0.8%
Online Product Information	5.1	— 2	0.2%
Initial Hardware Quality	5.4	— 2	0.6%
Ongoing Hardware Reliability	5.3	▼ 3	-0.4%
Performance	5.4	— 2	-0.4%
Virtualization, Efficiency, Scalability	5.3	▼ 3	-0.2%
Total Cost of Ownership	5.2	— 2	-1.0%
Management Capabilities	5.1	▼ 3	-1.5%
Product Design/Features	5.2	▼ 3	-0.4%
Phone Support Availability	5.1	— 2	-0.2%
Phone Support Technical Expertise	5.1	— 2	0.0%
On-site Response Time	5.0	— 3	-1.0%
On-site Technical Expertise	5.0	▼ 3	-0.4%
Online Technical Support	5.1	— 2	-1.0%
Ongoing Services and Maintenance	5.2	— 2	0.4%
Replacement Parts Availability	5.3	▼ 2	0.6%
Self-support/Automated Support	5.0	— 2	-0.2%
Social Media Support	4.4	— 2	-3.3%
Loyalty	**4Q15 Loyalty Metric**	**Industry Rank**	**Loyalty vs. 3Q15**
Will buy again	82.6	▼ 3	-3.1%
Would recommend	81.3	— 3	-0.4%

SOURCE: TBR 4Q15

Dell's industry ranking fell in seven of the 22 attributes during 4Q15

While Dell's satisfaction score increased in eight attributes, the vendor did not benefit from the increased satisfaction, as it did not improve any of its industry rankings and declined in seven of the 22 attributes. Dell customers reported more declines in its industry rankings for product attributes than sales and service attributes, with many of these product attributes considered critically important by customers.

Dell's strength in sales attributes positions the vendor to deliver in price and respond to customer problems quickly

Dell finished 4Q15 in second place across all six sales attributes and experienced increases in satisfaction for five of the six attributes. As customers indicate importance is shifting to purchase price and speed of services, Dell is positioned to capitalize on this trend with its lower-priced portfolio and agility; however, the acquisition of EMC has the potential to limit Dell's agility as the vendor integrates EMC into its data center portfolio in 2016.

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HP's split into HPI and HPE caused little disruption in customer satisfaction, as the vendor improved in 11 of the 22 attributes in 4Q15

HP: 6-Mo. Server Performance Dashboard

Attribute	4Q15 Satisfaction	Industry Rank	Satisfaction vs. 3Q15
Purchase Price/Acquisition Cost	5.1	▲ 2	0.2%
One-time Services and Setup	5.0	— 2	-0.2%
Delivery Time and Product Availability	5.1	▼ 3	-1.4%
Sales Responsiveness	4.9	▼ 3	-0.8%
Post-purchase Customer Care	5.0	— 2	0.0%
Online Product Information	4.9	▼ 3	-1.4%
Initial Hardware Quality	5.4	— 2	0.2%
Ongoing Hardware Reliability	5.4	— 2	0.4%
Performance	5.4	— 2	-0.6%
Virtualization, Efficiency, Scalability	5.4	— 2	1.3%
Total Cost of Ownership	5.2	— 2	1.4%
Management Capabilities	5.2	— 2	0.8%
Product Design/Features	5.3	— 2	1.0%
Phone Support Availability	5.1	— 2	0.2%
Phone Support Technical Expertise	5.0	— 3	0.4%
On-site Response Time	5.1	— 2	-0.6%
On-site Technical Expertise	5.1	— 2	0.4%
Online Technical Support	5.0	▼ 3	-1.2%
Ongoing Services and Maintenance	5.1	▼ 3	-1.0%
Replacement Parts Availability	5.2	— 3	0.0%
Self-support/Automated Support	5.0	— 2	-1.2%
Social Media Support	4.4	▲ 2	-0.5%
Loyalty	**4Q15 Loyalty Metric**	**Industry Rank**	**Loyalty vs. 3Q15**
Will buy again	88.8	— 1	1.8%
Would recommend	85.3	— 1	-0.7%

SOURCE: TBR 4Q15

HP's customers reported higher levels of satisfaction in 11 of 22 attributes

Compared with its scores in 3Q15, HP improved satisfaction in half of the attributes TBR ranks, with product attributes accounting for six of the 11 attributes that increased. HP's ability to increase its customers' satisfaction in product attributes positions the vendor well, as organizations typically considered many of these attributes to be critical to purchase decisions.

HP's customer satisfaction is increasing for many attributes, but industry rankings are not following the trend

While HP customers reported higher satisfaction in 11 attributes, only purchase price satisfaction increased enough to increase the vendor's industry ranking. HP also increased its ranking in social media support; however, this was a result of a declining score from Dell. HP can continue to make progress toward becoming the industry leader by focusing on areas where it trails competitors, especially services attributes such as online technical support and ongoing services and maintenance, which both declined 1% or more from 3Q15.

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Lenovo System x continued to dominate as its customers' satisfaction increased across every attribute

TBR

Lenovo (System x): 6-Mo. Server Performance Dashboard

Attribute	4Q15 Satisfaction	Industry Rank	Satisfaction vs. 3Q15
Purchase Price/Acquisition Cost	5.3	1	1.9%
One-time Services and Setup	5.3	1	2.3%
Delivery Time and Product Availability	5.3	1	2.3%
Sales Responsiveness	5.2	1	3.0%
Post-purchase Customer Care	5.3	1	1.7%
Online Product Information	5.2	1	2.2%
Initial Hardware Quality	5.5	1	0.7%
Ongoing Hardware Reliability	5.6	1	0.7%
Performance	5.6	1	1.8%
Virtualization, Efficiency, Scalability	5.5	1	0.4%
Total Cost of Ownership	5.3	1	0.9%
Management Capabilities	5.4	1	2.1%
Product Design/Features	5.5	1	1.1%
Phone Support Availability	5.4	1	1.5%
Phone Support Technical Expertise	5.3	1	0.8%
On-site Response Time	5.4	1	0.4%
On-site Technical Expertise	5.3	1	0.8%
Online Technical Support	5.3	1	1.7%
Ongoing Services and Maintenance	5.4	1	1.7%
Replacement Parts Availability	5.4	1	1.9%
Self-support/Automated Support	5.3	1	1.9%
Social Media Support	4.8	1	2.8%
Loyalty	**4Q15 Loyalty Metric**	**Industry Rank**	**Loyalty vs. 3Q15**
Will buy again	84.1	▲ 2	2.2%
Would recommend	82.8	2	0.6%

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

Lenovo increased customer satisfaction in all 22 attributes, solidifying its No. 1 ranking

Lenovo remains the industry leader in satisfaction across all 22 attributes, as the vendor continued to increase its customers' satisfaction with every attribute. Lenovo experienced its largest increases in satisfaction for sales attributes, with sales responsiveness increasing the most.

Lenovo's brand loyalty continues to increase as it closes the gap between itself and HP

Lenovo leads in customer satisfaction but trails HP in customers' likeliness to buy again and to recommend its servers. However, Lenovo is narrowing the gap and moving closer to HP, especially in customers' likeliness to buy again. While increased levels of satisfaction are likely the main driver of the increase in loyalty, TBR believes Lenovo's ability to provide a level of satisfaction similar to IBM's helps the vendor return to the levels of loyalty IBM customers historically displayed.

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x86-based Server Attribute Analysis

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Report attributes and statistical significance key

Sales Attributes

1. Purchase Price/Acquisition Cost
2. One-time Services and Setup
3. Delivery Time and Product Availability
4. Sales Responsiveness
5. Post-purchase Customer Care
6. Online Product Information

Product Attributes

7. Initial Hardware Quality
8. Ongoing Hardware Reliability
9. Performance
10. Virtualization, Efficiency, Scalability
11. Total Cost of Ownership
12. Management Capabilities
13. Product Design/Features

Service and Support Attributes

14. Phone Support Availability
15. Phone Support Technical Expertise
16. On-site Response Time
17. On-site Technical Expertise
18. Online Technical Support
19. Replacement Parts Availability
20. Ongoing Services and Maintenance
21. Self-support/Automated Support
22. Social Media Support

Statistical Significance Key

- Higher Mean than Dell — 99% confidence level
- Higher Mean than Dell — 95% confidence level
- Higher Mean than Dell — 90% confidence level
- Higher Mean than HP — 99% confidence level
- Higher Mean than HP — 95% confidence level
- Higher Mean than HP — 90% confidence level
- Higher Mean than Lenovo (System x) — 99% confidence level
- Higher Mean than Lenovo (System x) — 95% confidence level
- Higher Mean than Lenovo (System x) — 90% confidence level

Note: Statistical Significance Key applies to slides 19, 20, 21, 23, 26, 29, 32, 35, 38, 42, 45, 48, 51, 54, 57, 60, 64, 67, 70, 73, 76, 79, 82, 85 and 88.

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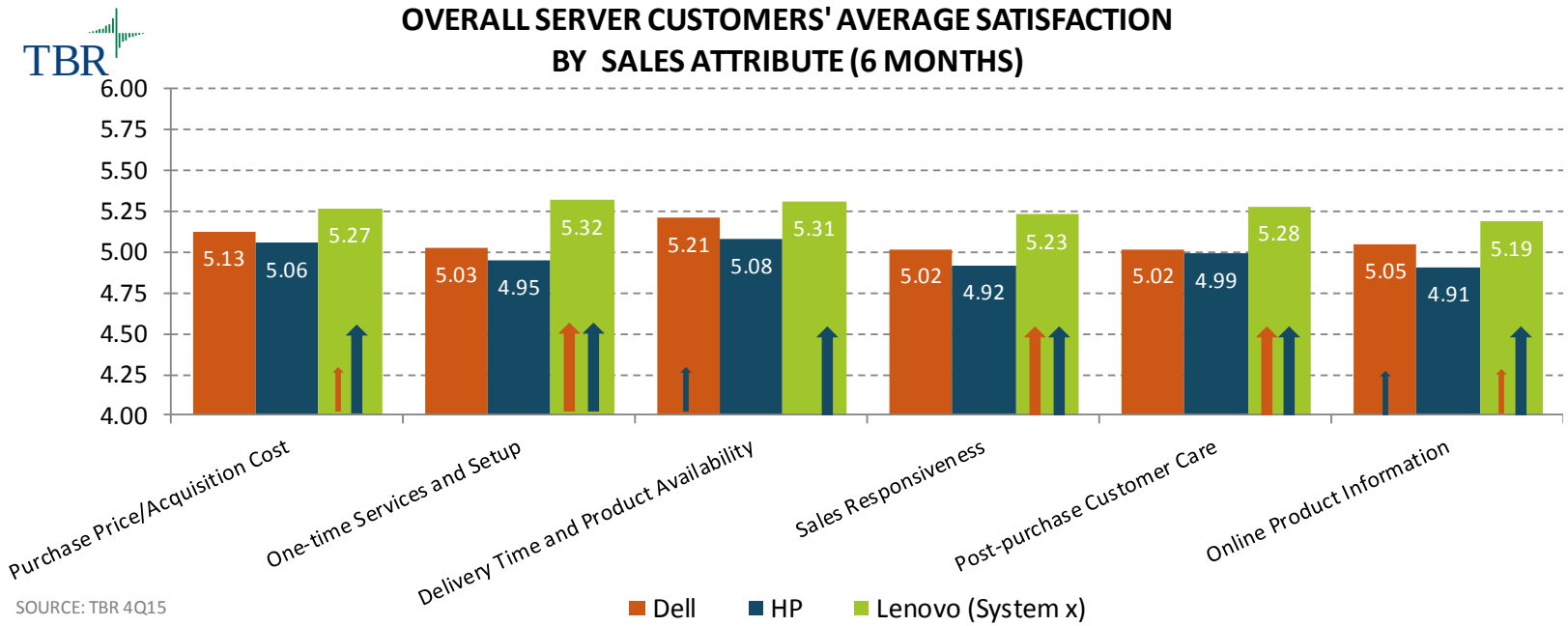
Customer satisfaction with Lenovo System x ranked highest in every attribute, and the servers held significant advantages in 3 attributes



SOURCE: TBR 4Q15

Sales satisfaction drivers

- Lenovo System x topped every sales attribute, tying HP and Dell in purchase price/acquisition cost and delivery time & product availability.
- Lenovo System x held significant advantages over Dell and HP in one-time services & setup and post-purchase customer care. In addition, Lenovo held an advantage over HP in purchase price/acquisition cost.

Customer comment *"Technical information available through the Dell Premier site is very detailed and valuable for making configuration and purchase decisions."* **— Dell customer**

Lenovo (System x) represents respondents who have purchased System x servers.

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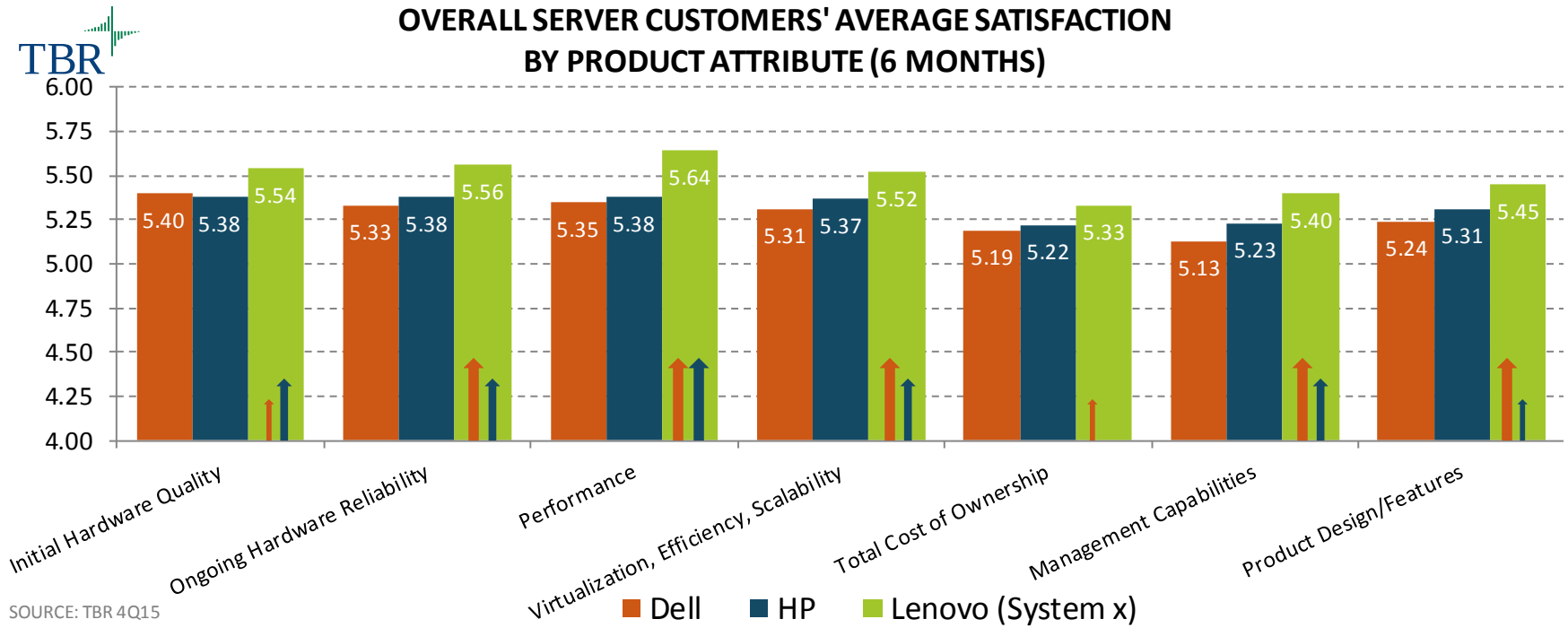
Lenovo System x stood alone in first place in all 7 product attributes



SOURCE: TBR 4Q15

Product satisfaction drivers

- Lenovo System x stood alone in first place in all seven product attributes and held significant advantages over Dell and/or HP in six.
- Customers were most satisfied with performance, ongoing hardware reliability and initial hardware reliability, all attributes critical to customers.

Customer comment *"They are very scalable and are reasonably priced for the quality and reliability of the hardware."* **— Lenovo customer**

Lenovo (System x) represents respondents who have purchased System x servers.

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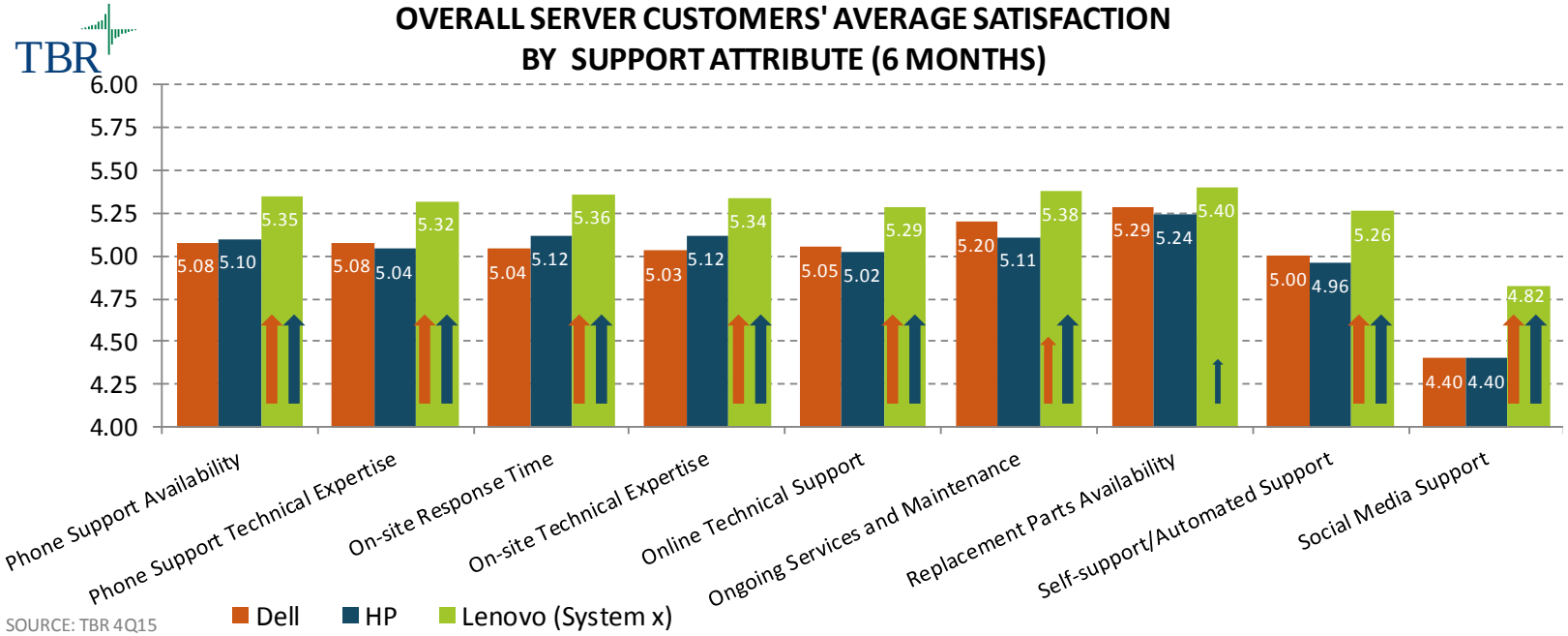
Lenovo System x held significant advantages in all support attributes except online technical support and replacement parts availability



SOURCE: TBR 4Q15

Service satisfaction drivers

Overall, Lenovo System x held the stand-alone first place spot in eight of nine attributes, only tying Dell in replacement parts availability. Additionally, the vendor held significant advantage over other vendors in seven of nine attributes.

Customer comments

"Came out to our location within the hour and helped with our problems." — **HP customer**

"Able to get replacement parts in a reasonable timeframe." — **Lenovo customer**

Lenovo (System x) represents respondents who have purchased System x servers.

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Appendix A

x86-based Server Attribute Analysis: Sales Satisfaction

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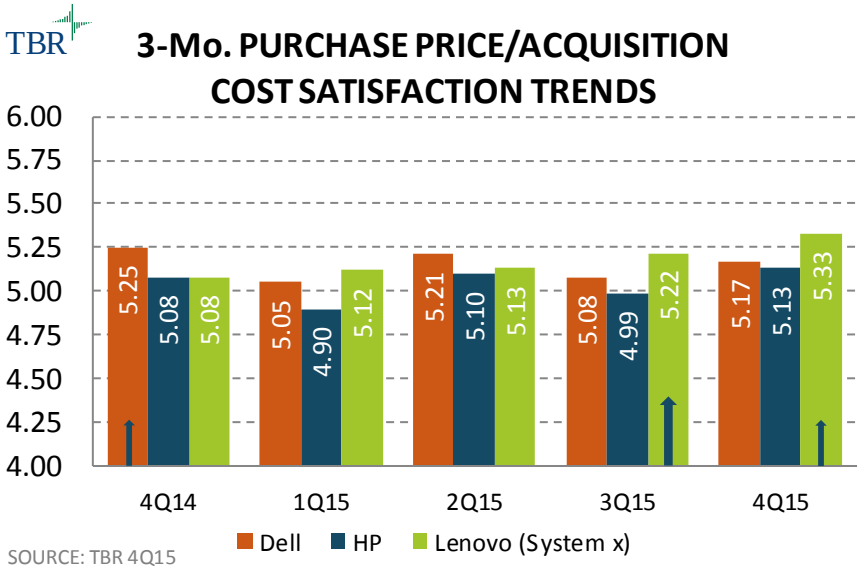
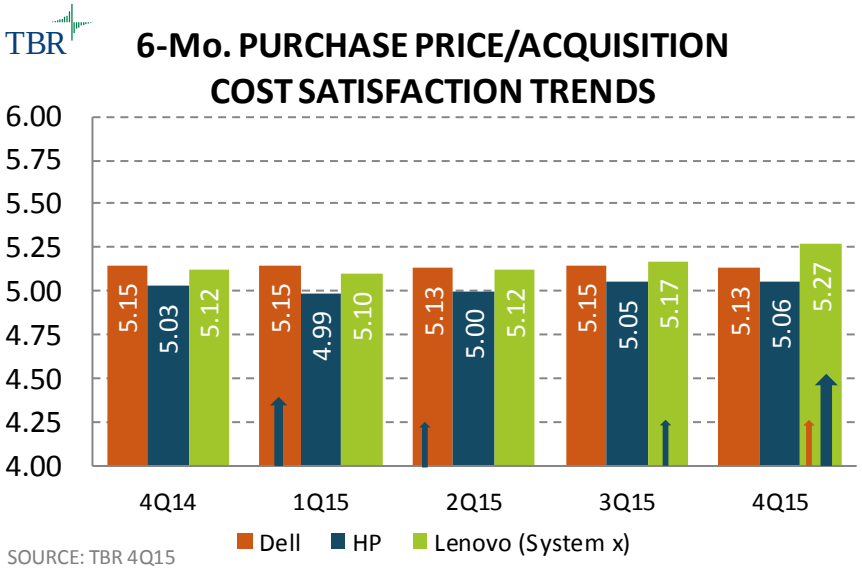
Decreasing satisfaction scores for Dell and stagnant scores for HP enabled Lenovo to lead again in 4Q15



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's six-month purchase price/acquisition cost satisfaction score decreased in 4Q15, keeping it in second place.
- Dell's rack customers were the only rack customers across vendors to consider purchase price critical and to give their vendor equal scores as the vendor's blade customers.

HP

- HP's six-month purchase price/acquisition cost satisfaction score remained the same from the previous quarter, placing the vendor's score below those of Dell and Lenovo.
- HP's lead with large IT departments helped increase its score in 4Q15.

Lenovo (System x)

- Lenovo increased for the third consecutive quarter in purchase price/acquisition cost satisfaction, outpacing Dell and HP for first place.
- Lenovo led in satisfaction perception across small and medium IT departments, while all vendors maintained equal satisfaction perception in large companies.

Lenovo (System x) represents respondents who have purchased System x servers.

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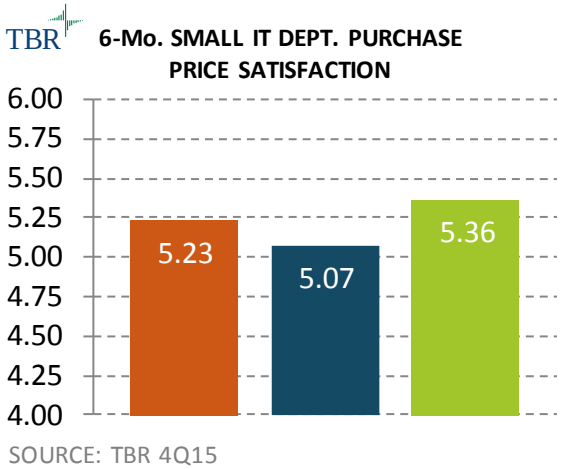
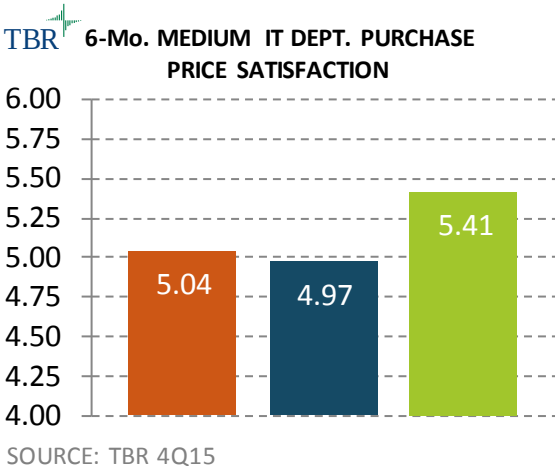
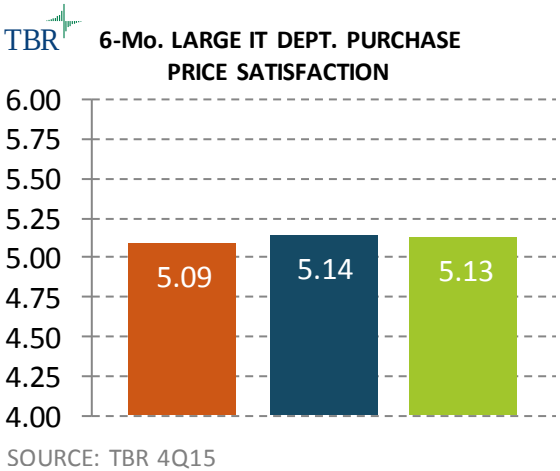
Purchase price/acquisition cost: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Dell: *"Competitive pricing and always willing to beat other vendors' pricing."*

Lenovo (System x): *"Provides outstanding value for the money."*

Medium IT customers

Lenovo (System x): *"[Lenovo] includes so much more than the product, [helping] me save money post-purchase by not having to pay for repair or replacements."*

HP: *"Purchase price is very competitive compared with other vendors; quality is higher for price."*

Large IT customers

Dell: *"Good value for the product."*

HP: *"The performance for the price is exceptional."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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Purchase price/acquisition cost: Blade vs. rack server rankings

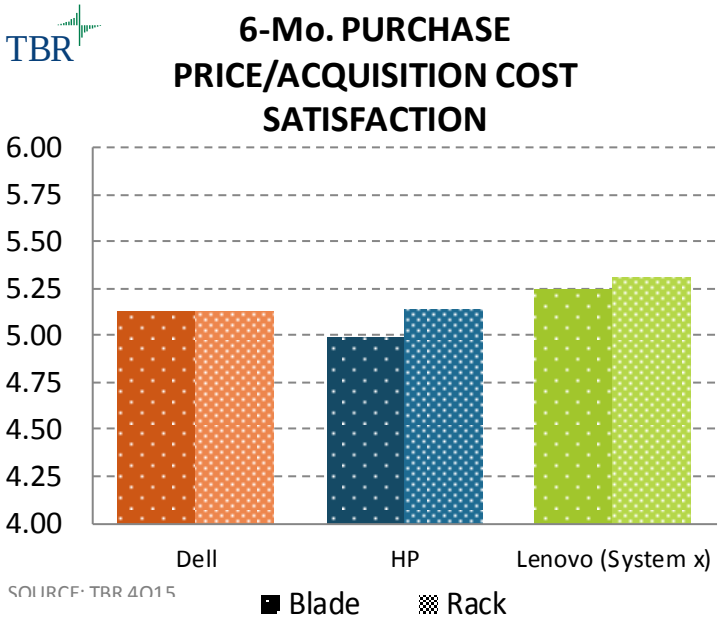
Customer Comments

"Reasonably priced for the quality and performance."
— Dell blade customer

"[Lenovo's] TCO beats every other rack server [manufacturer] in the market."
— Lenovo (System x) rack customer

"Great value for what we get. Best in the industry."
— Lenovo (System x) blade customer

"HP blades are a good product for the [money]."
— HP blade customer



SOURCE: TBR 4Q15

6-Mo. PURCHASE PRICE/ACQUISITION COST IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	Critical	Critical	Critical
Blade	Critical	Critical	Critical
Rack	Critical	Important	Important

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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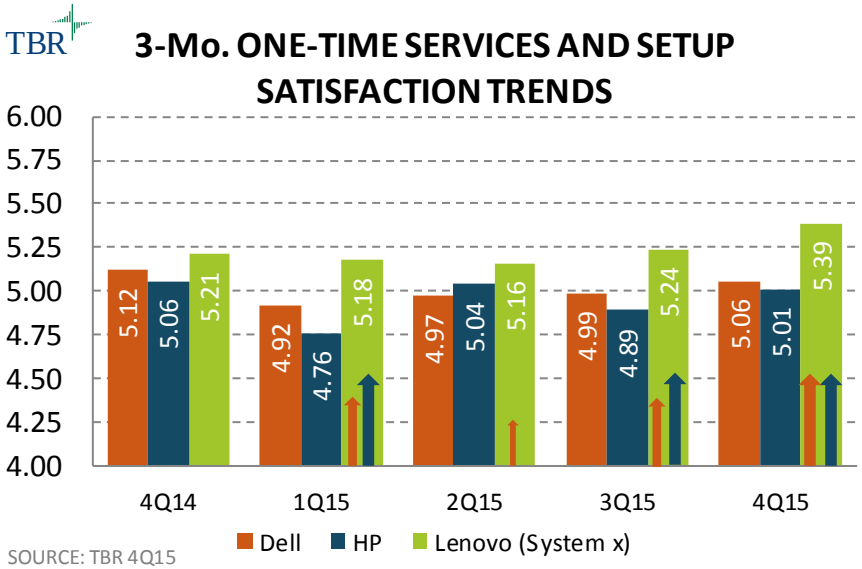
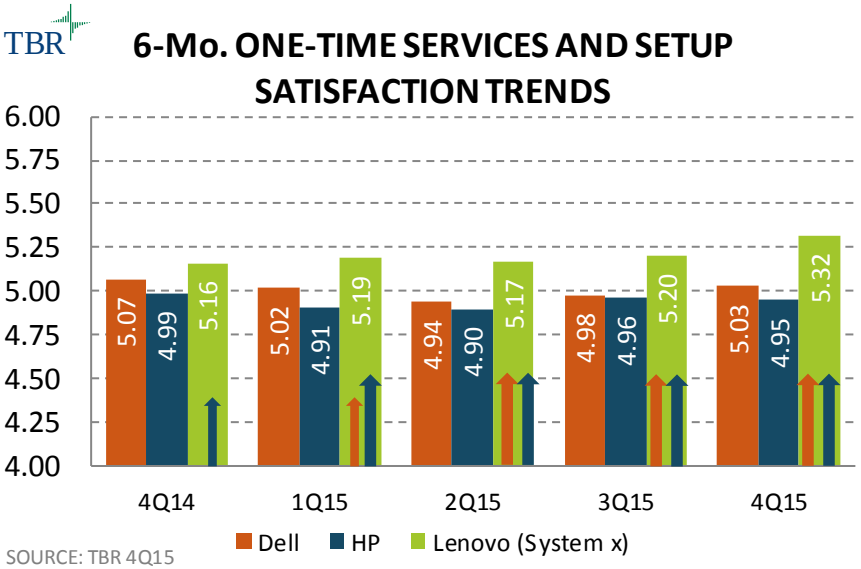
High ratings from companies of all sizes placed Lenovo in first place for one-time services and setup satisfaction for the fifth consecutive quarter



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's six-month one-time services and setup satisfaction score remained the same in 4Q15, putting the vendor in the No. 2 spot with HP.
- Although not in first, Dell increased satisfaction scores among small and medium IT departments.

HP

- HP's score remained stagnant in six-month one-time services and setup satisfaction, continuing to tie with Dell for second place.
- HP scored lowest among customers in small and medium IT departments.

Lenovo (System x)

- Lenovo's six-month one-time services and setup satisfaction score increased in 4Q15, securing the top spot for the vendor for the fifth consecutive quarter.
- Lenovo scored well among all sizes of IT departments, with its highest satisfaction score from medium IT departments.

Lenovo (System x) represents respondents who have purchased System x servers.

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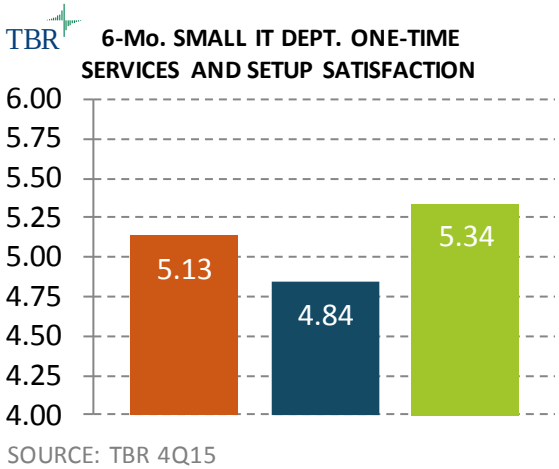
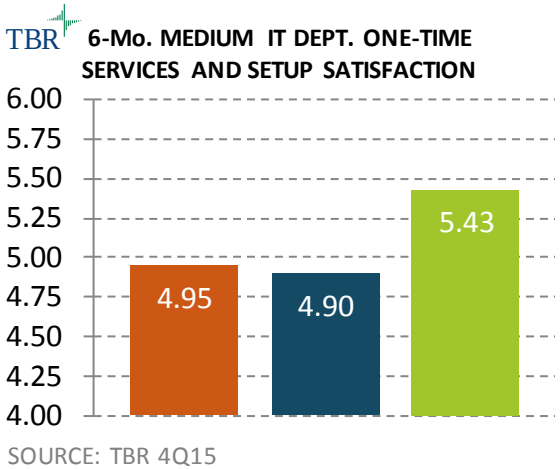
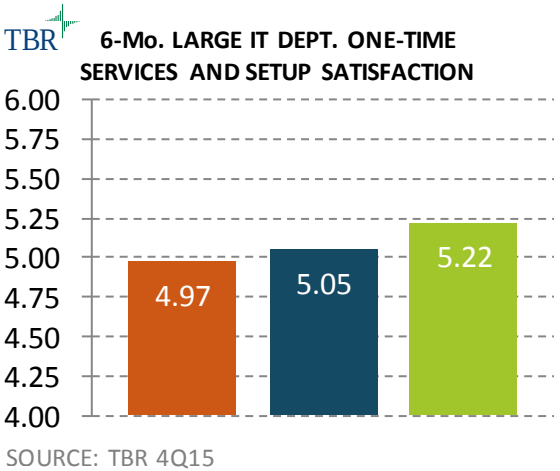
One-time services and setup: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Lenovo (System x): *"They gave us a time line and stuck to it. [They] explained the features [and] they work efficiently and got everything set and ready quickly. "*

Dell: *"Responsive setup staff."*

Medium IT customers

Dell: *"Easy to setup and configure."*

Lenovo (System x): *"The training our staff receive is comprehensive and the process has become almost turnkey."*

Large IT customers

Dell: *"When we need them, they are here."*

Lenovo (System x): *"Completed [setup] before the [expected] time to go live."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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One-time services and setup: Blade vs. rack server rankings

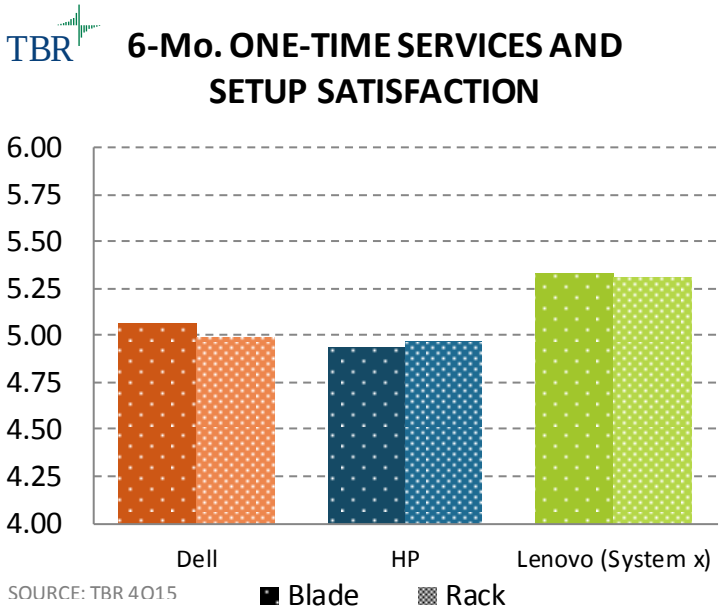
Customer comments

"Easy to setup and configure for our environment."
— HP rack customer

"Vendor or vendor rep usually only has to come out once. Things get done right the first time."
— Dell rack customer

"They are there on-time with the right expertise to get the job done."
— Lenovo (System x) rack customer

"Easy setup, integrates with IT environment in place."
— Dell blade customer



SOURCE: TBR 4Q15

6-Mo. ONE-TIME SERVICES AND SETUP IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	Less	Less	**Important**
Rack	Less	Less	**Important**
	Less	Less	Less

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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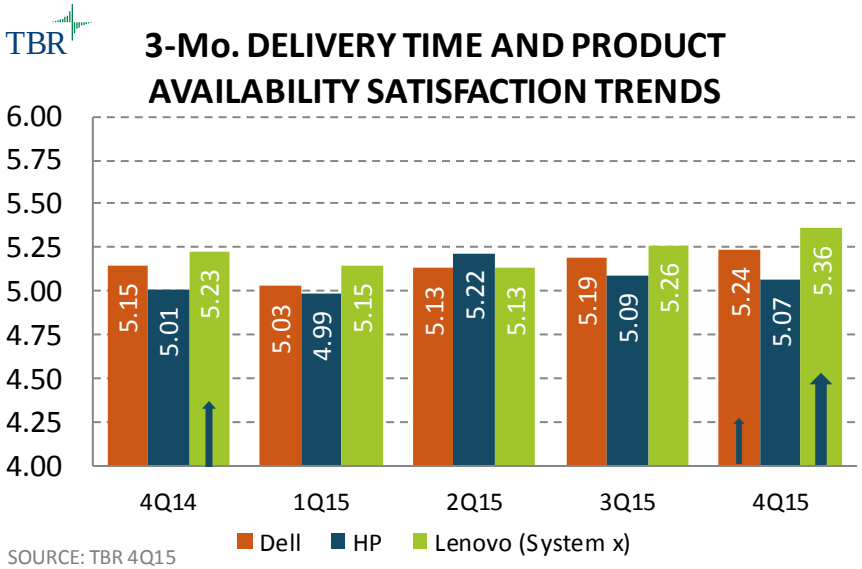
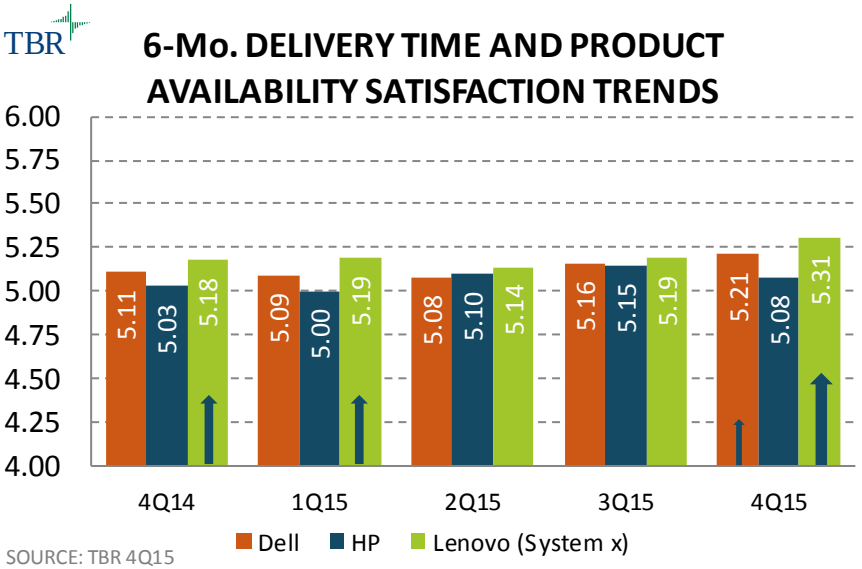
With sequential increases across all vendors, the 3 maintained a tie in their delivery time availability satisfaction scores



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's score remained the same in six-month delivery time and product satisfaction in 4Q15, bringing the company to second place.
- Dell's customers in large IT departments scored the vendor higher than other vendors' customers did.

HP

- HP's six-month delivery time and product satisfaction score decreased in 4Q15 to fall behind Dell and Lenovo.
- Both rack and blade HP customers rated the vendor the lowest in this attribute.

Lenovo (System x)

- Lenovo's customers cited a strong increase in six-month delivery time and product satisfaction, pulling ahead of competitors for 4Q15.
- Among small and medium IT departments, Lenovo scored above Dell and HP in this attribute.

Lenovo (System x) represents respondents who have purchased System x servers.

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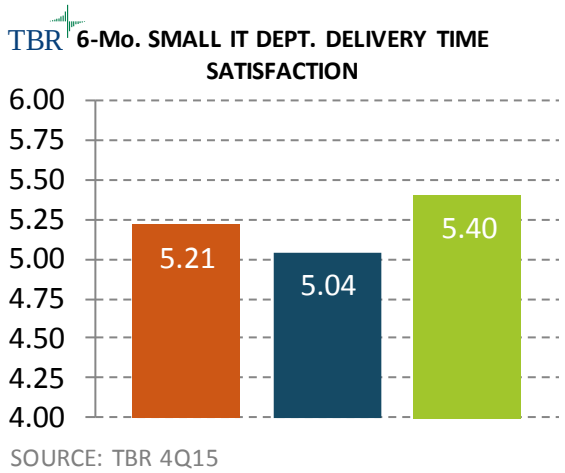
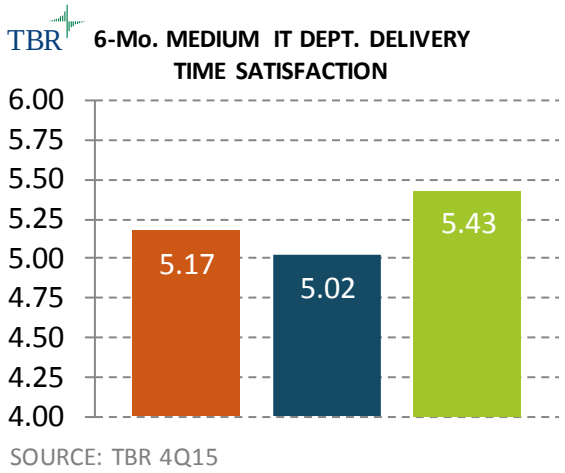
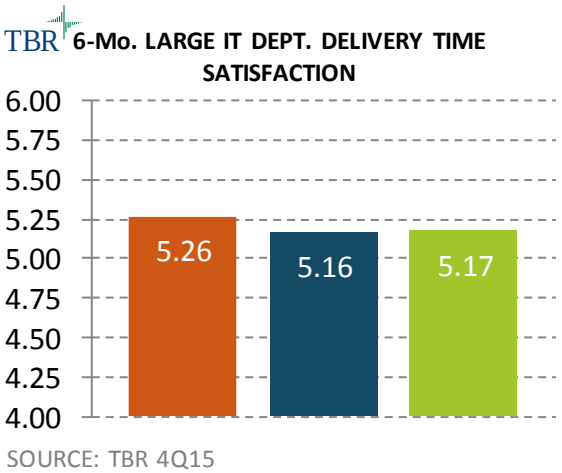
Delivery time and product availability: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"They usually come within two to three days."*

Lenovo (System x): *"Great service and delivery; well packaged."*

Medium IT customers

Dell: *"Delivery is rapid and dependable."*

Lenovo (System x): *"Fast delivery."*

Large IT customers

Dell: *"Quick delivery schedule."*

Lenovo (System x): *"On-time delivery and everything was setup and worked like we expected."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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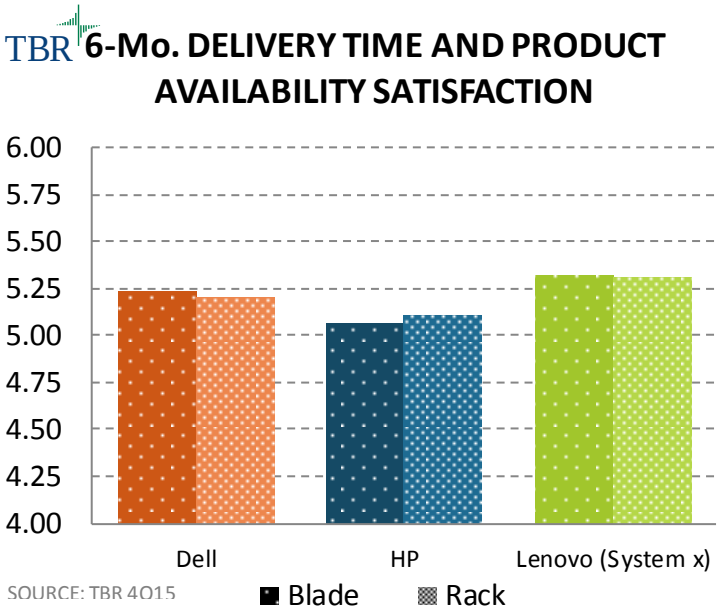
Delivery time and product availability: Blade vs. rack server rankings

Customer comments

"Delivery is faster than indicated."
— Dell rack customer

"Delivered on-time, in good condition; setup consultant is able to handle many custom configurations and make changes to fit our needs."
— Dell blade customer

"Very easy to setup and deliver."
— HP blade customer



SOURCE: TBR 4Q15

6-Mo. DELIVERY TIME AND PRODUCT AVAILABILITY IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	**Important**	**Important**	**Important**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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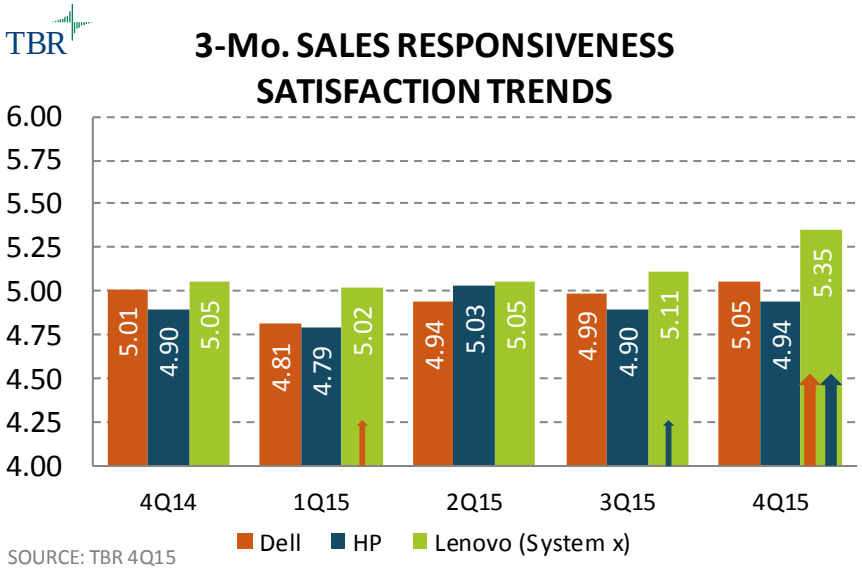
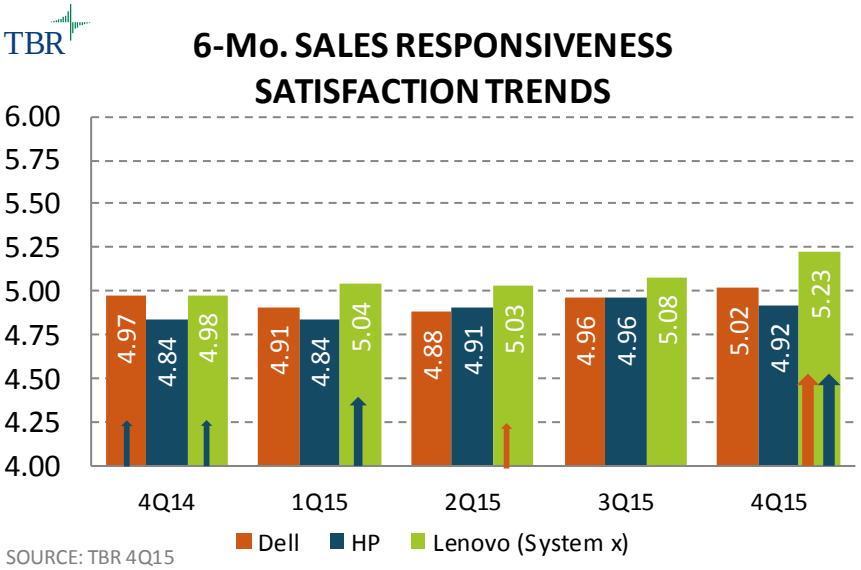
Lenovo's significant score gains in sales responsiveness satisfaction enabled it lead for the fifth consecutive quarter



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell experienced little change in its six-month sales responsiveness satisfaction score in 4Q15, but managed to end in second place, above HP.
- Dell customers in small and medium IT departments rated the company between Lenovo and HP for sales responsiveness satisfaction.

HP

- HP customers reported decreased satisfaction in the company's sales responsiveness compared to 3Q15, placing HP in third place.
- Of the three vendors, HP had the greatest margin between its rack and blade customers, with rack customers favoring the company.

Lenovo (System x)

- Lenovo's increase in six-month sales responsiveness score gave the company a secure first-place spot.
- Lenovo customers reported the highest satisfaction with sales responsiveness in IT departments of all sizes.

Lenovo (System x) represents respondents who have purchased System x servers.

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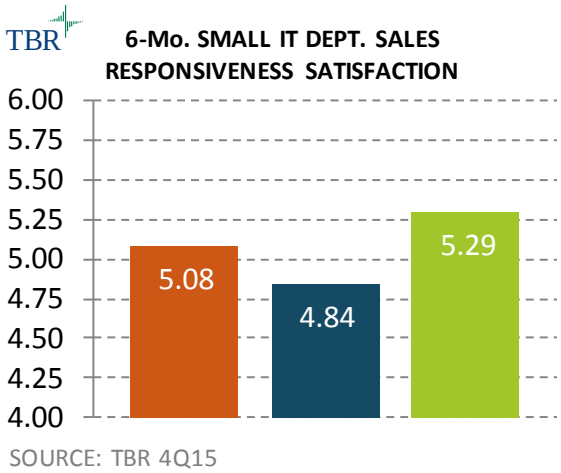
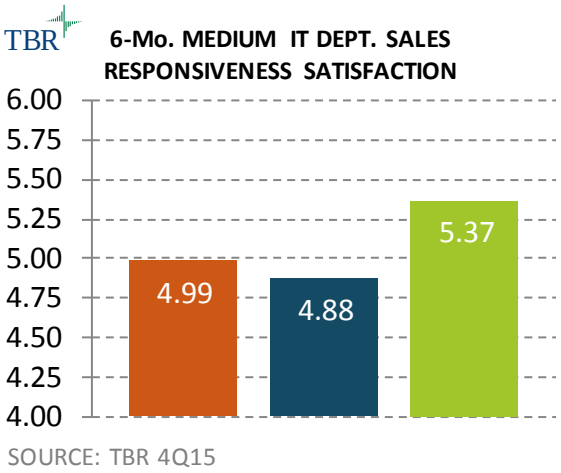
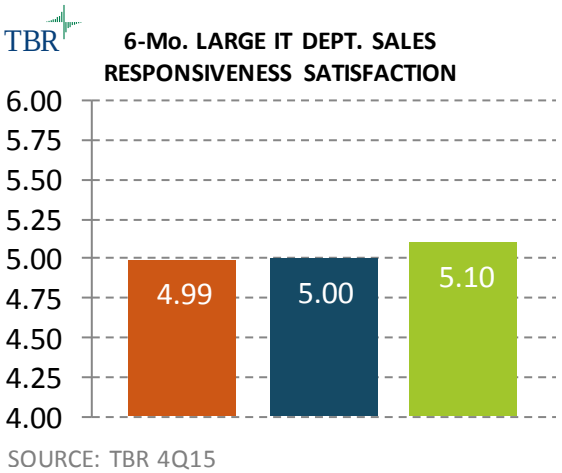
Sales responsiveness: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"Always get the info we need quickly."*

Dell: *"We have a very good sales team that supports our account."*

Medium IT customers

Dell: *"Our Dell sales team helps us out a great deal with customizing equipment to meet our requirements. It also [ensures] we are satisfied with what we get."*

HP: *"Sales team does a good job meeting our corporate needs."*

Large IT customers

Dell: *"Quick response times."*

HP: *"Aggressive sales team was determined to provide what we need, even when we did not know what exactly we wanted."*

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Sales responsiveness: Blade vs. rack server rankings

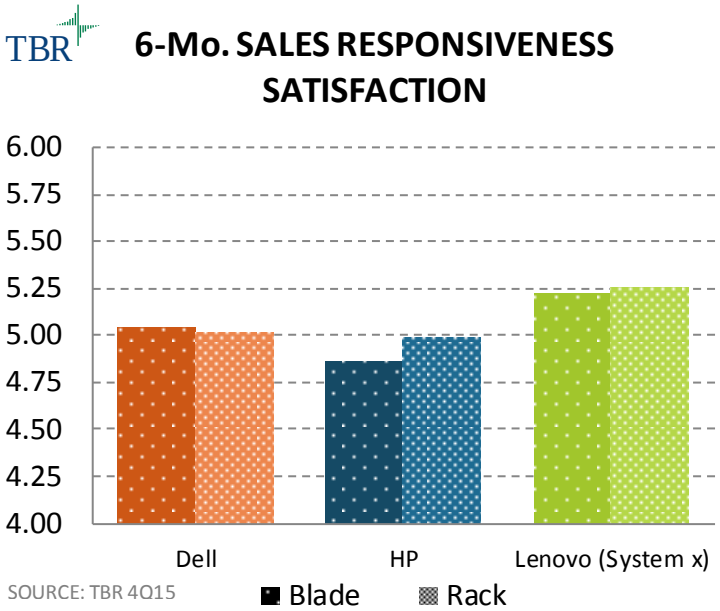
Customer comments

"Sales team is very knowledgeable and responsive."
— HP rack customer

"We have excellent local sales staff — very available and responsive."
— Dell rack customer

"Our sales team is great to work with."
— Dell blade customer

"Very responsive."
— Lenovo (System x) blade customer



SOURCE: TBR 4Q15

6-Mo. SALES RESPONSIVENESS IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	Less	Less	Less
Rack	Less	Less	Less

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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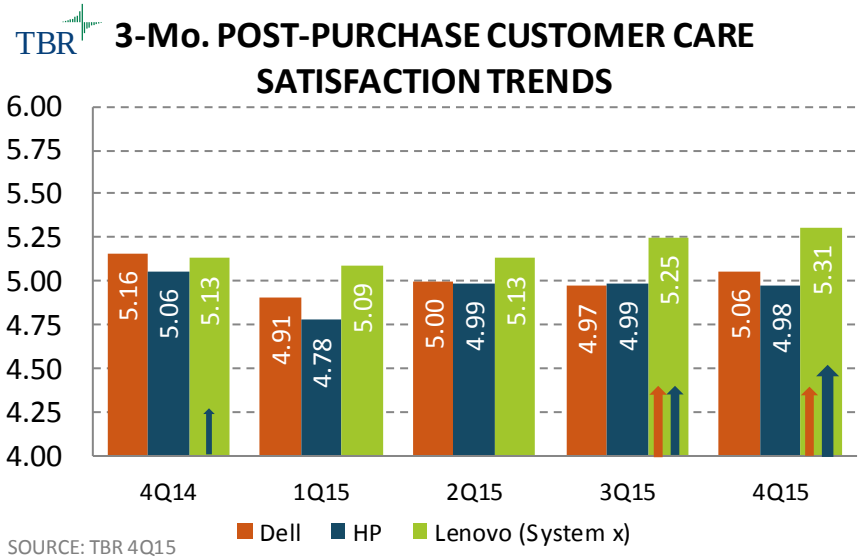
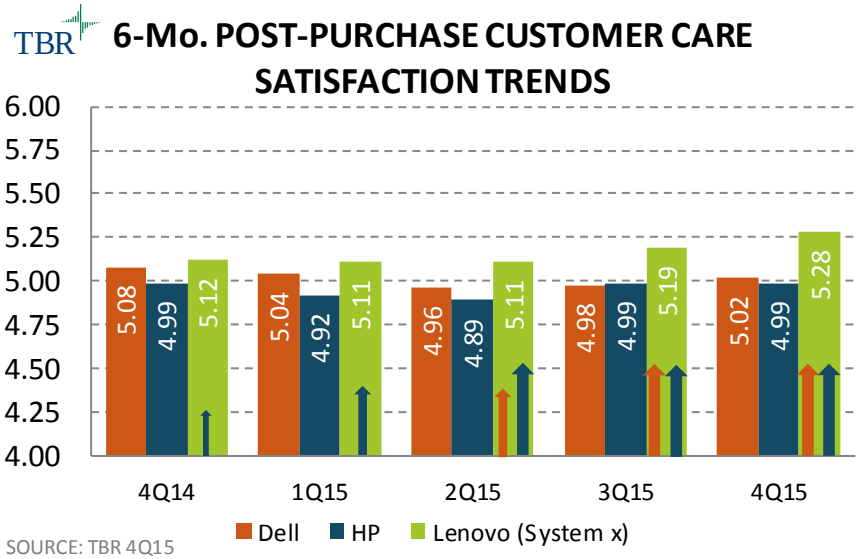
Lenovo maintained its post-purchase care satisfaction lead with a sequential increase in score



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's six-month post-purchase customer care satisfaction score remained the same as in 3Q15, helping the company maintain its tie for second place with HP.
- Dell's low satisfaction scores among large IT departments brought down its overall score with this attribute.

HP

- HP saw no change from the previous quarter in its six-month post-purchase customer care satisfaction score, putting the vendor in second place.
- HP satisfaction was rated lowest for small and medium IT departments, while it was in second place for large IT departments.

Lenovo (System x)

- Lenovo customers reported the highest satisfaction with post-purchase customer care, maintaining the company's significant first-place lead.
- As in many other categories, Lenovo led in satisfaction scores throughout all IT department sizes.

Lenovo (System x) represents respondents who have purchased System x servers.

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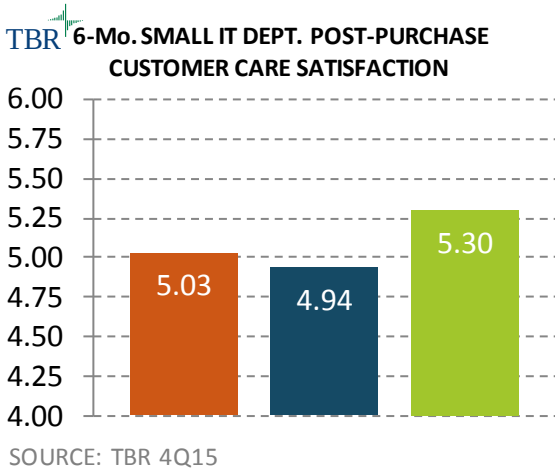
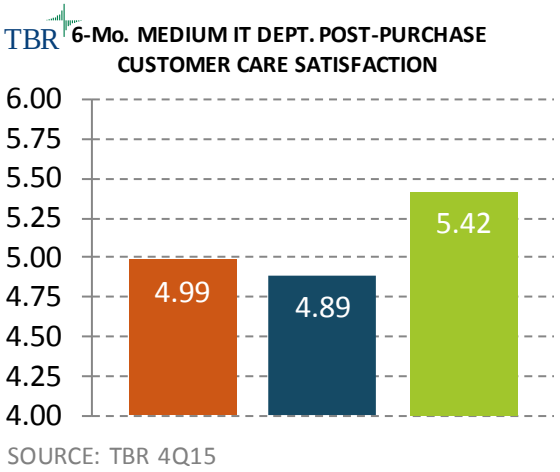
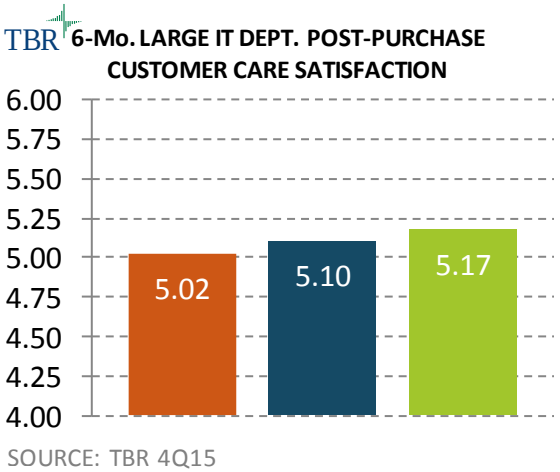
Post-purchase customer care: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"Good customer service."*

Lenovo (System x): *"Excellent customer service."*

Medium IT customers

HP: *"Customer service and sales staff make purchasing and ongoing maintenance pain-free."*

Lenovo (System x): *"Post-purchase support has been quick and reliable."*

Large IT customers

HP: *"They have always been there for us."*

Lenovo (System x): *"Stellar follow-up and transition friendly."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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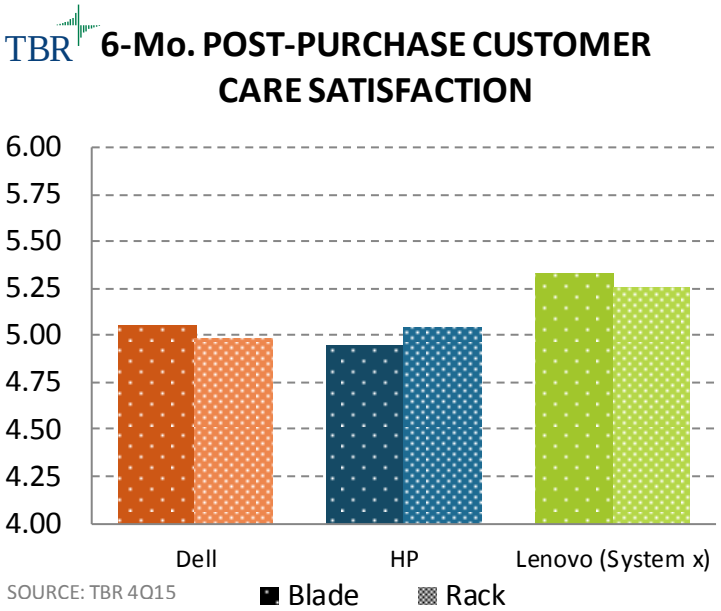
Post-purchase customer care: Blade vs. rack server rankings

Customer Comments

"Whenever we've needed to find information online, we have found it easily and the sales responsiveness and post-purchase care has been very good thus far."
— HP blade customer

"Best post-purchase customer care."
— HP rack customer

"They have always taken care of us post-sale. No issues."
— Lenovo (System x) blade customer



SOURCE: TBR 4Q15

6-Mo. POST-PURCHASE CUSTOMER CARE IMPORTANCE

Server	Dell	HP	Lenovo (System x)
	Less	Less	**Important**
Blade	Less	Less	**Important**
Rack	**Important**	Less	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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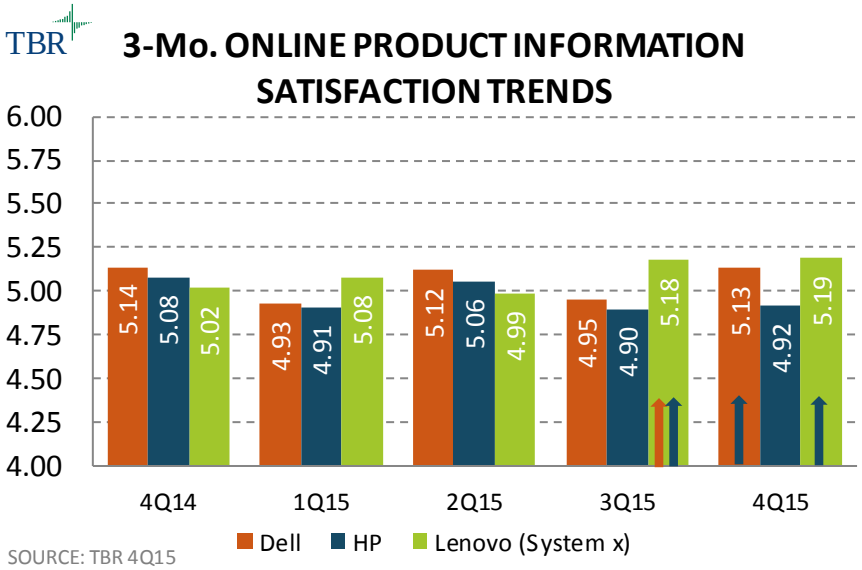
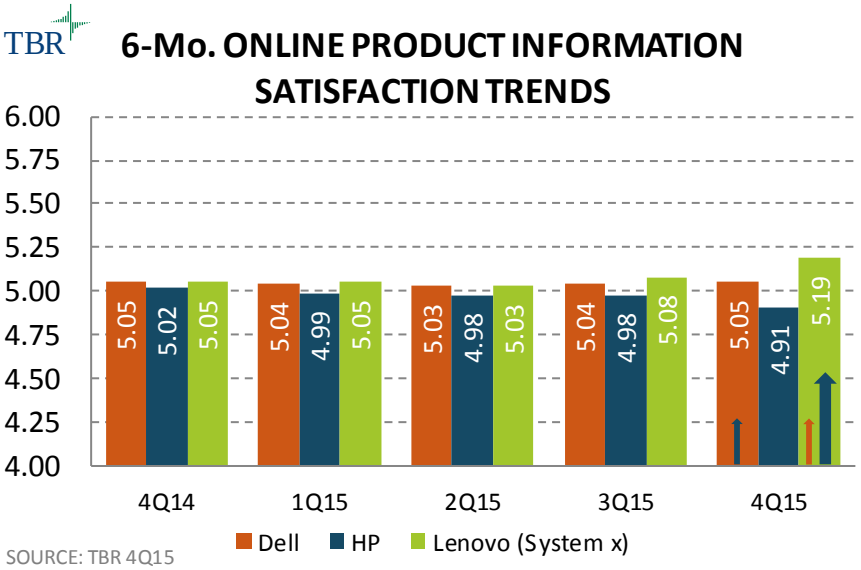
Lenovo remains the leader in online product information satisfaction, keeping Dell at bay with strong increases for both vendors



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- A slight increase in its six-month online product information satisfaction score from the previous quarter kept Dell in second place behind Lenovo.
- By a small margin, customers within large IT departments have a higher perception of online product information satisfaction with Dell than other vendors.

HP

- HP's score decreased sequentially in six-month online product information satisfaction, dropping the vendor to third place.
- HP scored fairly evenly across IT departments of all sizes and failed to take sole command of second place in any.

Lenovo (System x)

- Lenovo increased its six-month online product satisfaction score significantly more than other vendors in 4Q15, enabling it to maintain its lead.
- Both rack and blade Lenovo customers found equal satisfaction in online product information, the highest among vendors.

Lenovo (System x) represents respondents who have purchased System x servers.

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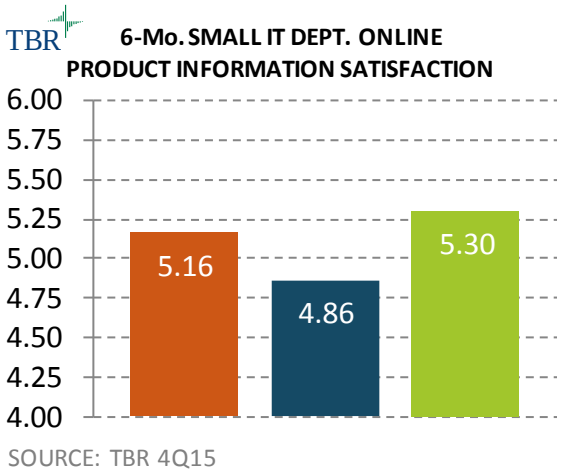
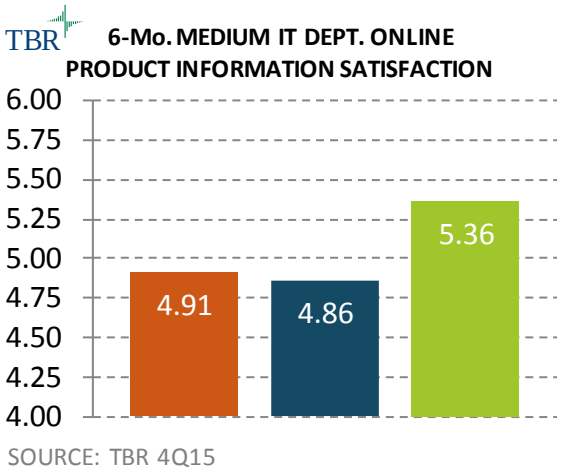
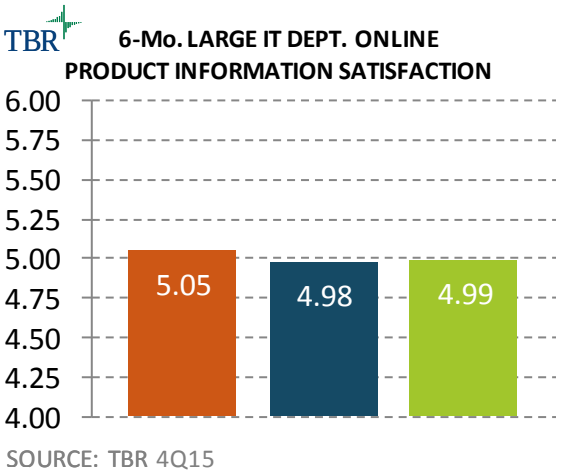
Online product information: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Dell: *"Online resources are invaluable."*

HP: *"Good product information available."*

Medium IT customers

Lenovo (System x): *"Comprehensive and accurate."*

HP: *"Great resource when needing information quickly."*

Large IT customers

Dell: *"They have excellent online resources."*

HP: *"Comprehensive."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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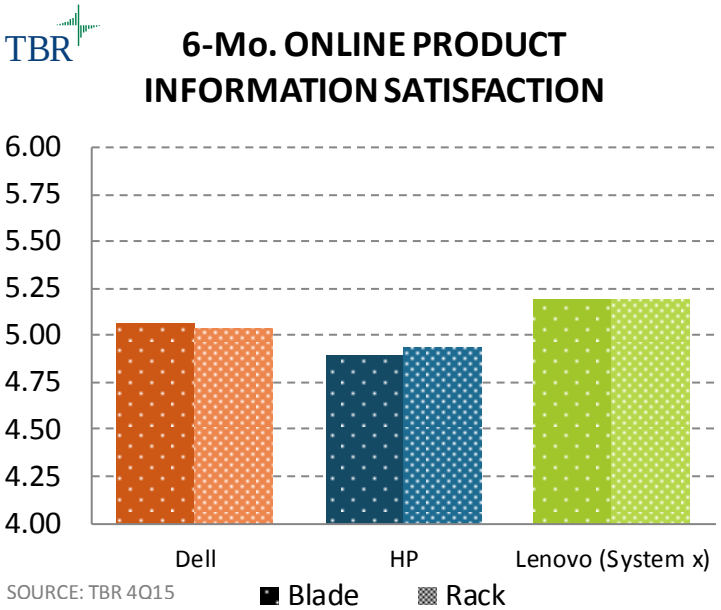
Online product information: Blade vs. rack server rankings

Customer comments

"Generally, I am able to do most of my research online."
— Dell rack customer

"Complete and accurate information available online."
— HP blade customer

"Most of my questions and concerns can be addressed from online tools."
— Lenovo (System x) rack customer



SOURCE: TBR 4Q15

6-Mo. ONLINE PRODUCT INFORMATION IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	Less	Less	Less
Rack	Less	Less	Less

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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Appendix B

x86-based Server Attribute Analysis: Product Satisfaction

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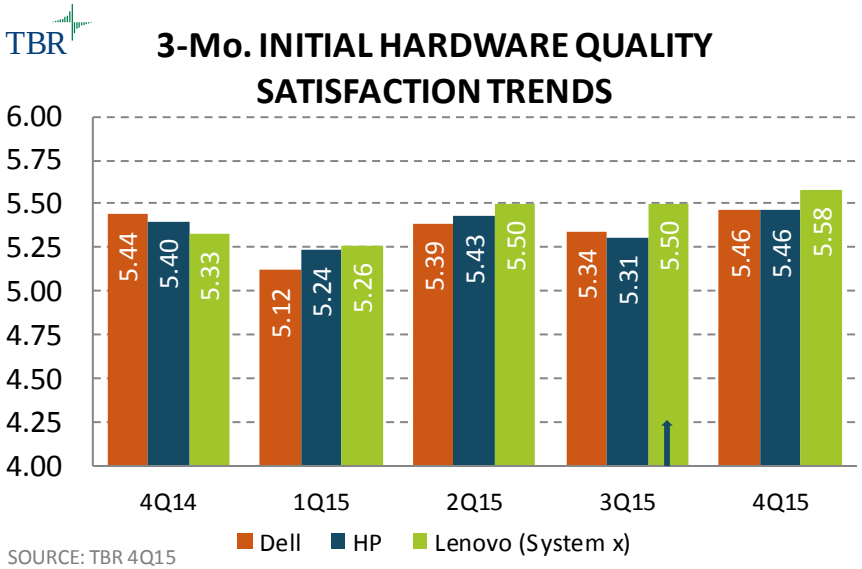
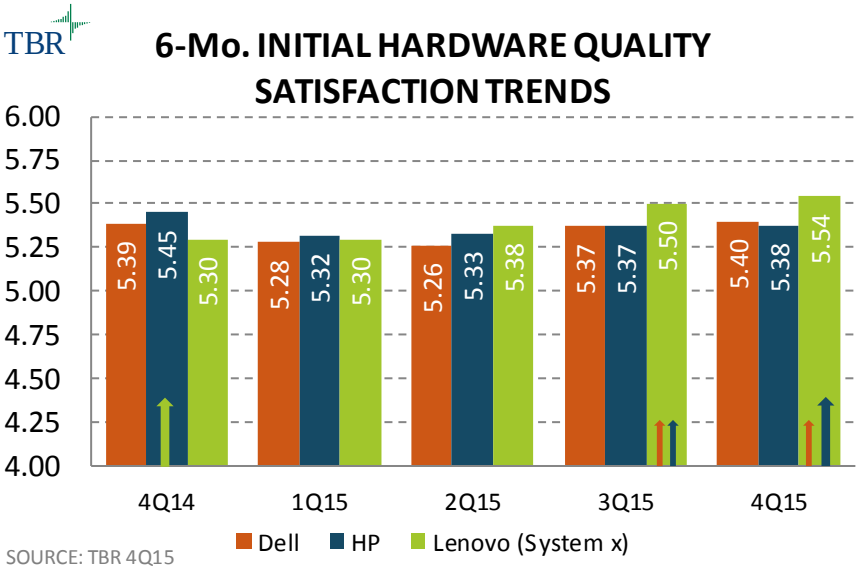
All vendors maintained their initial hardware quality satisfaction scores from 3Q15



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- With no score increase, Dell maintained its tie with HP in six-month initial hardware quality satisfaction.
- Customer satisfaction scores from large IT departments placed Dell and HP in a tie.

HP

- HP's customers cited no increase in six-month initial hardware quality satisfaction in 4Q15, maintaining the vendor's second-place spot.
- HP scored the lowest with small IT departments for initial hardware quality satisfaction and did not score the highest with any demographic.

Lenovo (System x)

- Lenovo's six-month initial hardware quality satisfaction score remained the same sequentially, keeping its No. 1 spot over the unchanged scores of Dell and HP.
- Customers in large IT departments ranked satisfaction similarly for initial hardware quality for HP and Lenovo.

Lenovo (System x) represents respondents who have purchased System x servers.

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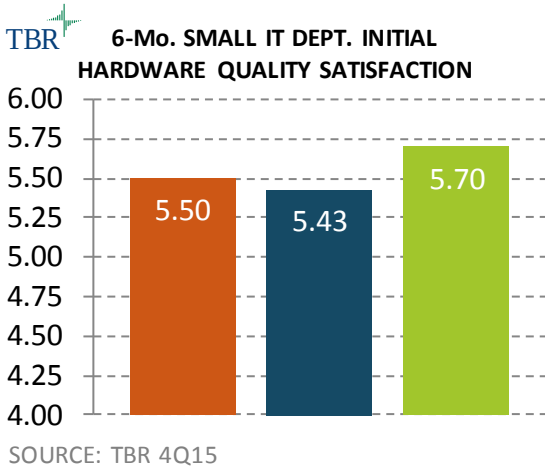
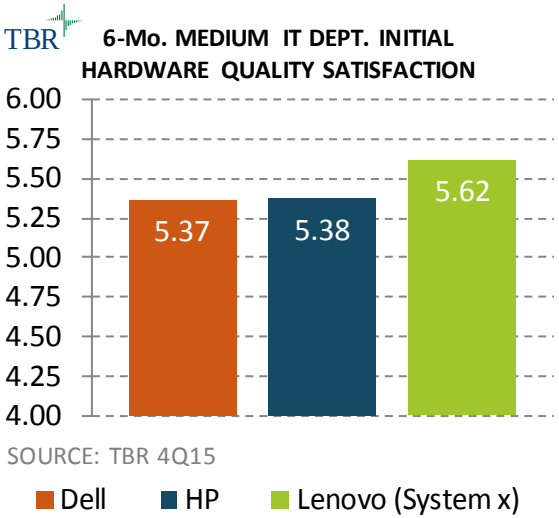
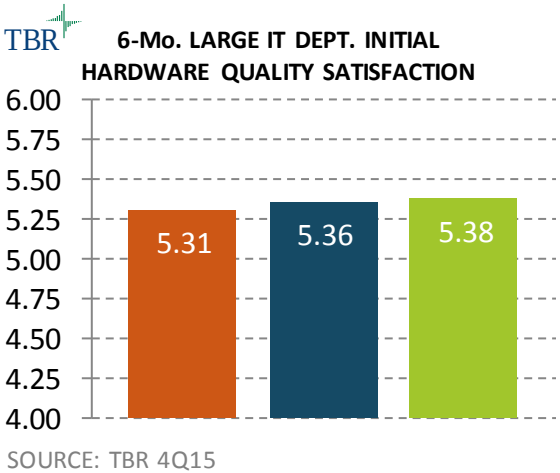
Initial hardware quality: Analysis by IT department size







Customer comments

Small IT customers

HP: *"Very few initial failures from the factory."*

Dell: *"The features and capabilities allow me to [easily] install, maintain and troubleshoot issues when they occur."*

Medium IT customers

Lenovo (System x): *"We have very little need for hardware replacement with some of our x servers. They run solidly."*

HP: *"Hardware is reliable and rarely has an issue or failure."*

Large IT customers

HP: *"[They] allow us to do what we need to easily."*

Lenovo (System x): *"Quality is great and [we're] not experiencing any problems."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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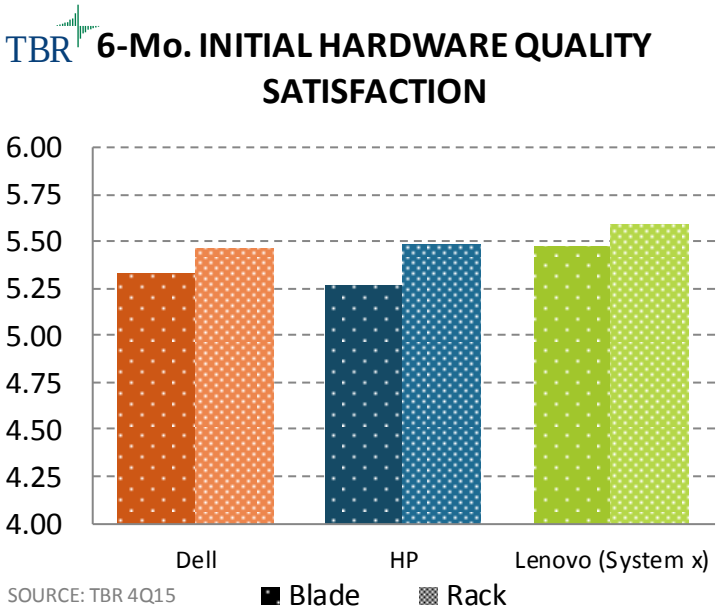
Initial hardware quality: Blade vs. rack server rankings

Customer comments

"We rarely have any hardware issues."
— Dell blade customer

"The hardware is very reliable and of high quality."
— Lenovo (System x) blade customer



SOURCE: TBR 4Q15

6-Mo. INITIAL HARDWARE QUALITY IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	Critical	Critical	Critical
Blade	Critical	Critical	Critical
Rack	Critical	Critical	Critical

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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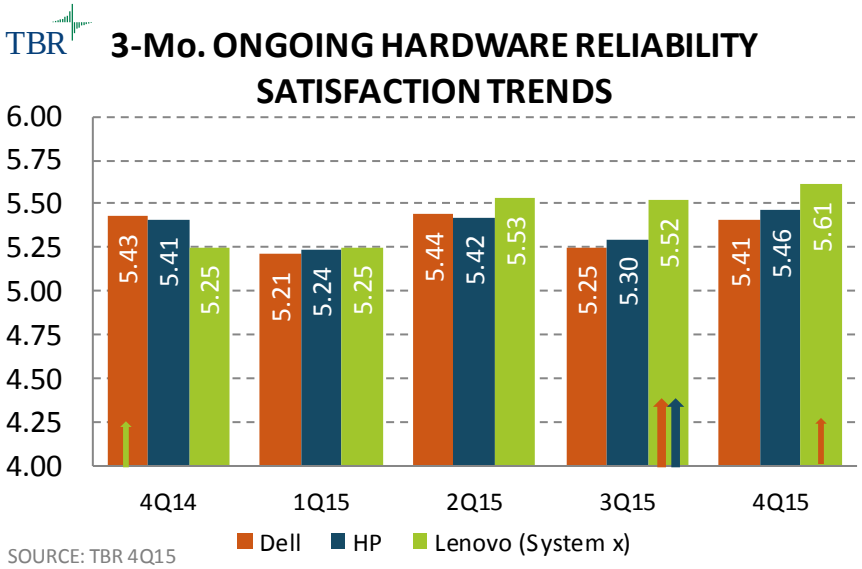
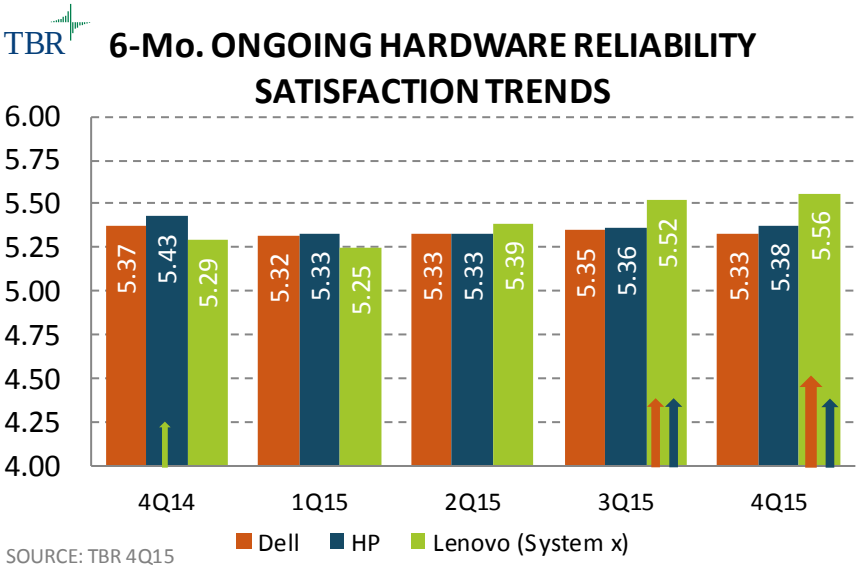
Lenovo maintained its lead in ongoing hardware reliability satisfaction despite sequential score increases for Dell and HP





Dell

- Dell's six-month ongoing hardware reliability satisfaction score decreased slightly sequentially, dropping to third place.
- Dell tied with HP among small and medium IT departments for hardware reliability satisfaction scores.

HP

- No decrease in six-month ongoing hardware reliability satisfaction scores from the previous quarter enabled HP to take second place.
- Only HP's scores from large IT departments differentiated from Dell.

Lenovo (System x)

- Lenovo customers' six-month ongoing hardware reliability satisfaction increased from 3Q15, enabling the company to remain in the top spot.
- Lenovo's customers in all sizes of IT departments scored the company higher than other vendors.

Lenovo (System x) represents respondents who have purchased System x servers.

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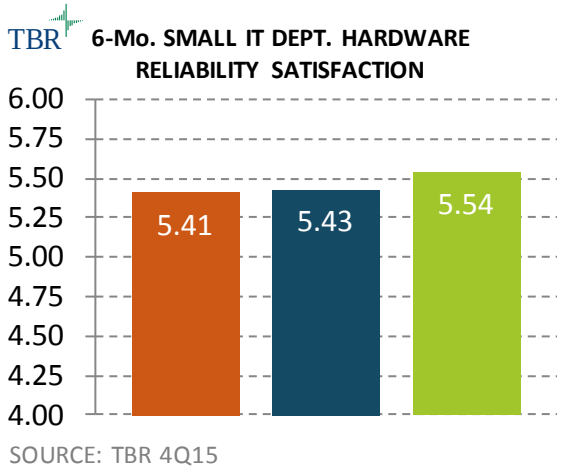
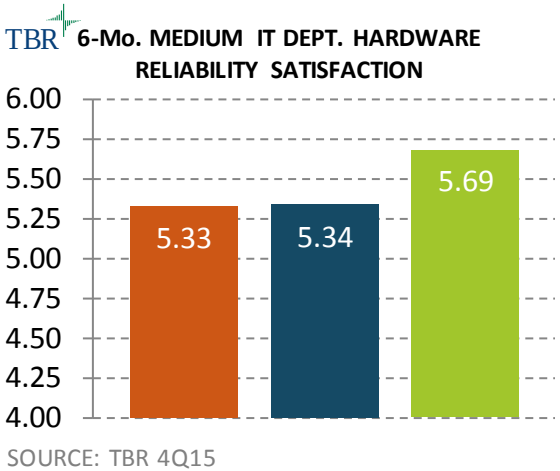
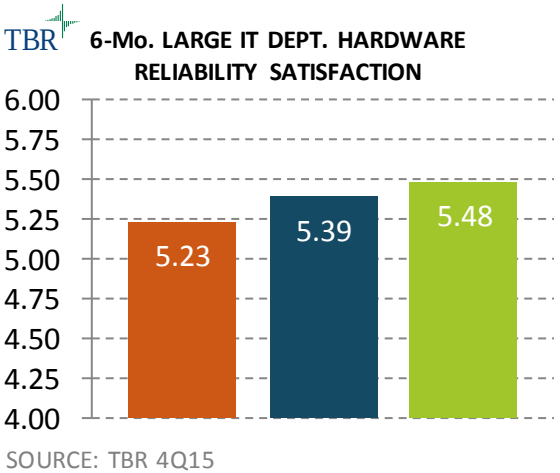
Ongoing hardware reliability: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"We use these servers in a production environment. They have the ability to be expanded and are totally a nonconcern for reliability for us."*

Dell: *"Extremely reliable."*

Medium IT customers

Dell *"We have never had a serious problem with any Dell server, even pretty old ones. They are very reliable."*

Lenovo (System x): *"Little down time and low cost."*

Large IT customers

Lenovo (System x): *"[Servers] last very long and replacement cost is not high."*

HP: *"We have very limited outages or service level agreement [SLA] interruptions due to the server hardware."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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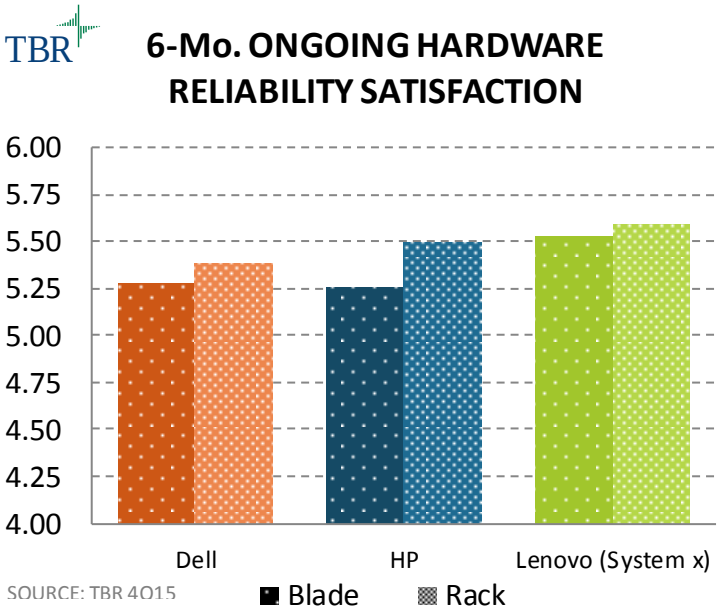
Ongoing hardware reliability: Blade vs. rack server rankings

Customer Comments

"We typically keep our hardware for more than five years, and I never have any issues with getting maintenance support or replacement parts."
— HP rack customer

"Hardware is reliable and rarely has an issue or failure."
— HP blade customer

"Great reliable hardware."
— Dell blade customer



SOURCE: TBR 4Q15

6-Mo. ONGOING HARDWARE RELIABILITY IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	Critical	Critical	Critical
Rack	Critical	Critical	Critical

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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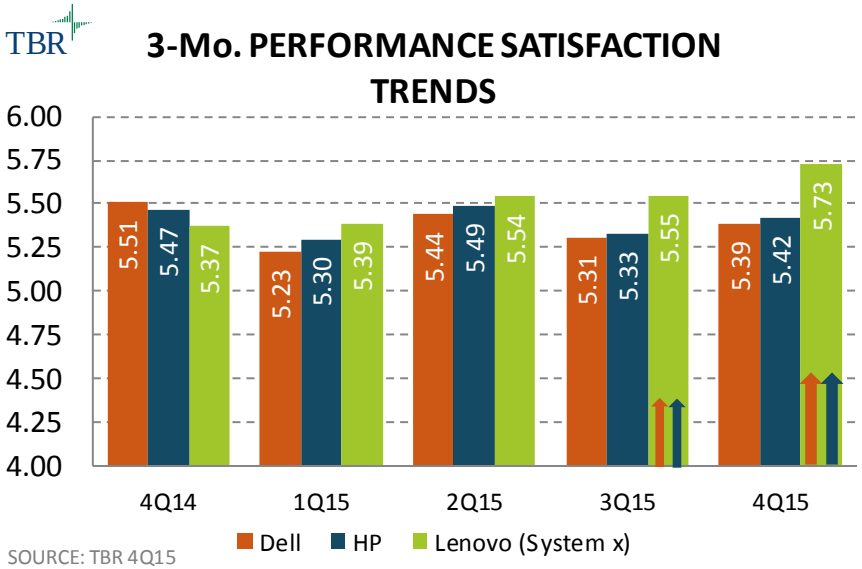
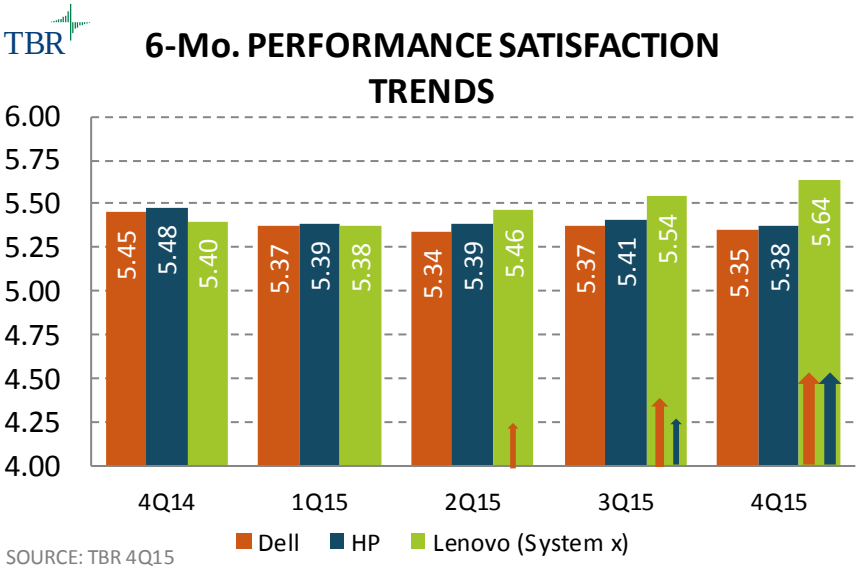
Lenovo continued its sequential score gain, significantly outperforming Dell and HP in performance satisfaction





Dell

- Dell's six-month performance satisfaction score was unchanged from 3Q15, maintaining its tie with HP.
- Dell rated last in performance satisfaction among medium and large IT departments.

HP

- HP maintained its six-month performance satisfaction score from 3Q15, keeping it tied for second place with Dell.
- HP finished 4Q15 in third place among small IT departments, but maintained its tie for second place in overall performance satisfaction.

Lenovo (System x)

- More of Lenovo's customers reported increased six-month performance satisfaction from 3Q15, keeping the company's significant advantage over HP and Dell.
- Lenovo customers in all sizes of IT departments scored it above all others.

Lenovo (System x) represents respondents who have purchased System x servers.

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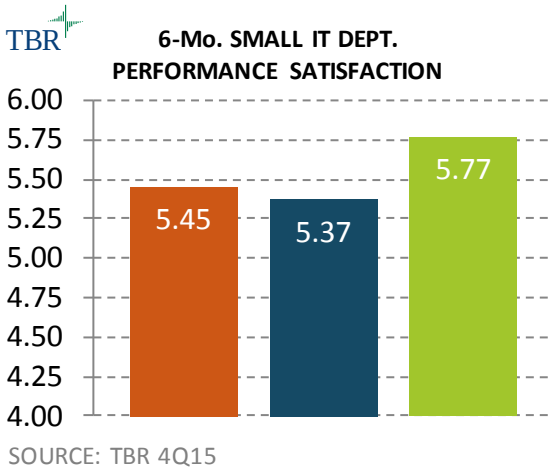
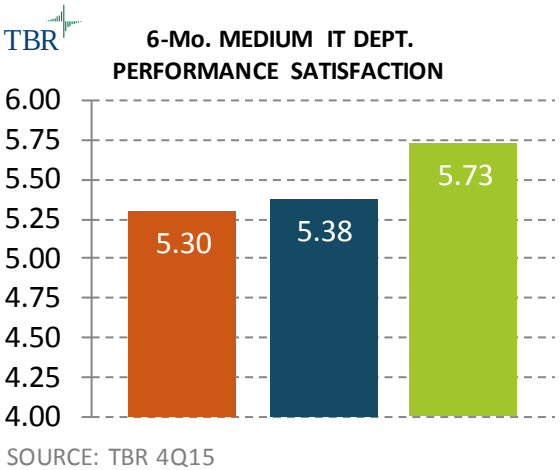
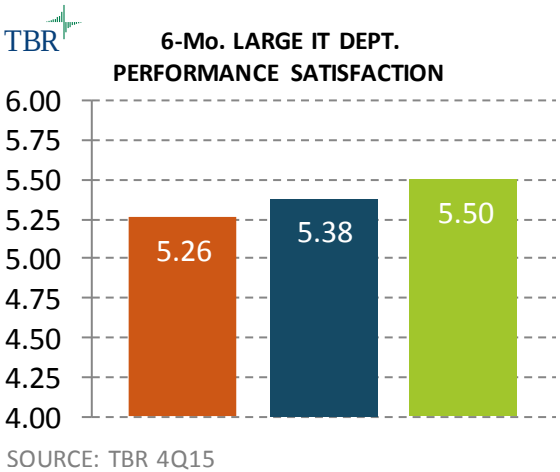
Performance: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Dell: *"Performance is as expected when configured to meet the need."*

Lenovo (System x): *"The quality of the product shows in the hardware reliability and performance."*

Medium IT customers

Lenovo (System x): *"Great performance."*

Dell: *"Reliability and performance exceed SLAs."*

Large IT customers

Lenovo (System x): *"Proficient and efficient performance and service."*

HP: *"Rarely any issues."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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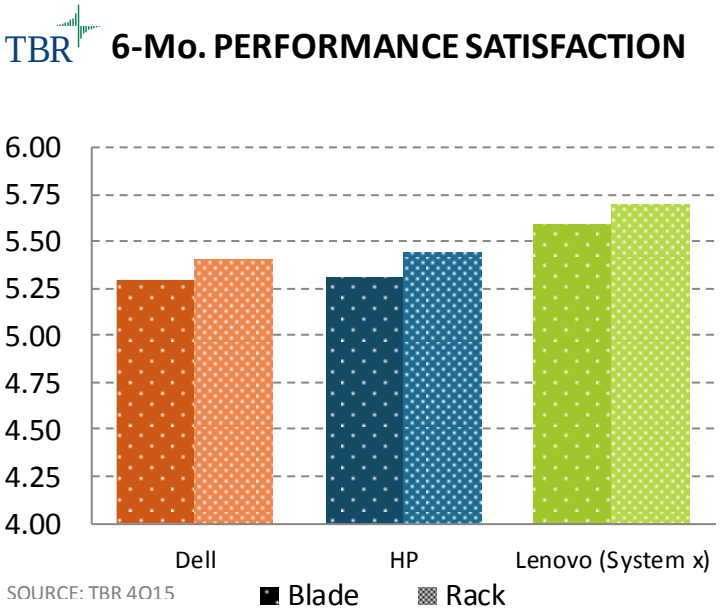
Performance: Blade vs. rack server rankings

Customer comments

"Good performance as compared to cost."
— HP blade customer

"They perform extremely well."
— HP rack customer

"Performance is solid and reliable."
— Dell rack customer



SOURCE: TBR 4Q15

6-Mo. PERFORMANCE IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	Critical	Critical	Critical
Blade	Critical	Critical	Critical
Rack	Critical	Critical	Critical

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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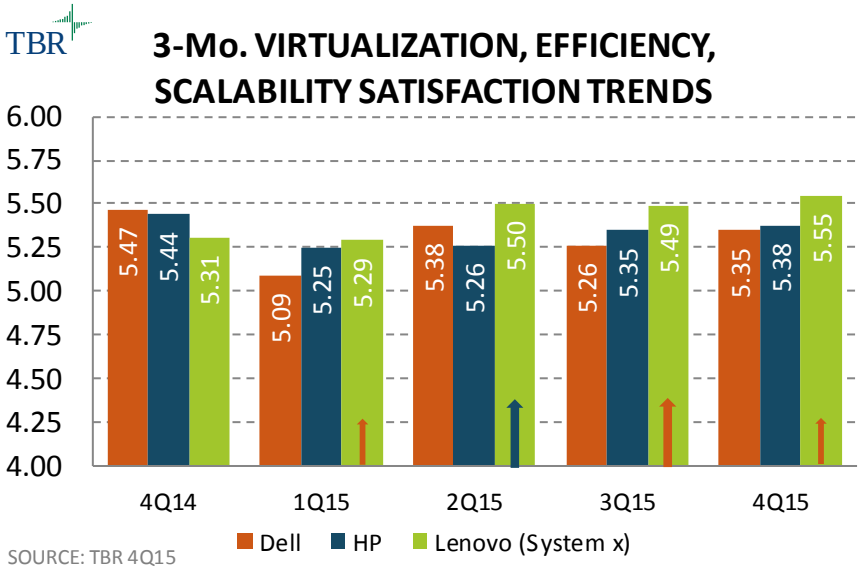
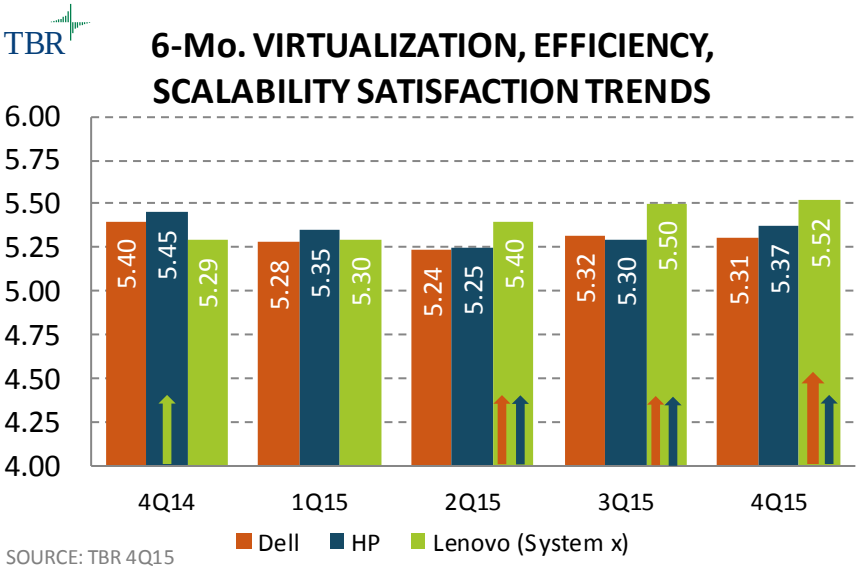
Lenovo maintained its No. 1 spot in virtualization, efficiency, scalability satisfaction with its significant 6-month score increase



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell maintained its six-month virtualization, efficiency, scalability satisfaction score in 4Q15, but dropped into third place.
- Customers in small IT departments reported some increases in satisfaction with Dell, boosting it to second place in this demographic.

HP

- HP increased its six-month virtualization, efficiency, scalability satisfaction score from the previous quarter, pulling into the No. 2 position.
- HP customers rate perceptions of satisfaction comfortably between Dell and Lenovo in all sized IT departments.

Lenovo (System x)

- Lenovo's six-month virtualization, efficiency, scalability satisfaction score remained the same as in 3Q15, maintaining a higher score than HP or Dell.
- Lenovo scored highest in perceptions of satisfaction for this attribute among all sized IT departments.

Lenovo (System x) represents respondents who have purchased System x servers.

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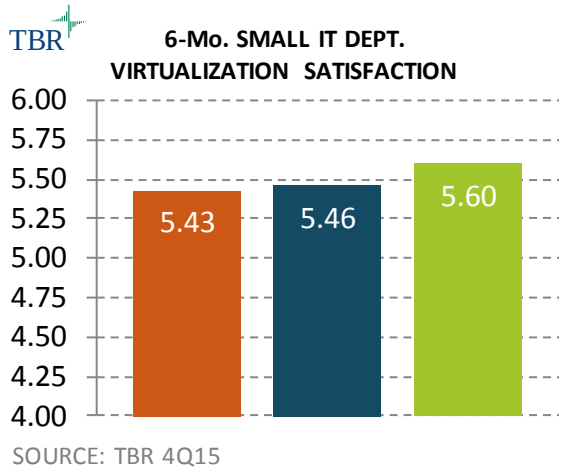
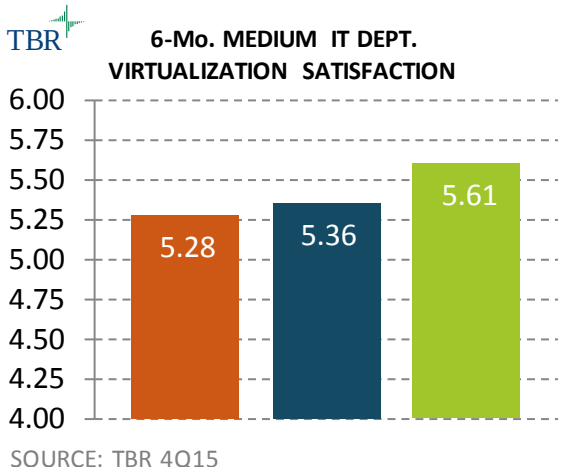
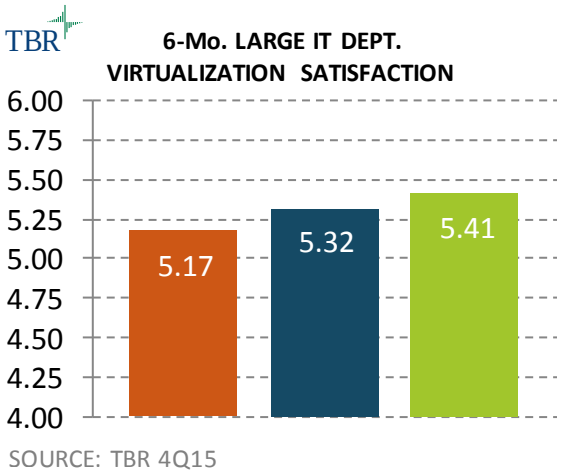
Virtualization, efficiency, scalability: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"We get up to five years out of HP servers, [and] can easily add memory and processing power."*

Dell: *"Virtualization is easy, and they provide a consistent value on dollar-for-dollar comparison."*

Medium IT customers

HP: *"We virtualize all of our servers using VMware and Oracle VM, and have great results scaling both up and out as our needs change."*

Dell: *"They are a good value in our environment as we continue moving to more virtualized systems."*

Large IT customers

Lenovo (System x): *"[Servers] have full virtualization capabilities."*

Dell: *"Easy to add new servers to our domains."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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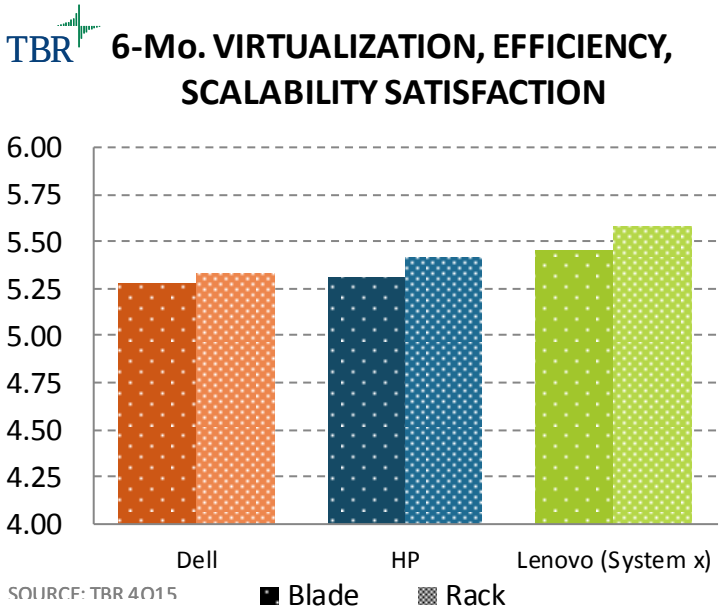
Virtualization, efficiency, scalability: Blade vs. rack server rankings

Customer comments

"Easily scalable when needed."
— HP blade customer

"We are able to virtualize more and more servers with just one of these [servers]."
— HP rack customer

"Using CPU and memory-dense rack servers for virtualization decreased our total spend while increasing our flexibility and scalability."
— Dell rack customer



SOURCE: TBR 4Q15

6-Mo. VIRTUALIZATION, EFFICIENCY, SCALABILITY IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	Critical	Critical	Critical
Blade	Critical	Critical	Critical
Rack	Critical	Critical	Critical

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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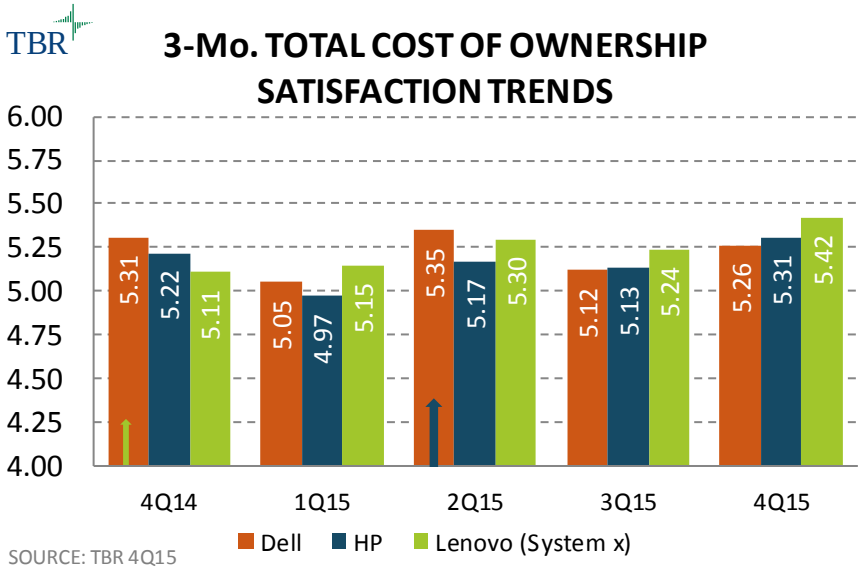
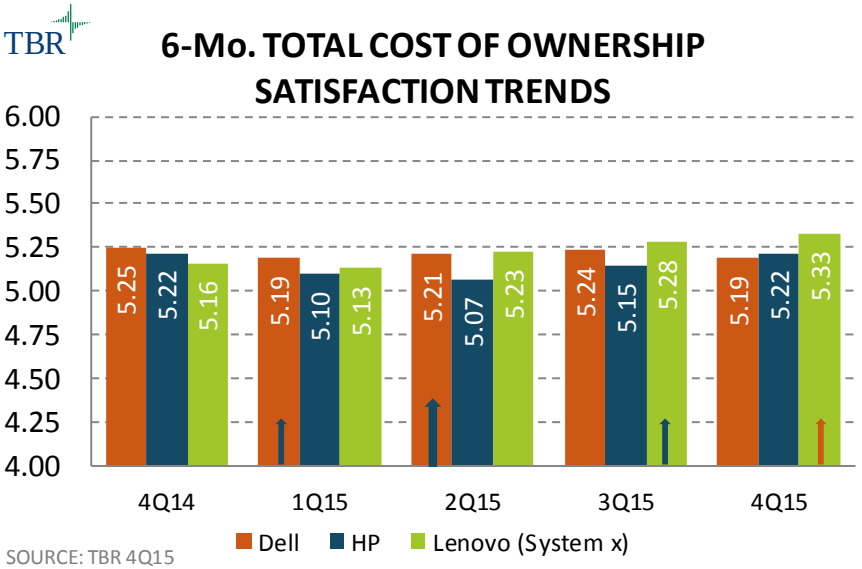
Dell's and HP's stagnant scores in TCO satisfaction enabled Lenovo to remain the top-perceived vendor in this attribute





Dell

- In 4Q15 Dell's six-month TCO satisfaction score remained the same, failing to match Lenovo's increase and remaining tied with HP.
- Dell tied with Lenovo for the lead in satisfaction scores with small IT departments.

HP

- HP kept its six-month TCO satisfaction score from the previous quarter, maintaining the tie for second place with Dell.
- HP scored the highest of all vendors among large IT departments.

Lenovo (System x)

- Lenovo remained in first place for six-month customer satisfaction in total cost of ownership.
- Lenovo's rack customers rated the company higher than Dell's and HP's rack customers rated their vendors, contributing to its high satisfaction.

Lenovo (System x) represents respondents who have purchased System x servers.

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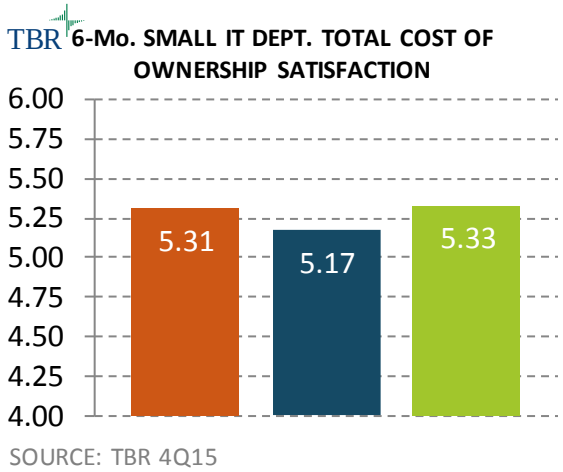
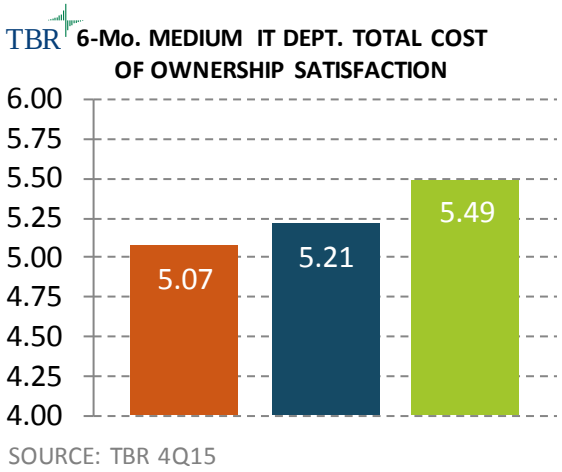
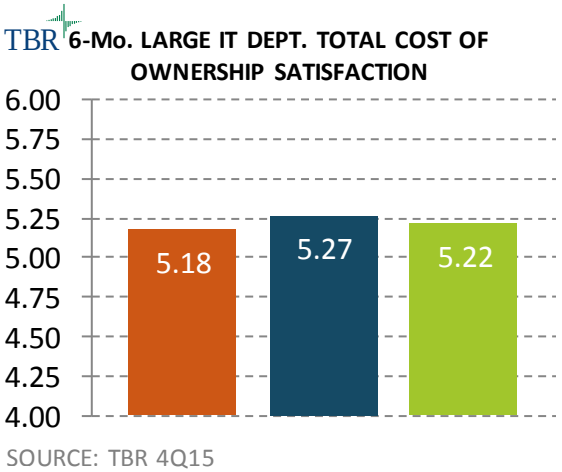
Total cost of ownership: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Dell: *"Easy to expand and add more hardware."*

Lenovo (System x): *"Easy to scale; value is decent for the price we pay."*

Medium IT customers

Dell: *"Dell servers are cost effective and can scale very well."*

Lenovo (System x): *"Our investment dollars go further with IBM."*

Large IT customers

HP: *"They are in-line with our cost structure."*

Dell: *"[Its] product is very interchangeable and that makes it very scalable, so we save money."*

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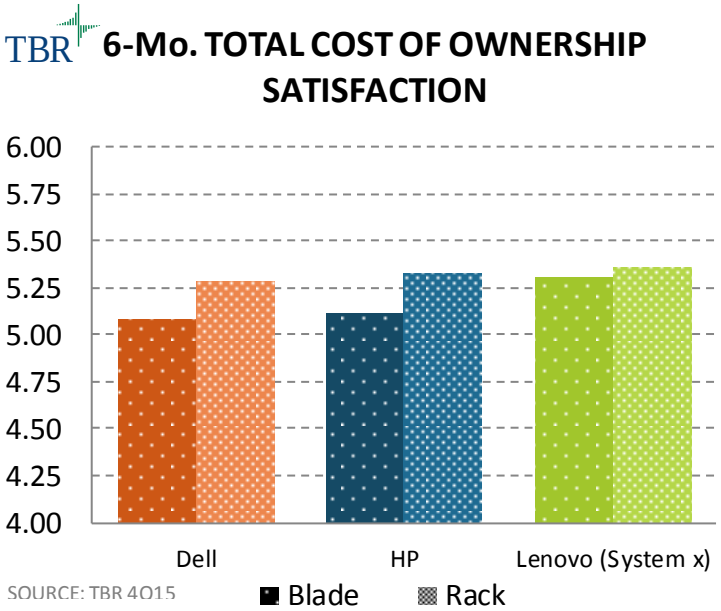
Total cost of ownership: Blade vs. rack server rankings

Customer comments

"HP servers are well priced for the systems that are delivered."
— HP rack customer

"Dollar for dollar a good [buy] and easily scalable."
— Dell blade customer

"We have been able to scale when needed and at a good price."
— Dell rack customer



SOURCE: TBR 4Q15

6-Mo. TOTAL COST OF OWNERSHIP IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	Critical	Critical	Critical
Blade	Critical	Critical	Critical
Rack	Critical	Critical	Critical

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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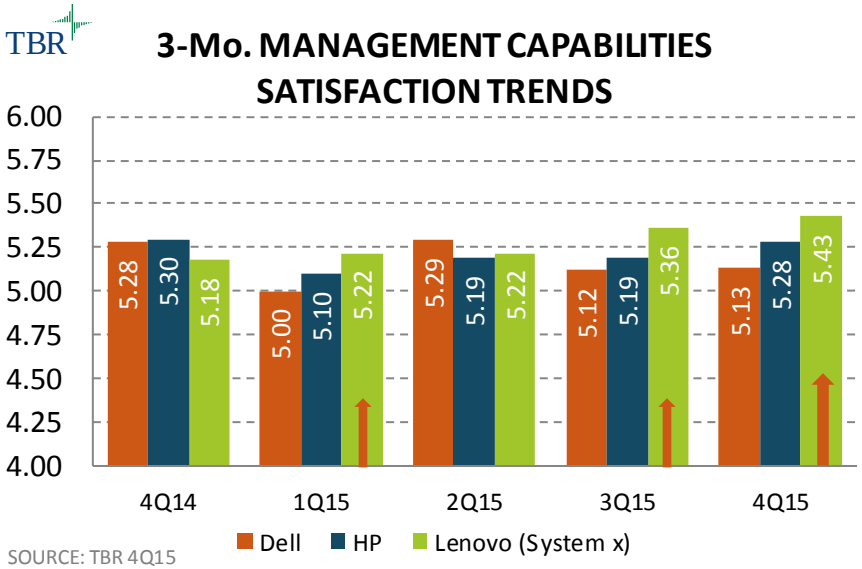
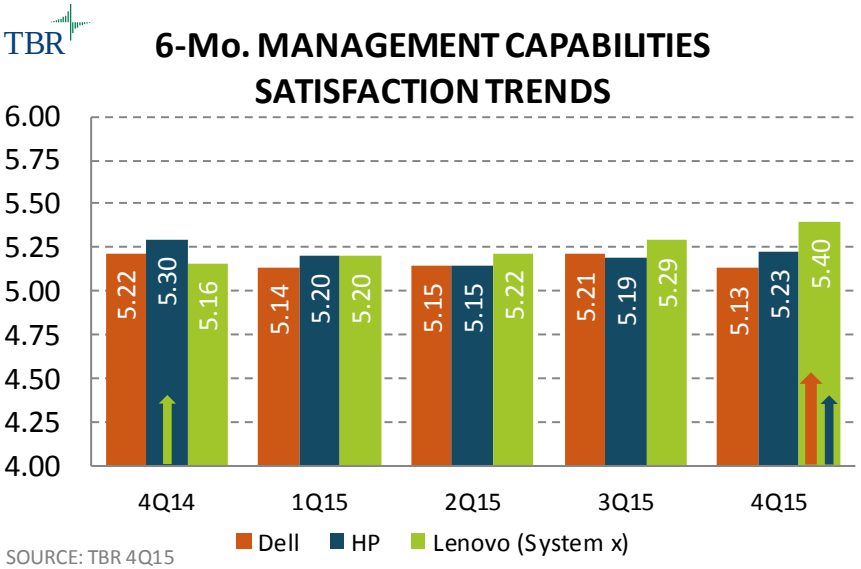
Lenovo maintained the lead score above Dell and HP in management capability satisfaction



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- A reported decline in Dell customer satisfaction with management capabilities led the company to third place.
- Dell scored lowest among blade customers, who listed management capabilities as an important attribute.

HP

- HP maintained its six-month management capabilities satisfaction score in 4Q15, allowing the company to stand alone in second place.
- HP scored highest among large IT departments, while a low score among small departments dragged its overall rating down.

Lenovo (System x)

- Lenovo increased its six-month management capabilities satisfaction score sequentially, enabling the company to keep its No. 1 spot.
- Large IT departments were the only ones that did not rate Lenovo first.

Lenovo (System x) represents respondents who have purchased System x servers.

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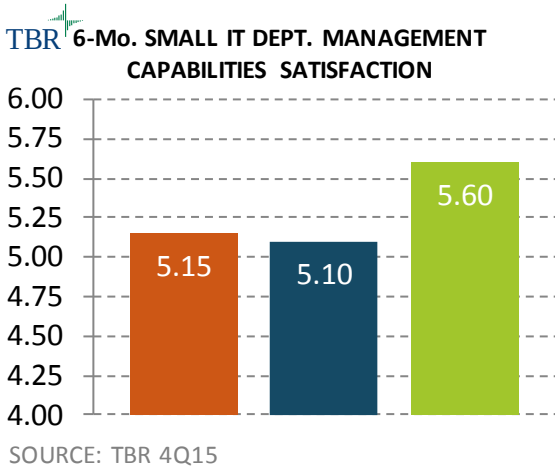
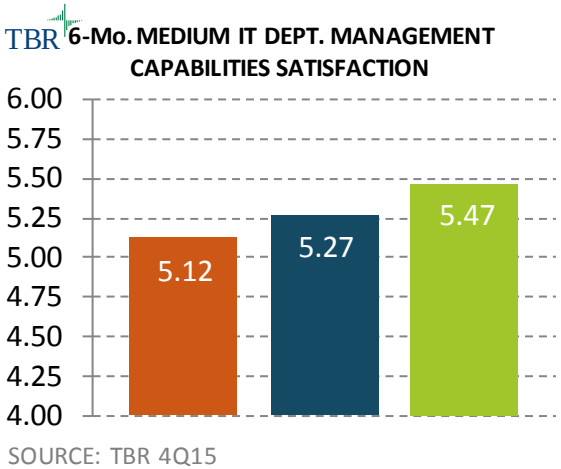
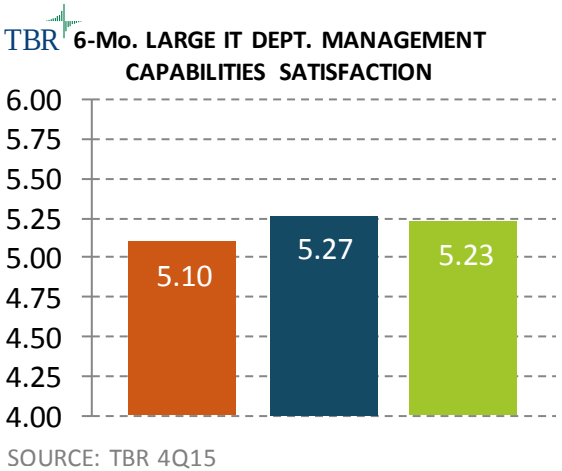
Management capabilities: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"Easy to manage and setup."*

Dell: *"Little to no unexpected downtime, easy to manage with in-house staff for cost savings."*

Medium IT customers

Dell: *"Performance is in-line with our needs and management capabilities are acceptable."*

HP: *"The management features of HP servers [are] better than most other server vendors."*

Large IT customers

HP: *"We've been able to seamlessly expand our IT infrastructure by scaling the components."*

Dell: *"Good performance and easy to manage."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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Management capabilities: Blade vs. rack server rankings

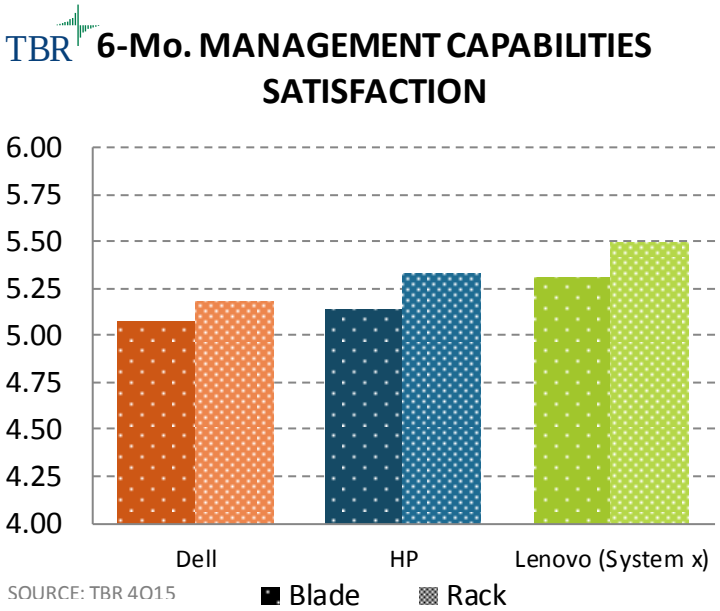
Customer comments

"The management features and capabilities make it easy to administer servers remotely."
— Dell rack customer

"The performance meets our needs, and the management features help us monitor our environment."
— HP blade customer

"The servers stay up; nice management interface."
— HP rack customer

"*Almost no failures; the management system can give a warning that a problem is starting."*
— Dell blade customer



SOURCE: TBR 4Q15

6-Mo. MANAGEMENT CAPABILITIES IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	**Important**	**Important**	**Important**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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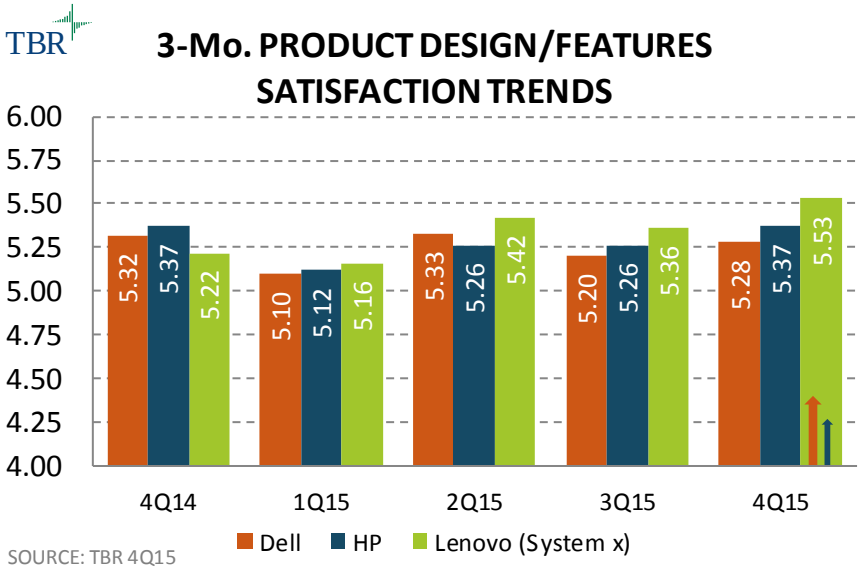
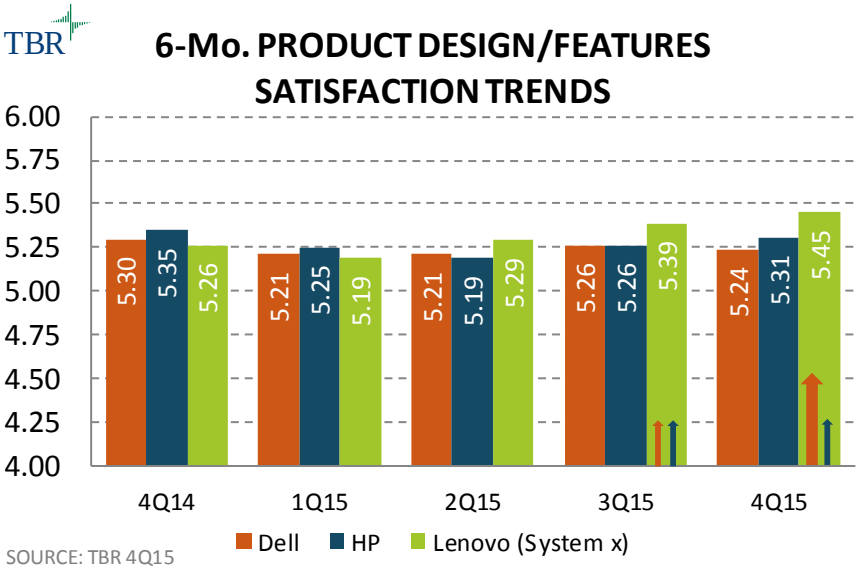
Lenovo exceeded 3Q15 increases and gained a more significant lead in product design and features satisfaction



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's customers reported a decrease in six-month product design/features satisfaction from 3Q15, falling behind HP and Lenovo to third place.
- Dell fell behind among all demographics except small IT department sizes, negatively affecting its overall score.

HP

- An increase in its six-month product design/features satisfaction score from 3Q15 pushed HP into second place.
- HP finished ahead of Dell among large IT departments, bringing the company strongly into second place.

Lenovo (System x)

- Lenovo's customers cited an increase in six-month product design/features satisfaction in 4Q15 that enabled the company to remain in first place.
- Lenovo's strong scores from rack customers helped maintain the company's first-place status.

Lenovo (System x) represents respondents who have purchased System x servers.

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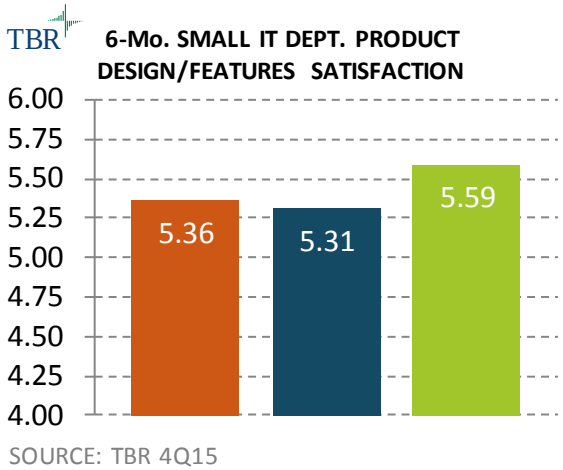
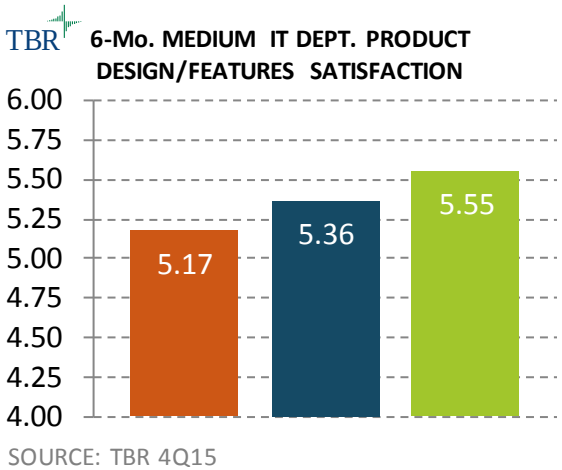
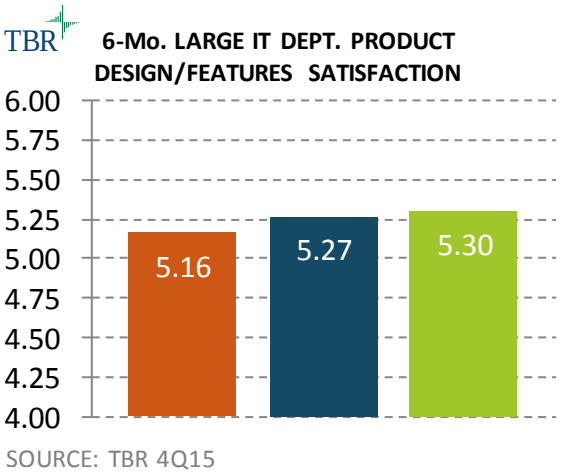
Product design/features: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Lenovo (System x): *"They are well designed and perform at their advertised speed and reliability."*

Dell: *"[They] have all of the features we need and integrate perfectly."*

Medium IT customers

Dell: *"iDRAC [Integrated Dell Remote Access Controller] is a well thought out, well designed remote management solution."*

HP: *"HP servers are very reliable and well built."*

Large IT customers

HP: *"They are well designed and perform outstandingly."*

Lenovo (System x): *"It has many good features."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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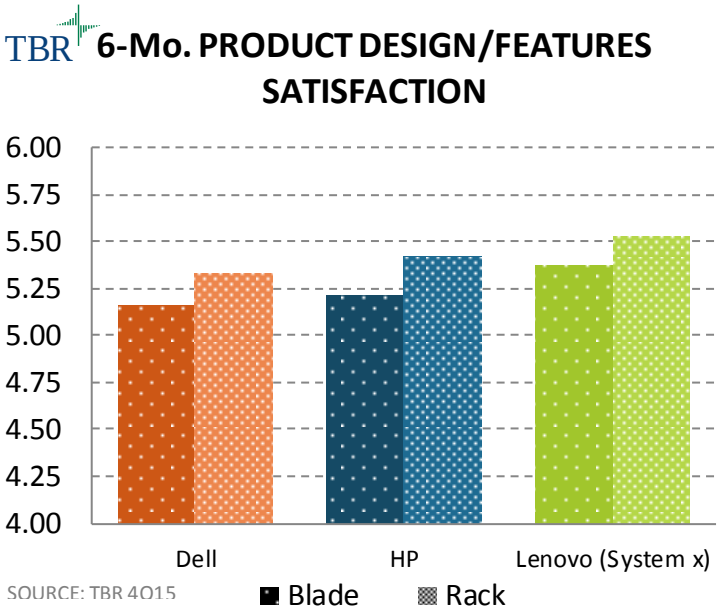
Product design/features: Blade vs. rack server rankings

Customer comments

"The performance meets our needs and the management features help us monitor our environment."
— HP blade customer

"We have had very few issues so far, and the reliability has been superb and features are excellent and incorporate and integrate well with our current hardware."
— Lenovo (System x) blade customer



SOURCE: TBR 4Q15

6-Mo. PRODUCT DESIGN/FEATURES IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	**Important**	**Critical**	**Important**
Rack	**Critical**	**Critical**	**Important**
	Important	**Critical**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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Appendix C

x86-based Server Attribute Analysis: Service and Support Satisfaction

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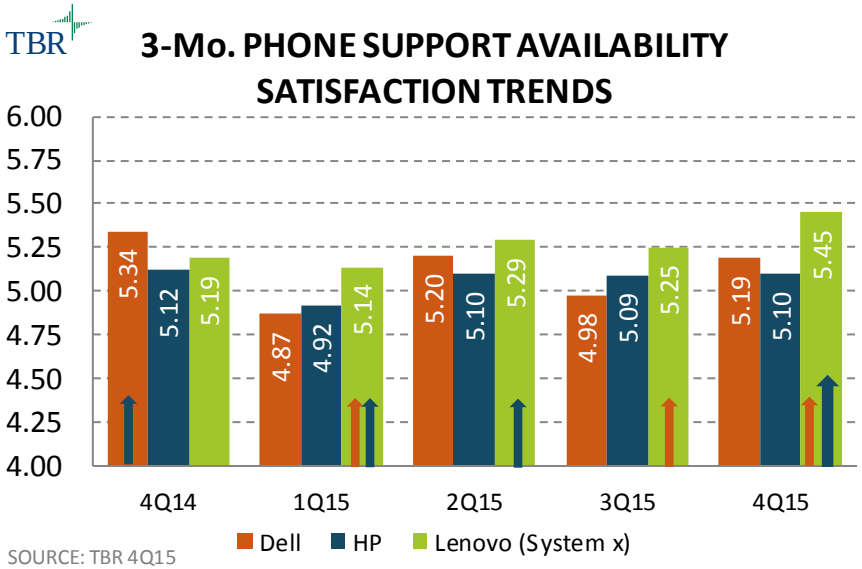
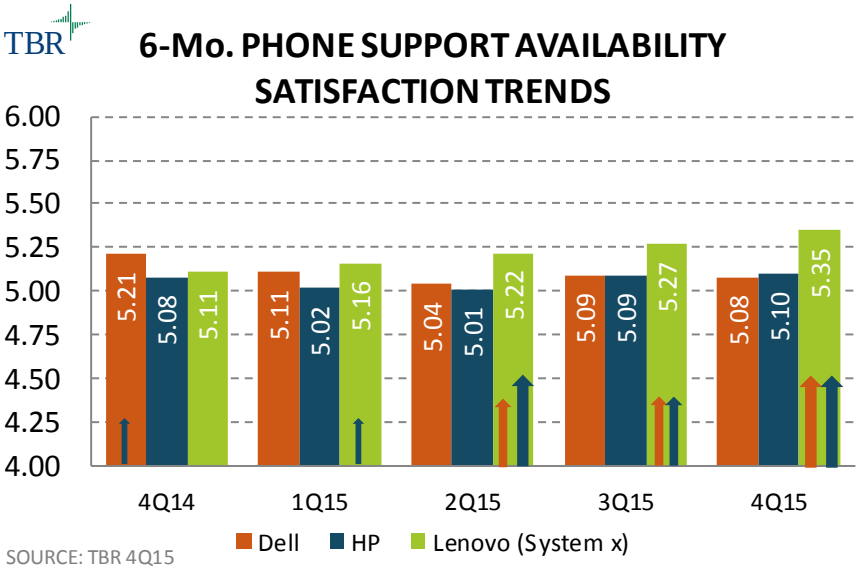
Despite marginal increases in Dell's and HP's phone support availability satisfaction scores, Lenovo remained in the lead



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's six-month phone support availability satisfaction score remained the same from the previous quarter, continuing a second-place tie with HP.
- Dell was only able to differentiate from HP among large IT departments, where Dell was rated lowest.

HP

- No changes in six-month support availability satisfaction scores among customers kept HP on par with Dell.
- HP's score outranked Dell's among large IT departments, leading HP to finish in second place.

Lenovo (System x)

- Lenovo's six-month phone support availability satisfaction score increased marginally from 3Q15, maintaining a significant lead above Dell and HP.
- Lenovo outscored Dell and HP in IT departments of all sizes.

Lenovo (System x) represents respondents who have purchased System x servers.

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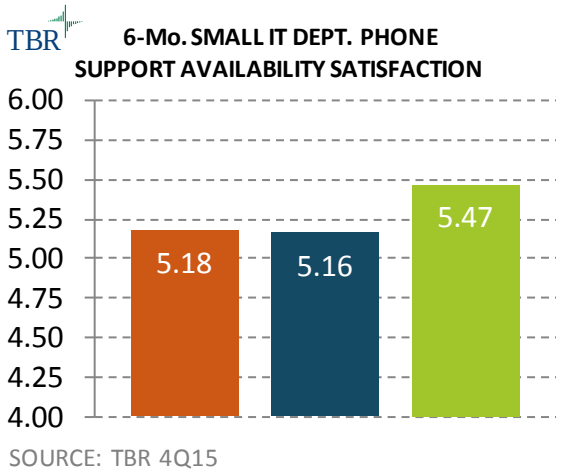
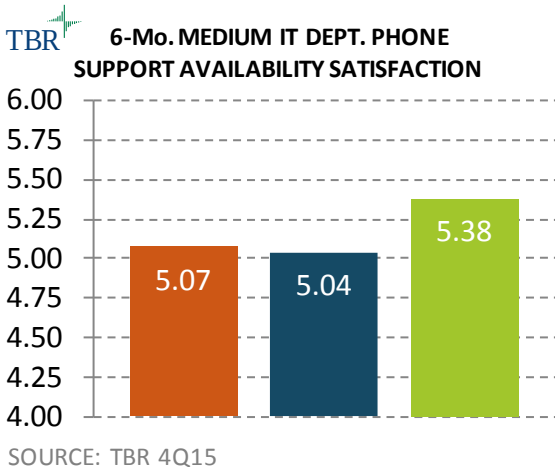
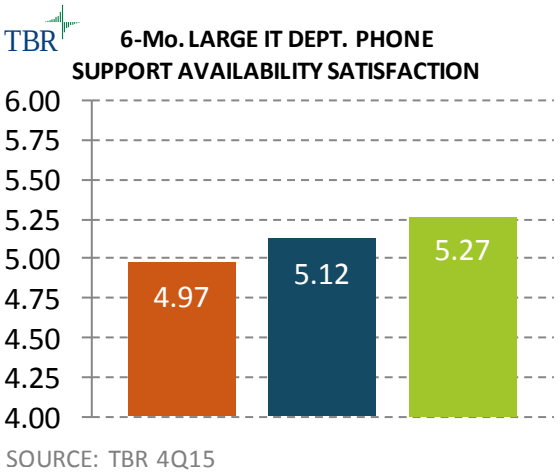
Phone support availability: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Lenovo (System x): *"Excellent response and technical product expertise."*

Dell: *"Very responsive phone support team."*

Medium IT customers

Lenovo (System x): *"Very responsive to our problems."*

HP: *"Tech was knowledgeable and answered quickly."*

Large IT customers

Dell: *"When we call, they answer and have [experienced] staff."*

Lenovo (System x): *"Always available and could solve simple issues."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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Phone support availability: Blade vs. rack server rankings

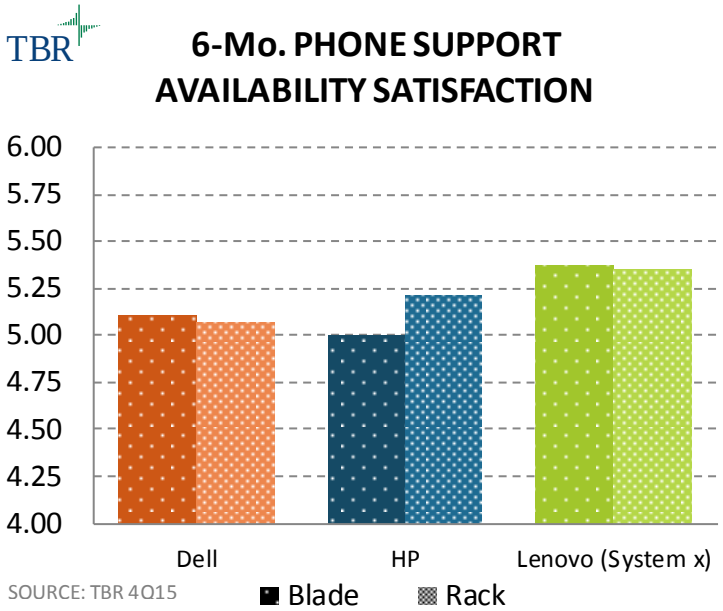
Customer comments

"Fast response and high technical product expertise."
— Lenovo (System x) blade customer

"Always able to get support when needed with an experienced person."
— Dell blade customer

"Always available when we need them, and they have the answers."
— Dell blade customer

"Always available."
— Lenovo (System x) rack customer



SOURCE: TBR 4Q15

6-Mo. PHONE SUPPORT AVAILABILITY IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	**Important**	**Important**	**Important**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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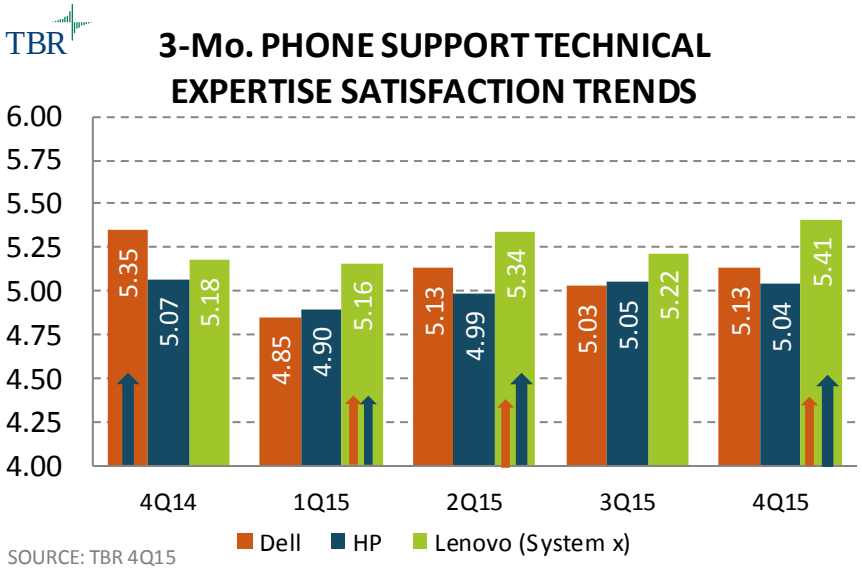
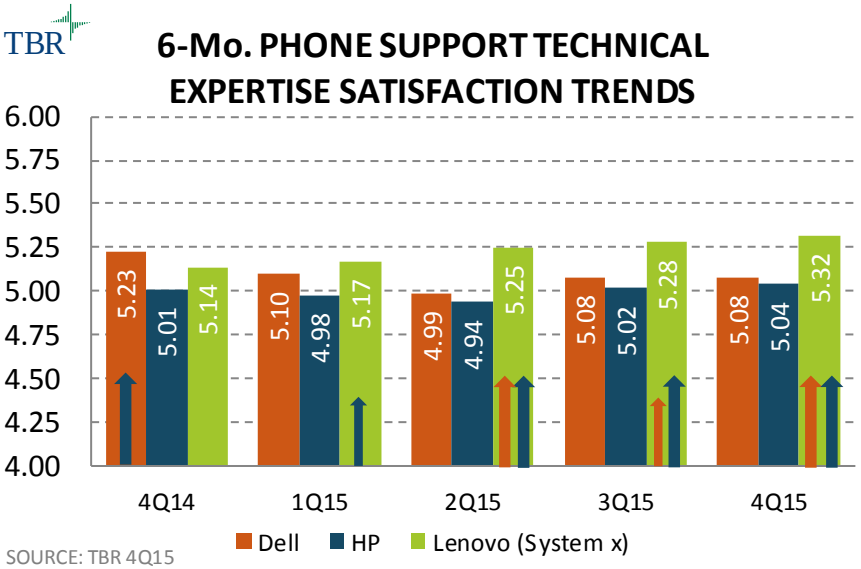
Significant gains for Lenovo in phone support technical expertise satisfaction scores leave HP and Dell far behind



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's six-month phone support technical expertise satisfaction score remained the same as previous quarter, keeping the vendor in second place.
- Dell again finished last in phone support technical expertise satisfaction scores among large IT departments.

HP

- HP's customers experienced no increase in six-month phone support technical expertise satisfaction from the previous quarter, and the vendor remained in third place.
- HP finished last in perceptions of this attribute among small and medium IT departments.

Lenovo (System x)

- Lenovo increased its six-month phone satisfaction score for the third consecutive quarter, significantly outpacing Dell and HP.
- Lenovo's blade customers considered this attribute more important than its rack customers and gave Lenovo higher scores than Dell and HP.

Lenovo (System x) represents respondents who have purchased System x servers.

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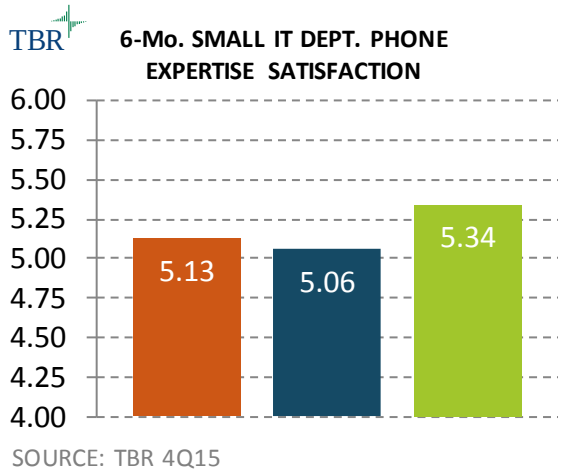
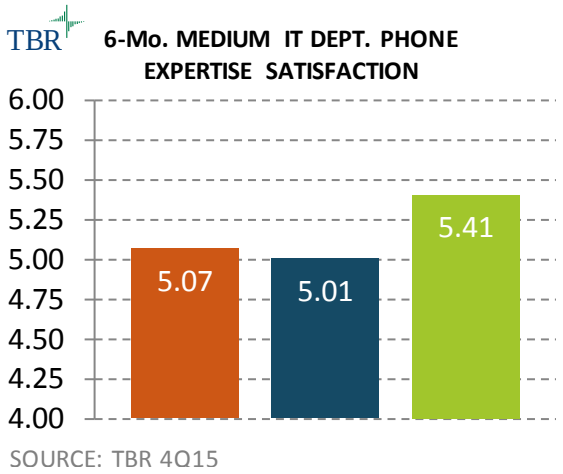
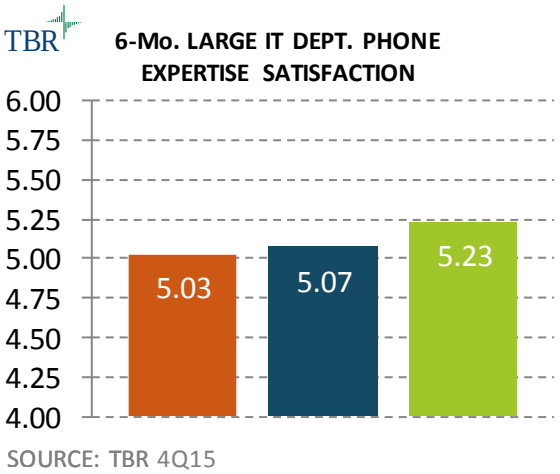
Phone support technical expertise: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Dell: *"Always good advice and support."*

Lenovo (System x): *"Quick service, and knowledgeable service tech."*

Medium IT customers

Lenovo (System x): *"Provide excellent customer knowledge and service."*

Dell: *"Support agents have been able to diagnose and repair issues where we need help."*

Large IT customers

Lenovo (System x): *"Quick response. Knowledgeable staff."*

HP: *"Answered my questions in a timely manner."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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Phone support technical expertise: Blade vs. rack server rankings

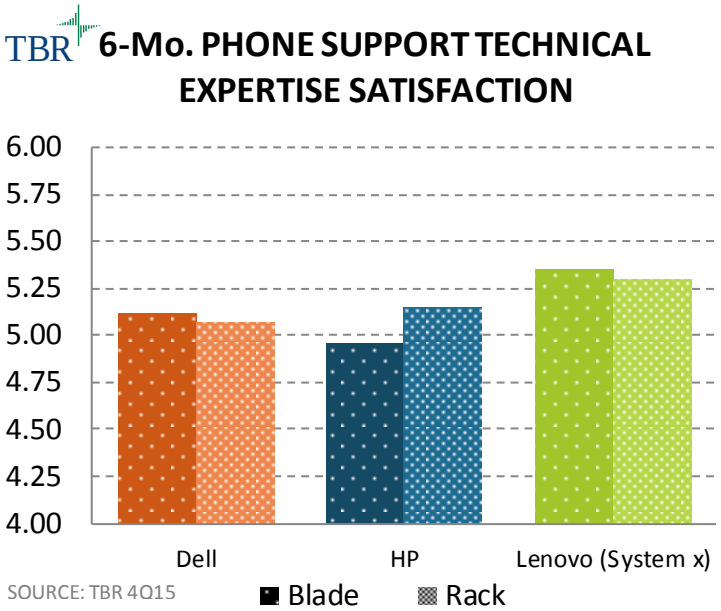
Customer comments

"I've never had a bad experience calling for support. I've always had my issues taken care of when I've called."
— Lenovo (System x) rack customer

"We have never had a problem getting high quality phone support from Dell technicians."
— Dell rack customer

"Thoroughly evaluate situation and quick to diagnose solutions."
— Dell blade customer

"They help you quickly and clearly. Clear enough so that you don't have to see them. They can do it over the phone."
— Lenovo (System x) blade customer



SOURCE: TBR 4Q15

6-Mo. PHONE SUPPORT TECHNICAL EXPERTISE IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	**Important**	**Important**	**Important**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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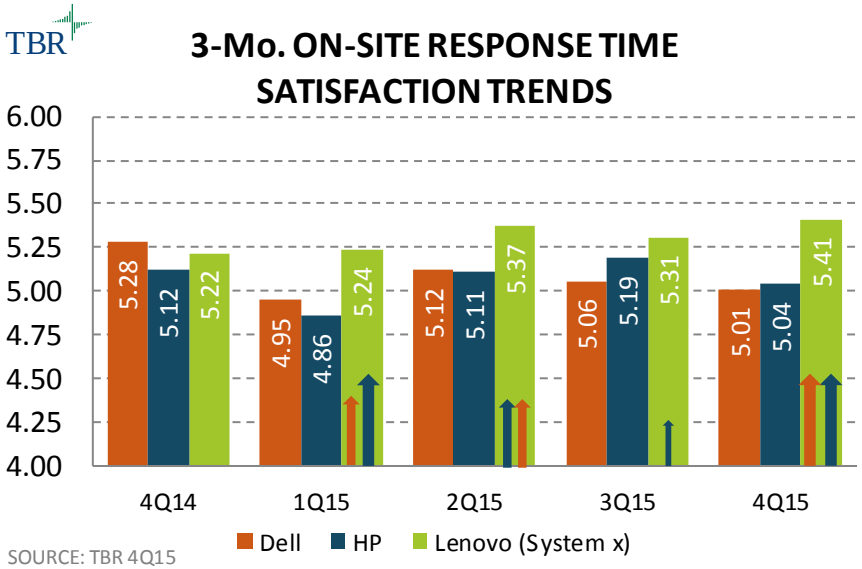
Lenovo held its first-place lead while HP maintained second place in on-site response time satisfaction scores



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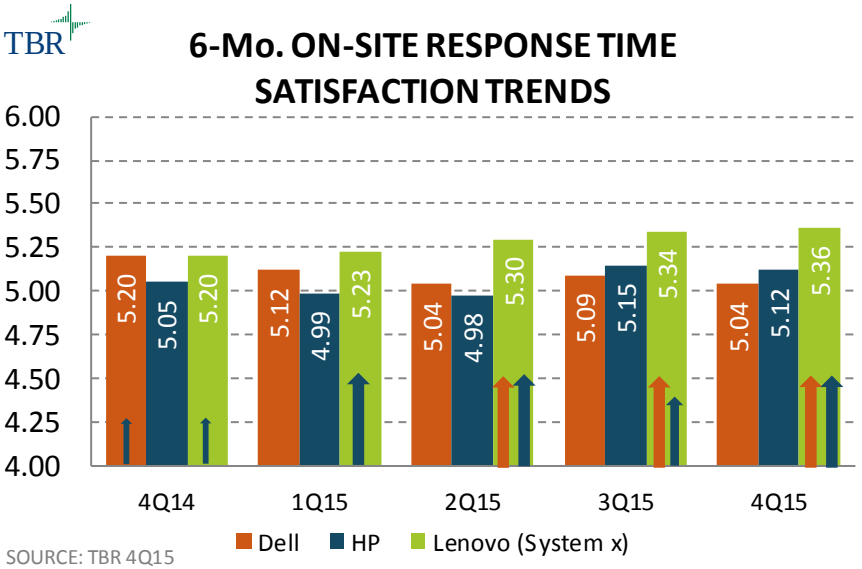

SOURCE: TBR 4Q15

Dell

- Dell's six-month on-site response time satisfaction score decreased from the previous quarter, keeping the vendor in third place.
- Dell was rated second among medium IT departments, while it was rated lowest in all other IT department size demographics.

HP

- A decrease in HP's six-month on-site response time satisfaction score in 4Q15 was on pace with Dell's decline, allowing it to stay in second place.
- Unlike Lenovo and Dell, HP rack customers rated this attribute higher than blade customers.

Lenovo (System x)

- An increase for the second quarter in six-month on-site response time satisfaction scores placed Lenovo in a firm lead.
- Lenovo customers have high satisfaction in this attribute across all IT department sizes, increasing the company's score.

Lenovo (System x) represents respondents who have purchased System x servers.

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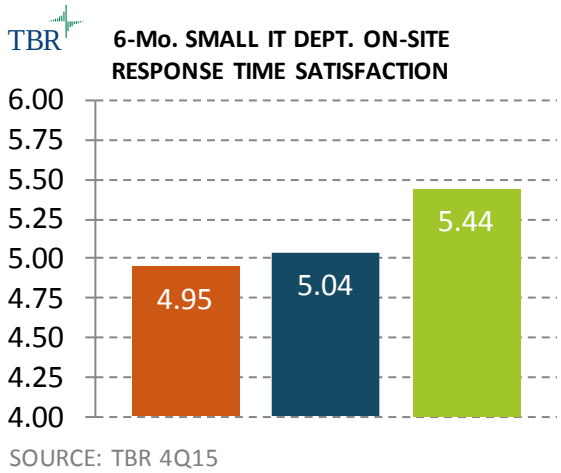
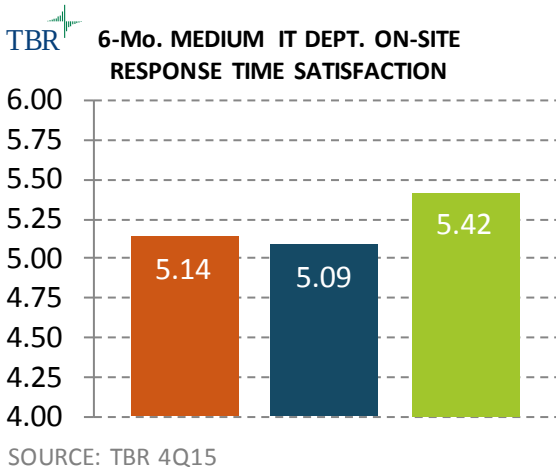
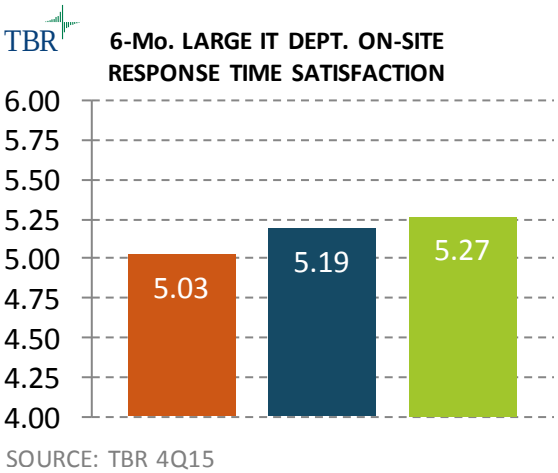
On-site response time: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"On-site technicians are experts who are able to resolve the issue in a timely manner."*

Lenovo (System x): *"On-time arrival and speedy troubleshooting."*

Medium IT customers

HP: *"Technicians are on-site quickly and know their stuff."*

Lenovo (System x): *"The tech answered questions about other issues and got some answers on those issues too. He went beyond the ticket to help me."*

Large IT customers

Lenovo (System x): *"Great turnaround time and first-visit resolution."*

HP: *"Quick and know what they are doing."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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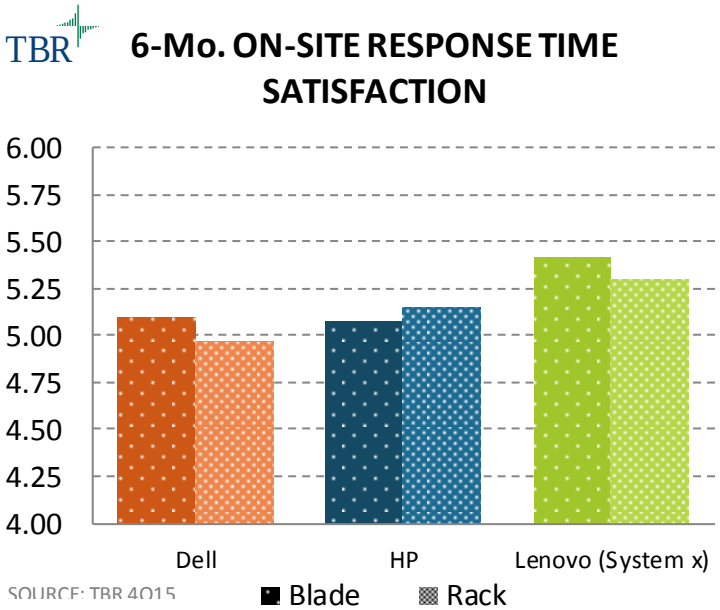
On-site response time: Blade vs. rack server rankings

Customer comments

"The on-site support team knows what they're doing when on-site."
— HP blade customer

"The few times we have needed it, they were super responsive and quick to resolve the issue."
— Lenovo (System x) rack customer



SOURCE: TBR 4Q15

6-Mo. ON-SITE RESPONSE TIME IMPORTANCE

Server	Dell	HP	Lenovo (System x)
	Important	**Important**	**Important**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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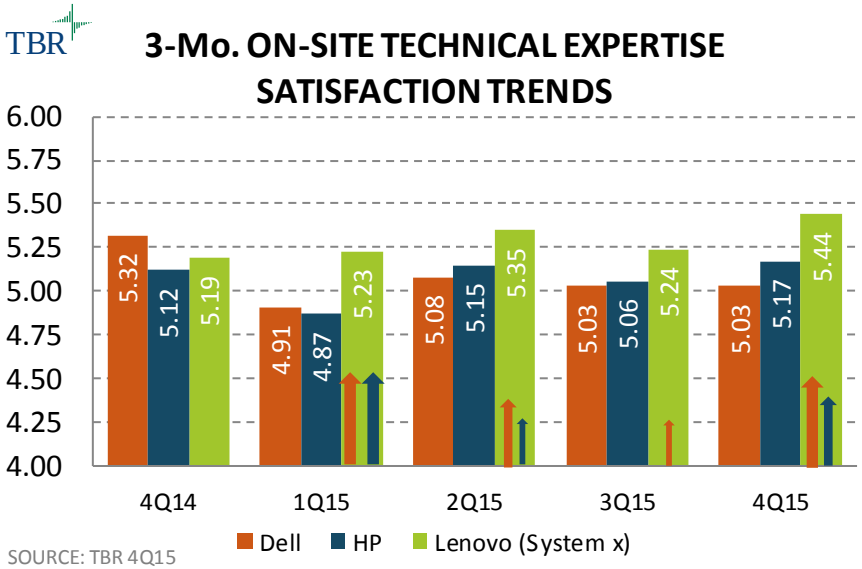
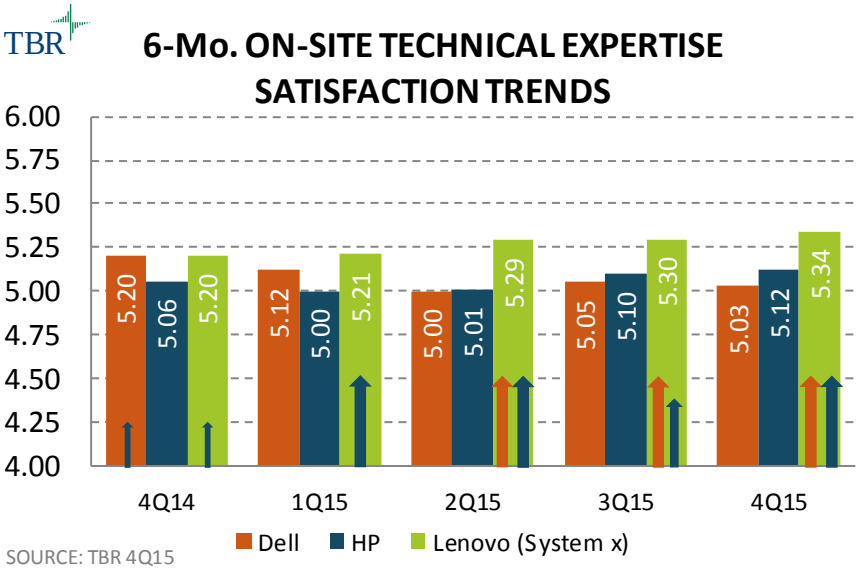
With significant gains over its competition, Lenovo remains first in on-site technical expertise satisfaction trends



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell customers reported a decrease in six-month on-site technical expertise satisfaction for the second consecutive quarter, dropping the vendor to third place.
- Dell was unable to beat any competitors among medium or large IT departments.

HP

- HP maintained its six-month on-site technical expertise satisfaction score from the previous quarter, pulling it ahead of Dell into first place.
- HP rack customers rated this attribute higher than blade customers, contrary to the preferences of Dell and Lenovo customers.

Lenovo (System x)

- A similar six-month on-site technical expertise satisfaction score for Lenovo allowed it to keep the top position for this attribute.
- Small and medium IT departments rated Lenovo more favorably than other vendors.

Lenovo (System x) represents respondents who have purchased System x servers.

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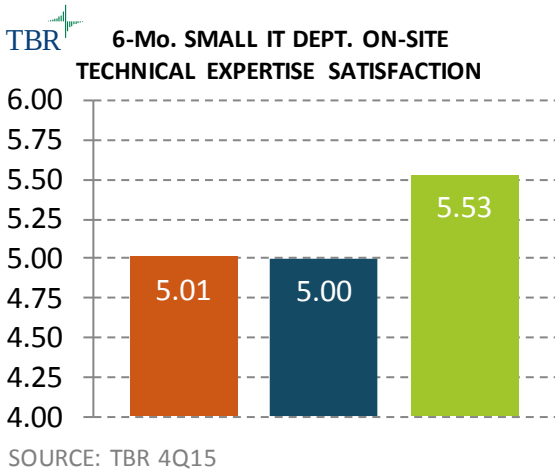
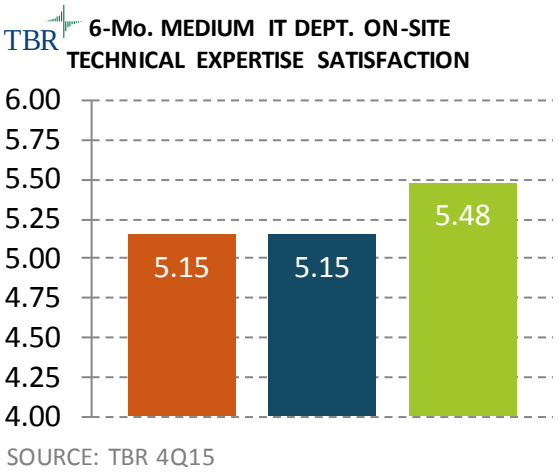
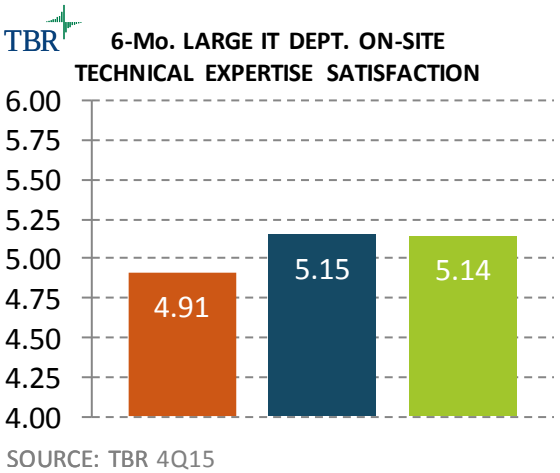
On-site technical expertise: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"Tech arrived within the SLA and repaired the server on the first attempt."*

Lenovo (System x): *"They are very knowledgeable, solution-orientated in a quick period of time."*

Medium IT customers

Lenovo (System x): *"The tech answered questions about other issues and got some answers on those issues too. He went beyond the ticket to help me."*

HP: *"Knowledgeable technician, fast response."*

Large IT customers

HP: *"Got answers I needed quickly and accurately."*

Dell: *"Excellent on-site support."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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On-site technical expertise: Blade vs. rack server rankings

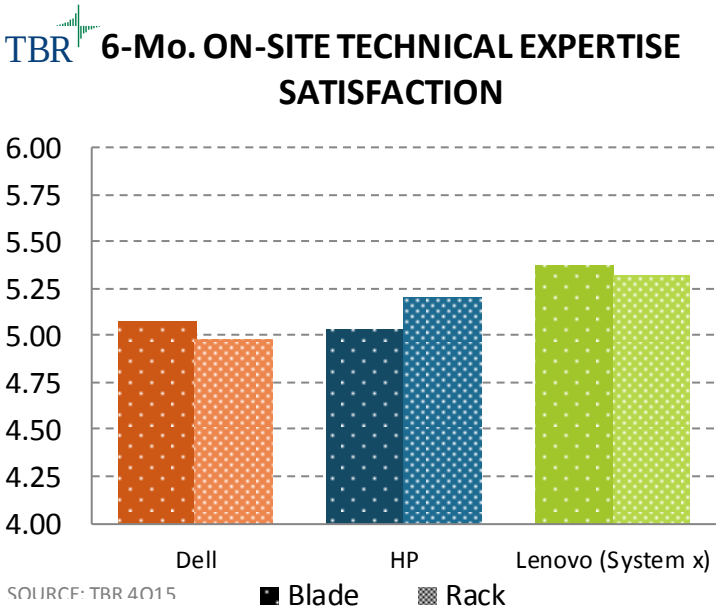
Customer comments

"Technicians arrive quickly and are knowledgeable about the hardware."
— Dell rack customer

"The personnel were knowledgeable, helpful, arrived on time, and were [thorough]."
— Lenovo (System x) blade customer

"They were prompt and caused very little disturbance to the workplace. They were very quick to fix the issue as well, and show me what the problem was."
— Lenovo (System x) rack customer

"Support is timely, and they can usually resolve issues quickly."
— Dell blade customer



SOURCE: TBR 4Q15

6-Mo. ON-SITE TECHNICAL EXPERTISE IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	**Important**	**Important**	**Important**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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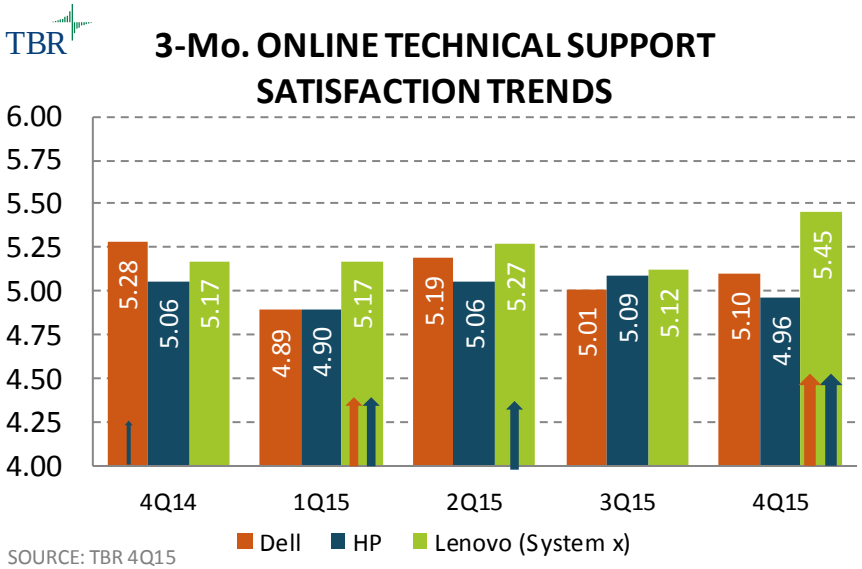
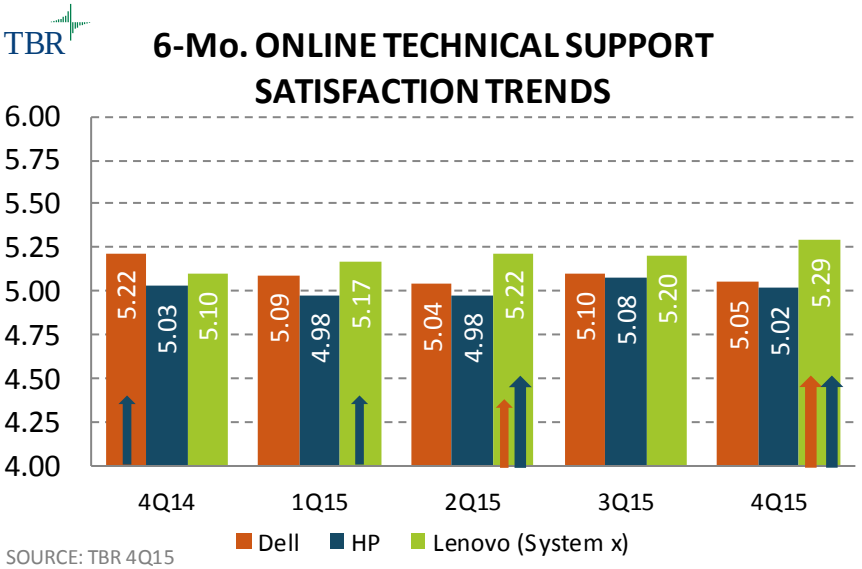
Lenovo kept its first-place spot in online technical support satisfaction, as it recovered from a decrease in satisfaction in 3Q15



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell maintained its six-month online technical support satisfaction score from 3Q15, breaking the tie with HP for second place.
- Dell scored lowest with medium IT departments in online technical support satisfaction.

HP

- A decrease in online technical support satisfaction from HP customers in 4Q15 caused the company to fall to third place.
- HP was only able to finish second among large IT departments; small and medium IT departments rated the company last.

Lenovo (System x)

- Lenovo's online technical support satisfaction score increased from its lower 3Q15 score to its highest rating in 2015.
- As in most attributes, Lenovo's score in IT departments of all sizes was higher than all other vendors'.

Lenovo (System x) represents respondents who have purchased System x servers.

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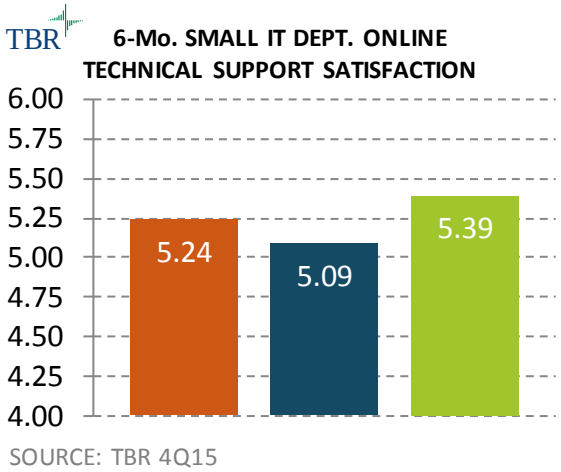
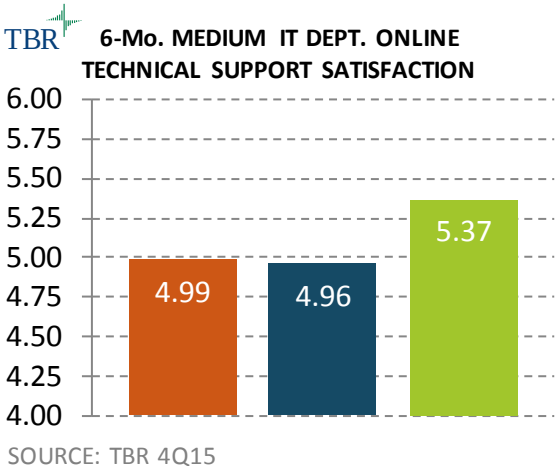
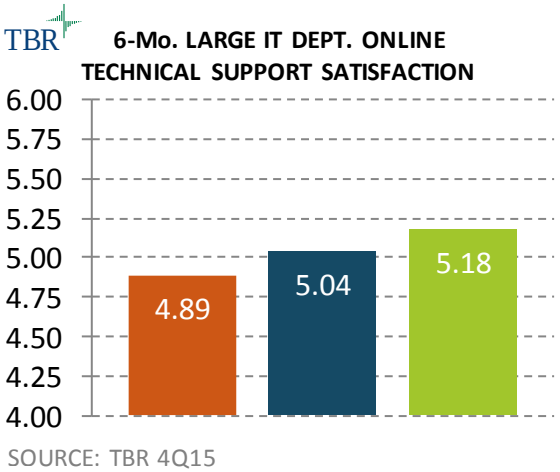
Online technical support: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"Accurate and very wide-ranging best practices."*

Dell: *"Online resources are valuable for technical information."*

Medium IT customers

Dell: *"Dell's online services are easy to use."*

Lenovo (System x): *"The best [support], fast and efficient with quality and expertise."*

Large IT customers

Lenovo (System x): *"Online services provide all information related to configuration."*

HP: *"Easy to navigate to find what needed."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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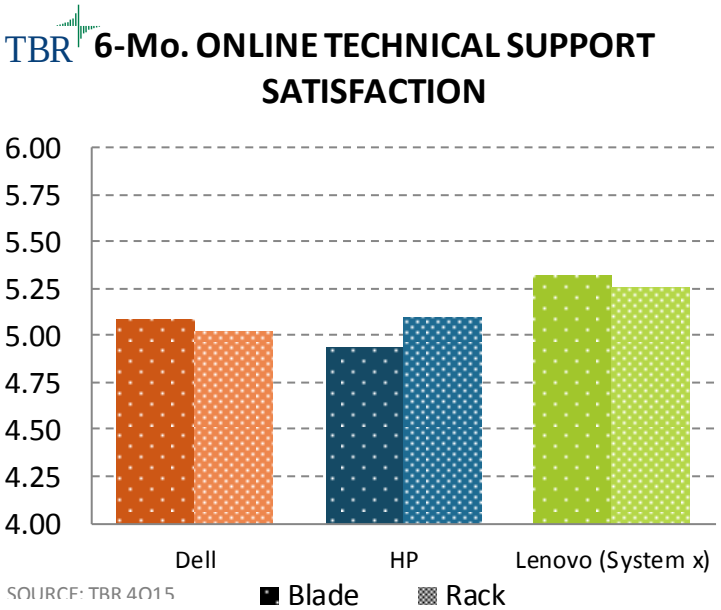
Online technical support: Blade vs. rack server rankings

Customer comments

"Online support is well organized and allows me to find the info I'm looking for quickly. I do not use social media support."
— Dell rack customer

"They are very knowledgeable, solution-orientated in a quick period of time."
— Lenovo (System x) rack customer

"Depth of info is very good."
— HP blade customer



SOURCE: TBR 4Q15

6-Mo. ONLINE TECHNICAL SUPPORT IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	**Important**	**Important**	**Important**
Rack	Less	Less	**Important**
	Important	**Important**	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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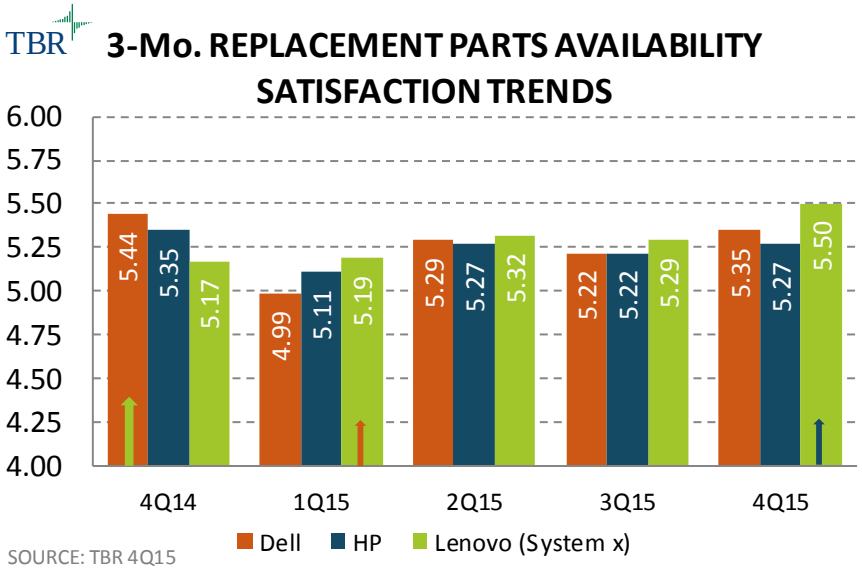
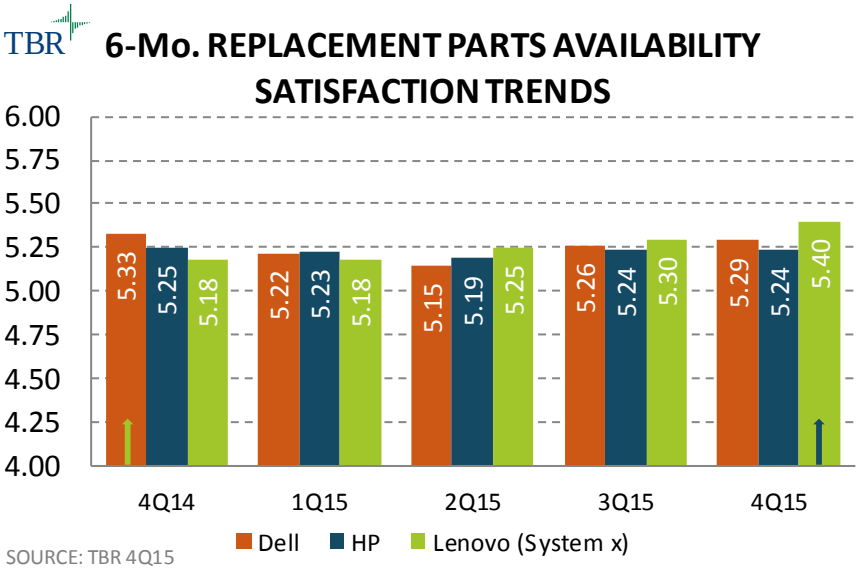
Lenovo dominates replacement parts availability satisfaction with a score that remains higher than Dell's and HP's



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Similar satisfaction among Dell customers from 3Q15 contributed to the company's drop to second place.
- Despite increased satisfaction among small IT departments, Dell failed to keep pace with Lenovo and fell into second place.

HP

- HP maintained its six-month replacement parts availability satisfaction score sequentially, prompting a fall to third place.
- HP claimed the greatest satisfaction scores across vendors among large IT departments.

Lenovo (System x)

- In 4Q15 a strong increase in satisfaction with replacement parts availability propelled Lenovo to the front of the pack after tying in 3Q15.
- Small and medium IT departments rated Lenovo favorably, listing it as having the highest satisfaction among the three vendors.

Lenovo (System x) represents respondents who have purchased System x servers.

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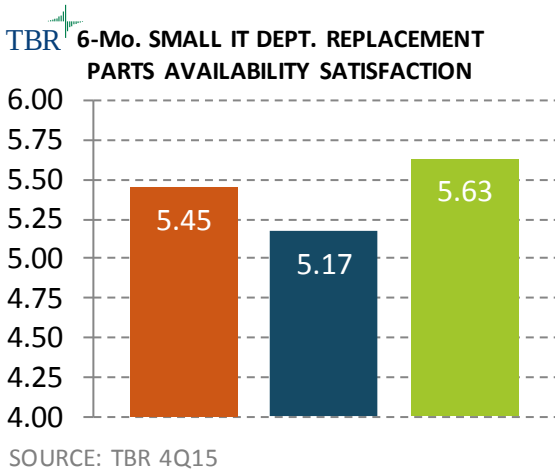
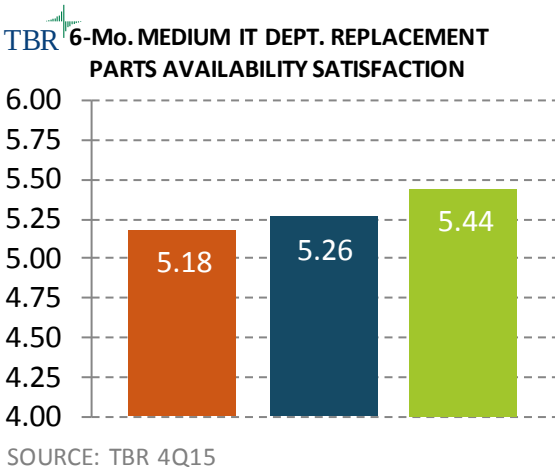
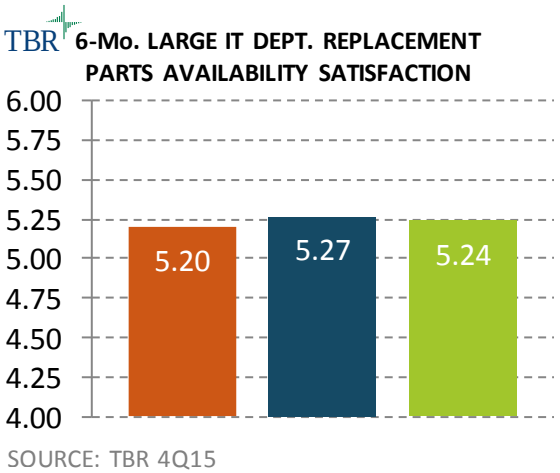
Replacement parts availability: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Lenovo (System x): *"When we need something [it's] usually in stock. Also they will come and install it. Provides great and timely support."*

Dell: *"Parts are available even for older end-of-life servers."*

Medium IT customers

HP: *"We typically keep our hardware for more than five years and I never have any issues with getting maintenance support or replacement parts."*

Dell: *"Replacement parts are usually available within 12 hours."*

Large IT customers

HP: *"The parts are easily swappable between our servers including different generations."*

Dell: *"The equipment doesn't break often, but when it does they get us the parts [we need]."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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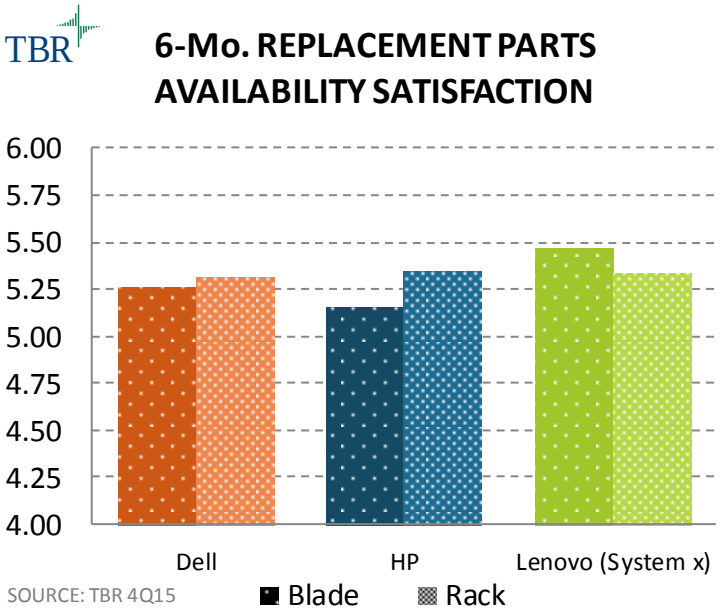
Replacement parts availability: Blade vs. rack server rankings

Customer comments

"Very few catastrophic failures, and when they do occur, replacement parts are available usually within 12 hours."
— Dell rack customer

"Replacement parts are readily available if needed and this is a crucial part of doing business with them."
— Lenovo (System x) blade customer



SOURCE: TBR 4Q15

6-Mo. REPLACEMENT PARTS AVAILABILITY IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	Critical	Critical	**Important**
Blade	Critical	Critical	**Important**
Rack	Critical	Critical	**Important**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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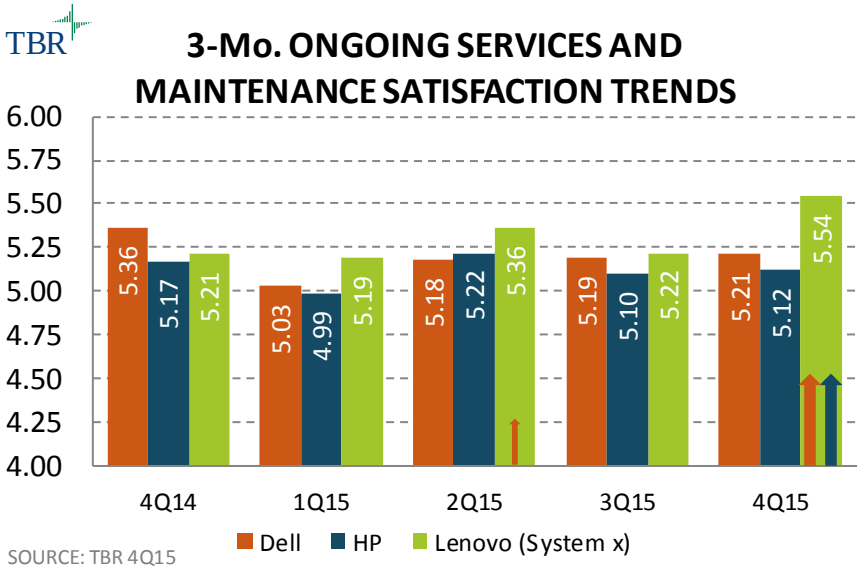
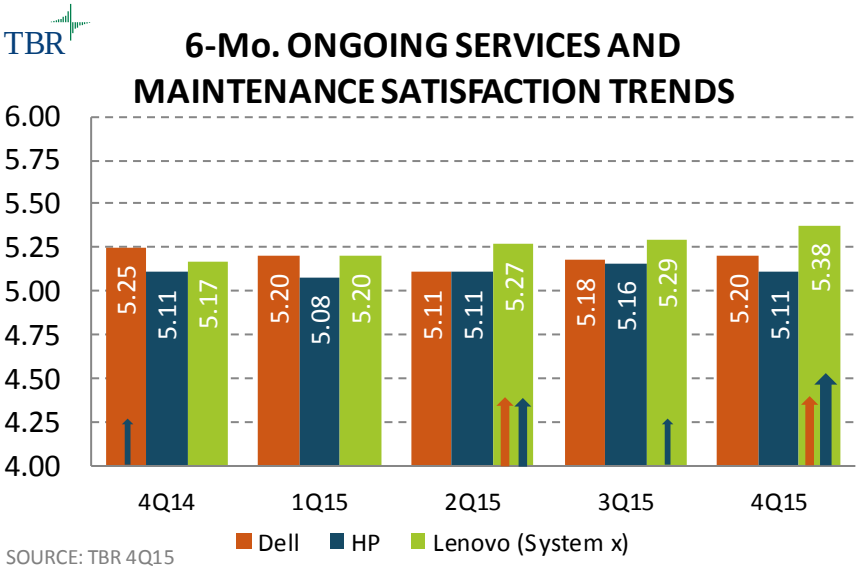
Significant increases for Lenovo allowed it to regain its lead over Dell and HP from previous quarters



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell maintained its six-month ongoing services and maintenance satisfaction score sequentially, allowing it to pull ahead as the sole second-place company.
- Dell finished comfortably in between HP and Lenovo among small and medium IT departments.

HP

- A drop in HP customers' reported six-month ongoing services and maintenance satisfaction from 3Q15 downgraded the company from second to third place.
- HP rack customers rated the company higher than its blade customers, unique to the company.

Lenovo (System x)

- Lenovo's increase in its six-month ongoing services and maintenance in 4Q15 outpaced Dell's slower growth in this quarter.
- Lenovo's customers consider ongoing services and maintenance of critical importance, while Dell and HP customers only consider the attribute important.

Lenovo (System x) represents respondents who have purchased System x servers.

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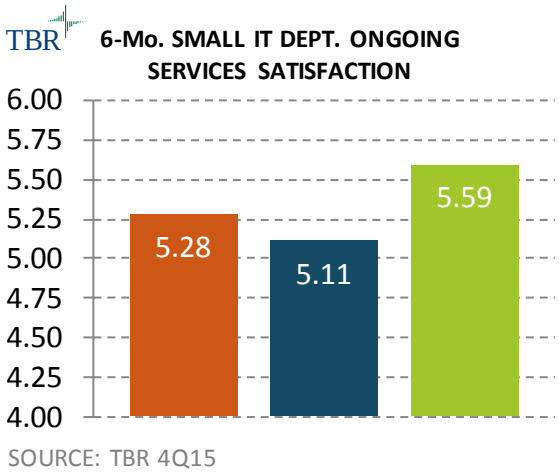
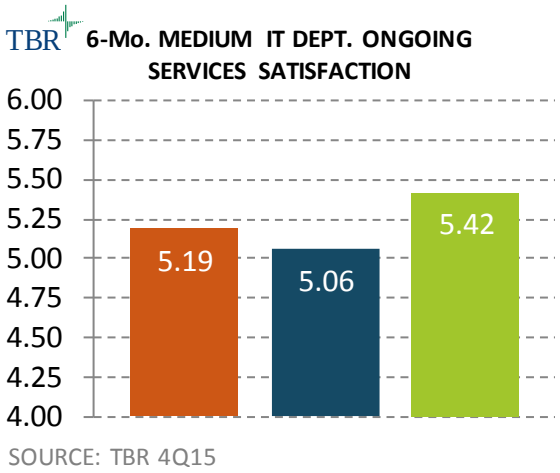
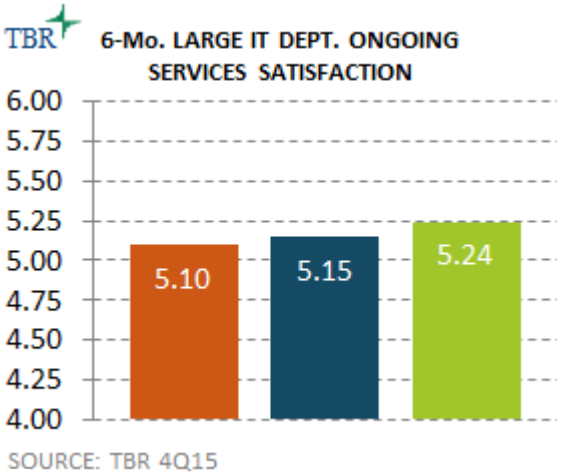
Ongoing services and maintenance: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Dell: *"Dell has a well oiled machine when it comes to ongoing maintenance."*

Lenovo (System x): *"The maintenance team is excellent."*

Medium IT customers

HP: *"Maintenance of systems meets business requirements. Parts availability is very good."*

Dell: *"Parts are available in a timely manner and maintenance is performed on schedule."*

Large IT customers

HP: *"Easy to maintain."*

Lenovo (System x): *"Minimal maintenance cost."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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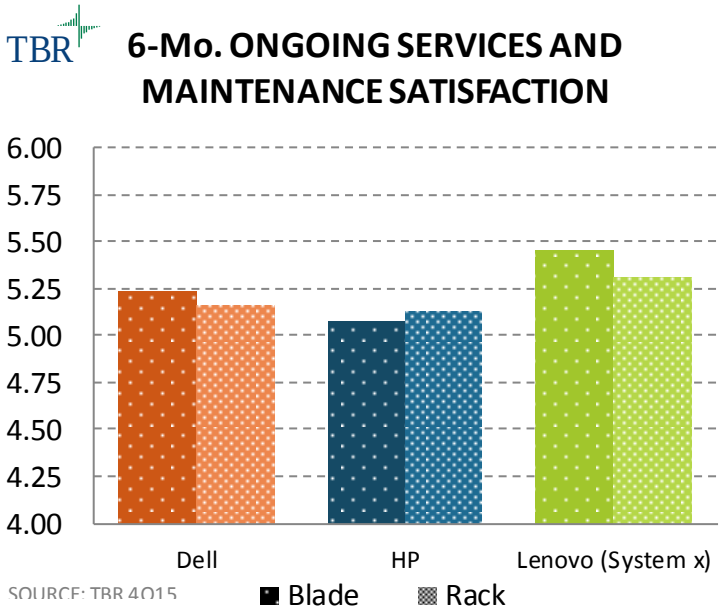
Ongoing services: Blade vs. rack server rankings

Customer comments

"Maintenance is done on schedule and done well."
— Dell blade customer

"Service, maintenance costs are effective. Response time is within manageable. Replacement parts are quite expensive but easily available."
— Lenovo (System x) rack customer

"For the few servers with ongoing maintenance, Dell always notifies us ahead of time when scheduled maintenance is due."
— Dell rack customer



SOURCE: TBR 4Q15

6-Mo. ONGOING SERVICES AND MAINTENANCE IMPORTANCE

	Dell	HP	Lenovo (System x)
Server	**Important**	**Important**	**Critical**
Blade	**Important**	**Important**	**Important**
Rack	**Important**	**Important**	**Critical**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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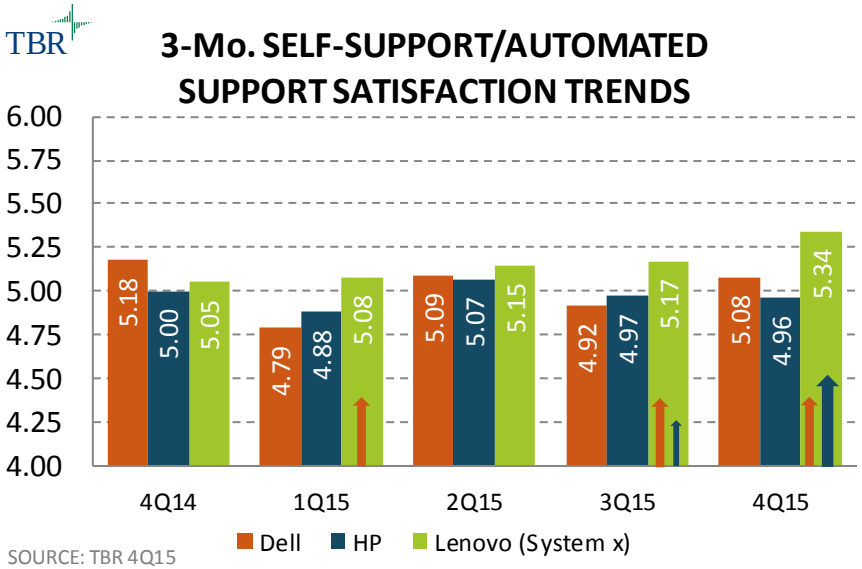
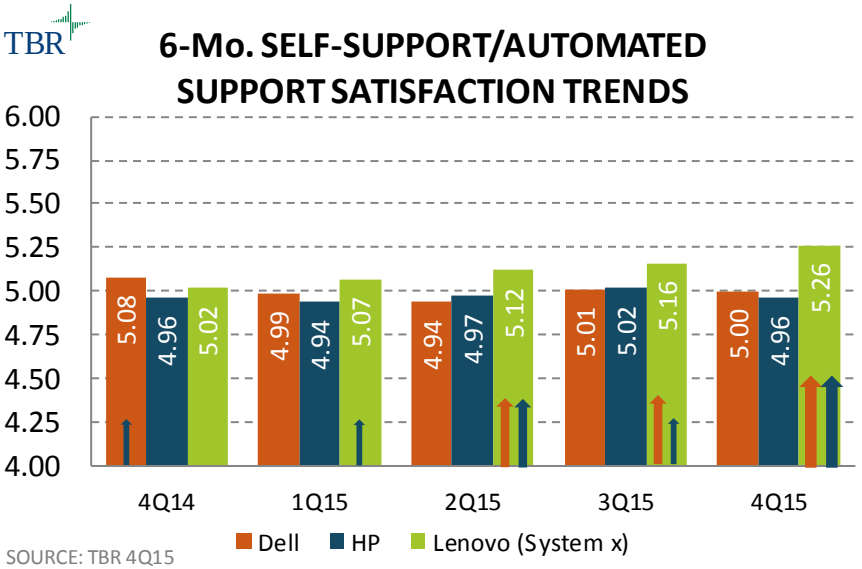
Lenovo raced ahead of Dell and HP with a significant increase in self-support/automated support satisfaction score



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell remained the same in its six-month self-support/automated support satisfaction score in 4Q15, staying tied with HP for second place.
- Customers in large IT departments considered Dell to have the lowest self-support and automated support satisfaction across vendors.

HP

- HP maintained its six-month self-support/automated support satisfaction sequentially, again tying for second place with Dell.
- Unlike other vendors' customers, HP's rack customers were more satisfied with HP than its blade customers.

Lenovo (System x)

- Increased customer perception in six-month self-support/automated support satisfaction from the previous quarter enabled Lenovo to maintain first place.
- Lenovo received the highest scores among all sizes of IT departments across vendors.

Lenovo (System x) represents respondents who have purchased System x servers.

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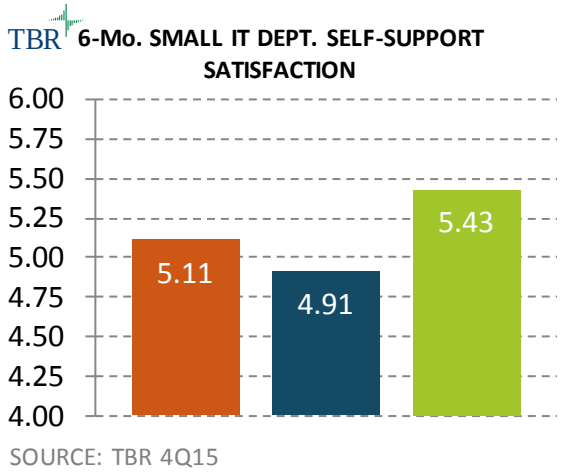
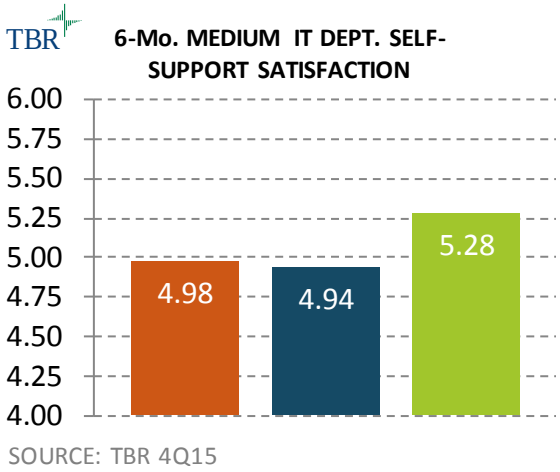
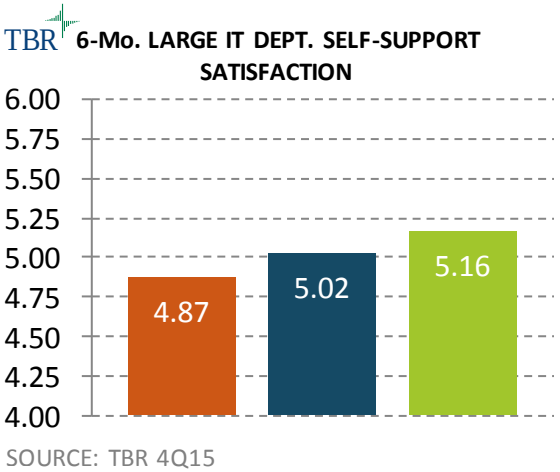
Self-support/automated support: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

Lenovo (System x): *"There are continual updates and self-support features that make maintaining programs easy."*

Dell: *"Self-support is a huge time saver, and parts are always available within the four-hour window (barring bad weather)."*

Medium IT customers

Lenovo (System x): *"Their ongoing maintenance is top notch, and there is good availability of replacement parts. Self-support features are also nice."*

Dell: *"Dell support is well-organized, from the updates to the inventory features."*

Large IT customers

Lenovo (System x): *"I am never disappointed as a result of not having any help. Whether it is something I can just do myself, or if I need a replacement for something that is broken."*

HP: *"Best support."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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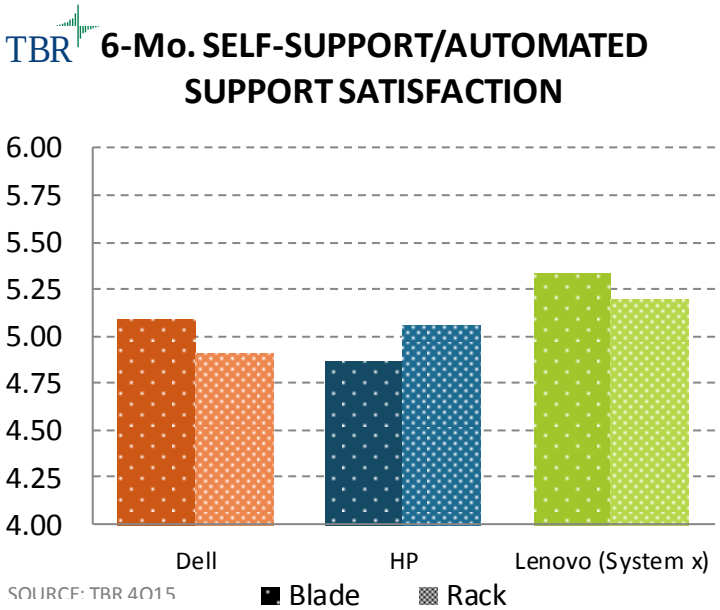
Self-support/automated support: Blade vs. rack server rankings

Customer comments

"I have never had any problem getting replacement parts, and the machines have been low maintenance. Out of the hundreds of Dell servers we have had at my organization, we have only had problems with about 5% of them over their life span."
— Dell blade customer

"Very complete and detailed self-help available."
— HP blade customer



SOURCE: TBR 4Q15

6-Mo. SELF-SUPPORT/AUTOMATED SUPPORT IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	Less	Less	Less
Rack	Less	Less	Less
	Less	**Important**	Less

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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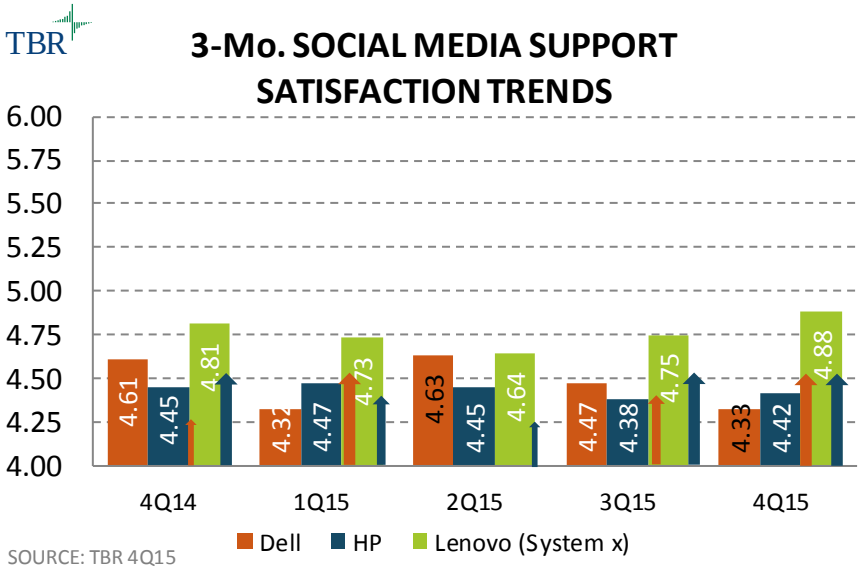
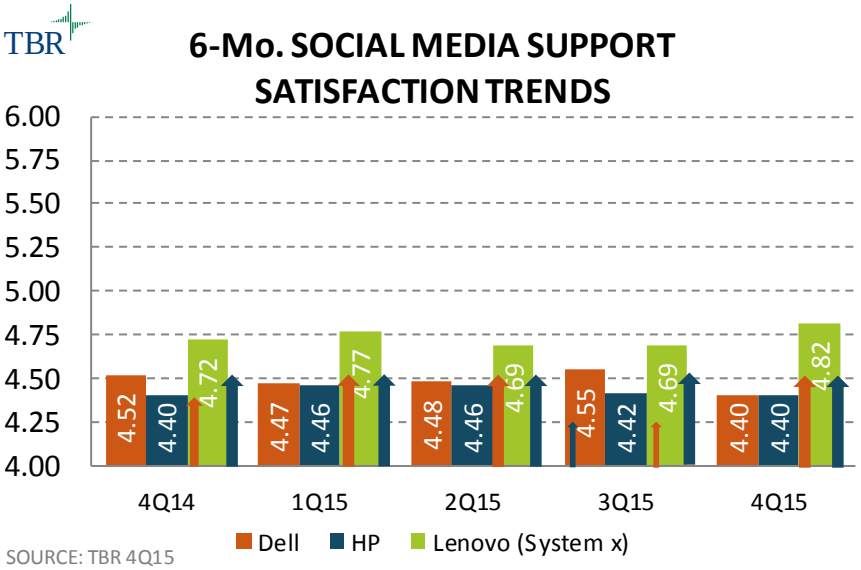
Lenovo's social media support satisfaction score grew significantly compared to Dell's and HP's for the third quarter in a row



SOURCE: TBR 4Q15



SOURCE: TBR 4Q15

Dell

- Dell's six-month social media support satisfaction score decreased in 4Q15, tying with HP for second place.
- Dell maintained a fairly even satisfaction rating across all demographic sizes of IT departments.

HP

- HP's six-month social media support satisfaction score remained the same from the previous quarter, allowing the company to catch up to Dell and tie a second place.
- The difference between HP's rack and blade customers was the smallest among vendors, with blade customers being minimally more satisfied.

Lenovo (System x)

- Due to an increased customer score in six-month social media satisfaction, Lenovo maintained its spot in first place across vendors.
- Lenovo scored highest across vendors with all sizes of IT departments, but had the greatest margin among small IT departments.

Lenovo (System x) represents respondents who have purchased System x servers.

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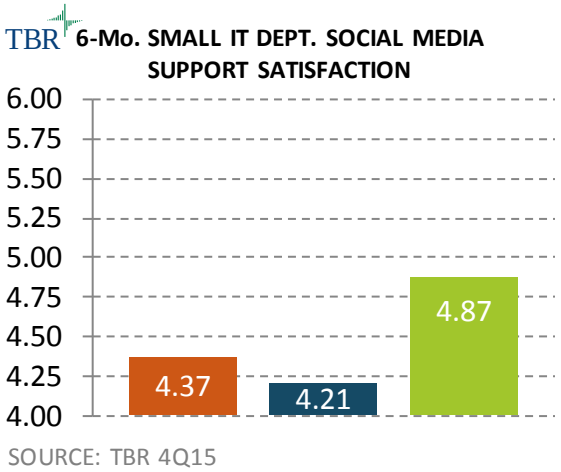
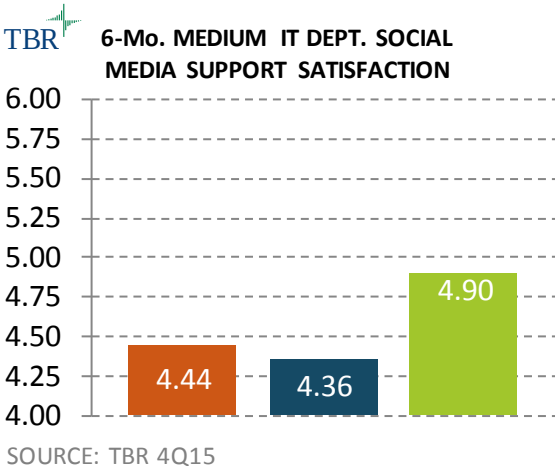
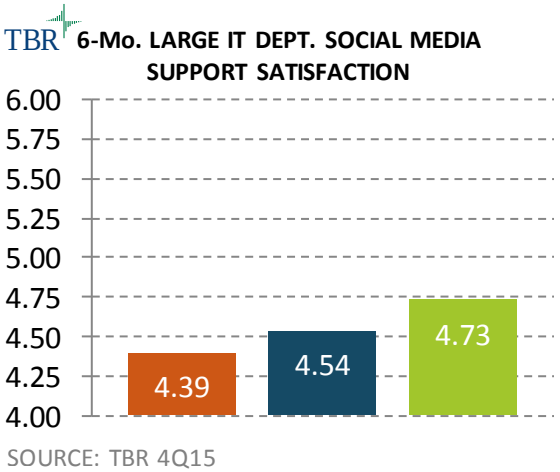
Social media support: Analysis by IT department size







Dell HP Lenovo (System x)

Customer comments

Small IT customers

HP: *"Information and support is always available on social media and online."*

Dell: *"Every time we have needed to use them, they were able to help us."*

Medium IT customers

Dell: *"No problems, all questions were answered, and there weren't any other issues."*

HP: *"Online is less used, but we have had no issues when used."*

Large IT customers

HP: *"Generally, social media is irrelevant to us."*

Lenovo (System x): *"Social media supports and online supports are quite fast and effective. Sometimes even faster than usual."*

For this study, TBR defines IT department size in the following brackets: Small IT, 50 or fewer employees; Medium IT, 51 to 300 employees; Large IT, more than 300 employees. Lenovo (System x) represents respondents who have purchased System x servers.

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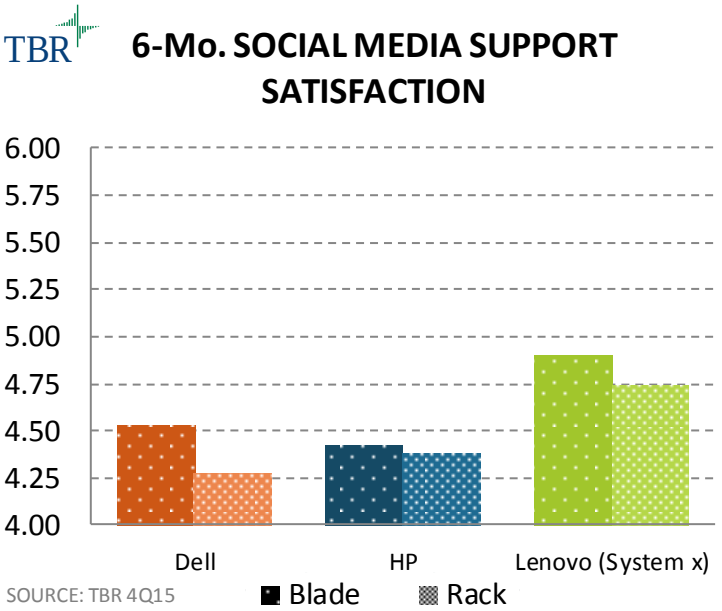
Social media support: Blade vs. rack server rankings

Customer comments

"Always available."
— HP rack customer

"Information is easy to find."
— Dell blade customer

"The help they provide is fast no matter where you are [and] whether you are on social media or not."
— Lenovo (System x) customer



SOURCE: TBR 4Q15

6-Mo. SOCIAL MEDIA SUPPORT IMPORTANCE

Server	Dell	HP	Lenovo (System x)
Blade	Less	Less	Less
Rack	Less	Less	Less

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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Appendix D

Firmographics

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4Q15 sample overview

Surveys collected between July 14, 2015, and Jan. 11, 2016

6-Mo. QUARTER SAMPLE: SERVER RESPONDENTS BY FORM FACTOR

	Dell	HP	Lenovo (System x)	Total
Blade Servers	154	156	145	455
Rack Servers	156	156	151	463
Total	**310**	**312**	**296**	**918**

SOURCE: TBR 4Q15

Lenovo (System x) represents respondents who have purchased System x servers.

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Servers installed and purchased

6-Mo. QUARTER SAMPLE: SERVERS INSTALLED AND PURCHASED

Servers Installed Currently	883,800
Servers Purchased in the Past 12 Months	142,467
Average Percent of Installed Servers Purchased in the Past 12 Months	16%
Server Purchases Planned in the Next 12 Months	152,231
Average Percent of Installed Servers Planned for Purchase in the Next 12 Months	17%

SOURCE: TBR 4Q15

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Company size by annual revenue

6-Mo. QUARTER SAMPLE: COMPANY SIZE BY ANNUAL REVENUE

	Dell	HP	Lenovo (System x)	Total
I don't know	5%	5%	5%	5%
Less than $100 million	16%	9%	10%	12%
$100 million – $249 million	16%	11%	9%	12%
$250 million – $499 million	10%	10%	5%	9%
$500 million – $999 million	13%	12%	15%	13%
$1 billion – $4.9 billion	17%	23%	25%	21%
$5 billion – $9.9 billion	10%	7%	14%	10%
$10 billion or more	13%	24%	17%	18%

SOURCE: TBR 4Q15

Note: 4Q15 firmographic data based on information provided by x86-based server sample only.
Totals that do not add to 100% are due to rounding.
Lenovo (System x) represents respondents who have purchased System x servers.

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Company and IT department size by number of employees

6-Mo. QUARTER SAMPLE: COMPANY SIZE

	Dell	HP	Lenovo (System x)	Total
500 - 999 employees	15%	8%	11%	11%
1,000 - 4,999 employees	32%	34%	25%	31%
5,000 - 9,999 employees	14%	14%	16%	14%
10,000 or more employees	40%	44%	48%	44%

SOURCE: TBR 4Q15

6-Mo. QUARTER SAMPLE: IT DEPARTMENT SIZE

		Dell	HP	Lenovo (System x)	Total
Small	50 or fewer IT employees	41%	25%	25%	31%
Medium	51 - 300 IT employees	33%	37%	33%	34%
Large	Over 300 IT employees	26%	38%	43%	35%

SOURCE: TBR 4Q15

Note: 4Q15 firmographic data based on information provided by x86-based server sample only.
Totals that do not add to 100% are due to rounding.
Lenovo (System x) represents respondents who have purchased System x servers.

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Respondents' titles

6-Mo. QUARTER SAMPLE: RESPONDENT TITLE

	Dell	HP	Lenovo (System x)	Total
CIO/CTO	17%	12%	16%	15%
IT EVP/SVP/VP	7%	12%	8%	9%
IT Director	17%	25%	36%	25%
IT Manager	38%	37%	32%	36%
IT Analyst/Specialist	19%	12%	8%	13%
Other	1%	2%	1%	1%

SOURCE: TBR 4Q15

Note: 4Q15 firmographic data based on information provided by x86-based server sample only.
Totals that do not add to 100% are due to rounding.
Lenovo (System x) represents respondents who have purchased System x servers.

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Industry

6-Mo. QUARTER SAMPLE: INDUSTRY

	Dell	HP	Lenovo (System x)	Total
Aerospace/Defense	2%	2%	1%	2%
Banking/Financial Services	7%	16%	11%	11%
Business and Legal Services	3%	4%	1%	3%
Computer Services/IT Consulting	11%	13%	18%	14%
Computer Software	4%	4%	4%	4%
Construction/Engineering/Env Services	3%	2%	2%	2%
Consumer Packaged Goods	1%	1%	2%	1%
Education – Private/Training	4%	2%	1%	2%
Education – Public	12%	6%	3%	7%
Electronics Manufacturing	3%	1%	1%	2%
Energy/Utilities	3%	4%	1%	3%
Government – Federal	5%	3%	2%	4%
Government – State/Local	5%	2%	4%	4%
Hospital/Healthcare – Private	5%	8%	4%	6%
Hospital/Healthcare – Public	3%	3%	7%	4%
Insurance	2%	4%	8%	5%
Industrial Manufacturing	6%	4%	3%	5%
Manufacturing – Other	4%	6%	10%	7%
Media/Publishing	1%	0%	0%	0%
Pharmaceuticals/Life Sciences	1%	3%	1%	2%
Retail/Wholesale	6%	4%	5%	5%
Telecommunications	3%	5%	4%	4%
Transportation/Logistics	1%	3%	3%	2%
Other	4%	5%	5%	5%

SOURCE: TBR 4Q15

Note: 4Q15 firmographic data based on information provided by x86-based server sample only.
Totals that do not add to 100% are due to rounding.
Lenovo (System x) represents respondents who have purchased System x servers.

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Appendix E

Analytical Procedures and Survey Instrument

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Satisfaction

- At the beginning of the survey, respondents select what brand of servers they purchased most in the past 12 months. This brand is their "primary brand" for the remainder of the server survey questions.

- Respondents rate their satisfaction with servers from their primary brand on 24 attributes using a seven-point Likert scale. Respondents rate satisfaction separately for blade and rack x86-based servers.
  - Question: How satisfied are you with each of the following attributes of {Primary Brand} {Blade/Rack} servers?

Value	1	2	3	4	5	6	7
Scale	Extremely Dissatisfied	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Extremely Satisfied

- The mean satisfaction scores (S) for each attribute by vendor are calculated for both server types, and for blade and rack servers separately.
- TBR uses an independent sample t-test assuming unequal variances or the standard student's t-test. Three α levels are used in the analysis: 0.1 (90%), 0.05 (95%) and 0.01 (99%).

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Importance

- Respondents rate the importance of the 24 attributes when making their purchase decision for blade and rack x86-based servers separately.
  - Question: When making your last {blade/rack} server purchase, how important were the following attributes to your organization? Please move each attribute on the left into one of the categories on the right by dragging and dropping them. You can move as few or as many attributes into one particular category as you like.
  - Categories:

Value	1	2	3
Scale	Less Important	Important	Critical

- Importance ratings are used for three key analyses in understanding customer perceptions and are applied to each vendor's combined server responses as well as the blade and rack respondents separately.

1. Importance Multiplier by Brand — Average importance across all attributes for that specific brand (I) is divided by the average importance across all attributes of all brands to determine an Importance Multiplier (M). The Importance Multipliers are used to help determine the TBR Weighted Satisfaction Index.

$$M_{Brand\ x} = \frac{\left(\sum_{n=1}^{22} \text{Brand x}\right)/22}{\left(\left(\sum_{n=1}^{22} \text{Brand x}\right) + \left(\sum_{n=1}^{22} \text{Brand y}\right) + \left(\sum_{n=1}^{22} \text{Brand z}\right)\right)/66}$$

2. Attribute Importance Weight by Brand — Each attribute mean importance score by brand (I) is divided by the sum of that brand's mean importance scores to determine a relative Importance Weight (W). The Importance Weights are used in the TBR Satisfaction Indices.

$$W_{\text{Attribute x, Brand y}} = \frac{I_{\text{Attribute x, Brand y}}}{\sum_{n=1}^{22} I_{\text{Attribute n, Brand y}}}$$

3. Attribute Importance Level by Brand — To determine what attributes are "Critical," "Important" and "Less Important" for each brand, the following methodology is applied.
   - Important Cut-off: Average $W_{\text{Brand y}}$ - ½ the standard deviation of the 21 $W_{\text{Brand y}}$
   - Critical Cut-off: Average $W_{\text{Brand y}}$ + ½ the standard deviation of the 21 $W_{\text{Brand y}}$
   - Less Important Attribute: An attribute with an importance weight that is less than the Important Cut-off
   - Important Attribute: An attribute with an importance weight that is greater than the Important Cut-off and less than the Critical Cut-off
   - Critical Attribute: An attribute with an importance weight that is greater than the Critical Cut-off

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TBR Satisfaction Index

- The TBR Weighted Satisfaction Index comprises four indices:

  ((0.3*Product Sat. Index + 0.3*Sales Sat. Index + 0.3*Service Sat. Index)*Importance Multiplier) + 0.1*Loyalty Index

- Attribute Scores: TBR uses the mean satisfaction score of all respondents by vendor to compare vendor performance by attribute.

- Attribute scores are aggregated into three distinct indices (Note: If a vendor receives a perfect seven mean satisfaction score for all attributes within an index, the index score would equal 100):

  1. **Sales Satisfaction Index —** The sum of the sales attribute scores by vendor (six satisfaction attributes)
  2. **Product Satisfaction Index —** The sum of the product attribute scores by vendor (seven satisfaction attributes)
  3. **Service Satisfaction Index —** The sum of the service attribute scores by vendor (nine satisfaction attributes)

- The fourth element of the TBR Weighted Satisfaction Index is a measure of loyalty:

  4. **Loyalty Index —** The average percent of respondents who indicated they would buy servers from that vendor again and percent of respondents who indicated they would recommend it to a professional peer, all multiplied by 100.

$$100 * \frac{\%\,Buy\ again + \%\,Would\ recommend}{2}$$

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Key Survey Questions

When deciding which {segment} {notebooks/desktops/servers} to purchase, how important are the following attributes to your organization?

Please move each attribute on the left into one of the categories on the right by dragging and dropping. You can move as few or as many attributes into one particular category as you like.

Items (order is randomized)
Initial Hardware Quality
Ongoing Hardware Quality & Reliability
Performance
Virtualization, Efficiency, Scalability
Total Cost of Ownership (TCO)
Purchase Price/Acquisition Cost
Management Capabilities
One-time Services and Setup
Product Design/Features
Delivery Time and Product Availability
Sales Responsiveness
Phone Support Responsiveness
Phone Support Technical Expertise
On-site Response Time
On-site Technical Expertise
Online Technical Support
Post-purchase Customer Care
Ongoing Services and Maintenance
Replacement Parts Availability
Online Product Information
Self-support/Automated Support
Social Media Support

Critical
Important
Less Important

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Key Survey Questions

Would you recommend {Brand} {segment} {notebooks/desktops/servers} to a professional peer?

Yes
Maybe/Undecided
No

Will your organization buy {Brand} {segment} {notebooks/desktops/servers} again?

Yes
Maybe/Undecided
No

If "No" or "Maybe/Undecided" to Buy Again

Which of the following reasons best describes why your organization is not likely to purchase {Brand} {segment} {notebooks/desktops/servers} again?

Please select up to five.

[Brand] [form factor] are not reliable enough
[Brand] [form factor] performance did not meet our expectations
[Brand] [form factor] did not meet our efficiency expectations
[Brand] [form factor] use too much energy
[Brand] [form factor] did not integrate well with our IT environment
Dissatisfied with the total cost of ownership (TCO)
[Brand] [form factor] are a poor value
[Brand] [form factor] are too expensive
Dissatisfied with the management capabilities
[Brand] [form factor] are difficult to set up
[Brand] [form factor] are lacking necessary features
[Brand] [form factor] are poorly designed
[Brand] [form factor] have long delivery times
[Brand] sales staff is not responsive enough
Dissatisfied with phone support
Dissatisfied with on-site support
[Brand] [form factor] have inadequate online technical support
[Brand] [form factor] have insufficient remote managed services
Dissatisfied with ongoing services and maintenance
Replacement parts are not available quickly enough
We do not need to buy [form factor] because we are using cloud computing/on-demand services
We are buying another brand of [form factor] instead

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Key Survey Questions

How satisfied are you with each of the following service and support attributes of {Brand} {segment} {notebooks/desktops/servers}?

Order is randomized.	Extremely Dissatisfied	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Extremely Satisfied
Phone Support Responsiveness							
Phone Support Technical Expertise							
On-site Response Time							
On-site Technical Expertise							
Online Technical Support							
Ongoing Services and Maintenance							
Replacement Parts Availability							
Self-support/Automated Support							
Social Media Support							
Initial Hardware Quality							
Ongoing Hardware Quality & Reliability							
Performance							
Virtualization, Efficiency, Scalability							
Total Cost of Ownership (TCO)							
Management Capabilities							
Social Media Support							
Purchase Price/Acquisition Cost							
One-time Services and Setup							
Delivery Time and Product Availability							
Sales Responsiveness							
Online Product Information							
Post-purchase Customer Care							

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Key Survey Questions

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH PHONE SUPPORT RESPONSIVENESS OR EXPERTISE
Please explain why you are highly satisfied with {Brand's} {segment} {servers} phone support.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH ON-SITE RESPONSE TIME OR EXPERTISE
Please explain why you are highly satisfied with {Brand's} {segment} {servers} on-site support.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH ONLINE SUPPORT
Please explain why you are highly satisfied with {Brand's} {segment} {servers} online services and/or social media support.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH REPLACEMENT PARTS, SELF-SUPPORT/AUTOMATED SUPPORT OR ONGOING SERVICES
Please explain why you are highly satisfied with {Brand's} {segment} {servers} ongoing maintenance, self-support features or replacement parts availability.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH PHONE SUPPORT RESPONSIVENESS OR EXPERTISE
Please explain why you are dissatisfied with {Brand's} {segment} {servers} phone support.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH ON-SITE RESPONSE TIME OR EXPERTISE
Please explain why you are dissatisfied with {Brand's} {segment} {servers} on-site support.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH ONLINE SUPPORT OR REMOTE MANAGED SERVICES
Please explain why you are dissatisfied with {Brand's} {segment} {servers} online services.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH REPLACEMENT PARTS, SELF-SUPPORT/AUTOMATED SUPPORT OR ONGOING SERVICES
Please explain why you are dissatisfied with {Brand's} {segment} {servers} ongoing maintenance, self-support features or replacement parts availability.

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Key Survey Questions

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH INITIAL HARDWARE QUALITY, ONGOING HARDWARE QUALITY & RELIABILITY, PERFORMANCE, MANAGEMENT CAPABILITIES OR PRODUCT DESIGN/FEATURES

Please explain why you are highly satisfied with {Brand's} {segment} {servers} hardware reliability, performance, features or management capabilities.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH PURCHASE VIRTUALIZATION, EFFICIENCY, SCALABILITY OR TCO

Please explain why you are highly satisfied with {Brand's} {segment} {servers} scalability or value.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH INITIAL HARDWARE QUALITY, ONGOING HARDWARE QUALITY & RELIABILITY, PERFORMANCE, MANAGEMENT CAPABILITIES OR PRODUCT DESIGN/FEATURES

Please explain why you are dissatisfied with {Brand's} {segment} {servers} hardware reliability, performance, features or management capabilities.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH PURCHASE PRICE OR TCO

Please explain why you are dissatisfied with {Brand's} {segment} {servers} scalability or value.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH DELIVERY TIME OR ONE-TIME SERVICES AND SETUP

Please explain why you are highly satisfied with {Brand's} {segment} {servers} delivery or setup.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH SALES RESPONSIVENESS, ONLINE PRODUCT INFORMATION OR POST-PURCHASE CUSTOMER CARE

Please explain why you are highly satisfied with {Brand's} {segment} {servers} online product information, sales responsiveness or post-purchase customer care.

IF "VERY SATISFIED" OR "EXTREMELY SATISFIED" WITH PURCHASE PRICE

Please explain why you are highly satisfied with {Brand's} {segment} {servers} purchase price.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH SALES RESPONSIVENESS, DELIVERY TIME, OR ONE-TIME SERVICES AND SETUP

Please explain why you are dissatisfied with {Brand's} {segment} {servers} ease of doing business, delivery or setup.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH SALES RESPONSIVENESS, ONLINE PRODUCT INFORMATION OR POST-PURCHASE CUSTOMER CARE

Please explain why you are dissatisfied with {Brand's} {segment} {servers} online product information, sales responsiveness or post-purchase customer care.

IF "EXTREMELY DISSATISFIED," "VERY DISSATISFIED" OR "DISSATISFIED" WITH PURCHASE PRICE

Please explain why you are dissatisfied with {Brand's} {segment} {servers} purchase price.

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TBR Coverage

Vendor Benchmarks
A comparison of vendor performance, over time, in a market including backward- and forward-looking analysis, comparison of vendors' strategies, financials, go to market, and resource management

- *Quarterly or semiannual reports*
- *Includes XLS data*

Customer Research
Provides a view of end-customer adoption within an emerging or maturing market, budgeting, vendor use and selection, and satisfaction analysis

- *Semiannual studies*
- *Corporate IT Buying Behavior & Customer Satisfaction studies*

Market Forecasts
Analysis of market opportunity with forward-looking and five-year forecasts including current market sizing, growth drivers, top trends and leading market players

- *Annual or semiannual reports*
- *Includes XLS data*

Market Landscapes
A forward-looking view of emerging market segments and analysis of how vendors and customers address an emerging technology, including vendor positioning, strategies, acquisitions and alliances, and opportunities

- *Semiannual reports*

Vendor Reports & Profiles
A deep-dive analysis of a single vendor across corporate strategies, tactics, SWOTs, financials, and go-to-market and resource points of view

- *Quarterly or semiannual vendor reports*
- *Featured vendor profiles*

IT SERVICES

Vendor Benchmarks
- Global Delivery*
- IT Services Vendor

Market Forecast
- IT Services**

Vendor Reports
- Accenture
- Atos
- Capgemini
- CGI*
- Cisco Services
- Cognizant
- CSC
- Dell Services
- Deloitte*
- EMC Services*
- Fujitsu
- HCL Technologies
- Hewlett Packard Enterprise Services
- IBM Global Services
- Infosys
- PwC*
- TCS
- T-Systems
- Unisys
- Wipro IT Services
- Xerox

Note: All offerings are quarterly unless indicated.

*Semiannual publication **Annual publication

PUBLIC SECTOR IT SERVICES

Vendor Benchmark
- Public Sector IT Services

Vendor Reports
- Booz Allen Hamilton*
- CACI International*
- General Dynamics IS&T*
- L-3 Communications*
- Leidos*
- Lockheed Martin IS&GS*
- ManTech*
- Northrop Grumman IS&TS*
- Raytheon II&S*
- SAIC*

HEALTHCARE IT SERVICES

Vendor Benchmark
- Healthcare IT Services

Vendor Reports
- Accenture HITS*
- CSC HITS*
- Dell HITS*
- HP HITS*
- IBM HITS*

MANAGEMENT CONSULTING

Vendor Benchmark
- Management Consulting*

Vendor Report
- McKinsey & Co.*

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TBR Coverage

BUSINESS INTELLIGENCE & ANALYTICS

Vendor Benchmarks
- BI Professional Services*
- BI Software*

Customer Research
- BI Professional Services*
- BI Software*

Market Forecasts
- BI Professional Services**
- BI Software**

DIGITAL

Vendor Benchmarks
- Ad Tech Vendor*
- Digital Marketing Services*
- Digital Marketing Technology*

Customer Research
- Ad Tech*
- Digital Marketing Services*

Vendor Profiles
- Ad Tech Vendor Profile Series
- Digital Marketing Services Vendor Profile Series

SOFTWARE

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- Applications Software
- Infrastructure Management Software

Vendor Reports
- CA Technologies
- Citrix*
- Dell Software*
- Hewlett Packard Enterprise Software
- IBM Software
- Microsoft
- Oracle Corp.
- Red Hat
- SAP SE
- SAS Institute*
- VMware

CLOUD

Vendor Benchmarks
- Cloud Brokerage & Integration*
- Cloud Components*
- Hosted Private*
- Cloud Professional Services*
- Public Cloud

Customer Research
- Cloud Developer & Platforms*
- Cloud Professional Services*
- Hybrid Cloud*
- Private Cloud*
- Public Cloud*

Market Forecasts
- Cloud Components*
- Cloud Professional Services*
- Hosted Private Cloud*
- Public Cloud*

Vendor Reports
- Accenture Cloud*
- Amazon Web Services
- Atos Cloud*
- Capgemini Cloud*
- Cognizant Cloud*
- CSC Cloud*
- Dell Cloud*
- Deloitte Cloud*
- Fujitsu Cloud*
- Google Cloud*
- Hewlett Packard Enterprise Cloud*
- IBM Cloud*
- Infosys Cloud*
- Microsoft Cloud*
- Oracle Cloud*
- Rackspace*
- Salesforce
- SAP Cloud*
- ServiceNow*
- TCS Cloud*
- Verizon Cloud*
- Wipro Cloud*
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Note: All offerings are quarterly unless indicated.

*Semiannual publication **Annual publication

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- Enterprise Operator*
- Telecom Infrastructure Services
- Telecom Infrastructure Services Margin**
- Telecom Vendor
- U.S. & Canada Mobile Operator

Vendor Reports
- Alcatel-Lucent
- AT&T
- Cisco Systems
- Comcast*
- Ericsson
- Google
- Huawei*
- Juniper Networks
- Microsoft Telecom & Mobility*
- Nokia Networks
- Samsung Networks*
- Sprint
- T-Mobile USA
- Time Warner Cable*
- Verizon
- ZTE*

Customer Research
- Telecom Software Mediated Networks (NFV/SDN)*

Market Forecasts
- Carrier Cloud**
- NFV/SDN Telecom**
- TIS Global**
- TIS North America**

Market Landscapes
- Alternative Network Providers*
- 5G*
- NFV/SDN Telecom*
- Small-cell*

DATA CENTER & DEVICES

Vendor Benchmarks
- Devices and Platforms
- Data Center

Vendor Reports
- Acer*
- Apple
- Asus*
- Dell
- EMC
- Fujitsu
- Hewlett Packard Enterprise
- HP Inc.
- IBM
- Intel
- Lenovo Group
- NetApp
- Samsung Devices*

Customer Research
- Corporate IT Buying Behavior & Customer Satisfaction Study: x86-based Servers

Market Forecasts
- Data Center Server and Storage*
- Devices**

Market Landscape
- Software-defined Storage

CONVERGED & HYPERCONVERGED

Customer Research
- Converged Systems*
- Hyperconverged Platforms*

Market Landscapes
- Converged Systems*
- Hyperconverged Platforms*

ENTERPRISE NETWORKING

Vendor Benchmarks
- Enterprise Network Vendor*
- Network Infrastructure Services

Customer Research
- SDN*

Market Landscape
- Enterprise SDN*

INTERNET OF THINGS

Vendor Benchmark
- Commercial IoT*

Market Forecast
- Commercial IoT*

Market Landscape
- Commercial IoT*

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+1 603.929.1166
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