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## TOP TAKEAWAYS—CISCO TOPS IN 6 OF 7 CRITERIA; BROCADE AND JUNIPER BATTLE FOR SECOND

This service profiles and analyzes the 8 largest vendors of enterprise networking, network security, and communication equipment. To eliminate subjective scoring and accurately and fairly evaluate vendors, we established 7 criteria using actual data and metrics, including market share data, publicly available financial data, and buyer feedback.

**Cisco** has the highest score and leads the rest of the field by a wide margin, giving them an adequate cushion to bolster against future score fluctuations in multiple areas. Cisco has the broadest product portfolio, the highest market share, the strongest financials, and the strongest overall brand. Cisco's key weakness is market share momentum due to a slight decline in market share in 2012.

**Brocade** strongly improved their ranking this year, jumping from 4th place last year to a tie for 2nd due to improvements in financials, market share momentum, and buyer perception. Brocade has a limited solution portfolio but makes up for it with strong financial results and market share momentum.

**Juniper**'s overall score, tied with Brocade, is unchanged from last year—improvements in solution breadth and buyer perception were offset by weaker financials.

**HP** slid into 4th place due to loss of market share momentum, weaker financials, and worsening perceptions among enterprise buyers. HP is ranked 2nd in 5 out of 7 criteria but has the weakest financials among the top 4.

The core business of the next 4 vendors—**Siemens Enterprise**, **NEC**, **Alcatel-Lucent**, and **Avaya**—revolves extensively around the PBX market, which experienced a decline in 2012 and impacts their market share and growth prospects. As a group, they are struggling to maintain or reach profitability, and thus received low scores in financial stability.

- **Siemens Enterprise** is 2nd in solution breadth, thanks to their sister company Enterasys, which complements Siemens' communication portfolio with an extensive networking portfolio.
- Avaya comes in 3rd in market share and solution breadth.



### THE ENTERPRISE NETWORKING AND COMMUNICATION INFRASTRUCTURE LANDSCAPE

## Infrastructure Categories Covered

Enterprise networking and communication infrastructure is a critical component of the day-to-day operations of any organization. It is the glue that connects people, devices, and IT systems together and allows them to communicate with each other securely. The 3 core components are:

- Networking: Equipment used to build enterprise networks
- Communication: Equipment and software that provides real-time enterprise voice and video communication
- Security: Products that provide security for networks and network-connected devices

Please see *Methodology* at the end of this report for full definitions of each segment.

## **Vendor Product Matrix**

The enterprise networking and communication infrastructure market is highly fragmented, with well over 100 vendors vying for a piece of the market, which totaled over \$50B in 2012 according to our various enterprise market size, share, and forecast services. Only 12 vendors capture more than 1% market share each; of those, we've selected the 8 largest vendors with diversified product offerings—the same list as last year.

The vendors included offer solutions across the enterprise networking and communication infrastructure spectrum, and in many cases, have offerings beyond, such as servers, storage, devices, and services. Vendors outside the top 8 tend to be limited in scope and tackle only a specific problem rather than offer overarching enterprise networking and communication infrastructure solutions. The following table lists each one and the segments in which they participate.



#### Exhibit 1

## Solution Portfolios of Top Enterprise Networking and Communication Equipment Vendors

	Networking				Communication		Security	
	Switching	Routing	WLAN	SAN	App Delivery	Voice + UC	Video	
Alcatel-Lucent	<b>✓</b>	<b>✓</b>	<b>✓</b>			>		
Avaya	~	<b>~</b>	<b>~</b>			>	~	
Brocade	~	~	~	~	~			
Cisco	<b>~</b>	<b>~</b>	<b>~</b>	~	<b>✓</b>	>	~	~
HP	~	<b>~</b>	<b>~</b>					~
Juniper	~	~	~					~
NEC	~	~				~		
Siemens Enterprise	~		<b>~</b>	•		<b>&gt;</b>		~

#### SCORECARD RESULTS

## Cisco Is the Top Enterprise Networking and Communication Equipment Vendor

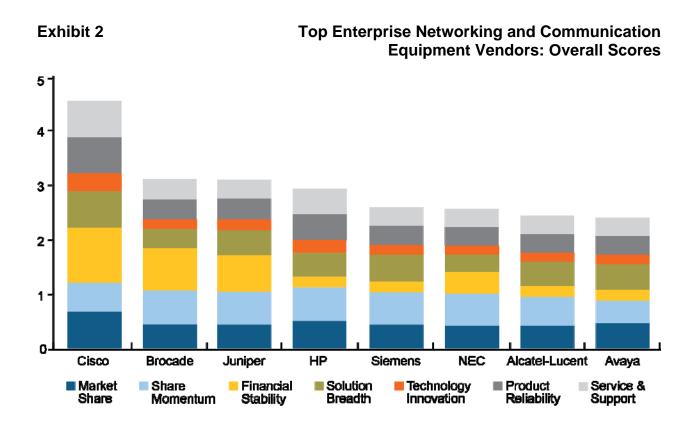
Unsurprisingly, Cisco has the highest score by far, just like they did last year. Cisco has the broadest product portfolio, the highest market share, the strongest financials, and the strongest overall brand, resulting in positive buyer feedback. A solid margin separates Cisco from its challengers, which we expect to serve as a bulkhead in the coming years to ensure Cisco's continued market leadership.

Brocade is tied for 2nd with Juniper. Brocade saw a strong rise in their ranking this year (from 4th last year) due to improvements in their financial strength, market share momentum, and buyer perceptions. Compared to other vendors, Brocade has a limited solution portfolio (the 2nd-lowest score) but makes up for it with strong financial results (2nd place) and strong market share momentum (1st place).

Juniper, who was virtually tied with HP last year for 2nd place, is solidly ahead of HP and tied with Brocade for 2nd this year. Juniper's overall score is unchanged from last year—they saw some improvements in solution breadth and buyer perceptions, but those were offset by weaker financial strength. Instead, HP's overall score declined due to loss of market share momentum in 2012, weaker financials, and worsening perceptions among enterprise buyers. Still, Juniper's advantage over HP rests mainly on a single criterion: financial stability. HP is ahead of Juniper on 5 out of 7 criteria but has the weakest financials among the top 4.



The trailing 4 vendors—Avaya, Siemens Enterprise, NEC, and Alcatel-Lucent—have all been around in some form for over 100 years. Their businesses today revolve extensively around the PBX and UC market, which accounts for about one-sixth of the enterprise networking and communication market and is also one of the slower-growing segments, limiting their market share and growth potential. Finally, these vendors share low scores on financial stability and are struggling to maintain or reach profitability.

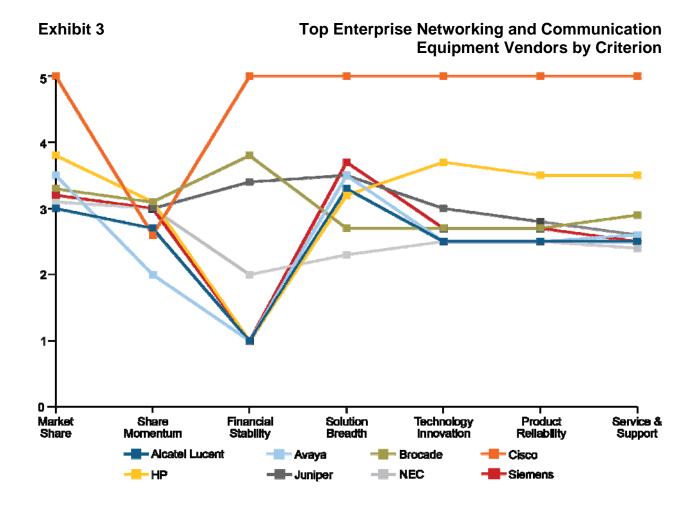




## Cisco Leads in 6 of the 7 criteria

The next chart shows all vendor scores by criterion and illustrates the range of vendor scores. Not only does Cisco lead on all but one criterion—market share momentum—but Cisco has a significant safety margin built into its lead, which should help it maintain its ranking in the future, despite eroding market share.

Putting Cisco aside, for the most part, vendor scores fall into a relatively narrow 1-point range around the average score of 3. The lone exception to this rule is financial stability, where there is significant variability in scores, spanning the entire range of our scoring system. This list of 8 vendors is a fairly exclusive club, and the differences between them on any one criterion are in most cases very small. Only when they're added up do clear distinctions between vendors emerge.





## **Top 3 Vendors by Criterion**

The next table summarizes the top 3 vendors for each criterion. Again, Cisco leads on all but 1 criterion, market share momentum.

HP does quite well from this perspective, capturing the #2 position in 5 of the 7 criteria. Still, it's not enough to pass Juniper and Brocade due to its low score on financial stability. Even modest improvements in financial stability could easily catapult HP ahead.

Brocade (tied for #2) makes the top 3 on 3 criteria: share momentum, financial stability, and service/support. Brocade's financials are fueled by the margin-rich SAN business, and their market share is gaining momentum due to expansion into the Ethernet market.

Juniper (tied for #2) scores well in share momentum and financial stability and gets good marks on product reliability and innovation from end-users (#3).

Avaya, who comes in last overall, makes the top 3 in 2 criteria—market share and solution breadth—thanks to diversifying beyond its core communication business.

Siemens Enterprise is #2 for solution breadth, thanks to their Enterasys networking division. The Siemens brand also tends to get positive feedback from buyers in our user studies, but the lesser-known Enterasys does not, and thus Siemens Enterprise does not make it into the top 3 for user-driven scores.

#### Exhibit 4

## Top 3 Enterprise Networking and Communication Equipment Vendors by Criterion

	Market Share	Share Momentum	Financial Stability	Solution Breadth	Technology Innovation	Product Reliability	Service & Support
1	cisco.	BROCADE	cisco.	cisco.	cisco.	cisco.	cisco.
2			BROCADE 2	SIEMENS			
3	AVAYA	JUNIPEC.	JUNIPER.	AVAYA	JUNIPEC.	JUNIPER.	BROCADE



#### **VENDOR PROFILES**

#### #1 Cisco

Cisco is one of the largest vendors covered in our scorecard, second only to HP in total company revenue. Cisco has its roots as a router startup in the early 1990s but has grown over the years, often through acquisition, to become the largest provider of enterprise networking and communication infrastructure by a wide margin. In the early 1990s, Cisco acquired several vendors in the Ethernet switching market, which has become the #1 product area for Cisco. In 1998, Cisco acquired VoIP startup Selsius, and Cisco subsequently shook up the mature PBX market, ushering in the VoIP era and eventually becoming the #1 PBX provider.

## **Markets and Technology Segments**

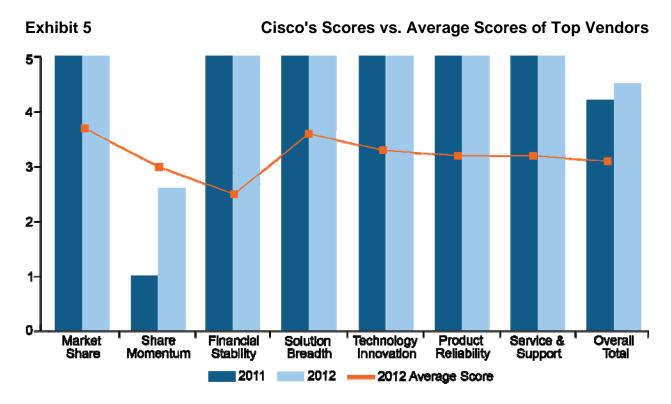
Cisco is first and foremost an enterprise company—about two-thirds of its revenue comes from enterprises—and networking and communication are core to Cisco's business. Cisco also has a healthy service provider business in routing, optical, and video, and this comprehensive view of the telecom industry has helped Cisco identify new trends ahead of time, such as in the VoIP example. Cisco has a strong track record of successful acquisitions, and many of its acquisitions have gone on to become top revenue and growth contributors.

Not only does Cisco play in all of the enterprise networking and communication infrastructure segments-the only vendor in this report to do so-it also captures significant market share in almost every segment. Though it's the goal of every vendor to capture significant share, Cisco is after \$1B+ opportunities to have an impact on its bottom line. To achieve that, it must either chase very large opportunities or become the #1 or #2 vendor in smaller segments. More often than not, Cisco has done both. With growth in enterprise networking and communication now limited, given overall market growth rates and Cisco's dominant position, it has recently expanded into the server market (a \$1.3B business for Cisco last year), taking on some of its former long-time partners, such as HP and IBM.

### **Score Analysis**

Cisco has the highest score overall, and it captures perfect or near-perfect scores in 6 of 7 criteria. Cisco has strong fundamentals (market share, financials) and consistently receives excellent buyer feedback. Cisco doesn't have much room to grow their overall score but still managed to do so last year thanks to improving market share momentum.





## **Strengths**

Cisco has the highest market share, capturing ~45% of total enterprise networking and communication revenue in calendar year 2012, due to strong execution and the breadth of its product portfolio. Cisco is the only vendor in this scorecard to offer products in all enterprise networking and communication segments, and it exploits this as much as it can by offering highly integrated solutions that cover multiple IT and networking needs. A good example is Cisco's ISR series of routers, which can host a variety of non-routing functions like security, VoIP, WAN optimization, WLAN control, compute, and more. Cisco's vast installed base is a built-in audience for these add-on functions, even if Cisco doesn't offer the optimal point solution. Ease of deployment and the right level of bundling have proven to be a recipe for success, if not always, most of the time.

Cisco has a very strong brand and is viewed as one of the top global brands by third party brand researchers. In the thousands of end-user interviews we've conducted over the years, Cisco consistently makes it to the top of buyers' short lists and gets strong marks on top purchase criteria such as product reliability and service/support. The common refrain from buyers is that they love Cisco, and the only thing they would love even more is paying a little less. But that usually doesn't stop them from purchasing Cisco gear.



Finally, Cisco has extremely sound financials—an operating margin of 22%, over \$15B in retained earnings, easy access to capital, including \$5B in cash, and low liabilities, giving Cisco multiple ways to invest in their business and weather financial distress, should it ever strike.

#### Weaknesses

Cisco's big weakness is its market share momentum, where they come in 6th place—actually an improvement over last place the previous year. Cisco lost about 2 points of market share in calendar year 2011 and launched a restructuring to refocus on core priorities, shedding non-core and unprofitable businesses. The effort was successful, and Cisco's share was fairly steady in 2012, down just 2/5 of a point. Given Cisco's very high level of market share, it's simply mathematically challenging to gain much more share but fairly easy to lose it; thus, Cisco is likely to always struggle on market share momentum.

Cisco's success is, in a way, also its weakness, as it makes it the biggest target. Cisco's competitors have its sights collectively trained on Cisco, and so Cisco has to play defense all the time, whereas smaller, more focused vendors escape competitor's scrutiny.

#### **Bottom Line**

Cisco has all the ingredients of a successful company and will be the hardest company to beat. Every time Cisco has stumbled, it has shown a remarkable way to turn things around and even top its previous high point.

#### #2 (Tie) Brocade

Brocade is the recognized industry leader in Fibre Channel SAN solutions and enjoys broad acceptance in the enterprise community. In 2008, Brocade diversified its product portfolio by acquiring Foundry Networks for \$2.6B in an all-cash transaction. The acquisition not only added IP networking products to their portfolio, but also a new customer base extending into the service provider market and new channels to market, in contrast to their OEM-driven Fibre Channel business.

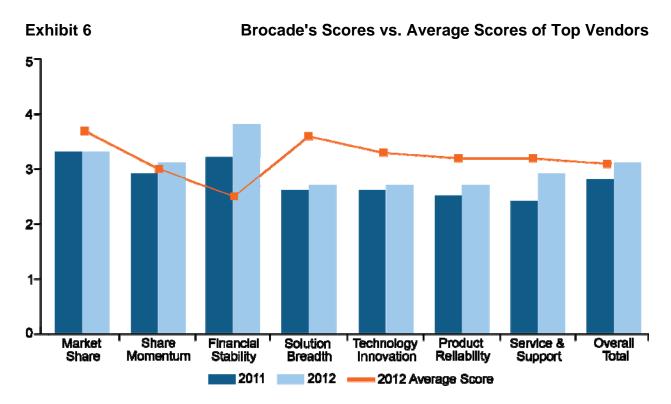
### **Markets and Technology Segments**

Brocade is very focused on the data center, and its product portfolio is representative of this strategy. Their Fibre Channel business contributes approximately 2/3 of its top line revenue, with the remainder coming from their IP networking business.

Brocade continues to invest in Fibre Channel SAN technology and was the first company to introduce 16G FC solutions to the market back in 2011. Those products now account for over 50% of their FC revenue and are helping offset declines in older FC technology.



Brocade's other data center products run the gamut from routing to switching to application delivery, and though they represent a smaller portion of the revenue base, they were the driver of growth for Brocade last year, up 14% vs 4% for FC. That's a reversal from 2011, when Brocade was struggling to grow the IP networking business, but investments in their converged networking strategy are now paying off.



## **Score Analysis**

Brocade jumped into a tie for 2nd place with Juniper in our vendor ranking this year, up from 4th last year. Like last year, Brocade has strong financials and showed improvements in share momentum and buyer perceptions, but the lack of a broader enterprise portfolio and brand awareness hurt its score.

#### **Strengths**

Brocade's biggest strength is in its financial stability. The stability of the FC storage networking market and its relatively price inelastic behavior bode well for Brocade in that it provides an excellent cash generating vehicle to fund other investment areas. Brocade has the 2nd-highest operating margin of the vendors examined in this scorecard (14%), and despite the high price of the Foundry acquisition, has access to capital and relatively low liabilities.



In addition to strong financials, Brocade had the highest revenue growth in 2012, up 6%, which translates to the top score for market share momentum. Starting with a solid Fibre Channel base, the company was able to drive double-digit growth in IP networking as their investments in that part of the business, such as the completion of their converged LAN-SAN FCoE networking solution, are starting to pay off.

#### Weaknesses

Brocade's biggest weakness is in its solution breadth. Brocade has chosen not to participate in the unified communication or security market segments and remains focused on its core competencies. This will limit Brocade's market share potential in the enterprise networking and communication market but could benefit Brocade financially in the long term, as it doesn't overextend itself.

Brocade's other main weakness is limited brand awareness, which translates into lower scores from endusers. This is something that will take time to fix, but already Brocade is seeing some success as userdriven scores on innovation, reliability, and support rose across the board this year.

#### **Bottom Line**

Brocade is making good investment choices and is executing its strategy well. It has a very strong brand in the storage networking community and is leveraging those long-standing and loyal customer relationships as it expands its data center portfolio to logically adjacent areas. Clearly, Brocade is not *just* a storage networking company anymore, and we believe it will continue to gain market share in its key focus areas.

## #2 (Tie) Juniper

Juniper was founded in 1996 as a service provider focused router vendor looking to take on Cisco's dominance of the high-end router market. It stayed mostly carrier-focused until 2004, when it acquired NetScreen, a successful security appliance vendor, for roughly \$4B. This acquisition gave it a line of enterprise products, an established channel, and a wide range of enterprise customers. Since the acquisition of NetScreen, Juniper has filled out its enterprise product offering through acquisition and internal development, the most notable being the internal development of its LAN and DC networking portfolio, which was released in 2008. Today, enterprise sales account for roughly 1/3 of Juniper's total revenue.

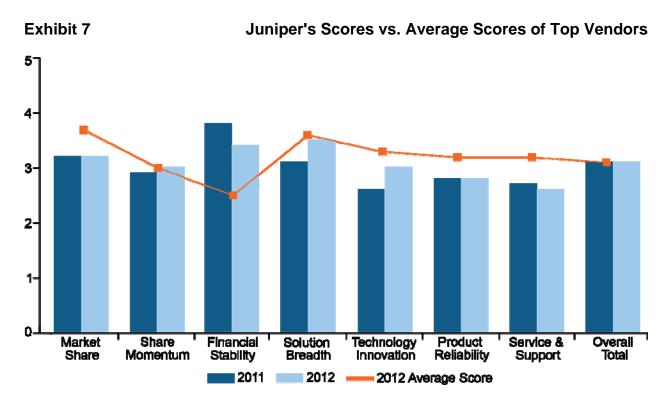
## **Markets and Technology Segments**

Though NetScreen was initially an SMB-focused security vendor, Juniper's enterprise focus has been on large customers with complex infrastructure requirements, and it has stayed true to that focus, resisting the urge to roll out SMB offerings and develop SMB channels. Juniper has mature offerings in switching, routing, security, and wireless LAN, and they added to their security offering in the last year with 2 acquisitions (in DDoS mitigations and web security).



## **Score Analysis**

Juniper is tied for 2nd place in our scorecard. Juniper saw a slight decline in their overall score, due mostly to deterioration in financial stability. Still, Juniper retains a strong financial position, has above average share momentum, and is viewed positively by buyers on technology and reliability.



## **Strengths**

Juniper is in a strong financial position, which contributes significantly to enterprise customer confidence for large infrastructure purchases and enables Juniper to shore up holes in its already broad technology/product portfolio. They increased their solution breadth score this year with the acquisition of Mykonos, which gave them their first dedicated content security offering, and we believe it's very possible that they'll make more acquisitions in the next 12 months to shore up their enterprise offering.

Juniper saw a slight rise in market share momentum this year, thanks to double-digit growth in their switching business. The acquisition of Trapeze puts Juniper in a much stronger position to supply wired/wireless campus networking infrastructure, and Juniper has rolled out additional QFabric components to address more data center opportunities.



Juniper's heritage as a service provider solution provider allows it to build enterprise products with hardware and software developed for service provider environments; this means it can deliver solutions that scale well, have the kind of reliability that large enterprises require, and have the rich management features that operators require. Its carrier heritage allows it to bring innovative carrier-grade solutions to its enterprise customers, and enterprises are responding well to that story. Juniper's technology innovation score (based on aggregated data from enterprise buyer surveys) jumped from last year's report to this year's. Juniper also invested significantly in its data center switching offering with the rollout of QFabric and is one of only 4 vendors (the others being HP, Dell, and Cisco) with the technology and business infrastructure required to sell integrated networking and security solutions into high-end enterprise data centers.

Juniper also has a strong vision and mature product for controlling and securing mobile devices, which in the face of the BYOD trend will be an increasingly important enterprise offering. Juniper's Pulse client is the most innovative mobile device security and control solution offered by any vendor in this report, and its strong mobile device story will draw in new enterprise customers and generate business for its broader enterprise portfolio; in 2013, an enterprise vendor who lacks a strong BYOD and mobile device security story and the solutions to back that story up will be seen as a laggard, but Pulse is already a mature offering-another reason why Juniper continues to be seen as an innovator.

### Weaknesses

Though Juniper has a broad enterprise portfolio, it has no enterprise voice or video offering, which limits its position in the enterprise networking and communication market and its ability to compete head-to-head with Cisco for some large enterprise deals that bundle infrastructure and voice/video applications.

Though its laser-focus on large enterprise customers with complex network problems has allowed it to focus its product development and sales resources with minimal distractions, it ultimately limits the visibility of the Juniper brand and its bottom-line revenue potential. Building and selling SMB products takes a different mindset and business infrastructure but could add significantly to its share position in most of the markets for which it has enterprise offerings.

#### **Bottom Line**

Juniper's enterprise business has significant upside potential. Though it is well established as an enterprise security vendor, many of its other enterprise offerings are relatively new and poised for growth. It could easily become the clear #2 enterprise competitor to Cisco with the addition of enterprise voice and video offerings, and it has the resources to make acquisitions in those areas. The company recognized key missteps in its enterprise security business, which affected its security share and share momentum in 2011 and 2012, and starting with the acquisition of Mykonos is working to build out an innovative web/content security offering.

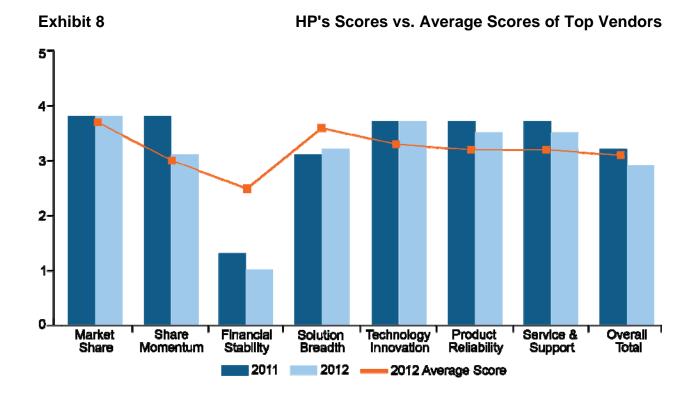


## #4 HP

HP is the largest company tracked in this scorecard, with well over a \$100B in annual revenue, over 300K employees, a customer base that spans from service providers to consumers, and a product portfolio that spans from infrastructure to devices. Like Alcatel-Lucent, enterprise networking and communication is a small part of HP's overall business, tucked into its Enterprise Servers, Storage, and Networking (ESSN) division, and contributing about 2% to total company revenue. Unlike Alcatel-Lucent, it is a strategic area for HP, as it complements its enterprise business of servers, storage, and services. This wasn't always the case, as HP had a strategic relationship with Cisco for networking products through 2008, which forced HP's internal line of networking products (ProCurve) to take a backseat. But once Cisco entered the server market, the relationship unraveled, and HP decided to build up its own networking portfolio, culminating in the 2010 acquisition of 3Com and creating the #2 networking vendor by a wide margin.

## **Markets and Technology Segments**

HP's core capabilities are on the networking side—switches, WLAN, routers—and it has a small presence on the security side. In addition, HP partners with third parties, such as Polycom and Microsoft, to address portions of enterprise communication that it does not serve directly. Finally, HP has an extensive IT product and service portfolio.





## **Score Analysis**

Despite being ranked in 4th place, HP excels in several areas and is ranked 2nd in 5 out of 7 criteria, including market-share-related criteria and positive buyer feedback. However, much weaker financials and a limited enterprise networking and communication solutions portfolio bring down its overall score.

## **Strengths**

HP has the highest market share (over 5% in 2012) aside from Cisco, and continues to have solid market share momentum, gaining about half a point of revenue share in 2012. HP has been able to grow share due to its exposure to the fast growing Chinese market and the realignment of HP's networking products within the HP organization and channel, which now favors HP's own products over third party products.

HP has a very strong brand across the world and gets strong endorsements for innovation, support, and reliability in our user studies. HP is a well-known brand, which generally helps vendors score well in enduser surveys, but beyond pure brand recognition, HP was one of the first to offer a lifetime warranty on Ethernet switches, which boosts its service/support and reliability scores. This strategy has been widely copied by HP's competitors.

#### Weaknesses

HP's major weakness is its financial situation, itself a result of slowing growth in its core markets and a poor track record on acquisitions. HP has racked up almost \$12B in operating losses over the past 12 months and has announced plans to lay off 30K employees to restore profitability. Most of the losses stem from one-time charges, such as restructuring and impairment of goodwill, and thus should be less of a factor in the future. But this isn't the only source of HP's difficulties—HP has one of the lowest working capital to assets ratios, which could lead to cash flow problems, and its share price keeps treading new lows, limiting its ability to raise new capital to cover its liabilities.

HP receives a below-average score for solution breadth due to a lack of communication offerings (served through partners) and a limited security portfolio. But what isn't reflected in this score, and what sets HP apart from other vendors, is an extensive portfolio beyond networking and communication that caters to the various IT needs of organizations: devices (laptops, PCs, printers), IT systems (servers, storage, software), and an expansive service portfolio. Few companies, and none in this scorecard, can match these capabilities. A side benefit is economy of scale, giving HP leverage with suppliers and the channel, and the ability to leverage investments across many divisions.



### **Bottom Line**

HP has many of the ingredients needed to be a successful enterprise networking and communication company, but its financial problems are a serious impediment to a stronger ranking as cost cuts are implemented across the organization and negatively impact HP's ability to invest in its business. If HP can get its financial house in order, we expect it to do much better in this scorecard next year.

## **#5 Siemens Enterprise**

Siemens Enterprise is a privately held company jointly owned by Siemens AG and Gores Group. It operates worldwide with over 10,000 employees and has a strong presence in Europe and South America. Though it sells to small and medium businesses, Siemens Enterprise has a strong focus on large enterprises, mostly because of its heritage in carrier class products through the Siemens carrier business (now part of Nokia Siemens Networks). In October 2013, the company will be rebranding itself, moving away from the Siemens name.

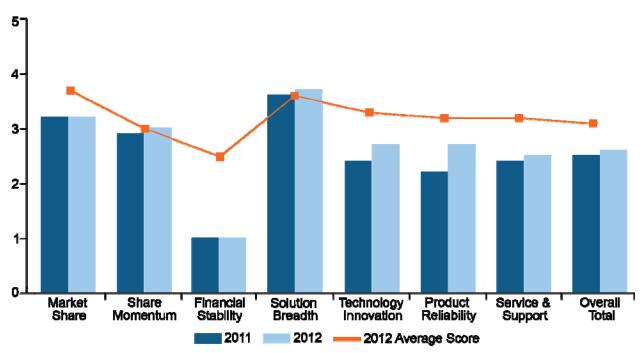
## **Markets and Technology Segments**

Siemens Enterprise's primary focus is on voice and UC solutions, which consist of PBX, UC applications, contact centers, and endpoints. It has spent the last 2 years focusing on 2 core platforms—OpenScape Enterprise and OpenScape Business—while moving its software into hosted options. Siemens Enterprise is the 3rd-largest enterprise telephony vendor behind Cisco and Avaya, with 11% of worldwide revenue in 2012.

Complementing its product platforms, Siemens Enterprise has a strong service portfolio—it is among the largest managed PBX providers—in addition to traditional professional, maintenance and support, and cloud-based offerings. Its managed service business is its strongest area and represents roughly 50% of its total revenue. Siemens Enterprise also offers data networking products such as switches and WLANs through its Enterasys division.







## **Strengths**

Siemens Enterprise has been in the enterprise voice business for decades, and its installed base of customers and corresponding market share are key strengths. Siemens Enterprise has been able to maintain its market position in the enterprise telephony market despite continued weakness in its home market of Europe by strengthening its presence in North America. Over the past year, Siemens has been focused on product innovation and will officially reveal a new user interface platform in mid-July 2013 that it plans use as springboard to transform the company. The company is in a strong position, particularly in Europe and North America, to expand its managed service and cloud telephony business.

Through its private equity firm, Siemens has access to the Enterasys networking business, which gives Siemens an almost complete portfolio of communication, networking, and security products and the #2 rank for solution breadth.

Finally, in our end-user studies, Siemens Enterprise tends to receive positive feedback from buyers due to the strong Siemens brand name, which is well known around the world and associated with quality German engineering. They will likely lose this association when they rebrand the company later in the year.



### Weaknesses

Siemens Enterprise's key weakness is in financial stability. Siemens Enterprise is a privately held company and does not release financial results, so its financial score is based on analyst opinion (the only such score in this report), rather than an Altman Z score analysis. We scored Siemens a 1 for financial stability, based on the following:

- Siemens AG, the minority owner, has been recording losses from its investment in Siemens Enterprise, indicating that it is unprofitable. Recent comments by senior management that investment has a higher priority than profitability bolster this assessment.
- As a private company that is not traded on public equity markets, Siemens faces greater challenges in raising capital to meet short- or long-term obligations.
- Siemens Enterprise was acquired by the Gores Group, a private equity firm, and thus is likely to carry a heavy debt load on its balance sheet, which will put a squeeze on future profitability.

Siemens Enterprise is still largely a voice and UC company—in 2012, it had \$2B in total revenue in this area. Though it has access to the Enterasys networking portfolio, Enterasys remains a separate brand, which creates confusion and doesn't help to show off the breadth of products. There have been no indications that the 2 organizations will unite under a common brand. The Enterasys name also suffers from poor brand recognition, bringing down Siemens overall buyer feedback.

Finally, Siemens Enterprise derives a majority of its revenue from select regions/countries, such as Germany, Europe, and South America. It has focused on growing revenue outside of its core region, especially in North America over the past year. However, it still has a small position in North America relative to the competition. High exposure to Europe, a region that faces the greatest economic challenges, will remain an issue for Siemens Enterprise over the coming year.

#### **Bottom Line**

Though Siemens Enterprise has access to data networking products through Enterasys, it is essentially an enterprise telephony and UC vendor. Its strength lies in its long standing position in the market, particularly with large enterprises, and its reputation for well-built products and professional services. As a privately held company, it falls short on financial stability. With more transparency on the financials, Siemens should be able to move up in the scorecard over the coming year, but we don't foresee this happening.



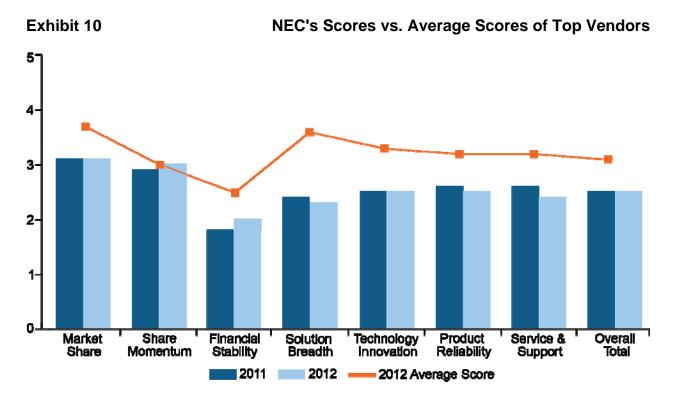
### #6 NEC

NEC is among the largest companies headquartered in Asia, with a broad portfolio of products ranging from display solutions, carrier network equipment, computers, software, enterprise network and communications, and social infrastructure. It had \$31B in sales in its fiscal year 2012. NEC's IT Solutions Business, which consists of IT systems, enterprise networking systems (servers, storage, software), and IP telephony systems, is 41% of its revenue. Our scorecard focuses only on the enterprise network and communications segment, but its activity in carrier network equipment and computing give NEC a differentiation and valuable expertise that can carry over into the enterprise communication space.

## **Markets and Technology Segments**

NEC's enterprise communication portfolio consists of conferencing and recording, contact center, storage, PBX and unified communication, and a wide range of professional services. Its professional service mix ranges from standard maintenance and support to full cloud offerings, consulting and integration, and IT managed infrastructure services. In addition, NEC has a small portfolio of top-of-rack switches for the data center and has been an active developer of software defined networking (SDN), being one of the first companies to launch and deploy SDN controllers and switches. NEC also resells or OEMs products that complement its communication portfolio, such as routers and gateways, and some of these are sourced from competitors in this scorecard, such as Cisco for routers, and Brocade for switches.





## **Strengths**

NEC's strength is in its product development and professional service capabilities. It has done a good job of creating comprehensive UC applications with a strong focus on the end-user. However, NEC has not been able to turn this leading development into stronger market share. NEC has 11% worldwide PBX revenue share, which has been consistent over the past 4 years. This consistency has been enough to drive above average market share momentum, as other, larger vendors struggled. The majority of its business is in Asia Pacific, its home region, but NEC does compete globally—roughly 19% of its enterprise telephony business is in North America.

#### Weaknesses

NEC receives a low score in financial stability due to low operating margins (4%), which impact its ability to reinvest in the business, and a high debt load relative to its market capitalization, which could impact its ability to service debt obligations. Its financial score takes into account the entire company, not just the communication portfolio, which is a small segment of NEC, and though the latter may not bear prime responsibility for the weak financial results, it's a factor that impacts the entire company.



With a focus on enterprise telephony and UC and a limited networking portfolio, NEC comes up short in product breadth in this scorecard. In addition, based on our survey data, NEC received below-average feedback from end-user organizations, especially in the areas of innovation and service and support. NEC's extensive work on SDN could very well bring up its innovation scores in future editions of this scorecard.

#### **Bottom Line**

NEC has a strong portfolio of IT solutions, but in the areas of enterprise networking and communications, it falls short on solution breadth and positive feedback from buyers. NEC's strength lies in its position in the Asia market, specifically its home country of Japan. As the "local" vendor, the company has a leg-up on the competition and a #1 market position for enterprise telephony in the region.

#### #7 Alcatel-Lucent

Alcatel-Lucent is a large, global, diversified telecom equipment manufacturer; its primary business is selling gear to the world's largest service providers. Alcatel-Lucent's enterprise division accounts for about 10% of its overall sales. The enterprise market is not a core priority for Alcatel-Lucent, and it has unsuccessfully attempted to divest this business. The recent release of Alcatel-Lucent's "shift" plan, which attempts to put Alcatel-Lucent on a long-term sustainable path, does not include the enterprise business as a strategic component of Alcatel-Lucent's future. Although a reluctant participant, Alcatel-Lucent is still one of the world's top enterprise networking and communication infrastructure suppliers.

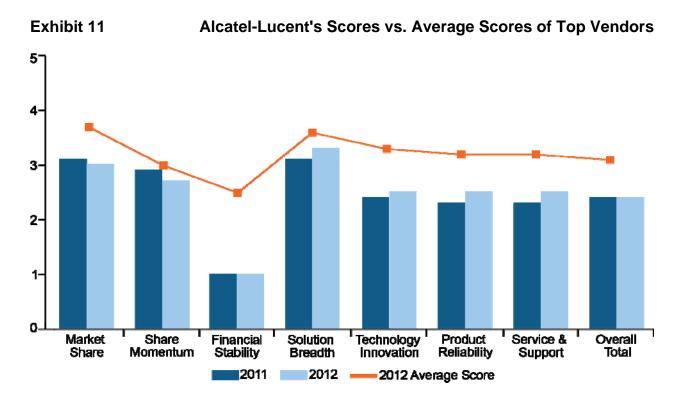
## **Markets and Technology Segments**

Alcatel-Lucent's enterprise division is fairly diversified, covering a range of networking equipment, including Ethernet switches and WLAN, and communication products, such as phone systems and unified communication software. Because the company is part of a much larger organization, Alcatel-Lucent's enterprise division is also able to source products from its service provider division, such as high-end routers, optical equipment, and wireless communication products, giving the company unique capabilities that are hard for other vendors to match.

#### **Score Analysis**

Overall, Alcatel-Lucent receives below average scores, weighed down by its financial situation and relatively low scores in innovation, reliability, and support based on our user surveys. Still, Alcatel-Lucent's score rose slightly this year based on a broadening of their solution portfolio and improved perceptions among end-users.





## **Strengths**

Alcatel-Lucent's strong suit is its broad range of product offerings, covering all of the major segments. It has a unique ability to source additional, primarily networking-related products from its service provider division, and though this doesn't figure into our scoring system directly, it can be an important differentiator for very large enterprises and certain verticals that have service provider-like requirements for scale and reliability. For example, Alcatel-Lucent's IMS equipment has been purchased by several Fortune 50 companies for internal communication networks. Though Alcatel-Lucent is not a one-stop supplier, it offers a broad set of products and can provide products other vendors can't. Alcatel-Lucent's solution breadth score rose this year due to the addition of branch routing products.

Alcatel-Lucent has low market share (one of its weaknesses) but has been able to keep it relatively steady over the past year, and for that, Alcatel-Lucent scores well in market share momentum. Alcatel-Lucent has ramped up marketing efforts over the past year, especially in North America, which is helping it maintain and grow its market share.



#### Weaknesses

Alcatel-Lucent's biggest weakness is its financial position. An Altman Z score analysis shows that Alcatel-Lucent is in financial distress—it has been unprofitable for years and has accumulated over €16B in losses. Its battered stock price reduces its ability to raise capital and attract talent and makes it a take-over target. Mass-market buyers don't pay much attention to vendors' financial situations, but larger companies do, and Alcatel-Lucent's weak financial position will hamper its ability to win large accounts and be considered a strategic supplier.

Alcatel-Lucent receives low scores in our user surveys on innovation, reliability, and support, but it is working hard to change that perception. Over the past year, the company has refreshed a number of products, particularly in the data center, and ramped up its marketing to highlight its successes. These initiatives are already paying off, with perceptions among end-users and relevant rankings rising across the board this year.

Alcatel-Lucent's other main weakness, which isn't readily discernible in the scores, is that it is still very much a regional player—well over half of its revenue comes from the EMEA market. This reduces its market share potential, scale, and the ability to serve global organizations with complex requirements. However, Alcatel-Lucent is working hard to change that, and has successfully grown revenue outside of EMEA over the past few years.

#### **Bottom Line**

Alcatel-Lucent won't be able to solve its financial problems in the short term, and that will weigh down its score in the years to come. But the company has a number of important differentiators, such as being part of a large organization with a global presence, its relationships with its base of service provider customers, and an opportunity to innovate across the enterprise and service provider market. These give Alcatel-Lucent an edge over other vendors, and should allow it to drive share gains and improve buyer perception.

## #8 Avaya

Avaya is among the largest enterprise telephony vendors, with its solutions sold worldwide. It built this position through the acquisition of Nortel's enterprise business in 2010, which also gave Avaya an extensive line of data networking products. Its global revenue market share in PBX systems and IP phones was 21% in 2012. Avaya's customer base consists of large enterprises, small and medium businesses, and government organizations. Avaya sells its solutions directly and through roughly 11,000 channel partners worldwide.



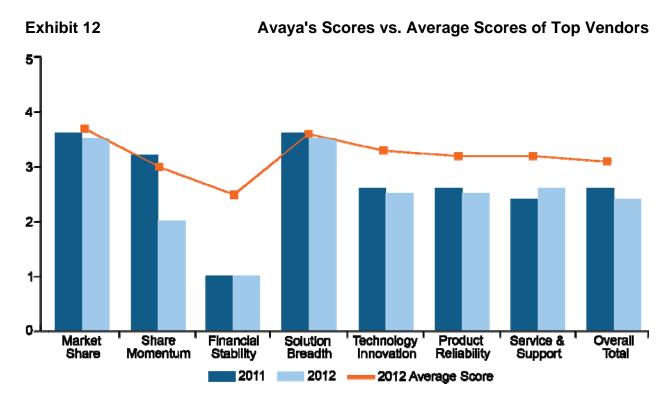
## **Markets and Technology Segments**

Avaya has operations in 3 segments: communication solutions, data networking, and professional services. However, the core of its business and the majority of its product revenue comes from communication solutions, which consist of phone systems, UC software and endpoints, video collaboration equipment, and contact centers. On the networking side, it markets Ethernet switches, branch routers, WLAN, and enterprise SBCs and gateways. Avaya has a large service organization, and roughly half its revenue comes from services, such as professional services (consulting, implementation) and operational services (managed services, support services, remote diagnostics, monitoring). The company has shown a willingness to acquire technologies and capabilities to broaden its capabilities, such as the acquisition of Radvision in June 2012 for \$230M for video conferencing capabilities. Unfortunately, acquisitions, particularly Nortel, have weighed heavily on Avaya's financial position and overall company operations.

## **Score Analysis**

Though Avaya has breadth of products, its market share momentum for 2012 was the worst of the bunch as competitors took advantage of its struggles and gained share. Its financial situation is the other big weight on its overall score. Avaya is privately held and has been looking to go public but has held back due financial markets and challenges in driving top line revenue (during 4Q11–1Q13, it saw its core PBX revenue decline sequentially in all but 1 quarter).





## **Strengths**

Avaya's strength is its solution breadth and installed base of long standing customers through which it upsells its suite of enterprise communication products. The challenge is that the Nortel base has stalled with upgrades to Avaya. Those that were receptive to the acquisition have already transitioned while others are taking their time and remain on Nortel gear or have moved on to a competitor. So, though Avaya has a large installed base, it has worked against it, leading Avaya to slide in market share momentum.

Avaya has a broad set of channel resellers to which it can sell current and future products—this asset is hard to replicate. Avaya's challenge is to effectively manage this asset and keep it simple as it rolls out new products. In the past year, Avaya has more working against it than for it, but it does fall on middle ground with product reliability and service and support.



### Weaknesses

Avaya's biggest weakness is its financial position. An Altman Z score (see Methodology for description) analysis shows Avaya in poor financial shape, saddled with long-term debt, close to \$5B in accumulated losses, and barely profitable operations. In addition to a weak financial picture, Avaya continues to have employee turnover, particularly at the management level, which impacts continuity of product strategy, employee motivation, and sales initiatives.

Finally, Avaya received below-average buyer feedback on technology innovation and product reliability. On the technology innovation front, businesses do not perceive Avaya as being a leader, whereas Cisco and Microsoft are viewed as the real standouts in enterprise telephony and UC.

#### **Bottom Line**

Though Avaya continues to work on getting its financial house in order, it has not had the movement necessary over the past 2 years to make the company financially strong. It remains to be seen if it can successfully go public. Avaya needs to demonstrate that it can continue to count on its installed base for telephony and UC upgrades and new purchases in areas such as video conferencing, enterprise SBCs, session management, and data networking. In the end, Avaya may make an attractive acquisition target for a vendor such as Juniper that lacks the telephony components of a broad enterprise product portfolio.

#### METHODOLOGY

#### Portfolio Covered

The enterprise networking and communication infrastructure market consists of the following distinct market segments:

- Networking: equipment used to build enterprise networks, including: routers; Ethernet switches; WLAN; application delivery controllers (ADCs) and WAN optimization appliances (application delivery); and Fibre Channel storage networking equipment and storage adapters (SAN)
- Communication: equipment and software that provides real-time enterprise voice and video communication, including private branch exchanges (PBXs), video conferencing systems, and unified communication software
- **Security:** products that provide security for networks and network-connected devices, including integrated security appliances, VPN/firewall software, client security software, web and mail security, network access control and authentication solutions, security management, storage security, and encryption



## **Vendor Inclusion Criteria**

Well over 100 vendors vie for a piece of the market, but only 12 vendors capture more than 1% market share. Out of those, 8 vendors have a diversified product portfolio that address multiple enterprise networking and communication segments and were considered for evaluation in this scorecard.

A note on excluded vendors:

- Huawei reported over \$1.8B in total enterprise revenue last year but does not break out how
  much of that revenue comes from enterprise networking and communication infrastructure. Once
  Huawei starts providing revenue break-outs and meets the threshold for inclusion, we will add
  Huawei to future scorecards.
- McAfee and Checkpoint each captured close to \$900M in security revenue last year, higher than Alcatel-Lucent; however, we did not include them in our scorecard due to their singular focus on the security market.
- Dell, IBM, Microsoft, and Oracle are large and well-known vendors, but the bulk of their enterprise revenue comes from servers, storage, and software, not enterprise networking and communication infrastructure.

## Leadership Score Criteria

We start with the 8 largest vendors by revenue, and evaluate them in 7 criteria using actual data and metrics. For each criterion, we scored vendors on a 5-point scale, with 1 being the lowest possible score, 3 being an average score, and 5 being a perfect score. Specifically, we evaluated vendors on:

- Market share: a measure of how successfully a company has penetrated its target markets; having significant market share creates awareness with buyers, improves scale, and re-assures buyers that companies are here to stay for the long term; some RFPs require vendors to meet certain market share thresholds, to ensure vendor viability; successful vendors will have aboveaverage market share that is increasing year over year
  - Market share: vendors' percentage share of the enterprise networking and communication
    infrastructure market; we determined the average market share, and how many standard
    deviations each vendor's share deviated from the market average; 1 standard deviation
    equals 1 point on the rating scale, and the market average is set to a score of 3, therefore a
    market share 1 standard deviation below the market average would result in a score of 2
  - Market share momentum: changes in market share over time; changes in annual market share were added or subtracted from a baseline of 3 points ("average"); a 1-point change in share equals 1 point on the rating scale, e.g., a 1-point market share gain would result in a score of 4
- **Financial stability:** an analysis of a vendor's financials; a strong financial position improves long-term viability and allows a company to stay ahead of the competition by investing in R&D and/or acquiring other companies/technologies; we used the Altman Z-score non-manufacturing model, and used calculated Z scores as-is



- Solution breadth: a measure of how many enterprise networking and communication infrastructure segments a vendor addresses; a broader solution set improves a vendor's potential and efficiency of its operations and allows it to differentiate by innovating across segments; we calculated scores based on whether a vendor participates in a given sub segment of the market, and its relative revenue contribution to the overall market; we applied the resulting ratio (the vendor's TAM vs the total enterprise networking and communication infrastructure TAM) to the maximum 5 points available; a vendor who participates in 100% of the market got a rating of 5, a vendor whose TAM is 50% of the total market got a score of 2.5, etc.
- Buyer feedback: an assessment of a vendor's performance by buyers, based on interviews we conduct with hundreds of end-users every year; we adjusted buyer's vendor ratings by familiarity, to compensate for brand recognition, and determined how many standard deviations each vendor's score deviated from the market average; 1 standard deviation equals 1 point on the rating scale, and the market average is set to a score of 3, therefore a user rating 1 standard deviation above the market average would result in a score of 4
  - Technology innovation
  - · Product reliability
  - Service and support

Some calculated scores fell below or above the 1–5 scale, in which case vendors received a score of 1 or 5, respectively.

Based on the scores for each of the 7 criteria, we created a single composite vendor score, using the same 5-point scale, and weighting the individual criteria based on its importance in the buying process. Approximately a third of the score comes from market share related performance metrics, a third from buyer feedback, and the remaining third from financial and solution portfolio metrics. The following table shows vendors' scores by criterion, as well as final composite scores.



Exhibit 13

## Top Enterprise Networking and Communication Equipment Vendors' Scores by Criterion

	Market Share	Share Momentum	Financial Stability	Solution Breadth	Technology Innovation	Product Reliability	Service & Support	Total
Alcatel-								
Lucent	3.0	2.7	1.0	3.3	2.5	2.5	2.5	2.4
Avaya	3.5	2.0	1.0	3.5	2.5	2.5	2.6	2.4
Brocade	3.3	3.1	3.8	2.7	2.7	2.7	2.9	3.1
Cisco	5.0	2.6	5.0	5.0	5.0	5.0	5.0	4.5
HP	3.8	3.1	1.0	3.2	3.7	3.5	3.5	2.9
Juniper	3.2	3.0	3.4	3.5	3.0	2.8	2.6	3.1
NEC	3.1	3.0	2.0	2.3	2.5	2.5	2.4	2.5
Siemens	•						_	<u>.                                      </u>
Enterprise	3.2	3.0	1.0	3.7	2.7	2.7	2.5	2.6

The information in this report is based on findings from multiple Infonetics Research services, including:



## Market Share, Size, and Forecasts

- Ethernet Switches Quarterly Worldwide, Regional, China, and Japan Market Size, Share, and Forecasts
- Enterprise Routers Quarterly Worldwide, Regional, China, and Japan Market Size, Share, and Forecasts
- Wireless LAN Equipment and WiFi Phones Quarterly Worldwide and Regional Market Size, Share, and Forecasts
- Enterprise Unified Communications and Voice Equipment Quarterly Worldwide and Regional Market Size, Share, and Forecasts
- Enterprise Telepresence and Video Conferencing Equipment Quarterly Worldwide and Regional Market Size, Share, and Forecasts
- Network Security Appliances and Software Quarterly Worldwide and Regional Market Size, Share, and Forecasts
- Content Security Gateway Appliances, Software, and SaaS Quarterly Worldwide and Regional Market Size, Share, and Forecasts
- SAN and High Performance Interconnect Equipment Quarterly Worldwide and Regional Market Size, Share, and Forecasts
- Data Center Network Equipment Quarterly Worldwide and Regional Market Size, Share, and Forecasts

## **Survey-Based Research**

- UC Strategies and Vendor Leadership: North American Enterprise Survey
- Data Center Security Strategies and Vendor Leadership: North American Enterprise Survey
- Mobile Security Strategies and Vendor Leadership: North American Enterprise Survey
- Wireless LAN Strategies and Vendor Leadership: North American Enterprise Survey
- Data Center and Campus Ethernet Switch Vendor Leadership: North American Enterprise Survey
- Security Strategy for On-Premise, Hosted, and Hybrid Solutions: North American Enterprise Survey



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