

# Critical Capabilities for Wired and Wireless LAN Access Infrastructure

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Here, we examine the capabilities of wired and wireless local-area network vendors to address a set of common enterprise use cases. Network decision makers should use this research to determine which vendors have the best mix of critical capabilities for their specific usage requirements.

## Key Findings

- Changes in potential vendor ownership affect strategic partnerships and will differentiate how several vendors in this research are able to approach the unified access or wireless-only use cases.
- Slightly more than half of organizations use a single vendor for unified wired/wireless local-area network solutions; however, 75% are interested in soliciting proposals from multiple vendors.
- Vendors now offer 802.11ac Wave 1 wireless access points; in many cases, they're priced at parity with previous-generation 802.11n hardware.
- As more organizations address guest access or employee bring-your-own-device initiatives, the ability to effectively and securely onboard large numbers of devices to the enterprise network is becoming a greater priority.

## Recommendations

- Select a LAN vendor based on your organization's network performance and management requirements. Consider use cases and stated performance and management requirements, as opposed to choosing based on a specific network architecture, a vendor's market leadership or incumbency.
- Create price leverage and identify the LAN solution that is best aligned to your organization's specific requirements by seeking competitive bids.
- Choose a single-vendor unified wired/wireless LAN access solution for a consistent wired/WLAN user-centric access policy, with improved provisioning times and reduced administrative costs.

- Differentiate vendor offers by evaluating simplicity and consistency of management, network applications, wired form factors and cost.

## What You Need to Know

Three general groups of vendors are covered in this research:

- Vendors that provide their own wired and wireless infrastructure, network applications and services — e.g., Cisco, HP Networking/Aruba, Extreme Networks and Huawei
- Vendors that focus on more-specific connectivity options and/or address specific sets of market requirements — e.g., Aerohive, Brocade Communications Systems, Ruckus Wireless and Zebra Technologies
- Vendors that use strategic partners to provide portions of the access solutions — e.g., Dell, Avaya, Juniper Networks and Alcatel-Lucent Enterprise (ALE)

Vendors in this research meet the basic functional requirements across the defined use cases. Customer feedback to Gartner also indicates that most organizations are pleased with their wired and wireless local-area network (WLAN) access vendors.<sup>1</sup> As in 2014, high scores were clustered in some use cases; we see wider vendor product differentiation in such areas as:

- Full-featured cloud management platforms that provide comparable functionality to the vendor's on-premises management solutions, rather than a more limited set of capabilities.
- Form factors and port densities that meet specific wired switching requirements. These include fixed form factors, port extensions and chassis-based switches.
- Innovation around network applications that support onboarding, security, guest access, policy enforcement, network management and other access-layer functionality.
- Consistency of management capabilities across the entire wired and wireless access network and across multiple vendor products, enabling simple "single pane of glass" management for an IT administrator responsible for supporting one or multiple enterprise locations.

Only about half of end-user clients deploy wired/WLAN solutions from a single vendor, even though 75% see using a single vendor as desirable.<sup>2</sup> Reasons include cost, existing relationships/infrastructure, mismatched refresh cycles or a preference for best-of-breed approaches.

Gartner believes that organizations generally benefit from a long-term strategy to use a unified wired/WLAN access layer. This results in:

- Improved provisioning, orchestration and management
- Reduced operating expenditures (opex)
- Improved onboarding
- Faster provisioning

- Consistent policy enforcement

## Analysis

### Critical Capabilities Use-Case Graphics

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Figure 1. Vendors' Product Scores for the Enterprise Unified Wired and WLAN Access Use Case

## Product or Service Scores for Enterprise Unified Wired and WLAN Access

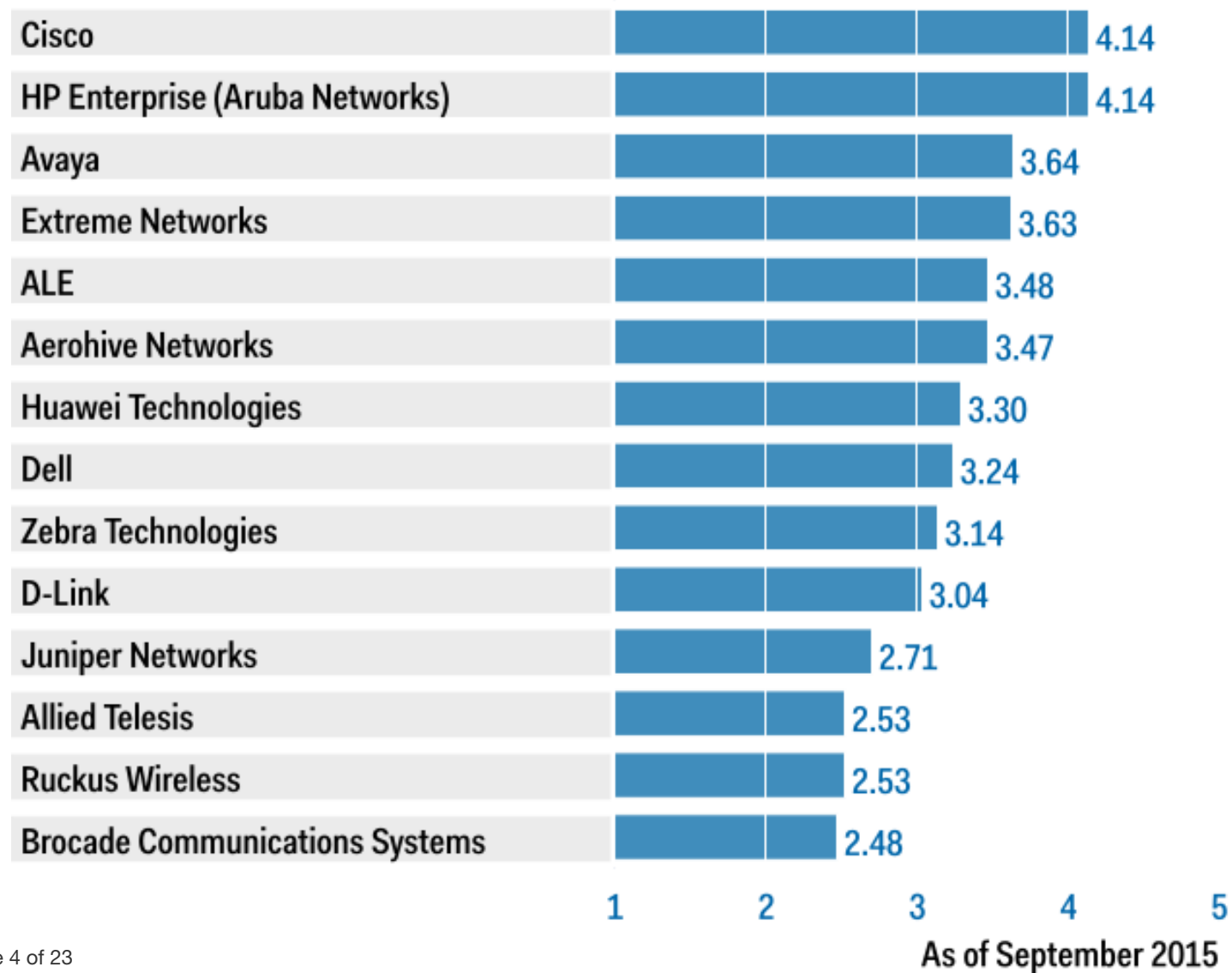


Figure 2. Vendors' Product Scores for the Enterprise Wired-Only Connectivity Use Case

## Product or Service Scores for Enterprise Wired-Only Connectivity

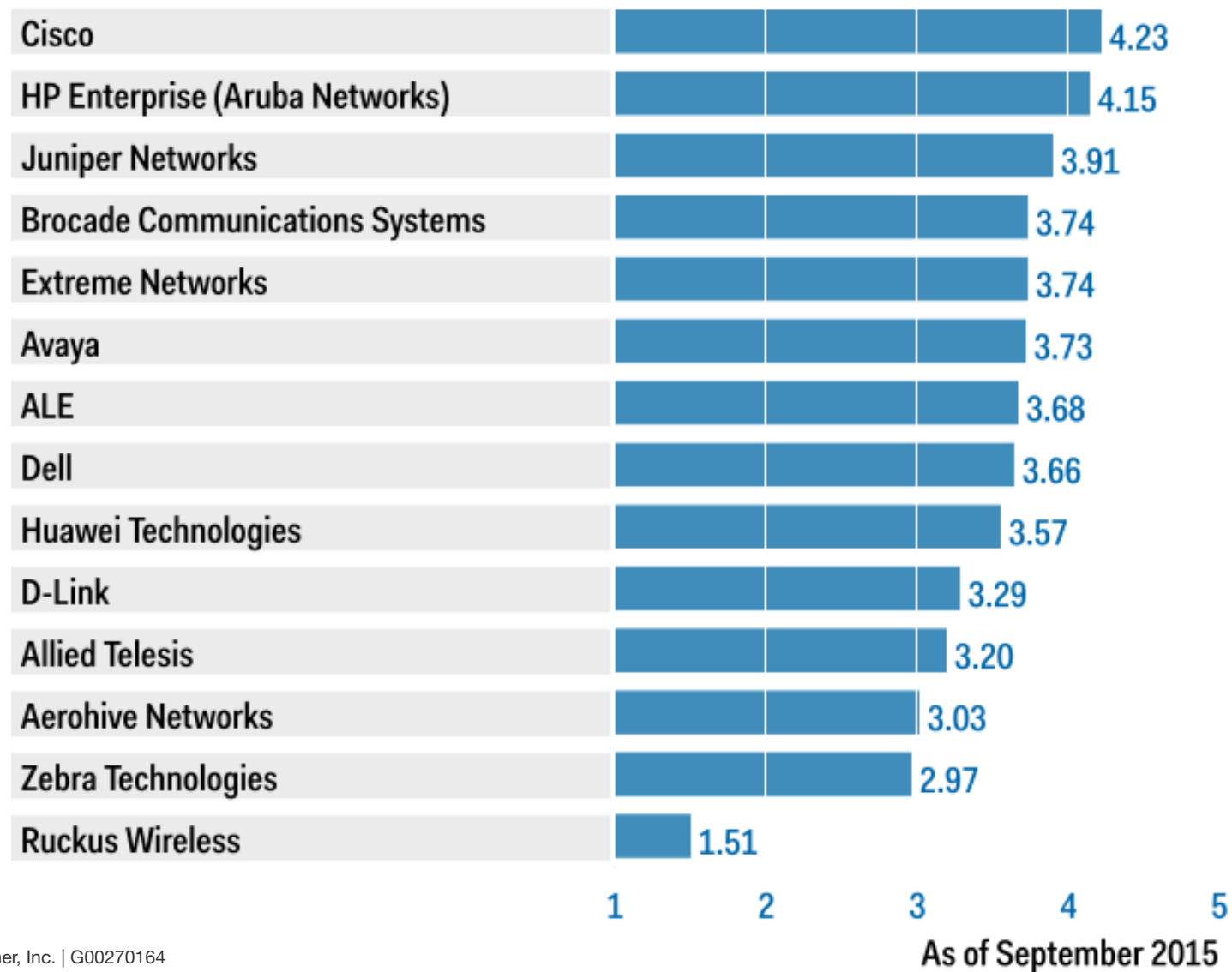


Figure 3. Vendors' Product Scores for the Enterprise Wireless-Only Connectivity Use Case

## Product or Service Scores for Enterprise Wireless-Only Connectivity

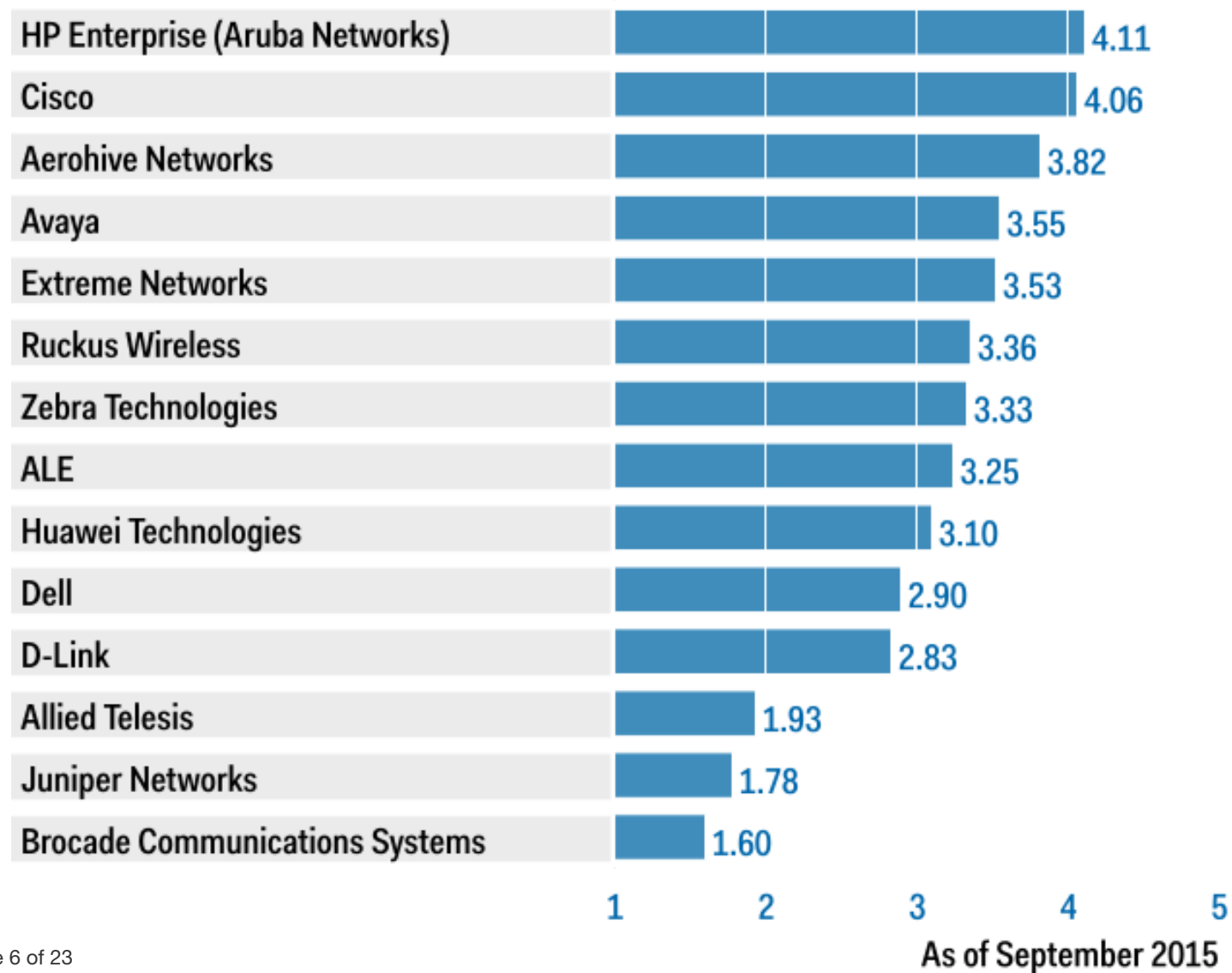


Figure 4. Vendors' Product Scores for the SMB and/or Mall or Remote Branch Office Use Case

## Product or Service Scores for SMB and/or Mall or Remote Branch Office

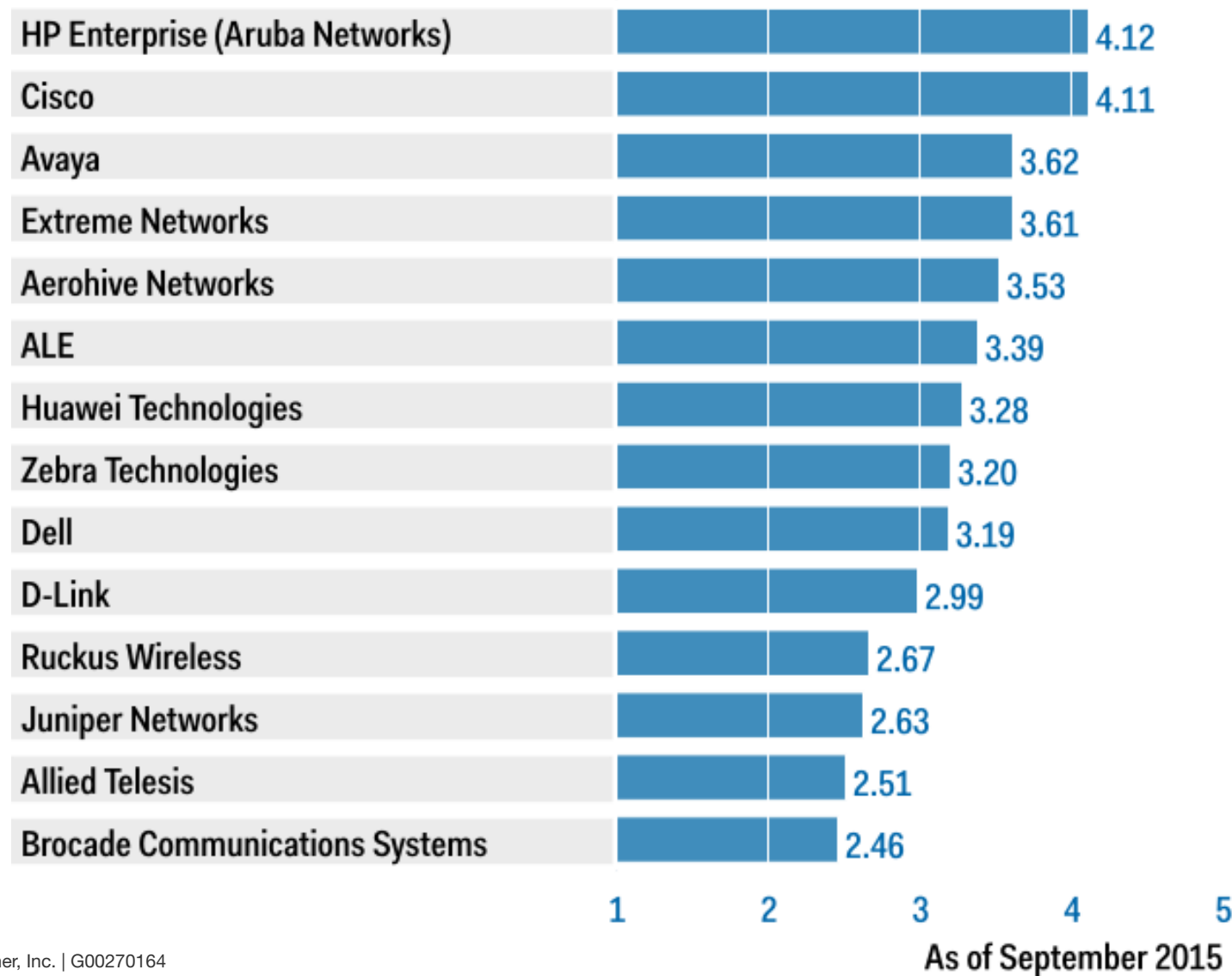


Figure 5. Vendors' Product Scores for the Voice Over WLAN Use Case

## Product or Service Scores for Voice Over WLAN

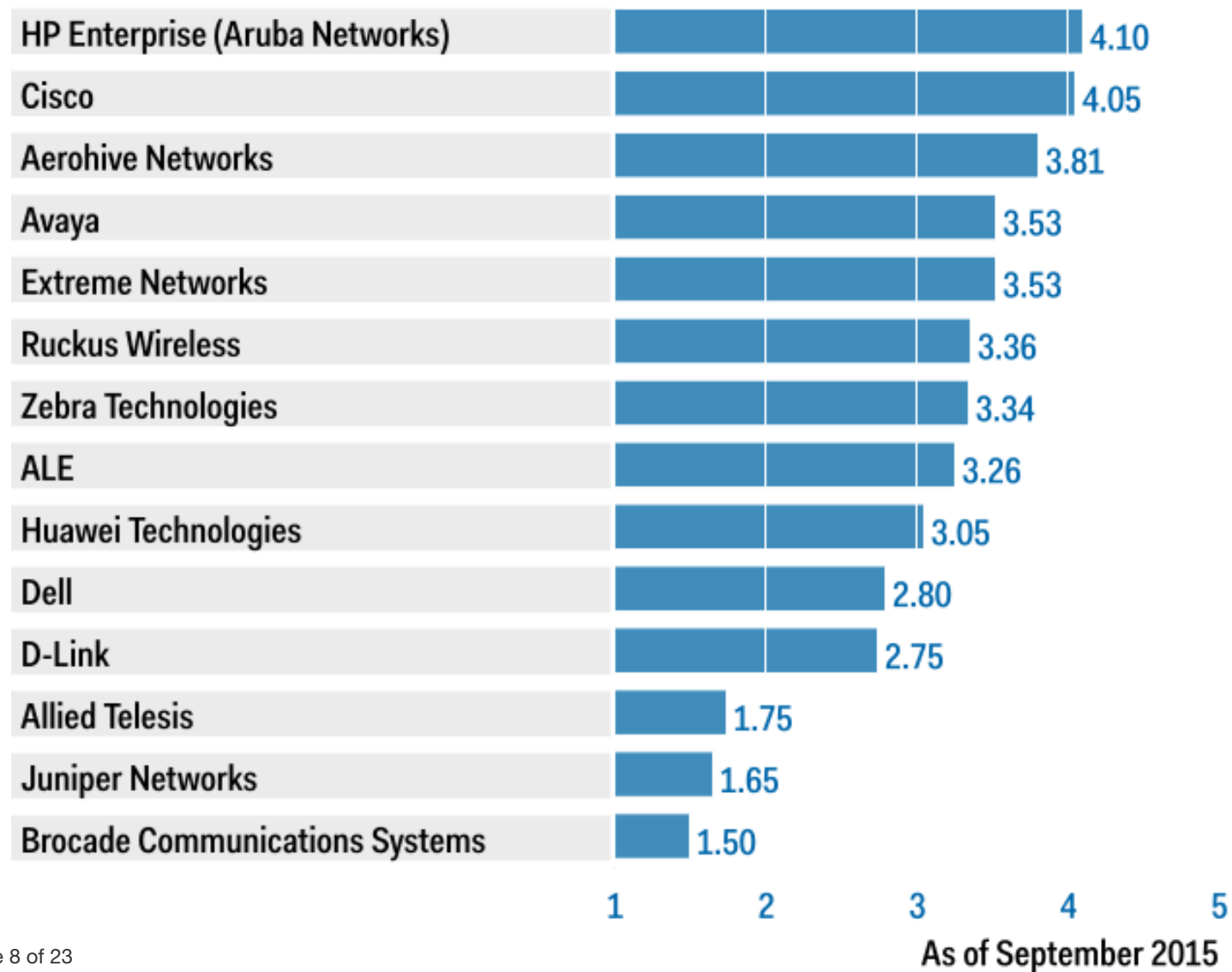
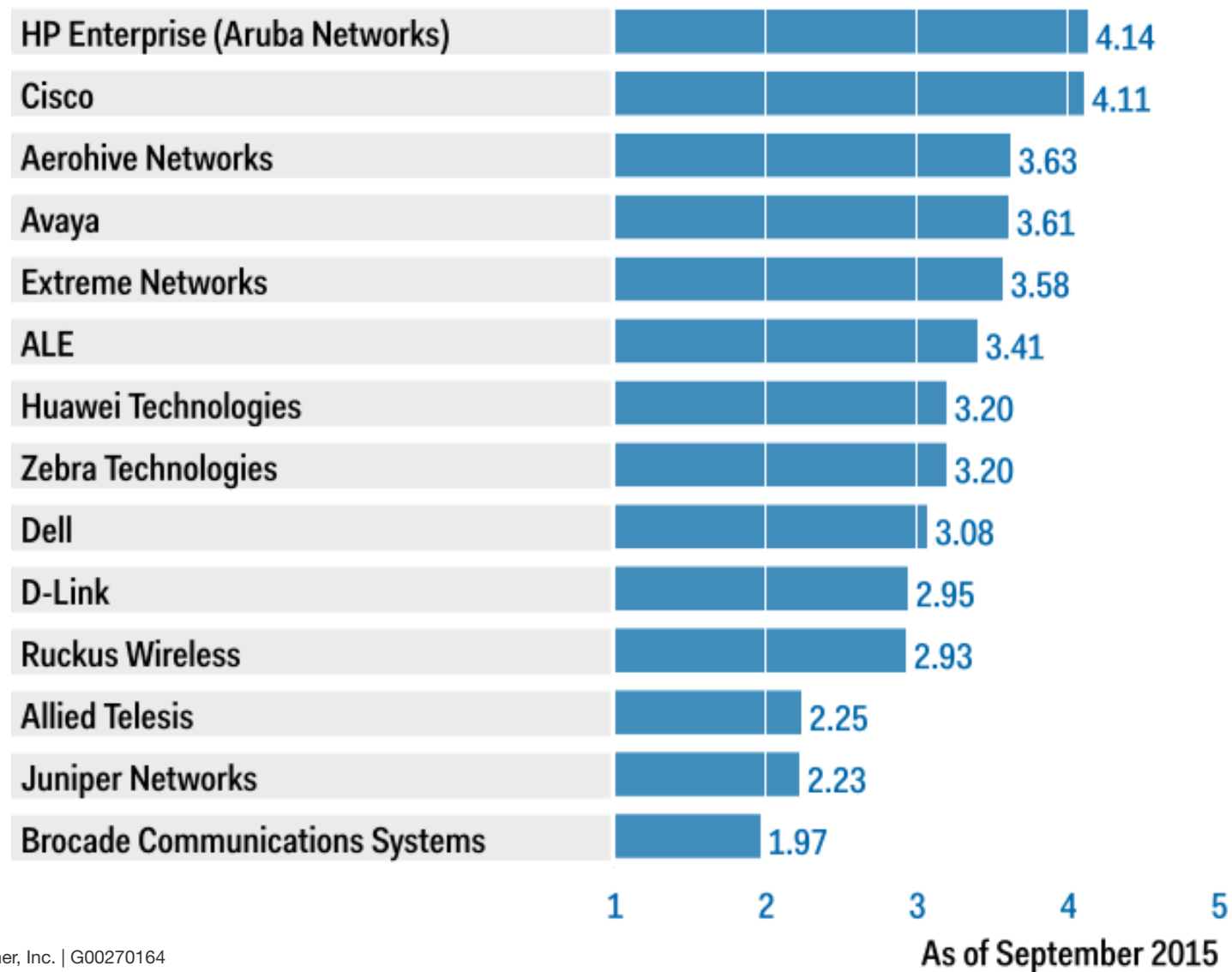




Figure 6. Vendors' Product Scores for the IaaS or Managed Service Use Case

## Product or Service Scores for IaaS or Managed Service



## Vendors

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### Aerohive Networks

Aerohive Networks strategically focuses on its strong wireless portfolio of access points and access applications, scoring among the top three vendors for WLAN-heavy use cases, such as enterprise wireless-only connectivity, voice over WLAN, and managed or cloud-based services. Aerohive provides a controllerless architecture, which is available as on-premises/private cloud or as-a-service/public cloud-managed, which Gartner clients often cite for installation ease and competitive cost. Aerohive's management component (HiveManager) manages only Aerohive equipment.

### ALE

Alcatel-Lucent Enterprise (ALE), scored at or above the midrange of vendors for each use case, on the strength of its end-to-end LAN capabilities, which provide unified network access and control for its own Ethernet switches and for wireless hardware from its OEM partner, Aruba. The vendor also uses Aruba's ClearPass access management technology, for which Gartner clients consistently give positive feedback, supporting its own and third-party wired and wireless LAN equipment. ALE is 85% held by state-owned China Huaxin. Customers should determine whether ALE's specific plans for organic and inorganic growth under its new ownership align with their own long-term networking requirements.

### Allied Telesis

Allied Telesis's capability for meeting basic connectivity requirements with its predominant wired switching portfolio place it in the lower third of vendors for the enterprise wired-only connectivity use case. The company is working to integrate the WLAN capabilities it acquired through its 2014 purchase of Extricom. The vendor provides limited guest access functionality and onboarding or policy enforcement applications for wired or wireless components. These limitations — plus a lack of capabilities for expanded requirements, such as indoor location or analytic reporting — place Allied Telesis in the low 25% quartile of vendor scores for wireless-related use cases.

### Avaya

Avaya's comprehensive wired and wireless LAN portfolio, which tightly integrates the vendor's wired switches and management and control solutions with wireless hardware and technology from its strategic OEM partner, enable the vendor to score in the top quartile for five of six use cases. Avaya scored as the No. 3 vendor for the small or midsize business (SMB) and/or mall or remote branch office use case, on the strength of its Unified Access solution, which enables management, policy enforcement, guest management and security across multivendor networks, and is supported by the vendor's fabric architecture to provide automated network and device provisioning at remote and branch offices. Avaya's managed service portfolio includes turnkey installation, deployment and management of a WLAN; however, the service is not yet available to customers for the wired access network.

## Brocade Communications Systems

Brocade Communications Systems' score in the top quartile for enterprise wired-only connectivity reflects its strong portfolio of wired switches delivered under the vendor's HyperEdge architecture. Brocade does not offer its own WLAN components, but relies on several strategic partners for wireless product development, including Aruba (which is now owned by HP Enterprise), Aerohive and Ruckus. Brocade provides several new aggregation and edge switches, has incorporated software-defined networking (SDN) functionality into its switching portfolio, and has integrated its switches with its partners' management and policy software. However, other WLAN applications remain limited, pushing Brocade's scores to the bottom of use cases with heavy weighting for wireless and for those capabilities.

## Cisco

Cisco scores as a top two vendor in all use cases, based on its broad set of access layer capabilities across switching, wireless, policy and network management. Scoring in some use cases is affected by the limited ability of Cisco customers to migrate from one wired or wireless architecture to another. For example, Gartner clients provide positive feedback for the Cisco Meraki cloud-managed solution's cost and ease of use; however, unlike competitors' solutions, Meraki WLAN access points cannot be migrated to on-premises WLAN deployments. Gartner clients also have reported inconsistencies among Cisco's management tools, including inconsistent user interfaces and different functionality for security, guest, network management and policy enforcement.

## Dell

Dell can provide a unified network solution based on the integration of its wired switching hardware — which ranked in the top 10 by global sales in 2014 — with wireless technology from OEM partners Aruba and Aerohive. The vendor scores in the midrange of all use cases, with its reliance on partners for wireless technology innovation. This may be an important factor for customers that find it advantageous to meet their WLAN requirements directly through Aruba or Aerohive, rather than Dell. An emerging market for Dell's unified network solution is SMBs — the vendor has introduced purpose-built solutions for that market, which may be secondary to larger vendors.

## D-Link

D-Link has a broad portfolio of wired and wireless access network hardware, scoring in the bottom third of all use cases due to limitations to the current capabilities of its network applications. For example, D-Link provides a software controller architecture, Central WiFiManager, which can remotely manage 500 D-Link wireless access points. Central WiFiManager covers only the vendor's hardware. Furthermore, as of 1H15, the vendor's SaaS-based CloudCommand management solution (which is provided by partner PowerCloud Systems) still did not cover wired switches or D-Link's growing array of 802.11ac access points. D-Link is a leading provider in the niche of stand-alone, software-managed access points, which is targeted at uses such as medical device carts, where the access point can aggregate signals from multiple pieces of equipment for transmission to the network.

## Extreme Networks

Extreme Networks' ability to provide a broad portfolio of wired and wireless products suitable for a wide range of needs, including those of SMBs, enterprises and service provider customers, places the company in the top third of vendor scores for all use cases. Extreme scored highly in the SMB and/or mall or remote branch office use case, partly due to its continued investment in products that reduce costs in smaller environments. This includes heterogeneous stacking for switching, as well as semiautonomous access points that operate in controller and controllerless modes. Similarly, the vendor benefited in the voice over WLAN use case from its ability to report mean opinion scores (MOSs) for voice applications. This makes Extreme one of the few vendors able to fully optimize the access layer for any enterprise considering an "all wireless office" decision.

## HP Enterprise (Aruba Networks)

With the acquisition of Aruba, HP attained No. 1 or No. 2 scores in each of the Critical Capabilities use cases, based on the strong access network solution combining HP's wired switching line with Aruba's WLAN and mobility products. HP will combine its FlexCampus switching portfolio with Aruba's WLAN solutions to offer these products' access capability. Network services and management applications will be delivered via the phased integration of ClearPass, Airwave and in-memory computing (IMC) functionality, which garner positive feedback from Gartner clients. Customers should continue to seek a committed product and service roadmap from HP that identifies products the vendor may phase out as it fully integrates with Aruba.

## Huawei Technologies

Huawei Technologies' Enterprise Business Group (EBG) scored at or near the midrange for all use cases, based on the capabilities of its Agile Network Solutions, which support the vendor's vision of an end-to-end campus networking portfolio. Huawei also continues to extend its functionality and capabilities to meet new and expanding enterprise requirements. This includes its eSight management and network applications, which support non-Huawei devices, including HP and Cisco, to simplify orchestration within multivendor environments. Huawei's lowest score was for voice over WLAN, where clients need to work with the vendor to understand what tools are available beyond normal quality of service (QoS) statistics to ensure performance.

## Juniper Networks

Juniper Networks scored in the top three vendors for wired-only connectivity, based on its EX line of fixed form factor and modular switches, as well as its ability to provide automation and stacking capabilities that simplify wired switching management. However, the vendor scored in the lowest quartile of use cases with any wireless capability weighting, because it has discontinued the development of its WLAN platform beyond 802.11n and will rely on a partner framework, which includes HP/Aruba and Ruckus, for future wireless development. Customer feedback indicates that the level of integration between Juniper and its Open Convergence Framework partners may affect a customer's ability to achieve a unified access layer with a single policy, security and management interface.

## Ruckus Wireless

Ruckus Wireless scored in the top half of vendors for wireless-only and voice over WLAN use cases, based on its strong portfolio of access points and its controller-based architecture, which can be deployed virtually with the full suite of Smart Applications. These applications now include location-aware capabilities, including Smart Positioning Technology (SPoT) and SmartCell Insight analytics. Both can be delivered on-premises or as cloud-managed services. As a WLAN-focused vendor, in 1H15, Ruckus Wireless announced a relationship with switching vendor Juniper that gives it the ability to offer a complete LAN solution. Further product integration between Ruckus' wireless and Juniper's wired access layer solutions is on a timeline that had not been committed by early 2H15. As a result, Ruckus scored as one of the bottom two vendors for the unified access and wired-only use cases. Scores also were affected by the fact that the vendor's management component (FlexMaster) handles only Ruckus equipment, unlike many of its top competitors.

## Zebra Technologies

Zebra Technologies scored in the midrange of most use cases. This is based on the strengths of the wireless access networking technology it has integrated from former Motorola solutions, combined with the limited wired switching product lineup, which completes its LAN solution. Network application capabilities helping to support Zebra's scores include its MPact location services platform, which supports Wi-Fi and Bluetooth low-energy beacons, and its WiNG Express platform. The latter platform is designed for the SMB market and enables one wireless access point to serve as virtual controller for as many as 25 other access points, thereby reducing costs for small deployments, compared with controller-based WLAN architectures. Zebra also provides its AirDefense Services Platform, supporting management of access layer hardware from non-Zebra vendors, such as Cisco and Juniper.

## Context

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In the LAN market, vendors continue to develop their hardware and software capabilities to address the increasing traffic on both wired and WLAN networks. Gartner estimates enterprises will experience a 28% compound annual growth rate in network traffic through 2017.<sup>3</sup> During the past year, the market has continued to evolve, and Gartner has observed the following major trends:

- Users have accelerated their adoption of 802.11ac Wave 1 wireless equipment, pushing sales of 802.11ac access points in 2014 to \$924.4 million from \$96.2 million in 2013. In many proposals, 802.11ac Wave 1 equipment is priced the same as 802.11n hardware (see "Enterprises Should Optimize the Timing of 802.11ac Adoption"). In contrast, although touted by the industry, 802.11ac Wave 2 equipment will be available in only limited volumes through 2016.
- HP's acquisition of Aruba prompted several vendors that have strategic partnerships with Aruba to also look at other partners, including Ruckus Wireless and Aerohive.
- Vendors introduced or enhanced cloud-based network management capabilities, reflecting an uptick in demand for cloud-managed access connectivity.

- Vendors made software innovations to improve the onboarding of large numbers of devices to the access network, for employee BYOD programs, guest access or Internet of Things (IoT) devices (such as surveillance cameras).

Enterprises must adequately balance sizing their access network requirements versus overbuilding and, consequently, overspending. Organizations can plan for refresh cycles of four to seven years for WLAN and seven to 10 for wired edge (see "Know When It's Time to Replace Enterprise Network Equipment"). Because WLAN refresh cycles are substantially shorter than those for wired LAN, the synchronization of wired/WLAN refresh cycles is economically feasible approximately half the time.

## Product/Service Class Definition

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Wired and wireless LANs consist of a wide range of features and functions. In this research, we examine six critical capabilities that enterprises should consider when developing infrastructure plans and choosing strategic suppliers.

## Critical Capabilities Definition

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### Wired Access

This includes the vendor's wired switching solution, which includes hardware (port extensions, fixed form factor or modular switches, Power over Ethernet, supported interfaces, etc.) and integrated software.

Key components include performance, availability, scalability, interoperability, cost and the overall portfolio architecture.

### WLAN Access

This involves the vendor's wireless access solution in traditional, carpeted enterprise environments, which includes hardware (access points, antennas, wall jacks and controllers) and integrated software.

Key components include performance, availability, scalability, interoperability, cost and the overall portfolio architecture.

### Guest Access/BYOD

This includes the ability to provide a captive portal for guests and define roles of differing permission/functionality to the network. These roles use primitives, such as device, device profile, user, location, time/date, duration and application access.

### Management and Administration

This includes the fault, configuration, and performance management/administration capabilities of the vendor's hardware/software products; other network products (e.g., routers/access points); and multivendor capabilities.

This can also include functionality embedded into individual network elements, vendor-provided network management system software/hardware, and integration with existing third-party management tools (e.g., NFM, NPM and/or NCCM) via standardized protocols or APIs.

### Additional Network Applications

This capability includes a broad set of new network applications, including network monitoring, analytics, forensics, advanced application support and location-based services. Network monitoring and analytics applications look at the network, as well as the end-user data.

Network forensics tools determine what's happening across the entire access layer, in addition to security functionality and fixed mobile convergence capabilities. Location services provide data that is based on Wi-Fi or active RFID/beacons, well as an application toolkit for zonal or real-time location services (RTLS). Location-based services can be specific to a vertical industry.

### Use Cases

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This research identifies the most common set of use cases in which organizations invest and deploy access solutions. These use cases vary significantly, and, as a result, the access networking market is driven by a wide range of user needs and environments.

### Enterprise Unified Wired and WLAN Access

This is a physical facility that typically supports more than 500 users, and employs wired/WLAN access in a carpeted office space environment.

Most users are typically badged employees; however, contractors and guests also require connectivity. Employees typically have assigned workspaces and use desk phones. Employees are issued corporate-owned devices; however, BYOD is often also supported for mobile devices (such as smartphones and tablets). This network buyer is typically highly technically competent and is comfortable making granular changes to wired/WLAN infrastructure components. This use case is typically initiated by a campus refresh or for "greenfield" opportunities. This is the most common use case for newly constructed office space.

### Enterprise Wired-Only Connectivity

This is a physical facility or campus environment with more than 500 users that requires only wired access. It is typically observed for brownfield and refresh opportunities.

This use case may involve locations for which the enterprise does not want to update or replace an incumbent wireless solution, or has risk-averse environments in which no wireless is deployed. Most users are typically badged employees, but contractors and guests also require connectivity. This buyer is typically highly technically competent, and/or routinely makes granular changes to wired/WLAN infrastructure components.

### Enterprise Wireless-Only Connectivity

This is a physical facility with more than 500 users in which more than 90% require WLAN access to be deployed in carpeted office space.

Limited wired components may provide connectivity for WLAN infrastructures or as incremental updates to an existing wired infrastructure. This use case is typically observed for brownfield and refresh opportunities. Most users are badged employees; however, contractors and guests also require connectivity. This buyer is typically highly technically competent, and/or routinely makes granular changes to wired/WLAN infrastructure components.

### SMB and/or Mall or Remote Branch Office

This is a single physical facility housing 10 to 50 users, but may grow to 499. This requires a combination of wired and WLAN access deployed in a carpeted office space.

This use case is typically observed for small enterprises or a small remote office of a larger enterprise. Most users are typically badged employees; however, contractors and guests also require connectivity. There is typically little or no on-site technical support in these locations.

### Voice Over WLAN

This is a single, small location or a large campus-based enterprise. In addition to data connectivity, all users have voice over WLAN clients for voice connectivity.

The implementation may also use voice over WLAN as a replacement for a wired phone and may include softphones on desktops or laptops, as well as Wi-Fi applications on smartphones. The requirement is for toll-quality calls with a MOS of 3.5 or greater and no perceptible jitter on client calls. This buyer is typically highly technically competent and routinely makes granular changes to wired/WLAN infrastructure components.

### IaaS or Managed Service

This provides access layer connectivity as infrastructure as a service (IaaS). It's typically deployed to enterprises of fewer than 500 employees or remote branch offices.

The service can be deployed either in a public cloud or in a data center network operations center, where the vendor or vendor partner/service provider deploys and manages the solution for the end user.

## Inclusion Criteria

Use this research in conjunction with Gartner's "Magic Quadrant for the Wired and Wireless LAN Access Infrastructure." This Critical Capabilities research uses the same vendor inclusion criteria listed in detail in the Magic Quadrant. These criteria include requirements related to vendor enterprise network revenue generated in 2014, installations in enterprise office environments, availability of publicly available price lists for hardware and software components, and specific



hardware and software component features and capabilities. To reflect the market's evolution, Gartner re-evaluated the inclusion criteria to ensure the consideration of compelling wired-only and WLAN-only vendors in the space.

Table 1. Weighting for Critical Capabilities in Use Cases

| Critical Capabilities           | Enterprise Unified Wired and WLAN Access | Enterprise Wired-Only Connectivity | Enterprise Wireless-Only Connectivity | SMB and/or Mall or Remote Branch Office | Voice Over WLAN | IaaS or Managed Service |
|---------------------------------|------------------------------------------|------------------------------------|---------------------------------------|-----------------------------------------|-----------------|-------------------------|
| Wired Access                    | 35%                                      | 75%                                | 0%                                    | 27%                                     | 0%              | 20%                     |
| WLAN Access                     | 35%                                      | 0%                                 | 55%                                   | 33%                                     | 50%             | 50%                     |
| Guest Access/ BYOD              | 10%                                      | 10%                                | 20%                                   | 15%                                     | 20%             | 10%                     |
| Management and Administration   | 12%                                      | 13%                                | 15%                                   | 20%                                     | 10%             | 10%                     |
| Additional Network Applications | 8%                                       | 2%                                 | 10%                                   | 5%                                      | 20%             | 10%                     |
| <b>Total</b>                    | <b>100%</b>                              | <b>100%</b>                        | <b>100%</b>                           | <b>100%</b>                             | <b>100%</b>     | <b>100%</b>             |
| As of September 2015            |                                          |                                    |                                       |                                         |                 |                         |

Source: Gartner (September 2015)

This methodology requires analysts to identify the critical capabilities for a class of products/ services. Each capability is then weighed in terms of its relative importance for specific product/ service use cases.

### Critical Capabilities Rating

Each of the products/services has been evaluated on the critical capabilities on a scale of 1 to 5; a score of 1 = Poor (most or all defined requirements are not achieved), while 5 = Outstanding (significantly exceeds requirements).

Table 2. Product/Service Rating on Critical Capabilities

| Critical Capabilities           | Aerohive Networks | ALE | Allied Telesis | Avaya | Brocade Communications Systems | Cisco | Dell | D-Link | Extreme Networks | HP Enterprise (Aruba Networks) | Huawei Technologies | Juniper Networks | Ruckus Wireless | Zebra Technologies |
|---------------------------------|-------------------|-----|----------------|-------|--------------------------------|-------|------|--------|------------------|--------------------------------|---------------------|------------------|-----------------|--------------------|
| Wired Access                    | 2.8               | 3.9 | 3.5            | 3.8   | 4.1                            | 4.3   | 3.9  | 3.5    | 3.8              | 4.2                            | 3.7                 | 4.4              | 1.0             | 2.8                |
| WLAN Access                     | 3.9               | 3.4 | 2.0            | 3.6   | 1.0                            | 4.1   | 3.0  | 3.0    | 3.5              | 4.2                            | 3.1                 | 1.5              | 3.6             | 3.2                |
| Guest Access/BYOD               | 3.6               | 3.0 | 1.0            | 3.3   | 2.5                            | 4.0   | 3.0  | 3.0    | 3.5              | 4.0                            | 3.2                 | 2.0              | 3.0             | 3.6                |
| Management and Administration   | 3.8               | 3.0 | 3.5            | 3.7   | 3.0                            | 4.0   | 3.0  | 2.5    | 3.6              | 4.0                            | 3.2                 | 3.0              | 3.0             | 3.4                |
| Additional Network Applications | 3.8               | 3.3 | 1.0            | 3.5   | 1.0                            | 4.0   | 2.0  | 2.0    | 3.6              | 4.0                            | 2.7                 | 1.0              | 3.3             | 3.4                |
| As of September 2015            |                   |     |                |       |                                |       |      |        |                  |                                |                     |                  |                 |                    |

Source: Gartner (September 2015)

Table 3 shows the product/service scores for each use case. The scores, which are generated by multiplying the use case weightings by the product/service ratings, summarize how well the critical capabilities are met for each use case.

Table 3. Product Score in Use Cases

| Use Cases                                | Aerohive Networks | ALE  | Allied Telesis | Avaya | Brocade Communications Systems | Cisco | Dell | D-Link | Extreme Networks | HP Enterprise (Aruba Networks) | Huawei Technologies | Juniper Networks | Ruckus Wireless | Zebra Technologies |
|------------------------------------------|-------------------|------|----------------|-------|--------------------------------|-------|------|--------|------------------|--------------------------------|---------------------|------------------|-----------------|--------------------|
| Enterprise Unified Wired and WLAN Access | 3.47              | 3.48 | 2.53           | 3.64  | 2.48                           | 4.14  | 3.24 | 3.04   | 3.63             | 4.14                           | 3.30                | 2.71             | 2.53            | 3.14               |
| Enterprise Wired-Only Connectivity       | 3.03              | 3.68 | 3.20           | 3.73  | 3.74                           | 4.23  | 3.66 | 3.29   | 3.74             | 4.15                           | 3.57                | 3.91             | 1.51            | 2.97               |
| Enterprise Wireless-Only Connectivity    | 3.82              | 3.25 | 1.93           | 3.55  | 1.60                           | 4.06  | 2.90 | 2.83   | 3.53             | 4.11                           | 3.10                | 1.78             | 3.36            | 3.33               |
| SMB and/or Mall or Remote Branch Office  | 3.53              | 3.39 | 2.51           | 3.62  | 2.46                           | 4.11  | 3.19 | 2.99   | 3.61             | 4.12                           | 3.28                | 2.63             | 2.67            | 3.20               |
| Voice Over WLAN                          | 3.81              | 3.26 | 1.75           | 3.53  | 1.50                           | 4.05  | 2.80 | 2.75   | 3.53             | 4.10                           | 3.05                | 1.65             | 3.36            | 3.34               |
| IaaS or Managed Service                  | 3.63              | 3.41 | 2.25           | 3.61  | 1.97                           | 4.11  | 3.08 | 2.95   | 3.58             | 4.14                           | 3.20                | 2.23             | 2.93            | 3.20               |
| As of September 2015                     |                   |      |                |       |                                |       |      |        |                  |                                |                     |                  |                 |                    |

Source: Gartner (September 2015)

To determine an overall score for each product/service in the use cases, multiply the ratings in Table 2 by the weightings shown in Table 1.

## Gartner Recommended Reading

*Some documents may not be available as part of your current Gartner subscription.*

"Magic Quadrant for the Wired and Wireless LAN Access Infrastructure"

"Don't Let the New WLAN Standard Break the Bank or Your Wired Network"

"Toolkit: RFP for Wired and Wireless Access Layer Infrastructure"

"Market Share: Enterprise Network Equipment by Market Segment, Worldwide, 4Q14 and 2014"

"Network Access for Guests or Contractors Requires More Than an Open-Network, Coffee Shop Strategy"

"How Cloud, Mobile and Video Will Increase Enterprise Bandwidth Needs Through 2017"

"Market Share: Enterprise Network Equipment by Market Segment, Worldwide, 4Q13 and 2013"

"How Products and Services Are Evaluated in Gartner Critical Capabilities"

### Evidence

The authors of this research conducted more than 1,500 client interactions regarding networking during the past 12 months.

Gartner analyzed the survey responses from 102 organizations using wired/WLAN in their environments. These organizations were provided as reference customers by the vendors participating in this research.

The authors of this research had multiple interactions with the vendors referenced in this research, including reviewing their responses to a questionnaire.

<sup>1</sup> This is based on client interactions during the past 12 months and is reiterated in a survey of vendor-provided references. In the survey, 43% (wired) and 47% (WLAN) were "completely satisfied," while 84% (wired) and 89% (WLAN) scored their vendors a 5 or higher on a scale of 1 to 7. In addition, 75% would use the vendor again, and 75% would recommend the vendor.

<sup>2</sup> This is based on client interactions during the past 12 months and is reiterated in a survey of vendor-provided references. In the survey, 64% of organizations considered using the same vendor for wired/WLAN, but only 56% actually deployed solutions from the same vendor (the number of respondents was 102).

<sup>3</sup> See "How Cloud, Mobile and Video Will Increase Enterprise Bandwidth Needs Through 2017."

## Critical Capabilities Methodology

This methodology requires analysts to identify the critical capabilities for a class of products or services. Each capability is then weighted in terms of its relative importance for specific product or service use cases. Next, products/services are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities for each use case is then calculated for each product/service.

"Critical capabilities" are attributes that differentiate products/services in a class in terms of their quality and performance. Gartner recommends that users consider the set of critical capabilities as some of the most important criteria for acquisition decisions.

In defining the product/service category for evaluation, the analyst first identifies the leading uses for the products/services in this market. What needs are end-users looking to fulfill, when considering products/services in this market? Use cases should match common client deployment scenarios. These distinct client scenarios define the Use Cases.

The analyst then identifies the critical capabilities. These capabilities are generalized groups of features commonly required by this class of products/services. Each capability is assigned a level of importance in fulfilling that particular need; some sets of features are more important than others, depending on the use case being evaluated.

Each vendor's product or service is evaluated in terms of how well it delivers each capability, on a five-point scale. These ratings are displayed side-by-side for all vendors, allowing easy comparisons between the different sets of features.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor: most or all defined requirements not achieved

2 = Fair: some requirements not achieved

3 = Good: meets requirements

4 = Excellent: meets or exceeds some requirements

5 = Outstanding: significantly exceeds requirements

To determine an overall score for each product in the use cases, the product ratings are multiplied by the weightings to come up with the product score in use cases.

The critical capabilities Gartner has selected do not represent all capabilities for any product; therefore, may not represent those most important for a specific use situation

or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making a product/service decision.

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