

Magic Quadrant for Wireless LAN Infrastructure

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With the higher speeds of 802.11n and increased focus on voice, wireless LANs are becoming the access layer technology of choice for new enterprise network deployments. To capture growth, vendors must meet diverse requirements regarding guest access, security, manageability and deployment.

WHAT YOU NEED TO KNOW

All the vendors profiled in this Magic Quadrant can provide the basic wireless LAN (WLAN) connectivity and Wi-Fi Protected Access 2 (WPA2) standards-based security required by most enterprises. Differences in WLAN architecture, enhanced security and management features separate the offerings from each vendor. These areas of technical differentiation generally matter when enterprise business needs reach a large number of end users in a coverage cell or in large, complex installations.

As the number of deployed access points (APs) in an enterprise grows, expectations of longevity (four years) and management requirements of the equipment have risen dramatically; therefore, companies supplying WLAN architecture must address these concerns.

Although WLAN vendors continue to innovate more rapidly on the technology front, the traditional wired infrastructure vendors are marketing increasingly compelling arguments for combined application services such as management of wired and wireless networks, though few have executed on this vision.

Several smaller vendors have focused on vertical markets and built up a significant war chest of customers, partners and end-to-end solutions. However, this narrow focus may not equate to horizontal-market success in the long run, so enterprises should expect vendors not only to supply vertical solutions but also to meet broader, horizontal networking requirements.

Leaders and Challengers in this Magic Quadrant (see Figure 1) will pose the least risk for client investment, but may not always provide the most leading-edge or current technology. Vendors termed Visionaries could provide this capability, but may present a greater risk. Those that are rated as Niche Players will typically appeal to vertical users, their client base, low-price buyers or to those looking for a specific set of features.

MAGIC QUADRANT Market Overview

Wireless LANs have established themselves as core enterprise network components for access layer communications, with few questions remaining about the security, reliability and usefulness of these networks. Growth of this market continues to be robust, although some users have delayed purchases of new infrastructures until the IEEE 802.11n standard is

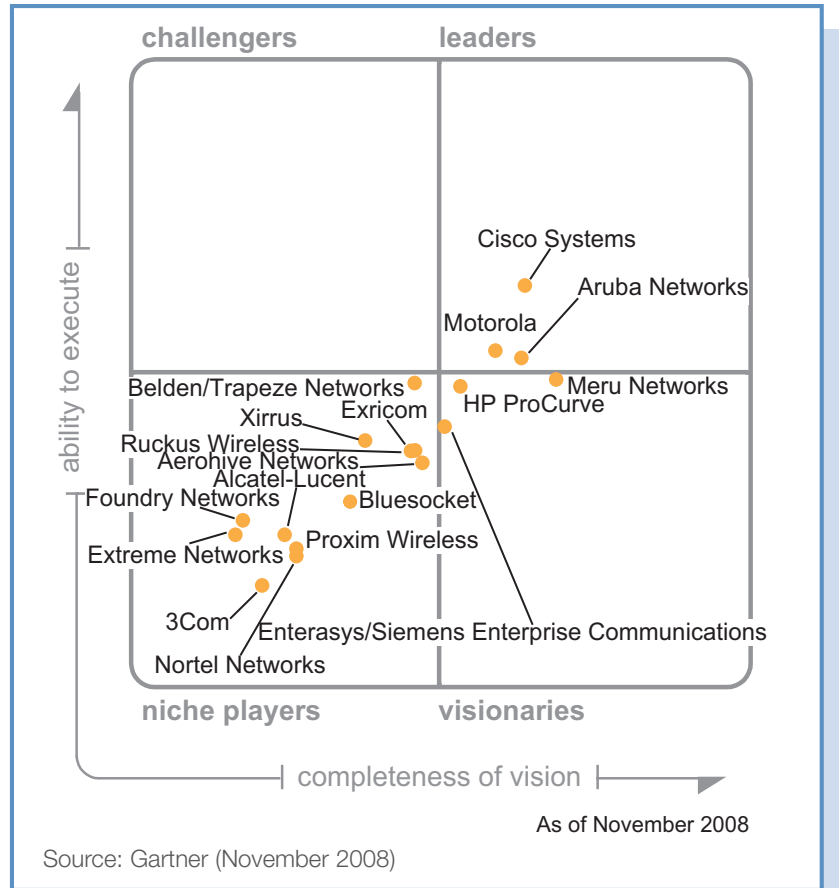
ratified. This delay, and an inability to guarantee long-term compatibility with ratified products, has caused some enterprise buyers to pause some of their acquisitions, even with assurances from the Wi-Fi Alliance that products will be backward-compatible. Regardless, healthcare and education continue to lead in adoption of 802.11n and standardization of newer services, while other traditional WLAN markets – warehousing, distribution and in-store retail – wait for 802.11n application requirements and device integration to catch up.

Increasingly, the buying decisions are based around management, cost-effective implementation and requirements for ancillary application support. The management/controller platforms from the combined wireless and wireline infrastructure vendors (with the exception of HP) have kept the functionality for wired and wireless separate, weakening the argument for a single vendor for both networking disciplines. Overlay implementations (see Note 1; wireless-only vendors) continue to remain popular because they offer cutting-edge technology when integrated wired/wireless is not a priority. In the longer term, we do expect that the integration of the infrastructures and controller/management software will be a requirement.

While all vendors continue to support basic end-user connectivity, additional requirements for security, management, voice capabilities, and integration with management or security appliances continue to drive vendor selections. Price remains a key component of vendor comparisons, but price versus functionality is often what wins the final bid. Vertical markets like healthcare, education, retail and financial services continue to lead their horizontal-market peers in adoption of technology and diversity of requirements. Vendors must address the needs of these early adopters with complete, focused solutions that are expanding beyond physical layer connectivity.

The 802.11n standard has the potential to change the market significantly. Its increased bandwidth and range enable single network deployments for voice, video and data services; however, many of these advantages will take time to get to market, and prices for APs will continue to be high until real volumes of chipsets and APs are reached (late 2008/early 2009). Furthermore, the challenges of delivering power and backhaul to an improved wireless edge will limit uptake only to the most technologically aggressive for two to three years.

Figure 1. Magic Quadrant for Wireless LAN Infrastructure



Note 1 "Overlay" Defined

An installation of a networking component that is noninvasive to the wired infrastructure. Overlays generally employ tunneling techniques that connect the endpoint functionality to a central controller offering a variety of data, management and control plane functions.

The market is populated with OEM vendors and resellers of technology, and while both are able to provide and support WLANs, those that resell have less ability to influence future product directions, management and security functions, as well as integration points with voice and application products. Therefore, we expect to see continued consolidation in the industry as the

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wireless access layer continues to become an important part of the end-to-end enterprise communication strategy.

Market Definition/Description

The WLAN market consists of a set of vendors that provide IEEE 802.11 standard networking components that provide mobility to the infrastructure access layer, from the edge of the wired network to the end user. Vendors have significantly narrowed the performance gap between the divergent wired and wireless environments, and continue to mesh together management, security, guest access and planning services. These solutions have converged wired and wireless functionality, as well as spawned multi-vendor wireless solutions, to provide not only a solid foundation but continuity. Wi-Fi access points and controllers conforming to the Wi-Fi Alliance certification process are the table stakes for this market, as vendors look to integrate new standards, extend the solutions architecturally to new applications or differentiate in new areas of the market.

Core Components

The 802.11n draft standard has added an unprecedented level of complexity that combines automatically negotiated and user-configured variables. At the core, each WLAN solution has an AP, a component that distributes a Wi-Fi radio frequency (RF) signal to a variety of client devices. Prevailing solutions also have a set of controllers that sit behind the APs to consolidate functions, although controllers increasingly have become optional – depending on the vendor and the environment.

APs continue to support the full set of 802.11 worldwide-assigned frequencies at 2.4GHz, 4.9GHz and 5.2GHz through 5.8GHz, even though some of the frequencies cannot be legally used in every country. Multiple-frequency, multiple-radio APs have become the norm to allow for continued operation of 802.11b/g solutions and address 802.11n migration issues. Soft radio designs in the APs will provide the required migration as well as a path to support for multiple-stream functionality defined by the 802.11n draft standard. Three- and four-radio APs can also be used to support other functionality, such as wireless backhaul for mesh networking or wireless intrusion detection (WIDS). APs that can be used outdoors are optionally provided by most full-service vendors, as well as a variety of antennae and power options.

New Architectures

With new standards on fast roaming, power over Ethernet and additional information from clients to make better decisions, wireless networks are now being used as the primary distribution layer to access layer communication for more business applications that reach more parts of the enterprise. The market discovered that there were new requirements for these far-reaching places, such as remote office solutions, the same as it did when wireless migrated from the islands of automation in the warehouse and distribution centers to the carpeted space of the enterprise office. These new requirements introduced a new twist in the physical environment that separated components between the remote office and the upstream enterprise facility. Vendors provided differing solutions for this new scenario – which varied from providing local AP bridging while separating data, control and management planes that only forwarded the management plane to the upstream controller – to creating a new local subcontroller appliance, to totally eliminating the controller.

As varied as the multiple configurations offered by the best-of-breed vendors are, the evaluation process bore out that “one size does not fit all,” while identifying that there are differing environments within a single enterprise. It became apparent that there were environmental considerations that needed to be taken into account for use cases in enterprise offices, and that these were different from coverage in retail or industrial data collection environments, or outside coverage needed in between building or courtyards. While the basic AP components were generally the same, each solution had a different use case that required differing antennae, power or capacity planning.

Separating Wireless Software/Services

Beyond the hardware, the market has seen a rise in the need to use the wireless physical layer data to make business decisions. This functionality has found a convergent path with a set of new vendors that are traditionally wired solution providers. These new software providers are reaching across the physical layer to provide services for wired as well as wireless networking components. At the same time, wireless vendors continue to separate controller functionality from these value-added applications on separate servers in an effort, from the wireless side, to provide cohesion with the wired infrastructure. As the number of players increase for these applications, so does the number of applications. Besides being able to administer the security and quality of service (QoS), providing simple spectrum analysis, and managing the complexity of 802.11n, the best-of-breed applications are extending the functionality that will also enable some or all of these functions:

- Location-based asset management, as well as location-based context-oriented applications
- Role provisioning guest access administration for wired and wireless guests
- Identity management
- Policy and resource management
- Intelligent roaming for mobile unified communications (UC) installations

WLAN OEM Relationships

Most wired networking vendors have extended their product lines to include WLAN components. If the solution is not internally owned, such as Cisco Systems or now HP, networking vendors have established OEM relationships to provide an end-to-end solution for the communications infrastructure. While each vendor has branded the respective WLAN components, the level of integration varies from vendor to vendor. The baseline for WLAN component integration is the inclusion of the WLAN controller and APs into the wireline network management application. More-integrated solutions include the controller applications embedded on networking blades. Most OEM vendors have yet to invest in the relationship to establish differentiating functionality between the wired and wireless components.

Here is a list of reseller and OEM relationships:

- 3Com, Enterasys/Siemens Enterprise Communications, Nortel – Belden
- Alcatel-Lucent – Aruba Networks
- Extreme Networks – Siemens
- Foundry Networks – Meru Networks

Inclusion and Exclusion Criteria

Vendor inclusion criteria are:

- AP-based WLAN infrastructure must be combined with a centralized management coordination function. This functionality is accomplished through two architectures: centralized controller/switch or intelligent mesh. In most cases, a separate and central WLAN switch/controller coordinates the enterprise APs. Alternatively, some vendors integrate controller functionality through intelligence embedded in their mesh APs, which communicate to each other instead of to a coordination point.
- Installed base. Vendors should have sold WLAN equipment for at least one full year prior to the publication of the WLAN Magic Quadrant and have sufficient installed bases, sales channels, partnerships and reference customers to appeal to Global 2000 IT departments.
- End-user interest and awareness. Enough interest from end users through inquiries placed by Gartner customers, appearances on shortlists and industry acknowledgement of market position.
- Focus and commitment toward the enterprise WLAN market. This includes a track record of selling in to large enterprise clients, appropriate marketing and partnerships, and a support organization capable of servicing global enterprise requirements.
- Vendors participating in the Magic Quadrant must be able to meet the minimum requirements for security as mandated by the Wi-Fi Alliance, including those set forth in the WPA2 standard for authentication and encryption. Additional security, including Extensible Authentication Protocol (EAP) support, is preferred by a majority of end users. Additional security capabilities include built-in Layer 2 or 3 firewall support and native virtual private network (VPN) capabilities.
- Guest networking must be supported by the controllers; best-of-breed products will enable a wide range of access types based on guest identity (guest, contractor or visiting employee).
- Support for rogue AP detection through a separate, dedicated sensor network or built into the APs, using WLAN radios or dedicated radios.
- All vendors must have 802.11a/b/g/n standard products available on the market, with extra “vision” points for those that offer clear migration strategies to next-generation standards for existing and new clients.

In this Magic Quadrant, we include the vendors that provide controller-based WLAN systems; second-generation systems only and stand-alone APs are not covered in this Magic Quadrant.

Added

Aerohive Networks, Proxim Networks and Ruckus Wireless.

Dropped

None.

Evaluation Criteria

Ability to Execute

The criteria used to assess vendors in this Magic Quadrant are described here and listed in Table 1. We have adjusted slightly the

Table 1. Ability to Execute Evaluation Criteria

| Evaluation Criteria | Weighting |
|--|-----------|
| Product/Service | High |
| Overall Viability (Business Unit, Financial, Strategy, Organization) | High |
| Sales Execution/Pricing | Standard |
| Market Responsiveness and Track Record | Standard |
| Marketing Execution | Standard |
| Customer Experience | High |
| Operations | Standard |
| Source: Gartner | |

weighting and evaluation criteria from 2007 to better reflect the buying requirements that enterprises are facing, including an increased focus on applications and management capabilities.

Gartner evaluates technology providers on the quality and efficacy of the processes, systems, methods or procedures that enable IT provider performance to be competitive, efficient and effective, and to positively affect revenue, retention and reputation. Ultimately, technology providers are judged on their ability and success in capitalizing on their vision.

- *Product/Service:* Core goods and services offered by the technology provider that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships, as defined in the market definition and detailed in the subcriteria.
- *Overall Viability (Business Unit, Financial, Strategy, Organization) Financials:* Viability includes an assessment of the overall organization’s financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue to invest in the product and continue offering the product and advancing the state of the art within the organization’s portfolio of products.
- *Marketing Responsiveness and Track Record:* The clarity, quality, creativity and efficacy of programs designed to deliver the organization’s message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This “mind share” can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.
- *Customer Experience:* Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups and service-level agreements.

Completeness of Vision

Gartner evaluates technology providers on their ability to convincingly articulate logical statements about current and future market direction, innovation, customer needs, and competitive forces, and how well they map onto the Gartner position. Ultimately, technology providers are rated on their understanding of how market forces can be exploited to create opportunity for the provider (see Table 2):

- *Marketing Strategy:* A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.
- *Sales Strategy:* The strategy for selling a product that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.
- *Offering (Product) Strategy:* A technology provider's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.
- *Innovation:* Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or preemptive purposes.

Leaders

A vendor in the Leaders quadrant will have demonstrated an ability to fulfill a broad variety of customer requirements, provide an end-to-end infrastructure-based solution and have financial viability to continue that support beyond a single installation. Leaders should have demonstrated an ability to shape the market, maintain strong relationships with their channels and customers, and have no obvious gaps within the portfolio.

Challengers

A vendor in the Challengers quadrant will have demonstrated sustained execution in the marketplace, and have clear and long-term viability in the market, but will not have shown the ability to shape and transform the market.

Visionaries

A vendor in the Visionaries quadrant demonstrates an ability to increase features in its offering to provide a unique and differentiated approach to the market. A visionary will have innovated in one or more of the key areas of WLAN technologies (convergence, security, management or operational efficiency).

Niche Players

A vendor in the Niche Players quadrant has a complete or near-complete product offering, but does not have strong go-to-market capabilities or innovation in its product offerings. Besides a capability to fulfill mainstream technology requirements, a niche player often has deep vertical knowledge and will be an appropriate choice for users within those vertical markets.

Table 2. Completeness of Vision Evaluation Criteria

| Evaluation Criteria | Weighting |
|-----------------------------|-----------|
| Market Understanding | No rating |
| Marketing Strategy | High |
| Sales Strategy | Standard |
| Offering (Product) Strategy | Standard |
| Business Model | Standard |
| Vertical/Industry Strategy | Standard |
| Innovation | High |
| Geographic Strategy | Standard |
| Source: Gartner | |

Vendor Strengths and Cautions

3Com

Strengths

- 3Com has a broad base of incumbent wired networking customers through which it has sold its OEM products.
- One of the original networking companies, its sales and marketing teams have a long history of selling into and supporting global enterprise IT.
- 3Com continues to partner with Belden/Trapeze Networks to supply the base technology for its WLAN offering, which enables a solid base to build an integrated offering.

Cautions

- 3Com maintains emphasis on its existing wired customer base, and does not appear on shortlists of RFP responses for other, nonwired networking customers.
- There is little integration work with OEM WLAN components (Belden/Trapeze), disparate management consoles, planning tools and authentication/access capabilities.
- The future of 3Com's commitment to the WLAN space remains a question, because it is one of the few larger, data-focused, networking vendors without an owned strategy. (Only Foundry and Juniper are in a similar state.)

Aerohive Networks

Strengths

- Aerohive's unique meshlike implementation combines distributed control APs with a software-based management console, enabling on-site and remote HTTP access to all network management and control functions.
- Its role-based access and management capabilities allow for a high degree of customization of the interface and the access control.

- Its lack of a controller enables very aggressive pricing when compared with controller-based competitors, especially in distributed environments.

Cautions

- It is a smaller company (less than 1% market share), private, with enterprise WLAN as the sole business, which can raise risks of long-term viability. Aerohive must establish a strategy for integrated wired/wireless buyers.
- It has a limited product set, four APs, two types of software-based management consoles and a guest management appliance. It will require further enhancements to the hardware lineup.
- Its management software will also require enhancements, in terms of spectral management and planning, equal to the depth and functionality of the best-of-breed vendors.

Alcatel-Lucent Strengths

- Alcatel-Lucent (ALU) remains a strong vendor in the voice space, with a particular focus on Europe, the Middle East and Africa (EMEA); its core customer base is loyal; and it holds long-standing contracts for service and support of traditional voice products.
- ALU has continued to integrate OEM products from Aruba Networks with its existing voice and new customer sales; sales growth has been strong.
- For sale, services and support, ALU maintains a strong global organization.

Cautions

- ALU's OEM products include limited integration work, only voice-centric management capabilities and some limited dual-mode handset testing/certification.
- It remains a vendor focused on its core customer base – voice-centric users in North America and Western Europe. It's unusual to find ALU on shortlists or bids outside of that comfort zone.
- Gartner believes that acquisition of technology by ALU will signify commitment to the WLAN space. Until then, its investments should be considered tactical.

Aruba Networks Strengths

- With its strong technical vision and marketing, Aruba continues a security-focused differentiation message, with powerful and innovative management tools.
- The addition of a vendor-independent network management application (AirWave) has given Aruba a strong, high-margin WLAN application suite that includes integrated and overlay intrusion detection and prevention (IDS/IPS), and guest access and network access control.
- Aruba has increased its position in the enterprise, retail, higher education and healthcare markets, buoyed by its 802.11n offering.

- The addition of Psion Teklogix as a strategic reseller will begin to strengthen Aruba's position as an infrastructure solution provider for data collection applications, especially in EMEA.

Cautions

- Aruba has invested in a strong reseller channel model and needs to continue to win the right resellers that are deploying vertical-market WLAN solutions to gain additional relevance in the larger IT markets. Progress has been made here, although more work remains to be accomplished.
- Business benefits and solution differentiation tend to get lost in hard-to-articulate technical benefits.
- Historically North America-focused, Aruba needs to continue expansion to additional geographies and vertical markets.
- Aruba needs to strengthen relationships with network vendors such as Force10 Networks, Foundry Networks and Riverbed Technology to help create a cohesive marketing message concerning its end-to-end wired and wireless infrastructure implementations.

Belden/Trapeze Networks Strengths

- One of the early controller-based WLAN companies, it has a good product set and strong management tools.
- It handles distributed environments well, with distributed forward capabilities within the APs.
- It has a strong group of OEMs and resellers, further enhanced by the Belden purchase.
- The Belden purchase addresses viability and future growth issues. The combined company will now have to establish what role Trapeze will play within the larger Belden organization.

Cautions

- Belden/Trapeze has found it tough to serve two masters – OEMs and direct-branded businesses. As the focus has shifted to direct business, many of the OEM partner relationships were unclear/unstable, casting the future of those relationships into doubt (and the future support of those OEM products).
- Its unclear technical differentiation is hurting future sales. Its distributed component functionality and a good management tool will not be enough for buyers with integrated voice/data or wired/wireless networking requirements.
- Its unclear future strategy for integration of the Belden and Trapeze parts of the business, with synergies difficult to find.

Bluesocket Strengths

- With the 802.11n product launch, Bluesocket now has a complete product line to offer end users looking at wireless office requirements. Standard Power over Ethernet (PoE) compatibility among two radio APs enhances its gradual upgrade story.
- It has had continued customer wins among key wireless LAN vertical industries – education, healthcare and hospitality.
- The refocus on the multiple vendor AP controller capability will enable Bluesocket to actively court Cisco Systems and other vendors' customers.

Cautions

- Reductions in the size of the company, coupled with the sell-off of recently acquired voice assets (PingTel to Nortel), contrast with the strong sales growth Bluesocket has experienced during the past 12 months.
- The overall size of its deployments remains small (number of APs) in comparison with other large, enterprise-focused vendors, although customer acquisitions have remained consistent.
- Its lack of wired partnerships and solution partnerships reduces opportunities for growth and integration with end-to-end products.

Cisco Systems

Strengths

- Cisco is a strong incumbent at most midsize-to-large businesses. It retains a greater than 60% market share (a level it has maintained for the past four years), and a 70% market share of wired networking. This gives Cisco the largest customer base and potential for upgrade business.
- It has unmatched global support sales and marketing channels, as well as a best-of-breed support organization (albeit often at the highest cost).
- Cisco has vastly improved marketing, horizontal and vertical, complete with device partnerships and fully tested solutions in retail, healthcare, education, and manufacturing.
- Its wired, wireless, voice, data, video, and a host of security and management options provide an excellent vision for the integration of the disciplines with its Motion products. It is one of the few vendors able to address all aspects of enterprise networking.
- It has a wide variety of WLAN products to service a broad set of needs (indoor, outdoor, industrial and carpeted), as well as a wide variety of form factors and price points.
- An improved set of Cisco-compatible extensions (CCX) utilities is now embedded in many client devices.

Cautions

- Given the wide spread of networking products and the end-to-end vision Cisco holds, there is little integration between the disparate parts (notably, the different management consoles for wireless and wired networking products). This leads to higher operational costs and little motivation to purchase all products from a single vendor, apart from its ability to discount across multiple product lines.
- Cisco has been slow to push 802.11n to its customer base. Despite its lack of a sales push and the low penetration of current customers, Cisco boasts the most 802.11n APs sold to date.
- Despite significant progress toward integrating the platforms, Cisco continues to have separate wired and wireless management products.
- Cisco will have to continue to invest in its wireless control system (WCS; the wireless management platform) to match the capabilities (such as Aruba Networks and Meru Networks) and ease of use (such as Aerohive) demonstrated by some of the vendors with best-of-breed consoles.

Enterasys/Siemens Enterprise Communications

We have rated the joint-owned Enterasys and Siemens (SEN) products and companies together.

Strengths

- It has solid WLAN components and an application suite that includes both SEN RoamAbout products and the OEM Trapeze/Belden products, giving the joint venture a complete product line with two low-power APs, large and small controllers, an integrated wireless intrusion prevention system (WIPS) solution, as well as a good management console.
- It is experiencing WLAN success and growth, particularly in targeted markets in EMEA and Asia/Pacific.
- It has a well-executed vertical market strategy focused on healthcare, education and service providers.
- It has a strong vision regarding integrated voice and wireless offerings. It will need to continue to execute on support for dual-mode devices to complete the offering.
- Siemens Enterprise Communications and Enterasys are now under joint ownership, with the ongoing management of the HiPath Wireless division by Enterasys. This new ownership structure of SEN (the Gores Group – 51%, and Siemens – 49%) gives SEN a viable wired data strategy and potential for a powerful voice, data and wired/wireless product offering with Enterasys.

Cautions

- Customers need to understand and agree with the long-term Enterasys/Siemens Enterprise Communications strategy now that Enterasys and SEN have common ownership. We expect to see an expanding Siemens relationship.
- While the combined Enterasys/SEN WLAN product line provides a complete end-to-end solution for the Enterasys solution for wired and wireless components, Enterasys' wireless offering has, to date, been rarely seen outside its wired installed base and primary vertical markets in education and the public sector. HiPath Wireless has, to date, been rarely seen outside of the Siemens core voice customer base or the healthcare environment.
- There are few large installations of WLAN infrastructure. Enterasys/SEN will have to further extend its controller product line and branch office solutions.
- While the Gores Group investment does solve the ownership issue for Siemens, and the structure of the combined company has been resolved, it will take time to work through the joint venture and even more time before the expected end-to-end product line is complete.

Extreme Networks

Strengths

- It has a strong base of wired networking customers and well-established relationships with enterprise IT that are being leveraged for providing WLAN capabilities.
- It has a continued vertical focus on the hospitality and education markets, as well as device, software and marketing partnerships for voice products.
- It has one of the few integrated wired and wireless management platforms.

Cautions

- It primarily services existing wired networking customers with OEM products from Siemens, producing questions regarding its commitment to the WLAN product lines.
- It infrequently appears on shortlists or among Gartner clients outside of the key verticals on which it focuses.
- Other than the management product, Extreme has done little additional integration of the controller products into the core networking kit (such as the HP and Enterasys “controller on a blade” products).

Extricom Strengths

- Its strong technology differentiation, based on single channel architecture, differs from Meru by moving all the intelligence away from the AP and into the switch, enabling low-cost APs and channel blankets to be used to segment users/applications.
- With lower power requirements at the AP and mixed mode capabilities, Extricom enables a gradual migration from 802.11a/b/g to 802.11n.
- It is a very technology-focused executive team and company, which drives valuable intellectual property – especially within its single-channel implementation.

Cautions

- It remains one of the smaller vendors in the WLAN space, with less than 2% market share. Given the volume of new entrants, Extricom will have to execute aggressively to rapidly gain market share.
- Because its product selection is limited (six controllers, six APs), it will need to continue to further flesh out the product line to address very large and branch office solutions.
- It has few large rollouts (greater than 5,000 APs) in its customer base.
- Extricom will have to focus on developing additional technology partnerships and actively courting wireless-savvy value-added resellers (VARs)/system integrators (SIs) to grow in the market. Its limited number of VARs/SIs and the unique aspects of the solution can make it difficult to find qualified, educated resellers.

Foundry Networks Strengths

- Foundry continues to brand parts of Meru Networks’ product line, giving it access to a fully featured single-channel WLAN.
- Meru’s WLAN integration and value-add, while limited, enables end-to-end management of the wireless and wireline products within the IronPoint platform.
- Foundry is a good choice for users that are extending their current investments in Foundry wireline infrastructure.

Cautions

- Foundry’s commitment to this space remains questionable (product line is limited to branded OEM). It does not appear that it proactively sells wireless and rarely appears outside its customer base.

- The acquisition by Brocade may focus the combined company on a completed end-to-end solution that includes wireless, which we are seeing from other wireline vendors, or may turn its focus internally, which will put wireless outside the circle of immediate attention.
- It has sent a mixed message by executing a marketing agreement with Aruba to jointly address the U.S. federal government market, making it unclear which (Meru or Aruba) its long-term technology partner will be.

HP ProCurve Strengths

- HP tends to successfully sell into its growing base of wired networking customers (horizontal and vertical); the recent Colubris purchase enables it to spread that base to the vertical industries in which Colubris has executed well (service providers, healthcare and others).
- The combined company has wireless as well as wireline networking capacities. Few among the competition have such a broad range of products, and it is the only one, apart from Cisco, that enhances its capabilities with global reach.
- Global sales and support capabilities are of increasing importance as wireless LAN moves from an overlay technology to core network infrastructure. HP has exhibited continued strength. We expect that owned infrastructure will enable it to further enhance this offering.
- HP had, with the OEM Motorola equipment, a well-integrated management platform. While it lacked some of the higher-end features of some of the competition, it was one of the few truly integrated (wireless/wired) management platforms. We believe that the integration of the Colubris functionality into this platform will add much of what was missing.
- Colubris’ strengths in guest access, support for dissimilar clients and many examples of large scalable networks give HP a strong technology platform to build its future WLAN business.

Cautions

- The combined entity must move fast to assure current customers of future compatibility on both the HP and Colubris customer/equipment sets. The next step will be to provide a management console that can address both platforms.
- While the combination of both companies will provide a larger total customer base, it has to work hard to penetrate the customer bases the companies have not traditionally served (vertical markets for Colubris, and HP customers for HP).
- The plans for the HP services organization with its current base of Cisco networking equipment customers will have to be made more clear.
- HP will have to continue to establish an increased level of technical differentiation from the “pack” (leaders); the vertical-market partnerships, solutions and products that Colubris brings will not, without enhancement, provide enough.

Meru Networks Strengths

- Its strong marketing momentum in the market, good (faster than market rate of 23%) sales growth and good regional expansion.

- Its wide-ranging 802.11n product portfolio, as well as its articulated, easy-to-grasp technical differentiation via the single-cell and virtual-cell architecture throughout the product line.
- Its enterprise voice enablement, which is also a strong focus, with many implementations within the education and healthcare customer bases.
- It is a technology-driven company, with many advances in infrastructure and management capabilities, balanced with relatively easy-to-use tools. Its RFBarrrier technology shows market leadership in understanding an enterprise business issue of limiting the RF signal outside of the enterprise.
- Its loyal higher education customer base. It has expanded into kindergarten through 12th grade education and healthcare with good results, but limited horizontal success.
- Its device partnerships and labs are now active to better enable vertical-market solutions. We expect to see significant focus here.

Cautions

- To implement the single-cell architecture, it requires Meru infrastructure end to end.
- Meru tends to win the majority of its business within its defined verticals, less frequently appearing on shortlists in others.
- Larger, highly dense installations have required direct involvement from Meru during the implementation process, thereby slowing the rollout. Better training and education for its channels will be required.
- Meru's current lack of a clear wired partnership/ownership strategy will prevent it from addressing enterprises with requirements for an integrated wireless/wired network.

Motorola Strengths

- Motorola continues to execute well and service its traditional vertical markets (retail and logistics), and maintains a loyal customer base within those markets as it continues to step out from the shadow of the data collection business and becomes a player in carpeted opportunities.
- Its integration of indoor and outdoor management products, best of breed from a planning and ease-of-use perspective, provides a WLAN product family that few can match.
- Its well-executed end-to-end integrated offering from the network through its devices.
- Its AirDefense purchase should open up new verticals and customer bases (education, healthcare and financial services). The combined solution will provide a very strong security offering enabling a good Health Insurance Portability and Accountability Act (HIPAA) and personal computer interface story.
- Adaptive APs will provide differentiation as "all wireless" offices move from the edge only and provide replacement of the wiring closet.

Cautions

- The perception of Motorola (companywide) has been severely diminished during the past few years, due to massive market share losses in the mobile devices/handset division. While the rest of the divisions are relatively healthy, those losses taint the entire company.

- Its long lead time for products, particularly on the voice side (single-mode products being quite late). With the integration of the two companies now complete (Motorola/Symbol), we expect this to improve.
- The loss of the OEM wireless business through HP will be negligible. Motorola will continue the wired networking partnership; however, Motorola must act quickly to establish/fortify a strategy for buyers who want integrated wired/wireless networking solutions.
- Other divisions of Motorola (notably, public-sector/government) have been slow to adopt the WLAN products. We believe Motorola is missing out on a significant opportunity in these markets by cross-selling outside the current core verticals.

Nortel Networks Strengths

- Nortel continues to offer OEM Belden/Trapeze WLAN equipment for 802.11a/b/g and current 802.11n RFP/deals, giving it access to a strong product line with good management capabilities.
- Its large North American customer base, good vertical solutions and marketing, enhanced by global sales and support facilities.
- Its good vision for the integration of voice into the WLAN, strong IP PBX and voice management products to support this vision.

Cautions

- Nortel sells primarily to its existing voice customer base. While large, it has not expanded the sales and marketing beyond those users.
- Current buyers of Nortel's OEM 802.11n product have no guarantees of future product interoperability with the forthcoming Nortel-owned solutions.
- Nortel's commitment and future in this space is highly questionable. Our estimate is the wholly owned Nortel 802.11n offering will take an additional 24 months to get to market; at which time, it will face the task of integration with the existing customer installations running the OEM equipment.

Proxim Wireless Strengths

- One of the original WLAN vendors, it has a long history of wireless networking experience. Its unique focus on metropolitan-area networks removed it from enterprise consideration for several years.
- Its indoor and outdoor long-range products, as well as its full-campus coverage capabilities.
- Its recent reintroduction to controller-based WLAN solutions.

Cautions

- It currently supports 802.11n, with a single product only.
- Proxim suffers from a lack of mind share or customer awareness to do limited marketing and a companywide focus on the metro-networking business.
- Its focus on small to midsize enterprises from both a product design and marketing perspective.

Ruckus Wireless

Strengths

- Its unique antenna design enables highly focused beam forming, which provides coverage and signal distribution advantages in certain environments.
- It is often a price leader when bidding against the bigger vendors for larger campuswide networks, particularly if the buyer has unique coverage requirements.
- Its numerous global service providers, high-volume, long-term contracts will provide significant revenue while Ruckus builds the nascent enterprise business.

Cautions

- It is a small company (less than 1% market share), which is new to the enterprise space. It will take time to build a customer and partner base.
- We have seen some VARs unable to accurately bid contracts due to Ruckus' unique antenna and signal distribution capabilities. This requires direct Ruckus involvement during the bidding and installation process to provide accurate cost and performance from the network.
- Its limited product set (five APs, two controllers) and few large traditional enterprise installations. (Ruckus does have some larger hospitality/service provider customers with very large installations.)

Xirrus

Strengths

- Its unique multiaccess point within a single chassis design has found success in dense user environments that are also difficult to wire.
- With the majority of network intelligence pushed out to the AP, controller functionality is software-based, enabling, in some cases, a lower-cost solution (without a separate controller cost).

- Due to the single installation point, lack of separate controller and the shared nature of the power supplies, Xirrus can be inexpensive when compared on a per-radio and time-to-deploy basis with other vendors.

Cautions

- While strong growth continues for Xirrus, its success to date, current product design and marketing/sales efforts are clearly focused on the midsize enterprise market.
- It can endure a single point of failure, unless multiple APs are used. Providing redundancy can significantly change the projected number of radios/APs of the network, affecting the cost advantage Xirrus has over traditional wireless networks.
- While this has not presented problems yet, Xirrus's direct-only distribution model may impose limits regarding where it can offer sales, service and support, as well as affecting how fast it can grow, particularly internationally.

Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue investing in the product, to continue offering the product and to advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message in order to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups and service-level agreements.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling product that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.