VIEW SUMMARY

The WAN optimization controller market is maturing, but it still sees a high level of innovation around cloud, video, multipoint quality of service, and security. Before purchasing, ensure the vendors being considered offer the product capabilities and support required by your application mix.

Market Definition/Description

WAN optimization controllers (WOCs) are deployed symmetrically — in data centers and remote locations — and improve the performance of applications that are accessed across a WAN. The WOCs are typically connected to the LAN side of WAN routers, or are software integrated with client devices. They address application performance problems caused by bandwidth constraints and latency or protocol limitations. The primary function of WOCs is to improve the response times of business-critical applications over WAN links, but they can also help to maximize return on investment in WAN bandwidth, and sometimes avoid the need for costly bandwidth upgrades. To achieve these objectives, WOCs use a combination of techniques, including:

- Ensuring fair access for mission-critical applications during periods of congestion by prioritizing business-critical traffic, through quality of service (QoS) policing and traffic shaping, for example
- Minimizing the effects of network latency using methods like protocol- and application-specific optimization
- Reducing the bandwidth required to transfer WAN traffic, by compressing it, for example

ACRONYM KEY AND GLOSSARY TERMS

<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>KEY/GLOSSARY</th>
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<tbody>
<tr>
<td>ADC</td>
<td>application delivery controller</td>
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<tr>
<td>AMI</td>
<td>Amazon Machine Image</td>
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<tr>
<td>BOB</td>
<td>branch office box</td>
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<tr>
<td>CIFS</td>
<td>Common Internet File System</td>
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<tr>
<td>ECDN</td>
<td>enterprise content delivery network</td>
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<tr>
<td>HTTP</td>
<td>Hypertext Transfer Protocol</td>
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<tr>
<td>HTTPS</td>
<td>Hypertext Transfer Protocol Secure</td>
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<tr>
<td>HVD</td>
<td>hosted virtual desktop</td>
</tr>
<tr>
<td>IaaS</td>
<td>infrastructure as a service</td>
</tr>
<tr>
<td>ICA</td>
<td>Independent Computing Architecture</td>
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<tr>
<td>IP</td>
<td>Internet Protocol</td>
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<tr>
<td>ISR</td>
<td>Integrated Services Router</td>
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</tbody>
</table>
Vendor Strengths and Cautions

BLUE COAT SYSTEMS

Blue Coat’s WOC appliance software, MACH5, runs on the vendor’s range of ProxySG appliances, which can also support Blue Coat’s Proxy Edition secure Web gateway (SWG) software or can be used with Blue Coat’s cloud-based SWG service. Blue Coat also offers a virtual appliance of the MACH5, software-based WOC (SoftWOC) client, and the PacketShaper visibility, control and compression appliances from its 2008 acquisition of Packeteer. It has completed the migration of its products to a
64-bit OS and new hardware, which have significantly increased performance.

**Strengths**

Blue Coat differentiates via a strong video solution with many streaming protocols and support for dynamic browser-based applications.

The company also provides a strong solution for software as a service (SaaS) applications via its direct-to-the-Internet capabilities combined with its cloud-based SWG service.

Blue Coat PacketShaper is a widely deployed QoS/visibility appliance that now provides competitive throughput levels.

Good vision around integration of WAN optimization, security and cloud-based applications.

A broad range of appliance price points and performance levels.

**Cautions**

Revenue has been stagnant, which may limit investment. Market share has continued to decline, and there has been significant management churn at Blue Coat over the past three years.

Generally, compared with its competitors, Blue Coat has been late with features. There is still no PacketShaper integration into SG Platform (still 12 to 18 months out), its SoftWOC is still weak (HTTP optimization planned for 2012), and the portfolio doesn't include hosted virtual desktop (HVD) support.

While Blue Coat now offers performance levels that may be attractive for data-center-to-data-center optimizations, storage-specific protocol optimizations are not yet available.

Use Blue Coat for branch-office-to-data-center optimization, particularly when access to SaaS providers and video delivery are a priority.

**CIRCADENCE**

Circadence's product range consists of the MVO 1200 WAN Optimization suite, which includes the MVO appliance, MVO virtual appliance, MVO Cloud Service, MVO SoHo appliance, MVO API and MVO mobile client. Circadence depends upon a novel approach that uses a proprietary protocol between devices that is designed to reduce loss, manage QoS and improve link utilization.

**Strengths**

Circadence has a broad portfolio including physical and virtual appliances, SoftWOCs for a large variety of OSs, and an API to integrate Circadence software with third-party applications.

Circadence has been very innovative on the mobility front, particularly with its small-footprint client (1.5MB) for Android and iOS optimization and an improved Microsoft Windows mobile client.

Sophisticated QoS and link optimization techniques maximize performance across "lossy" or presales 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, promotion, 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, service-level agreements, etc.

**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 website, 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.
congested networks.

**Cautions**

Circadence lacks data-center-to-data-center capabilities and has limited protocol-specific accelerations and deduplication capabilities.

The company enjoys a limited visibility in the general market, especially outside of the U.S. market, where it is primarily focused.

The company is very channel-focused, with significant dependence on OEM partners that have yet to demonstrate their ability to take product to market.

Use Circadence for branch-to-data-center optimization, especially when link quality is problematic or when a broad client support, particularly mobile clients, is required.

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**Cisco's WOC product portfolio consists of Wide Area Application Services (WAAS) software, which runs on a range of appliances and on modules for Cisco's Integrated Services Router (ISR), WAAS Express software that runs natively on ISR G2 routers, vWAAS that runs on Cisco's NV1000 vSwitch for VMware, and the WAAS Mobile software client.**

**Strengths**

Cisco offers a broad range of platforms and deployment options, with competitive product pricing, and with physical, virtual and integrated appliances for branch-to-data-center and cloud. WAAS is now part of the branch router business and is therefore receiving attention from senior leadership.

Cisco provides global sales and support via an extensive channel network and manages service providers.

WAAS mobile performs well on limited-bandwidth, lossy links, such as third generation (3G) mobile networks.

Cisco offers support for video, with video on demand and video streaming optimization.

Cisco supports a broad number of third-party application performance monitoring products in addition to its in-house developed offering.

Cisco offers the broadest overall network equipment product portfolio in the industry, backed by a strong channel and a very strong balance sheet.

**Cautions**

There has been some innovation around caching and streaming media, but in general, Cisco is a slow follower whose vision is limited to an incremental product road map.

The company is consistently very late with support for new protocols — encrypted Messaging API 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.
(MAPI), Server Message Block (SMB) signing, and so forth. E-MAPI is planned for 2012. Initial software quality has been problematic, with some problems remaining unsolved for months or longer. Some improvement has been achieved, and Cisco continues to take steps to further improve quality, but we still hear about client issues, such as complicated installation and configuration. The management interface continues to appear clumsy, with a lack of functional integration among Cisco WAN products. The products can be very difficult to install and maintain, particularly in complex networks. Uneven presales and postsales support exacerbates the problem globally.

Use Cisco for branch-office-and-mobile-to-data-center WAN optimization, particularly when the network topology is simple, consistent IOS levels are in place across the environment, and a single vendor solution for all WAN technologies is desirable.

CITRIX SYSTEMS

Citrix’s WOC product range comprises the Branch Repeater and Branch Repeater with Windows Server appliances for branch offices, Repeater appliances for data centers and larger sites, and the Citrix Repeater Plug-in SoftWOC client. The WOC group has recently been reorganized to be part of the NetScaler group, which should increase focus and resources.

Strengths

Citrix has accomplished some good work around cloud, especially with cloud bridging work with Amazon — cloud bridge and Branch Repeater as Amazon Machine Image (AMI) — and integration of WOC and application delivery controller (ADC) with partners like Cotendo. Citrix offers global sales and support via an extensive network of resellers and system integrators. Citrix has a strong offering for HVD application visibility and QoS for TCP and User Datagram Protocol (UDP). Branch Repeater Virtual Edition is free for locations using XenDesktop Platinum Edition. Rich application identification and QoS capabilities.

Cautions

Citrix has been slow to develop new features, and it is not a strong choice for general-purpose WAN optimization. The offering for data-center-to-data-center is limited, with support only for TCP, no storage-specific protocol optimizations and limited bandwidth per flow. Sales execution has been spotty. Use Citrix for branch-office-to-data-center optimization, particularly when optimization of Citrix
Independent Computing Architecture (ICA) is important or when a Windows-based appliance is preferred.

**F5 NETWORKS**

F5's WOC features are now available under the vendor's Traffic Management Operating System (TMOS) architecture supported on its BIG-IP platforms. Advanced WOC features are available in BIG-IP's WAN Optimization Manager module or stand-alone appliances. Some features are also provided by F5's WebAccelerator, also available as a module on BIG-IP platforms or stand-alone appliances.

**Strengths**

The company's vision of integrated application delivery services that are available on a range of data center platforms with a strong integration between WOC and ADC, and with a strong focus on security and virtual machine live migration.

Since the last edition of this Magic Quadrant was published, F5 has released a new version of its BIG-IP TMOS with the application control plane architecture that binds application control and visibility providing complete life cycle management.

F5 offers a very-high-throughput device for data-center-to-data-center links (as much as 16 to 20 Gbps), for a wide range of protocols.

F5 provides optimizations, although somewhat limited in scope, for mobile users with Windows, Mac, Linux, Android and Apple iOS devices via its VPN client and WebAccelerator.

F5 benefits from a strong customer support and customer experience.

**Cautions**

A continued lack of a low-cost, small branch office platform and branch capabilities, including branch office box (BOB) features, limits applications, even though a virtual appliance is available.

There is still no video delivery story.

There is still no EMC E-Lab qualification for Symmetrix Remote Data Facility (SRDF) for BIG-IP WAN optimization platforms.

F5's early innovation around asymmetrical acceleration has been eclipsed by the competition.

F5 continues to lack managed service partner deployment options.

Use F5 when high-performance data-center-to-data-center optimization is important or when its asymmetrical acceleration provides good-enough performance.
IPANEMA TECHNOLOGIES

Ipanema's WOC capabilities are delivered through the vendor's ip|engine appliances, which are available as physical and virtual appliances (symmetrical and asymmetrical), SoftWOCs, and managed services from major global managed-service providers. Ipanema integrates dynamic path selection into its WOCs to natively support hybrid WANs and provides global sales and support via global network service providers and an expanding list of value-added resellers and distributors.

Strengths

Ipanema has a good track record with service providers, but lately, the company has been expanding beyond that model with managed services and distribution via system integrators and directly to large organizations.

Good velocity in product release since the last Magic Quadrant iteration: a SoftWOC, the Ipanema Mobile Agent, virtual appliances, single-ended appliances, updated data center hardware, and new low-cost entry-level appliances starting at $595.

Unmatched scalability for visibility control and application SLAs, proved in large and complex network deployments.

Unique in the market, Ipanema uses a closed-loop feedback mechanism (linked to the SALSA management platform) that can tune delivered QoS across massive mesh networks to match precisely defined SLAs. SALSA will be integrated with CRM, billing and payment as a SaaS offering.

Despite being a privately held company with limited resources, Ipanema is profitable and has a strong vision for the long-term future of the business.

Cautions

The product lacks HTTPS/SSL-specific compression and MAPI acceleration (but they are announced for 2012), and does not offer BOB capabilities.

Still limited as a general-purpose WAN optimization offering, with only partial video optimization and partial replication/storage acceleration through generic mechanisms.

EMEA is still by far the largest region for Ipanema, with over 80% of revenue coming from there. However, North American and Asia/Pacific revenues have doubled in the past year.

Use Ipanema for branch-to-data-center or cloud/SaaS WAN optimization, particularly when sophisticated application-based point-to-multipoint or any-to-any QoS-based (for example, unified communications and collaboration) and Internet/VPN hybrid WANs are important.

RIVERBED TECHNOLOGY

Riverbed's WOC capabilities are delivered through its Steelhead appliances and virtual appliances (Virtual Steelhead, Cloud Steelhead and the Steelhead Mobile client software) and via its recently
acquired Aptimize WAX.

**Strengths**

Riverbed offers the broadest set of capabilities in the industry, including features for large branch networks, data center replication and storage networking applications, and single remote users, combined with unmatched ease of installation and management and best-in-class presales and postsales support.

Despite its size and success, Riverbed remains one of the most innovative companies in this market: The acquisition of Aptimize and Zeus, the new partnership with Akamai (to develop a SaaS acceleration solution) and EMC (resale agreement), the pending introduction of Virtual Edge, and other features and capabilities demonstrate this.

Riverbed can optimize the traffic associated with delivery of HVD for solutions like Citrix ICA and VMware View and is expected to be the first vendor to optimize VMware View over PCoIP. Riverbed has broad distribution on a global basis with multiple options for reaching the customer, including an extensive reseller network (including HP), most global managed service providers, cloud infrastructure as a service (IaaS) providers (including Amazon and AT&T) and system integrators.

With the integration of the recently acquired Aptimize WAX (now Stingray Aptimizer), Riverbed provides a broader solution for dynamic browser-based applications like SharePoint.

A solid near-term road map including a more fully featured offering for video and UDP optimizations combined with a solid track record of high initial software quality.

**Cautions**

Despite a good understanding of market needs, the product has lagged in some areas, particularly application SLAs, visibility and video delivery.

Riverbed still doesn't offer UDP optimization, which was planned in the first half of 2011 but was delayed until December 2011.

Its discounting policies can be inconsistent on large deals, sometimes resulting in high prices, compared with other WOC vendors. A new vice president of sales operations has been hired to make Riverbed an easier company to do business with.

Use Riverbed for a broad range of accelerations (branch-to-data-center, data-center-to-data-center and mobile user applications) and when multiple deployment models are required, particularly when the network topology is complex or when third-party software may also be hosted in the branch.

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**SILVER PEAK SYSTEMS**

Silver Peak’s WOC capabilities are delivered through the vendor's physical NX appliances and VX/VRX
virtual appliances. Silver Peak has leveraged its leadership position in data-center-to-data-center optimization to expand into the broader market.

**Strengths**

Silver Peak maintained its focus in data center storage replication, where it's strong and backed up by segment-leading products, and good strategic alliances with data center infrastructure companies.

The company has a large portfolio of appliances, with flexibility on deployment options (hardware and virtual appliances) and pricing (subscription, perpetual and free). It has released a free entry-level WOC and a virtual data center WOC.

It has good QoS and optimizes all IP traffic — TCP and UDP. Specific enhancements and certifications for SRDF, Brocade FCIP, and EMC VPLEX are available.

Significant global expansion over the past 12 months, particularly in Europe and Asia, which together now account for about 20% of total revenue.

Expanded partnerships with Avaya (virtual appliance running on Avaya's router), Hitachi Data Systems, Dell and EMC (virtual storage solution), and a new partnership with HP (virtual appliance running on HP's switch).

**Cautions**

Silver Peak is still lacking in capabilities for home office and mobile users (no SoftWOC).

It also lacks application-specific optimizations (such as latency mitigation for MAPI and Citrix ICA/HVD) and BOB capabilities, except as a "do it yourself" implementation using its virtual appliance.

The company lacks an offering for video on demand that incorporates remote-office file caching/streaming to offload the network and the origin server.

Despite a growing list of channel partners, there is no significant service provider offering, although Silver Peak states that one is in development. Expansion in EMEA and Asia/Pacific are under way, but support capabilities of these new partners remain unproven.

Use Silver Peak when data-center-to-data-center performance is critical and in branch-to-data-center networks when UDP traffic and operation across error-prone links are important factors.

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.

**ADDED**

**Vendors Added**

Three additional vendors that provide interesting products were considered for inclusion: Certeon, Exinda and Streamcore. However, these vendors did not meet the revenue criteria. We will continue to track their progress and will consider them for inclusion in 2012.

**DROPPED**

**Vendors Dropped**

Juniper has been dropped because it no longer meets the revenue threshold.

**Inclusion and Exclusion Criteria**

To help organizations with their WAN optimization needs, Gartner has assessed vendors that offer generic, multifunction WOC products, rather than those that offer only application- or protocol-specific capabilities for Web caching, HTTP compression or remotely mounted file systems, or single functions, such as QoS.

While WOC technology is maturing, significant variations between different implementations remain, so we are focusing on evaluating the different feature sets that are available. Therefore, we have included only vendors that were substantially the original developers of their WOC products (either directly or through acquisition). We have excluded vendors that source the bulk of their technology under OEM or resale agreements.

As this market develops, we expect vendors that offer a combination of techniques, both generic and application- or protocol-specific, to be the most successful. To be included in the present Magic Quadrant, vendors’ products must include capabilities in each of the four broad categories of WAN acceleration techniques:

- Traffic management capabilities, such as WAN QoS classification, enforcement or traffic shaping
- Compression, caching and/or data deduplication or reduction capabilities
Generic protocol acceleration (for TCP or HTTP, for example)

Application- or higher-level protocol-specific optimization features, such as acceleration of the Common Internet File System (CIFS) file-sharing protocol

Due to the wide geographical reach of the networks that will benefit most from this technology, vendors need to have a global installation and support capability. As this Magic Quadrant is intended to inform enterprise purchasing decisions, we have included only vendors that have a specific focus on enterprise customers.

Because this is the fifth iteration of Gartner’s WAN optimization Magic Quadrant, covering substantially the same set of vendors in a maturing market, our focus remains on informing our clients’ vendor selection process. Therefore, we have included only vendors that have established a market presence demonstrated by worldwide 2010 WOC revenue exceeding $20 million, as measured by our market share methodology. We continue to track emerging vendors and add them as they establish themselves as credible suppliers. If emerging vendors demonstrate significant innovation as to potentially disrupt the market, we will consider modifying our inclusion criteria.

Evaluation Criteria

ABILITY TO EXECUTE

Gartner analysts evaluate technology providers on the quality and efficacy of the processes, systems, methods or procedures that enable IT providers’ performance to be competitive, efficient and effective, and to positively impact revenue, retention and reputation. Ultimately, technology providers are judged on their ability and success in capitalizing on their vision. The criteria that Gartner uses to evaluate technology providers' ability to execute are described below.

Product/Service

This describes core goods and services offered by the technology provider that serve the defined market. These include current product and service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements and partnerships, as defined in the market definition and detailed in the subcriteria. For the WOC market, this criterion evaluates both the capabilities of the product (as fully released and generally available on 15 October 2011) and the underlying hardware and software platform on which the vendor’s products are based, the breadth of the product range, and the products’ suitability for supporting additional features in the future.

Overall Viability (Business Unit, Financial, Strategy and Organization)

Viability includes an assessment of the overall organization’s financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue to invest in
and offer the product and advance the state of the art within the organization's portfolio of products.

**Sales Execution/Pricing**

This describes a technology provider's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel. For the WOC market, the sales execution subcriterion is rated higher than the pricing subcriterion.

**Marketing Execution**

Marketing execution is defined as 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 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, promotion, thought leadership, word-of-mouth and sales activities. We consider the success and mind share of products in the WOC market, including the installed base and market share, as well as the maturity and breadth of the organization's distribution channels. Also considered are the quality of customer case studies and the level of interest from Gartner clients.

**Customer Experience**

Customer experience comprises the relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways that customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), the availability of user groups and SLAs. For the WOC market, the vendor's global installation and support capabilities are key components of the customer experience. Also considered are the quality of vendor-supplied customer references and Gartner clients' experience of the vendor.

The following evaluation criteria have not been used:

- Market responsiveness and track record are evaluated under Marketing Execution.
- Operations is covered under Overall Viability.

The weighting we assigned to the various criteria used to evaluate technology providers' ability to execute is shown in Table 1.

**Table 1. Ability to Execute Evaluation Criteria**

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
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<tr>
<td>Evaluation Criteria</td>
<td>Weighting</td>
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<tr>
<td>--------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Product/Service</td>
<td>Standard</td>
</tr>
<tr>
<td>Overall Viability (Business Unit, Financial, Strategy, Organization)</td>
<td>High</td>
</tr>
<tr>
<td>Sales Execution/Pricing</td>
<td>High</td>
</tr>
<tr>
<td>Market Responsiveness and Track Record</td>
<td>No rating</td>
</tr>
<tr>
<td>Marketing Execution</td>
<td>High</td>
</tr>
<tr>
<td>Customer Experience</td>
<td>High</td>
</tr>
<tr>
<td>Operations</td>
<td>No rating</td>
</tr>
</tbody>
</table>

Source: Gartner (January 2012)

**COMPLETENESS OF VISION**

Gartner analysts evaluate 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 to Gartner’s position. Ultimately, technology providers are rated on their understanding of how market forces can be exploited to create opportunities for the provider. The criteria Gartner uses to evaluate technology providers’ completeness of vision are described below.

**Market Understanding**

Market understanding is defined as the technology provider’s ability to understand buyers’ needs and translate these needs into products and services. Vendors that show the highest degree of vision listen to and understand buyers’ wants and needs, and can shape or enhance those wants with their added vision. For the WOC market, we expect to see a consistent track record of feature enhancements, together with a sound product road map that demonstrates a clear vision for the future of the WAN optimization market.

**Marketing Strategy**

Marketing strategy involves a clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

**Sales Strategy**

This entails the strategy for selling products 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. For the WOC market, as well as a well-developed global distribution strategy, we expect to see a vision to address the increasing importance of managed WOC services.

**Business Model**

The business model involves the soundness and logic of a technology provider's underlying business proposition.

**Innovation**

Innovation describes direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes. WOC vendors with a track record of early introduction of new features and capabilities will be highly rated. As well as feature innovation in the four broad categories defined in the inclusion criteria, we expect to see innovation in the scope of product availability (for instance, breadth of product range, including data center, branch and remote access products), in high-availability options, and in manageability and maintainability.

**Geographic Strategy**

Geographic strategy entails the technology provider's strategy for directing 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. For the WOC market, we expect to see a sales and support strategy that recognizes the global nature of many user organizations' WOC needs.

The following evaluation criteria have not been used:

- Offering (product) strategy is covered under Market Understanding and Innovation.
- Vertical/industry strategy is not relevant, because WOC equipment is being adopted across a broad range of industries and is a generic technology that is not industry-specific.

The evaluation criteria and weighting used by our analysts to determine completeness of vision are shown in Table 2.

**Table 2. Completeness of Vision**

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Market Understanding</td>
<td>High</td>
</tr>
</tbody>
</table>
Evaluation Criteria | Weighting
--- | ---
Marketing Strategy | Standard
Sales Strategy | Standard
Offering (Product) Strategy | No rating
Business Model | Standard
Vertical/Industry Strategy | No rating
Innovation | High
Geographic Strategy | Standard

Source: Gartner (January 2012)

Quadrant Descriptions

LEADERS

Leaders exhibit an ability to shape the market by introducing additional capabilities in their product offerings and by raising awareness of the importance of these features. We expect a Leader to grow the market as a whole and to have solutions that resonate with an increasing number of enterprises. Leaders in the WOC market need to have a broad feature set, including QoS, generic compression, protocol acceleration and file system acceleration, with the majority of features proved in substantial real-world implementations. They also need to be able to offer sales and support on a global basis.

CHALLENGERS

A Challenger in this market is a follower from a product or innovation perspective, but has demonstrated the ability to take its products into the market and to show their relevance to a wide audience. Challengers may have less-complete feature sets than Leaders, or they may have new products that are as yet unproved in substantial real-world implementations.

VISIONARIES

Visionaries need to address the whole market and must exhibit strong market understanding and innovation. They can be pointers to the market's future. However, they currently lack the ability to influence a large portion of the market and have yet to expand their sales and support capabilities globally. In addition, they may have new products that are as yet unproved in substantial real-world implementations.
implementations, or may lack the funds to execute with the same capabilities as a vendor in the Leaders quadrant.

NICHE PLAYERS

Niche Players provide a more limited set of capabilities, and they have not demonstrated enough vision or focused execution to warrant a stronger position in our analysis. They may be indicative of emerging requirements and features. Niche Players may have yet to expand their sales and support capabilities globally. Additionally, they may have new products that are as yet unproved in substantial real-world implementations, or may lack the funds to execute with the same capabilities as a vendor in the Leaders quadrant.

Context

We see increasing deployment of managed WAN optimization services, increasing "openness" of WOC platforms to third-party applications, and some integration of WOC features into other network equipment, such as routers. Software-only "virtual" WOC implementations are also reaching the mainstream.

Optimization techniques for WANs can improve most organizations' application response times, particularly where network latency is high, which is often due to centralization of servers and IT resources. Through data deduplication/compression and prioritization techniques, WOCs can also help organizations avoid costly bandwidth upgrades.

The WOC market is maturing rapidly, but it is still dynamic with a high level of vendor innovation, particularly around cloud, video, multipoint QoS and security. Performance measurement and SLA reporting are also becoming increasingly common on WOCs. This has led to different vendors offering a variety of combinations of features. The emergence of centrally served HVDs is challenging WOC vendors to provide value in an environment where traffic is encapsulated in proprietary encryption technologies and typical protocols (HTTP, CIFS and MAPI) never leave the data center.

Prices for WOCs has remained relatively consistent over the past year, although increased competitive pressures have increased discounts, especially on highly competitive and very large deals.

So, before choosing a vendor, ensure that you understand the applications and services running on your network and the protocols they use. Also, conduct a detailed analysis of your network traffic to identify specific problems (for example, excessive latency, bandwidth oversubscription or lack of prioritization for certain types of traffic). Finally, insist on a real-life trial before committing to any new purchase.

Our advice on deciding on a WOC deployment should, therefore, be considered in light of these changes.
in the market, and we recommend that selection is made on the basis of relatively short payback times (typically three years), and on current and near-term product capabilities.

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Market Overview

WAN optimization is about improving the performance of business applications over WAN connections. This means matching the allocation of WAN resources to business needs and deploying the optimization techniques that deliver measurable business benefits. The majority of WOCs are purchased by North American companies (with Europe coming second) because these companies have the greatest number of branch offices. These WOCs are deployed to support an increasingly global WAN footprint.

Most networks carry a variety of traffic types of differing characteristics and importance. Many organizations are striving to manage this traffic to optimize the response times of critical applications and reduce costs, given that bandwidth continues to represent a significant proportion of operating expenditure for wide-area data networks. But the cost of bandwidth isn't the only consideration — as resources are increasingly centralized, minimizing the effect of latency on application response times is becoming a critical requirement. In addition, virtualization and new application environments, such as cloud computing and Web services, can put an unexpected strain on the network (see "You Can't Do Cloud Computing Without the Right Cloud (Network)" and "Is Your Network Design the Weak Link in Cloud Computing?").

Different types of traffic and IT architecture present both difficulties and opportunities for improving the response times of essential applications. For example:

- Traffic that isn't time-sensitive, such as email, backups and personal Web access, can swamp WAN links, leading to slow response times for business-critical applications.
- Applications that make extensive use of dynamic content, such as Microsoft SharePoint, can swamp WAN links, while delivering poor end-user response times.
- Global centralization of branch office servers and data centers can expose latency-sensitive protocols, again leading to slow response times.
- File transfers, OS patch distribution and similar applications, such as the delivery of training videos, can quickly saturate WANs.
- Repeated transmission of the same, or similar, files, objects or data patterns can create opportunities for data compression and caching.
- Dynamic multipoint unified communications and collaboration video sessions can saturate edge network nodes without passing through the data center, making visibility and control very difficult to achieve.

Because optimizing overall application response times is a requirement for many organizations, this
Magic Quadrant reviews vendors that address the common need to make more efficient and effective use of wide-area connections, regardless of the type of traffic or application. The predominant need is still to optimize the connection between users (both in remote branch locations and single remote users) and centralized IT resources. However, we are also seeing the need to optimize connections between data centers (vendors such as Silver Peak, Riverbed and F5 tackle that issue). We are also seeing early signs of the need to optimize traffic to mobile devices, including tablets and smartphones, as well as access to externally hosted applications (cloud). In some cases, access to cloud-based applications makes use of direct access to the Internet from the branch office to reduce latency and offload the intranet backbone. This approach often integrates a cloud-based SWG service.

The development of the application acceleration market has been driven by customer demand for highly integrated solutions that employ a wide range of techniques to optimize network traffic and that offer scalability and fault tolerance. Vendors in this space initially addressed either the traffic shaping/QoS market, or the compression/caching market. These two segments have now largely merged, with most products supporting both sets of capabilities. Increasingly, the combination of application visibility/QoS and latency mitigation is required to achieve acceptable application performance. We therefore see a need for application identification/control and both generic and application-specific optimizations to mitigate the impact of network latency on remote application performance.

Some vendors are now increasingly merging their enterprise content delivery network (ECDN) and WOC products, or are adding ECDN features to their WOC products. ECDN offers the capability to deliver live and on-demand streaming of media content, by splitting unicast streams and by prepositioning content in the cache. This increases the scalability of media servers and helps to improve the response times for semi-static content, such as business procedures and software upgrades. The ECDN market is now merging into the WOC market.

In addition, the following WOC product trends are emerging:

- In branch offices, the capabilities of WOCs will evolve to the point that they can support serverless branch operations, also described as BOBs. Customers often need to maintain one or two key applications in the branch. BOBs are now leveraging hypervisor or OS capabilities to host one or more applications on the BOB hardware.
- An alternative offered by some vendors is to install a virtualized WOC in a server at the branch. That server can then run the virtualized WOC along with other virtualized appliances. An advantage is the availability of a standard virtualization environment at the branch, and easier replacement of the hardware if there's a failure. However, integration of the branch server can be complex, and hardware bypass network interface cards (NICs) for fail-to-wire operation may not be available for a particular hypervisor. Virtual WOCs are also being loaded into clouds and used to accelerate cloud-based applications.
- There is increasing interest in SoftWOC clients for mobile devices, such as smartphones and tablets, but availability and adoption are limited.
- Alternative delivery models, such as cloud-based or cloud/premises-based hybrid solutions, are
generating interest in managed service providers such as Aryaka and Virtela and in the
Riverbed/Akamai joint offering.

There remains a focus on security — including the acceleration of encrypted protocols such as
HTTPS and the security of data stored on WOC systems — as well as secure access to off-premises
applications. Ensure that your vendor provides timely support for new versions of applications and
protocols and that data in flight and at rest is protected by strong encryption. Some vendors can
decrypt HVD traffic to provide QoS for interactive versus print and file transfer traffic. In some
cases, cross-session compression/deduplication and caching are performed. Other vendors provide
QoS only for the encrypted streams, in some cases with guaranteed in-order delivery of packets.

As basic acceleration capabilities mature, we are seeing a resurgence of interest in visibility and
control, both as a means to demonstrate WOC effectiveness, and as a bandwidth/response-time
planning tool. Providing application and user performance measurement and SLA reporting are key
emerging requirements for WOC equipment.

Cisco has integrated limited WOC capabilities into its core router software, because the branch
router seems a logical point of consolidation for WAN optimization. However, this WOC is a
lightweight version with TCP optimization and some deduplication but without extensive
deduplication or higher-layer protocol acceleration. It may be adequate when latency is low and
bandwidth is relatively plentiful. Cisco and HP offer fuller-function WOCs on blades in their branch
office routers, although performance is limited. In the future, we may also see branch-office-class
routing offered as a service on WOCs.