G00270457

Magic Quadrant for Application Delivery Controllers

Published: 6 October 2015

Analyst(s): Andrew Lerner, Mark Fabbi, Danilo Ciscato, Joe Skorupa

The application delivery controller is a key component within enterprise and cloud data centers to improve availability, security and performance of applications. Application-centric personnel are increasingly influencing ADC selections, which is accelerating innovation and change in the market.

Market Definition/Description

Application delivery controllers (ADCs) provide functions that optimize delivery of enterprise applications across the network. ADCs provide functionality for both user-to-application and application-to-application traffic, and effectively bridge the gap between the application and underlying protocols and traditional packet-based networks. This market evolved from the load-balancing systems that were developed in the latter half of the 1990s to ensure the availability and scalability of websites. Enterprises use ADCs today to improve the following aspects of their applications:

- Availability
- Scalability
- End-user performance
- Data center resource utilization
- Security

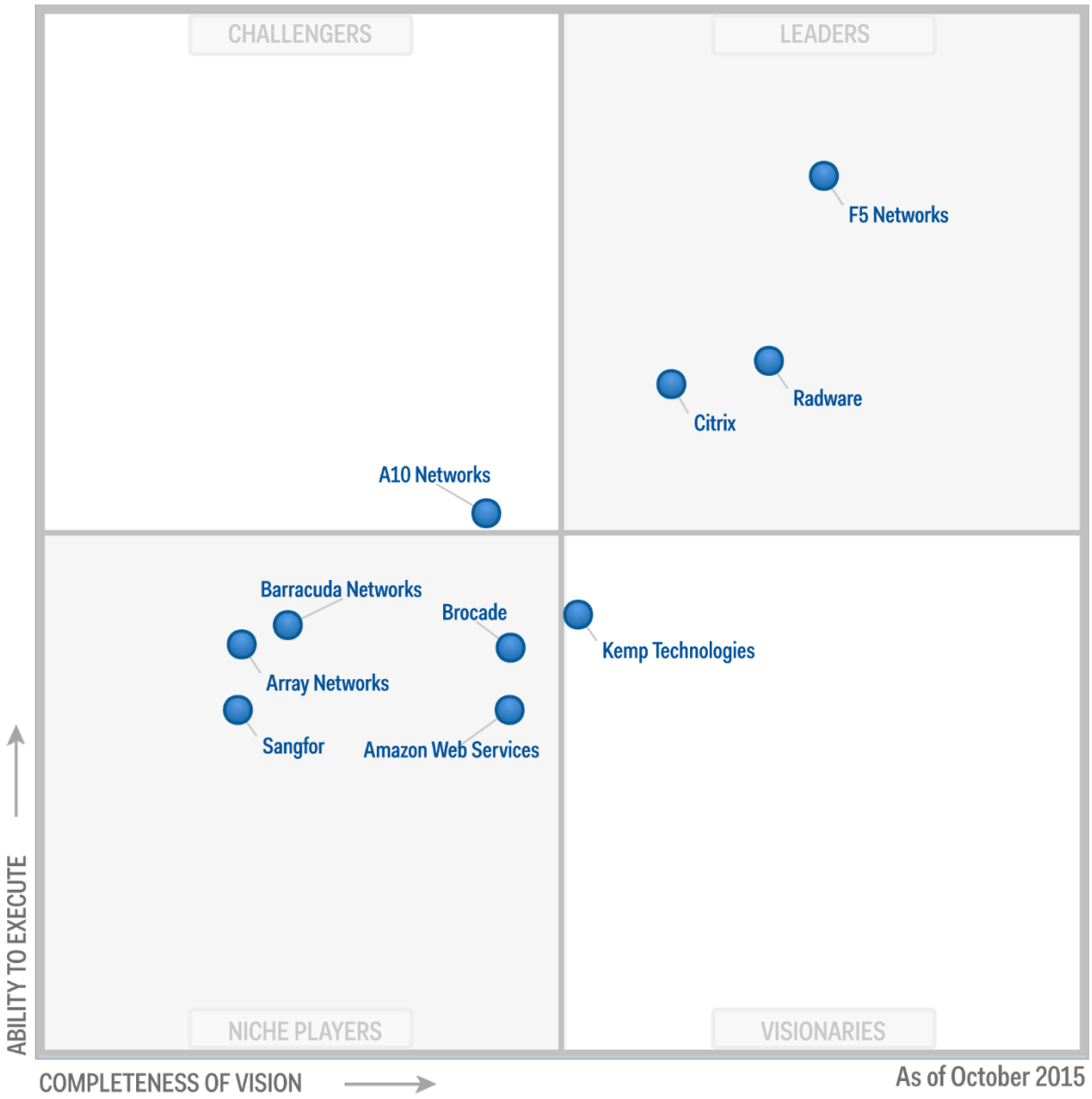
See Note 1 for a more detailed listing of ADC capabilities.

The following ADC deployment models are commonly found in the market:

- Single-instance hardware appliance
- Multi-instance hardware appliance
- Software-based instance, which can be run on a bare-metal server, a virtual appliance or within a container, or as an image within an infrastructure as a service (IaaS) provider
- A cloud-based as-a-service offering (over-the-top [OTT])

Magic Quadrant

Figure 1. Magic Quadrant for Application Delivery Controllers



Source: Gartner (October 2015)

Vendor Strengths and Cautions

A10 Networks

A10 is the fourth-largest ADC vendor when measured by revenue (as of year-end 2014), with approximately 7% of overall share and a well-established footprint in large-scale environments.

A10's Harmony platform includes hardware and software ADC capabilities that are delivered via the vendor's Thunder Series of appliances. A10 has long been a price/performance leader in the market and has had success in large-scale environments (such as e-commerce). It is now attempting to further penetrate the enterprise market. Over the past year, A10 released version 4.0 of its ACOS software, which included full exposure of all platform features via API — making it more appealing to developer-centric organizations. Organizations with large-scale application delivery requirements should consider A10.

Strengths

- A10 has an established footprint and track record for success in large-scale environments within North America and Japan.
- A10 aggressively prices its products and delivers a high-performance product in small form factor (up to 150 Gbps of throughput in a one-rack unit [1RU] device).
- A10 provides all-inclusive licensing SKUs, which lowers product cost and simplifies ordering versus leading competitors.
- A10 provides some of the highest-performing network address translation (NAT) and Secure Sockets Layer (SSL) visibility functionality in the market. These capabilities are delivered within the Thunder ADC as software modules (SSL Insight and Carrier Grade NAT [CGNAT]).

Cautions

- A10 has limited experience in mainstream enterprise environments compared with leading competitors. Thus, it lacks expertise in complex enterprise application environments.
- A10 lacks SSL VPN capability, which is desirable for organizations looking to consolidate remote access functionality into their ADC platform.
- A10's Web application firewall (WAF) is immature and lacks the depth of functionality compared with leading ADC competitors.
- A10 does not have a cloud-based OTT capability to deliver ADC functionality, which leading ADC competitors do.

Amazon Web Services

Amazon is the most visible of a new breed of ADC vendors that target new application delivery approaches (cloud first/cloud only and emerging microservices) and new buying centers outside of traditional infrastructure and operations (I&O; for example, application developers/architects, DevOps teams and lines of business). Amazon's product suite of Elastic Load Balancer (ELB), Route 53 DNS services and CloudFront content delivery network (CDN) are only available within Amazon Web Services (AWS). While this focus limits Amazon's impact on legacy applications and within enterprise data centers, it enables the company to optimize all activities around high-growth strategic applications where traditional I&O teams have less influence over vendor selection. AWS customers have the option to install non-Amazon ADC software within AWS ("bring your own"

[BYO]), which puts AWS in the unique position of both competing and cooperating in the market. Organizations that are developing applications within AWS or migrating applications to AWS should consider the vendor's suite of application delivery functionalities.

Strengths

- Customers cite cost, the ability to handle bursty workloads, simplified integration within AWS and the ability to load-balance across availability zones as positive differentiators versus traditional ADC competitors.
- Amazon has fostered a large community of developers that are very familiar with its API and suite of functionalities, making it easy for its target buyers to obtain development resources.
- Amazon offers a highly scalable, reliable, secure set of application delivery services as part of its industry-leading suite of IaaS capabilities, which are increasingly being selected by CIOs.
- Amazon's application delivery services leverage the rapid, high-quality feature development and rollout required by Amazon's e-commerce platform.

Cautions

- The vendor's ADC software only runs within AWS, and (unlike other cloud providers) has no plans for on-premises versions of its offering. This makes it extremely challenging for customers to migrate workloads between AWS and other public/private cloud infrastructures, and facilitates vendor lock-in.
- Amazon's "pay as you go" pricing does not allow customers to lock in maximum costs, which can lead to unpredictable costs, and customers have noted higher than anticipated charges during periods of increased volume.
- Amazon's offering has a very limited feature set compared with traditional ADC players, making it unsuitable for many complex traditional enterprise applications. For example, ELB does not support stickiness (affinity) via client source IP address, and instead requires session cookies.
- Traditional on-premises management tools offer varying levels of support for managing AWS services, which could require I&O teams to learn and support a new environment.

Array Networks

Array Networks is headquartered in Milpitas, California, and provides ADC, WAN optimization and security products. Array Networks targets environments with high SSL requirements, primarily in the midmarket and cloud provider markets. Array was the No. 10 ADC vendor in 2014 (when measured by revenue), with approximately 2,500 customers, primarily in Asia/Pacific (APAC) and North America. Array offers physical (single instance and multitenant) and virtual appliances, which support mix-and-match configurations and provide a pay-as-you go model in specific increments. The vendor has invested in cloud and virtualization orchestration, and supports leading CMP platforms, including OpenStack, VMware and Microsoft. Midmarket organizations and cloud providers with high-scale SSL requirements looking for a cost-effective ADC should consider Array.

Strengths

- The vendor has a simple-to-manage platform, suitable for midmarket enterprises that cannot afford dedicated ADC skills, but scale also to large environments in terms of performance.
- Its ADC product supports high-performance/high-capacity SSL implementation at a cost-effective price point.
- The vendor supports up to 32 virtualized ADC instances running on the same hardware platform, with dedicated resources and guaranteed performance.
- Array's products have been successfully deployed in very large-scale cloud and service provider environments.

Cautions

- The vendor lacks an installed base and advanced capabilities for complex enterprise application environments, compared with leading competitors in the market.
- Security functions (WAF and distributed denial of service [DDoS]) are more limited than those available from market leaders, although the vendor continues to invest in this area.
- Array has limited sales and channel resources compared with market leaders; thus, enterprises should ensure there are appropriate levels of local sales and engineering support.
- Array has been later to market with new functionality and deployment models versus leading ADC competitors.

Barracuda Networks

Barracuda Networks continues to focus on the small or midsize business (SMB) market by offering a broad set of storage and security products and services, including its Load Balancer ADC and a more advanced WAF with ADC capabilities. Recent additions to the product portfolio include a very aggressively priced 40 Gbps Layer 4 (L4) Load Balancer Fast Distribution Controller (FDC) that can be deployed to enable scaling of security infrastructure. Barracuda seeks to provide products that are simple and cost-effective backed by comprehensive subscription-based support. Barracuda has more than 9,000 ADC customers, representing a more than 25% year-over-year growth. Small and midmarket organizations should consider this vendor, particularly if security is a priority and/or other Barracuda products exist in the infrastructure.

Strengths

- Barracuda provides a good-enough feature set for its target market and aggressively prices its ADC offerings.
- Barracuda's products are designed to provide quick time to value and low operational costs through a consistent operational interface.

- Barracuda provides free hardware upgrades to customers that purchase a four-year maintenance contract, which results in long-term capital expenditure (capex) savings. This maintenance program is highly unusual and is a differentiator in the market.
- Barracuda's broad and rich product offerings outside the ADC market enable midmarket customers to obtain a rich set of IT infrastructure capabilities from a single supplier.

Cautions

- Barracuda has a limited set of application deployment templates and experience with customization and programmatic interfaces and application-specific optimizations versus leading competitors.
- Barracuda lacks the installation base and experience in large enterprises, compared with market leaders.
- Barracuda marketing confuses prospects due to branding an integrated ADC/WAF as only a WAF. This limits Barracuda's opportunities for organizations looking for more advanced ADC solutions.
- Barracuda's focus on SMB prevents it from gaining exposure in larger accounts that might find its products useful. This makes it difficult to gain experience in more complex application environments.

Brocade

Brocade has been in the ADC market for more than 15 years. However, the past year has seen Brocade embark on a significant change in strategy: moving from a high-performance, basic-featured hardware platform to one where software is the key. Over the past year, Brocade acquired the SteelApp ADC product line from Riverbed, rebranded it as the Brocade vADC and delivers it as its core ADC offering. Brocade is now adding Layer 2 through Layer 4 functionality using Intel's Data Plane Development Kit (DPDK) to provide high performance on standard x86 server platforms. 'The solution fits well with Brocade's network function virtualization (NFV) strategy for service providers, and also offers enterprises a software-based solution that is available on various cloud platforms. Brocade has over 3,000 ADC customers, with software representing more than 50% of ADC sales in the past year. Organizations that desire a software-based ADC deployment for their private or public cloud environments should consider Brocade's vADC, but recognize the vendor is in the early stages of integration of SteelApp.

Strengths

- Brocade's virtual solution allows for per-application ADC deployment, including micro ADCs that can support up to 250 instances on single x86 server, which is higher than most competitors.
- Brocade's pooled usage licensing allows for simple scalability within an ADC instance, as well as for the number of instances deployed.

- Brocade's virtual solution enables organizations to create and configure generic load-balancing templates to simplify deployment of applications within cloud architectures.
- The acquisition of the SteelApp business provides Brocade with strong application layer features, including performance optimization and security capabilities that were lacking in Brocade's previous offerings.

Cautions

- At the time of this review, Brocade had just completed the acquisition of SteelApp, and had not yet published a longer-term roadmap to integrate its virtual ADC capabilities into a cohesive cross-company strategy.
- Brocade's does not currently offer a physical appliance form factor for its flagship ADC product.
- Gartner clients and survey respondents note that prices for Brocade's virtual solutions can be expensive.
- Brocade has limited market share in the ADC market, and limited experience in enterprise environments compared with leading competitors.

Citrix

Citrix provides a comprehensive set of hardware and software options for ADC deployments that span midsize to large enterprises, service providers and cloud providers. The vendor's NetScaler portfolio includes a full range of hardware (MPX), software (VPX) and multi-instance hardware (SDX), which provide the capability to consolidate multiple functionalities (i.e., WAF, global server load balancing [GSLB], etc.) into a single platform. Citrix maintained its clear No. 2 ranking based on revenue share; however, it grew below the average growth rate of market leaders in 2014. Further, an activist investor with a 7% stake in the company has aggressively recommended corporate changes that initially included exploring the sale of Netscaler. Since then, Citrix has publicly stated that they are seeking alternative options for both the GoTo and ByteMobile product lines but that the company has no plans to sell NetScaler. Citrix has been successful cross-selling the NetScaler ADC products into traditional Citrix XenApp and XenDesktop deployments, and is now working to grow its routes to market beyond these. Citrix is a key partner with Cisco, with integration into several product lines, including ACI and the Nexus 7000. Citrix should be considered for all ADC opportunities globally.

Strengths

- Citrix provides a cost-effective offering with a good range of deployment options and feature capabilities, which is well-aligned for most enterprise environments.
- Citrix has deep integration with a number of Cisco products, including the Nexus 1000V, Nexus 7000 and ACI. In addition, customers that prefer to source their ADC from Cisco can acquire the virtual edition of NetScaler directly from Cisco via an OEM relationship.

- Citrix is the only vendor to offer built-in discounts for customers willing to commit to multiyear support contracts for ADC services.
- Citrix is one of the only ADC vendors to provide database load balancing with support for native SQL load balancing for Microsoft SQL Tabular Data Stream (TDS) and MySQL.

Cautions

- Compared with other vendors in this report, Gartner clients and survey respondents report more problems with implementation and support.
- Citrix has been slow to articulate its vision to deploy ADC features as a cloud-based OTT offering.
- Compared with other leading ADC vendors, Citrix has not demonstrated the same level of enterprise application expertise within complex deployments.
- During inquiry with Gartner clients, unaided mentions of Citrix NetScaler have declined in the last 12 months, compared to other leading ADC vendors.

F5 Networks

F5 continues as the market leader, with its revenue share increasing to 52% in 2014. F5 also continues to innovate and broaden its offerings to meet the changing needs of its diverse customer base. F5 benefited from a full year of its new software bundling offerings (Good, Better, Best), which resulted in approximately 70% of customers buying the fully featured "Best" offering. We have also observed clients increasingly deploying F5's security functionality within ADC implementations. Over the past year, F5 introduced its Silverline cloud-based offerings and is leveraging its LineRate acquisition to help combat erosion from lower-cost or open-source offerings that can appeal to DevOps buyers. F5's in-depth knowledge and features to support applications deployed in complex enterprise environments remain primary differentiators. Consider F5 for all ADC requirements, especially when support for complex or custom application environments is a requirement.

Strengths

- F5 has a broad and comprehensive vision which encompasses physical, virtual and cloud deployments in support of enterprise, service provider and cloud provider use cases.
- F5's Silverline cloud-based services offer capabilities for cloud-resident ADC offerings, which will be increasingly important to support new application traffic patterns.
- F5 provides the capability to consolidate multiple security, remote access, performance and application delivery functionalities into a single platform.
- F5 has support for a broad range of functionality associated with software-defined networking (SDN), NFV, orchestration and integration with cloud management platforms.
- F5's internal knowledge base, extensible platforms, and experience in and understanding of complex and customized application environments are clear differentiators.

Cautions

- Gartner clients and survey results confirm that F5 is the highest-priced provider in the ADC market.
- F5's APIs, scripting and integration capabilities often result in a series of lock-in features for F5 customers.
- As the incumbent vendor, F5 generally will not lead with options (such as virtualized hardware platforms and clustered ADC deployments) that help enterprises reduce footprint and cost of large deployments.
- F5 has a very deep set of functionalities, but many customers do not fully leverage the platform's capabilities.
- The F5 platform is not well-aligned with midmarket organizations' ADC requirements from a feature and price perspective.

Kemp Technologies

Kemp Technologies is a privately held pure-play ADC vendor with more than 13,000 paying customers. While small in size, Kemp has a broad, deep understanding of customer needs and a clear vision for how to meet those needs. Kemp's line of LoadMaster products deliver aggressively priced (including freemium) ADC and load-balancing solutions to the small- and midsize-enterprise segments, with increasing penetration of the mainstream enterprise market. Kemp's resale agreement with Dell and its inclusion in the AWS and Microsoft Azure cloud offerings have increased visibility and go-to-market capabilities. Over the past 12 months, Kemp has added WAF capabilities, a replacement for Microsoft's Threat Management Gateway (TMG) and additional application templates; it has also refreshed the product family, including addition of 10 Gbps virtual and 30 Gbps physical LoadMasters. Midmarket organizations should consider Kemp, as should enterprises that would benefit from a second-source ADC with good-enough features, flexible deployment models, aggressive pricing and a compelling vision for the future.

Strengths

- Kemp has a solid range of physical and virtual appliance deployment options, and is the only vendor that supports native bare-metal deployments on Cisco, Dell, Fujitsu, HP and Oracle server hardware.
- In proposals that Gartner reviews, Kemp offers very cost-effective prices that align with the budgetary requirements of midmarket organizations.
- Kemp's early and innovative support for SDN and freemium prices demonstrate the company's vision, technical acumen and willingness to drive new capabilities into the market. Few competitors, including those many times Kemp's size, have demonstrated this level of understanding and innovation.

- The company is well-positioned as SDN and NFV achieve increased mainstream adoption. Kemp has a software-centric vision, with SDN and NFV functionality generally available today.

Cautions

- Due to its size, Kemp may not have the required local support in all geographies. Potential Kemp customers should verify appropriate local sales and support resources.
- Kemp's WAF is immature and lacks the depth of functionality compared with leading ADC competitors.
- Due to its limited size and market penetration, there are a limited number of IT personnel familiar with Kemp, which can hinder deployments. Similarly, Kemp suffers from limited brand awareness in mainstream enterprises.
- Kemp has a limited number of configuration templates and advanced application features compared with leading competitors.

Radware

Radware is a longtime player in the market, and with more than 7,000 paying customers, is composed primarily of larger enterprises and service providers. Radware grew more than double the market rate in 2014, and now accounts for approximately 9% to 10% of overall ADC revenue. Radware has a strong portfolio of solutions that can go toe-to-toe with any ADC vendor, but lacks market visibility of leading competitors. Radware provides application delivery capability via its Alteon hardware appliances or software instances, and via a cloud-based delivery model. Over the past year, the vendor has continued to integrate its products in emerging SDN and NFV ecosystems, added features to increase performance, and focused on simplifying deployment of complex feature capabilities. Large enterprises requiring a full-featured ADC should consider Radware.

Strengths

- Radware has a complete range of deployment options, including hardware/software, multitenant appliance and OTT services.
- Radware has a comprehensive set of application delivery features today and a strong vision to meet the future needs of enterprises.
- Radware offers cost-effective solutions that can scale up ("pay as you grow"), scale in (device consolidation) and scale out. These are delivered via its Virtual Application Delivery Infrastructure (VADI) architecture. In addition, the vendor guarantees that any platform purchased will support all software releases for a minimum of five years.
- Radware has a deep set of security capabilities that can be integrated with its application delivery controller, including WAF, DDoS, SSL visibility and device/user fingerprinting.
- Radware integrates application performance monitoring and FastView optimization capabilities into its ADC product, which improves application visibility and performance.

Cautions

- Radware customers report that advanced features have been complex to deploy and difficult to manage.
- Radware lacks the global brand awareness of leading competitors and is not as strong in specific geographies versus leading competitors.
- Enterprise customers report that Radware's user interface needs improvement, and the vendor recognizes this and has invested in this area.
- Radware's sales coverage and routes to market are not as comprehensive as those of its leading competitors. Enterprises should ensure that local resources are available and that these resources have appropriate levels of expertise.

Sangfor

Sangfor is a well-known vendor in the Asia/Pacific (APAC) region, with headquarters in Shenzhen, China. Sangfor provides ADC, security and infrastructure solutions. In 2014, it was the No. 7 ADC vendor (by revenue). It grew above market rates and now has more than 4,000 customers. The vendor focuses on public sector, finance and telecom verticals within APAC, primarily China. Sangfor covers all primary ADC functions, and began shipping also a virtual appliance for VMware in 2014. Organizations looking for a cost-effective ADC solution in the APAC region should evaluate Sangfor.

Strengths

- The vendor is well-positioned to address the fast-growing Chinese market, providing products tailored to meet specific needs and building strong technical capabilities in large-scale projects.
- All primary functions (including security) are integrated and packaged in a cost-effective device with full Web management.
- The vendor has added image transcoding functionality, which can improve Web application performance.
- Sangfor is in full compliance with Chinese government policies and support of SSL Office of Security Commercial Code Administration (OSCCA) standards.

Cautions

- The vendor has very limited installed base and market coverage outside of China.
- The vendor lacks deployment options compared with leading competitors and was very late to market with virtual instances.
- The vendor provides limited SDN and cloud integration options, compared with leading competitors.

- The vendor currently lacks an integrated WAF module for its ADC, although this functionality is roadmapped.

Vendors Added and 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's appearance 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. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

Brocade acquired the ADC assets of Riverbed and now meets inclusion criteria.

Amazon Web Services was added to the 2015 Magic Quadrant as it now meets inclusion criteria.

Dropped

Piolink was dropped because it no longer meets our inclusion criteria.

Riverbed was dropped, as its ADC business unit was acquired by Brocade.

Other Players

There are several additional vendors that garner interest from Gartner clients and/or that could impact this market over time. These vendors do not currently meet our inclusion criteria, but can address application delivery requirements in certain usage scenarios. In some cases, these vendors sell to customers outside the traditional IT organization — the so-called "shadow IT." Specific players we track include:

- Open-source software offerings, along with vendors like HAProxy Technologies and Nginx that provide commercial support and differentiation on top of the open-source products.
- Several cloud infrastructure providers, such as Microsoft (Azure), that provide application delivery functionality within their cloud offering.
- Avi Networks and Appcito are emerging ADC vendors that target application-centric buyers with deployment models that often leverage public cloud infrastructure.
- Akamai, Instart Logic and Lagrange Systems provide OTT capabilities that can improve application performance for Internet-facing applications.
- Cisco, Fortinet, Huawei, jetNEXUS, Loadbalancer.org, Payoda (ADC orchestration), ScaleArc (database load balancing) and VMware (NSX).

Inclusion and Exclusion Criteria

Inclusion Criteria

Criteria for *inclusion* in the ADC Magic Quadrant include the vendor's ability to:

- Produce and release ADC products for general availability as of 15 May 2015, and demonstrate commitment and relevance to the *enterprise* ADC market. All ADC product components must be generally available and included on the vendors' published price list.
- Demonstrate relevance to Gartner clients via achievement of a minimum of $20 million in ADC product revenue during 2014, and/or $10 million in ADC subscription revenue.
- The vendor must be able to demonstrate at least 250 enterprise customers that use its ADC products in production environments as of 15 May 2015.
- The vendor must support ADC deployments for both internal and external applications, including support for both front-end and back-end services.
- The vendor's offering must include at least three of the following ADC capabilities:
  - Dynamic L4 redirection, load balancing and failover
  - Dynamic L7 redirection, load balancing and failover
  - Global load balancing
  - SSL termination

Exclusion Criteria

ADC vendors may be *excluded* from this research for one or more of the following reasons:

- The vendor is not actively shipping products to enterprise customers, or has minimal continued investments in the ADC market.
- The company is not the original manufacturer of the ADC product or, in the cases of commercially supported open-source software (OSS), is not the direct provider of that support (including Tier 2 and Tier 3). This includes hardware OEMs, resellers that repackage products that would qualify from their original manufacturers, and carriers and ISPs that provide managed services.

Evaluation Criteria

Ability to Execute

We analyze the vendor's capabilities across broad business functions. Vendors that have expanded their ADC products across a wider range of protocols and applications, improved their service and

support capabilities, and focused on improving enterprise applications will be more highly rated in the Magic Quadrant analysis. Evaluation criteria are:

- **Product or Service** evaluates the capabilities of the products or solutions offered to the market. Key items to be considered for the application delivery market are how well the products address enterprise application needs, the breadth of the products (in terms of different functional capabilities) and how well they scale — from entry-level products to high-end products and features. Support for virtual ADCs and virtualized ADC platforms, as well as support for cloud requirements, including elasticity and orchestration, is increasingly important. Key aspects that demonstrate continued execution in this area are how the vendor expands the types of applications that are optimized, as well as the flexibility to deploy the ADC in different form factors and deployment architectures. A focus on simplifying operational requirements is also key to a technology that crosses multiple functional groups.
- **Overall Viability** includes an assessment of the 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 the product, offer the product and advance the state of the art in the organization's product portfolio.
- **Sales Execution/Pricing** looks at the vendor's ability to get the product into the market efficiently. In this market, we look for specialist capabilities — that is, a vendor and associated channels that understand and deliver solutions for optimizing a range of data center applications. In this market, pricing has become a more important criterion during the past two years. As the market matures and expands to include SMBs and DevOps buyers, customer pricing and flexible licensing approaches will become even more important. Additionally, we expect global distribution and support to serve large enterprise accounts.
- **Market Responsiveness/Record** focuses on the vendor's capability 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 provider's history of responsiveness.
- **Marketing Execution** measures the clarity, quality, creativity and efficacy of programs that are 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 of the product/brand and organization in the minds of buyers. This mind share can be driven by a combination of publicity, promotions, thought leadership, word of mouth and sales activities.
- **Customer Experience** looks at a vendor's capability to deal with postsales issues. Because of the specialized nature of the application delivery market and the mission-critical nature of many of the application environments supported by the ADC, vendors are expected to escalate and respond to issues in a timely fashion with dedicated and specialized resources, and to have detailed expertise in many specific application environments. Another consideration is a vendor's ability to deal with increasing global demands. Additional support tools and programs are indications of a maturing approach to the market.

Ability to Execute reflects the market conditions, and to a large degree, it is our analysis and interpretation of what we hear from the market. Our assessment focuses on how a vendor participates in the day-to-day activities of the market.

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product or Service	High
Overall Viability	Medium
Sales Execution/Pricing	Medium
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	High
Operations	Not Rated

Source: Gartner (October 2015)

Completeness of Vision

Evaluation criteria in this category are:

- **Market Understanding** looks at the vendor's capability to understand buyers' current and future needs, and to translate those needs into an evolving roadmap of products and services. Vendors that show the highest degree of vision listen to, understand, and anticipate buyers' wants and needs, and can shape or enhance those wants and needs with their added vision. An example of the expectations in this category is how vendors have enhanced their portfolios to address new application environments, or how they are integrating ADC services into emerging SDN-based networks.
- **Marketing Strategy** examines the messages and methods that vendors use to disseminate their messages. Are they clear and differentiated? Are they consistently communicated throughout the organization, and communicated externally through the website, advertising, customer programs and positioning statements? A key attribute of a market leader is the ability to shape and direct the key discussion points in a market to help shift a market in new or expanded directions.
- **Sales Strategy** looks at how the vendor is positioned to take advantage of different business models, packaging and routes to market.
- **Offering (Product) Strategy** looks at a vendor's product roadmap and architecture, which we map against our view of enterprise requirements. We expect product direction to focus on

optimizing enterprise application performance and security across a variety of deployment models. Specific capabilities may include, security enforcement, application enhancements and analytics, and cloud-based delivery of ADC services. The timely incorporation of new application architectures and deployment models that support SDN, cloud and mobile environments contribute to this ranking.

- **Business Model** assesses a vendor's approach to the market. Does the vendor have an approach that enables it to scale the elements of its business (for example, development, sales/distribution and manufacturing) cost-effectively, from startup to maturity? Does the vendor understand how to leverage key assets to grow profitably? Can it gain additional revenue by charging separately for optional, high-value features or by changing the business model for delivering ADC functionality in different ways? Other key attributes in this market would be reflected in how the vendor uses partnerships and bundling/integration to increase sales. The ability to build strong partnerships with a broad range of application vendors and associated system integrators demonstrates leadership.
- **Innovation** measures a vendor's ability to move the market into new solution areas, and to define and deliver new technologies or business models. In the application delivery market, innovation is key to both meeting rapidly expanding requirements and keeping ahead of new (and often more agile) competitors.

Completeness of Vision distills a vendor's view of the future, the direction of the market and the vendor's role in shaping that market. We expect the vendor's vision to be compatible with our view of the market's evolution. A vendor's vision of the evolution of the data center and the expanding role of ADCs in an increasingly distributed cloud and mobile environment are important criteria. In contrast with how we measure Ability to Execute criteria, more of the rating for Completeness of Vision is based on direct vendor interactions, and on our analysis of the vendor's view of the future.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	High
Marketing Strategy	Low
Sales Strategy	Low
Offering (Product) Strategy	High
Business Model	Medium
Vertical/Industry Strategy	Not Rated
Innovation	High
Geographic Strategy	Not Rated

Source: Gartner (October 2015)

See Note 2 and Evaluation Criteria Definitions at the end of this document for Gartner's generic Magic Quadrant criteria descriptions.

Quadrant Descriptions

Leaders

A Leader exhibits the ability to shape the market by introducing capabilities in its product offerings and by raising awareness of the importance of these features. Key capabilities for a Leader in this market revolve around enterprise application functionality. We expect a Leader to have strong or growing market share and to have solutions that resonate with an increasing number of enterprises. We expect Leaders to release ADC capabilities (deployment models, features, pricing models and so on) well in advance of mainstream enterprise demand. A Leader must exhibit expertise in complex enterprise application environments and offer a range of deployment models.

Challengers

A Challenger in this market is a follower from a product or innovation perspective, but has demonstrated the capability to take its products into the market and show their relevance to a wide audience. Compared to Leaders, Challengers typically have not yet shown a comprehensive vision to address emerging ADC requirements far in advance of mainstream enterprise demand.

Visionaries

Visionaries are vendors that have provided key innovative elements that illustrate the future of the market, and they have an ability to influence the direction of the market toward new approaches. Like Leaders, we expect Visionaries to release ADC capabilities (deployment models, features, pricing models and so on) well in advance of mainstream enterprise demand. However, Visionaries lack the capability to reach a large portion of the market; they haven't expanded their sales and support capabilities on a global basis; or they lack the funding to execute with the same capabilities as a vendor in the Leaders quadrant. Examples of technical innovation include the integration of ADCs into cloud and SDN architectures, facilitating the deployment of ADCs into ADC cloud offerings or advancing Web content optimization capabilities into broader applications. Visionary status is not a matter of deploying certain features, but rather requires a vendor to be early enough to demonstrate new approaches while having an ability to change key aspects of the market.

Niche Players

Niche Players provide more limited capabilities or focus on specific geographies, verticals or specific deployment scenarios. Niche Players haven't demonstrated enough vision or focused execution to warrant a stronger position in our analysis.

Context

The key criterion in this Magic Quadrant focuses on the vendor's ability to provide products and services that solve complex application deployment challenges. Success in this market goes beyond features. It involves a deep understanding of how the elements of applications perform across the network and how emerging network and application deployment options, such as network fabrics, SDN and cloud services, will change ADC deployment models.

Market Overview

The ADC market provides asymmetrical solutions to improve the reliability, performance, efficiency and security of a wide range of applications. New use cases and deployment models of ADC technology continue to emerge, reflecting significant innovation in the market. These technologies apply across a growing base of enterprise applications that may use the Internet, or may have little or no roots in Internet-based and browser-based technologies.

This market continues to be very innovative as new application-centric buyers are emerging to drive change in the market, including changes in deployment, pricing and the overall vendor landscape for application delivery. As the market continues to develop, our expectations increase with each iteration of this Magic Quadrant. As a result, the Magic Quadrant axis depicts a shift up and to the right with each revision. Consequently, vendors must progress to maintain their positions in each new Magic Quadrant.

Features

Although this market emerged from load balancing in the mid-1990s, most organizations use advanced functionality, including WAF and global load balancing. Below are the percentages of respondents using these capabilities, based on a research survey of end users. The survey results align with what analysts observe via client interactions.

Table 3. ADC Features Deployed

Feature/Capability	% of Survey Respondents Using the Feature/Capability
Server Load Balancing	97%
SSL Offload	85%
Web Content Optimization/Acceleration	37%
Application-Specific Configuration Templates	37%
Global Load Balancing	35%
TCP Multiplexing	30%
Web Application Firewall	30%
Customized Scripting	26%
SSL VPN/User Access Control	13%
Internet Protocol version 6 (IPv6) Gateway Services	6%

Source: Gartner (October 2015)

Hardware Versus Software

As the market evolves, ADCs are becoming less hardware-centric. We see an increasing trend toward software-based ADCs, which is reiterated in this year's customer reference survey:

- 49% of customers purchased software-based ADC components (up from 33% in last year's survey).
- 30% of the *deployed* ADC instances are now software-based.

Today, hardware-based ADCs still provide the highest level of performance and scale, but the gap is being reduced with time, due to advancements in x86 server/network interface card (NIC) processing, such as Intel's DPDK.

Market Drivers

The ADC market is primarily driven by:

- Refresh of existing ADC and load-balancer deployments, including end of life and replacement of widely used Cisco Application Control Engine (ACE) and Microsoft products that have been discontinued.

- Capacity expansion of ADC due to new application initiatives and rollouts, including public/private cloud deployments. In many cases, the buyer is not traditional I&O personnel.
- Extension of ADC capabilities into nonproduction environments, such as development/test/quality assurance (QA). These requirements are often met today by virtual appliances and software-based instances.
- Expansion of ADC usage to include additional features, such as security and global load balancing.
- In the SME market and midmarket, there is net-new expenditure as organizations upgrade from rudimentary load-balancing solutions.

Vendor Differentiation

Overall, ample differentiation still exists between products, but this differentiation is often specialized and, in many instances, difficult to fully leverage in mainstream enterprises. In other words, Gartner finds that many solutions profiled in this research are "good enough" to meet the needs of most organizations using a mix of standard application environments.

Buying Profiles

From the buying perspective, we can broadly categorize enterprise ADC buyers into the following types:

- **Standard —** A buyer primarily looking for basic load-balancing functionality to provide high availability for applications. This is typically a buyer from the networking organization. Most of these buyers purchase fully capable ADCs that are not fully exploited in their implementation.
- **Extended —** A buyer looking both for basic functionality and to leverage more of the advanced ADC features, such as security (for example, WAF and DDoS), performance (asymmetric FEO, dynamic compression and caching) or geographic load balancing. This is typically a buying effort that includes networking and system/application administration personnel.
- **Advanced —** A buyer looking for advanced ADC features and integration/orchestration with virtualization, cloud management platforms and SDN architectures. Advanced buyers are also typically looking for delivery of application delivery in a platform that provides pooled resources. This is typically a multidisciplinary effort including architecture, cloud, networking, security and system/application personnel.

What Has Changed?

During the past year, we have seen several important changes in the ADC market. The most notable include:

- Emergence of the application-centric buyer
- Increasing interest in security
- Emergence of cloud-based ADC delivery deployment methods

- Geopolitical issues
- Simultaneous aggregation and disaggregation of ADC functionality

The Emerging Application-Centric Buyer

The increased usage of both agile and DevOps methodologies within the enterprise impacts ADC buying. While the aforementioned standard/extended/advanced personas still dominate more than 90% of ADC buying, we are also seeing the early emergence of a mainstream application-centric and/or DevOps buyer. For example, 41% of survey respondents indicated they are implementing DevOps principles that will influence ADC strategy moving forward.

Currently, this represents a small percentage of the market (we estimate less than 10% of revenue), but is growing rapidly. These "buyers" typically prefer nontraditional offerings such as Amazon Web Services, HAProxy or Nginx. These buyers desire the following characteristics, versus traditional ADC buyers:

- Frictionless software acquisition (such as open-source downloads, freemium or direct access from cloud provider service catalogs)
- Per-application instances of ADC/load-balancing (versus per environment)
- Scale-out resiliency and scalability, versus scale-up
- Limited usage of advanced ADC capabilities
- Low costs and/or usage-based pricing

As a result, several established ADC vendors are innovating to address these buying requirements, including renewed emphasis on per-application ADC deployments and newer, aggressively priced offerings. Ultimately, these vendors are hoping to prevent future mind share and market share as DevOps proliferates. Examples in the market include:

- Kemp Technologies offering a fully featured ADC via a freemium pricing model
- F5 launching LineRate Point, which is a lightweight, lower-cost and software-only alternative to their flagship Big-IP ADC, aimed primarily at application and cloud teams

We anticipate continued innovation in this area, with established vendors potentially open-sourcing lightweight versions of their software, or providing support for open-source software within their management suites.

Increased Security Interest

Organizations are increasingly willing to use ADCs for security functionality. Of the ADC deals that Gartner reviews, roughly one-third include WAF capability. This is reiterated in our research survey, where 30% of respondents reported using the embedded WAF capability from their ADC solution. This is due to the string of widely publicized security breaches, lingering concerns over vulnerabilities such as Heartbleed and Shellshock vulnerability, continued DDoS attacks and even

concern from governmental spying. These issues have further underscored the importance of security capabilities available within ADC platforms, and most ADC buyers are now interested in and can justify the additional incremental spend on security capabilities within an ADC. Gartner also publishes a "Magic Quadrant for Web Application Firewalls," which includes several vendors from this research.

Cloud-Based (OTT) ADC Delivery

Adoption of SaaS, IaaS and mobile access to applications has led to changing enterprise traffic patterns. Thus, we are seeing an early stage trend toward cloud-resident OTT ADC services, as enterprises deal with the increasingly distributed traffic patterns of cloud-based applications, mobile devices and new application architectures. Cloud-based delivery also appeals to organizations looking to consume application delivery services in more of a subscription or operating expenditure (opex)-based model. F5's Silverline and Radware's Attack Mitigation System are early examples of this. We are also seeing significant startup investment in this area, with solutions targeting application performance, cloud optimization and security capabilities (see "The Future of Application Delivery Is [Partly] Cloudy").

Geopolitical Issues

Economics, technology innovation and competitive advantage fluctuate between the East, led by China (and technology hubs like Taiwan) and, to a lesser degree, India; and the West, led by the U.S. and its EU partners. Local buying practices, especially in China have led to market share gains by local suppliers, generally at the expense of Western market leaders. In the ADC market, we have seen regional buying practices impact market share. In 4Q14, Sangfor, a local Chinese player, jumped into the top five ranking in global ADC revenue with more than 2% share. See "Four Highly Disruptive Factors Will Challenge the Survival of Incumbent Data Center Market Vendors."

The Result: Change, Innovation, and Simultaneous Aggregation and Disaggregation

The result of these factors is that the market is changing and innovating quickly, and ADC offerings are simultaneously consolidating and disaggregating functionality:

- Consolidation is led by traditional I&O buyers who are aggregating security, performance and availability, while deploying ADCs between users and applications.
- Disaggregation is led by application-centric buyers deploying lightweight, software-based ADCs primarily for load balancing and closer to the application logic.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor for 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: 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 investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor'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.

Market Responsiveness/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 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 initiatives, 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 and so on.

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 to 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 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.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets 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 vertical markets.

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.

Gartner Recommended Reading

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

"How Markets and Vendors Are Evaluated in Gartner Magic Quadrants"

"Cool Vendors in Enterprise Networking, 2015"

"Cool Vendors in Web-Scale Platforms, 2015"

"Toolkit: Sample RFP for Application Delivery Controllers"

"Magic Quadrant for Web Application Firewalls"

"The Uncertain Future of IT's Most Influential Vendors Requires Vendor Risk Modeling"

Evidence

- Gartner analysts conducted more than 475 interactions with current and prospective Gartner clients on the topic of application delivery controllers from 1 July 2014 through 15 July 2015 (this does not include inquiries related primarily to WAF).

- The authors of this research conducted more than 250 interactions with current and prospective Gartner clients on the topic of application delivery controllers from July 2014 through 15 July 2015 (this does not include inquiries related primarily to WAF).
- Through the course of client interactions and the research process, Gartner has specific insight into ADC deals tallying more than $100 million in expenditure, over the past 12 months.
- Surveys conducted with vendor-provided customer references (n = 78).
- Surveys conducted with vendor-provided reseller/partner reference (n = 44). In total, these partner/reseller references provide ADC equipment and services to more than 7,500 ADC customers.
- All vendors in this research were asked to complete a questionnaire and provide a bill of materials for enterprise usage scenarios.
- Gartner Enterprise Network Equipment Market Share reports.
- "Elliott Sends Letter to Citrix Board of Directors," Business Wire, 11 June 2015.

Note 1 Key ADC Capabilities

The range of functionality offered by ADCs continues to grow, and can include some or all of the following:

- Reliability
  - Dynamic L4 through L7 redirection, load balancing and failover
  - Transaction assurance
  - Load balancing for database and big data use cases
  - High availability and clustering for ADC platforms
- Data center resource efficiency
  - TCP connection multiplexing
  - SSL termination
  - Proxy caching
  - XML validation and transformation
- Performance
  - Data compression and dynamic/adaptive compression
  - Protocol optimization
  - Caching
  - Content transformation and rewrite

  - HTML (and other application protocol) optimizations
  - Prefetching and selective encoding
  - Object reordering and consolidation
  - Application-specific acceleration
  - SPDY proxy
- Security
  - WAF
  - Network-level security functions, DDoS protection and server cloaking
  - Access control, identity management and single sign-on
- Platform capabilities
  - Rules and programmatic interfaces (rule-based extensibility), including open APIs
  - Application configuration templates and wizards to ease deployment
  - Role-based management
  - Virtualized appliance and software form factors
  - Application performance management capabilities
  - Cloud deployment and control
  - Back-end server monitoring
  - Network-address translation (NAT)
  - Bidirectional and stateful application proxy
  - IPv6 to IPv4 gateway functions
  - Global load balancing
  - Integration with other IT systems (via APIs and protocols)

Note 2 Evaluation Criteria Definitions

The Evaluation Criteria Definitions section below contains Gartner's standard Magic Quadrant evaluation criteria and generic definitions. It should not be considered integral to the ADC Magic Quadrant document. Market-specific definitions and weightings are described in the Evaluation Criteria section.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor for 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: 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 investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor'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.

Market Responsiveness/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 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 initiatives, 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 and so on.

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 to 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 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.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets 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 vertical markets.

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.

GARTNER HEADQUARTERS

Corporate Headquarters
56 Top Gallant Road
Stamford, CT 06902-7700
USA
+1 203 964 0096

Regional Headquarters
AUSTRALIA
BRAZIL
JAPAN
UNITED KINGDOM

For a complete list of worldwide locations,
visit http://www.gartner.com/technology/about.jsp