

Global DDoS Mitigation

Product Line Strategy Leadership Award

Frost & Sullivan - Best Practices Research

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Background and Company Performance

Industry Challenges

A Distributed Denial-of-Service (DDoS) attack is an increasingly popular tactic for hackers to harass, intimidate, and disrupt businesses with an online presence or other network-centric business processes. A DDoS attack can block legitimate users, employees, and customers, and can therefore be a costly problem. DDoS attacks can also cost millions of dollars per hour depending on the nature of a company's online outward-facing business, internal operations, or both. As a result, the demand for DDoS mitigation solutions is growing rapidly.

Yet, the DDoS market faces a number of challenges including rapidly changing technologies, rapidly evolving attack tactics, high costs, and growing competition. These issues can compel potential customers to postpone new or incremental investments in DDoS mitigation solutions. In particular, DDoS mitigation solutions continue to evolve in response to changing DDoS attack vectors and threat actor tactics. Confronted with this reality, potential customers then wait until DDoS mitigation solutions adapt before making a purchase in order to avoid investing in an outdated solution.

A consequence of higher performance hardware and ongoing research needed to adapt to changing DDoS attack tactics is that DDoS mitigation solutions are expensive for many organizations. The competition level of the DDoS mitigation market remains high as well, and the array of available solutions can confuse customers and lengthen sales cycles.

To effectively compete, DDoS mitigation solution vendors must contemplate this varied and dynamic state of the marketplace. Completeness of solution has proven to be an important attribute with "completeness" meaning more than completeness in just DDoS attack mitigation but also in complementary security and application performance technologies. As organizations often need a range of products and technologies, and options to minimize the business risk of a DDoS attack and serve their online constituents, a broader definition of a DDoS mitigation solution is fitting.

Product Line Strength and Customer Impact of Radware

Radware's growth in the DDoS mitigation market is driven largely by the company's comprehensive and integrated product line and the value that it provides to customers.

Breadth

Radware has excelled in breadth of its DDoS mitigation product line as it offers an on-premises product, a cloud-based mitigation service, and related security solutions such as Web application firewalls (WAF), SSL acceleration and management, and application delivery controllers (ADC).

Radware's Attack Mitigation Service (AMS) includes DefensePro and AppWall WAF

combined with the DefenseSSL solution. Radware AMS also includes a cloud-based DDoS protection service that can be used with DefensePro as an integrated hybrid solution for protection against the largest volumetric attacks and smaller, stealthy attacks in a single end-to-end, integrated solution.

Radware was one of the first, and remains one of few security companies to offer both an on-premises product and a cloud-based service for DDoS mitigation that both use the same technology. Increasingly, Radware competitors are developing similar capabilities, though primarily through partnerships, in order to stay competitive rather than the in-house strategy practiced by Radware.

Scalability

Radware's robust product line includes application delivery and security solutions that can meet the needs of a wide range of organizations. Radware offers a range of appliances, from its entry-level DefensePro x06 Series appliances to its DefensePro x4420 Series appliances designed for data center use, enterprise networks, and service provider networks. The DefensePro 1604420 appliance provides up to 160 Gbps of inspected traffic throughput with mitigation capacity up to 350 Gbps and 330 million packets per second.

Additionally, the Radware Cloud DDoS Protection Service enables Radware to offer a solution for organizations that face escalating volumetric DDoS attacks. Traffic can be diverted to the highly scalable Cloud DDoS Protection Service for threat mitigation when attacks threaten to overwhelm the connections of on-premises DDoS mitigation products. This service can be purchased as an on-demand service working in conjunction with an on-premise device for detection and mitigation, or as an always-on solution with full detection and mitigation in the cloud.

Technology Leverage

Radware utilizes purpose-built solutions with dedicated hardware systems to ensure scalability and performance. Radware AMS uses multiple techniques to detect DDoS attacks including Network Behavior Analysis (NBA), intrusion detection and prevention, SSL attack protection, and IP reputation. Similarly, the Cloud DDoS Protection Service utilizes the Radware DDoS Mitigation Engine (DME) which enables detection of volumetric threats and the StringMatch Engine (SME) which provides rapid signature matching.

Reflecting the evolution nature of DDoS attacks and tactics, the DDoS market is characterized by a high level of research and development. Radware continues to invest heavily in new means to detect constantly evolving DDoS threats. For example, Radware developed an advanced solution called DefenseFlow that uses Software Defined Networking (SDN) to separate attack detection and mitigation functions. By separating and optimizing these functions, Radware can provide network-wide attack mitigation services.

Features

Radware continually develops a number of features to enhance the efficacy of its DDoS mitigation solutions. Radware DefensePro features real-time behavior analysis systems and attack signatures using over 20 parameters to ensure DDoS attack detection accuracy. DefensePro also includes SSL inspection to detect attacks hidden in encrypted traffic streams. This ensures that Radware DefensePro can detect attacks that other solutions might miss, including zero-day attacks, unknown attacks, and SSL encrypted attacks.

To mitigate the full range of network attacks – not just volumetric – Radware developed and patented a proven algorithm. Unlike other algorithms in the market, this advanced algorithm looks at the rate of overall traffic types, specific traffic parameters, as well as the ratio of different parameters within the IP flow. The Radware security solution can detect attacks regardless of their volume, including targeted application attacks that may or may not have a volumetric component.

Radware features also enhance the usability of its AMS solutions. For example, Radware DefensePro includes a policy generation feature to enable WAF protection with low false positives and reduced operational effort on the customer's part. DefensePro also includes pre-defined report sets for regulations including PCI DSS, HIPAA, and SOX, to help customers achieve compliance.

Price/Performance

Radware does not focus on offering the lowest cost DDoS mitigation solution available, but offers solutions of varied scale based on customer need. The company provides a high level of security expertise and support for its products that increases the value (e.g., assurance) of Radware AMS solutions. Radware also provides value to customers in a number of ways. For example, Radware AMS solutions come with upgradable licenses for scalable performance which allows customers to “pay as they grow” and reduce capital expenditures. Other DDoS mitigation solutions on the market will require the customer to buy the largest box based on the size of their link capacity. Radware can offer a license based on legitimate traffic volume, and then invoke cloud DDoS resources to handle volumetric attacks.

The availability of Cloud DDoS Protection Services enables Radware to offer a solution for smaller organizations with limited in-house security expertise or more restrictive budgets. This represents a valuable option that can meet the security needs of a market segment that has previously been slow to adopt DDoS mitigation because of the large capital expense associated with mitigation products.

Customer Purchase Experience

Radware customers can implement a comprehensive DDoS mitigation and Web protection solution now or deploy only the solutions they need and grow this deployment as security

requirements, networking needs, and budgets allow.

Radware solutions are all managed centrally through the APSolute Vision attack management, monitoring, and reporting system. The system allows businesses to identify attacks across the full deployment of Radware solutions in-real time, as well as to prioritize and respond to these threats.

Radware AMS customers are supported by the Radware Emergency Response Team (ERT) which provides 24x7 expert response services for companies under a DDoS attack. The ERT greatly enhances the customer experience, as many businesses lack the ability, time, or experience necessary to identify and mitigate DDoS threats quickly. Additionally, the ERT can provide fully managed services that allow the customer to outsource the monitoring and management of any or all of the AMS components.

Conclusion

The breadth and depth of the Radware DDoS mitigation portfolio, along with essential network and Web security solutions, provides a number of options to customers that need to address DDoS attack risk. The strength of the company's product line allows Radware to compete with large security and IT vendors, and has helped the company to advance in the market place.

With its strong overall performance, Radware has earned the Frost & Sullivan Product Line Strategy Leadership award in DDoS mitigation.

Significance of Product Line Strategy

Ultimately, growth in any organization depends upon customers purchasing from your company, and then making the decision to return time and again. A full, comprehensive product line that addresses numerous customer needs and preferences is therefore a critical ingredient to any company's long-term retention efforts. To achieve these dual goals (customer value and product line strength), an organization must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition. This three-fold approach to delivering Product Line Strategy Leadership is explored further below.



Understanding Product Line Strategy Leadership

As discussed above, driving demand, brand strength, and competitive differentiation all play a critical role in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on building a superior and comprehensive product line.

Key Benchmarking Criteria

For the Product Line Strategy Leadership Award, we evaluated two key factors—Product Line Strength and Customer Impact—according to the criteria identified below.

Product Line Strength

- Criterion 1: Breadth
- Criterion 2: Scalability
- Criterion 3: Technology Leverage
- Criterion 4: Features
- Criterion 5: Supply Chain Reliability

Customer Impact

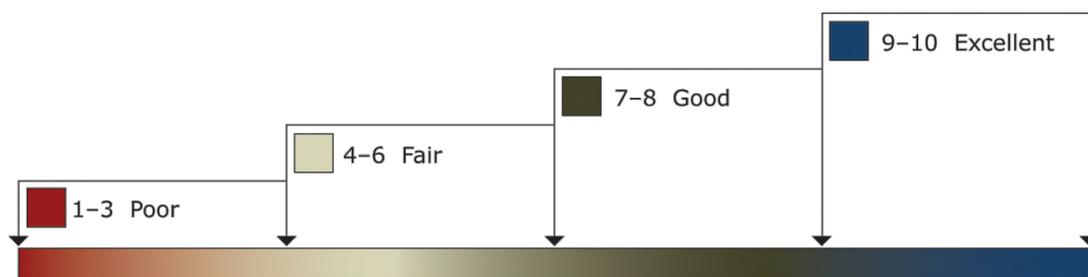
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practice Award Analysis for Radware

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by Product Line Strength and Customer Impact (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criteria are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key players in as Company 2 and Company 3.

DECISION SUPPORT SCORECARD FOR PRODUCT LINE STRATEGY LEADERSHIP AWARD (ILLUSTRATIVE)

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Product Line Strategy	Product Line Strength	Customer Impact	Average Rating
Radware	10	9	9.5
Competitor 2	9	9	9.0
Competitor 3	9	8	8.5

Product Line Strength

Criterion 1: Breadth

Requirement: Product line addresses the full range of customer needs and applications

Criterion 2: Scalability

Requirement: Product line offers products at a variety of price points and functionality levels

Criterion 3: Technology Leverage

Requirement: Demonstrated commitment to incorporating leading edge technologies into product offerings, for greater product performance and value

Criterion 4: Features

Requirement: Products offer a comprehensive suite of features to serve customers at multiple levels of functionality, ease of use and applications

Criterion 5: Supply Chain Reliability

Requirement: There is sufficient control over the supply chain to ensure availability of key components and thereby the availability of products in the product line

Customer Impact

Criterion 1: Price/Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market

Criterion 2: Customer Purchase Experience

Requirement: Customers feel like they are buying the most optimal solution that addresses both their unique needs and their unique constraints

Criterion 3: Customer Ownership Experience

Requirement: Customers are proud to own the company’s product or service, and have a positive experience throughout the life of the product or service

Criterion 4: Customer Service Experience

Requirement: Customer service is accessible, fast, stress-free, and of high quality

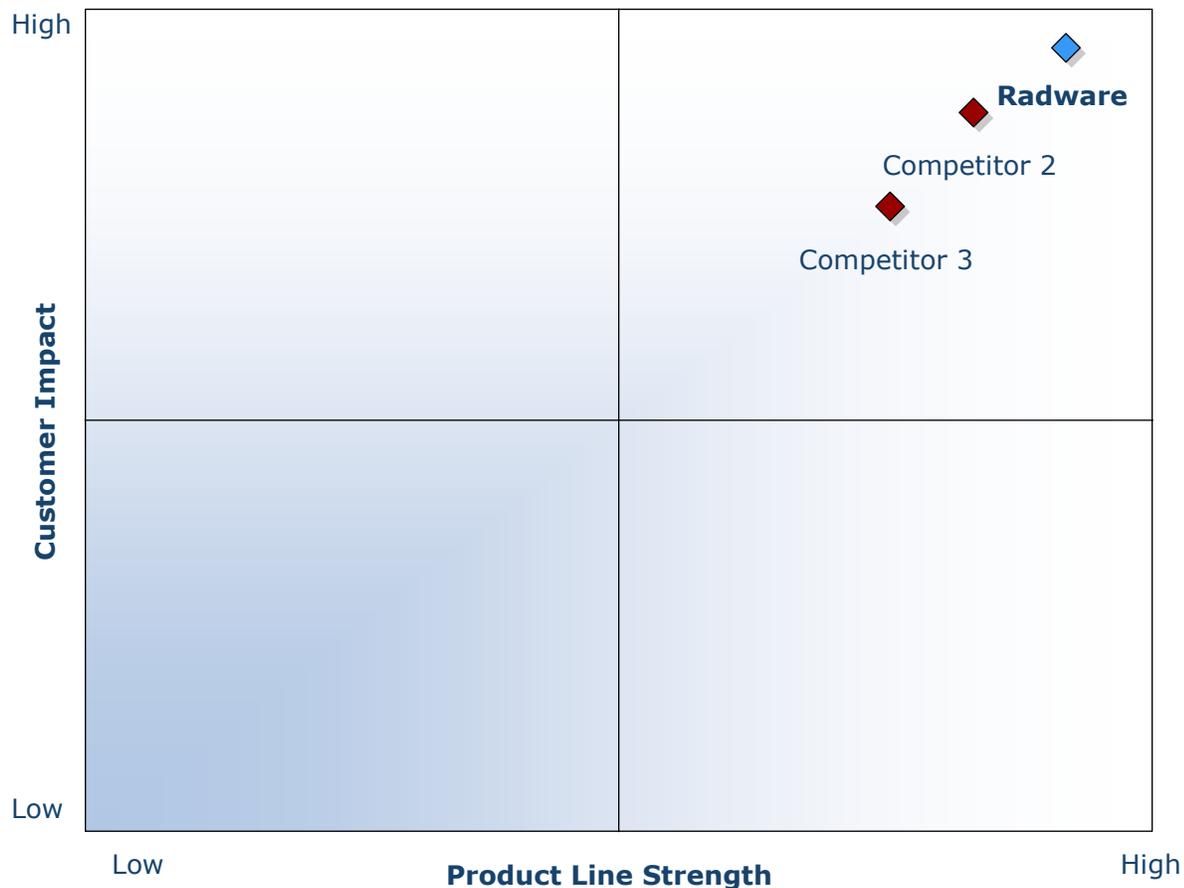
Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts can then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.

DECISION SUPPORT MATRIX FOR PRODUCT LINE STRATEGY LEADERSHIP AWARD (ILLUSTRATIVE)



The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan’s 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan’s research methodologies. Too often, companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry players and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Our awards team follows a 10-step process (illustrated below) to evaluate award candidates and assess their fit with our best practice criteria. The reputation and integrity of our awards process are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates 	Matrix positioning all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • Share findings • Strengthen cases for candidate eligibility • Prioritize candidates 	Refined list of prioritized award candidates
6 Conduct global industry review	Build consensus on award candidates' eligibility	<ul style="list-style-type: none"> • Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates 	Final list of eligible award candidates, representing success stories worldwide
7 Perform quality check	Develop official award consideration materials	<ul style="list-style-type: none"> • Perform final performance benchmarking activities • Write nominations • Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best-practice award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select winner 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform award recipient of award recognition	<ul style="list-style-type: none"> • Present award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of award and plan for how recipient can use the award to enhance the brand
10 Take strategic action	License the research for reprint rights and marketing strategies	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess award's role in future strategic planning 	Widespread awareness of recipient's award status among investors, media personnel, and employees

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best in class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages almost 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 31 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.