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BEST PRACTICES

AWARDS

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BEST PRACTICES AWARD

2020

perimeterx

2020 EUROPEAN
WEB APPLICATION SECURITY
TECHNOLOGY INNOVATION AWARD

Contents

Background and Company Performance

Industry Challenges

Internet and smartphone penetration has grown exponentially in the past decade, to the point that Internet connectivity has almost become ubiquitous globally. Businesses have responded by strengthening their online presence in order to reach and stay connected to customers no matter where they are. Business models have evolved as well: the travel and tourism, electronics, and fashion industries now attribute a large portion of their revenue to eCommerce.

Company Web sites are the most vital point of contact for eCommerce. Customers rely on the sites for many interactions with a brand, ranging from fetching information about a product to actually buying it. The data that customers create or disclose during this process attracts interest from hackers searching for personally identifiable information (PII) or credit card data. The deployment of bots or automated algorithms is one of the most common tactics that hackers use for this and other dubious purposes, such as automatically purchasing limited-quantity items so they can be resold at a premium, performing ad and attribution fraud, and scraping Web site content. Software company Distil Networks reported that legitimate bots constitute 17.5% of online traffic, but malicious bots account for 20.4%. Bots have evolved and become more difficult to detect and thwart.

Web sites also act as a marketplace for other businesses whose services are delivered directly onto a user's browser by way of plug-ins for which the site owner has no control. More than 70% of front-end code on a Web site is third-party scripts and libraries that do not go through the site owner's Web server and thus evade its security controls; enterprise or personal devices often use endpoint security solutions that do not protect user activity on the browser or do not have deep visibility into plug-in behavior. Both factors create security blind spots for the Web site owner.

Web site security has transformed from a service deployed on the back end of a server to something that has to run on the front end of the client browser. An ideal solution would make it easy for site owners to quickly spot unusual activity and have minimal impact on a browsing session so that site load times remain fast.

Technology Attributes and Future Business Value

Industry and Product Impact

PerimeterX provides companies with tools to secure their Web sites and mobile apps from attacks that leverage bots and browser-based threats. The company, which was founded in 2014, has expanded the definition of Web security to help businesses deal with a wide range of threats that leverage vulnerabilities at the client end or make use of set business logic in a Web application's algorithm.

With Web sites and mobile apps at the forefront of companies' sales strategies, more and more transactions happen online, and eCommerce sites are struggling to safeguard customers' financial data and protect their own operations.

PerimeterX has made it possible for site owners to identify abnormal activity and block it so that only legitimate users have access. Its Bot Defender solution detects bots of the most advanced nature and blocks all bot activity in real time. The behavioral analytics technology deployed at the back end of PerimeterX's solutions analyzes a number of user activity indicators such as mouse movements and session times. PerimeterX has created detailed behavioral benchmarks to which it can compare any user session and determine whether it is being performed by a human or a bot. Bot Defender uses an exonerate or incriminate approach: for low-risk home or landing pages, the solution assumes the user to be human until proven otherwise; for sensitive pages such as data collection forms or checkout pages, it assumes the user to be a bot and only allows a transaction when sufficient evidence is obtained that the user is indeed human.

PerimeterX's Code Defender solution provides a robust mechanism to protect users and companies from client-side attacks by scanning and analyzing scripts running outside of the site owner's visibility and control. Code Defender keeps track of all third-party scripts running on a site and uses machine learning and behavioral analytics to detect and track suspicious scripts or changes in the behavior of a trusted script. It flags anomalies including data being collected and sent to other domains and highlights behavioral changes that might indicate a breach. The result is full visibility of activities on the client side.

PerimeterX also provides a solution called Page Defender to help eCommerce sites sustain and grow their conversion ratios and online revenue by preventing the injection of unwanted ads and scripts that redirect a visitor and divert the path to purchase.

Application Diversity

In the last decade, broadband and smartphone penetration coupled with low data prices have fueled business digitization; eCommerce as a business model largely can attribute its success to these changes. It is almost impossible to find a business today with no online presence. PerimeterX addresses the pain points of companies with a heavy Internet presence.

Web site security and all related components commonly fall under the purview of cybersecurity, but PerimeterX has identified that certain types of hacks and manipulations are not covered by traditional cybersecurity vendors even though they are just as dangerous to a business. These include business logic exploitation, in which fraudsters try to affect functioning of embedded logic or generate faulty engagement data to affect the analytics engine of the site, and skimming, in which fraudsters steal original content to disrupt Web ratings and search engine optimization. PerimeterX's solution suite addresses all these issues, which are normally difficult to detect and deter.

PerimeterX counts Grubhub, Puma, Skyscanner, and Seeking Alpha among its customers. The company is developing products and features that will help it expand its coverage to the banking, financial services, and insurance industry.

Visionary Innovation

Companies must ensure that their Web sites are robust and responsive enough to provide a smooth and seamless user experience. But maintaining fast site load times and forgoing cumbersome verification processes often happen at the expense of security.

PerimeterX has realized the importance of maximizing infrastructure performance while keeping unwanted elements out. Its solutions are characterized by a very low ratio of false positives: a captcha security challenge verifies that a user is not a bot.

Frost & Sullivan recognized the sophisticated technology stack that is at the core of Bot Defender, Code Defender, and Page Defender. The products rely on a proprietary architecture that consists of three components: PX Sensor, PX Defender, and PX Enforcer. PX Sensor is a JavaScript deployed at each end-user browser or mobile application to collect data related to device behavior, user interaction, and environment. Data is relayed to the PX Detector, which runs on the cloud and uses behavioral fingerprinting and attack detection algorithms to determine whether the user is a bot or a human; results are relayed back to the PX Sensor, which in turn provides them to PX Enforcer for a decision about the next step (either a bot is blocked from accessing the site or in some cases a captcha challenge is provided to authenticate a user). Only Page Defender does not leverage PX Enforcer. The entire architecture is platform-agnostic and works with any kind of configuration on the site owner's end.

Human Capital and Financial Performance

A company's internal security team often is not able to keep up with the dynamic threat environment or make the best of the tools at their disposal. PerimeterX offers its own experts as a service to augment the capabilities of a client's security team and ensure that the client realizes the greatest value from its cybersecurity investment.

PerimeterX's own leadership team includes distinguished cybersecurity and intelligence experts. Two of the company's co-founders, Omri Iluz and Ido Safruti, have backgrounds in the Israeli Defence Forces' Unit 8200 (an elite Intelligence Corps unit), after which they held senior positions at companies such as Cotendo and Akamai Technologies. Their experience working at Akamai, a CDN company, resulted in a foundation of knowledge about Web site performance matrices and the importance of smooth site experience.

PerimeterX has raised a total of $77.5 million in three rounds of funding from leading investors including Scale Venture Partners, Canaan Partners, Vertex Ventures, Adams Street Partners, and Data Collective. The company has quickly grown its team to more than 140 employees in 4 locations in the United States, United Kingdom, and Israel, and is now focusing on aggressive expansion of its sales teams.

Conclusion

With Web sites becoming the primary customer touch point for businesses and the eCommerce business model gaining steam across industries, protecting sites and mobile apps from cyber threats has become crucial. Unfortunately, as sites become more interactive and personalized, owners have lost control of additional content that is loaded directly on the front end by third-party widgets and scripts. Frost & Sullivan's independent analysis has concluded that PerimeterX offers one of the most complete solution suites in the industry, allowing for a secure browsing experience for users and greater visibility for site owners.

With its strong overall performance, PerimeterX has earned Frost & Sullivan's 2020 Technology Innovation Award.

Significance of Technology Innovation

Ultimately, growth in any organization depends on finding new ways to excite the market and maintaining a long-term commitment to innovation. At its core, technology innovation, or any other type of innovation, can only be sustained with leadership in 3 key areas: understanding demand, nurturing the brand, and differentiating from the competition.

- Acquire competitors' customers
- Generate awareness and interest
- Increase market share
- Grow the overall size of the market
- Balance price with profitability

- Increase brand equity
- Establish a strong brand identity
- Inspire customers
- Build a reputation for innovation
- Push the envelope

DEMAND BRAND

Technology Innovation Leadership

COMPETITIVE POSITIONING

- Deliver superior value to customers
- Be a leader in innovation
- Implement innovation strategy
- Carve out a unique market niche

Understanding Technology Innovation

Technology innovation begins with a spark of creativity that is systematically pursued, developed, and commercialized. That spark can result from a successful partnership, a productive in-house innovation group, or a bright-minded individual. Regardless of the source, the success of any new technology is ultimately determined by its innovativeness and its impact on the business as a whole.

Key Benchmarking Criteria

For the Technology Innovation Award, Frost & Sullivan analysts independently evaluated 2 key factors—Technology Attributes and Future Business Value—according to the criteria identified below.

Technology Attributes

> Criterion 1: Industry Impact
> Criterion 2: Product Impact
> Criterion 3: Scalability
> Criterion 4: Visionary Innovation
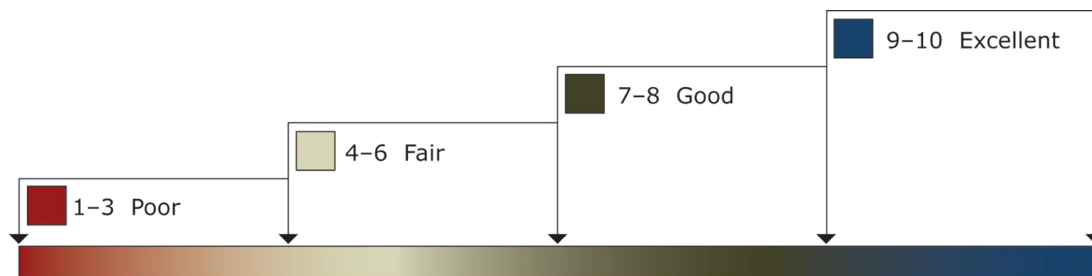> Criterion 5: Application Diversity

Future Business Value

> Criterion 1: Financial Performance
> Criterion 2: Customer Acquisition
> Criterion 3: Technology Licensing
> Criterion 4: Brand Loyalty
> Criterion 5: Human Capital

Best Practices Award Analysis for PerimeterX

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 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 considers Technology Attributes and Future Business Value (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criterion 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, Frost & Sullivan has chosen to refer to the other key participants as Competitor 1 and Competitor 2.

Measurement of 1–10 (1 = poor; 10 = excellent)			
Technology Innovation	Technology Attributes	Future Business Value	**Average Rating**
PerimeterX	**9**	**9**	**9**
Competitor 1	7	6	6.5
Competitor 2	8	7	7.5

Technology Attributes

Criterion 1: Industry Impact
Requirement: Technology enables the pursuit of groundbreaking ideas, contributing to the betterment of the entire industry.

Criterion 2: Product Impact
Requirement: Specific technology helps enhance features and functionalities of the entire product line for the company.

Criterion 3: Scalability
Requirement: Technology is scalable, enabling new generations of products over time, with increasing levels of quality and functionality.

Criterion 4: Visionary Innovation
Requirement: Specific new technology represents true innovation based on a deep understanding of future needs and applications.

Criterion 5: Application Diversity
Requirement: New technology serves multiple products, multiple applications, and multiple user environments.

Future Business Value

Criterion 1: Financial Performance
Requirement: Potential is high for strong financial performance in terms of revenue, operating margins, and other relevant financial metrics.

Criterion 2: Customer Acquisition
Requirement: Specific technology enables acquisition of new customers, even as it enhances value to current customers.

Criterion 3: Technology Licensing
Requirement: New technology displays great potential to be licensed across many verticals and applications, thereby driving incremental revenue streams.
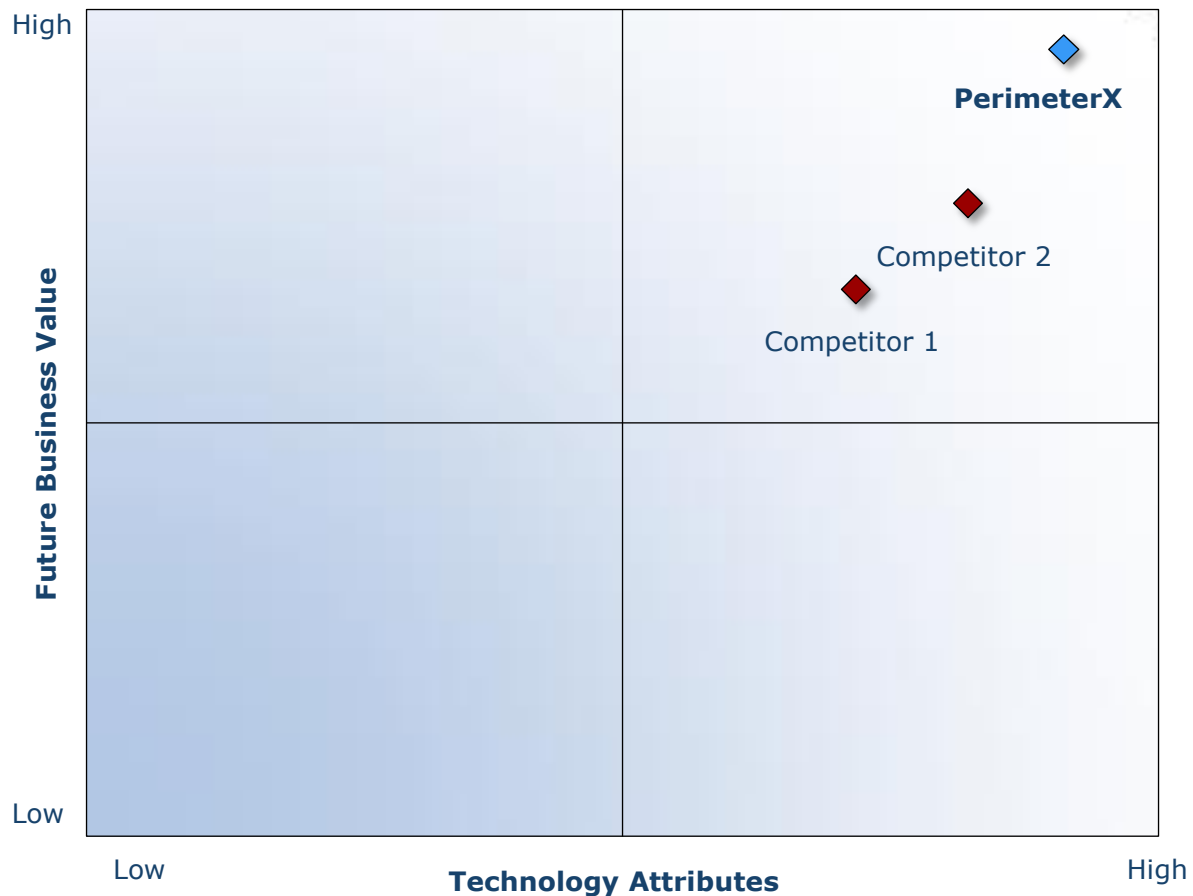
Criterion 4: Brand Loyalty

Requirement: New technology enhances the company's brand, creating and/or nurturing brand loyalty.

Criterion 5: Human Capital

Requirement: Customer impact is enhanced through the leverage of specific technology, translating into positive impact on employee morale and retention.

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts 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.

High

PerimeterX

Competitor 2

Competitor 1

Future Business Value

Low

Low

Technology Attributes

High

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

Frost & Sullivan analysts follow a 10-step process to evaluate award candidates and assess their fit with select best practices criteria. The reputation and integrity of the awards 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 world	• Conduct in-depth industry research • Identify emerging industries • Scan multiple regions	Pipeline of candidates that potentially meet all best practices criteria
2	**Perform 360-degree research**	Perform comprehensive, 360-degree research on all candidates in the pipeline	• Interview thought leaders and industry practitioners • Assess candidates' fit with best practices criteria • Rank all candidates	Matrix positioning of all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• Confirm best practices 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	• Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles	Final prioritization of all eligible candidates and companion best practices positioning paper
5	**Assemble panel of industry experts**	Present findings to an expert panel of industry thought leaders	• 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	• 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	• 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 practices award recipient	• Review analysis with panel • Build consensus • Select recipient	Decision on which company performs best against all best practices criteria
9	**Communicate recognition**	Inform award recipient of recognition	• 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**	Upon licensing, company is able to share award news with stakeholders and customers	• Coordinate media outreach • Design a marketing plan • Assess award's role in strategic planning	Widespread awareness of recipient's award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of the 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, resulting in 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 participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, helps clients 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-practices models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages nearly 60 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on 6 continents. To join Frost & Sullivan's Growth Partnership, visit http://www.frost.com.