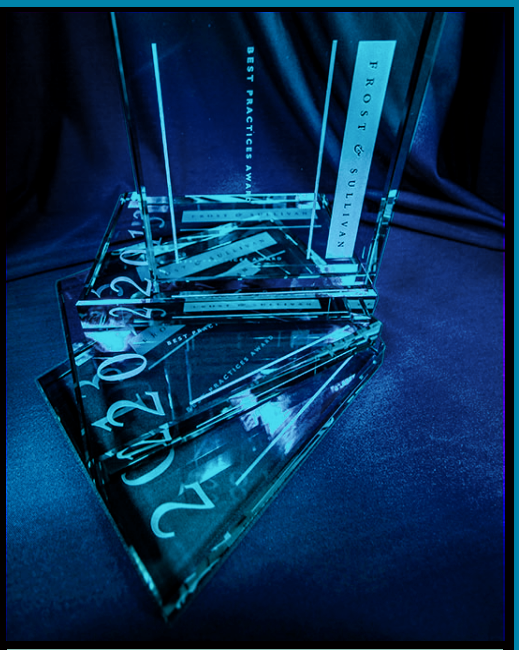
FROST & SULLIVAN

ZIMPERIUM

2016 North American Machine Learning-based Mobile Threat Detection Technology Innovation Award



FROST & SULLIVAN

2016 BEST PRACTICES AWARD

NORTH AMERICAN
MACHINE LEARNING-BASED MOBILE THREAT
DETECTION TECHNOLOGY INNOVATION AWARD

2016
BEST PRACTICES
AWARDS

Contents

Background and Company Performance

Industry Challenges

The latest trend of the enterprise workforce is to access sensitive corporate data from outside the corporate network by using their own devices, thereby empowering businesses to perform at their best. This trend is facilitated by bring-your-own-device (BYOD) strategies, which in turn helps improve employee productivity. While the use of mobile devices through BYOD is growing at an exponential pace, BYOD has some security challenges that restrict its mass adoption. For example, cyber attackers can infiltrate the confidential databases of organizations by using mobile devices as a medium for penetration.

Conventional mobile device security solutions usually focus on protecting enterprise networks from threats by using predefined parameters through signature-based technology. However, this is not effective against new zero-day unknown threats or for identifying the changes in device parameters. Existing network security solutions lack the required visibility to effectively protect mobile devices that are outside the enterprise perimeter. These conventional solutions are also incapable of detecting and protecting against advanced persistent threats (APTs) present in mobile devices, which can pose future threats to an enterprise's database and confidential information.

With the growing trend of working closely with customers, more business is conducted on the go, using cellular and Wi-Fi networks for connectivity. Because of this, organizations are looking for a solution that can strike a better balance between mobile devices and security while increasing business productivity at the same time.

Aiming to address this challenge, California-based Zimperium has developed an innovative on-device mobile threat detection technology called the z9 Engine.

Technology Attributes and Future Business Value

Visionary Innovation

Most companies in the mobile security space are trying to modify their desktop security solutions to fit into mobile devices through the customization of the architecture. This leads to issues with latency and software responsiveness while running on mobile computing devices. However, the z9 Engine from Zimperium was developed from the ground up for the mobile environment with the specific objective of combating the unique challenges associated with iOS and Android mobile devices. The z9 technology engine is installed directly onto the device, which negates the need to transfer data to the enterprise cloud for analysis while reducing battery usage and significantly improving the responsiveness of the security solution. This unique approach also eliminates the need for

Internet connectivity for device security, unlike competing solutions.

This ground-up approach helps the company eliminate issues with compatibility and to run smoothly and continuously, providing real-time protection of the device and applications on any mobile devices. In addition, the patented technology developed by the company incorporates an advanced machine learning algorithm that ensures dynamic and accurate real-time identification of malicious attacks on mobile devices, regardless of the entry point. The machine learning-based z9 Engine is smart enough to dynamically detect the advanced host and network-based attacks on mobile devices. Unlike competing solutions that only monitor the installed applications and their malicious behavior, the z9 Engine provides a comprehensive view of the device and of the applications installed in it. The technology analyzes even slight changes in behavior of the mobile operating system's statistics, CPU and memory utilizations, and all other important resources in order to accurately identify the type and reason for attack.

Scalability

The z9 technology is highly intelligent thanks to the integration of a behavioral analytics threat detection engine that is based on machine learning algorithms. This makes products developed with the technology highly immune to evasion techniques used in modern day attacks, such as polymorphic malware that constantly changes codes. Compared to the competing solutions that depend on set parameters and preset malware libraries for threat detection, Zimperium's approach to detecting and protecting against known and unknown attacks is much more accurate in practical scenarios. The technological advancement of the z9 Engine makes it highly scalable and grows feature sets from its own learning experience rather than depending on a predefined database.

In respect to architectural scalability, the technology is designed with multi-tenant support that can handle an increasing number of mobile devices to meet the growing demands of modern enterprises.

Product Impact

The z9 technology was initially developed by Zimperium to only protect mobile devices and was offered through its zIPS mobile threat protection product. The zIPS solution provides a comprehensive view of the network, device, and application through a single solution suite. Embedded with a z9 Engine, the zIPS solution offers strong protection against network attacks (such as reconnaissance scans, man-in-the-middle, Secure Sockets Layer (SSL) stripping, SSL decryption attempts, and rogue access points), device attacks (such as OS/Kernel exploits, profile/configuration modifications, system tampering, physical USB exploits), and application attacks (such as malicious apps, known and unknown malware, and dynamic threats abusing download and exploit techniques).

The company has also released zIAP, an in-app protection product that generates "self-

protecting" apps. This unique offering from Zimperium leverages the capabilities of the z9 Engine and offers customers a software development kit (SDK) to develop their own applications incorporating advanced security feature sets.

The flexibility of the technology to develop a new product line from a single technology clearly shows its ability to cope with future challenges that might arise in the Internet of Things (IoT) ecosystem. The scalability of the technology will be essential to expanding feature sets that can cope with increasingly sophisticated attacks in coming years. Moving forward, this could potentially become the key driver enabling solution providers to survive in the competitive mobile device security landscape.

Industry Impact

z9 incorporates the power of expensive intrusion prevention system (IPS) appliances into a mobile device. This will help an organization to solidify its BYOD policies and transform its threat landscape into an advantage. The innovative technology enables companies to increase their mobile workforce seamlessly and securely at a fraction of the cost involved with competing IPS security solutions.

The z9 Engine's capability to enable affordable security for an organization's mobile strategy will have a substantial impact in every sector. Considering the growing global trend of digitization, the technology is expected to significantly impact the banking and financial services sector and the telecommunication sector in the near term. Considering the growing popularity of mobile payments and the associated security concerns, the technology could become an ideal solution to facilitate secured financial transactions.

Frost & Sullivan analysis finds adequate potential in the innovative z9 technology engine to become an industry standard for the mobile threat detection space. The real-time responsiveness, low latency, reduced battery usage, and advanced threat detection capability will make it a preferred choice across sectors in the near future.

Application Diversity

The z9 technology will have a wide range of applications across sectors. Cyber security will be the major application area for the technology, enabling highly secure and effortless threat detection for mobile devices. The technology will play a key role in the prevention of the growing number of identity and account thefts for remote employees through sophisticated cyber attacking tools.

Additionally, this technology will find numerous applications in the evolving IoT ecosystem. The IoT ecosystem will open up a network of connected devices with which users can interact in real time. This will expand the penetration gateways for cyber criminals to enter into a wide open network. The z9 Engine will have considerable applications to authenticate users and their devices in smart environments, such as smart

homes and smart cars. Also, it will offer software developers the opportunity to easily integrate mobile security features into their IoT application environment and will eliminate the complexity in designing security features from scratch.

Robotics is another area that will leverage the benefits of the z9 Engine. In the future, robots will work with humans in a more organized environment and will be controlled by mobile devices remotely. To prevent unauthorized use, the technology can help robots identify their owners when taking orders. Overall, the technology's affordability will open up wide spectrum of innovative application opportunities in the near future.

Customer Acquisition

The market for BYOD security solutions is growing exponentially. Zimperium has successfully identified the customer demands in this space and has developed its innovative technology to meet these demands. The technology's low cost of ownership, simple operation, and easy integration capabilities have been the key drivers for the company's growth. Zimperium's customers span across all key geographic regions and across a wide range of industries and sectors. Zimperium mainly serves customers in the financial, telecommunications, information technology, pharmaceutical, media, logistics, and transportation sectors at the moment, and several of these customers are listed as industry leaders in their respective sectors.

The z9 Engine is not only targeted to the end users, but it also provides the opportunity for the company to serve leading enterprise mobility management vendors, leading independent software vendors (ISVs), mobile application developers, and mobile network operators. Zimperium expects maximum revenue growth from the medium to large enterprises as well as from the market-leading ISVs and mobile solution providers through its z9 embedded application development platform zIAP.

Conclusion

In recent years, Zimperium has emerged as an early innovator in the mobile threat detection technology space. Frost & Sullivan's independent analysis clearly shows that by virtue of its ability to integrate a best-in-class behavioral analytics engine based on machine learning algorithms into a mobile threat detection management solution, the z9 technology has obtained a huge advantage over its competitors. The scalability and high integration potential of the technology are key factors that will make it a future benchmark in this space. For its strong overall performance and innovative capabilities, the Zimperium z9 Engine has earned Frost & Sullivan's 2016 Technology Innovation Leadership Award.

Significance of Technology Innovation

Ultimately, growth in any organization depends upon finding new ways to excite the market, and upon 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 three key areas: understanding demand, nurturing the brand, and differentiating from the competition.

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 the mind of a singular 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 two 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

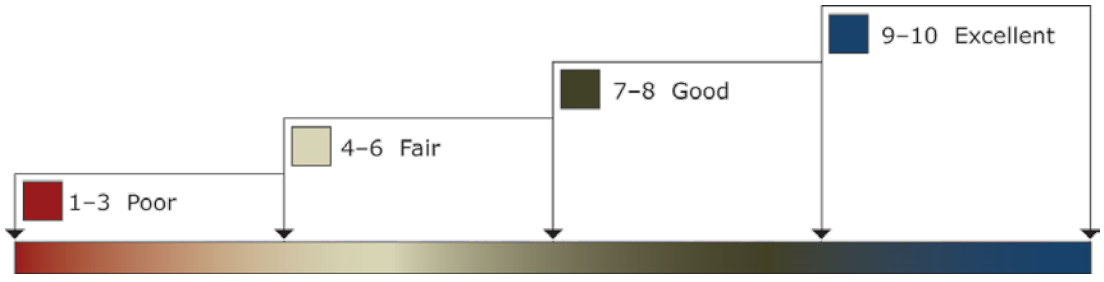
Criterion 1: Financial Performance
Criterion 2: Customer Acquisition
Criterion 3: Technology Licensing
Criterion 4: Brand Loyalty
Criterion 5: Human Capital

Best Practice Award Analysis for Zimperium

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 Technology Attributes and Future Business Value (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, Frost & Sullivan chooses to refer to the other key players as Competitor 2 and Competitor 3.

DECISION SUPPORT SCORECARD: TECHNOLOGY INNOVATION AWARD

Measurement of 1–10 (1 = poor; 10 = excellent)			
Technology Innovation	Technology Attributes	Future Business Value	**Average Rating**
Zimperium	**9.5**	**9**	**9.25**
Competitor 2	8.5	8	8.25
Competitor 3	7.5	7.5	7.50

Technology Attributes

Criterion 1: Industry Impact

Requirement: Technology enables the pursuit of groundbreaking new ideas, contributing to the betterment of the entire industry

Criterion 2: Product Impact

Requirement: Specific technology helps enhance features and functionality 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: High potential for strong financial performance in terms of revenues, 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 sectors 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

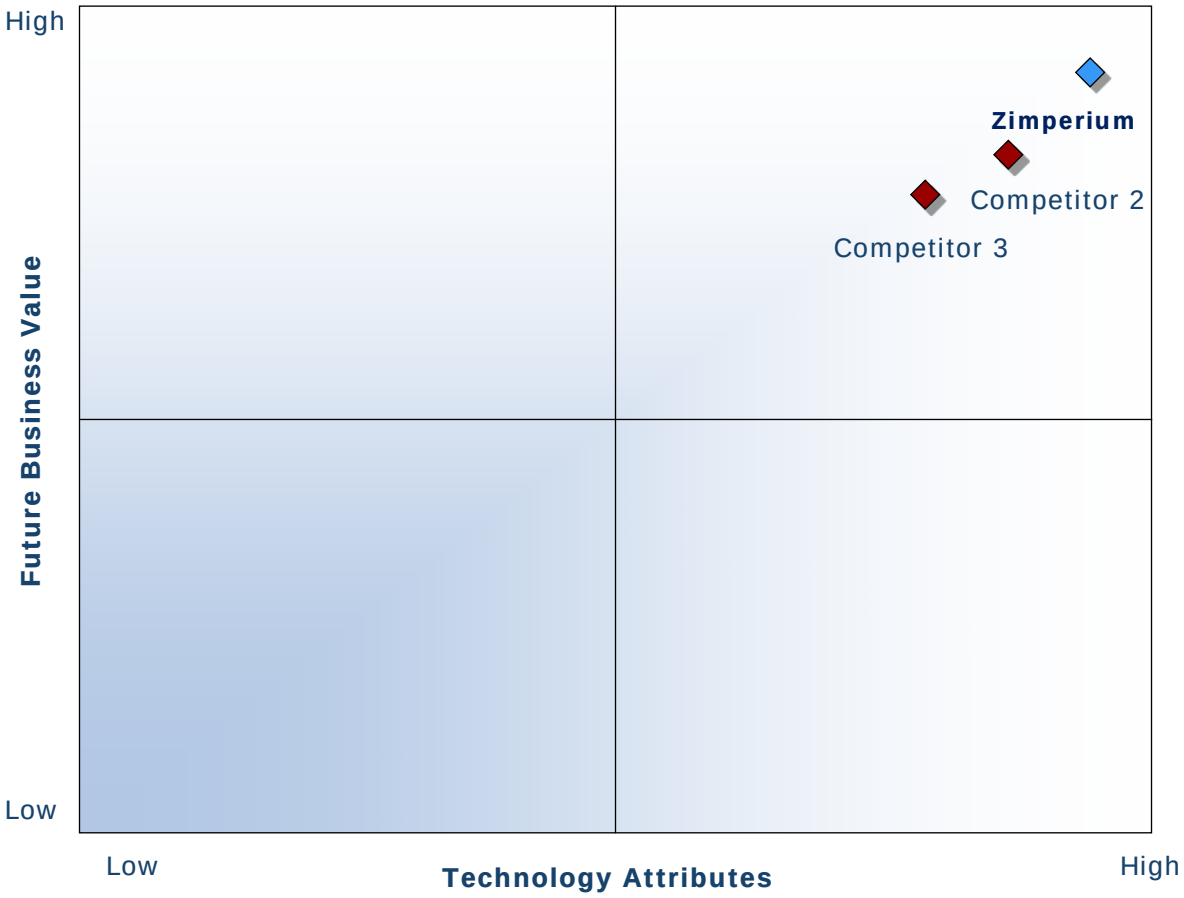
Criterion 5: Human Capital

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 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: TECHNOLOGY INNOVATION AWARD



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

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 over 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 40 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.