FROST & SULLIVAN

PENTA SECURITY RECEIVES THE 2023 COMPANY OF THE YEAR AWARD

Identified as best in class in the South Korean web application firewall industry

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Penta Security Systems excels in many of the criteria in the web application firewall (WAF) space.

AWARD CRITERIA

Visionary Innovation & Performance	Customer Impact
Addressing Unmet Needs	Price/Performance Value
Visionary Scenarios Through Mega Trends	Customer Purchase Experience
Implementation of Best Practices	Customer Ownership Experience
Leadership Focus	Customer Service Experience
Financial Performance	Brand Equity

Addressing Unmet Needs and Implementation of Best Practices

Growing reliance on web, mobile applications, APIs, and accelerated cloud migration have expanded the attack surface. In South Korea, these factors have boosted local customer demand for WAF, predominantly cloud-based WAF.

South Korea is compliance-focused; new industry requirements and government regulations are in place to protect its citizens from application-layer attacks, such as the Personal Information Protection Act (PIPA) and the Security Verification Scheme implemented by the South Korean National Intelligence Service (NIS). Such government and industry standards ensure the quality of WAF functions offered by vendors to protect customers' sensitive information across various sectors, especially in government departments, public institutions, and critical infrastructure sectors.

Headquartered in Seoul, South Korea, Penta Security Systems Inc. (Penta Security) has offered web and data security products and services since 1997. The government sector and financial institutions in South Korea prefer Penta Security's International Computer Security Association (ICSA) Labs-certified WAF WAPPLES because it meets security standards, a key customer need that many international industry participants do not fulfill. In addition, the company has ISO 9001, 14001, and 27001 certifications issued by Korea Quality Assurance (KQA) for its quality, environmental, and information security management practices.

Penta Security can deploy WAPPLES in public cloud environments, such as AWS and Microsoft Azure, and use Cloudbric, its security-as-a-Service (SECaaS), to support expedited cloud migration processes. Given the demand surge for cloud-based WAF solutions in the last 2 years, Penta Security included Alibaba Cloud, Kakao Cloud, NAVER Cloud, and NHN Cloud in the diverse portfolio of cloud environments it supports. With WAPPLES supporting local cloud environments across Asia-Pacific, especially Kakao Cloud in South Korea, the company offers scalability and accessibility to its customers, unlike many industry participants in South Korea.

> *"Penta Security has gained a competitive edge in the local market by staying updated and complying with the latest regulations in South Korea. Frost & Sullivan commends its WAF solutions that showcase the implementation of best practices to meet customers' unmet needs."*
>
> *- Ying Ting Neoh,*
> *Research Analyst*

Penta Security improved WAPPLES to bridge local WAF market technology gaps. By 2022, WAPPLES was offering comprehensive threat protection through its threat intelligence platform, WAPPLES Intelligence Center (WIC), with its Threat Protection Profile (TPP) feature. This enhanced solution detects new web vulnerabilities, provides automated vulnerability updates, and allows customers to respond to attacks instantly. While WIC updates IP files which could be malicious IPs or threat-based TOR IPs and GEO IPs, as well as the Bot lists; TPP is a profile feature which helps customers patch vulnerabilities as soon as possible. In addition to common WAF capabilities, WAPPLES protects against API attacks and bot mitigation beyond application layer attacks.

Penta Security has gained a competitive edge in the local market by staying updated and complying with the latest regulations in South Korea. Frost & Sullivan commends its WAF solutions that showcase the implementation of best practices to meet customers' unmet needs.

Leadership Focus and Visionary Scenarios Through Mega Trends

Legacy security solutions can no longer protect applications and APIs in the cloud from sophisticated cyber threats, such as Log4J or payload attacks. Instead of a single-pronged or a stand-alone security approach, local customers in South Korea prefer a holistic solution that protects web applications and APIs. Penta Security leverages this Mega Trend by integrating its WAF with API protection, DDoS defense, and bot mitigation for comprehensive application security for customers facing zero-day application vulnerability. The company is developing containerized WAF solutions to meet the demand.

Penta Security incorporated advanced technologies to improve WAPPLES' threat detection efficiency. The solution employs an intelligent detection engine, Contents Classification and Evaluation Processing (COCEP™), with an AI-/ML-based self-inspection tool for instant detection and blocking of known, modified, and zero-day attack vectors. The COCEP™ engine detects and blocks attacks that alter the API format, including the YAML data format, found in incoming web traffic quite accurately. For example, the COCEP™ engine has a security validation function for the YAML data format in APIs, making Penta Security the world's first vendor to offer this feature. WAPPLES has successfully improved its performance after a detection engine upgrade, thereby reducing false positives and achieving a 144.0% improved network performance than the previous model.

Customer Ownership and Service Experience

Customers get a web-based GUI management console to perform advanced WAF management through the WAPPLES Control Center (WCC) and WIC. WCC manages customer policies, detection, logging, auditing, and monitoring of individual applications or devices, while WIC allows customers to respond to web vulnerabilities quickly. In 2021, Penta Security created a sandbox environment for its WAPPLES LEO, a next-gen WAF with an enhanced engine, to fend off evolving application layer attacks. Before publicly

> *"Penta Security incorporated advanced technologies to improve WAPPLES' threat detection efficiency. The solution employs an intelligent detection engine, Contents Classification and Evaluation Processing (COCEP™), with an AI-/ML-based self-inspection tool for instant detection and blocking of known, modified, and zero-day attack vectors. The COCEP™ engine detects and blocks attacks that alter the API format, including the YAML data format, found in incoming web traffic quite accurately."*
>
> *- Ying Ting Neoh,*
> *Research Analyst*

releasing the official version of WAPPLES LEO, Penta Security worked with a local company to run the new feature and monitor operations while continuously building and fine-tuning security functions. As a result, Penta Security's sandbox environment did not affect the local company's user experience and ensured the security effectiveness of a fine-tuned WAPPLES LEO in a real-life situation.

The company has more than 200 employees and offers round-the-clock support to local customers with its 24-7 online customer communication system, incident management system (IMS), and information delivery system (IDS) that connect its customers with security experts for in-depth technical support. The newly enhanced COCEP™ is the only engine to extend its preconfigured detection rules from 36 to 39, allowing customers to strengthen its protection and increase bandwidth for throughput efficiency. In addition, customers can opt for different deployment options, from hardware and software appliances to SECaaS delivery.

Penta Security has a robust ecosystem of channel partners through strategic partnerships in South Korea and worldwide, such as Prospera Aswindra Teknologi, RAS Infotech Limited, and R3. These extensive connections offer local customers access to advanced technologies, world-class experience, and support when expanding geographic reach. Penta Security has continuously fostered strong customer ties and achieved loyalty across the South Korean WAF industry.

Financial Performance

With the increasing shift of local customers' infrastructure to the cloud and the South Korean government's focus on compliance, organizations in the government sector and critical infrastructure, primarily banking, financial, services, and insurance (BFSI), have shown a higher demand for Penta Security's WAF for compliance and web and application security.

Penta Security has grown; it maintained its leadership position in the compliance-focused South Korean WAF industry. Based on Frost & Sullivan's estimates, the company recorded a year-over-year revenue growth of more than 20.0% in 2021 and slightly lower than 15.0% in 2022. The company's reputation and brand value in the region have continued to drive solid growth across verticals in 2022.

Conclusion

Owing to steady business performance in 2022, Penta Security has positioned itself as an industry leader in South Korea. The company's visionary strategy is based on its commitment to implementing best practices and leveraging the cloud industry's rapid growth to develop cloud-based WAF, a valuable addition to its application security portfolio and growth pipeline.

Through its diversified offerings and go-to-market strategies, Penta Security has continuously upheld its brand value as the South Korean WAF industry leader while fostering strong customer relationships.

With its strong overall performance, Penta Security earns Frost & Sullivan's 2023 South Korean Company of the Year Award in the WAF industry.

What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Award is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Award Analysis

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Visionary Innovation & Performance

Addressing Unmet Needs: Customers' unmet or under-served needs are unearthed and addressed by a robust solution development process

Visionary Scenarios Through Mega Trends: Long-range, macro-level scenarios are incorporated into the innovation strategy through the use of Mega Trends, thereby enabling first-to-market solutions and new growth opportunities

Leadership Focus: Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

Best Practices Implementation: Best-in-class implementation is characterized by processes, tools, or activities that generate a consistent and repeatable level of success

Financial Performance: Strong overall business performance is achieved in terms of revenue, revenue growth, operating margin, and other key financial metrics

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at http://www.frost.com.

The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.
Learn more.

Key Impacts:

- **Growth Pipeline:** *Continuous Flow of Growth Opportunities*
- **Growth Strategies:** *Proven Best Practices*
- **Innovation Culture:** *Optimized Customer Experience*
- **ROI & Margin:** *Implementation Excellence*
- **Transformational Growth:** *Industry Leadership*

The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**