FROST & SULLIVAN

2024 TRANSFORMATIONAL INNOVATION LEADER

IN THE GLOBAL IOT SECURITY 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. VinCSS excels in many of the criteria in the IoT security space.



Industry Challenges

The Internet of Things (IoT) is growing at an unprecedented rate, with a Frost & Sullivan report estimating that the total number of active connected devices surged by more than 41 billion in 2023, or an 18% growth compared to 2022. The main drivers for this expansion include economic benefits, acceleration of automation processes, companies embarking on digital transformation, the recovery of value chains post-COVID-19 pandemic, and the rollout of 5G connectivity networks. A 2023 Frost & Sullivan's Cloud and IoT Report showed that more than 63% of respondents see IoT technologies as crucial or very important to growing their business revenue, boosting sales and marketing effectiveness, improving customer experience and satisfaction, and rapidly responding to market demands and disruption.

However, the explosive growth of IoT devices introduces significant security challenges, especially as IoT devices are integrated deeply into homes, workplaces, industries, and critical infrastructures such as healthcare and smart cities. The lack of standards and robust security protocols makes these devices potential gateways for attackers to attack and threaten entire networks. As most IoT devices are vulnerable to cyberattacks, it requires organizations to pay greater attention to IoT security, which underlines the urgent need for robust, scalable security solutions. Due to the distributed deployment and massive number of devices connected to the network, organizations often face challenges in IoT security operations associated with managing the secure integration of thousands of devices, which is increasingly complex and resource intensive.

One of the primary challenges is device onboarding, which traditionally takes 20 to 30 minutes per device, leading to inefficiencies and increased operational costs. For instance, onboarding 5,000 devices could take over 2,500 hours, be prone to human error, and introduce more security vulnerabilities and operational disruption. This is crucial in high-risk environments, such as industrial IoT or smart manufacturing, as they involve worker safety and require uninterrupted production operations.

Moreover, IoT devices have inherent limitations, such as low processing power and minimal security features, making them vulnerable to external attacks. The inability of many organizations to maintain adequate security controls across all connected devices has led to the proliferation of cyber threats targeting these networks, such as distributed denial of service (DDoS) attacks, ransomware, and unauthorized access through poorly protected IoT nodes.

Additionally, the complexity of managing different types of IoT devices presents a major challenge. Organizations have to deal with the unique requirements of each type of device while maintaining consistent security protocols and policies across the entire network, which is often made more difficult by limited visibility into device activity and vulnerabilities, exacerbating security challenges for organizations.

Bridging Market Gaps with a Disruptive Approach

VinCSS, established in 2018 as part of Vingroup JSC, has emerged as a cybersecurity trailblazer in passwordless authentication technology using FIDO2 (Fast IDentity Online 2) standards and is a pioneer in FIDO Device Onboarding (FDO) adoption for IoT device security. Based in Ho Chi Minh City, Vietnam, VinCSS has established itself as a leader in the IoT security landscape through its commitment to innovation, standardization, and strategic partnerships with the world's first commercial IoT security platform and ecosystem to simplify IoT onboarding and ensure secure device management.

Organizations often encounter issues associated with IoT devices that do not adhere to consistent security standards, leading to security vulnerabilities and an increased risk of cyberattacks. VinCSS's pioneering adoption of the FDO standard helps it tackle these challenges through a unified and automated solution that enhances security across IoT deployments.

VinCSS is revolutionizing IoT device onboarding management by becoming the first company in the industry to receive three FDO certifications from the FIDO Alliance. FDO technology is a game-changer that automates device onboarding, drastically reducing time and effort, particularly when it concerns thousands of devices, which would otherwise involve labor-intensive manual work prone to human error and high costs. VinCSS's FDO solutions significantly minimize the risks of mistakes and security vulnerabilities to ensure consistent, secure onboarding. Its automated FDO protocol cuts onboarding time by up to 90%, enabling organizations to save time, effort, and costs in deploying devices. It also enhances the reliability and security of the onboarding process by eliminating human involvement and freeing IT teams to focus on more strategic initiatives rather than being bogged down by repetitive, manual tasks.

The FDO protocol leverages advanced authentication standards that allow devices to be securely onboarded with minimal manual intervention, making it a highly viable approach for large-scale deployments, such as smart cities or industrial IoT environments, where managing thousands of devices can quickly become messy, unmanageable, and error-prone without automation. In addition, VinCSS's

FDO solution integrates seamlessly with organizations' existing security ecosystems using a zero-touch onboarding approach that enables the addition of existing devices to a network without direct human involvement, which is crucial in scenarios where scalability and stability are vital, such as manufacturing plants, smart healthcare systems, or expansive sensor networks in smart cities.

VinCSS has gone beyond merely adopting the FDO protocol by building a comprehensive turnkey FDO infrastructure and setting a benchmark in the IoT security industry with the Device Onboarding Services, FDO-enabled devices, and the Rendezvous Server. All three components are certified to stringent standards set by the FIDO Alliance. Unlike other market players that may only provide fragmented products, VinCSS's comprehensive ecosystem offers an end-to-end onboarding ecosystem that allows seamless integration for IoT deployments.

What truly differentiates VinCSS is its ability to enable organizations, OEM manufacturers, and service providers to adopt FDO standards without investing in building their own infrastructure from scratch. Many of these organizations have FDO-capable devices but lack the necessary onboarding services and server infrastructure needed for certification. With VinCSS's comprehensive solutions, organizations can quickly achieve FDO compliance, facilitating device enrollment. By providing this capability, VinCSS positions itself not only as a provider of IoT security solutions but also as a key partner for hardware manufacturers and service providers looking to adopt FDO standards while maintaining high security and overcoming the barriers of cost and complexity for a faster time-to-market.

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> ***– Anh Tien Vu***
> ***Industry Principal, Global Cybersecurity Practice***

Infrastructure development is a significant achievement as it helps lower the barrier to entry for IoT security, which encourages wider adoption of secure onboarding protocols across various industries. VinCSS's leadership in building a scalable, FDO-certified infrastructure has made it a catalyst for industry transformation and provides other vendors with the tools they need to secure their devices more effectively.

Industry Game Changer through Competitive Differentiation

VinCSS delivers game-changing IoT security solutions that address current challenges and set new benchmarks for the future. It is one of the first companies to commercialize products and services integrated with the FDO standard. While many organizations are still exploring the potential of FDO since its introduction by the FIDO Alliance in 2021, VinCSS has taken decisive steps to implement this technology in real-world scenarios. By launching multiple FDO-enabled solutions, including integrated cameras, Wi-Fi routers, smart parking network solutions and FDO network deployment solutions VinCSS has gained a competitive edge as a first mover to gain traction across multiple sectors, including smart cities, healthcare, manufacturing, and automotive.

In addition to being one the first to adopt FDO standards, what sets VinCSS apart is its integrated approach to IoT security that extends beyond the initial device onboarding phase. Unlike many competitors focusing solely on certain phases of the entire lifecycle, such as secure onboarding and device and network management, VinCSS combines the secure onboarding process with continuous monitoring and threat detection throughout the device's lifecycle, thanks to VinCSS's initial IT security strength for over 6 years. The company embeds security analytics and intrusion detection mechanisms into its solutions, creating a dynamic security model that adapts as devices and networks evolve and expand. This enables IT and security teams to manage the onboarding process, monitor each device's security posture, and maintain compliance and security best practices for data protection, providing organizations with a long-term solution.

VinCSS addresses the growing demands for IoT security by offering designing services to help organizations and partners scale and embrace secure IoT technologies. This is crucial for sectors such as healthcare and smart cities that need rapid large-scale deployment of devices while maintaining high security standards to manage related security risks. Frost & Sullivan finds that VinCSS accommodates this growing need efficiently, making it an invaluable partner for organizations looking to maintain high security standards while ensuring the rapid mass deployment of IoT devices.

VinCSS provides organizations with enhanced control and visibility over device onboarding and operations through its FDO Network Deployment Solution. This centralized system helps organizations monitor and manage all onboarded devices' operations in real time, ensuring they operate securely and efficiently. Automation reduces the IT workload and empowers organizations to make informed decisions, maintaining compliance and increasing confidence in their network's security.

In addition, by understanding the importance of regulatory compliance in industries such as healthcare, finance, and government, VinCSS has integrated compliance checks into its FDO onboarding process. This allows organizations to deploy devices at scale while meeting relevant regulatory standards, including GDPR and HIPAA, making VinCSS an attractive choice for companies requiring stringent adherence to regulatory frameworks and robust security measures.

Market Leadership through Product Value, Innovation, and Partnership

VinCSS is a market leader with its unique and comprehensive product ecosystem, innovative approach, and robust industry partnerships. The company's considerable research and development investments position it as an innovation pioneer in the IoT security sector. By continuously exploring new applications for FDO technology across diverse IoT domains, VinCSS stays ahead of emerging threats and adapts its solutions to evolving use cases. This approach is particularly crucial in the automotive and industrial IoT sectors, where security demands are unique and stringent.

Leveraging its first-mover advantage, VinCSS is among the first to commercialize FDO-integrated and groundbreaking products, such as the first FDO-enabled camera and FDO solutions for Wi-Fi routers and smart parking systems. This helps the company consolidate its market pioneer and leadership status in secure IoT device onboarding to ensure IoT security.

To keep pace with evolving industry requirements, VinCSS's strategy is to focus on enhancing and expanding the application of FDO standards to stay ahead of technological advancements in the FDO

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ecosystem. By developing practical, market-ready products that are innovative and commercially viable, VinCSS addresses real-world challenges across various industries. The ability to customize solutions for specific sectors offers a remarkable value proposition to customers and partners, making the company a preferred partner for organizations looking for industry-centric solutions.

VinCSS recognizes the importance of collaboration in driving industry adoption and actively pursues partnerships with technology leaders and hardware manufacturers. Its collaborations with companies such as ASRock Industrial, ST Engineering, Pavana, among others, enable VinCSS to expand its reach and technological capabilities and integrate its FDO solutions into a wide range of use cases, including smart city infrastructure and industrial automation systems, influencing FDO-enabled IoT security standards globally.

VinCSS devotes significant resources to market education and demand creation through many channels, including industry events, webinars, press releases, blogs, and social media campaigns. Efforts to raise awareness about the importance of secure IoT onboarding and FDO technology advantages contribute to generating demand for VinCSS's products and cultivating greater industry collaboration, positioning the company as a driving force in the industry.

Conclusion

VinCSS is a market pioneer and leader in the IoT security industry using FDO standards that streamline secure device onboarding with its innovative and comprehensive ecosystem. By providing automated, secure onboarding solutions and actively leading standardization efforts, VinCSS is not only responding to current industry needs but also proactively shaping the future of IoT security through its early adoption and practical application of FDO technology. With the likelihood of FDO becoming a widely adopted or mandatory requirement in specific industries, much like the FIDO2 standard and Passkey today, VinCSS is well-positioned to lead industry transformation moving forward.

With its strong overall performance, VinCSS earns Frost & Sullivan's 2024 Global Transformational Innovation Leadership Award in the IoT security industry.

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What You Need to Know about the Transformational Innovation Leadership Recognition

Frost & Sullivan's Transformational Innovation Leadership Award recognizes the best up-and-coming, potentially disruptive market participant.

Best Practices Award Analysis

For the Transformational Innovation Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Transformational Innovation

Market Disruption: Innovative new solutions have a genuine potential to disrupt the market, render current solutions obsolete, and shake up competition

Competitive Differentiation: Strong competitive market differentiators created through a deep understanding of current and emerging competition

Market Gaps: Solution satisfies the needs and opportunities that exist between customers' desired outcomes and their current market solutions

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

Passionate Persistence: Tenacity enables the pursuit and achievement of seemingly insurmountable industry obstacles

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

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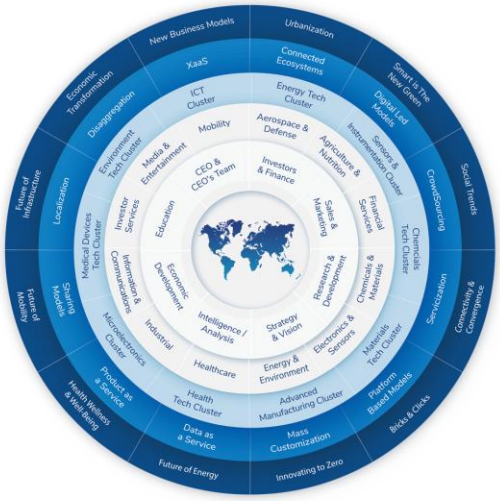


Key Impacts:

- **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)