FROST & SULLIVAN

2024
COMPETITIVE STRATEGY LEADER

IN THE EUROPEAN AUTOMOTIVE CYBERSECURITY MANAGED SERVICES INDUSTRY

FROST & SULLIVAN

2024   BEST PRACTICES AWARD

C/O
CYBELLUM

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. Cybellum excels in many of the criteria in the automotive cybersecurity managed services space.

AWARD CRITERIA	
Strategy Innovation	**Customer Impact**
Strategy Effectiveness	Price/Performance Value
Strategy Execution	Customer Purchase Experience
Competitive Differentiation	Customer Ownership Experience
Executive Team Alignment	Customer Service Experience
Stakeholder Integration	Brand Equity

A Market Snapshot

The automotive industry is gaining momentum as more manufacturers integrate digital technologies into vehicles. With more connected and autonomous features, there is a pressing need to secure vehicle systems from cyber threats. As a result, the industry is marked by the rise of cybersecurity firms specializing in automotive security solutions and strong collaborations between traditional automotive manufacturers and technology companies. Technological advancements, such as artificial intelligence (AI), machine learning (ML), and blockchain, drive innovation in automotive cybersecurity. AI-powered threat detection algorithms, ML-based anomaly detection systems, and blockchain-enabled secure communication protocols can revolutionize automotive cybersecurity by providing proactive defense mechanisms against evolving cyber threats.

However, automotive cybersecurity faces a significant challenge as vehicles increasingly depend on complex software systems and supply chains. Heightened regulatory pressure exemplified by the United Nations Economic Commission for Europe (UNECE), the International Organization of Standardization (ISO), and the Society of Automotive Engineers (SAE) standards require manufacturers to manage cybersecurity risks across their entire supply chain. This task is complex and resource-intensive, compounded by a shortage of skilled professionals.

> *"[Cybellum's] CSMS Cockpit platform streamlines cyber-assurance and incident response tasks for manufacturers, ensuring vehicles remain digitally secure and compliant with evolving regulations. This solution swiftly identifies vulnerabilities, proactively monitors threats, and manages a comprehensive vehicle components database over their lifecycle, spanning approximately 20 years."*
>
> *- Dorothy Amy*
> *Senior Industry Analyst*

Therefore, the industry must adopt a strategic approach that combines advanced technologies with expert services to ensure comprehensive protection and regulatory compliance amid an evolving threat landscape. Managed services provide comprehensive support for customers, handling everything from initial planning and implementation to ongoing maintenance and optimization, ensuring seamless and efficient operations. This end-to-end assistance allows customers to focus on their core business activities while relying on expert management for their information technology needs.

As automotive manufacturers integrate cutting-edge technologies like autonomous driving, vehicle-to-grid charging, vehicle-to-everything communication, and over-the-air updates, the need for robust security solutions becomes more critical. Effective automotive cybersecurity solutions must mitigate cyberattack risks and build consumer trust, promoting the widespread adoption of next-generation, connected, and autonomous vehicle technologies.

Best Practices Excellence: Cybellum Technologies

Founded in 2016 and headquartered in Tel Aviv, Israel, Cybellum Technologies (Cybellum) is a security platform developer that helps device manufacturers keep their connected products secure and compliant. The company's Product Security Platform manages cyber risk and compliance gaps across its product lifecycle, from individual components to multiple business units. With a keen focus on automotive, Cybellum boasts an impressive customer base, including Jaguar Land Rover, Supermicro, Danaher, Rolls Royce, and Fauercia. Moreover, LG Electronics (LG) acquired the company in 2021 due to its innovative and differentiated technology. With a goal of creating a new standard for product security worldwide, the company stands firm in safeguarding the connected products on which consumers rely.
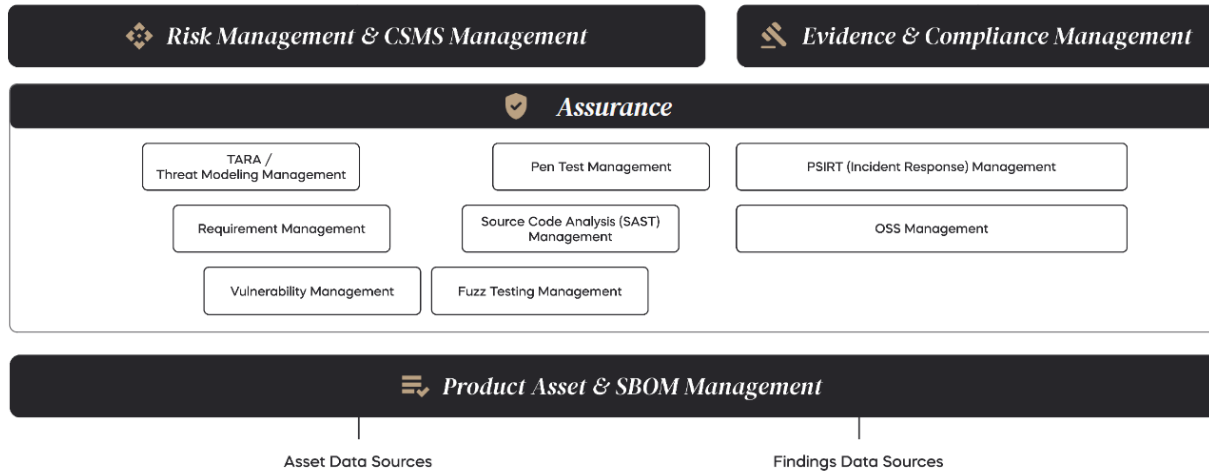
In 2021, Frost & Sullivan recognized Cybellum for its visionary innovation, performance, and customer impact and remains impressed with the company's continuing innovation and sustained leadership.

Roadmap to Leadership: Knowledge Breadth, Strategic Depth

Cybellum's primary mission is to partner with companies to build the best solution for every roadmap, through a combination of consulting, professional services, and technology.[1] This trifold approach combines robust security platforms with expert-managed services and guidance, differentiating the company in the market and paving its roadmap. By embedding security from the initial design phase through deployment and covering the entire lifecycle of automotive products, Cybellum delivers a robust and evolving security posture for its clients.

---

[1] "Mission Satement." *Cybellum Technologies.* Web page. https://cybellum.com/about-us/#:~:text=Our%20goal%20is%20to%20partner,%2C%20professional%20services%2C%20and%20technology. Accessed 5 June 2024

The Product Security Platform

Source: Cybellum Technologies

Cybellum's Product Security Platform offers a comprehensive solution for managing product security throughout the entire vehicle lifecycle. It encompasses asset management, security assurance, evidence generation for regulatory compliance, and governance and KPI tracking.

Furthermore, the platform addresses a key challenge in automotive product security by aggregating both asset data (e.g., SBOM files, source-code, and binary-based SCA) and risk data (vulnerability feeds, fuzzing, pen-tests, TARA) from disparate sources. This creates a unified data layer that provides a comprehensive overview of assets and associated risks, enabling informed decision-making across the organizations.

In 2023, the company collaborated with LG to develop the Cyber Security Management System (CSMS) Cockpit, which addresses the escalating cybersecurity challenges that the automotive industry faces and one of the key mandatory requirements for complying with UNECE WP.29 R155 regulation. With vehicles becoming increasingly software-defined and facing a complex supply chain, regulatory standards like ISO/SAE 21434 and UNECE WP.29 demand robust security measures from the initial product design phase and across the automotive supply chain. The CSMS Cockpit platform streamlines cyber-assurance and incident response tasks for manufacturers, ensuring vehicles remain digitally secure and compliant with evolving regulations. This solution swiftly identifies vulnerabilities, proactively monitors threats, and manages a comprehensive vehicle components database over their lifecycle, spanning approximately 20 years. Automating security processes and enabling real-time risk detection, the platform facilitates thorough inspection protocols for individual components.

Capitalizing on its innovation prowess, Cybellum's latest CSMS Cockpit release brings advanced asset management features like Software Bill of Materials (SBOM) Auto-Fix for error detection and correction, custom package management, and automatic correction of non-authoritative common platform enumerations. Additionally, it introduced role-based approvals to ensure compliance with regulations. This recent update also leverages AI-powered vulnerability filtering and SBOM repair to streamline compliance, reduce resources, and enhance device safety.

> *"Using a human-in-the-loop approach, Cybellum's managed services combine embedded device security expertise, automation technology, and AI to manage security activities from start to finish, acting as a force multiplier for a customer's entire operation. These services include SBOM analysis, vulnerability management, and incident response."*
>
> *- Samantha Fisher*
> *Best Practices Research Analyst*

Cybellum's strategic and collaborative approach involves working closely with organizations to understand their security needs and aligning solutions with their long-term objectives. This partnership model extends beyond the initial implementation, providing ongoing support and iterative improvements to maintain and enhance security postures in response to evolving threats and technological advancements. Cybellum effectively tackles the complex challenges of automotive cybersecurity amidst new regulations and an evolving cyber threat landscape. With vehicles increasingly dependent on sophisticated software systems, the automotive industry faces heightened risks, as these new standards require manufacturers and suppliers to implement robust security measures at every stage of product development, production, and post-production, with continuous threat analysis and risk assessment (TARA) being particularly crucial.

Focused Leadership

Cybellum's executive alignment is deeply rooted in the company's mission to revolutionize product security globally, particularly within the automotive sector. Under the leadership of Chief Executive Officer and Co-founder Slava Bronfman, the company embarked on this mission after recognizing the major gaps in vehicle security, leading to delayed product launches, costly recalls, and significant safety risks. Drawing on Bronfman's experience, including insights into cybersecurity and product security in the military, Cybellum's executive team is committed to automating the entire product security domain. Insights from Ronen Lago, one of the company's experienced advisors, further fuel this commitment to automation. Through knowledge sharing, Cybellum sheds light on existing and emerging cybersecurity challenges within the industry .

The company's collaboration with industry experts and regulatory bodies is instrumental in shaping its strategic direction. For instance, Bronfman's involvement with ISO and engagement with regulatory initiatives like SBOMs and ISO/SAE underscore the company's commitment to staying at the forefront of industry standards and best practices. Moreover, leadership insights into managing product security versus merely addressing vulnerabilities highlight the importance of proactive approaches and lifecycle management. By leveraging these insights, Cybellum is well-positioned to provide tailored solutions that address each customer's unique needs while advancing the broader goal of enhancing product security across industries.

End-to-end Customer Support and Continuous Enhancement

Cybellum's integrated approach involves a comprehensive methodology encompassing purchase, service, and ownership aspects, specifically tailored to clients' needs in the automotive sector. The company taps into available growth opportunities by leveraging megatrends, such as generative AI and digital twins, in its product portfolio, enhancing security measures and bolstering its technology leadership. An essential facet of Cybellum's competitive differentiation is its Product Security Synergy Services customized key

performance indicator (KPI) model tailored to each client's specific needs and workflows, which guarantees seamless integration and allows for precision security performance tracking.

Customer Purchase Experience

Cybellum's Deployment and Customization service ensures a seamless integration of its platform across an entire organization. The company's team works with customers across a set of milestones, including discovery, concept, implementation, and monitoring, to draw a clear trajectory for a successful product security organization. Additionally, Cybellum's Managed Services combines AI with a dedicated technology expert to manage security processes from start to finish, acting as a force multiplier for a customer's entire operation. These include services for SBOM analysis, vulnerability management, pen-testing, and incident response. Finally, the company's ProdSec Performance Model gauges the customer across a set of product security KPIs and continuously monitors them across implementation to provide customers with a health dashboard that helps improve their team's performance over time. This level of product security is crucial to prevent unauthorized access, data breaches, and attacks that can lead to significant financial losses, impacts on reputation, and harm to users, and is essential for maintaining customer trust and complying with regulatory requirements. Also, Cybellum's dedicated product security experts help automakers and Tier 1 suppliers meet implementation milestones and regulatory compliance timelines.

Customer Service & Ownership Experience

Enterprise customers are assigned a Customer Success Manager to ensure their success. The manager serves as a trusted advisor, offering expert technical support, troubleshooting, and providing technical guidance to help customers achieve their desired outcomes and maximize the value of the software. These professionals also act as customer advocates, communicating feedback to product and engineering teams and building strong customer relationships.

Moreover, Cybellum's continuous innovation bolsters its customers' ownership experience, as the company releases new products and versions regularly. Recently, it launched its Product Security Platform 3.0: Risk Edition. Key features of this innovative solution include threat modeling management, SBOM merging, and fuzzing support, all managed from a comprehensive dashboard. Cybellum further enhanced its risk management, enabling customers to integrate asset data with security activities to form a unified risk data system, facilitating informed risk mitigation decisions through tailored dashboards.

Additionally, the company's Product Compliance Manager supports customers in meeting regulations like the WP.29 R155 by generating customizable, audit-ready reports and tracking compliance progress. Cybellum strengthens vulnerability handling by integrating threat modeling/TARA and third-party security tests.

Positioned for Growth

Cybellum's strategic partnerships, acquisitions, and comprehensive suite of services tailored to the automotive industry bolster the company's growth potential and brand equity.

Itemis Partnership

In October 2023, Cybellum and Itemis announced a collaboration to merge their TARA solution with Cybellum's platform, encompassing SBOM and vulnerability management, compliance validation, and incident response. This partnership aims to meet the requirements of emerging regulations, particularly for CSMS. Through collaboration, knowledge sharing, and mutual go-to-market initiatives, the partnership offers customers a more comprehensive and integrated solution to address cybersecurity challenges in the automotive industry. By automating and improving traceability, the solution assists automotive companies in identifying and mitigating cyber risks throughout the product lifecycle, adhering to ISO 21434 guidelines efficiently. It also provides a more comprehensive view of cyber risks, enabling better decision-making for risk mitigation. Additionally, the combined solution facilitates compliance with critical regulations, ensuring automotive companies meet regulatory standards effectively.

Cybellum's market presence, largely driven by partnerships with prominent automotive original equipment manufacturers (OEMs) such as Jaguar Land Rover, Rolls Royce, Great Wall Motor, Nissan, BMW, and Audi, increases its credibility and access to new customers. Moreover, these collaborations validate Cybellum's expertise and capabilities, enhancing its reputation as a leader in automotive cybersecurity solutions.

Moreover, in 2021, LG acquired a 64% stake in Cybellum, underscoring the company's robust revenue potential and promising growth trajectory. This significant investment strengthens the company's financial standing and validates its position as a key player in the market.

Frost & Sullivan finds Cybellum's strategic approach to the market enables it to deliver best-in-class solutions to automotive manufacturers that safeguard their products. As more OEMs digitally transform their products, the company is well-positioned to emerge as a leader.

Conclusion

Frost & Sullivan believes that innovation and growth opportunities drive future success; many factors contribute, yet having a competitive strategy is critical. Cybellum Technologies (Cybellum) understands this core concept and is leading the automotive cybersecurity managed services market due to its focused strategies, helping it to outpace competitors. The company combines advanced security platforms with expert-managed services, differentiating it in the market and paving its roadmap. Moreover, Cybellum's strategic and collaborative approach involves working closely with organizations to understand their security needs and aligning solutions with their long-term objectives. This partnership model extends beyond the initial implementation, providing ongoing support and iterative improvements to maintain and enhance security postures in response to evolving threats and technological advancements. Overall, Cybellum develops and implements its strategies with its customers in mind, securing its position as a trusted partner and market leader.

Cybellum Technologies earns Frost & Sullivan's 2024 European Competitive Strategy Leadership Award for its strong overall performance in the automotive cybersecurity managed services industry.

What You Need to Know about the Competitive Strategy Leadership Recognition

Frost & Sullivan's Competitive Strategy Leadership Award recognizes the company with a stand-out approach to achieving top-line growth and a superior customer experience.

Best Practices Award Analysis

For the Competitive Strategy Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Strategy Innovation

Strategy Effectiveness: Effective strategy balances short-term performance needs with long-term aspirations and overall company vision

Strategy Execution: Company strategy utilizes Best Practices to support consistent and efficient processes

Competitive Differentiation: Solutions or products articulate and display unique competitive advantages

Executive Team Alignment: Executive team focuses on staying ahead of key competitors via a unified execution of its organization's mission, vision, and strategy

Stakeholder Integration: Company strategy reflects the needs or circumstances of all industry stakeholders, including competitors, customers, investors, and employees

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)