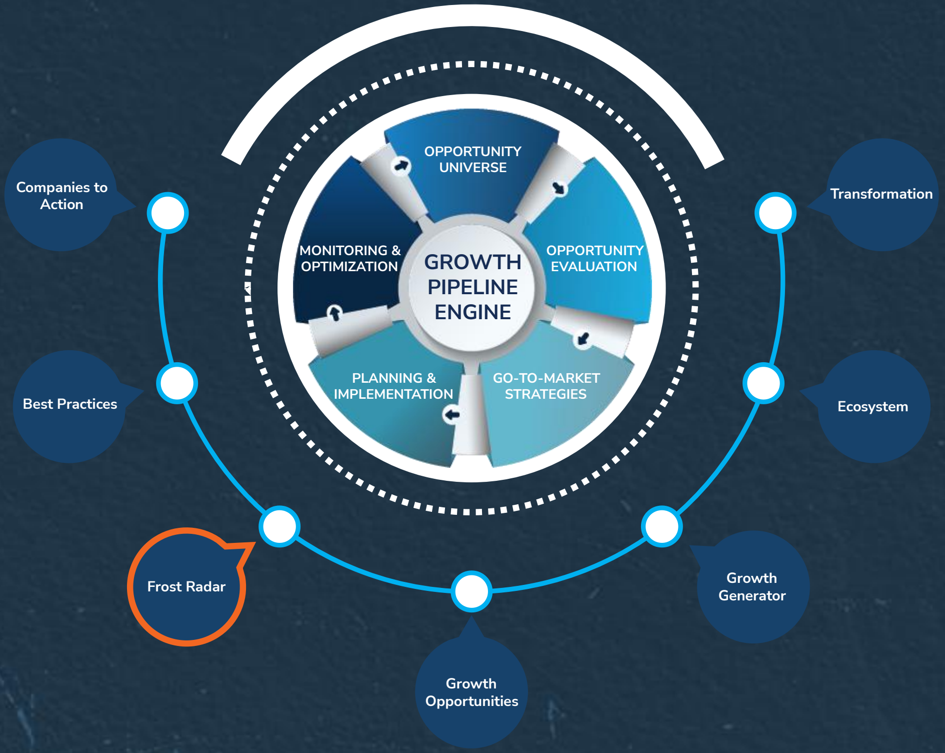
FROST & SULLIVAN

Frost Radar™: Zero Trust Browser Security, 2025

A Benchmarking System to Spark Companies to Action - Innovation That Fuels New Deal Flow and Growth Pipelines



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Strategic Imperative and Growth Environment

List of Abbreviations

- **API:** Application Programming Interface
- **BDR:** Browser Detection and Response
- **BYOD:** Bring Your Own Device
- **CDR:** Content Disarm and Reconstruction
- **CISO:** Chief Information Security Officer
- **DDR**: Data Detection and Response
- **DLP:** Data Loss Prevention
- **DORA**: Digital Operational Resilience Act
- **EDR:** Endpoint Detection and Response
- **EMEA:** Europe, the Middle East, and Africa
- **FedRAMP:** Federal Risk and Authorization Management Program
- **GDPR:** General Data Protection Regulation
- **GenAI:** Generative AI
- **IdP:** Identity Provider
- **IDP:** Intrusion Detection and Prevention
- **MDM:** Mobile Device Management
- **MSSP:** Managed Security Service Provider
- **NIS2:** Network and Information Security Directive 2
- **PCI DSS:** Payment Card Industry Data Security Standard
- **PII:** Personally Identifiable Information
- **RBI:** Remote Browser Isolation
- **RDP:** Remote Desktop Protocol
- **SaaS:** Software-as-a-Service
- **SASE:** Secure Access Service Edge
- **SIEM:** Security Information and Event Management
- **SMB:** Small to Medium-Sized Business
- **SME:** Small and Medium-Sized Enterprise
- **SOAR:** Security, Orchestration, Automation, and Response
- **SSE:** Security Service Edge
- **SSH:** Secure Shell
- **SSO:** Single Sign-On
- **SSPM:** SaaS Security Posture Management
- **SWG:** Secure Web Gateway
- **UEBA:** User Entity and Behavior Analytics
- **VDI:** Virtual Desktop Infrastructure
- **VPN:** Virtual Private Network
- **XDR:** Extended Detection and Response
- **ZTBS:** Zero Trust Browser Security
- **ZTNA:** Zero Trust Network Access

Source: Frost & Sullivan

Strategic Imperative

- The browser is rapidly becoming the hub of enterprise activity, evolving into the new endpoint for both productivity and threat risk. Enterprise browsers and browser extensions are eclipsing legacy tools, such as virtual private networks (VPNs), virtual desktop infrastructure (VDI), and proxy-based secure web gateways (SWGs), offering clientless and user-friendly secure application access. Enterprise customers demand lightweight, clientless, and browser-native security solutions that are easy to deploy and manage and offer high performance.
- GenAI integration in workflows is a major driver of innovation and a source of substantial compliance and security risk. There is strong demand for AI usage visibility, context-aware data loss prevention (DLP), and governance features integrated at the browser layer. The rise of agentic (AI-first) browsers requires new security guardrails, such as prompt filtering, AI response inspection, and model compliance hooks.
- Vendors must rapidly innovate to provide context-aware DLP, AI usage visibility, and governance features directly in the browser, increasing pressure to deliver secure, scalable, and user-friendly solutions. Security vendors are embedding AI-driven threat detection and precision controls to counter highly evasive threats and AI-powered attacks.
- Evolving data privacy laws and regulatory complexity (e.g., GDPR, PCI DSS, and FedRAMP) are driving new architectures that differentiate between work and personal activity, enforce granular audit controls, and ensure local data custody. These developments increase the complexity and cost of product development and support.

Source: Frost & Sullivan

Growth Environment

- The zero trust browser security (ZTBS) market is undergoing a profound transformation, driven by technological innovation, evolving threat landscapes, and changing enterprise needs. Over the next five years, the market is expected to shift from fragmented point solutions to integrated, browser-native platforms that serve as the central control plane for enterprise security and access.
- Frost & Sullivan expects double-digit or even triple-digit year-on-year growth rates in the emerging, start-up-dominated market. In 2025, the market generated aggregated revenue of $622.0 million; a compound annual growth rate of 18.9% is anticipated from 2025 to 2030.
- The pace of mergers, acquisitions, and vendor consolidation is increasing as established players and start-ups seek to unify point solutions into broader enterprise platforms.
- There is a pronounced market movement toward identity-first, zero trust access models, moving access control and policy enforcement directly into the browser—especially as managed and unmanaged (BYOD) devices proliferate. Enterprise solutions are shifting away from heavy endpoint agents, focusing on lightweight, browser-native deployment models for rapid, seamless rollout.
- North America continues to dominate the ZTBS market, accounting for 73.2% of revenue in 2025. Asia-Pacific is emerging as a key region because of digital transformation initiatives and governments' data sovereignty requirements. EMEA, a compliance-driven region, is slow to ZTBS adoption and ranks third. Central and Latin America is slowly catching up with EMEA, especially in the enterprise browser and secure browser extension segments, because of the affordability and deployment simplicity of these solutions.
- Large and very large enterprises are the largest adopters of ZTBS solutions, while SMEs and medium-sized enterprises typically show high resistance to adoption due to cost considerations.

Source: Frost & Sullivan

Frost Radar™: Zero Trust Browser Security

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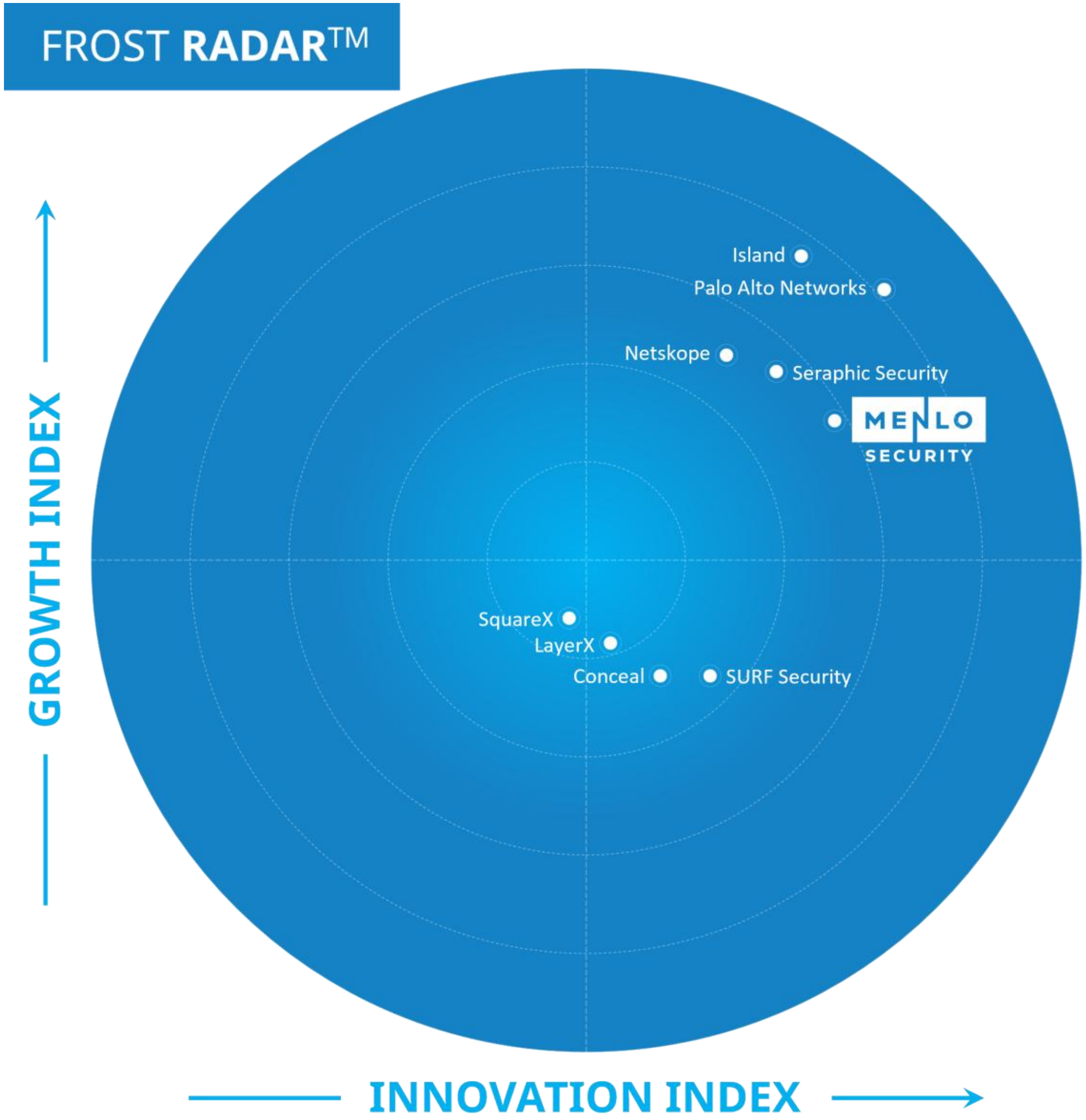

Source: Frost & Sullivan

Frost Radar™ Competitive Environment

- The ZTBS competitive landscape is rapidly evolving, shaped by shifting customer demands, strategic acquisitions, and new entrants. The market remains fragmented but is witnessing signs of consolidation and the emergence of clear market leaders that can provide comprehensive, browser-first security platforms.
- Larger vendors from adjacent markets are acquiring start-ups to fill capability gaps and deliver the breadth of features that customers demand. Vendors including Palo Alto Networks (Prisma) and Netskope are integrating or acquiring browser security solutions but often bundle them to protect core network revenue.
- Companies including Island and Palo Alto Networks are developing full browser solutions that offer enterprise-first security, but face adoption barriers due to user reluctance to abandon familiar browsers such as Chrome and Edge. At the same time, the market is witnessing the emergence of start-ups targeting narrow problems (e.g., DLP or GenAI risk in the browser), and adjacent browser security vendors. These entrants fall into two main categories:
  - Extension-based start-ups targeting SMBs and mid-market with lightweight solutions.
  - SASE/SSE vendors launching or acquiring browser security tools to complement their network-centric offerings.
- The technical complexity of building enterprise-grade browser extensions (e.g., anti-tampering and incognito mode support) and customer preference for consolidated platforms are among the challenges that new entrants face in this market.

Source: Frost & Sullivan

Frost Radar™ Competitive Environment (continued)

- Island leads the ZTBS market in 2025 with a 25.7% share. The company provides an enterprise browser developed from the ground up to offer detailed security, policy management, and data protection during browsing. It stands out by incorporating DLP, activity monitoring, and seamless application access, appealing to organizations that want native endpoint security closely integrated with employee workflows.
- Menlo Security holds the second position with an 18.7% market share. It is recognized for its strong remote browser isolation platform that blocks web threats and prevents credential theft by keeping harmful content away from endpoints. Recently, the company shifted its focus from remote browser isolation to enterprise browsers, which has boosted revenue growth. Its scalable, cloud-native engine serves large enterprises prioritizing threat containment and zero trust browsing.
- Palo Alto Networks captured a 7.7% market share after entering the ZTBS market in 2024 through its acquisition of Talon and integration with the Prisma Access portfolio. The Prisma Browser leverages the vendor's security expertise to provide advanced browser protections within a broader zero trust framework, embedding threat detection, isolation, and policy enforcement into digital workflows.
- LayerX and Netskope each account for approximately 5% of the global ZTBS market. LayerX focuses on secure browser extensions that add runtime protection, visibility, and conditional access to standard browsers, while Netskope integrates enterprise browser features within its SASE portfolio, emphasizing inline threat protection, context-aware access controls, and advanced data security.
- Seraphic Security and SURF Security are emerging players in the enterprise browser space, demonstrating rapid and sustained growth through innovative technologies.

Source: Frost & Sullivan

Frost Radar™ Competitive Environment (continued)

- Conceal and SquareX are emerging vendors in the secure browser extension space. While SquareX has pioneered the browser detection and response (BDR) capability, Conceal delivers agile browser isolation through its browser extension.
- Zscaler and Red Access were considered for inclusion on this Frost Radar™ but were omitted because of a lack of updated information relating to their solutions.

Source: Frost & Sullivan

Frost Radar™: Companies to Action

Menlo Security

INNOVATION

- Menlo Security, one of the pioneers of RBI, expanded its focus to the enterprise browser segment over the last two years.
- The company's innovation strategy centers on its patented Adaptive Clientless Rendering (ACR) technology, which enables an agentless approach where a surrogate browser executes in the cloud rather than on endpoints. This fundamental architecture allows the company to neutralize threats before they reach users' devices while maintaining transparent user experience with no latency.
- The company's innovation portfolio includes several distinctive capabilities. The HEAT Shield AI leverages Google Gemini's AI to detect and block highly evasive adaptive threats, including zero-hour phishing and AI-driven malware that bypass traditional signature-based detection systems.
- Menlo Browsing Forensics provides unprecedented visibility with video-like session playback, enabling security teams to conduct detailed threat hunting and incident response. The Browser Posture Management solution ensures compliance by comparing current browser policies against recognized security benchmarks.
- The 2024 acquisition of Votiro significantly expanded the platform's data security capabilities, adding CDR and DDR technologies.
- Recent product launches include Menlo Adaptive Web for fine-grained browser controls, Menlo Secure Storage for eliminating local file storage risks, and enhanced GenAI governance features to prevent data leakage to public large language models.

Source: Frost & Sullivan

Menlo Security (continued)

GROWTH

- With 10 years of experience in browser security, Menlo Security maintains a leading role in the browser isolation and security space.
- Menlo Security holds the second position in the global ZTBS market with an 18.5% market share in 2025, as per Frost & Sullivan estimates. In 2024, the company shifted gears from RBI to focus on the enterprise browser segment and has since been holding the second position in the segment.
- Menlo Security has demonstrated strong financial and operational growth. In October 2024, it announced that it surpassed $100 million in annual recurring revenue with an impressive 110% net retention rate.
- The company serves more than 1,000 global enterprises, including Fortune 500 companies, eight of the largest global financial services institutions, and large government institutions.
- Menlo Security has been boosted by customer migration from point solutions to the comprehensive secure enterprise browser package. The company's 2024 acquisition of Votiro broadened its product portfolio, in turn accelerating revenue growth through upsell opportunities.
- The company's deep hyperscaler partnerships, notably Google Gemini integration, and international expansion initiatives to Asia-Pacific and EMEA set the stage for sustained growth momentum.

Source: Frost & Sullivan

Menlo Security (continued)

FROST PERSPECTIVE

- Menlo Security's strategy to reposition itself as a secure enterprise browser is in line with market trends. At the same time, competition has intensified, with several leading network security vendors entering the market through acquisition or product line expansion. Therefore, Menlo Security must accelerate customer acquisition efforts to remain competitive in the rapidly evolving ZTBS market.
- Menlo Security should intensify its investment in building what it positions as the first true AI browser security platform. This includes expanding HEAT Shield AI capabilities to proactively counter emerging AI agent threats embedded in websites and applications. The company should leverage its unique data advantage from billions of web sessions processed through Menlo Labs to train proprietary threat detection models that can predict and neutralize attacks with minimal human intervention.
- The company should aggressively pursue displacement of legacy VPN and VDI infrastructure by focusing on high-value, compliance-driven use cases. Prioritizing the development of clientless access capabilities for non-web applications (SSH and RDP), privileged remote access scenarios, and operational technology environments would address critical market gaps. These specialized workloads require the granular, browser-context controls that Menlo's architecture provides, such as session recording, read-only access, and elimination of file downloads, which are essential for auditability and least-privilege access.

Source: Frost & Sullivan

Best Practices & Growth Opportunities

Best Practices

1 Enterprises demand simplicity, seamless user experience, and rapid time to value from security solutions, rejecting complex, intrusive, or slow-to-deploy alternatives. Solutions that overlay onto existing workflows and browsers, minimizing user training and operational disruption, are more popular.

2 Despite strong investor interest, ZTBS market growth is restrained by limited awareness and end-user resistance. ZTBS vendors must improve brand awareness, highlight the critical need for their solutions through marketing campaigns, and improve user experience through seamless workflow integration.

3 Although ZTBS solutions are not mandated by regulation, compliance is a key factor driving growth in locations with data sovereignty requirements, such as EMEA and Asia-Pacific. Vendors considering international expansion must incorporate compliance-specific use cases to gain traction in these regions.

Source: Frost & Sullivan

Growth Opportunities

1 Enterprises are demanding platforms that consolidate multiple security functions into a single, intuitive interface. The market will witness significant consolidation, with leading vendors acquiring smaller players to expand capabilities and address emerging use cases. Vendors that offer horizontal platforms with deep browser integration and AI-readiness will emerge as category leaders.

2 The proliferation of GenAI tools and agentic AI browsers will drive enterprise demand for robust, in-browser governance capabilities. Vendors that can deliver prompt inspection, model compliance, and real-time DLP enforcement directly in the browser will be in the best position to secure AI-driven workflows.

3 As hybrid work and BYOD adoption continue, organizations will prioritize browser-native security solutions that offer seamless protection across managed and unmanaged devices. Vendors that offer identity-aware policy enforcement without disrupting user experience will capture significant market share in this evolving landscape.

Source: Frost & Sullivan

Frost Radar™ Analytics

Frost Radar™: Benchmarking Future Growth Potential
2 Major Indices, 10 Analytical Ingredients, 1 Platform

Growth Index

Growth Index (GI) is a measure of a company's growth performance and track record, along with its ability to develop and execute a fully aligned growth strategy and vision; a robust growth pipeline system; and effective market, competitor, and end-user focused sales and marketing strategies.

GI1

MARKET SHARE (PREVIOUS 3 YEARS)
This is a comparison of a company's market share relative to its competitors in a given market space for the previous 3 years.

GI2

REVENUE GROWTH (PREVIOUS 3 YEARS)
This is a look at a company's revenue growth rate for the previous 3 years in the market/industry/category that forms the context for the given Frost Radar™.

GI3

GROWTH PIPELINE
This is an evaluation of the strength and leverage of a company's growth pipeline system to continuously capture, analyze, and prioritize its universe of growth opportunities.

GI4

VISION AND STRATEGY
This is an assessment of how well a company's growth strategy is aligned with its vision. Are the investments that a company is making in new products and markets consistent with the stated vision?

GI5

SALES AND MARKETING
This is a measure of the effectiveness of a company's sales and marketing efforts in helping it drive demand and achieve its growth objectives.

Source: Frost & Sullivan

Frost Radar™: Benchmarking Future Growth Potential
2 Major Indices, 10 Analytical Ingredients, 1 Platform (continued)

Innovation Index

Innovation Index (II) is a measure of a company's ability to develop products/ services/ solutions (with a clear understanding of disruptive megatrends) that are globally applicable, are able to evolve and expand to serve multiple markets and are aligned to customers' changing needs.

II1

INNOVATION SCALABILITY
This determines whether an organization's innovations are globally scalable and applicable in both developing and mature markets, and also in adjacent and non-adjacent industry verticals.

II2

RESEARCH AND DEVELOPMENT
This is a measure of the efficacy of a company's R&D strategy, as determined by the size of its R&D investment and how it feeds the innovation pipeline.

II3

PRODUCT PORTFOLIO
This is a measure of a company's product portfolio, focusing on the relative contribution of new products to its annual revenue.

II4

MEGATRENDS LEVERAGE
This is an assessment of a company's proactive leverage of evolving, long-term opportunities and new business models, as the foundation of its innovation pipeline. An explanation of megatrends can be found here.

II5

CUSTOMER ALIGNMENT
This evaluates the applicability of a company's products/services/solutions to current and potential customers, as well as how its innovation strategy is influenced by evolving customer needs.

Source: Frost & Sullivan

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