Solution brief

HPE Networking for retail environments

Great retail experiences start with great connections

Intelligent, efficient, and secure networks for modern retail

Executive summary

Retailers today face rising customer expectations, security threats, and operational complexity, making network modernization essential for reliability, agility, and standout customer experiences. Successful transformation starts with robust IT networking fundamentals, and HPE's comprehensive campus and branch portfolio empowers retailers to innovate, streamline operations, and exceed customer expectations through self-driving networks. While transformation is challenging, leveraging AI, automation, and the right foundational architecture is key to thriving in this dynamic landscape.

Retail IT transformation: Addressing complexity, customer demands, and unfulfilled AI potential

Retailers are balancing innovation with operational resilience. Legacy systems, multivendor cloud environments, and distributed locations create complexity, while rising customer expectations and sophisticated cyber threats demand robust, scalable solutions. Key imperatives for retail IT include:

— **Reliability:** Ensuring consistent performance for core systems (POS, inventory, fulfillment) while integrating new technologies like AI.

— **Enhanced shopping experience:** Delivering seamless, personalized shopping—online and in-store—through data-driven insights and real-time analytics.

— **Security:** Protecting customer data and brand reputation against advanced cyberattacks, with zero trust frameworks and continuous verification.

— **Cost control:** Streamlining operations and optimizing spend across multivendor environments.

— **Compliance and sustainability:** Aligning technology with ESG goals and regulatory mandates.

Despite strong intentions, many strategic initiatives—particularly those involving AI—often lose momentum due to weak foundational planning and implementation.

Secure, self-driving networks: A foundation for retail transformation

For modern retail environments to successfully transform, they demand a networking strategy that is agile, resilient, and capable of supporting innovation at scale. Regardless of vendor, successful implementation of a comprehensive networking strategy hinges on these foundational pillars:

1. **AIOps: Right data and right results:** Data is the foundation of modern retail transformation, and it is no different for self-driving networks. The true value in this case is achieved only when diverse, well-curated inputs from across the full stack—LAN, WAN, location services, security, and more—are combined with mature, continuously learning AI algorithms and deep networking expertise. Many solutions fall short by focusing on isolated data sources and bolted-on AI, making full-stack integration and vendor foresight essential for delivering exceptional user experiences and increasing AI's impact in retail networking.

2. **Comprehensive portfolio:** Retailers must implement solutions that can rapidly support a wide range of networking needs—including wireless (Wi-Fi and private 5G), wired switching, WAN connectivity, network access control, advanced security, and centralized management with full visibility. These solutions should offer flexible deployment options, whether on-premises or in the public cloud, and enable seamless data transport across critical domains. Key considerations include:

    a. **Flexible architecture:** Comprehensive management platforms, built upon microservice architectures with flexible deployment options such as private and public cloud, that are fit for most retail organizations and offer consistent, industry-leading features such as self-driving.

    b. **Scalability and agility:** Enables rapid deployment, seamless expansion to new locations, and swift adaptation to evolving business requirements—supported by an OpenAPI architecture that integrates effortlessly with broader IT systems, including OSS/BSS, inventory management, collaboration platforms, and other third-party tools.

    c. **Advanced tools:** Centralized management combined with generative AI (GenAI)-powered conversational assistants, large experience models (LEMs), digital twin technology, and rich analytics to deliver self-driving operations, automated troubleshooting, and faster, data-driven business decisions.

3. **Integral security is non-negotiable in today's retail landscape.** Protecting customer data, ensuring compliance, and defending against sophisticated cyber threats are critical. A full-stack networking strategy should deliver:

    a. **Zero trust frameworks:** Continuous verification and identity-based access controls across distributed environments, with a road map to universal ZTNA (UZTNA).

    b. **Regulatory compliance:** Alignment with PCI DSS, data privacy, and ESG mandates.

    c. **Proactive threat detection:** Leveraging AI and automation to identify and respond to risks in real time.

Accelerating retail innovation with HPE Networking

HPE Networking offers a compelling solution for retail IT by delivering self-driving network operations that facilitate exceptional user experiences and retail outcomes. With the integration of technologies from both HPE Aruba Networking and HPE Juniper Networking Mist, HPE provides a foundation for IT networking innovation that leverages agentic AI and microservices architecture to lower network trouble tickets and reduce operational expenses. Retail environments benefit from the fastest rollouts, robust security, and adaptive infrastructure, ensuring reliable connectivity for wired, wireless, and WAN networks. This common blueprint and shared engineering resources accelerate innovation, enabling retailers to transform their network operations at scale and deliver seamless customer experiences across campus and branch environments, while facilitating the transport of data to other key resources.

Innovation in action: Self-driving networks shape retail's future

Today, with HPE, retail customers are experiencing the benefits of self-driving networks, from automated remediation of non-compliance issues and bad WAN uplinks to resolving stuck ports—resulting in dramatic reductions in network trouble tickets and operational costs.

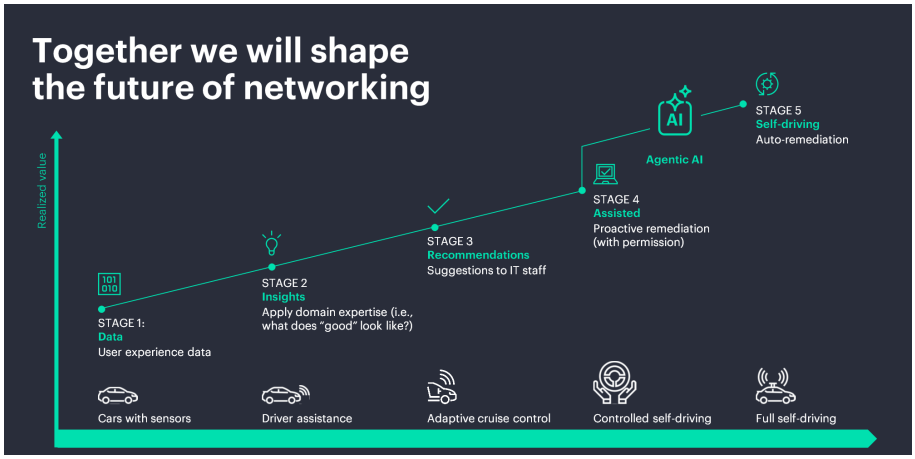

Figure 1. The 5 stages in the journey to self-driving networks

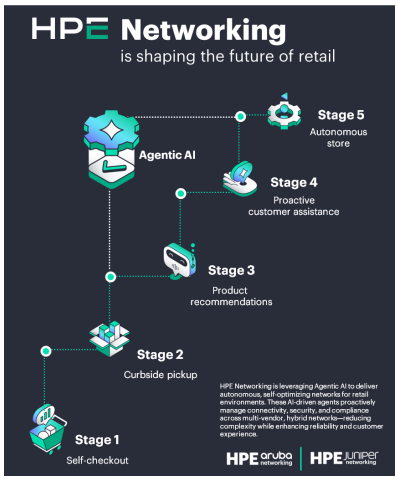

Figure 2. How self-driving networks transform retail environments

Key capabilities across the portfolio—including AI insights, client profiling and behavioral analytics, network access control, microsegmentation, large experience models (LEMs) for optimized collaboration, Marvis Minis digital experience twins, and conversational assistants powered by integrated large language models (LLMs)—work in unison with agentic AI to reduce IT truck rolls to stores, accelerate mean time to repair and free up retail IT teams to focus on strategic business initiatives. With agentic AI, cross-pollination of innovations, and a unified blueprint, HPE is shaping the future of networking and delivering network transformation at scale.

What is a Large Experience Model (LLM)?
Unique to HPE, an LEM is an AI-native observability engine that analyzes billions of data points across network to proactively optimize digital experiences—especially for collaboration platforms such as Zoom and Teams.

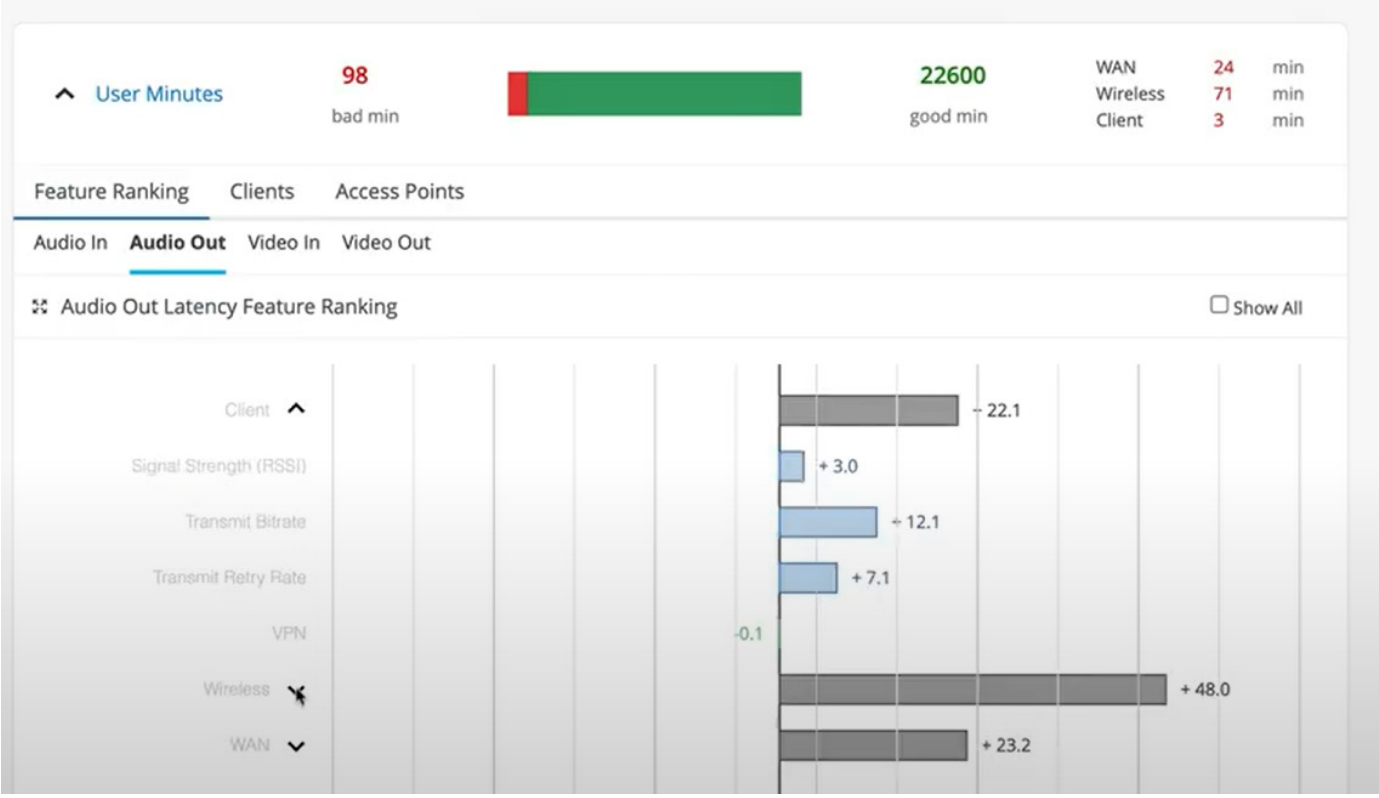

Figure 3. A snapshot of LEM diagnosing key causes of poor audio on a virtual call

Transforming retail spaces with high performance networking solutions

HPE Networking offers one of the industry's most comprehensive wired and wireless portfolios for retail IT, designed to meet the evolving demands of modern retail environments. The portfolio includes a full range of indoor and outdoor access points—supporting the latest Wi-Fi standards, including Wi-Fi 7, to deliver high performance, reliable connectivity across stores, warehouses, and outdoor spaces. These access points are complemented by a robust lineup of campus switches, from resilient chassis and stackable options to compact and ruggedized variants, ensuring seamless integration and consistent policy enforcement from the sales floor to the back office.

For environments requiring even broader wireless coverage or specialized use cases, HPE offers private 5G solutions that complement Wi-Fi, providing secure, high-speed mobility and reliability for critical enterprise applications such as mobile point-of-sale, robotics, and autonomous vehicle use cases. This unified vision for retail IT networking enables IT teams to deliver exceptional, secure, and scalable experiences for both customers and employees.

Efficient retail operations: Location, engagement, and better decisions made easy

A critical driver of retail transformation is leveraging the network to deliver precise indoor location. HPE Networking enables retailers to drive better personalization and operational optimization—such as wayfinding, asset tracking, and proximity marketing. Embedded GPS, barometric sensors, and patented virtual Bluetooth Low Energy (BLE) technology provide precise location data at a lower total cost of ownership (TCO) compared to traditional location systems. This not only enhances the customer experience but also streamlines store operations and improves staff efficiency. Additionally, HPE Networking delivers rich analytics and actionable insights into customer engagement, space utilization, security, and compliance. Retailers can access real-time and historical data on network health, user behavior, and application performance, empowering IT and business leaders to make data-driven decisions.

Unifying protection across retail networks

HPE Security solutions are simplifying security for campus and branch retail IT environments by expanding zero trust everywhere. From AI-powered client profiling, NAC and post-authentication remediation actions to secure SD-WAN, mesh firewall, and cloud-native SSE, HPE enables retail organizations to enforce zero trust principles across most devices and locations, while leveraging AI for deep insights and automated remediation. As the industry moves toward UZTNA, HPE uniquely brings together the essential components, such as microsegmentation, to deliver security assurances retail IT leaders need to protect sensitive data, help ensure compliance, and maintain business continuity in a dynamic environment.

Two leading wired and wireless solutions under one roof

HPE Juniper Networking and HPE Aruba Networking have both been recognized as Leaders in the 2025 Gartner® Magic Quadrant™ for Enterprise Wired and Wireless LAN Infrastructure. Together, the combined portfolios represent AI-native networking solutions purpose-built for retail environments and the future of digital transformation.

Figure 4. The 2025 Gartner Magic Quadrant for Enterprise Wired and Wireless Infrastructure

Retail transformation: By the numbers

85% reduction in IT store visits[1]

100% reduction in network trouble tickets[2]

50% reduction in power consumption using intelligent power management and Energy Efficient Ethernet[3]

15x extension of wireless coverage outside retail stores[4]

16x faster network-service provisioning[5]

Real business outcomes

HPE Networking is delivering real business outcomes today for leading retailers by enabling scalable, secure, and AI-native infrastructure. At The Home Depot, HPE Aruba Networking helped modernize store connectivity and operations, enhancing customer experiences and supporting digital transformation across thousands of locations. Similarly, T-Mobile is leveraging the Mist AI for full-stack campus and branch networking to streamline operations across 3500 retail stores, achieving rapid deployment, self-driving networking, and measurable improvements in secure network reliability and customer engagement.

[1] "Gap, Inc. Transforms In-Store Wi-Fi Experience with AI-Native Networking," HPE.

[2] "Halfords relies on AIOps for retail transformation," HPE.

[3] "Sustainability with HPE GreenLake for Aruba," DSI Ltd.

[4] "Interconnected retail on a massive scale," HPE.

[5] "Musgrave Stores Undergoes Transformation with AI-Native Network Enhancements," YouTube™.

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