

FROM LEGACY TO LEADING EDGE: MODERNIZING NETWORKS WITH LUMEN'S NAAS, AON, AND WAVE

A Carrier Access, Inc. and Lumen Perspective on Network Modernization



EXECUTIVE SUMMARY

Enterprises are under pressure to modernize their networks. Cloud adoption, AI workloads, and a distributed workforce have pushed legacy infrastructure to its limits. The result is rising costs, greater security risks, and less agility.

Carrier Access, Inc. (CAI), in partnership with Lumen Technologies, helps organizations address this challenge. Lumen's Network-as-a-Service (NaaS), Adaptive Optical Networking (AON), and WAVE services replace static, hardware-heavy models with agile, consumption-based platforms designed for performance and security. CAI brings the consultative expertise and customer-first approach that ensures these technologies deliver measurable results.

The proof is in the market. Lumen's NaaS surpassed 1,000 enterprise customers in 2025, growing 35 percent quarter over quarter. CAI continues to earn client loyalty with an NPS of 84, powered by an ITIL-certified team with deep tenure. Together, they offer enterprises a path forward that is modern, resilient, and built for growth.

INTRODUCTION

Traditional networks weren't built for today's reality. They were designed for predictable workloads, static locations, and a slower pace of change. That world is gone.

Enterprises now need networks that can adjust in real-time, are secure by design, and support cloud-native and AI-driven applications. Lumen's portfolio provides this shift. NaaS delivers on-demand connectivity across multi-cloud environments. AON equips optical networks to support AI and latency-sensitive workloads. WAVE provides highcapacity, low-latency transport between data centers and clouds.

CAI ensures these solutions align with business goals, helping organizations modernize without adding risk.

THE MARKET IMPERATIVE

The drivers are clear. AI adoption, cloud migration, and remote work are reshaping demand for network services. Analysts project the global NaaS market will reach \$14.7 billion by 2029. Lumen has already recorded a 31 percent increase in NaaS ports for multi-cloud networking in 2025.

Optical networking is expanding as well. The optical waveguide market is expected to reach \$8.6 billion this year, with growth continuing into the next decade. In the U.S., WAVE services circuits grew eight percent year over year in 2024. With 39 new hyperscaler data centers set to open by the end of 2025, demand for highcapacity transport will only accelerate.

Organizations that continue to operate on outdated infrastructure will be left behind. Those that modernize now gain speed, resilience, and a stronger security posture.

CHALLENGES OF LEGACY NETWORKS

Legacy infrastructure creates bottlenecks. Provisioning is slow, costs are high, and security features are outdated. Outages are harder to recover from, and adding capacity often requires long lead times.

These issues aren't just technical. They affect customer experience, business agility, and the ability to compete. For many enterprises, legacy networks have become liabilities.

THE LUMEN APPROACH

Network-as-a-Service (NaaS)

NaaS replaces hardware-heavy models with flexible, on-demand connectivity. Enterprises pay for what they use and scale up or down in minutes. Security features, including DDoS protection and advanced threat intelligence, are integrated. NaaS delivers both agility and efficiency, with direct margins exceeding 80 percent compared to 67–75 percent for legacy services.

Adaptive Optical Networking (AON)

AON brings resilience and performance to optical networks. It is built for data-intensive workloads like AI and real-time analytics. With adaptive capabilities, it ensures traffic is optimized for both speed and reliability.

WAVE Services

WAVE services provide high-capacity optical transport between offices, data centers, and cloud environments. Offering 100G and 400G circuits, they deliver low-latency connections essential for trading, healthcare, and AI applications. Industry growth is fueled by hyperscaler expansion and global cable builds, including 161,100 km of new submarine cable capacity expected in 2025.

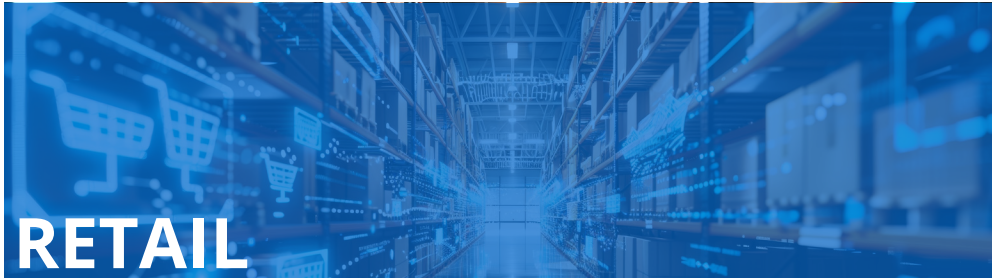
HOW MODERNIZATION HAPPENS

Successful modernization starts with a clear assessment of current infrastructure and its limitations. The next step is aligning solutions with business needs—whether that's agile cloud access through NaaS, highspeed transport through WAVE, or resilient optical performance through AON.

Implementation should minimize disruption. With CAI's consultative approach, clients benefit from phased rollouts, close alignment between IT and business leaders, and a focus on measurable outcomes.

The results are tracked against KPIs such as deployment speed, uptime, cost savings, and customer satisfaction.

CLIENT SUCCESS STORIES



RETAIL

A Midwest retail chain modernized with Lumen's NaaS. Deployment times improved by 25 percent, network costs dropped 40 percent, and customer experience improved with more resilient digital operations.



FINANCIAL SERVICES

A financial services firm implemented WAVE to support multi-cloud trading applications. Latency dropped to under five milliseconds, enabling faster trades and stronger security through built-in DDoS defense.



HEALTHCARE

A regional healthcare provider adopted AON to support secure imaging and telemedicine. The outcome: zero breaches, faster image sharing, and higher patient satisfaction scores.

OVERCOMING BARRIERS

The biggest barrier is often perception. Many organizations still see network modernization as a “telecom upgrade” rather than a strategic initiative. CAI helps executives see the difference by connecting outcomes—cost control, risk reduction, customer experience—to modern architectures.

Internal alignment is another challenge. Business leaders want agility, IT leaders want security, and budgets demand efficiency. CAI bridges these perspectives, ensuring decisions are clear and outcomes are tangible.

STRATEGIC GUIDANCE

Modernization is no longer optional. Organizations that delay will pay more for less flexibility. The practical approach is to begin with NaaS and WAVE for immediate gains, then extend into AON as AI and data demands grow.

Partnership matters. CAI and Lumen bring together proven platforms and consultative expertise. The result is networks that support business goals, not just IT requirements.

CONCLUSION

Enterprises that move away from legacy infrastructure position themselves for speed, resilience, and security. With Lumen’s NaaS, AON, and WAVE solutions, and CAI’s trusted expertise, modernization is achievable and low risk.

Carrier Access is helping clients across industries move from legacy to leading edge. The question is no longer if modernization should happen, but how quickly.