LUMEN®

The need for rapid and scalable network transformation

Today's enterprises face an unprecedented challenge: AI workloads are growing at 100% CAGR through 2030[1], yet many enterprises are in need of accelerated deployments. This gap between demand and delivery isn't just an IT problem; it's a business crisis.

With only 16% of networks completely ready for AI demands[1], companies are incurring opportunity costs. Every week of delay means lost revenue, competitive disadvantage, and stranded AI investments.

This guide explores how the industry must evolve from traditional procurement models to rapid deployment approaches. It will explain how predefined routes, automated processes, and intelligent network management can accelerate deployment to deliver business value more closely.

AI traffic shows no sign of slowing down as more organizations realize its benefits. AI-enhanced traffic is growing at 31% CAGR and will account for 30-50% of network traffic within three years[1], and most of it is coming from enterprises. Three-quarters of cloud service providers expect enterprise customers to drive the most traffic growth[1].

Enterprises require 100G and 400G bandwidth to meet these traffic demands, and they will soon need 800G connectivity as well. However, they can't wait for extended periods to bring it online.

The hidden cost of slow networks

Delays to network deployments can translate to lost opportunities for organizations eager to capitalize on the benefits of AI. If they have already invested heavily in other parts of their AI infrastructure, then hardware, software, and data assets can sit idle while they wait for infrastructure.

For many companies, this might already be an issue. 45% of enterprises report that they still have significant work to do on their networks before they can fully support AI demands[1].

While companies wait for deployment, their competitors have a window to pull ahead and enjoy return on investment from AI deployments. PricewaterhouseCoopers says that two-thirds of top-performing companies are already realizing value from generative AI in product and service innovation[2]. And it estimates that adopting AI in R&D can reduce time-to-market by 50% and lower costs by almost a third in many industries[2].

It's easy for a market window to close before network infrastructure is ready when dealing with traditional high-speed network deployments.

There are other risks in slow network deployment. Customer experience can suffer if network capacity fails to scale with customer numbers and new services. This is how digital transformation initiatives lose momentum.

[1] Sterling Perrin, "Optical Transport Networks for AI: 2025 Heavy Reading Survey Analysis," Heavy Reading white paper produced for Ciena, April 2025

[2] PricewaterhouseCoopers. "2025 AI Business Predictions: PwC." PwC, 2025, https://www.pwc.com/us/en/tech-effect/ai-analytics/ai-predictions.html

Why traditional procurement models are breaking down

The worst part of this is that it's difficult for enterprises to predict and prepare for these problems. Many businesses experiencing delays often only learn about capacity issues after placing orders, thanks to opaque supply-side issues. These issues include engineering bottlenecks. Traditional high-speed network deployment approaches require custom engineering for every route. Frequent exchanges between stakeholders can add days or weeks to deployment timelines.

The same goes for capacity increases to existing network installations. As enterprises plan to move from 100G to 400G and even beyond, they will find themselves repeatedly facing the same challenges. Traditional models can require complete re-engineering for capacity increases.

With one in three North American CSPs citing capacity as a top concern[1], this affects many enterprises around the country.

Coping with the complexity challenge

Companies grappling with initial deployments and upgrades alike rarely do so in a vacuum. Their networks must support both current operations and future growth simultaneously, creating even more complexity for network management at a time when it's already weighing heavily on enterprises. Over a quarter of organizations cite network management as a key challenge[1].

Manual processes create operational drag, while limited visibility into network operations slows response times. Both of these issues make it more difficult for businesses to troubleshoot network issues. A lack of visibility makes it difficult to get ahead of the game, leading to reactive support that can extend network downtime.

What modern businesses actually need

Enterprises have shouldered this burden for long enough. As the speed of business increases and the stakes rise for meeting deployment deadlines, they're looking for speed across the entire lifecycle, from quoting through to network design and deployment. They also need to stay responsive after the network has been installed. Scaling existing network capacity shouldn't feel like a first-time deployment. And network managers should feel in control, with real-time visibility and intelligence about all aspects of network operations.

These requirements drive the business case for network investment, providing faster time to ROI through rapid deployment while also preserving revenue and market position. Quick deployment and greater responsiveness help to improve a company's competitive positioning and enhance its business agility.

Requirements for AI-era networks

Networks that will manage AI traffic extensively have their own particular needs. In a recent Heavy Reading survey analysis, IT decision-makers identified the top AI-era network needs.

55%
Low latency[1]

52%
High bandwidth connectivity[1]

44%
Resiliency and network protection[1]

43%
SLA portals for service monitoring[1]

What an accelerated customer journey looks like with Lumen Wavelength Solutions RapidRoutes℠

Consult

- Predefined ready-to-deploy routes
- Clear capacity visibility upfront
- Digital catalog of available options
- Accelerated feasibility confirmation

Quote

- Near real-time quoting
- Known capacity paths
- Transparent pricing
- Digital marketplace self-service

Deploy

- Industry-leading 20-day SLA*
- Pre-built capacity ready to activate
- Automated provisioning workflows
- Real-time progress tracking

Manage

- 310+ automated workflows
- Proactive issue detection
- AI-driven monitoring
- Automated resolution

How Lumen accelerates your time to value

Lumen's RapidRoutes℠ service transforms deployment speed to clients to days by using predefined routes that eliminate engineering delays. These routes, combined with known capacity paths, enable near real-time quoting for deployments. And when it comes to service delivery, customers enjoy an industry-leading 20-day SLA from contract to service delivery.* A digital marketplace even enables self-service ordering.

Industry-leading 20-Day SLA

Industry-leading deployment agreement. Accelerated time to ROI.

Up to 1.26 PB of new capacity added across key corridors

Lumen has enormous amounts of network capacity in reserve.

*Based on publicly available SLAs and service installation data for major U.S. wavelength providers and market share data from the July 2024 Atlantic-ACM North American Business Connectivity Survey. SLAs may vary by provider, location, and contract terms. 20-business-day service installation starts from the date order and order addendum are fully executed and received by Lumen.

LUMEN®

300+ On-net sites, including 79 locations with 400g capability

Many high-capacity points of presence make it easy to connect.

25 Major metros

Plenty of options for inter-city connectivity.

Enables 50,000+ unique pairings for a-z sites

Expansive reach to meet business needs.

Accelerated multi-cloud and hybrid-cloud connectivity

Direct cloud connectivity to AWS, Azure, Google, Oracle, and IBM.

Speed is your competitive advantage

The gap between network demand and deployment speed isn't just a technical challenge; it's a business imperative. Organizations that solve this challenge will capture the opportunities that AI offers, while those that don't risk watching those possibilities pass them by.

Learn more about **Lumen Wavelengths.**

LUMEN®