

Building America: why AI infrastructure needs more than GPUs and data centers

By [Lumen](#)

Published on Oct 20, 2026 | 12 minute read



AI success depends on more than just models, chips and data centers. In a recent conversation on *The Washington Post*'s "Building America" series, Lumen CEO Kate Johnson shared her perspective on what it will take to move AI from isolated experiments to secure, adaptable operations. Learn why programmable networks, whole-system thinking and workforce readiness are essential to supporting your business's future at scale.

What it takes to make AI work at scale

During a "[Building America](#)" [vodcast](#) with *The Washington Post*, Lumen CEO Kate Johnson described a business's network as "the nervous system" of AI. Her point was simple. To create value, AI at scale needs a digital "brain" that moves data quickly and securely wherever it's needed.

That idea raises a broader question for enterprises: What does it really take to build an AI strategy that works?

The conversation often focuses on a single layer of the stack: the physical infrastructure. How many GPUs are available? Where will the data centers go? How much energy will they require?

Those questions matter, but infrastructure alone isn't enough to harness the full capabilities of AI. Business outcomes depend on how well connected elements work together to move data and deliver timely insights across the places where work, data and decisions happen.

In this blog, you'll learn how:

- Networks shape the way data reaches AI resources.
- Programmable networks help organizations adapt to changing AI workloads.
- AI adoption depends on workforce readiness, not technology alone.

Why AI is an interconnected system

As AI investment accelerates, leaders are learning that buying more technology isn't the same thing as building an AI-first organization.

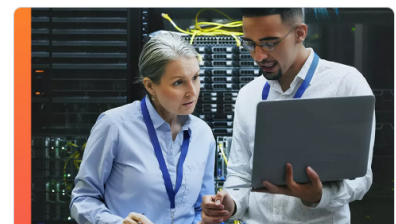
[IDC reported](#) that worldwide spending on AI infrastructure reached \$318 billion in 2025, more than twice the \$153 billion recorded in 2024.¹ But expanding one layer of the technology stack doesn't guarantee that the rest of the environment can support it.

More compute can only do so much if the network can't keep data moving, and broader data access needs the security and governance measures to match. Plus, even the best tools will sit unused if they don't fit the way people work.

In order to turn AI experimentation into tangible benefits, leaders should evaluate AI readiness across all of these connected dimensions:

- **Data:** Is the information accurate, secure and available where it is needed?
- **Compute:** Can workloads reach appropriate processing resources?
- **Connectivity:** Can data move securely, reliably and dynamically across environments?
- **Operations:** Can teams observe the system and respond when conditions change?

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- **People:** Do employees have the skills, authority and support to use AI well?

On paper, these dimensions may seem separate. But in practice, the interactions between them often determine whether AI delivers results or creates new complexity.

In short, the size or speed of the new data center isn't the end of the conversation—it's only one piece of it.

AI networking moves beyond the data center

Organizations quickly may discover that AI functionality doesn't stay neatly in one place. Data may begin at a factory, store or connected device. It may be stored in a private data center, processed in a public cloud and presented to a user somewhere else.

Also, a workload may require specialized compute in one location, access to protected data in another, or a low-latency response near the point of use. The necessary AI enterprise architecture is less like a point-to-point origin and destination—and more like a changing map of data, apps and resources.

This is why the value of a data center depends partly on what it can reach. Compute power goes to waste when data can't get there in time, and even a useful insight loses value if it arrives after the moment to act. If connecting a new location or resource requires a major network redesign, teams may struggle to experiment and adapt at the pace AI demands.

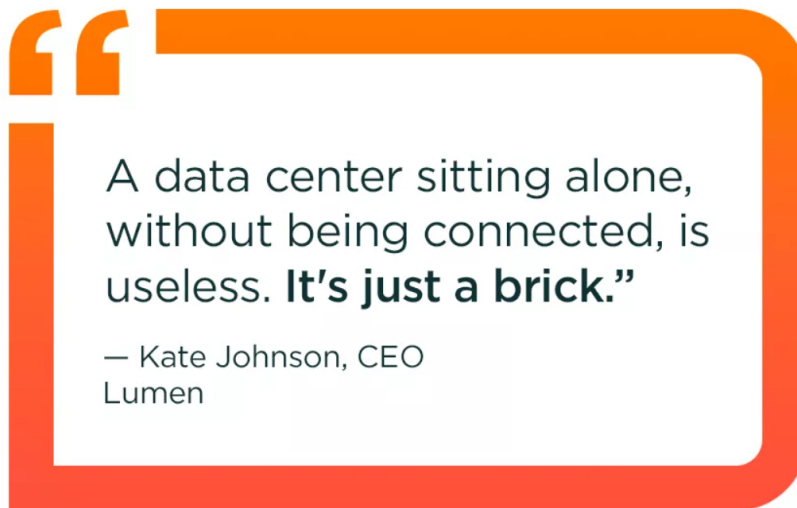


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Connectivity turns AI into action

AI runs on a steady flow of data, but AI workloads place different demands on infrastructure depending on how they're used. Some use cases for AI include:

- **Model training:** Large datasets often move between clouds, data centers and storage environments for bespoke internal models.
- **Inference:** Applications need low-latency access to data and compute resources to generate timely responses.
- **AI agents:** Agents regularly exchange information with applications, databases and other systems to complete tasks.
- **Edge AI:** Data generated in stores, factories, hospitals and branch locations may need to be processed close to where it originates.

The more active and connected these systems become, the more they ask of the network beneath them.

That's why connectivity is part of AI performance itself. Large datasets need enough bandwidth to move efficiently. Low latency helps applications stay responsive, diverse routes help maintain service when a path is disrupted, and security controls help protect sensitive data as it moves.

Connectivity isn't a pipe placed beneath an AI strategy after the important decisions have been made. Instead, it determines which data can reach which resources, how consistently services respond and how readily an organization can change course.

Can traditional networks support AI workloads?

The short answer is no. Traditional networks were [built for a more predictable world](#), when locations and traffic patterns changed slowly and businesses could plan their capacity years

locations and traffic patterns changed slowly and businesses could plan their capacity years in advance.

[Flexential's 2025 survey](#) of more than 350 IT leaders found that **59% of organizations surveyed report bandwidth issues**. The same research found that **62% were planning infrastructure and data center needs one to three years ahead** because of rising demand.²

But AI clearly disrupts the assumption that traditional networks will work for the future of business.

A training project can send huge amounts of data across the network for a short time, while a popular inference service may need more capacity with every new user. And when an experiment proves its value, the business may need to connect new clouds, partners or data sources to bring it into production.

A fixed connection can transport data, but it cannot automatically become more adaptable simply because the workload above it has changed. When every adjustment requires manual coordination, separate tools or a new physical deployment, the network can become a constraint on the pace of the business.

These limitations point to a critical reality: AI requires both capacity *and* flexibility.

How programmable networks revitalize the model

In order for a business to bring cloud-like adaptability to the connections between locations and environments, it needs a programmable network. So what is that, exactly?

It's a software-defined, API-driven network that allows approved connectivity and capacity changes to be controlled digitally rather than handled through fixed configurations and manual processes.

With programmable infrastructure, organizations can:

- **Adjust bandwidth** as workload demands change.
- **Add or modify connections** through digital controls.
- **Connect distributed environments** with less manual coordination.
- **Automate routine changes** while maintaining policies and approvals.
- **Manage network resources centrally** as business needs evolve.

Programmability does not eliminate physical infrastructure. Fiber, equipment and facilities remain essential.

Instead, it adds an **intelligent control layer** that makes those assets easier to use in response to changing requirements compared to legacy systems.

Traditional network: fixed configurations, manual changes, slower adaptation and limited visibility

Programmable network: software-defined controls, automated adjustments, dynamic scalability and centralized management

But as organizations adjust their network strategy, the question shifts from how fast data can move to how safely it can reach its destination.

Why AI security must follow the data

As AI moves across hybrid infrastructure—including users, clouds and data centers—security needs to follow the data rather than remain tied to a single perimeter. In fact, **55% of surveyed companies say that AI has increased exposure to cyberthreats** due to the volume and sensitivity of data.²

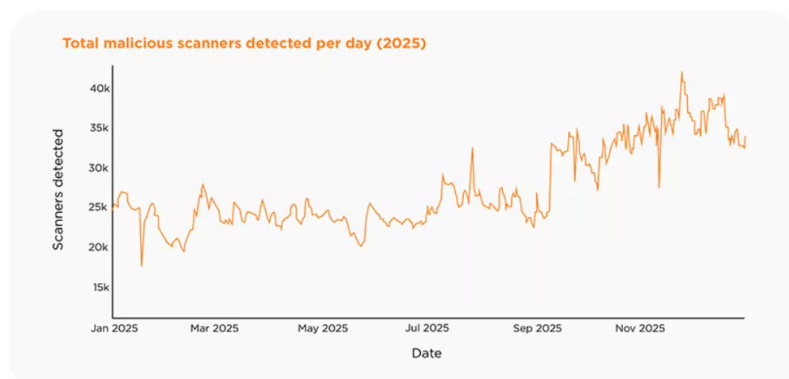


Figure 1. Generative AI helps threat actors unleash attacks faster with automated tasking, scanning, infrastructure rotation and C2 management.³

Organizations therefore need governance policies that secure the pipelines connecting the vital pieces of an AI workflow. Safeguards around model inputs and outputs can help reduce risk and protect sensitive information. And global organizations also must understand where data resides, how it moves and which regulations apply.

Programmable networks can support these goals by applying security policies consistently as connections change—and by making it easy to integrate visibility, threat intelligence and response. Because [the network sees activity across the environment](#), it can reveal patterns that isolated tools may miss, helping teams cut through alert overload, identify the threats that matter and act with greater confidence.

However, not every decision should happen automatically. Policies, approvals and operational guardrails still matter, especially when a change could affect cost, security or business risk.

The objective is to automate routine work and respond fast while keeping people in control of the processes and decisions that matter most.

People turn adaptability into progress

The process of AI transformation can be uncomfortable because the technology is evolving faster than conventional training and planning cycles.

AI adoption asks employees to learn new tools, test unfamiliar approaches and revise established processes at the drop of a hat. According to [the BTS 2026 AI pulse survey](#), **47% of respondents say a lack of skills or confidence is the biggest barrier to adoption.**⁴

But organizations can't place the responsibility for adaptation entirely on individuals.

Leaders need to provide time, access and clear guidance for learning. Employees need safe opportunities to experiment, along with practical training grounded in their roles. Teams also need a way to share what works, examine what doesn't and turn individual discoveries into organizational knowledge.



**We have to be learn-it-alls
instead of know-it-alls.”**

— Kate Johnson, CEO
Lumen

In Johnson's [Daring Diaries series](#), she frames disruption not only as a technology shift, but as a human moment that requires learning, courage and adaptability.

That culture matters because a programmable network and a learning organization share an essential quality: both are designed to adapt as needs change.

As Lumen has learned through our own [culture of human-powered disruption](#), transformation moves forward when people have the tools and support to shape the infrastructure into a system that works for them.

How to build AI infrastructure with Lumen

We're working to meet changing AI demands by [combining physical infrastructure and digital control](#). The result is a dynamic way to connect and manage clouds, data centers and business locations through unified management and on-demand services.

The goal is to make it easy to connect and control clouds, data centers and business locations as needs change. Capabilities such as [Lumen® NaaS](#), [Ethernet Fabric Connect](#), [Multi-Cloud Gateway](#) and [Cloud Interconnect](#) are designed to do exactly that.

And with [our recent acquisition of Alkira](#), the world-class Lumen Network unites with Alkira's cloud-native control plane to deliver private network performance and reach with on-demand, cloud-like flexibility.

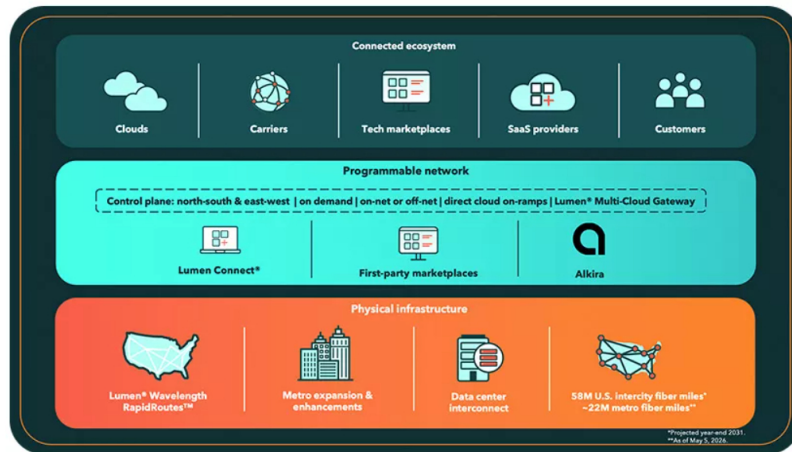


Figure 2. The Lumen Platform consists of physical infrastructure, the programmable network and the connected ecosystem.

While technology may provide the foundation for growth, it won't shape the future of AI alone. It will be shaped by the people who ask the right questions, make thoughtful choices and turn new possibilities into meaningful progress.

If you're thinking about what AI needs next, you've come to the right place.

Explore [Lumen Connectivity Services](#) to see how flexible connectivity can help create a strong network foundation, and hear Kate's perspective on building AI's nervous system in this [Washington Post interview](#).

Discover connectivity

¹IDC, *AI infrastructure spending caps historic year at ~\$90 billion in Q4 2025; 2029 spending to eclipse \$1 trillion*, April 2026.

²Flexential, *2025 state of AI infrastructure report*, 2025.

³Lumen, *The 2026 Lumen Defender Threatscape report infographic*, 2026.

⁴BTS, *2026 AI pulse survey*, June 2026.

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