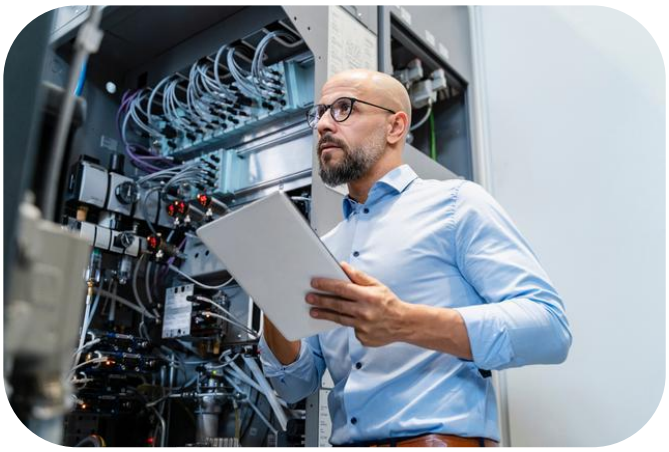
Top use cases for AI-enabled networks

By leveraging the underlying network to support the AI ecosystem, businesses can unlock the benefits of digital transformation today.

CIOs are hearing a lot of buzz these days about artificial intelligence (AI), but they might not have a clear picture of how it can help organizations improve existing business processes and unlock new opportunities for AI-powered innovation.

Just 32% of US organizations have fully implemented a comprehensive digital infrastructure as a core operational capability, according to an IDC InfoBrief[1] survey. That suggests most are still in the early stages of digital transformation.



But there are several use cases that illustrate the business benefits that can accrue when organizations leverage an underlying network designed to support the AI ecosystem, according to Lumen – which is working with businesses to achieve their digital potential across different sectors. These use cases fall into two basic buckets: private extranet and enterprise wide area network (WAN).

Private extranet use cases

Extranet links provide private connectivity between an organization and its suppliers, contractors, and partners.

For example, a credit card company with a business objective to add more retail customers works with a service provider to create a high-speed private fabric that provides connectivity as well as control points for security and policy enforcement.

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When a new retail customer signs on to connect its point-of-sale systems to the network, the retailer is given a digital key that automatically connects its locations to the credit card processing system via application programming interfaces (APIs). The service provider leverages its fiber optic capacity and broad network reach to deliver dedicated, secure bandwidth for real-time transaction processing. In the background, these complex transactions rely on AI systems for features such as fraud detection.
"As organizations move from experimenting with AI to deploying it in real operations, latency becomes critical." says Jim Fowler, chief technology and product officer at Lumen. "If data can't move and be processed in milliseconds, the application simply doesn't work. That's why the network has to be built for high bandwidth and ultra low latency from the ground up."

> "Real time AI only works when the network delivers ultra low latency and high bandwidth."
>
> – **Jim Fowler**
> Chief Technology & Product Officer, Lumen

Other extranet use cases include inventory management and supply chain optimization in industries such as retail and manufacturing. Healthcare is another industry that relies on a data-driven ecosystem that includes entities such as hospitals, physicians, pharmacies, insurers, and claims processors. Healthcare execs have the added responsibility to protect patient data, which makes a private extranet an attractive option.

Extranets can also enable industry-specific collaboration efforts designed to aggregate and analyze large data sets, sometimes known as community clouds or industry clouds. These types of collaborative efforts, common in industries such as automotive, manufacturing, and healthcare, have been hampered in the past by the lack of secure, high-speed connectivity.

Enterprise WAN use cases

Enterprise WAN links provide connectivity between an organization's data centers, edge locations, cloud resources, and remote end users.

Industries such as automotive, healthcare, finance, and manufacturing rely on intricate supply chains that can greatly benefit from virtual private fabric extranets and the creation of robust supply chain ecosystems. However, the increasing volume of traffic in such networks also drives new bandwidth and latency requirements. To meet these demands, solutions such as 100-400G access, enterprise fabric services that connect to the private fabric, private data centers, hyperscalers, and specialized clouds (e.g., storage and security clouds) are essential for interconnecting the ecosystem of partners efficiently and securely.

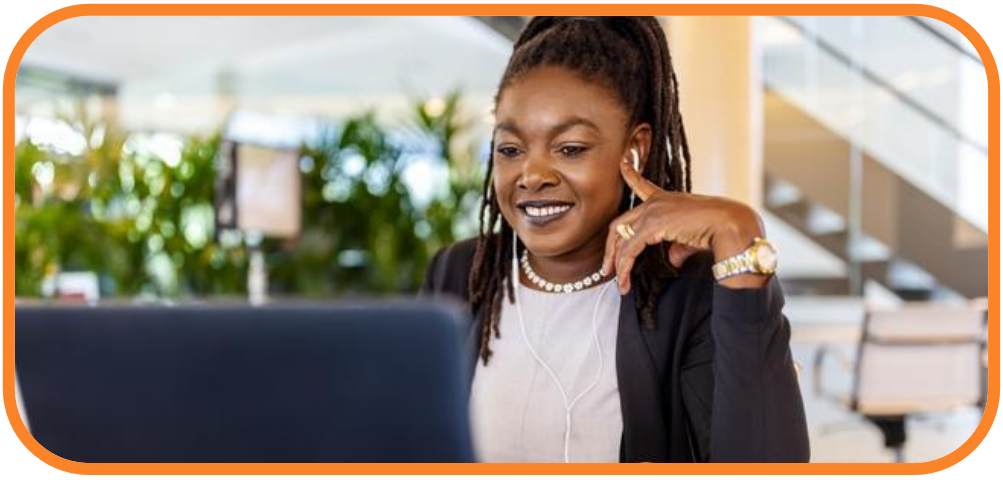
Meanwhile, in healthcare, enterprise WAN enables use cases such as telemedicine and remote patient monitoring of AI-enabled wearables.

Another powerful AI-enabled use case that spans multiple industries is the customer service chatbot. As the technology improves, chatbots will take on higher-level functions beyond simply answering basic questions; they will have a deeper understanding of the customer and will be able to provide personalized recommendations and consulting services.

"Enterprises need a broad WAN and routes to support the growth of AI data. That should include connectivity and essential services like cloud and security, allowing for customized and efficient network solutions tailored to specific business needs," says Ward.

Future use cases

AI is expected to unlock new business opportunities and use cases we haven't even thought of. But we do know that the future will include AI systems talking to other AI systems across hybrid, edge, and multicloud environments. And enterprises need to have an AI-ready network in place in order to take advantage of these new opportunities.



"When you're moving massive data sets into GPU environments, the limiting factor isn't compute- it's the network" says Fowler. "On a traditional 10 gig circuit, moving a petabyte of data can take days. At 400 gig speeds, that same transfer takes hours. That difference determines whether expensive GPU resources are productive or sitting idle. This is why high capacity networks are foundational for AI workloads."

Lumen Private Connectivity Fabric℠ (PCF) addresses today's AI data needs without sacrificing performance or security. The fabric includes an adaptable, scalable network that enables customers to layer in or integrate various solutions for a customized connectivity experience. It starts with high-speed connectivity, offering multiple options for expanding and completing the fabric, based on specific needs.

Learn more at Lumen.com/PCF.

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Footnote(s)/Disclaimer(s)

1. IDC InfoBrief: "Empowering Digital Transformation."

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