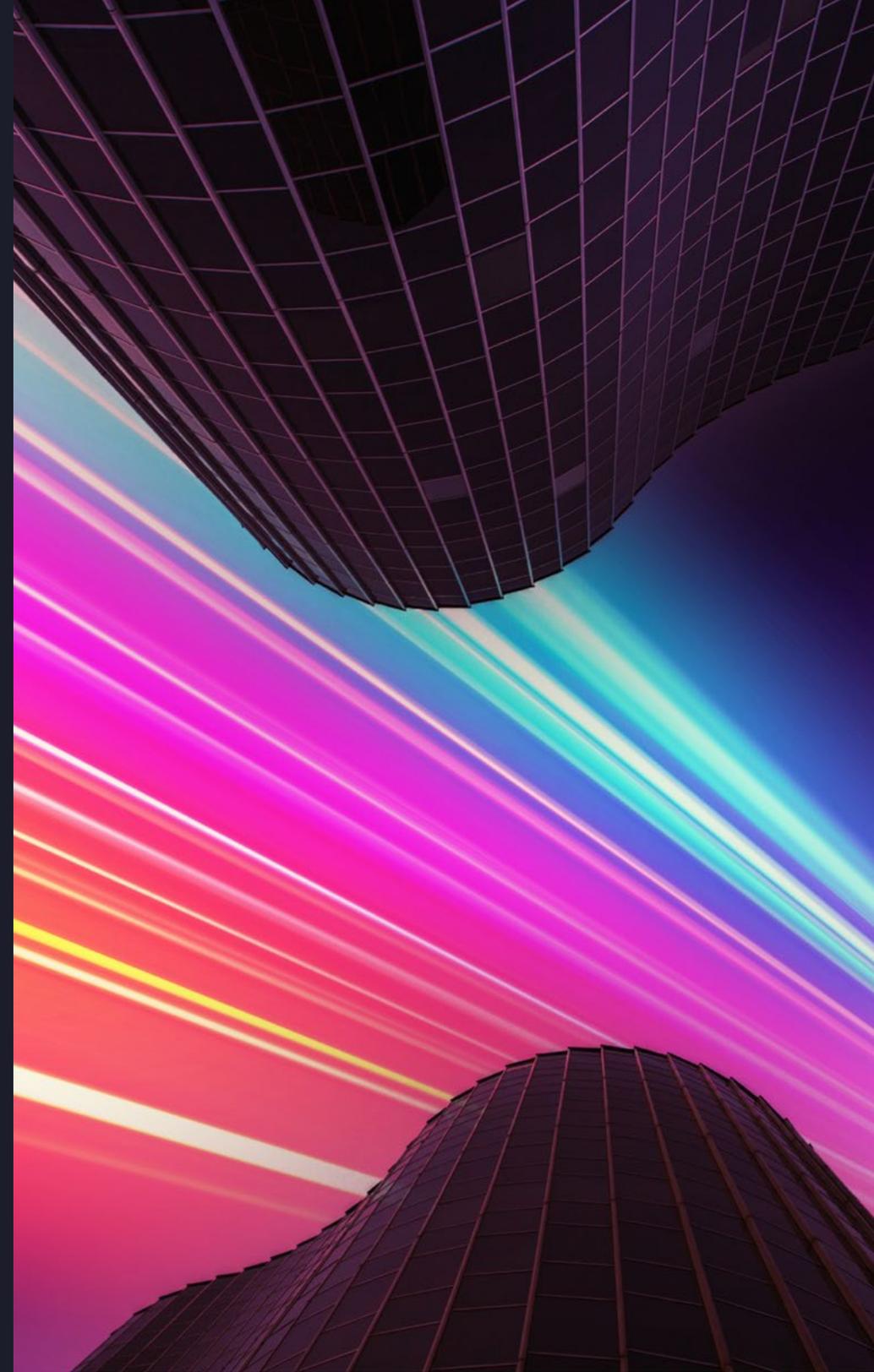




Next-Gen Metro and Edge

Global Connectivity Use Cases

*Aggregation and converged connectivity—
bridging the digital divide*



Connectivity requirements for home, work, and remote subscribers vary. However, operators constantly need to expand utilization for fiber, ports, and other valuable network assets while maximizing network efficiency and driving the bottom line.

Next-generation metro and edge technologies—specifically those that can aggregate multiple traffic types and services on the same converged access infrastructure—can help increase network efficiency, scalability, and performance. These technologies are providing fast, reliable connectivity to:

- Support digital inclusion
- Help connect loved ones, families, friends, and communities
- Enable seamless home and remote working experiences

Converged access infrastructure— a different approach

Business and consumer customers are replacing legacy voice with mobile, consumer, or residential EPON/GPON with XGS-PON, and business services with internet connectivity as a dial-tone. While 10G PON (XGS-PON and 10GE PON) brings 10 times the symmetrical bandwidth, traditional chassis-based PON architectures can only be used to deliver a single service: typically residential broadband. It is not an ideal solution as it reduces the revenue potential of infrastructure investments, by requiring separate networks to deliver residential, business Ethernet, and mobile xHaul services. Ciena's Universal Aggregation (UA) and 10G XGS-PON solutions are helping operators overcome these challenges.

Operators can build an access network once and sell it three times

Building converged access infrastructure allows operators to support multiple service and traffic types—including home, work, remote, and mobile connectivity—on the same highly efficient architecture.



Fiber to the Home

With use of high-bandwidth work and entertainment applications from home at an all-time high, especially since the pandemic, there is a rapidly growing demand for fast, highly reliable Small Office/Home Office (SOHO) networks. Connected home applications have resulted in a proliferation of smart devices attached to home Wi-Fi networks, further increasing capacity and reliability requirements.

Residential broadband for all
Learn more



An example of the Fiber to the Home (FTTH) approach in action is in the U.K. **Openreach**—a division of BT that is responsible for improving the country's 'first-mile' access—has been able to increase available capacity on its fiber network by a factor of four, allowing connections to be scaled in increments of 100G.

"Our customers require agile networks and customizable solutions to meet demands and manage costs. Ciena's solutions make it possible for us to deliver faster, more agile, resilient services for our customers in a shorter time frame—and will help us meet increasing bandwidth needed aligned with our recently announced plans to expand our FTTP [Fiber To The Premise] footprint to 25 million premises by 2026."

—Peter Bell, Openreach Director of Network Technology





Work, business Ethernet, and closing the digital divide

The ability for businesses of all sizes to access fast, reliable broadband connections is the foundation for economic growth and development. By providing these kinds of services, operators can help close the digital divide between rural towns, cities, regions, and entire countries—supporting fast, reliable communications that help drive digital participation and support companies' growth strategies.

[Ciena Services for broadband access](#)
Learn more



This is exactly what U.S. operator [Summit Broadband](#) is doing by creating data superhighways encircling the Florida peninsula, constructing a network that can adapt to the incredible increase in data consumption from end-users with the speed and simplicity needed to deliver reliable, high-bandwidth services for its customers.

"We chose to invest in deploying Ciena's cutting-edge solutions to bring an enhanced digital experience across Florida, connecting more people and businesses using higher speeds and lower latency services." — Kevin Coyne, CEO of Summit Broadband

Another example is found in Mexico where the leading telecommunications operator, [Bestel](#), is closing the digital gap by providing more reliable connectivity solutions to private and public sector organizations in 32 states across the country.

Bestel's work with Ciena will ensure that rural and regional communities across Mexico have access to faster and improved digital services that are essential to their everyday lives.





Remote and mobile connectivity

Connectivity is vital for full participation in today's digital society and economy. This creates a particular challenge for areas like rural locations that do not have access to fiber networks. The good news is that by optimizing network efficiency with Ciena's UA solution while increasing edge capabilities and fiber and port utilization, operators can deliver residential and business bandwidth services to remote areas and seamlessly aggregate and transport traffic from mobile networks to drive new revenue opportunities.

An example of an operator overcoming deployment challenges and connecting residential and business customers in rural areas is **Cherry Capital Communications**. Based in Elk Rapids, Michigan, it is using Ciena's technology to bring 'gig-speed' access to homes and small businesses in this rural part of the U.S.

"In rural rollouts especially, it's common to encounter space constraints and intemperate weather. Ciena's dense, hardened, easy-to-manage solution helped us simplify and de-risk our journey. Particularly, Ciena's pluggable OLT [Optical Line Terminal] modules have allowed us to reduce transport costs, footprint, and power consumption—key to our economics."
—Tim Maylone, CEO of Cherry Capital Communications

In another major project, **Piauí Conectado**, a public private telecoms provider serving the state of Piauí in northeast Brazil, is delivering high-speed fiber broadband services to citizens, schools, hospitals, and law enforcement agencies—helping to drive improved health, safety, and education outcomes.

"The first project of its kind in Brazil, our network vitally improves internet availability and quality, bettering educational, public service, healthcare, and entrepreneurship opportunities for the citizens of Piauí."—Emerson Silva, President of Piauí Conectado

Take the next step to own the edge

Operators face a constant struggle to keep pace with the ever-growing demand for fast, symmetrical, reliable broadband services while at the same time maximizing commercial opportunities. Ciena understands these challenges, and its approach to converged access infrastructure can support major increases in network scalability and efficiency and offer additional revenue potential.

Further information can be found in [this infobrief](#) or on [our blog](#).

Next-gen metro and edge use cases

Take a deep dive



Ciena may make changes at any time to the products or specifications contained herein without notice. Ciena and the Ciena Logo are trademarks or registered trademarks of Ciena Corporation in the U.S. and other countries. A complete list of Ciena's trademarks is available at www.ciena.com. Third-party trademarks are the property of their respective owners and do not imply a partnership between Ciena and any other company. Copyright © 2023 Ciena® Corporation. All rights reserved. EB011 1.2023



Customer case studies

How Ciena is helping Openreach revolutionize connectivity services for UK carriers

[Read more](#)

Bestel reduces digital gap in Mexico with Ciena technology

[Read more](#)

Summit Broadband expands network across Florida with Ciena's Adaptive IP

[Read more](#)

Town of Dryden to become one of New York's first municipal broadband providers

[Read more](#)

Cullman Electric powers Gigabit Broadband speeds to rural Alabama with Ciena

[Read more](#)

Piauí Conectado: Advancing digitalization in Brazil

[Read more](#)

Cherry Capital Communications brings gig speeds to rural Michigan

[Read more](#)

Was this content useful?