

Enabling Next-Generation Metro and Edge Networks for Communications Service Providers

Edge networks—including access, aggregation, and cloud—along with metro networks are the new frontier for storage, compute, and connectivity. Consumers and businesses are insatiable in their demand for new services, applications, and content—a trend that shows no sign of slowing down. The global COVID-19 pandemic, which forced the world's population to shift to working, learning, and playing from home, has only accelerated the importance of investments in the edge. But there is a problem.

Metro and edge networks are not designed or managed to enable Communications Service Providers (CSPs) to quickly monetize new applications and opportunities. This paper explores Ciena's perspective on the limitations of these current network architectures and presents a vision for the next generation of metro and edge networks that are designed for growth and opportunity—while delivering an incredible customer experience.

Change brings opportunity

Consuming content at the network edge is nothing new—it has been a topic of discussion for the past few years. Adoption of IoT devices and demand for online entertainment, including gaming and high-definition video streaming, had already been

driving steady growth in the Fiber-to-the-Home (FTTH) market. But the pandemic has changed everything.

As remote learning, commerce, entertainment, and teleworking have become more mainstream due to the pandemic, growth in the FTTH market is surging—and this is likely to be the new normal even after the pandemic subsides. In fact, it is expected that the global FTTH market, valued at about \$10.4B in 2018, will see a growth rate of more than 15 percent from 2019 to 2026.¹

At the same time, enterprises are fundamentally changing the way they work, which is impacting the services they need. In fact, there is a shift in the enterprise services mix from network-based and private line to fixed broadband, such as xDSL, DOCSIS, PON, FWA, and DIA; public IP/DIA; and cloud-based services, such as SD-WAN, SASE, VNF, and 5G private networks. Layer on top of this the fact that 5G can enable an almost unlimited number of new services and applications, and the net result is a market primed for new revenue opportunities—but also heightened competition.

Capitalizing on these opportunities requires CSPs to improve their competitive advantage—now. And that boils down to creating an incredible customer experience that drives loyalty and deeper engagement with content and connectivity services. CSPs can no longer take months to bring new services to market when cloud service providers can do so in a few hours or less. At the same time, CSPs must be able to effectively monetize new services and applications that delight customers, and of course, do all of this with greater levels of automation and efficiency.

As CSPs begin to tackle the new market opportunities and challenges in front of them, all attention is turning to the network edge, where consumers, businesses, and machines create and consume content.

¹ MarketWatch, "Fiber To The Home (FTTH) Market", April 2021, <https://www.marketwatch.com/press-release/fiber-to-the-home-ftth-industry-size-2021-research-report-by-market-scope-market-segmentation-research-method-competition-analysis-and-forecast-to-2026-2021-04-19>