

DTC Upgrades to AXOS 60 Percent Faster and Boosts Network Speeds 10x With Calix Solution

The Challenge

Keeping Pace With the Competition

The DeKalb Telephone Cooperative (DTC) has served rural communities across Tennessee with connectivity services for over 70 years and today serves five counties at the heart of the state. In recent years, DTC has focused on upgrading its footprint from copper-based technologies such as ADSL to fiber to the home (FTTH) to offer a faster, more reliable service. Around 70 percent of DTC's subscriber base has recently upgraded to fiber.

DTC aims to offer the best service experience possible to attract and retain subscribers. As a broadband service provider (BSP), DTC faced increasing competition from larger rivals, particularly in more urban areas. Moreover, they needed to respond to subscriber demands for faster speeds and value-added service offerings. Consumer trends—like working from home, video streaming, and online gaming—have fueled demand for reliable connectivity and broadband services. DTC's business customers also required higher speeds and greater reliability to support their operations.

DTC needed to upgrade its fiber network from point-to-point active ethernet (AE) to a multi-passive optical network (PON)—GPON, XGS-PON network—that was faster, operationally efficient, and future-proof. As a Calix customer, this required DTC to upgrade from EXA to AXOS, a software-defined access network operating system, enabling the BSP to operate more efficiently and deliver up to 10 Gbps speeds (10x what was possible on the previous network!).

As part of the transition, DTC needed to upgrade 900 active subscribers. DTC needed to ensure its network remained up and running during the switchover and that subscribers didn't experience disruptions outside planned maintenance windows.



COMPANY

DTC Communications

LOCATION

Alexandria, Tennessee

SERVICES

Voice, high-speed internet, TV, security, business services

WEBSITE

www.dtccom.net



The Solution

Harnessing the Power of the Intelligent Access EDGE Solution

By upgrading to AXOS and the Intelligent Access EDGE solution, DTC dramatically simplified its operations by taking advantage of a fully abstracted service layer, hardware independence, common service operational models, and automated workflows—as well as a stateful, always-on environment. The new network was powered by the flexible and highly scalable E7-2 Intelligent Access EDGE Modular System on the Access system side.

DTC leveraged the power of the Intelligence Access EDGE solution to accomplish several objectives:

- Provide a simple network to deliver multi-gig broadband and managed services.
- Automate service and subscriber management capabilities via the Calix Services Management Connector (SMx).
- Reduce the power consumption, cooling, and space required to service subscribers.
- Enhance operational efficiencies, including advanced alarm workflow capabilities to reduce truck rolls.
- Leverage analytics and insights proactively to address network issues before they result in trouble tickets.

DTC partnered with the Calix Professional Services team to develop a multi-stage upgrade plan that would enable DTC to get up and running quickly with 10G PON services. This plan sought to:

- Evaluate the current network configuration, and test new equipment and processes in a controlled laboratory setting.
- Deploy and activate Calix AXOS E-Series systems featuring multi-PON modules able to accommodate both legacy and 10G PON.
- Set up CMS/EXA subscribers on the new network by pre-provisioning them via the SMx.
- Transition from EXA to AXOS by enabling existing subscriber services to be identified and mapped on the new network. Customized tools and scripts within the AXOS platform accelerated this process.
- Test and validate the new system in real-time during a maintenance window.

The upgrade occurred within DTC's central offices, avoiding expensive truck rolls to dispatch field technicians to individual ONTs. DTC could also fine-tune the process by taking a phased approach as they upgraded ONTs in increasingly larger batches to accelerate the project.

"Working with Calix Professional Services meant we didn't need to reinvent the wheel. They had all the templates we needed, which we could adapt to our network. This enabled our network technicians to rapidly improve our own processes when deploying the new technology. We would recommend working with Calix from both a time-saving and labor-saving perspective."

**Edward Massey,
Network and Central
Office Manager,
DTC Communications**





Case Study

The Results

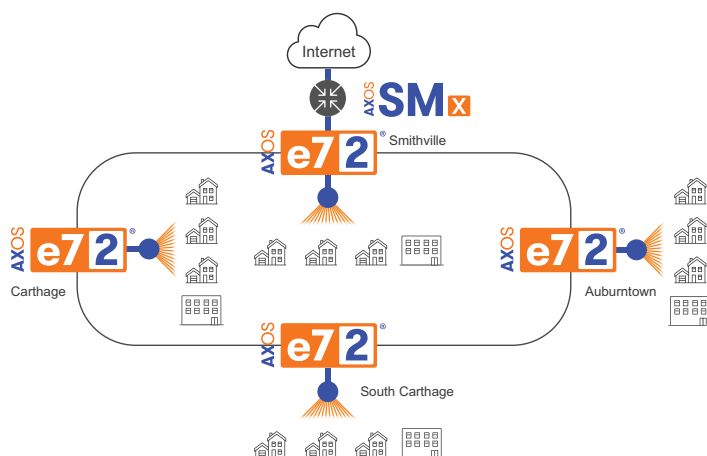
A Future-Proofed Network That Is 10x Faster

DTC's migration plan dramatically accelerated the network upgrade and minimized impacts on existing subscribers. In fact, by working with Calix Professional Services, DTC reduced the project timeline by seven weeks (cutting the timeframe from five to just two months!). This meant that maintenance windows were limited to one month, with research to identify the least disruptive periods for downtime. Extensive lab testing also contributed to fewer subscriber-impacting migration issues than expected—and during the transition period, DTC's support team received fewer than 25 trouble tickets. Furthermore, after implementing the new solution, DTC experienced a significant decrease of 41 percent in trouble tickets compared to the previous year. This has resulted in greater operational efficiency and has allowed resources to dedicate more time to network growth projects.

DTC also realized additional advantages by partnering with Calix Professional Services. First was better management of internal resources for mission-critical projects instead of stretching existing teams across multiple upgrade projects. Calix also shared critical knowledge with DTC's operational teams to equip them with the necessary skills and best practices to manage the new network moving forward. Finally, DTC performed the upgrade significantly faster and more cost-effectively than if it had proceeded independently. The Calix team has extensive experience with this upgrade type, having previously migrated over 100,000 GPON and AE lines.

This simplified approach allowed DTC to reduce the number of pieces of equipment in their access network and save space in central offices and cabinets. Only four AXOS E7-2 systems were needed to power the new network, replacing around 24 EXA B6 systems in the earlier network, a 95 percent reduction in floor space. The upgraded network serves more subscribers per PON port, reducing multiple shelves in central offices to just two. This also resulted in a greater than 24 percent power and cooling reduction.

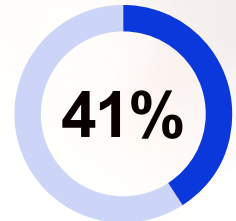
DTC could future-proof its network by upgrading to Calix Intelligent Access EDGE. DTC can now expand services at the subscriber pace and achieve speeds 10x faster than before while benefiting from a simplified and operationally efficient network.



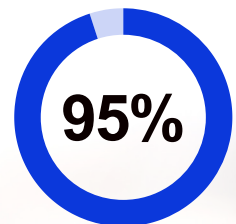
Contact us today for a Network Consult to learn how AXOS can help accelerate your business transformation.

10x

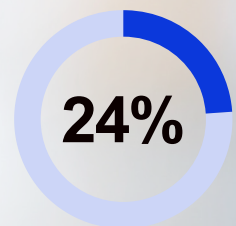
Faster Network



Decrease in
Trouble Tickets



Reduction in
Floor Space



Reduction in
Power and Cooling