A BRIGHT FUTURE FOR BRIGHT HOUSE NETWORKS

10G EPON fiber access solution from Alcatel-Lucent ensures the cable operator can meet the growing needs of its commercial business customers

Independently held Bright House Networks is the sixth largest owner and operator of cable systems in the United States and the second largest in Florida. It operates technologically advanced systems in five states, including Florida, Alabama, Indiana, Michigan and California, and serves approximately 2.5 million subscribers with its video, high-speed data, home security and automation and voice services.

The company offers a full suite of customizable, cutting-edge business solutions spanning Internet, MEF-certified Metro Ethernet, Wi-Fi, security, telephony, and video to businesses of all sizes, serving its small- and medium-sized customers primarily with cable infrastructure and its large enterprise customers primarily with fiber. In the enterprise segment, Bright House Networks focuses on five key vertical markets: healthcare; hospitality; education; government; and financial services. Bright House Networks also provides cellular backhaul services over its EPON fiber network to the nation's largest mobile service providers.

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THE CHALLENGE

In 2006, Bright House Networks deployed a 1G Ethernet passive optical network (EPON) to provide connectivity to its enterprise customers and backhaul to mobile service providers. As a fiber-sharing technology, EPON allows Bright House Networks to define and provision multiple customers onto one fiber. It provides customers the bandwidth they require, dedicated to them at all times, both upstream and downstream, without oversubscribing the network.

"We're big fans of EPON because it fundamentally lowers the cost of our last mile infrastructure to provide fiber-based services to commercial businesses," says Craig Cowden, Senior Vice President, Network Engineering, Operations and Enterprise Solutions at Bright House Networks. "It's the gift that keeps on giving. There are benefits from day one."

Demand for bandwidth is increasing among Bright House Networks enterprise customers. As dedicated bandwidth required for mission-critical applications grows, it's clear more capacity is required.

"We see the day coming when many of our customers will want dedicated 1G, multi-G or 10G services," says Cowden. "That's certainly the case with cell backhaul. When we first rolled it out, the typical speed to the tower was 10 Mb to 20 Mb, where now we're routinely deploying 150 Mb, 200 Mb, even 300 Mb per tower, driven by the explosion in data traffic, in particular video streaming to mobile devices. This means you can quickly run out of bandwidth on a 1G EPON platform."

WHY ALCATEL-LUCENT

Bright House Networks uses a formalized request for proposal (RFP) process to select all of its infrastructure investments, and deciding which vendor would be used to upgrade the EPON network from 1G to 10G was no different.

"It was a very competitive process, with multiple equipment manufacturers interested in deploying PON solutions," said Cowden. "We thought Alcatel-Lucent brought a comprehensive and aggressive offer – from the RFI, to the RFP, to the lab testing phase, and then on to the financial negotiations. After executing on our process to thoroughly assess competitive offers, we selected Alcatel-Lucent with full confidence in their ability to help us evolve our network to meeting the growing needs of our customers."

Bright House Networks also knew from past experience that Alcatel-Lucent would deliver as promised, having previously helped to deploy their cellular backhaul network that enabled their native IP/MPLS backbone to interface with TDM circuits that were the prevailing cell tower technology at that time.

"Shortly after we deployed our backhaul solution, mobile service providers started to convert to native Ethernet interfaces at the cell towers to get to the much larger bandwidth they needed," said Cowden. "The solution we put in place, which uses the Alcatel-Lucent 7705 and Alcatel-Lucent 7750, enabled circuit emulation across a native Ethernet packet network. Migration from TDM to Ethernet basically became a desktop exercise. Other service providers had real challenges and had to use more expensive and less efficient solutions like Ethernet over SONET, for example."

"Alcatel-Lucent really helped us to be near the leading edge with that solution, and the 10G EPON solution we're currently deploying from Alcatel-Lucent will help match our enterprise customer and cellular backhaul capacity requirements for the foreseeable future," continued Cowden.

THE SOLUTION

Bright House Networks selected the Alcatel-Lucent EPON fiber access solution to upgrade its platforms from 1G to 10G. Comprised of the Alcatel-Lucent 7360 Intelligent Services Access Manager (ISAM) FX product family card and optical network unit (ONU), the solution can simultaneously support multiple fiber technologies (1G EPON, GPON, CWDM-P2P, and 10G-EPON).

The 7360 ISAM FX also has DOCSIS® provisioning of EPON (DPoE™) integrated in the platform which, when deployed, will allow Bright House Networks to more easily provision and support fiber-based services on a greater scale. DPoE reduces operational expenses by allowing service providers to activate and manage EPON-based network services while using DOCSIS-based back office systems. It ensures vendor interoperability between the OLT and CPE devices from various vendors in the EPON ecosystem.

THE BENEFITS

By deploying the Alcatel-Lucent EPON fiber access solution, Bright House Networks can position itself to deliver higher bitrates, use its fiber more efficiently, and capture a greater share of the lucrative commercial services market. DPoE will allow them to use a time-tested, familiar approach to turn up EPON-based services quickly on an automated scale without needing to retrain personnel.

Bright House Networks will initially use 10G EPON services to provide commercial business services for enterprise customers.

Other benefits for Bright House Networks include the ability to offer:

- Purely symmetrical services which are generally not technically feasible with many other access technologies
- Both 1G and multi-G services on the same EPON link
- Higher individual speed services than currently available on a 1G EPON platform
- Guaranteed high-bandwidth throughput for mission-critical end-user applications more ubiquitously and cost-effectively compared to a 1G EPON platform.

By the end of 2014, Bright House Networks expects to have 10G EPON deployed within its entire Florida footprint.

The DPoE capabilities of the solution will enable Bright House Networks to efficiently expand the reach of its fiber services to a larger market. "DPoE will provide us with more options once it's deployed," says Cowden. "Manually provisioning our commercial customers has worked well for us to this point, but the economics provided by the 10G EPON system allow us to offer fiber to an expanding customer base."

NEXT STEPS

While the Alcatel-Lucent 10G EPON fiber access solution is still being deployed within their network, the explosive growth in traffic already has Bright House Networks thinking about the next upgrade.

"EPON is usually between three and five years behind the Ethernet speeds of the core backbone. So while we're deploying 10G EPON systems today, we expect in the next few years that the ecosystem and cost structure will lead eventually to migration to 40G or 100G."

SUMMARY

With the deployment of the Alcatel-Lucent EPON fiber access solution, Bright House Networks has ensured it has the network in place to maintain and grow its business cost effectively. They can offer high quality of service with the high-bandwidth services its commercial business and mobile service provider customers demand.

"We have traditionally been an early investor in next gen network technologies that enable capabilities that set us above the competition," say Cowden. "10G EPON with DPoE continues that legacy, and we look forward to continuing that technology journey to solve our customers' needs."

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