



Case Study:

Campus-Wide Passive Optical LAN Saves Energy

Vision Technologies performed a multi-phase, passive optical network installation at the corporate headquarters of an iconic global leader in the food and beverage industry. A Passive Optical LAN or OLAN, is a fiber-based IT infrastructure that combines the best of standards-based Passive Optical Network (PON) and advanced enterprise Ethernet technologies. The five main pieces of an Optical LAN system are the Optical Line Terminal (OLT), Single-Mode Fiber (SMF) cabling, Passive Optical Splitters, Optical Network Terminal (ONT), and Passive Optical Network Manager.

CHALLENGE

Like many companies, this client wanted to create a next-generation workplace and enterprise IT transport to handle a flex workforce, regardless of the onsite employee count. It was necessary to network the seven-building campus totaling over 450,000 square feet of office space from hardwire to wireless in the most energy-efficient, cost-effective manner due to the client's green initiatives.

SOLUTION

The passive optical network solution was based on Tellabs PON architecture and OCC optical fiber plant cable with CommScope terminations interconnecting the seven buildings. Over 400 optical network terminals and 400 wireless access points were installed across all buildings by project completion.

The headquarters was already a LEED Platinum-certified facility (green/energy efficient), and the migration to PON will further help the company in the LEED category of energy utilization. A PON-based network can save 40-50% on energy usage over a

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INDUSTRY PARTNERS



GSA Schedule 70 Contract # GS-35F-0581R
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Campus-Wide Passive Optical LAN

comparable switch-based network. Additionally, a PON system uses less physical space for network equipment, has a longer service life, and is more secure from tampering and surveillance.

By converting a legacy network to PON and replacing the copper cabling, Vision reduced the overall equipment and maintenance costs, as well as allowed more flexibility in the usage of space.

Highlights

The headend for the network was located in a main distribution frame (MDF). In this location, Vision installed four Tellabs FlexSym Optical Line Terminal Six (OLT6) distribution shelves. The PON endpoints were Tellabs ONT 205 optical network terminals, which each provide four 10/100/1,000 Mbps Ethernet ports and one IEEE 802.3bz and 802.3an port for backbone optical fiber connectivity at speeds up to 10 Gbps (for connection to the headend), ONTs, and 61 WAPs.

PON Installation

- ▶ IDF (distribution point to all floors & connected the endpoint equipment)
- ▶ Edge Power Solutions splitters (connected other IDFs & power supplies)
- ▶ Tellabs Optical LAN equipment (OLT & ONTs)

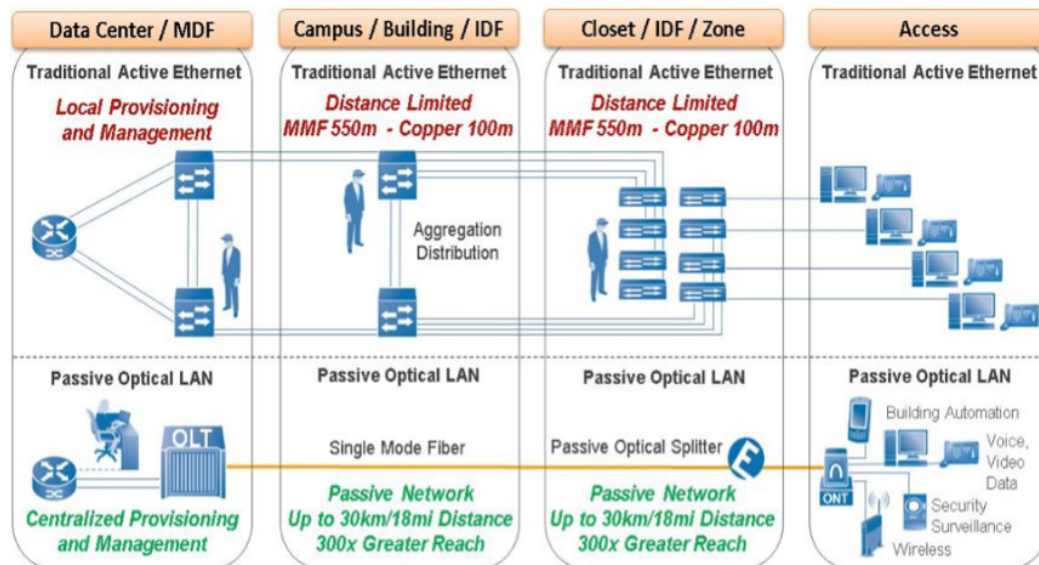
Cable Plant Installation

- ▶ OCC fiber with CommScope terminations
- ▶ Belden power cables (fusion spliced to SM connectors)

BENEFITS OF A PASSIVE OPTICAL NETWORK

- ▶ Unlimited Bandwidth Potential
- ▶ Simplifies Network Operations
- ▶ Frees Up Valuable Network Space
- ▶ Eliminates Telco Closets
- ▶ Scalable and Future Proof
- ▶ Green, Energy Efficient
- ▶ Reduces OpEx, CapEx and TCO

Passive Optical LAN vs. Traditional Optical LAN



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