ZYXEL

Success Story

India Cable MSO Provides High-Speed Broadband Service with Zyxel GPON E2E Solution

INDUSTRY — Cable MSO

CUSTOMER — Cable Vision

REGION — South India

SOLUTIONS — Zyxel GPON Solution

Overview

Challenges

- Deliver Internet and cable TV service to rural and semi-urban areas
- Provide high-speed connectivity to support video, voice, and data services
- Reduce labor and management costs
- Provide superior return on investment
- Provide management and monitoring from a central location

Solutions

- 2U Temperature-Hardened 6-slot Chassis GPON OLT
- GPON Optical Network Unit with 1-port GbE LAN
- Wireless N300 Home Router

Benefits

- Significant power and operating cost savings
- Reduced TCO
- Scalable and future-proof solution
- Centralized management and monitoring
- High-speed connectivity across the network

The Zyxel GPON End-to-End solution helped our organization resolve performance issues and reduce maintenance costs caused by the outdated equipment we had been relying on. Not only did it fix ongoing problems, but it is fully customizable and scalable to meet future challenges. This will allow Cable Vision to provide triple play services to our subscribers in a very efficient manner. Earlier, we were using a switching network to provide Internet service, which was not efficient in terms of management and monitoring.

Mr. Malar
Managing Director of Cable Vision

ZYXEL

Background

Cable Vision is one of southern India's top cable and broadband internet providers, delivering a wide range of telcom and entertainment services. With increased digitalization throughout the country, Cable Vision recently launched broadband services targeting semi-urban and rural areas. Their plan is to deploy FTTH services in four to five phases. In this first phase they planned to reach 250 or more subscribers, with a future goal of exceeding more than 1,000 subscribers..

Challenges

The rapid growth of bandwidth needs and the changing role of enterprise networking can result in disruptive change for enterprise LANs. The major challenge facing Cable Vision was to accommodate high-speed connectivity in support of voice, video, and data services. The network they envisioned would reduce labor-intensive network operation tasks while deploying environmentally friendly solutions. Cable Vision was looking for a solution that would dramatically reduce total cost of ownership (TCO) by moving to a passive optical network based on GPON (Gigabit Passive Optical Network) technology, rather than

continuing to rely on a traditional two- or three-tier switch Ethernet solution.

Another challenge involved the management and monitoring. Cable Vision was looking for a solution in which the company could configure COE to CPE devices from a central location, and one in which multiple OLTs and ONTs could be configured and monitored via a single elementary management system (EMS). Ideally, EMS should provide features to provision the bandwidth profile, ingress profile, and VLAN.

Solutions and Benefits

Zyxel proposed GPON technology to establish a passive infrastructure that would not require any electrical power at the intermediate nodes between the aggregation and the user's nodes. Since there are no active electronic components between the service providers and the end user, particularly in the riser closets, significant power saving is possible, as cooling is not necessary in the riser closets. OLT(Optical Line Terminal) enables symmetrical broadband service delivery to the end-user device, which is ONT(Optical Network Terminal), and end user equipment like IPTV boxes, surveillance cameras, VoIP phones, and laptop computers. It also supports quality of service (QoS) and flexible dynamic bandwidth allocation.

Zyxel supplied fully loaded chassis that supports 250+ subscribers with 50 Mbps download and 50 Mbps upload speeds in current phase, along with scalability up to 400 subscribers in the future at the same bandwidth. The GPON chassis (OLT) with 10G uplink is accompanied by a management workstation (Elementary Management Systems) that provides a graphical user interface (GUI) and command line interface (CLI) for configuration purposes. The ability to manage bit, port, and power levels across the system — in VLANs and groups — and down to individual ports provides performance assurance

that is not available in legacy switch network configurations.

The Zyxel ONT PMG1005-T20A Single Family Unit with GPON port integrates a one-port 10/100/1000 Mbps Ethernet switch. It is a fiber network edge device offering high-performance and long-reach connection services. This allows subscribers to bridge the most popular fiber services with optimized bandwidth from telcos/service providers as well as various applications from the wired LAN.

The Zyxel networking solution supports Cable Vision's vision for the future, helping to create a performance-centric technology environment that allows the community to access the best broadband service available. As a result of this successful initiative, Cable Vision has also recommended Zyxel for projects with other local service providers. Zyxel engineer Mr. Bhairave Maulekhi provided comprehensive planning, design, and implementation services to meet aggressive deployment deadlines. In addition, technical training was conducted at the customer end to educate technical staff in OLT/ONT configuration and EMS integration. After deployment, Zyxel will provide ongoing technical support through the company's toll-free service

ZYXEL

Products Used

OLT2406 • 2U Temperature-Hardened 6-slot Chassis GPON OLT

- ITU-T G.984-compliant GPON ports; each port can supports 64 ONT
- Two management and switch cards plus two power modules redundancy
- Four 10 GbE or two GbE uplink ports
- 10 GbE backplane bandwidth per line card slot for non-blocking service
- Four PON or GbE port per line card
- ITU-T G.984.1 type A and type B protection
- Temperature-hardened
- All front-access and hot-swappable

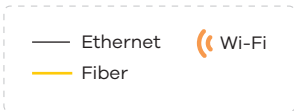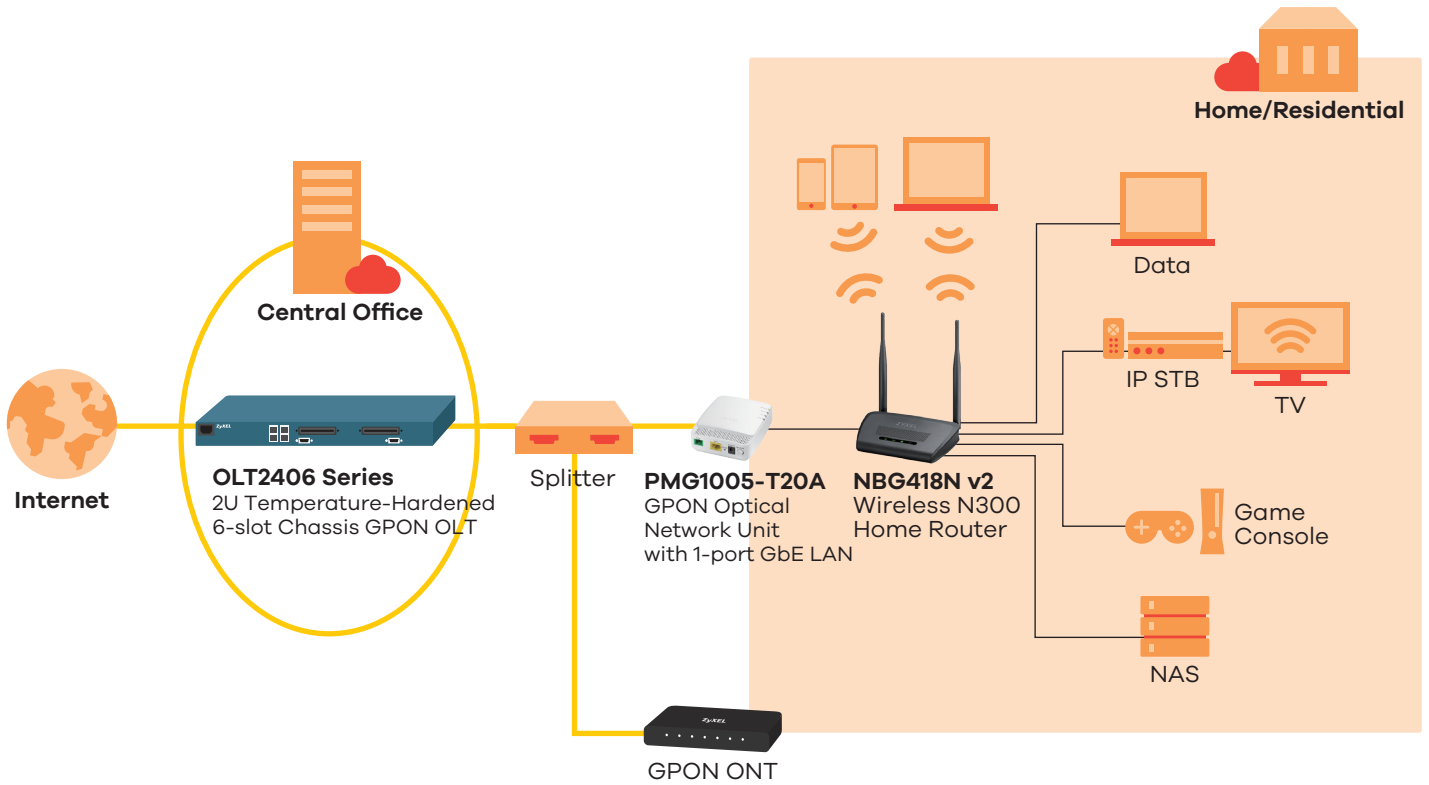### PMG1005-T20A • GPON Optical Network Unit with 1-port GbE LAN

- Integrated Internet services through fiber
- High-speed data access
- QoS ensures service quality
- OMCI remote management

NBG418N v2 • Wireless N300 Home Router

- Compliant with 802.11n with data transfer rates of up to 300 Mbps*
- Two omni 5 dBi antennas boost wireless signals for wider coverage and more stable data transmission
- WPS for quick, easy wireless security setup
- Bandwidth management control to prioritizes home network traffic
- Support for IPv6
- Online Firmware Upgrade service for convenient feature enhancements
- Eco-friendly router help you saves energy

ZYXEL

Diagram

Central Office

OLT2406 Series
2U Temperature-Hardened
6-slot Chassis GPON OLT

Internet

Splitter

PMG1005-T20A
GPON Optical
Network Unit
with 1-port GbE LAN

NBG418N v2
Wireless N300
Home Router

GPON ONT

Home/Residential

Data

IP STB

TV

Game
Console

NAS

—— Ethernet   ((Wi-Fi
—— Fiber

About Zyxel Communications

Focused on innovation and customer-centricity, Zyxel Communications has been connecting people to the Internet for nearly 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for telcos and service providers, business and home users. Zyxel is building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play. Zyxel, Your Networking Ally.