Cambium Networks™

Health Care and Education Connectivity for 150 of the Most Remote Villages

Overview

IN 2002, NEPAL WIRELESS CONNECTED ONE VILLAGE IN THE HIMALAYAN REGION TO THE Internet using a simple Wi-Fi router and homebuilt antenna during its testing phase. After the successful testing it started using wireless broadband Point-to-Point (PTP) link from Cambium Networks. Accessibility to broadband using Cambium radios provided such an improvement in education, health care and safety that the network was expanded to include more villages in the area.

"Our goal is to bring the benefit of information and communication technology to underserved people. We want to increase the digital literacy among the rural people and bridge the digital gap as far as it is possible."

- DR. MAHABIR PUN, TEAM LEADER, NEPAL WIRELESS

The Nepal Wireless network is now serving 150 of the most remote villages in the world and continues to grow rapidly.

Challenge

"BECAUSE OF THE INCREDIBLY CHALLENGING terrain and the small population, no commercial service providers are interested to provide Internet Team Leader. "We are continuing to expand the network. We provide Internet service to villages where there is no means of transportation other than walking."

Nepal Wireless sees this network as much more than a service provider business. Pun says, "This network is not a commercial business. We are doing it for social cause because our goal is to bring the benefit of the information and communication technology to under served people. We want to increase the digital literacy among the rural people and want to bridge the digital gap as far as it is possible."

The terrain is unquestionably the most challenging in the world. "Most of our relay stations are located on the top of high mountains ranging from 3,000 meter to 5,000 meter elevation, and at levels where it snows heavily in the winter," says Pun.

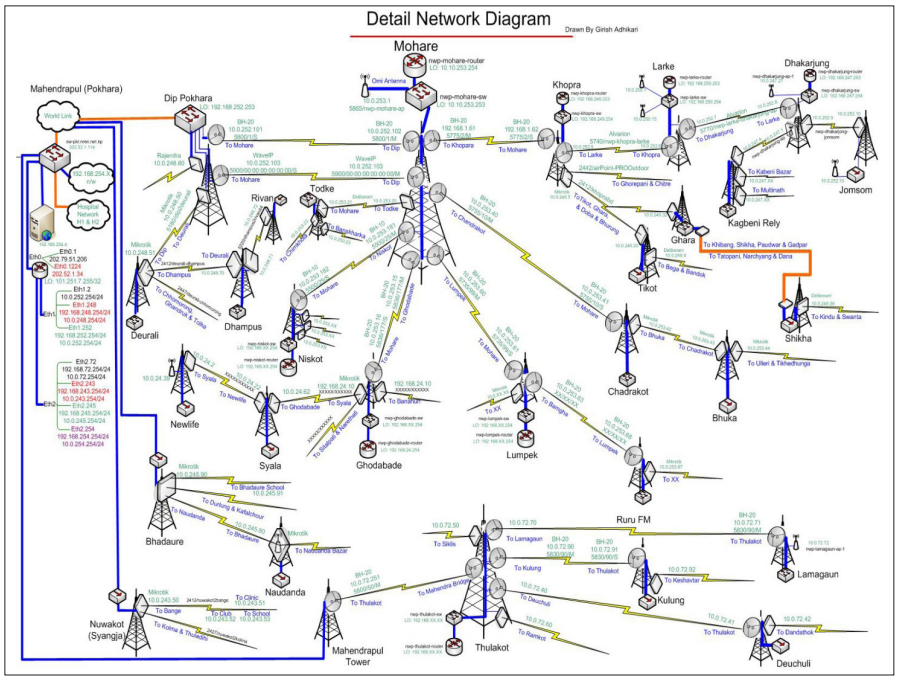
Requirements

BECAUSE THE GEOGRAPHY IS SO CHALLENGING, NEPAL WIRELESS DESIGNED SOLAR powered relay towers. To minimize the costs of equipment and towers, the equipment had to perform at the longest possible ranges between tower locations.

In addition, there was no government funding to create the network, so the solution had to be affordable to purchase and highly reliable to provide the lowest management and maintenance costs.

The network is leveraged to provide a host of connectivity solutions for people in the region:

- Education
- Health care
- Weather station monitoring
- Security and video surveillance cameras
- Climate monitoring sensors
- Local E-commerce



Solution

NEPAL WIRELESS' NETWORK IS COMPRISED MOSTLY OF PTP backhaul links for long range connectivity. The longest link is 59 km. In most cases, the PTP link serves a single remote location.

Where access network connectivity is required, Point-to-Multipoint (PMP) access solutions are used.

These communication centers in the villages provide a location where people who cannot afford computers and Internet access can go and access information.

In addition, the network connects schools and health care clinics to provide the best possible opportunity for the people.

While the number of residents needing connectivity is small in number, lodges where tourists stay show strong demand for connectivity. These lodges are able to satisfy tourists' needs for Internet connectivity.

About Nepal Wireless

CHALLENGE

Provide broadband for education, health care, and e-commerce to rural people in the Himalayan region of Nepal

SOLUTION

- Network of 80 Point-to-Point (PTP) for backbone infrastructure and to connect vital points of communication
- 60 Point-to-Multipoint (PMP) base stations for wide area access network connectivity

Results

THE NETWORK HAS PERFORMED AS DESIGNED, AND THE reliability of the Cambium Networks equipment has lived up to expectation.

"We have installed more than 80 backhaul links, and we have access points and remote modules in the access network. These products are very reliable and very easy to install – that is important in locations where the technicians do not visit frequently," says Pun. "Compared to other 2.4 GHz and 5.8 GHz products available in the market, Cambium's are much more reliable and the performance is great."

APPLICATION

Rural connectivity to connect 150 remote villages

Enabling connectivity for

- Education
- Health Care
- Weather stations
- Network cameras
- Climate sensors
- E-commerce

BENEFITS

- High reliability to perform in harsh environments where travel must be made on foot
- Low latency for video surveillance and video conferencing applications
- Long range connectivity to minimize the number of locations
- Rapidly deployed to connect new locations
- Scalable to increase capabilities and needs evolve