



Bridging the Digital Divide

A pilot project for a Community based internet Service Provider and Services



Project Background

ICT infrastructure/applications and their related deliverables play a vital role in enhancing communities. The digital divide not only prevents communities accessing information and technology, but also has long term socioeconomic impacts. Successfully using ICT bridges the divide and creates a scalable, inclusive and integrated approach, which is critical in community development.

Hence, this project aims to develop a robust digital infrastructure to provide internet access to underserved rural and remote populations. This will be supplemented by identifying and operating relevant applications for these groups. It will require collaboration with multiple government bodies (e.g., local, provincial, federal), as well as the local community in order for wider social benefits to reach individuals. Thus, the entire project will be delivered under a Public-Private Partnership model.

Asi@Connect has made a major contribution to the project. Even more importantly than its grant, it is providing ongoing support and impetus to help deliver a holistic, community-centric, local context driven internet access model. Asi@Connect aims to contribute towards meeting sustainable development goals, which aligns with our project objectives.

Project Partners

Pasang Lhamu Rural Municipality: This local government body will evaluate and supervise the effectiveness of the project. It was actively involved during the survey phase and has provided feedback based on local community needs.



Centre for ICT for Development (ICT4D): A Not-For-Profit organisation, which advocates the application of novel and innovative technology resources. These include digital technologies, broadband and communication infrastructure, and community and region relevant development-oriented applications. Its slogan – “ICT for Development and Empowerment” is indicative of its values and commitment.

Nepal Research and Education Network (NREN): An organisation dedicated to providing high speed internet links between research and education institutions in Nepal. This is a non-commercial network developed to accommodate vast amounts of data for students, researchers and educational institutions, thus accelerating the development of research and education.

Project Area

The proposed network starts at Namche Bazaar, the gateway to Mount Everest, which is at 3400 metres. It runs to Kala Patthar, located at almost 5600 metres. The network passes through major villages along the trail, which not only provide shelter to tourists but also play a vital role in the development of the region, both culturally and economically. The network will reach almost 500 households and provide value added services over IP (e.g., telemedicine, online digital resources, and distance learning).



Project Objectives

The prime objective of the proposed project is to build a robust network in underserved areas, based on a Public-Private Partnership model. The network will be designed to include an interactive platform that connects stakeholders from both the government and the local community.

The proposed network will be deployed in the Himalayan region, which witnesses myriad climatic conditions, which provide valuable data for global climate researchers. The detailed project specifics will be guided by the following principles:

1. Ensure a people-centric approach to create broadband infrastructure and to provide ICT centric solutions that address community requirements.
2. Create a knowledge based society, which contributes to climate change awareness and its impact on local livelihoods.
3. Foster ICT-based knowledge sharing platforms, and develop appropriate ICT-based tools and sustainable models.
4. Develop an effective Climate Regional Information System.
5. Assist researchers in accessing climate change related data. This includes the formation of new glacier lakes within the proposed project area that are indicative of significant global warming.
6. Create a self-sustained project that is operated and maintained by the local community itself.

Proposed Fibre Technology as Backbone

An ITU-T standardised L.110 optical fibre cable with a Corning core is proposed for the backbone network. Fibre strands are well protected through a continuous moulded stainless steel tube along the length of the cable. These characteristics allow for direct burial in any environment (including mud, sand, rock, ice, jungle, air, and water). The 11 mm diameter of the cable makes it lightweight, yet robust enough to ensure that it is rodent resistant and moisture proof. The entire 43 km backhaul network connectivity will run over the L.110 cable.



Challenges

1. Slow moving glaciers, landslides, and natural barriers are amongst the major obstacles.
2. Annual weather patterns allow for two short windows during which fibre installation is possible. Monsoon rains and winter snow render most months almost impossible for project implementation.
3. Human resource management during such an implementation requires careful and meticulous planning and preparation for earthquakes, avalanches, floods, mudslides, general daily weather, and much more.



Overcoming Challenges

1. Asi@Connect has been most generous and extremely supportive in encouraging the project and helping it align its goals to reflect local expectations and realities.
2. Asi@Connect has provided additional insight into overcoming natural physical barriers and ensuring long term sustainability.
3. The project team has been able to create a community mobilisation team with the objective of long term growth.