



Fast Facts

Project: “Chiang-Rai MeshTV”: An Educational Video-on- Demand (EVoD) System for a Rural Hill-Tribe Village via a Community Wireless Mesh Network (CWMN)

Lead Organization: The Internet Education and Research Laboratory (intERLab) Asian Institute of Technology (AIT)

Country: Thailand

Budget: AUD 30,000.00

Situation

The village of Huay Khom, or Bann Huay Khom, with a population of approximately 550 people and 265 households, is located in Mae-Yao district of Chiang Rai province in the northern part of Thailand. Before the beginning of this project, no home in the village has Internet access. Cellular phone signals are weak and unevenly distributed. Cellular voice calls are only possible at a few spots due to geographical obstacles. Cellular data (e.g. 2G/3G/4G) coverage is likewise very spotty and unreliable. Internet and ICT literacy level is therefore undoubtedly among the lowest in the nation.

The village already has electricity supplies. A paved road ends near at the entrance to the village. Many households rely on government-subsidized electricity.

Solution

This project aimed to deploy “Chiang-Rai MeshTV” which is an educational video-on- demand (E-VoD) system running in a Community Wireless Mesh Network (CWMN) for a hill-tribe village known as Huay Khom village. The villagers of Huay Khom are among those having lowest ICT literacy in the nation. The main reason is because of their social status and their living in mountainous terrains that block cellular network signals. This project aimed to experimentally bridge digital divide in Huay Khom, by using a low-cost low-powered and robust CWMN network created by using off-the-shelve networking devices.

1. To deploy and customize a Community Wireless Mesh Network (CWMN) along with relevant wireless intranet-link services in the targeted hill-tribe village using the CWMN routers that IntERLab has already built and tested.
2. To devise and establish an Education Video-on-Demand (E-VoD) system which can run in such Community Wireless Mesh Network, by taking the advantages (or bearing the limitations), which exist in the Community Wireless Mesh Network.
3. To gather, select and create educational video contents, which are suitable for the targeted population in the rural hill-tribe community. Also to make documentary video or other multimedia contents that can help preserve and promote the village’s cultural heritage.



Obtain user feedbacks with the villagers

Outcomes

On the Medium-term Effects:

This project has shown to be effective to get rural villagers with relatively limited ICT literacy background to accept and adopt ICT in their daily lives. Young rural students were particularly the ones attracted to our deployment. They served as a catalyst for their parents to accept our invitation to participate.

Effect of a Series of Achieved Outputs:

The project team has seen the following consequentially effective outputs. First, they now have young volunteers, led by THNICF, who successfully learned and completed the Chiang-Rai MeshTV deployment mission. Secondly, their E-VoD and CWMN systems were successfully deployed. Thirdly, they have attracted a group of E-VoD and CWMN users in the targeted rural community. Fourth, the deployed platform already brings them a number of new research ideas and directions. Many of these ideas have been discussed with EU and international research partners.



IntERLab team identifying the locations of the core mesh routing backbone nodes

Capture the Changes for the Beneficiaries:

First, the villagers of Huay Khom have a new way to access world-class knowledge and digital educational contents. They could do so even from a relatively remote rural community that does not have speedy Internet links. Secondly, the staff members and volunteers at the Mirror Foundation Chiang Rai now have a new tool for their community development programs. They can now capture, create, and disseminate knowledge through video contents. They also have a primitively new 'community-cloud' platform that can be used to further develop rural community application services.

Project Contact

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