

A proposal for operative maintenance planning at ICT infrastructures in rural areas of developing countries

Inés Bebea-González

EHAS Foundation, Universidad Rey Juan Carlos de Madrid

email: ines.bebea@ehas.org

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ICT projects in rural areas of developing countries have an extremely low success ratio in terms of sustainability. The main difficulty arises from the fact that sustainability needs to be simultaneously achieved in several categories: economical, financial, institutional, technological, educational and capacity building, and social and cultural challenges.

The EHAS Foundation has developed various ICT solutions for providing connectivity and communication services in several Latin American countries. In 2005, EHAS deployed a broadband wireless network for the National Health System in the rural Amazonic region of Napo, in Peru. Connectivity was achieved using WiLD (WiFi for Long Distance) technologies, and also some services are provided on top of the network, such as VoIP telephony, videoconferencing, chat and Internet access among others. This network connects 18 health facilities along Napo river (covering a distance larger than 500 km) with Iquitos Regional Hospital, and counts with a strong support and motivation from rural health staff. A mid-term objective at all EHAS projects is to transfer both knowledge and technology of the network to the Public Health System, which is intended not only to use it but also to operate and maintain the system. Although great efforts have been done in the fields of institutional and staff technology acceptance, as well as capacity building for both health and technical staff, since the Napo network is up, EHAS engineers have coped with operation and maintenance of the network.

The aim of this work is to analyze this situation in order to propose a methodology for achieving sustainability of ICT infrastructures deployed in rural isolated regions, via efficient operation, management and maintenance planning for such networks. Already in 2009, EHAS started a project related to the Napo network aiming to implement a Global Operational and Maintenance Plan that will establish: monitoring responsibilities, incidence report and management, reparation schedules, decision making protocols aimed for health masters, network information storage and update, stock and logistics management, and human resources management. Within this project, EHAS expects that the effective assumption of this Plan and all related activities by the local institution, will be a significant advance towards the achievement of sustainability.

Keywords: ICT, WiLD, technological sustainability, network maintenance, isolated regions, developing countries