The eBario Story: ICTs for Rural Development

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***Abstract*—Malaysia's eBario project has had a seminal influence on policy and professional practice in ICT4D for rural development, especially for remote and isolated communities of indigenous minorities. Direct impacts have delivered benefits for improved skills, incomes, health, education, cultural preservation, agriculture and social communications for participating communities. Wider impacts include influence on national policy-making and the operation of development interventions as well as providing important insights into the conduct of ICT4D research that seeks to improve the lives of marginalised and underserved communities.**

Keywords—ICT4D, rural development, indigenous peoples

I. INTRODUCTION

eBario is the name given to an action research project by Universiti Malaysia Sarawak (UNIMAS) which began in 1998. Its objective was to demonstrate the opportunities for sustainable development in a remote and isolated rural community from the use of Information and Communication Technologies (ICTs), and to test how they could be applied to the problems and opportunities for development among communities of indigenous minorities. The project provided public telephones, computers and internet access for two schools and a community telecentre in the village of Bario. Access to the internet was via satellite and electrical power was provided with a combination of solar panels and a diesel-powered generator. The impacts of the project – both direct and indirect – have been considerable, delivering useful lessons at community, regional, national and international levels for the conduct of similar ICT interventions as well as for the means of using research to influence policy formulation and professional practice towards desirable outcomes for ICTs for development (ICT4D). In this article, we will outline the major activities, milestones, outcomes and lessons learned from the project. As each author has been directly involved from its outset, the article draws on a range of material, from formal research results to community workshop outputs and field observations.

Bario is an isolated and remote village in the Kelabit Highlands of northern Sarawak, one of the two East-Malaysian states on the island of Borneo. The area is the heartland of the Kelabit indigenous minority, one of Malaysia's smallest, and around 1,000 of the total 5,000 Kelabits live in the area. The lifestyle is typified by communal longhouses and wet-padi rice farming that is supplemented by hunting and gathering in the surrounding tropical rainforest. At the start of the eBario project, communications with the outside world were rudimentary. There were no roads connecting Bario to any other community. Access was by 20-seat Twin-Otter aircraft operated by the Malaysian Airlines Rural Air Service with around five flights per week. A cumbersome short-wave radio service was connected to the national telephone system. Being off-grid, all electrical power came from small-scale generators. The researchers soon discovered that the internet was unheard of and no-one had any knowledge of computers.

Simultaneously, the Government of Malaysia had proclaimed its Vision 2020 whereby the nation would achieve fully-developed status and it had established a Multi-Media Super Corridor that promised ICT-based development for all. Such initiatives sat in stark contrast to the daily experiences of many rural residents and particularly to the many isolated communities across the country who were starved of public services.

II. MILESTONES

The research study began by obtaining permission from the community leaders and this was followed by a household study that yielded base-line data for project guidance and outcome monitoring. Computers were initially introduced into the lower-secondary school, based on the widely-accepted notion that children would gain real benefits from them and against the background that the Ministry of Education was vigorously promoting e-learning. It also helped considerably that the school principal was strongly in favour of the research and supportive of having the technology in the school. Later, the facilities were replicated in the primary school and a community telecentre was established. This contained eight computers with internet access and printing facilities. Training in the use of the equipment was provided to anyone with interest.

In a short time, the benefits that internet connectivity provided quickly became apparent, mainly in terms of easy communication with family, friends and colleagues in the towns and cities of the rest of Malaysia. Another early impact was a boost to local community-based eco-tourism whereby the internet was used to promote local homestays and eco-tourism activities. Operators were no longer dependent on town-based agents to bring business as they were able to connect directly with any client having internet access. Additionally, the local clinic became a keen internet user; contacting the nearest hospitals on a variety of health-related matters.

As reports by the UNIMAS researchers began to emerge in global forums, various international bodies took notice of the project. The International Telecommunications Union (ITU) prepared a report in which eBario was proclaimed as "one of Malaysia's most significant Internet development projects" [1]. In 2006, UNESCAP published a Guidebook on Developing Community E-Centres in Rural Areas: Based on