

LONG LAMAI COMMUNITY ICT4D E-COMMERCE SYSTEM MODELLING: AN AGENT ORIENTED ROLE-BASED APPROACH

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ABSTRACT

This paper presents the post-mortem report upon completion of the Long Lamai e-commerce development project. Some weaknesses with regards to the current software modelling approach are identified and an alternative role-based approach is proposed. We argue that the existing software modelling technique is not suitable for modelling, making it difficult to establish a good contract between stakeholders causing delays in the project delivery. The role-based approach is able to explicitly highlight the responsibilities among stakeholders, while also forming the contract agreement among them leading towards sustainable ICT4D.

1. INTRODUCTION

Information and Communication Technologies for Development (ICT4D) is an initiative to bridge the digital divide and improve economic development for rural communities, by providing access to up-to-date information and communication technologies. Rural communities can be characterized by: (i) being remotely located; (ii) difficulty to access via most means of transportation; (iii) disconnected in terms of communications; (iv) having low household income; (v) having limited or no public utilities such as schools, health clinics, banks, government services, electricity, phone lines etc.; (v) a lack in language variation (community members primarily peak the local language/dialect); (vi) low literacy in terms of reading and writing; and (vii) low ICT literacy (Pitula et al., 2007).

In Sarawak, various initiatives have been launched for rural communities. The most common is the telecentre projects where the focus was in the rural areas of Sarawak since the year 2000. Bario was the first remote location in Sarawak involved in the telecenter project, where after its inception saw a rise in the community using ICT for products and service promotions.

Throughout the years, Bario's adoption of ICT (especially in the tourism industry) has correlated with an increase in the number of visitors. This has been mainly attributed to the promotion of Bario through web-based applications especially e-commerce. Through e-commerce, business owners were able to market their products and services to the outsiders. This not only allowed them to perform transactions online, but also allowed direct interaction with customers and suppliers anytime and anywhere, primarily through their websites. Online bookings and promotional websites/blogs have played a central role in promoting the tourism industry to outsiders. The 24 x 7 booking systems allow potential customers to place orders on products and services from anywhere and at any time. It reduces the hassle for business owners to maintain manual booking systems as everything is done online. Other tasks that have been digitized are such as product marketing, sales reporting and income/revenue management.

Based on the success at Bario, we were encouraged to adopt a similar approach for the Long Lamai community. However, we discovered that the development approach used at