Technological Innovation and the Adoption of ICT in Thai Universities: A TAM Study Re-Analysed Using ANT

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ABSTRACT

This article makes use of Innovation Translation and Actor-Network Theory to re-analyse a study of Internet usage by academics in Business Schools in Public Universities in Thailand. There are a number of approaches to modelling technology adoption and this article begins by examining these and demonstrating how innovation translation can be useful. The original research, on which this article is based, was conducted in 2006 and analysed using a modified version of the Technology Acceptance Model with the support of techniques from Structured Equation Modelling. The original research suggested that only perceived usefulness, perceived ease of use and self-efficacy significantly influenced actual usage behaviour. After making use of Structured Equation Modelling it then came up with an ‘Internet Acceptance Model’. This article, on the other hand, makes use of the same data but re-analyses it making use of Actor-Network Theory and Innovation Translation. In doing so it identifies some things not shown by the original quantitative research.

Keywords: Academic Work, Adoption, Innovation Translation, Technological Innovation, Technology Acceptance Model (TAM), Thailand

INTRODUCTION

The original research on which this article is based was undertaken in 2006 in Thailand through interviews and surveys of academics in Thai Public Universities. Its aim was to form a better understanding of the determinants of usage behaviour of these academics in relation to Information and Communication Technologies (ICT) to enable Thai higher education institutions to better plan policies and design organisational interventions to increase user acceptance and usage of Internet technologies (Kripanont 2007). It investigated the extent to which academics then used and intended to use the Internet in their work, how academics can...
be motivated to make full use of the Internet in their work and the extent to which using the Internet helps in improving academics' professional practice, professional development and quality of working life.

The original research was analysed using a modified version of the Technology Acceptance Model (TAM), along with the use of Structured Equation Modelling (SEM).

This article uses the original data (surveys and interviews) but re-analyses it in a quite different way through the use of a framework based on innovation translation and actor-network theory (ANT).

THAI UNIVERSITIES, ICT AND THE INTERNET

The Thai public university sector is supported by the government, and higher education institutions are under the supervision of the Office of the Higher Education Commission, Ministry of Education (Commission of Higher Education - Ministry of Education 2007). These universities can be classified into four types with specific patterns of coordination and institutional governance (South East Asian Ministers of Education Organisation, 2007):

- Public universities and institutes;
- Private universities and colleges;
- Other institutes and colleges;
- Specialised training institutions.

Each public university or institute has its own Act empowering the University Council to function as the governing body (Kripanont, 2007). Under the University Council is the President who is responsible for university administration. The President operates the university or institute according to the policy laid down by the University Council. As specified by the University Act, the University Council has the powers and duties to control and supervise the general affairs of the university and is empowered to grant degrees and other qualifications at the institutional level (South East Asian Ministers of Education Organisation, 2007).

Internet Usage

The Internet can be viewed as an electronic community that interacts for leisure, commerce and research (Davison, Burgess & Tatnall 2004). Although it has existed for over 30 years, its popularity world-wide began to accelerate quite recently. Internet World Stats (Miniwatts Marketing Group 2013) notes that in 2012 world population was just over 7,000 million people, with 2,400 million (34.3%) being users of the Internet. This figure has increased dramatically since 2006 when 15.7% of all people in the world used the Internet, accounting for 1,023 million people from a total population of 6,500 million (MIniwatts Marketing Group 2006).

In Thailand (population 69 million) Internet penetration is now (2013) up to 30% (MIniwatts Marketing Group 2006), but in 2006 it was only 12.7%, lower than the world average and not to be compared with that of the U.S. (68.6%) or Australia (68.4%) (MIniwatts Marketing Group 2006).

For some years the Thai government has had a policy of supporting IT to facilitate teaching and learning processes (Government of Thailand 2001) and so, in 2006 when this research was commenced, there were networks that linked to all state universities around the country. All Thai Public Universities had computer facilities and networking including intranet, extranet and the Internet to facilitate the teaching and learning environment. In 2006, Thai National Plans (National Electronics and Computer Technology Centre 2001; Office of the Education Council 2004) had consistent targets aimed to use Internet technologies to support continuous learning. The critical issues of how to increase usage and make full use of ICT were then important national concerns. It was seen as essential for all academics in higher education to use ICT and especially the Internet as most students already did so (Office of the Education Council 2004).
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