Chapter 1
Analyzing ICT and Development:
Thailand's Path to the Information Economy

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ABSTRACT

This study uses Trauth's (2000) Influence-Impact Model as a sensitizing device to examine the influence of four key socio-cultural factors —policy, infrastructure, economy, and culture—on information economy development efforts in Thailand. Our assessment shows that progress has been made but gaps remain. Thailand's infrastructure challenges include unequal development across regions, a small skilled workforce, and low R&D expenditures in the ICT sector. Future economic growth of Thailand will depend on an increase in investments and improvement in technology and innovation. The authors' cultural analysis reinforces the need to develop a synergy between Thai cultural systems and development needs. To highlight strategies that Thailand might follow, the authors compare their findings to the lessons learned from the case of Ireland, India, and China. These include facilitating ICT sector work, ensuring a supply of qualified workers, exploiting the country's distinctive capacities, and reconfiguring policy to adapt to changes in the global ICT market.

INTRODUCTION

It has been globally recognized that the economic health of a nation is increasingly tied to its development of a sustainable information economy, one in which information and knowledge are both the main inputs and the main outputs of production (Castells, 2000). During the final decades of the twentieth century, developed countries invested heavily in information and communications technology (ICT) to maintain their competitiveness in the global information economy. In the twenty-

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first century, emerging economies are pursuing a similar path of economic development through enhancement of their ICT sectors and promotion of ICT adoption in other sectors.

A strong linkage between the production and use of ICT and the development of a sustainable information economy has been documented in the literature (D'Costa, 2006; Pohjola, 2002). According to Piatkowski (2006), ICT contributes to economic growth of emerging economies in four ways. First, the production of ICT goods and services contributes directly to an economy's aggregate value. Second, the increase in total factor productivity (TFP) in the ICT sector contributes to aggregate TFP growth. Third, the use of ICT capital as an input in the production of other goods and services contributes to productivity improvements in other sectors. Fourth, the increase in TFP in non-ICT production also contributes to economic growth. Hence, a sustainable information economy depends upon both the production of ICT goods and services and the diffusion and use of ICT in other sectors such as agriculture, manufacturing, education and public sectors (D'Costa, 2006).

Research has also shown that there is no "one best model" for information economy development (D'Costa, 2006; Huang et al., 2007; Piatkowski, 2006; Trauth, 2000). Rather, it is necessary to understand the specific ways in which sociocultural factors (such as country size, geographic location, history, resources, levels of economic and infrastructure development, policies and culture) are shaping both the production and use of ICT in a country, and the development of its information economy. Further, globalization requires that the development of a nation's information economy must be closely connected to the global market, as the cases of China, India, Ireland, Singapore, and Taiwan show.

This paper focuses on Thailand. Trauth's (2000) Influence-Impact Model is used to analyze contextual factors influencing Thailand's ICT industry and information economy development. In particular, we focus on the influence of policy, infrastructure, economy and culture in Thailand. This research makes several contributions to the literature. Our first contribution is methodological. In contrast to a variance approach (e.g., Tan & Leewongcharoen, 2005) which explores a set of independent variables to explain variation in a dependent variable, we explored the complex and nonlinear processes of information economy development (Soh & Markus, 1995) through examination of rich contextual details that explain a country's trajectory. Our second contribution is scope. Whereas other research has focused more narrowly on specific aspects of the information economy -- such as the hardware and software industry (Dedrick & Kraemer, 1995) or the software industry (Heeks, 2006; Heeks & Nicholson, 2004) -- our study examined the overall ICT sector including ICT goods, software, infrastructure, information content, and ICT usage. Our third contribution is the incremental nature of our investigation. In contrast to other examinations of a single country (e.g., India in Heeks (2006), Ireland in Trauth (2000, 2001), Thailand in Tan & Leewongcharoen (2005), or Singapore in Wong (1998)), we draw upon lessons learned from Ireland, India, and China so as to build upon the experiences of other emerging economies.

We chose to study the case of Thailand for three reasons. First, Thailand is one of the emerging economies in South East Asia, a region that has experienced substantial economic growth during the last decade. Second, in its effort to develop a sustainable information economy, Thailand has been actively seeking ways to develop its ICT sector, attract foreign investment, foster domestic entrepreneurship, and raise its competitive position. The Global Competitive Report 2008-2009 ranked Thailand 34th on the competitive index and 46th on the innovation index among 134 countries worldwide. Thailand's rankings are higher than several other developing countries in the region including China, the Philippines,