Chapter 2

Can National Information Infrastructures Enhance Social Development in the Least Developed Countries? An Empirical Investigation

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The need for national information infrastructures (NII) in the world’s least developed countries (LDCs) tends to be overshadowed by the nation’s severe deficiencies in physical infrastructure. Consequently NII may be inadequately addressed by governments and supporting agencies in their plans for stimulating social growth. The example of Singapore’s TradeNet and other lesser-developed countries developing national, electronic information infrastructures, suggests that information technology infrastructure may enable an LDC to develop at a particularly advanced rate. This paper studies the relationship of information infrastructure and social development. It establishes a clear correlation between 1) levels of information infrastructure and social development, and 2) growth rates of information infrastructure and social development. The findings suggest that governments of LDCs may enhance their countries’ growth by developing strategic plans for NII development.

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INTRODUCTION

The value of information technology infrastructure in business has been well documented over the past few years (e.g., Branchéau et al. 1996; Broadbent et al. 1996; Duncan 1995). It is understood to affect the firm’s process efficiencies (Keen 1991; Weill 1994) and to have strategic potential for the firm’s comparative performance in its industry (Keen, 1991; Branchéau et al., 1996; Duncan, 1995). It enables firms to economize on transactions through “virtual integration” (Clemons and Row, 1991; Miller et al., 1993) and to compete in markets that would otherwise be inaccessible.

The concept and perceived value of a national information infrastructure (NII) arises from similar needs within and across national boundaries. As information technology expands a nation’s interconnectivity and capacity for information integration, hitherto independent sectors such as education, health, social policy, commerce and trade, government, agriculture, communications, and science and technology can be integrated. An NII that allows members of the various sectors to share information and related resources may increase process efficiencies and intellectual activity that lead to economic productivity. Sharing resources reduces the cost of affected projects or services, which in turn increases feasibility of new endeavors. Consequently, the span and scope of its information infrastructure can affect a nation’s delivery of social services, national productivity, and may ultimately stimulate economic growth. This synchronous development of a vision for integrated national services makes evident the importance and value of an integrated national information infrastructure.

The value of greater information integration across independent sectors has been explored and exploited by nations with highly developed economies such as the U.S. In economically less developed countries, the need for NII is less obvious. It may be obscured by needs for more basic infrastructure (such as roads, electricity and water treatment networks), or it may simply not be in demand because the need for information occurring in service-based economies is not yet pressing (Odedra et al., 1993). Yet if the NII can offer strategic economic benefits to a developed country, it may likewise offer means for more efficient economic development in the least developed countries (LDCs). Indeed, it may offer new and more efficient means to both social and economic growth.

Since the concept of an NII is very recent, hardly any empirical research has been conducted to study the correlation or causal relationships existing between the development of an NII and the social and economic development of particular countries, least of all the LDCs. LDCs face immense disadvan-
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