Chapter XIV

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

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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 less-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.

INTRODUCTION

The value of information technology infrastructure in business has been well documented over the past few years (e.g., Brancheau 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; Brancheau 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 and 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 disadvantages in social and economic development. Their precarious position is exacerbated by the current global economic order centered on international open-market trade. However, it is generally accepted that the increasing polarity between the developed nations and the LDCs is not beneficial for the sustainable growth of the international economy. Therefore sustainable growth of LDC economies is rapidly becoming an international concern.

This paper examines the potential relationship between national information infrastructure and social development in LDCs. The next section of the paper examines the hypothesized role of information infrastructure in the social development of developing countries as well as in the international economy. It posits the unique capabilities of information infrastructure in providing access to markets and basic services unattainable without an adequately developed physical infrastructure. Such capabilities may offer an efficient alternative to physical infrastructure through which infrastructure-dependent services can be dispensed within LDCs. Part three presents the research design and method. Data collection and analysis are described, and the assumptions of the study elaborated. Part four documents the findings of the study and the inferences drawn therefrom. Our conclusions focus on the implications of this study for future research.

**INFORMATION INFRASTRUCTURE AND SOCIAL DEVELOPMENT**

Previous research establishes that the quality and levels of services provided by sectors including education, health, commerce, government, agriculture, communications, and
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