Chapter XVII
Governmental and Cultural Factors in Broadband Adoption

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ABSTRACT

Though the potential benefits of broadband Internet adoption are great, the levels of take-up vary greatly around the world. Some governments have adopted aggressive policies to deploy broadband networks and to encourage the use of these applications, while others have not. In the former cases, governments are motivated to promote broadband adoption in order to realize both economic and social benefits. This chapter argues that the high level of broadband adoption rates witnessed in certain Asian economies is attributable in part to the aggressive policies pursued by these governments. Independent of these policies however, social factors can also have an impact on whether broadband-related technology will be adopted. Even if economic and social benefits exist therefore, as in the case of telemedicine in the United States, cultural and social factors may in fact hinder the deployment of such applications and retard the growth rate of broadband access.

INTRODUCTION

The continued worldwide growth of broadband Internet use has exposed the benefits of an "e-society" to an increasing number of the world's population, resulting in improved access to healthcare through telemedicine, the diminishing of the social divide through tele-education, and increased economic competitiveness through telework. Although many countries around the world have modern telecommunications networks that support broadband access to the home and business, broadband penetration rates vary across these countries. One of the key factors explaining this difference in penetration rates is the government initiatives in the various countries, particularly in

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the more developed Asian economies, to establish national "information superhighways."

Governments are motivated to develop national broadband networks for several reasons. Efficient information-age infrastructures can enhance productivity by providing intelligent networks that can accommodate the converging voice, data, and electronic commerce applications (Frieden, 2005). These infrastructures provide a competitive advantage in the knowledge-based industries that include data processing, insurance, management, customer relationship management, and logistics and distribution. Such a competitive advantage in the area of information and telecommunications technology (ICT), when combined with a stable economy and favorable regulatory system, has been shown to translate to higher levels of foreign direct investment (FDI). The deployment of such networks, either directly through the use of tax dollars or indirectly by use of appropriate policies, such as spectrum allocation by fiat, further allow national governments to exploit the benefits of e-government, including increased efficiency and transparency. Governmental involvement and promotion of broadband can encourage end user adoption, by effectively lowering the usage cost of applications for business and consumers alike, thus improving working and living standards, and enhancing productivity.

Specific applications that are made possible through broadband capabilities, such as telemedicine, may soon enable governments—particularly developing countries where transaction costs are high because of logistical problems (Sein & Harindranath, 2004)—to extend universal healthcare services to remote areas and provide an economically viable means to increase the quality of medical services. Similarly, tele-education provides governments with the potential to increase the level of educational services to resource-strapped inner-cities or rural areas and the means to extend the learning experience into the home. In addition, teleworking allows employees to work from home while still being productive agents of society, and gives firms a means to decrease costs in the production process. Furthermore, from a societal viewpoint, teleworking reduces traffic congestion and helps in pollution control.

Given the numerous areas where broadband deployment can bring about both social and economic benefits for society, demand can be expected to grow in the coming years. The question remains regarding the proper role of governmental intervention in this process, and what role the unique cultural characteristics of specific societies bring to bear. This chapter addresses these issues by presenting a number of case studies illustrating the roles both governments and culture have played in the broadband deployment process, followed by a discussion of our findings.

THEORETICAL FRAMEWORK

The relationship between telecommunications investment and growth has been demonstrated (Roller & Waverman, 2001). Indjikian and Siegel (2005) review work from the developed world that suggests evidence, both qualitative and quantitative, of a positive correlation between IT investment and economic performance. The implications for developing countries are encouraging, and it appears that the empirical findings on IT and economic performance, including case analysis from China, India, Chile, and elsewhere, are contributing to improvements in productivity and growth.

In the economic literature, endogenous growth theory (or new-growth theory) stipulates that it is technology and human capital, when endogenously present, that contribute to continuous economic growth and therefore play an essential role in a country's development (Easterly, King, Levine, & Rebelo,1994; Barro, 1997). Logically, workers who are better educated and literate, better fed, healthier, and technologically capable can produce more than those who are hungry, illiterate, unhealthy, and technologically unskilled.

Barro's (1997) statistical analysis of the difference in growth rates across a large number of countries reveals that a high initial level of human capital has a significantly positive effect on growth—a virtuous circle. We can predict that ICT penetration—the ability to use technology to

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