Chapter VII

Global Competition and Cooperation in Standardization of Wireless Communications

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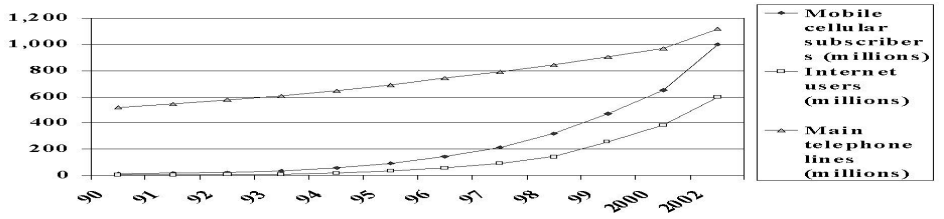
INTRODUCTION

Since the first installation of cellular-based wireless public telephone systems back in the early 1980s, the number of wireless communication subscribers has seen dramatic and continuous growth across the world. The total global mobile subscribers grew from 11 million in 1990 to 472 million in 1999, according to ITU's (International Telecommunications Union) statistics. It is forecasted that global mobile subscribers will surpass global main line users (fixed phone lines) in the first decade of 21st century as shown in Figure 1 (ITU, 1999).

At the same time, the global Internet has emerged as a new and powerful communication medium with a combined function of communicating, broadcasting and publishing. Until recently, the Internet has been accessed mainly through the wireline telecommunications infrastructure. With the third generation (3G) of wireless communication systems focusing on their integration with the Internet, future wireless systems are projected as channels to offer

Figure 1. The total mobile cellular subscriber, Internet users, and main telephone lines in the world.



Source: ITU 1999 indicators (estimated data for 2000 & 2001

anytime and anywhere access to sophisticated information. This possibility serves to satisfy users' perceived economic and social needs for constant interaction with information. Wireless communication has been positioned as one of the strategic driving forces for the global telecommunications industry in the 21st century.

One of the challenges as well as opportunities for the success of wireless communication in the 21st century is the standardization that, in a simplified term, defines how specific technologies are used in a particular wireless communication system. Standardization goes beyond a technical decision made by engineers. This chapter first examines the history and the status of standardization in wireless communications in the world. Global cooperation and competition among different standards are then examined. Finally, the chapter analyzes ITU's efforts on the 3G standardization that aim to bring harmony among the world's wireless communication developers and providers.

BACKGROUND

Standards govern many aspects of human society, including economic activities, technology development and applications, psychological behavior, politics, and social life. According to the most prestigious standard organization, ISO (International Standards Organization), "Standards are documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose" (ISO, 1995). Standardization, defined by ISO (1995), is the process of formulating and applying agreements reached among all concerned. The goal of standardization is to facilitate trade, exchange and technology transfer.