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## Abstract

Since telecommunications reforms began around world in the 1980s, many scholars have attempted to uncover its effects on the telecommunications sector. Nevertheless, research focusing largely on the impact of privatization on universal service has been relatively less frequent than other research on telecommunications reform such as the effect of competition on efficiency, investment, and universal service, and the impact of privatization on efficiency. As a result, there still remain doubts and debates about the effect of privatization on universal service. Further, the well-established ideas in the literature fail to fully explain the process of telecommunications reform and the evolution of universal service in Korea because of the atypical strategies which Korea has employed for network expansion and universal service. From these perspectives, this study attempted to bridge the gap between the findings in the previous works and the Korean case.

As a case study of Korea, it has a limitation in generalizing the impacts of changes in market structure on universal service because of the unique features which Korea has demonstrated in the process of telecommunications reform and the evolution of universal service. In spite of this limitation, this dissertation may contribute to providing policy-makers and scholars in telecommunications with useful policy suggestions by concretely illustrating why Korea has adopted its own agenda in telecommunication and how she has successfully implemented it in the reform process. Particularly, this study indicates that each state may have its discretion in telecommunications and be able to choose the strategies appropriate to its political, economic, and social circumstances in order to secure universal service, despite the irresistible global trend of market-oriented

telecommunications reform. In other words, this dissertation shows through the case study of Korea that even though telecommunications reform such as competition and privatization is a useful and effective choice on the policy menu for developing countries which pursue the improvement in the efficiency of their telecommunications as well as the promotion of universal service, a new recipe, which looks queer to those who prefer the conventional, might be the better option for them depending on their tastes, as the Korean case demonstrates.

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## Chapter 1: Introduction

Since telecommunications reforms, such as the introduction of competition, privatization of state-owned telecommunications operators, and establishment of independent regulatory agencies, began around the world in the 1980s, many scholars have attempted to uncover its effects on the telecommunications sector (e.g., Fan, 2005; Hills, 1989; Jayakar, 1999; Megginson & Netter, 2001; Mody, Bauer & Straubhaar, 1995; Ros, 1999; Wallsten, 2001). These studies based on a variety of approaches shed light on how telecommunications reform has influenced changes in the telecommunications sector, and led to some valuable and fruitful theories on the relationship between them.

For example, it is generally regarded as an axiom that the introduction of competition promotes the efficiency of the telecommunications sector, and thus benefits consumers' welfare. This proposition is well supported by the theoretical and empirical studies mentioned above and provokes little controversy among scholars or policy-makers. Another commonly accepted recommendation is that establishing an independent regulatory agency is an indispensable factor for introducing competition and liberalizing the telecommunications sector successfully. In addition, there is a general consensus among scholars that an independent regulatory authority is a prerequisite for the success of any country's efforts to privatize state-owned telecommunications operators (e.g., Cowhey & Klimenko, 2000; Fan, 2005; Kennard, 1999).

In spite of these well-established ideas, however, there are still many inconclusive debates on the effects of telecommunications reform on the telecommunications sector, such as the relationship between the introduction of competition and universal service,

and the impact of the privatization of state-owned telecommunications companies on their efficiency and social objectives including universal service. For instance, even though it is generally taken for granted that the adoption of competition improves the efficiency of the telecommunications sector, a general consensus has not been reached among scholars on how the introduction of competition influences universal service. As a result, it is still a controversial issue whether the introduction and diffusion of competition promotes or impairs universal service.

In this regard, some scholars argue that neutral competition under free market is the most important impetus to achieve the goals of universal service (Compaine & Weinraub 1997; Mueller 1997, 1999). Other scholars insist that telecommunications companies unencumbered with a legal obligation to provide universal service would be reluctant to serve non-profitable customers with telecommunications services; thus relying entirely on competition makes it difficult to achieve the goals of universal service (Packer, 2000; Skogerbo & Storsul, 2000). In addition, empirical studies on the relationship between competition and universal service sometimes reach incompatible conclusions. Jayakar (1999) explains that in spite of weak evidence, available empirical research shows that the effect of competition is positive on universal service, while Ros' (1999) study based on a fixed-effects model indicates that competition has neither positive nor negative effect on network expansion.

The impact of the privatization of state-owned telecommunications enterprises on their efficiency is also controversial. In this regard, many researchers generally concur that state-owned telecommunications companies would benefit financially and in terms of operating performance as a result of privatization. For example, Megginson and Netter

(2001) use a survey of empirical studies on privatization to conclude that most case studies indicate that “privatization is associated with improvements in the operating and financial performance of divested firms” (p. 356). Additionally, Fan (2005) insists that the privatization of state-owned telecommunications operators plays a major role in contributing to the development of the industry.

By contrast, Bortolotti, D’Souza, Fantini, and Megginson (2002) point out that despite the fact that the financial and operating performance of telecommunications companies improves significantly after privatization, a significant fraction of the observed improvement results from regulatory changes rather than from privatization alone. In addition, Mody, Bauer, and Straubhaar (1995) indicate that the nature of ownership makes no major difference in the efficiency of a nation’s telecommunications system. They assert, “a clear separation of operational management, regulatory and policymaking functions” and “an increase in competitive market forces through liberalized market entry and access to the network” are more crucial factors for telecommunications reform than the change in ownership such as the privatization of state-owned enterprises (cited in Petrazzini, 1997, p.74).

Along with the effect of competition on universal service and the impact of privatization of state-owned telecommunications operators on their efficiency, the effect of the privatization of state-owned telecommunications operators on universal service is not conclusively explained either. In particular, the relationship between privatization and universal service has received less attention than other issues mentioned above, despite the fact that it is also an important and worthwhile research topic.

As mentioned above, there have been many studies to investigate the effect of

telecommunications reform since the 1980s. Nevertheless, research focusing largely on the impact of privatization on universal service, such as Hills' (1989) study, has been relatively less frequent than other research on telecommunications reform such as the effect of competition on efficiency, investment, and universal service, the impact of privatization on efficiency, and the effect of an independent regulatory agency on efficiency and social objectives including universal service. Instead, the impact of privatization on universal service has been briefly dealt with in other studies on the effect of telecommunications reform (e.g., Jayakar, 1999; Ros, 1999; Wallsten, 2001).

Further, there are incompatible findings in previous works on the impact of privatization on universal service in terms of network expansion. For instance, Hills (1989) claims that the effect of privatization is neither positive nor negative on universal service defined in terms of penetration and usage of telecommunications service, while Ros (1999) argues that privatization is correlated with telecommunications network expansion. Hills (1989) investigates the impact of liberalization of telecommunications in the United Kingdom and the divestiture of AT&T in the United States on these two nations' universal services and reaches a conclusion that universal service measured as penetration is affected neither by liberalization nor by privatization since there was no significant change in telephone penetration between pre- and post- liberalization and privatization in both countries. From these findings, Hills (1989) predicts that the privatization of state-owned telecommunications operators is not likely to contribute to extension of universal service defined in terms of penetration and usage of telecommunications service in "Third-World countries". By contrast, Ros (1999) suggests that privatization has positive effect on network expansion, discovering that the number

of telephone mainlines per capita is higher in countries that have privatized their telecommunications companies than countries that haven't yet privatized theirs. Consequently, prior research has limitations to fully shed light on how the privatization of a state-owned telecommunications enterprise impacts universal service.

From this perspective, this dissertation attempts to discover the impact of privatization of a state-owned telecommunications operator on universal service, for better understanding the relationship between privatization and universal service. In particular, unlike prior studies which have mainly focused on how privatization influences the changes in network expansion, it investigates the impact of privatization on the process of universal service policy formulation and universal service mechanism through the case study of Korea. Additionally, this study looks at the goals and process of telecommunication reform in Korea, which enables us to understand unique characteristics of the relationship between privatization and universal service in Korea.

Korea has a unique and intriguing telecommunications history including the evolution of universal service. Even though telecommunications service began more than a hundred years ago, Korea was able to provide modern and full-scale telephone service in the 1980s (Kim & Lee, 1991). Nevertheless, Korea succeeded in rapidly expanding the penetration rate of telephone shortly after modern and full-scale telephone service was introduced by using its national monopoly operator as well as the government's universal service policy (Kim & Lee, 1991; O'Siochru', 1996). Interestingly, however, in spite of the Korean government's efforts to provide all households with telephone service at low prices, the term "universal service" had not been conceptualized until competition was introduced to the Korean telecommunications market in 1990s. In addition to this

anomaly, a number of questions are raised by developments in Korean telecommunications during this period and later, compared to those in other developing countries' telecommunications such as Brazil, Chile, India, Philippine, South Africa, and Bangladesh.

In the Brazilian case, teledensity was very low and the performance in telecommunications was poor during the state monopoly period, for example teledensity of fixed lines for each 100 inhabitants was 8% in 1994. Thus, Brazil embraced telecommunications reform and privatized its state-owned telecommunications enterprise in 1998, which was to enhance competition, to provide universal service, and to raise its revenues (Mattos & Coutinho, 2005). Chile's telecommunications network was underdeveloped until the mid-1980s because of public operator's insufficient capital for network expansion. However, Chile achieved a rapid modernization of the network and improvements in universal service after opening its telecommunications market to the private sector and foreign investors (Stehmann, 1995). India's telecommunications network was also underdeveloped in the state monopoly period and the Indian government introduced telecommunications reform in order to promote the development of the telecommunications sector in the mid-1980s. Unlike Chile, however, India failed to achieve the goals of telecommunications reform until the mid-1990s because of its unique institutional arrangements, despite the fact that it was one of the first developing countries to launch telecommunications reform (Petrazzini, 1996). Philippines, South Africa, and Bangladesh, as developing countries, had difficulty in promoting the development of the telecommunications sector, such as network expansion and universal service, in the monopoly period (the private monopoly in Philippines) because of the

monopoly's inherent inefficiency and insufficient capital for network investment. As a way to promote network expansion and modernization, universal service, and economic efficiency, thus, these countries also introduced competition or privatization in order to attract the private and foreign investments to their telecommunications (Bhuiyan, 2004; Cowhey & Klimenko, 2000; Gillwald, 2005; Serafica, 1996). With regard to developing countries' poor performance in the state monopoly period, Wallsten (2001) claims that "by the 1980s, it was clear that nationalized monopoly telecommunications firms in developing countries could not effectively provide telecom services" (p. 3). Also, Cowhey and Klimenko (2000) say that "traditional state-owned monopoly suppliers had largely failed to provide low-cost, efficient, or even widely available services in many countries" (p. 267).

Contrary to the experience of these developing countries, and despite the expectations from theory that it is difficult to do so, how was Korea able to dramatically expand the network in the state monopoly period without significant private capital investment? In the introduction of competition itself, why was the Korean government keen to introduce competition in a deliberately slow and phased manner despite enormous pressure from international actors? Why did Korean universal service policy, for long administered by government fiat, suddenly acquire a legal foundation and a systematic framework in the mid-to-late 1990s? In contrast to the experience of many countries, why was Korea so quickly able to develop a universal service policy for broadband? Again in contrast to most other countries, how was Korea able to build rural broadband networks most simultaneously with networks in urban areas? How did changes in industry structure such as competition and privatization change the dynamics

of universal service policy-making?

In the light of these anomalies and questions, the Korean case becomes worthy of study. This dissertation closely investigates changes in the process of universal service policy formulation in Korea after the privatization of Korea Telecom, as a way to discover the impact of the privatization of a state-owned telecommunications enterprise on universal service. To do so, this study first examines whether or not the privatization of Korea Telecom caused the changes in universal service. And it will investigate how it influenced universal service policy formulation as well as universal service mechanism in Korea if there is causation between them. Thus, the primary research question of this dissertation is rephrased like the following: Did the privatization of Korea Telecom cause the changes in universal service? If so, how did it influence universal service policy formulation as well as the universal service mechanism in Korea?

In this regard, this study doesn't attempt to examine changes in network expansion over the pre- and post-privatization windows because it basically focuses on the impact of the privatization of Korea Telecom on changes in the concepts of universal service as well as the government's universal service policy in Korea. In terms of teledensity, Korea reached 150.13 in 2000 and the rate of increase of teledensity has been stagnant since the 1990s whereas Korea succeeded in rapidly expanding teledensity prior to the privatization of Korea Telecom. Additionally, most Koreans enjoyed wire-line telephone service at a relatively cheap price due to the government's strong universal service policy for telephone service (KT, 2001). In the case of Korea, thus, it is not practically possible to show the relationship between the privatization of a state-owned telecommunications provider and changes in teledensity because wire-line telephone

service matured in the 1990s before Korea Telecom was privatized in 2002. It is perhaps possible to compare high speed Internet penetration might be measured over the pre- and post- privatization windows to evaluate the effect of the privatization of Korea telecom on network expansion. High speed Internet was introduced to the Korean telecommunications market in 1998, and its market has not been matured yet when privatization began. As mentioned above, however, an econometric approach to measure changes in network expansion after telecommunications reform is not one of the goals of this study.

Instead of examining changes in network expansion, therefore, this dissertation will look at the motives, ideological backgrounds, and process of telecommunications reform in Korea in order to investigate why Korea has a unique experience of the evolution of telecommunications reform and universal service. In other words, another research question of this study is what were the goals and process of telecommunications reform in Korea. This research question will be investigated before the primary research question of this study – Did the privatization of Korea Telecom cause the changes in universal service? If so, how did it influence universal service policy formulation as well as the universal service mechanism in Korea? - is answered because it is a prerequisite to explore the process of telecommunication reform in Korea for better understanding the impact of the privatization of Korea Telecom on universal service. Finally, this dissertation attempts to find out what we can learn from the Korean case about the evolution of universal service. To summarize, the purpose of this dissertation is to discover the impact of the privatization of a state-owned telecommunications enterprise on universal service in Korea. To do so, the following research questions are closely

investigated

RQ 1) What were the goals and process of telecommunications reform in Korea?

RQ 2) Did the privatization of Korea Telecom cause the changes in universal service? If so, how did it influence universal service policy formulation as well as the universal service mechanism in Korea?

RQ 3) What does the Korean case say about the relationship between privatization and universal service?

As a case study, this dissertation has some limitations in generalizing the relationship between the privatization of a state-owned telecommunications enterprise and universal service because the impact of the privatization of a state-owned telecommunications enterprise on universal service in Korea may not be the same as in other countries. Nevertheless, this dissertation could contribute to better understanding the relationship between privatization and universal service, by explaining a unique case of the evolution of universal service in Korea. This study doesn't attempt to support or reject previous works that provide theoretical explanations about the impact of telecommunications reform on universal service. Instead, it attempts to reveal the gaps in previous theoretical frameworks to explain the evolution of universal service through the case study of Korea. Further, it suggests that we sometimes need new approaches to grasp the impact of privatization on universal service more thoroughly.

In the next chapter, previous works on telecommunications reform and universal service are reviewed. Additionally, the existing literature on telecommunications reform

and universal service in Korea is examined before we closely investigate the Korean case. Chapter 3 discusses the methodological approach for this study. Chapter 4 presents the process of telecommunications reform and the evolution of universal service stage by stage. In this chapter, particularly, the unique features of the telecommunications reform process and the evolution of universal service in Korea are discussed. Finally, chapter 5 summarizes the findings of this study and provides the lessons from the Korean case.

## **Chapter 2: Literature review**

To begin with, this chapter examines the literature on telecommunications reform and identifies the motives for market-oriented reform in telecommunications and the terminology of telecommunications reform such as liberalization and privatization. Secondly, it presents the literature on the evolution of universal service. Finally, the existing literature on the evolution of telecommunications reform and universal service in Korea is introduced in order not only to analyze how the theoretical motivations identified in this chapter influenced the Korean case, and to what extent; but also to demonstrate why theories in the existing literature on telecommunications reform and universal service are inadequate to explain the Korean case.

### **Telecommunications reform**

#### 1) Motives for telecommunications reform

There was competition at the early stage of telecommunications history in many developed countries, such as competition between the Bell System and independent telephone companies from 1847 to 1912 in the United States (Mueller, 1997).

Nevertheless, monopoly was a dominant paradigm in telecommunications market in most countries before the 1980s, regardless of whether it was controlled by a state or a private owner (Petrazzini, 1995). This is mainly because telecommunications industry was perceived as a natural monopoly for most decades of the twentieth century (Ros, 1997).

Due to the notion that monopoly's costs in serving the entire market are lower than

the total costs of multiple producers in an industry like telecommunications, that requires large sunk capital investments of new entrants, monopoly was taken for granted in the telecommunications sector before the 1980s in most countries (Petrazzini 1995; Ros, 1997). In addition, it was argued that government regulation of the telecommunications monopoly was required, in order to provide service to the maximum possible number of residential subscribers and to protect quality of service. Thus, there were two basic telecommunications paradigms before telecommunications reform was initiated in the 1980s - a private regulated monopoly, or a state-owned monopoly combining operative and regulatory functions, for example British Telecom (Jayakar, 1999).

Under monopoly, universal service was based on the mechanism of cross-subsidy in which residential users of telecommunications service were subsidized by business users who had relatively higher demand for long-distance and international calls than residential users. In other words, cross-subsidy under monopoly played a role in lowering rates of basic telecommunications services such as local calls below costs and increasing telephone penetration at the expense of other service users such as long-distance and international call users (Laffont & Tirole, 2000). As a result, monopoly was perceived to have positive effects on universal service.

Ironically, however, the cross-subsidy-based universal service mechanism played a role in delaying the development of the telecommunications sector, helping the incumbent monopoly to prevent the introduction of competition. For instance, AT&T, as an incumbent monopoly before the 1980s strongly opposed the introduction of competition, arguing that cross-subsidy was not compatible with competition and

universal service would be jeopardized. From this perspective, AT&T argued that competition would destroy a universal service mechanism based on cross-subsidy (Mueller, 1997; O' Siochru', 1996).

In spite of the incumbent monopoly's great efforts to prevent the introduction of competition by advocating universal service through cross-subsidy, monopoly was rejected in most developed countries due to its negative effects on telecommunications market, such as inefficiency and market distortion. First of all, before the introduction of competition the incumbent monopoly had very little incentive to lower the costs of local call service through innovation, either because the contract between the government and the operator guaranteed that the operator's costs for local call service were fully compensated by subsidies from other services, or because the service provider was guaranteed a reasonable profit in addition to full recovery of costs under rate of return regulation. Additionally, cross- subsidy inevitably resulted in market distortion not only by providing basic telecommunications services below costs but also by overcharging other telecommunications services, irrespective of their actual costs (Laffont & Tirole, 2000).

Consequently, monopoly based on cross-subsidy for universal service didn't favor heavy users of long-distance and international calls such as business users. Thus, they strongly opposed monopoly and proposed the introduction of competition to the telecommunications market. Additionally, increased demands for long-distance and international calls due to rapid globalization since the 1980s led them to resist the cross-subsidy that inflated the prices of those services. With business users' strong resistance to cross-subsidy, the rapid development of new communications technologies put pressure

on regulators to introduce competition because it lowered barriers to entry and enabled new entrants to enter the telecommunications market. As a result, liberalization and competition were introduced to the telecommunications market in most developed countries such as the United States and the United Kingdom since the 1980s (Jayakar, 1999; Laffont & Tirole, 2000; Petrazzini, 1995; Ros, 1997).

In sum, two major causes of telecommunications reform in the 1980s were inherent problems of monopoly such as inefficiency and market distortion, as well as the rapid development of new telecommunications technologies that undermined the legitimacy of natural monopoly in the telecommunications sector. In this regard, Ros (1997) explains that new emerging lower-cost telecommunications technology and increased demand for telecommunications services defy the argument in favor of monopoly provision in the telecommunications industry. On the other hand, along with those two causes mentioned above, in the case of developing nations, the pressure by developed countries and international organizations such as The World Bank was another leading cause of telecommunications reform (Wallsten, 2001). Additionally, Jayakar (1999) points out that a neoclassical economic ideology initiated by Reagan and Thatcher administrations played a crucial role in implementing market-oriented reform in wide range of industries including telecommunications. In this vein, Mariscal (2004) states that global changes in economic circumstances in the 1970s, such as an economic slowdown brought on by the oil crisis provided a momentum for market-oriented reform in most industries.

As covered so far, the motives for telecommunications reform were various and sometimes contradictory depending on each country's political, economic and social

environments despite the fact that market-oriented reform has widely been adopted around the world from the 1980s. Consequently, it is necessary to investigate the motives for regulatory reform in general first before we attempt to analyze the process and impact of telecommunications reform. In this regard, the objective of the first research question of this dissertation is to analyze which of the motives identified here influenced telecommunications reform in Korea, and to what extent.

Before analyzing the Korean case, we will look at the terminology of telecommunications reform such as liberalization, privatization, and establishing an independent regulatory agency, which provides us with an overview of each market-oriented reform process as well as the basic knowledge to analyze the evolution of telecommunications reform in Korea.

## 2) Dividing telecommunications reform into segments

Market oriented-reform in telecommunications is generally presented as three major components which are closely integrated (Gillwald, 2005): the introduction of competition, privatization, and the establishment of an independent regulatory agency, even though other terms such as ‘liberalization’, ‘deregulation’, and ‘divestiture’ are often used to describe the phenomenon of telecommunications reform. Among these three elements, independent regulation is regarded as an important but secondary factor to affect the outcomes of the telecommunications industry, while competition and privatization are perceived as primary factors to influence performance of the sector. Though some recent studies (e.g., Fan, 2005) argue that an independent regulator contributes to making the telecommunications sector more transparent and predictable

and thus helps to increase foreign direct investments to the sector, the main role of independent regulation is generally perceived to support the market-oriented telecommunications sector to work effectively.

This is because an independent regulatory agency is needed to establish a competitively neutral market as well as to prevent the government's discretionary market intervention as competition and privatization are implemented. In detail, the telecommunications sector needs neutral and fair regulation when competition and deregulation are introduced, due to its inherent issues such as interconnection, universal service, predatory pricing by the incumbent service provider and so on. Paradoxically, therefore, effective telecommunications reform toward market requires more sophisticated and systematic regulation by a neutral and fair regulator, rather than a dismantling of all state controls. In this regard, previous works on telecommunications reform support the argument that competition and privatization without an independent regulatory authority don't guarantee the improvement of market performance. Particularly, many studies discover that privatization itself has no positive effect on the performance of the telecommunications sector unless an independent regulatory agency is established (Fan, 2005; Gillwald, 2005; Mariscal, 2004; Petrazzini, 1995; Ros, 1999; Ryan, 1997; Wallsten, 2001; Wellenius & Stern, 1994).

With the demise of the belief that telecommunications was a natural monopoly due to the rapid development of new communications technologies, competition was initially introduced to the telecommunications sector in the United States and the United Kingdom, and it spread around the world. However, the degree of competition in each country was not the same and there were several differences in implementing

liberalization around the world. For example, the U.K. introduced competition to all sectors of telecommunications in 1981 and New Zealand adopted radical open market strategy to the telecommunications sector (Mariscal, 2004). By contrast, the U.S. opened the long-distance exchange markets to competition but didn't introduce competition to the local exchange markets at the time of the break-up of AT&T. In addition, India and Hungary introduced competition to some segments such as the local services market when liberalizing their telecommunications sector in the 1990s, instead of opening all telecommunications markets to competition (Jayakar, 1999).

In this regard, previous works on telecommunications reform argue that a leading factor that caused the differences in implementing competition among countries was that each country had a different political institution and economic circumstance when introducing competition to its telecommunications sector (Mariscal, 2004; Petrazzini, 1995). For example, the U.S. and New Zealand were able to introduce a relatively high degree of competition because of the stability of their political institution, while Brazil and Mexico implemented a low degree of competition because of the constraints of their transitional political institutions (Mariscal, 2004).

On the other hand, Petrazzini (1995) finds that each country's economic circumstance was a more crucial and influential factor than its political institutions, to determine not only the success of liberalization but also the degree of liberalization. The success of the privatization of state-owned telecommunications enterprise was largely determined by the features of each country's political institutions, such as autonomy and the political power of the executive branch. Along with political institutions and economic environment, social objectives including universal service affected the degree

of competition in each country's telecommunications sector. At the early stage of telecommunications reform in many countries, competition was generally perceived to have a negative effect on universal service despite the fact that some scholars and policy-makers assumed that competition contributed to network expansion. As a result, most countries chose a strategy to open some segments to competition, instead of liberalizing all segments of telecommunications, in order to minimize the negative effect of competition on universal service when they introduced competition to the telecommunications sector. In other words, the degree and pace of each country's liberalization of telecommunications depended on its political and economic circumstance as well as its policy choice to achieve two conflicting goals—economic efficiency and social objectives (Jayakar, 1999).

As mentioned earlier, the primary motive for market-oriented reform in telecommunications was to improve economic efficiency of the sector. In this regard, previous works on the effect of competition on market performance of telecommunications generally, though not universally, support the argument that the introduction of competition improves economic efficiency of the telecommunications sector (e.g., Fan, 2005; Ros, 1997; 1999; Stehmann, 1995; Wallsten, 2001). However, the review of literature on the effect of competition on universal service shows conflicting findings. Some studies (Mueller, 1997; 1999; Stehmann, 1995) argue that competition has a positive effect on universal service, while other studies (Parker, 2000; Ros, 1999) find either that competition has no effect on network expansion or that it has a negative effect on universal service. In particular, even some studies indicating that competition contributes to network expansion admit that the low penetration of telecommunications

service in rural areas and among low-income residents still remains an unsolved problem after market-oriented reform (e.g., Stehmann, 1995).

Another factor that affects deregulation is ideology. As a way to improve economic efficiency, reforms such as competition and privatization have been adopted in a wide range of industries in developed countries since the 1980s. In particular, a neoclassical economic ideology emerged in response to widespread economic crises in the late 1970s; for example, in the United Kingdom, Thatcherism provided a momentum for privatization in many industries including that of British Telecom. Vuylsteke (1988) defines privatization as “the transfer of commercially oriented state-owned enterprises, activities, or productive assets of the government to the total, majority, or minority private ownership or to private control” (cited in Petrazzini, 1995, p.16). From this perspective, the privatization of state-owned telecommunications companies is less motivated by the desire to improve telecommunications market performance, than is the case with liberalization. Rather, it is more related to political and ideological trends in the general economy (Petrazzini, 1995). As a result, there has been a controversy of whether or not the privatization of state-owned telecommunications enterprises contributes to better performance of the telecommunications sector even though the stated motive for privatization was the improvement of economic efficiency in most developed countries.

In developing countries, privatization is a more complex and political event because the privatization of state-owned telecommunications enterprises in most developing countries is not merely for improving economic efficiency of the telecommunications sector, rather it is mainly for resolving their economic crises and problems such as fiscal deficits (Jin 2006; Petrazzini, 1995). Additionally, the process of

privatization in developing countries is affected by foreign players such as international organizations who put pressure on them to pursue market-oriented reform in a wide range of industries (Wallsten, 2001).

Unlike the introduction of competition to the telecommunications sector, therefore, the process of the privatization of a state-owned telecommunications company is largely determined by each nation's political institutions rather than its economic circumstances. In this regard, previous works on telecommunications reform find that the autonomy and political power of the executive branch play a major role in achieving privatization in developing countries (Mariscal, 2004; Molano, 1997; Petrazzini, 1995; Levy & Spiller, 1996). For example, some states with autonomous and powerful executive branches, like Mexico, Malaysia, Chile, Jamaica, Venezuela, and Argentina (during its 1989-1995 administration) succeeded in privatizing their state-owned telecommunications enterprises, while other states with vulnerable governments that don't have strong political power, like Thailand, Colombia, South Africa, Uruguay, and Argentina (during the 1976-1989 administrations), failed to sell their state-owned telecommunications enterprises to the private sector including foreign investors (Petrazzini, 1995).

Along with the introduction of competition, privatization has been perceived as a major component of market-oriented reform and its effect on the telecommunications sector has attracted a lot of research attention (Jayakar, 1999). Nevertheless, the relationships not only between privatization and economic efficiency, but also between privatization and universal service are still controversial and inconclusive as mentioned in the introduction. A general consensus seems to be that privatization without an independent regulatory authority has little positive effect on economic efficiency of the

telecommunications sector (Bortolotti, D'Souza, Fantini & Megginson, 2002; Fan, 2005, Gillwald, 2005; Mariscal, 2004; Ros, 1999; Wallsten, 2001). On the other hand, some studies (Mariscal, 2004; Mody, Bauer & Straubhaar, 1995; Vickers & Yarrow, 1998) also seem to suggest that competition is a more crucial factor for economic efficiency of the telecommunications sector than privatization, and thus privatization doesn't play a role in improving performance of the sector in the absence of competition.

As for the impact of privatization on universal service, findings in previous studies don't reach a general consensus either. As mentioned earlier, for example, Hills (1989) says that the privatization of state-owned telecommunications enterprises has no effect on universal service, while Ros (1999) indicates that it has a positive effect on network expansion. Furthermore, Stehmann (1995) provides empirical data that shows that telecommunications reform promotes network expansion and telephone penetration in Chile and concludes that liberalization and privatization contribute to implementing universal service, while McElhinney (2001) argues that in Australia, universal service has been jeopardized since the telecommunications market was liberalized and the former national monopoly carrier was privatized, because residents in rural and remote areas were marginalized from telecommunications service after market-oriented reform in telecommunications.

In summary, there is much to be conclusively proven about the impact of the three major categories of telecommunications reforms—privatization, introduction of competition, and the creation of independent regulatory bodies—when they are implemented singly or in combination, on goals such as efficiency, and universal service.

## **Universal service**

Universal service is one of the recurring themes in the debates in telecommunications, especially in the context of telecommunications reform and changing technologies. Historically, there has been a long-standing policy concern with universal service which mainly focused on how equitable access in telephones could be achieved. With the rapid development of new telecommunications technologies, however, the paradigm on universal service has drastically changed, becoming much more complex than before. First of all, the emergence of the Internet asks us to re-conceptualize the definitions and basic concepts of universal service because its characteristics are greatly different from those of the telephone. In addition, the traditional issues on universal service still remain unsolved and debatable such as what is the purpose of universal service, whether or not a universal service policy is necessary in order to promote the proliferation of telecommunications services, how to create universal service funds, and so on.

In this regard, this thesis is motivated by the idea that the concept of universal service is a flexible one, influenced strongly by the regulatory and industrial environments. In this literature review, it is proposed to explicate the concept of universal service and discuss how this conceptualization has changed over time, with specific reference to the telecommunications history of the United States. The aim in later part of the thesis is to document a similar evolution in the Korean national context, in response to the changes in the introduction of competition and the privatization of Korea Telecom.

### 1) Conceptual explication of universal service

Notwithstanding its multidimensional characteristics, in these modern days universal service is generally perceived as providing all residents with basic telecommunications service at an affordable price irrespective of where they live. Further, there is a general consensus that universal access to basic telecommunications service has become one of the important social objectives to be achieved in order to promote social welfare as well as to save democracy (Blizinsky & Schement, 1999; Garnham, Cornford, & Marvin, 1996; McChesney, 1996; Preston & Flynn, 2000; Sawhney, 1994). In contrast to these contemporary concepts, however, the initial conceptualization of universal service was not in the interest of the consumers of telecommunications service but for the consolidation of the Bell system's control over the industry (Mueller, 1997). In this regard, Mueller (1997) discovers through the study of the United States's telecommunications history that universal service in the modern sense was never part of AT&T's original conception of the business when Vail coined the slogan 'one system, one policy, universal service'. Vail's universal service never meant telephone service at an affordable price. Rather, it meant the elimination of the fragmentation brought about through competition between Bell and the independents, and the unification of telephone service under regulated local exchange monopolies (Mueller, 1997).

In terms of the modern sense of universal service, many scholars consider that it appeared with the enactment of the Communications Act of 1934 which stipulated that "the FCC was created for the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States, a rapid, efficient, nation-wide, and world-wide wire and radio

communication service with adequate facilities at reasonable charges”. As for the Communications Act of 1934, Jayakar (1999) states that the Act provided “the legal genesis of the universal service principle (p. 31),” in spite of some of its ambiguous terms such as ‘available’ ‘adequate facilities’ and ‘reasonable charges’. Consistent with Jayakar, Preston and Flynn (2000) place much weight on the Act, explaining that it became the basis for the subsequent elaboration of the universal service objective, as well as for the funding mechanism of universal service. Since the enactment of the 1934 Law, the cross-subsidy system was gradually put in place that lowers the rates of local calls below their costs by overcharging other telecommunications services such as long distance calls. This system stated in place until market-oriented reform was introduced (Jayakar, 1999). In this regard, Jayakar (1999) points out that “the universal service concept became synonymous with the cross-subsidy system that supported it, and the need to maintain universal service became the justification for the cross-subsidy system and the regulated monopoly itself (p.32).”

By contrast, Mueller (1997) explains that in spite of the enactment of the Communications Act of 1934, a major redefinition of universal service occurred in the 1970s, when competition was introduced to the long-distance telephone market and it threatened the mechanism of cross-subsidy by regulated monopoly. From this perspective, he argues that as a result of the introduction of competition to telecommunications, universal service policy not only has become synonymous with regulated rates to make telephone service more affordable to consumers, but it also became a political weapon for defenders of regulated monopoly. Irrespective of the disagreement between scholars on when the term “universal service” was re-conceptualized and how it evolved away from

its original concepts coined by Vail, there is a general consensus that cross-subsidy was identified as universal service itself before new universal service mechanisms were introduced as a result of market-oriented reform.

As mentioned in the previous section on telecommunications reform, cross-subsidy in the monopolistic era contributed to lowering the rates of local call service below cost at the expense of long-distance and international call users, and to increasing telephone penetration. At the same time, however, it also played role in delaying the development of the telecommunications sector, providing the incumbent monopoly with a political rationale to prevent the introduction of competition to the telecommunications sector. In spite of the incumbent monopoly's efforts to defend cross-subsidy as well as regulated monopoly, the irresistible wave of telecommunications reform toward competitive markets in the 1980s finally put an end to the cross-subsidy mechanism by regulated monopoly (Jayakar, 1999; Laffont & Tirole, 2000; O' Siochru', 1996). Specifically, with the introduction of competition the incumbent monopoly was unable to provide local call service at prices below costs by overcharging on long distance call service any more, because new entrants rushed into the long-distance market that was profitable while avoiding local call service whose costs were higher than its price. In other words, in response to competition with new entrants, the incumbent monopoly couldn't help lowering the rates of long-distance and international calls to prevent its customers from moving to competitors, while it couldn't help raising the rates of local calls to make up its losses incurred by local call service. As a result, the introduction of competition demolished the cross-subsidy mechanism.

Ironically, the competition in telecommunications that put an end to cross-subsidy

increased the concern on how to implement universal service. Its primary goal—to provide low-income and rural consumers with basic telecommunications services at affordable rates—became part of a political and social agenda (Jayakar, 1999). In particular, there has been increasing concern on how to create new universal service mechanisms in a competitively neutral way that replace cross-subsidy (Laffont & Tirole, 2000). These concerns have provoked many complicated and debatable issues related to universal service.

First of all, there has been a dispute among scholars since competition was introduced about what the most effective means to implement universal service is—a universal service policy (the government intervention) or neutral competition under free markets. Some scholars (Compaine & Weinraub, 1997; Crandall & Waverman, 1995, 2000; Dordick, 1991; Mueller, 1997, 1999; Noam, 1994) argue that universal service could be achieved by neutral competition among telecommunications companies without the government intervention and thus a universal service policy is not necessary, while others (Bauer, 1999; Bauer, Berne, & Maitland, 2002; Frieden, 2005; Parker, 2000; Sawhney, 1998; Schement & Forbes, 2000) insist that the market is not a flawless mechanism that by itself offers universal service and that a universal service policy should be employed to provide basic telecommunications service at affordable rates to all residents.

Those who advocate competition under free market as the most efficient way to implement universal service explain that a universal service policy distorts market competition. From this perspective, they argue that the state should let market choices determine the proliferation of telecommunications service because the most efficient way

to provide telecommunications service to ever larger numbers of people is to increase each household's wealth and to build a competitive free market. Further, they claim that a universal service policy should not be imposed on telecommunications service including new or emerging media forms.

By contrast, Bauer (1999) argues that competition is not sufficient to implement universal service because liberalization of telecommunications is much less beneficial to rural areas and low-income groups than to urban areas and upper-middle classes, even though he agrees with their basic point of view that a more competitive environment is the most important impetus to improve the performance of the telecommunications sector, to lower prices of telecommunications service, and to promote universal service. Parker (2000) points out that telecommunications service would not be provided to rural areas that are unattractive to telecommunications carriers, and thus universal service would not be achieved if we rely entirely on a competitive environment in order to promote network expansion. Additionally, Frieden (2005) sheds light on the question of how much the government's intervention in the market can promote the diffusion of new advanced telecommunications services. Through the case study of Canada, Japan, Korea and the United States, he finds that the rapid expansion of the Internet infrastructure in Canada, Japan, and Korea was due to the government's market intervention and stewardship, instead of solely relying on market competition. Based on this finding, he concludes that deregulatory policy and market competition are not sufficient to achieve universal access to new advanced telecommunications services such as the Internet.

Along with the debate on a universal service policy, it became another complex and difficult debate among scholars and policy-makers what specific service should be

included in the scope of universal service (Jayakar, 1999; Jeong, 2004).

Telecommunications generally meant telephone service before new advanced telecommunications services were introduced. In addition, in many countries only local call service, not even long-distance, was regarded as basic telecommunications service and included in the scope of universal service. With the emergence of a variety of new advanced telecommunications services, however, it has become a more difficult and complicated task to define the scope of basic telecommunications service.

As for this debate, many scholars (e.g., Cho, 2006; Clement & Shade, 2000; Gillett, 2000; Lievrouw, 2000; McChesney, 1996; Preston & Flynn, 2000) are in favor of including new advanced telecommunications services such as the Internet in the scope of universal service in the modern information society. They assume that those who are not able to use the Internet in the modern information society can hardly avoid not only political but also economic disadvantages. In this regard, some of them (Clement & Shade, 2000; Gillett, 2000; Lievrouw, 2000) emphasize that a universal service policy for the Internet should focus on Internet service as well as the end-user equipment and training because the characteristics of the Internet are different from those of the telephone.

Additionally, some states have attempted to expand the definition of universal service to include new advanced telecommunications services. With the enactment of the 1996 Telecommunications Act, for example, the United States expanded the scope of universal service to other advanced telecommunications services to promote access to advanced telecommunications service in all regions of the nation (Jayakar, 1999). Korea has also attempted to expand to the definition of universal service to include new

advanced services since the late 1990s. The Korean government has not only adopted many programs but also established a few laws to expand the scope of universal service to the Internet, even though it has not been defined as universal service on the Ministerial Ordinance<sup>1</sup> of the Ministry of Information and Communication that includes only four telecommunications services in the universal service package: local phone service, local public phone service, isolated area communication service, and wireless phone service for ships (Cho, 2006; Jeong, 2004).

By contrast to the argument that advocates expansion of the universal service package to new advanced services, some works (e.g., Beachboard, McClure, & Bertot, 1997; ITU, 1998) claim that expansion of the universal service package to new advanced services might result in the negative effects on the telecommunications sector. They point out that expansion of the universal service package discourages telecommunications service carriers to provide new advanced services whose initial costs are high. Further, Beachboard, McClure, and Bertot (1997) argue that the inclusion of new advanced services in universal service results in misallocation of limited investment funds on telecommunications as well as the delay of the introduction of advanced services.

As covered so far, universal service has become a more complex and tangled issue with the initiation of telecommunications reform and the rapid development of new telecommunications technologies. In addition, telecommunications reform toward market has spread the concerns on universal service to many developing countries since the 1980s because it was thought to jeopardize social objectives including universal service

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<sup>1</sup> Ministerial ordinance or ordinance of the prime minister is “a statute which prescribes matters delegated to the prime minister or the head of each government ministry, including matters within the jurisdiction of the ministry” (Ministry of Government Legislation, The Law-making process, <http://www.moleg.go.kr>) (Cited in Jeong, 2004, p. 97).

(Jayakar, 1999). Consequently, the definition of universal service varies with each country's political, social, and economic conditions as well as the stage of telecommunications reform in the country, despite the fact that the commitment to provide all residents with basic telecommunications service at an affordable price is a common theme in most countries.

To summarize, even though universal service is generally perceived as a social objective to provide all residents with basic telecommunications service at an affordable price, the concept of universal service has not clearly been defined among scholars and policy-makers primarily because the definition itself includes a few ambiguous terms such as 'basic telecommunications service' and 'an affordable price'. Additionally, the term "universal service" has differently been interpreted, depending on each country's political, social, and economic circumstances even after the modern sense of universal service was conceptualized. In this regard, Jayakar (1999) summarizes in the following manner; "Universal service has come to acquire a variety of meanings in different national environments over its almost century-long history. In various places, at various times, it has meant a fully interconnected national network; universal access for all consumers; a geographically ubiquitous service; service at "reasonable and affordable" rates; subsidized access for disadvantaged consumers such as rural users and the disabled; and so on (p.36)."

In the later portion of this thesis, it will be shown that universal service in Korea too has been an evolving concept. It will be demonstrated how the universal service definition, as well as the regulatory and administrative processes for its implementation, have evolved over time in response to changes in the domestic industry structure, general

political and economic conditions in the nation, and the international environment. Prior to analysis of telecommunication reform and universal service in Korea, a brief description of Korea is given in order to provide contextual backgrounds of this study. In addition, an overview of changes in telecommunications during the period covered by the case study is given below—an analytical treatment follows in Chapter 4.

### **Overview of Korea**

*Korea is a modern nation with a glorious history of over five thousand years. But, it has an experience as a colony of Japan from 1910 to 1945. At the end of World War II, in 1945, Korea was liberated from 35 years of Japanese colonization. With its independence, however, it was divided into the Republic of Korea in the south and the Democratic People's Republic of Korea in the north by two foreign players - the United States and the Soviet Union. This division brought about the Korean War in 1950 and the war was ended by an Armistice Agreement which established the Demilitarized Zone (DMZ) that now divides the Korean Peninsula.*

*South Korea, which is referred to Korea in this study with very few exceptional cases, is a presidential republic in East Asia, occupying the southern half of the Korean Peninsula. This mountainous peninsula is flanked by the Yellow Sea to the west, and the East Sea to the east. Korea is bounded by China to the west, Japan to the east and shares a border with North Korea to the north. The country's total area is 38,622.57 square miles. Its terrain is mostly mountainous, most of which is not arable. Lowlands, located primarily in the west and southeast, constitute only 30% of the total land area. The current population of Korea is roughly 48.85 millions. Most Koreans live in urban areas,*

*due to rapid migration from the countryside during the country's quick economic expansion since the 1970s. Seoul, the capital city of Korea, has over 10 million inhabitants.*

*Korea is one of the world's top ten exporters and a highly industrialized country that is classified as a high-income economy by the World Bank and an advanced economy by the International Monetary Fund. Korea has been the second fastest growing economy in the world for over four decades. Its remarkable transformation to a wealthy developed country in less than half a century is often called the 'Miracle on the Han River' and earned the distinctive reputation of 'Asian Tiger' in the international community. Korea is regarded as one of the strongest economies in the world, despite lacking natural resources and having the smallest territory among the G-20 major economies. The Korean economy is the fourth largest in Asia and 13<sup>th</sup> largest in the world. Like West Germany and Japan, rapid industrialization since the 1960s has made Korea one of the world's top ten exporters. It is the seventh largest trading partner of the United States.*

*An extremely competitive education system, and a highly skilled and motivated workforce are two key factors driving this knowledge-based economy that has the world's highest scientific literacy and second highest mathematical literacy. Korea has a high-tech and futuristic infrastructure, and is a world leader in technologically advanced goods, such as electronics, automobiles, ships, and machinery. It boasts the world's highest broadband Internet access per capita, and is the most wired country in the world. In 2007, the Economist Intelligence Unit ranked Korea's information technology industry competitiveness among the top three in the world. Korea's e-readiness and e-government readiness are also ranked above Japan and many European countries.*

*An estimated 90% of Koreans own mobile phones and use them not only for calling and messaging, but also for watching live TV, viewing websites and keeping track of their online gaming status. The rapid industrialization and urbanization have brought many changes to the way Korean people live. Changing economics and lifestyles have led to a concentration of population in major cities, particularly the capital Seoul, with multi-generational households separating into nuclear family living arrangements (quoted in Jeong, 2004; Korean History, 2008; Wikipedia, 2008, and edited by this author).*

In terms of policy formulation, the military autocratic regime was an absolute and crucial policymaker and the Korean government could strongly push its political and economic goals at its autonomous will, suppressing domestic players' resistance and opposition until the late 1980s when democracy and globalization rapidly progressed. This implies that the economic development strategies had been adopted and controlled almost entirely by the state during the military regime in Korea. Thus, the big industrial conglomerates (chaebol) tried to keep the close ties with the military regime to get a chance for new and profitable business as well as to avoid the political and economic sanctions by the authority (Kim, 1999; Koh, 2001).

With a gradual shift to a democratic society due to civil rights movement and student activism, a variety of societal actors such as labor unions, consumer groups and civil movement organizations have become politicized and attempted to influence the process of the government's policy formulation starting in the late 1980s. As a result, the process of policy formulation in Korea has become more complex and complicated than before because they sometimes clashed, and sometimes cooperated with the government

as well as other actors in the process of policy making depending on issues. In spite of this dramatic change, the fate of the Korean conglomerates were largely influenced by the authority even after the late 1980s because the government still had a strong initiative in policy making and an influential actor in implementing political, economic, and social agenda in Korea. Along with the government-run enterprises such as Korea Telecom, therefore, even private conglomerates have been eager to keep the close ties with the authority, and they have been willing to work with the government until recently (Jin, 2006; Hwang, 1995; Kim, 1999; Koh, 2001).

### **Overview of Telecommunications reform and universal service in Korea**

Korea achieved the rapid development of telecommunications and displayed a commitment to universal service in the 1980s before competition was introduced to the telecommunications sector (Hyun & Lent, 1999; Kim & Lee, 1991; Kim, 2003). In spite of these achievements during the monopolistic era of a state-owned telecommunications enterprise, Korea introduced market-oriented reform to the telecommunications sector in the early 1990s. In this regard, previous works on the motives for telecommunications reform in Korea find that there were two main causes to drive the Korean government to adopt market-oriented reform in telecommunications (Choi, 1999; Hong, 1998; Hyun & Lent, 1999; Jin, 2006; Kim 2003; Yoon, 1999). First of all, the Korean bureaucrats were influenced by market-oriented reform in telecommunications in developed countries like the United States and the United Kingdom, and realized that competition should be introduced to the telecommunications sector in order to resolve the problems caused by monopoly's inefficiency. Secondly and more importantly, pressure from foreign players

such as international organizations and the United States forced Korea to open its telecommunications market to competition.

Even though foreign players' enormous pressure was the primary impetus to lead the Korean government to liberalize its telecommunications market, the Korean government kept its initiative and exercised its discretion in the process of market-oriented reform in telecommunications (Yoon, 1999). For example, despite the fact that the United States put pressure on the Korean government to fully open its telecommunications market to competition, it made a master plan to introduce competition and new services to the telecommunications sector step by step, instead of fully liberalizing its telecommunications market, in order to protect its telecommunications industry from foreign competitors (Hong, 1998; Kim, 2003; Yoon, 1999). As a result, competition among domestic service providers was gradually introduced at the early stage of telecommunications reform before foreign competitors were invited to the Korean telecommunications market.

As another strand of market-oriented reform, the privatization of a state-owned telecommunications enterprise was announced in 1987. Before the announcement, the Korean government separated Korea Telecom from the Ministry of Communications, and transformed it to an independent operating entity in 1982 as the prelude to privatization (Straubhaar et al., 1995; Ure, 1995a). As for the motives for the privatization of Korea Telecom, many previous works describe that like the introduction of competition, it was also caused mainly by pressure from foreign players including the United States (e.g., Choi, 1999; Hyun & Lent, 1999; Jin, 2006). Additionally, some of these works point out that along with foreign players' pressure, pressure from domestic players such as

conglomerates played a role in the process of the privatization of Korea Telecom (e.g., Choi, 1999; Jin, 2006). At the same time, interestingly, the Korean government was eager to preserve power over Korea Telecom even after privatization because it was one of the most important vehicles for implementing telecommunications policies, including universal service (Choi, 1999). Thus, the Korean government undertook privatization at a gradual pace at first in order to achieve its own purpose and agenda for the privatization of Korea Telecom.

The privatization of Korea Telecom has shown some unique characteristics different from that of other telecommunications enterprises. First of all, the completion of the privatization of Korea Telecom had taken the extraordinarily long duration of fifteen years since the Korean government announced its plan in 1987. Secondly, improving managerial efficiency of the government-run telecommunications enterprise was not a main reason for the privatization of Korea Telecom because, unlike other telecommunications companies in Latin America and elsewhere, it had enjoyed large net profits even before privatization. Thirdly, the privatization of Korea Telecom had been heavily influenced by international players such as the United States, WTO, and International Monetary Fund (IMF) (Choi, 1999; Hyun & Lent, 1999; Jin, 2006, Yoon, 1999).

These distinctive processes of telecommunications reform resulted in the unique evolution of universal service in Korea which is different from that in most other countries. First of all, even though the introduction of competition contributed to conceptualizing universal service and devising the universal service mechanism in Korea, it didn't imply the end of Korea Telecom's status as a main universal service provider. In

contrast to most other countries' cases, the introduction of competition didn't imply the implementation of the universal service mechanism in a competitively neutral way in Korea; the obligation of universal service was asymmetrically imposed to Korea Telecom even after competition. Instead, interestingly, it was the privatization of a state-owned telecommunications enterprise that provided a momentum to terminate the asymmetric universal service mechanism that imposed the obligation of universal service largely on Korea Telecom. As a result, it caused the drastic changes in the Korean government's universal service policies.

In sum, Korea has a unique experience of the evolution of telecommunications reform and universal service, which prevents the existing theoretical frameworks from explaining well the relationship between telecommunications reform and universal service in Korea. From this perspective, this thesis attempts to identify the particular ways in which changes in industry structure—specifically the introduction of competition, and the privatization of Korea Telecom—influenced the way universal service was conceptualized and implemented in Korea along the lines of the similar changes documented above for the United States and other countries. In particular, it mainly focuses on three research questions mentioned earlier - 1) What were the goals and process of telecommunications reform in Korea? 2) Did the privatization of Korea Telecom cause the changes in universal service? If so, how did it influence universal service policy formulation as well as the universal service mechanism in Korea? 3) What does the Korean case say about the relationship between privatization and universal service?

### **Chapter 3: Research methodology**

To answer the three main research questions of this study, both the case method and policy analysis are employed as the primary tools. Along with theory-based analytical research and the empirically-oriented econometric approach, the case method has broadly been adopted in the literature on telecommunications reform (Jayakar, 1999). Despite its difficulty in generalizing findings and lessons from a specific case as well as distinguishing the impact of telecommunications reform from that of other factors, such as general economic growth, on the development of the telecommunications sector, the case method also has the advantage of permitting the contextual and in-depth exploration of industrial and regulatory activities. The reason why many researchers have employed the case method to investigate complex phenomena and issues related to telecommunications reform is that it provides actual telecommunications reform experiences in different countries and enables researchers to understand the process and impact of telecommunications reform in the political, economic and social context of each country or a specific group (Jayakar, 1999).

As noted in the previous chapters, Korea has a unique telecommunications reform experience different from that of other countries. In addition, the evolution of universal service in Korea is largely different from that of other countries in that unlike most other countries, Korea displayed a commitment to universal service in the 1980s before market-oriented reform was invited to the telecommunications sector (Jeong, 2004; Kim, 2003; Kim & Lee, 1991; O'Siochru', 1996). More interestingly, the Korean government imposed the obligations of universal service largely on the state-owned

telecommunications carrier after liberalization of telecommunications occurred, unlike other countries that attempted to impose the obligations of universal service on all telecommunications carriers in a competitively neutral way. Consequently, it is necessary to conduct detailed contextual analysis of telecommunications reform in Korea and its impact on universal service in order to answer the research questions of this study.

Feagin, Orum, & Sjoberg (1991) say that a case study is a useful tool when a researcher needs a holistic and in-depth investigation of current issues. In addition, Yin (1984) describes a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (p. 23). From these perspectives, the case study research method can be an appropriate and useful tool to investigate not only motives, ideological bases, and process of telecommunications reform in Korea but also the impacts of the privatization of Korea Telecom on the Korean government’s universal service policy and the universal service mechanism. The reason why this study looks at the ideological bases as well as the motives for the privatization of Korea Telecom is that like the United Kingdom where Thatcherism provided a momentum for privatization in a wide range of industries including that of British Telecom, Korea accelerated privatization in many industries including telecommunications after energetically embracing neo-liberalism in the mid-1990s.

As mentioned in the previous chapters, the literature on the impact of telecommunications reform on policy goals including universal service has a broad consensus that the introduction of competition is the most effective means to achieve

telecommunications objectives such as promotion of market performance, network expansion and so on (e.g., Fan, 2005; Garbacz & Thompson, 2007; Mueller, 1999; Ros, 1997; 1999; Bhuiyan, 2004; Stehmann, 1995; Wallsten, 2001). This general consensus, however, doesn't provide an appropriate framework to explain telecommunications reform and its impact on policy goals in Korea because the evolution of the telecommunications sector in Korea shows unique characteristics as noted in the previous chapter. To bridge the gap between findings in the previous literature on telecommunications reform and the Korean case, therefore, this study employs a contextual analysis of telecommunications reform in Korea and attempts to answer 'why' and 'how' it is different from other countries' telecommunications reform as Campbell (1975), Stake (1995), and Yin (1984, 1994) explain that the case study is a useful tool for investigating 'why' and 'how' questions.

To do so, this study adopts policy analysis that includes a review of government documents, laws, annual reports of Korea Telecom, newspaper articles, and Korea Telecom's internal documents related to the first two main research questions of this study. As primary information sources, laws, documents, and announcements produced by the Ministry of Information and Communications (MIC- preceded by the Ministry of Communications), such as the Korea Telecom Authority Act, the Immediate Telephone Installation System, the Widening and Automation program, the Telecommunications Business Act, the Framework Act on Telecommunications, and Act on Closing the Digital Divide are mainly investigated. The MIC was the institution in charge of the Korean government's telecommunications policies including universal service until President Lee Myung-Bak's administration changed this in February 2008. Those information sources

identify how the basic concepts and definitions of universal service have evolved as well as how the universal service mechanism has changed in Korea. In particular, they enable us to analyze how the Korean government's universal service policies have been formulated. Majchrzak (1984) describes that policy analysis is "the process of conducting research on, or analysis of, a fundamental social problem in order to provide policymakers with programmatic, action-oriented recommendation for alleviating the problem" (p. 12). Additionally, Dunn (1994) says that policy analysis is "to facilitate improved policies" (p. 27). Consistent with them, this study attempts to provide the policy suggestions with regard to the privatization of a state-owned telecommunications enterprise and universal service, by critically assessing and analyzing the information sources mentioned above.

Along with policy analysis, an individual interview with Manager Yang Seong-Won in the Corporate Relations Department at Korea Telecom was conducted in June 2008. On behalf of Korea Telecom, he was involved in the project team, which consisted of the MIC, Korea Information Society Development Institute (KISDI), and telecommunications service providers, to reform the current universal service system. This interview provides in-depth information about the topics of this study, particularly the process of universal service policy formulation as well as Korea Telecom's point of view on universal service.

The period of this study spans from the 1980s until 2008. This period is chosen because the period in which telecommunications reform began in Korea was the 1980s, and it is still underway as of this writing: in late 2008, a new universal service mechanism is being re-designed in response to the privatization of Korea Telecom. In

between, the significant changes in the Korean telecommunications system such as the introduction of competition, privatization, and the evolution of universal service will be studied. It may be observed that these events divide the period of study into roughly three phases: the monopolistic era of a state-owned telecommunications enterprise; the period of competition between private carriers and Korea Telecom owned by the state; and the period of competition after Korea Telecom was privatized. Consequently, this study deals with the evolution of telecommunications from the monopolistic era to the latest date in order to investigate not only what led to telecommunications reform in Korea but also how telecommunications reform, particularly the privatization of Korea Telecom, influenced universal service.

To summarize, policy analysis is an empirical approach that can use methodologies employed in various disciplines and fields (Hernon & McClure, 1989). In addition, by contrast to the traditional scientific hypothesis-testing approach it draws upon an empirico-inductive approach (Majchrzak, 1984). Thus, even though quantitative methods are still largely adopted in policy analysis, qualitative research methods are gaining popularity with many researchers engaged in policy analysis because they enable researchers to focus not only on what happens but also on why it happens (Jeong, 2004). In this vein, policy analysis based on qualitative research methods can be a useful and appropriate approach to answer the research questions of this study. In particular, the techniques presented in standard works of policy analysis such as historiography will be utilized for this thesis. This is because in contrast to the studies based on econometric approaches that focus mainly on the measurable aspects of universal service such as network expansion, it deals not only with why telecommunications reform including

privatization occurred in Korea but also with what happened to the process of universal service policy formulation after telecommunications reform in Korea.

As a case study, this thesis may have a limitation in generalizing the impact of the privatization of a state-owned telecommunications enterprise on universal service. Nevertheless, it is a meaningful and worthwhile attempt in that it represents Korea's unique experience of telecommunications reform and the evolution of universal service. Further, this study is expected to contribute to bridging the gap between previous works explaining the relationship between telecommunications reform and universal service, and the case of Korea which is in many ways exceptional. As some scholars (e.g., Jayakar, 1999; O'Siochru', 1996) suggest, the case study of Korea may contribute to a better understanding of the impact of telecommunications reform on universal service by demonstrating 'why' and 'how' Korea's experience of the telecommunications reform process is unique, as well as analyzing the evolution of universal service in Korea.

#### **Chapter 4: The changes in the industry structure of telecommunications and the evolution of universal service in Korea**

This chapter will take a close look at the changes in the industry structure of telecommunications and the evolution of universal service chronologically in order to investigate how the changes in the market structure of telecommunications influence the goals of universal service and the process of universal service policy formulation in Korea. As noted earlier, the market structures of telecommunications in Korea are roughly divided into three phases in this study: the monopolistic era of a state-owned telecommunications enterprise before the 1980s; the period of competition between private carriers and state-owned Korea Telecom from 1991 until 2002; and the contemporary period of competition after Korea Telecom was privatized. In response to this segmentation, consequently, this chapter will explore the market structures of telecommunications and universal service stage by stage. This is expected to shed light on how universal service has been affected by the changes in the market structure of telecommunications.

##### **The monopolistic era of a state-owned telecommunications enterprise**

The first telecommunications service in Korea was the telegraph in 1885. The telephone was introduced to Korea in 1898 (MOC, 1985a). Thus, the history of Korean telecommunications is over a hundred years old. Despite its long history, however, Korean telecommunications had hardly developed before the 1960s due to Korea's experience as a colony of Japan and the Korean War. In particular, the Korean War, that

began in 1950 and continued until 1953, destroyed the infrastructure of Korean industries, including telecommunications. In addition, the telecommunications industry had progressed very slowly before the 1980s, even though Korea began to promote economic development and construct infrastructure such as electricity, running water, roads, and telecommunications in the 1960s. This is because telecommunications rated low on the Korean government's priority list at the beginning stage of economic development, compared to other infrastructures such as electricity, running water, and roads (Koh, 2001).

With the steeply increased demands for telecommunications as a result of economic development in the 1970s, however, the development of telecommunications became one of the top priorities of the Korean government in the 1980s. At the same time, the Korean government realized that it was nearly impossible to continue economic growth without the development of telecommunications; underdeveloped telecommunications had been recognized as an obstacle to economic development since the late 1970s. Due to these realizations, the Korean government made great efforts to develop telecommunications starting in the 1980s. As a result, unprecedented structural changes in telecommunications have taken place, and the telecommunications industry has rapidly developed since the 1980s (Kim & Lee, 1991; Koh, 2001; KT, 2001).

Unlike other countries that have an experience of competition at the early stage of telecommunications, such as the United States, Korea never experienced competition in telecommunications before it was introduced into the telecommunications sector as a result of market-oriented reform in the 1990s. Therefore, structural changes in the 1980s didn't imply the end of a state monopoly in telecommunications in Korea. Instead, the

separation of business and policymaking by the establishment of the Korea Telecommunication Authority (KTA) was the most important and outstanding change in the Korean telecommunications market in the 1980s. As a first step toward competitive markets, the Korean government separated the telecommunications business from the Ministry of Communications (MOC) and established the KTA, which became an independent operating entity as a public corporation. The corporatization of Korea Telecom was the “transformation of state-owned enterprises or business assets into public corporations organized under company law”, as Wellenius and Stern (1994, p. 690, quoted in Jayakar, 1999) define. Before the establishment of the KTA, the government had fully taken care of telecommunications, just as it had been in charge of other public utilities such as electricity and running water. That is, the government had been simultaneously the policymaker, regulator, and service provider in telecommunications until 1981. Thus, the emergence of the KTA implied the separation of business and policymaking in telecommunications for the first time in Korea, and it had heavy impacts on the Korean telecommunications sector.

In spite of the establishment of the KTA, structural changes in telecommunications in the 1980s did not go beyond the scope of monopoly since telecommunications was still a state monopoly and the telecommunications sector was fully controlled by the government. However, the emergence of the KTA was a prelude to market-oriented reform in telecommunications and the privatization of Korea Telecom in the future. Additionally, it made an impact on the conceptualization of universal service as well as the development of telecommunications, particularly network expansion, in Korea. To begin with, therefore, we explore the motive and process of the establishment

of the KTA, and its impact on the conceptualization of universal service and the Korean government's universal service policy.

Even before the 1970s, some government officials advocated that the telecommunications business should be separated from the government's policymaking and regulation in order to promote the development of the telecommunications sector (Koh, 2001; KT, 2001; MOC, 1985b). Their proposal, however, had not been taken into full consideration because telecommunications was a relatively low priority on the government's list until the late 1970s. Moreover, it was taken for granted that telecommunications service should be provided by the government, like other public utilities. New circumstances due to rapid economic development in the 1970s, however, supported their argument. As the demands for telecommunications increased rapidly and the underdeveloped infrastructure of telecommunications put an obstacle in the way of economic growth, these officials argued that the Korean government needed to adopt new strategies to promote the development of telecommunications. In particular, there was a need for network expansion in an efficient and timely manner in order to alleviate residents' complaints about poor telecommunications service and to support continued economic development (Kim & Lee, 1991; KT, 2001).

As a result, the establishment of the KTA for the separation of the telecommunications business from policymaking and regulation was officially proposed by the MOC and taken into full consideration in 1979 (Koh, 2001; KT, 2001; MOC, 1985b). In particular, the MOC strongly insisted that structural change, including the separation of business and policymaking in telecommunications, was a prerequisite to implement network expansion efficiently. Finally, the MOC's proposal for the

establishment of the KTA, which aimed at efficient network expansion, was approved in 1981 by Chun Doo-Hwan's military regime that had come to power in a coup in 1980. The KTA came into being in 1981, formally separating the telecommunications service provider from the government (Kim, 2003; Koh, 2001; KT, 2001; MOC, 1985b).

As briefly covered so far, the primary motive for structural changes in telecommunications, such as the establishment of the KTA in the 1980s, was to provide telecommunications service universally by implementing network expansion in response to the rapidly increased demands for telecommunications service. This purpose was explicitly summarized in the Korean Telecommunication Authority Act. To begin with, Article 1 in the Act describes that "the KTA should contribute to promotion of the public interest such as the interests of people and social welfare through reasonable and responsible operation." Additionally, Article 10-2 defines the role and duty of the KTA as follows: "The KTA should strive to provide all the people with telecommunications service in equitable and convenient ways."

These two articles in the Act indicate that the Korean government endeavored to provide telecommunications service to all the people through structural changes in telecommunications in the 1980s, which aimed at the promotion of telecommunications' efficiency as well as network expansion. The significance is that the Korean government emphasized the promotion of the public interest as the ultimate goal much more than the promotion of efficiency in the process of structural changes in telecommunications in the 1980s as Article 1 in the Act notes. At the same time, implementation of the public interest in telecommunications was interpreted as providing all the people with telecommunications service in "equitable and convenient ways". In other words, the

goals of structural changes in telecommunications in the 1980s, represented by the establishment of the KTA, was to implement network expansion in an efficient way, and ultimately to achieve universal telephone service. Consequently, these structural changes in telecommunications had largely influenced the concept of universal service and the government's universal service policies before the term "universal service" officially appeared during the 1990s in Korea.

However, some previous works (e.g., Kim, 2003) indicate that the concept of universal service didn't come to the minds of Korean policy-makers in the 1980s when the Korean government endeavored to implement regionally balanced network expansion and to provide all the people with telecommunications service in equitable and convenient ways. How was it possible that Korean policy-makers in telecommunications pursued universal service of telephone without realizing the concept of universal service? To answer this question, we need to take a look at the political, economic and social context in Korea. The unprecedented economic development in the 1960s ~ 1970s led to the rapid industrialization and urbanization, and it widened the gap between urban and rural areas in Korea. Additionally, residents in rural areas were relatively marginalized from the benefits of economic development and unsatisfied with their circumstances as the gap between urban and rural areas was getting wider in spite of rapid economic development. Thus, the problem of the gap between urban and rural areas emerged as a political and social issue in Korea since the late 1970s (Kim & Lee, 1991). And, it became one of the top priorities of the Korean government to narrow the gap between them as well as to mitigate the complaints about disadvantages in rural areas. Particularly, Chun Doo-Hwan's military regime that had come to power in a coup in 1980 was

relatively more focused on the regionally balanced economic development, compared to the former military regime that emphasized the rapid economic development based on industrialization and urbanization at the expense of rural areas (Koh, 2001). The economic crisis starting in the late 1970s put pressure on Chun Doo-Hwan's regime to replace the former regime's economic strategy of pursuing the rapid growth with a new economic strategy aimed at the economic stabilization. In addition, Chun Doo-Hwan's regime attempted to establish its legitimacy by distributing the economic achievements to rural areas which had been sacrificed for the economic development until the late 1970s (Haggard & Moon, 1990; Kim & Lee, 1991; Koh, 2001).

In these circumstances, Korean policy-makers since the 1980s came to strongly pursue regionally balanced network expansion as a way to resolve the problem of the gap between urban and rural areas. Along with these political and social motives for the regionally balanced development of telecommunications, an economic motive also played a major role in promoting regionally balanced network expansion—the Korean government realized that the telecommunications infrastructure was an indispensable factor in continued economic growth. In other words, these political, economic, and social motives pushed policy-makers in telecommunications to put the goal of regionally balanced network expansion first in the 1980s, irrespective of whether or not the concept of universal service came to their minds.

Therefore, we might conclude that the basic concept of universal service appeared in Korea in 1981 with the succinct and explicit statement of Article 10-2 in the Korean Telecommunication Authority Act, even though the term “universal service” officially appeared for the first time in Korea only in the Telecommunication Business Act revised

in September 1998. This situation, wherein, a major policy shift is introduced but unaccompanied by its current terminology is perhaps analogous to the enactment of a commitment to universal service in the 1934 Communications Act in the United States.

The comparison of the Korean Telecommunication Authority Act with the 1934 Act makes this clear and evident. As noted above, the former describes that “the KTA should strive to provide all the people with telecommunications service in equitable and convenient ways.” And, the latter states that the goal of government policy will be “to make available, so far as possible, to all the people of the United States, a rapid, efficient, nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.” As we can see, the Korean Telecommunication Authority Act also states that telecommunications service should be universally provided to all the people as the Communications Act of 1934 does. In this regard, Kim and Lee (1991) interpret Article 10-2 in the Korean Telecommunication Authority Act as follows: “The sentence is generally taken to mean that everyone, regardless of the geographical region or income level, must be given equal opportunity of access to the telecommunications network; no preferential or discriminatory treatment can be given for the reason of residence area and income level. It is also taken to mean that the customers must be afforded telecommunications services at reasonable rates, although it is not explicitly stated” (p. 32). Further, they argue that “universal service defined this way is traced back to the Communications Act of 1934 in the United States, which became the basis for the telecommunications acts of other countries, including Korea” (p. 32).

In spite of their assertion, however, it is unclear whether or not Article 10-2 in the Korean Telecommunications Act was actually influenced by the Communications Act of

1934 because some previous works (e.g., Kim, 2003) point out that it is uncertain that the concept of universal service came to the minds of Korean policy-makers in the 1980s. If Korean policy-makers were influenced by the Communications Act of 1934 when they enacted the Korean Telecommunication Act, previous works might have deduced that the concept of universal service had come to their minds. To summarize, even though the Korean Telecommunication Act aimed at providing telephone service universally and provided the basic concept of universal service, it is uncertain whether or not Korean policy-makers who enacted it realized at the time that the Article 10-2 referred to the goals and basic concepts of universal service.

In the meantime, there is a difference between those two acts with regard to how to provide telecommunications service to all the people, despite the fact that they have close similarities in their provisions on universal service. The Korean Telecommunication Act suggests “in equitable and convenient ways”, while the Communications Act of 1934 prescribes “with adequate facilities at reasonable charges”. Nevertheless, this difference can hardly prevent us from reaching the conclusion that the Korean Telecommunication Authority Act occupies a position somewhat analogous to that of the 1934 Communications Act in the United States universal service policy, in the sense that both provided the basic concepts and the goals of universal service. Interestingly, the former also has some ambiguous terms such as “equitable” and “convenient” in a provision on universal service as the latter has some ambiguous terms such as “available” “adequate facilities” and “reasonable charges”.

Korean telecommunications policies in the 1980s were largely influenced by the establishment of the KTA, the separation of a service provider from the government,

which was the result of structural changes in telecommunications at the beginning of the 1980s. Particularly, in response to the primary purpose of the establishment of the KTA, i.e., rapid network expansion, the Korean government's telecommunications policies in the 1980s focused mainly on the rapid proliferation of telephone service. There is a broad consensus in previous works on telecommunications in Korea (e.g., Kim, 2003; Kim & Lee, 1991; Koh, 2001) that it is nearly impossible to understand the development of the Korean telecommunications sector in the 1980s, including the implementation of universal service, without an investigation of two epochal telecommunications policies; the Immediate Telephone Installation System (IT IS) and the Widening and Automation (WA) program. Consistent with a general consensus in previous works, therefore, this study also attempts to explore them as a way to grasp the evolution of universal service during the monopolistic era of a state-owned telecommunications enterprise in Korea.

With the establishment of the KTA, the Korean government set its sights on the regionally balanced growth of telecommunications service with a slogan of "One Household, One Telephone" in order to supply the demand for telephone service in a short period. As a result, the two telecommunications policies mentioned above were adopted and energetically carried out in the 1980s. In most countries, telecommunications policies at the early stage of the sector tended to target volume-oriented network expansion rather than regionally balanced network expansion in order to achieve the most rapid network expansion (Gordon & Haring, 1984). Unlike those policies in other countries, however, the Korean government's major telecommunications policies in the 1980s, the IT IS and the WA, didn't merely aim at volume-oriented network expansion but pursued regionally balanced network expansion as well as volume-oriented network

expansion at the same time as Article 10-2 in the Korean Telecommunication Authority Act intended. These two policies, particularly the WA, were designed to contribute to resolving the problem of the gap between urban and rural areas which emerged as a political and social issue starting in the late 1970s (Kim & Lee, 1991).

As explained well in previous works (Kim, 2003; Kim & Lee, 1991; Koh, 2001; KT, 2001; MOC, 1988), the IT IS was designed to expand transmission networks and to provide high-capacity switching equipments and largely contributed to the volume-oriented network expansion. The WA simultaneously pursued two separate telecommunications policies, widening of local zones and subscription zones<sup>2</sup> and automation of switching, and greatly contributed to the growth of telephone subscriptions in rural areas and played a major role in achieving regionally balanced network expansion by lowering the cost of usage and access for telephone subscribers in rural areas and providing greatly improved telephone service to rural areas than before. Particularly, the WA gave a priority to rural areas over urban areas in providing telephone service and contributed to narrowing the gap between urban and rural areas. In detail, the WA widened local call zones enabling residents in rural areas to call nearby urban areas at cheaper rates than before because calls that had earlier been classified as long distance calls were now local calls due to the widening of local call zones. Additionally, the WA gave a higher priority to the automation of switching in rural areas, along with the widening of local call zones and subscription zones. As a result, rural areas were fully digitalized by electronic switches in 1987 even before some urban areas where electromechanical switches were still in operation. This enabled residents in rural areas to

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<sup>2</sup> Local call zones and subscription zones refer to zones in which the same local call rates and subscription charges were applied, respectively (cited in Kim & Lee, 1991, p. 36).

enjoy better quality of telephone service than those in urban areas (Kim, 2003; Kim & Lee, 1991; KT, 2001).

As a result of these two telecommunications policies, volume-oriented network expansion was successfully achieved and the total number of telephone subscribers reached 10 million in 1987. This implies that the number of telephone subscriptions increased at the pace of about a million every year from 1981 to 1987. By 1992, the number of telephone subscribers reached 17 million and Korea ranked as the ninth top nation in the world in terms of the number of telephone subscriptions. Further, regionally balanced network expansion, energetically pursued by the Korean government with a slogan of “One Household, One Telephone” in the 1980s, was also successfully achieved. Thus, telephone service was provided to almost all households even in rural areas including mountainous areas and isolated islands before the 1990s (Kim, 2003; Kim & Lee, 1991; Koh, 2001; KT, 2001; MOC, 1988b).

The process of network expansion and the commitment to universal service in Korea in the 1980s were largely distinguished from those in other developing countries that adopted market-oriented reform in telecommunications. In particular, contrary to other developing countries that allowed foreign players to invest in their telecommunications sector and privatized their state-owned telecommunications enterprises to finance the huge capital needed for network expansion, Korea achieved network expansion and committed to universal service largely utilizing domestically raised capital during the state monopoly period before full-scale market-oriented telecommunications reform began in the 1990s.

The Korean government issued telephone bonds<sup>3</sup> to new telephone subscribers from 1979 and raised local call rates by 66% from 12 won (12 cents) to 20 won (20 cents) in 1981 to help the KTA's financial position and to accumulate capital needed for implementing the IT IS and the WA. In the 1980s, Korean customers were able to afford the steeply raised telephone service rates due to accumulated wealth from the rapid economic development in the 1960s ~ 1970s and they were willing to pay extra for telephone service due to a large supply-demand gap. In effect, the KTA was able to domestically finance the huge capital requirements for the development of the telecommunications sector with very little resistance from customers to the extra financial burdens such as telephone bonds and increased local call rates. For example, as Table 1 indicates, the KTA's internal financing<sup>4</sup> for its total investment, including network expansion, increased to 75.9% in 1987 from 44.9% in 1981 due to a series of rate hikes, while funding from foreign investors decreased to 0% from 20.1% during the same period. In the meantime, telephone bonds that contributed to funding for network expansion were abolished and telephone service rates were re-adjusted to reduce residents' burdens in rural areas in 1988 after regionally balanced network expansion was successfully achieved (Kim, 2003; Kim & Lee, 1991; Koh, 2001; KT, 2001; MOC, 1988b).

This Korean case contradicts the argument that state telecommunications monopolies in developing countries cannot simultaneously promote network expansion and universal service because the commitment to keep basic service rates low in order to

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<sup>3</sup> They refer to the government bonds which new telephone subscribers must purchase in order to obtain a telephone connection. It implies that the Korean government raised revenues from charging installation fees and issuing telephone bonds to new telephone subscribers.

<sup>4</sup> It refers to the part of the KTA budget that came from telecommunications revenues.

promote universal access leads to lower revenues, hampering network expansion.

Table 1: Funding for the KTA's investment during 1981~1987

Unit: %

Year		1981	1982	1983	1984	1985	1986	1987
Internal financing		44.9	44.1	54.7	66.1	72.1	73.4	75.9
External financing	Foreign investment	20.1	23.0	15.8	7.9	3.7	1.2	-
	Telephone bonds	15.8	11.0	12.9	11.4	11.9	12.7	11.2
	Installation fees	19.2	13.4	16.6	14.3	12.1	12.5	12.1

(Source: MOC, 1998b)

For example, contrary to Ros' (1997) conclusion that the introduction of competition to telecommunications along with increase in the price of basic service promotes network expansion given that there are strong demands for telecommunications service at current rates in developing countries, Korea raised basic service rates steeply by taking advantage of a large supply-demand gap and achieved regionally balanced network expansion in a short period under a monopoly environment before competition was invited to telecommunications. Additionally, this Korean case undermines Stehmann's (1995) conclusion deduced from the case study of Chile that developing countries need the strategies of privatization, liberalization and the political opening to attract private and foreign investments to the telecommunications sector because their public telecommunications service providers lack the capital needed to install a modern and universal infrastructure. As a result, Korea provides a good example to support the argument that market-oriented reform in telecommunication is not a prerequisite to promote network expansion and commitment to universal service (Jayakar, 1999; O'Siochru, 1996).

As covered so far, the epochal events in telecommunications during the 1980s, such as the establishment of the KTA and the achievement of regionally balanced network expansion, were entirely initiated and led by the state. As previous works (Hyun & Lent, 1999; Kim, 2003; Kim & Lee, 1991; Koh, 2001) indicate, the state was the sole and absolute player in the process of policy formulation in a wide range of areas including telecommunications in Korea until democracy and globalization rapidly progressed in the late 1980s. This means that the Korean military regimes had autonomy and power enough to decide political, economic, and social policies at their will in the face of interest groups' resistance and opposition before the late 1980s. Particularly, the president, the chief executive of administration, had unchallenged authority to decide the government policies before Korea moved to a democratic society.

Like other policies, thus, telecommunications policies had been almost solely articulated by the government until the late 1980s in Korea. Particularly, they were largely influenced by the president's opinions. For example, the KTA might not have been established in the early 1980s without Chun Doo-Hwan's resolute decision to separate telecommunications business from the government because the government's plan for the corporatization of the KTA confronted resistance from some government officials and consumer groups. Government officials who worked at the department of telecommunications business were solidly against the corporatization of the KTA because of the fear of the instability of their jobs. Additionally, some consumer groups were also against it because there was a broad consensus that telecommunications service should be provided by the state for the public interest. Despite this resistance, however, the establishment of the KTA was completed in a short period backed by the strong authority

of Chun Doo-Hwan's military regime which had a power to force all officials belonging to the department of telecommunications business to move to the corporatized KTA with no dissent. In the same vein, with Chun Doo-Hwan's approval, the Korean government was able to administer two major telecommunications policies in the 1980s, the IT IS and the WA, which aimed at regionally balanced network expansion (Kim, 2003; Koh, 2001, KT, 2001).

In this regard, the process of policy formulation in telecommunications until the 1980s is well understood in terms of the statist theory that largely focuses on the state's autonomy and role in explaining how policies are formulated. This theory is convincing and persuasive to explain the process of policy formulation initiated by strong and autonomous governments. Likewise, it describes well how the Korean government had pushed coherent economic development strategies from the 1960s to the late 1980s (Kim, 1999). As the statist theory explains, the process of policy formulation had been mainly controlled by the state in Korea until democracy and globalization rapidly progressed in the late 1980s because the military autocratic regime was an absolute and crucial policymaker and the government could strongly push its political, economic, and social goals at its autonomous will, suppressing domestic players' resistance and opposition. Similarly, telecommunications policies in the 1980s such as the IT IS and the WA that enormously contributed to universal service were also formulated and administered entirely by the state in Korea.

### **The period of competition between private carriers and state-owned Korea Telecom**

During the monopolistic era of a state owned telecommunications enterprise in the

1980s, Korea managed to expand the telecommunications network while simultaneously promoting universal service—a difficult balance to achieve since the rate controls and cross-subsidies often used for universal service inhibit network investment. In Korea, two epochal telecommunications policies, the IT IS and the WA, contributed to implementing rapid network expansion, and while simultaneously displaying a commitment to universal service. In spite of these unprecedented achievements during the era of state monopoly, Korea could not help implementing market-oriented telecommunications reform in the late 1980s due to drastically changed internal and external circumstances. Previous works on telecommunications reform in Korea explain that there were two main causes to drive the Korean government to accelerate market-oriented reform in telecommunications (Choi, 1999; Hong, 1998; Hyun & Lent, 1999; Jin, 2006; Jung, 1997; Kim 2003; Koh, 2001; Yoon, 1999).

First of all, Korean bureaucrats were influenced by market-oriented telecommunications reform in developed countries such as the United States and the United Kingdom, and realized that liberalization should be introduced to the telecommunications sector in order to resolve the problems caused by monopoly's inefficiency (Hwang, 1995; Hwang, 1999). Additionally, the rapid development of technologies as well as the increased demands for new telecommunications services prompted the Korean government to liberalize the telecommunications market. Particularly, the former contributed to lowering entry barriers and fostering the introduction of competition in telecommunications (Koh, 2001).

Secondly and more importantly, pressure from foreign players, such as international organizations and the United States, forced Korea to open its

telecommunications market to competition. In particular, the United States made great efforts to open the Korean telecommunications market in the late 1980s, and its strong pressure played a major role in liberalizing the Korean telecommunications sector (Jung, 1997). For example, the United States Trade Representative (USTR) has closely monitored the Korean telecommunications industry and put pressure on the Korean government to open the Korean telecommunications equipment and service markets. Furthermore, the USTR designated Korea as a Priority Foreign Country (PFC) in 1989, in order to push the Korean government to accept its request (Hyun & Lent, 1999). The United States wanted to enter the Korean telecommunications sector freely because it was, with Japan, numbered among the most lucrative markets in Asia. Additionally the United States attempted to reduce its trade deficit with Korea, aggravated by the rapid growth of Korean exports to the United States, by selling its competitive telecommunications service and equipment to the latter (Koh, 2001).

Korea was vulnerable to the United States's pressure for the liberalization of the Korean telecommunications market because its economy was closely tied to that of the United States, its largest export market to which more than one-third of its total exports in the 1980s were destined (Koh, 2001; Sa, 1993). In other words, Korea could hardly refuse the United States's request for the liberalization of its telecommunications market because it would be disastrous to the Korean economy if the United States imposed economic sanction and retaliation against Korea. Consequently, Korea could not help opening its telecommunications market to foreign players in order to avoid an economic conflict with the United States. Along with pressure from bilateral negotiations with the United States, pressure from multilateral negotiations such as World Trade Organization

(WTO) basic telecommunications negotiations also played an important role in leading the Korean government to reshape the Korean telecommunications market in the 1990s (Hyun & Lent, 1999; Kim 2003; Koh, 2001).

Though the enormous pressure from these foreign players induced the Korean government to liberalize its telecommunications market, it managed to retain control over the timetable and the specifics of reform and exercised its discretion (Yoon, 1999). For example, despite the fact that the USTR put pressure on the Korean government to fully open its telecommunications market to competition, it made its own master plan to introduce competition and new services to the telecommunications sector step by step in order to protect its telecommunications industry from foreign competitors, instead of fully liberalizing its telecommunications market (Hong, 1998; Kim, 2003; Yoon, 1999). As a result, competition among domestic service providers was gradually introduced in the initial phase of market-oriented reform before foreign competitors were allowed to come in. In other words, one of the Korean government's primary goals of telecommunications reform was to improve domestic carriers' competitiveness before the Korean telecommunications market was fully liberalized (Hong, 1998; Kim, 2003). This strategy of the Korean government failed to satisfy the United States that wanted Korea to fully liberalize its telecommunications market as soon as possible. As a result, Korea was designated as a PFC by the USTR a second time in 1996 (Hyun & Lent, 1999).

To summarize, while the first phase of market-oriented telecommunications reform during 1980~1987 was driven entirely by internal causes, the second phase of telecommunications reform during the period of 1990~1997 was heavily influenced by external causes in addition to internal causes. Also, while the 1980s reforms were mainly

for the achievement of regionally balanced network expansion, the reforms in the latter period were pursued not only to enhance the productivity and competitiveness of domestic telecommunications service providers but also to cope with enormous pressure from foreign players to open the Korean telecommunications market. These differences made the process in the latter period more complex than in the former.

In this section, the process of the second phase of telecommunications reform will be explored before we take a close look at universal service during the period of competition between private carriers and state-owned Korea Telecom. This analysis is expected to provide insights into how liberalization in telecommunications influenced the changes in the government's universal service policies in Korea. In general, the second phase of telecommunications reform spanned four separate initiatives in structural adjustment during the 1990~1997 period. The introduction of competition and the diffusion of new services were key features of these structural adjustments (Hong, 1998; Kim, 2003; Koh, 2001). This study attempts to explain the process of the second phase of telecommunications reform by investigating these structural adjustments step by step. As noted above, the government retained the initiative in telecommunications reform and implemented structural adjustments in a phased manner to further its own economic agenda, despite foreign players' pressure for immediate liberalization of the Korean telecommunications sector.

#### 1) The chronology of telecommunications reform in the second phase, 1990-1997

By the end of the 1980s, the Korean government had achieved significant progress on network expansion and universal service. Though further deregulation and

liberalization had been considered, no moves in these areas had been made until the USTR's designation of Korea as a Priority Foreign Country (PFC) in 1989. Galvanized into action by the threat of imminent sanctions, the Korean government announced in haste 'The First Plan of Structural Adjustment in Telecommunications' in July, 1990 after bilateral negotiations with the United States.

In the first structural adjustment in telecommunications, the Korean government introduced partial competition to the international call, mobile service, and wireless pager markets and opened the value added service market to full competition. Specifically, DACOM, a second international call carrier, began to compete with Korea Telecom in December, 1991, and ten service providers were newly invited into the wireless pager market in August, 1992, as a result of the first structural adjustment. In addition, Shinsegi Tongshin, a second mobile service carrier, began to provide mobile service in July, 1994 in competition with SK Telecom<sup>5</sup> (Hong, 1998; Koh, 2001). The emergence of new telecommunications service carriers finally put an end to Korea Telecom's monopolistic era that had lasted over one hundred years and heralded the introduction of full-scale competition to the telecommunications market.

In spite of the introduction of more competition and new services, the first structural adjustment in telecommunications had some crucial limitations to foster free competition in the telecommunications market. First of all, competition was not allowed into basic telecommunications services: local and long distance call services. Additionally, the Korean government still had a strong power to control the telecommunications sector after competition was introduced, and pursued its own agenda – the enhancement of

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<sup>5</sup> SK Telecom originated as Korea Mobile Telecom owned by Korea Telecom; in January 1994, Korea Mobile Telecom was privatized and sold to Sunkyung, one of Korea's big conglomerates, and was renamed SK Telecom

domestic telecommunications carriers' competitiveness by gradual liberalization of telecommunications. Consequently, the telecommunications market was still largely controlled and managed by the government after the first structural adjustment of telecommunications and the introduction of competition (Koh, 2001).

In the meantime, the domestic and international circumstances of telecommunications rapidly changed in the early 1990s. With the objective, among others, of liberalizing telecommunications systems around the world, the WTO basic telecommunications negotiations began in April, 1994. They put pressure on countries participating in the negotiations to open their telecommunications markets. Along with this international pressure, Korean domestic conglomerates, which had accumulated huge amounts of capital during the rapid economic development in the 1970s ~ 1980s, pushed the government to introduce more competition to the telecommunications sector because telecommunications was regarded as a very lucrative business and entry barriers to telecommunications were remarkably lowered in the 1990s due to the rapid development of new communications technologies (Kim, 2003; Koh, 2001).

To cope with these changes in internal and external circumstances, the Korean government carried out the second structural adjustment in telecommunication in 1994. With the objective of further promoting competition and the introduction of new services, the second adjustment program opened the long-distance call market to competition and licensed DACOM as a second long-distance call service provider in March, 1995. Additionally, new telecommunications services, such as PCS (Personal Communications Service) and TRS (Trunked Radio System), were introduced (Hong, 1998; Koh, 2001).

In 1995, one year after the second structural adjustment, the Korean government

announced 'A Blueprint to Improve Competitiveness of the Telecommunications Industry' and conducted the third structural adjustment in telecommunications. Like the two previous adjustments of the telecommunications market, this reform also aimed at improving the competitiveness of domestic carriers against foreign telecommunications service providers, prior to the introduction of full-scale competition to the telecommunications market—a key requirement if the WTO basic telecommunications negotiations were to reach an agreement (In actual fact, they reached an agreement in February, 1997). In the third structural adjustment based on the Blueprint, the Korean government in 1996 licensed twenty-seven new service providers and introduced competition to all telecommunications markets except local-call market (Hong, 1998; Kim, 2003; Koh, 2001).

The WTO basic telecommunications negotiations finally reached an agreement in February, 1997. Consequently, the Korean government began the fourth structural adjustment in telecommunications in the same year, which aimed at more competition among domestic carriers as well as deregulation on foreign direct investment (FDI) to telecommunications in the preparation for full liberalization of its telecommunications market. As a result, Hanaro-Tongshin was licensed as a second local call service carrier and local-call market was opened to competition in 1998. By this step, Korea completed the process of the introduction of competition to its telecommunications market (Hong, 1998; Kim, 2003, Koh, 2001).

The key feature of the last two structural adjustments during the period of 1995 ~ 1997 was the implementation of a fully-competitive market. The Korean telecommunications market had been controlled and managed largely by the government

before those structural adjustments, even though the government pursued market-oriented telecommunications reform through the first two structural adjustments (Koh, 2001). The four structural adjustments, primarily induced by pressure from foreign players such as the United States and the WTO basic telecommunications negotiations, completed the process of the Korean government's liberalization of its telecommunications market in terms of the introduction of full-scale competition. In particular, the third structural adjustment generated a momentum to foster the implementation of a pro-competitive market in telecommunications, as its three major slogans indicated: 'Diffusion of competition', 'Enhancement of competitiveness of Korea Telecom' and 'Implementation of competitively neutral market'. For example, the Korean government allowed Korea Telecom to adjust its local and long-distance call rates before competition was invited to the long-distance call market, not only to implement a pro-competitive circumstance between Korea Telecom and DACOM, but also to persuade Korea Telecom not to oppose the diffusion of competition according to the government's plan for the liberalization of telecommunications (Hwang, 1999; Koh, 2001). In other words, the government gave incentives to Korea Telecom, which was resolutely against competition because of the fear of new entrants' cream skimming strategy, in order to persuade Korea Telecom to consent to the diffusion of competition.

Along with the diffusion of competition, the Korean government gradually lifted the restrictions on FDI to the telecommunications sector, in order to accelerate the liberalization of telecommunications as well as to relieve pressure from foreign players who wanted to access the Korean telecommunications market. Foreign players had been prohibited to invest in the Korean telecommunications sector except within the strictly

limited wireless business area before the Korean government proposed its WTO commitments in 1997. With its WTO commitments, however, Korea began to lift regulations on FDI to its telecommunications market. This was implemented in a series of graduated steps. As the first step, the Korean government allowed foreign investors to hold up to 33% of the shares in any telecommunication carrier in 1998, except Korea Telecom where the limit was set to 20%. As the second step, foreign investors were allowed to hold up to 49% of shares of all Korean telecommunications carriers in 2001, including Korea Telecom, with the revision of the Telecommunication Business Act in September, 2000 (Hong, 1998; Jin, 2006; Koh, 2001; Lee et al., 2001). Most recently, with the Free Trade Agreement (FTA) with the United States signed in April, 2007, the Korean government must allow foreign companies established in Korea to hold up to 100% of shares in all telecommunications and cable companies within two years after the FTA goes into effect, except for two major players: Korea Telecom (the biggest fixed-line operator in Korea) and SK Telecom (the biggest mobile carrier in Korea) (The Dong-A Ilbo, 2007). In other words, the FTA between Korea and the United States enables not only foreign investors to have an ownership of Korean telecommunications companies but also allows foreign telecommunications carriers to access the Korean market with very few restrictions in the near future.

As mentioned earlier, the primary goals of the first phase of telecommunications reform, which led to the establishment of the KTA and the separation of telecommunications business from the government, were to implement rapid network expansion and to promote universal service. In contrast, the second phase of market-oriented reform during the period of 1990 ~ 1997 largely focused on the introduction of

competition step by step and the improvement in domestic carriers' competitiveness in order to limit foreign service providers' success post-entry in the Korean telecommunications market even after the invitation of full-scale competition. As a result, the promotion of universal service rated relatively lower than competition on the government's priority list in the second phase of market-oriented telecommunications reform. This argument can be supported by the fact that there had been little discussion of universal service during the period of 1990 ~ 1997 when the four structural adjustments in telecommunications for the diffusion of competition occurred.

With regard to the relationship between competition and universal service, previous works (e.g., Jayakar, 1999; Mueller, 1997) indicate that the introduction of competition tends to ignite discussions of universal service in most countries because it is accompanied by widespread fears that universal service, a prime example of social objectives, may be sacrificed for economic efficiency. Meanwhile, supporters of competition argue that open competition itself will encourage universal access but in a manner that does not privilege one carrier over another. However, the introduction of competition in Korea didn't spark discussions of universal service, nor were any arguments made that competition should be introduced because it would promote universal service in a competitively neutral way. Indeed, the discourse around the introduction of competition had very little to say on universal service, either in a positive way that competition will aid universal service or negatively that social objectives like universal service will be sacrificed in a competitive market. As a result, it has taken eight years after competition was invited to the Korean telecommunications market for the term "universal service" to officially appear, in the Telecommunication Business Act

(TBA) revised in September, 1998. In other words, universal service emerged in the policy discourse only after the phased introduction of competition was mostly completed, and not during the eight-year period when competition was gradually introduced.

In this regard, this study attempts to discover the unique features of the evolution of universal service in Korea by taking a close look at universal service mechanisms and the Korean government's universal service policies after the liberalization of telecommunications. To do so, it will first explore universal service, including the funding mechanism of universal service, during the period of 1990~1995 before the introduction of full-scale competition to the telecommunications market. Secondly, it will investigate the universal service mechanism after the invitation of full-scale competition, which ostensibly aimed at supporting universal service programs in a competitively neutral way. This investigation will include an analysis of the TBA, the Presidential Decree of the TBA<sup>6</sup>, and the Ministerial Ordinance of the MIC that describe the goal, the principle, and the scope of universal service as well as the obligations of universal service imposed on telecommunications carriers. Thirdly, it will examine the Korean government's universal service policies for the Internet, defined lately as a new advanced telecommunications service. The Korean government has made great efforts to provide all residents with the Internet to promote informatization (an information society) and adopted universal service policies for the Internet since the 1990s, even though the Internet is not included in the scope of universal service in the MIC's Ministerial Ordinance. To some extent, the Korean government's approach to universal service for the Internet displays several unique features, distinguishable from that of other countries.

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<sup>6</sup> A presidential decree is "a subordinate statute which prescribes matters delegated to the president by act with the scope specifically defined, and also matters necessary to enforce the act concerned" (Ministry of Government Legislation, the law-making process, <http://www.moleg.go.kr>) (Cited in Jeong, 2004, p. 96 ).

Thus, we will take a look at universal service for the Internet as well as the telephone in order to fully understand the Korean government's universal service policies and the universal service mechanisms after the introduction of competition.

## 2) Universal service after the introduction of competition

To begin with, this study investigates how telephone service was universally provided during the period of 1990 ~ 1995 in Korea. The most important feature of universal service before full-scale competition was introduced was that Korea Telecom, a state-owned service provider, still took the full responsibility for universal service despite the fact that the first structural adjustment invited competition to some segments, including the international call market. Consequently, in spite of the introduction of competition to some segments, a cross-subsidy based universal service mechanism, usually terminated with the introduction of competition in other countries, was still sustained in Korea.

As noted in the previous section, Korea achieved the goal of regionally balanced network expansion in 1987, and since the late 1980s the Korean government has focused relatively more on providing basic telecommunications service (local calling) at a low rate than on promoting network expansion (Kim, 2003; Kim & Lee, 1991). Therefore, Korea Telecom had sustained a cross-subsidy that contributed to lowering rates of local call service below its costs by overcharging rates of long-distance and international call services during the period of 1990 ~ 1995 when limited competition was introduced. For example, as Table 2 notes, Korea Telecom's total revenues of local call service were 65.26% of its costs, while the total revenues of long-distance call service were 2.7 times

of costs and the total revenues of international call service were 1.9 times of costs in 1995 (KT's internal documents cited in Kim, 2003, p. 122). This implies that the introduction of competition to some segments, including international call market, didn't terminate the cross-subsidy based universal service mechanism in Korea.

Table 2: Korea Telecom's segmented revenues (Unit: million dollars)

	Local call service	Long distance service	International call service
Revenue (A)	2743.8	1654.3	715.7
Cost (B)	4204.4	611.2	375.4
Ratio of A to B	65.26%	270.67%	190.63%

Another key feature of universal service before 1996 was that there had been little discussions of universal service in spite of the introduction of competition to the telecommunications market, as mentioned above. As a result, there were very few telecommunications laws that had the provisions related to universal service. In particular, Korea did not have any telecommunications laws that described how to operate the universal service mechanism until the TBA was revised and the Ministerial Ordinance of the MIC was enacted in 1998. There were only two telecommunications laws that had provisions on universal service before the discussions of universal service began on a full scale in the mid-1990s. One was the TBA revised in 1991 whose Article 3 described that "telecommunications service providers must not refuse to provide telecommunications service without fair and legitimate reasons." In addition, Article 29 in the TBA indicated that "telecommunications service should be provided at reasonable rates, in order not only to promote the development of the telecommunications sector, but also to provide residents with a variety of telecommunications services conveniently and fairly at cheap prices." The other telecommunications law with a provision for universal service was the

KTA Act which was dealt with in the previous section. In spite of the new circumstances after the introduction of competition, Korea Telecom was still obliged by the KTA Act to provide all people with telecommunications service in equitable and convenient ways. With regard to these two acts, Kim (2003) points out that “they didn’t reflect changes in market structure caused by the introduction of competition, nor did they make mention of how to operate the universal service mechanism” (p. 122~123). To summarize, the introduction of limited competition didn’t imply the termination of cross-subsidy in Korea. Thus, the obligation of universal service was still fully imposed on the state-owned telecommunications enterprise, Korea Telecom, until full-scale competition was introduced.

In the mid-1990s, the discussions of universal service were touched off in Korea due to the imminent agreement of the WTO basic telecommunications negotiations and the Korean government’s third and fourth structural adjustments in telecommunications that introduced competition to all segments of telecommunications market. The basic strategy of the Korean government to cope with the agreement of the WTO basic telecommunications negotiations was to restrain foreign carriers from entering the Korean market by enhancing the competitiveness of domestic carriers. Separately, the Korean government realized that it was imperative to consider a countermove to prevent foreign carriers’ cream-skimming strategies in case they entered the Korean market after the agreement of the WTO basic telecommunications negotiations. Thus, it began to figure out a scheme to impose the obligation of universal service on foreign telecommunications service providers if they would run their business in the Korean market. In particular, the Korean government attempted to design the universal service

mechanism in a pro-competitive way, since the WTO basic telecommunications agreement required all member countries to introduce “pro-competitive regulatory framework” to spread market-oriented telecommunications reform around the world (ITDRI, 1997; Kim, 2003).

More broad-based competition in the mid-1990s also played a major role in intensifying the discussions of universal service because the introduction of competition to long-distance call market was expected to jeopardize cross-subsidy. In this regard, Korea Telecom opposed the introduction of competition to long-distance call market and proposed the Nationwide Unified Telephone Rating System (NUTRS) which was expected to cause the drastic drop of long-distance call rates at the expense of local-call users. Korea Telecom argued that the introduction of the NUTRS would make the initiation of competition to the long-distance market unnecessary and contribute to preventing foreign carriers from entering the Korean market. Despite Korea Telecom’s strong proposal, however, the NUTRS was not adopted because the promotion of competition was one of the Korean government’s top priorities in the 1990s, and other telecommunications carriers, including DACOM, strongly supported the promotion of competition (Koh, 2001). Instead, the government permitted Korea Telecom to adjust its local and long-distance call rates before the introduction of competition to the long-distance call market, in order to strengthen it for the impending competition. In addition, it introduced interconnection fees to compensate for Korea Telecom’s losses incurred by universal service.

As is well known, the interconnection fee system has a couple of inherent flaws in supporting universal service in a competitively neutral way. First of all, this mechanism

induces the incumbent operator not only to overcharge interconnection fees to other service providers, but also to provide a low quality of interconnection because a regulator has difficulties in computing the costs of interconnection and evaluating the quality of interconnection. In this mechanism, therefore, a new telecommunications carrier is tempted to build its own networks to avoid interconnection fees and a low quality of interconnection. Further, consumers with huge demands for long-distance and international calls, such as big business groups, are also tempted to create their own private telecommunications networks to avoid exorbitant interconnection fees. Consequently, this mechanism tends to cause inefficiency and market distortion in the telecommunications sector (O' Siochru', 1996; Kim, 1998; Laffont & Tirole, 2000). Ultimately, it is not appropriate for implementing universal service.

Apart from these inherent flaws, the interconnection fee system had a big problem in implementing universal service in Korea because interconnection fees collected from other telecommunications service providers were too meager to compensate Korea Telecom for its losses caused by universal service. In spite of the introduction of interconnection fees to support universal service, therefore, Korea Telecom's internal cross-subsidy still played a major role in supporting universal service. For instance, as Table 3 indicates, Korea Telecom was responsible for 91% of the deficits caused by Non Traffic Sensitive (NTS) costs, which was 206 million dollars, while other telecommunications carriers paid only 9% of the deficits incurred by NTS costs, which was 20 million dollars in 1996. In addition, Korea Telecom paid 90% of the deficits incurred by NTS costs, which was 624 million dollars, while others were responsible for just 10% of the deficits by NTS costs, which was 69 million dollars in 1997 (KT's

internal documents cited in Kim, 2003, p.124). Along with NTS costs, the basic telecommunications services provided at the rates below costs such as local public phone service and wireless phone service for ships, increased the total amount of the deficits incurred by universal service which reached 1078 million dollars in 1996, and Korea Telecom was responsible for 95% of the total deficits caused by universal service in the same year (Kim, 2003, p. 126).

Table 3: Service provider's contributions to the losses by NTS (Unit: million dollars)

Korea Telecom		Other service providers		Total	
1996	1997	1996	1997	1996	1997
206.1	624.3	20.4	69.4	226.5	693.7
91%	90%	9%	10%	100%	100%

To summarize, the diffusion of competition provided a momentum for the Korean government to consider a pro-competitive universal service mechanism and introduce interconnection fees to compensate for Korea Telecom's losses incurred by universal service. As a result, Korea Telecom's internal cross-subsidy was augmented with interconnection fees during the period of 1996~1999 until a new universal service mechanism based on 'Virtual Universal Service Fund (USF)' was introduced in 2000. However, Korea Telecom's internal cross-subsidy was still the main resource to provide universal service because interconnection fees collected from other telecommunications service providers were very insufficient to compensate for Korea Telecom's losses incurred by universal service. In effect, the obligation of universal service had asymmetrically been imposed on the state-owned telecommunications carrier in spite of the introduction of interconnection fees as well as the diffusion of competition.

With the realization of the problems with interconnection fees, the introduction of full scale competition in 1997 made it incumbent on the Korean government to amend the universal service mechanism based on cross-subsidy and interconnection fees. Thus, the Korean government had meetings with telecommunications service providers to create a new universal service mechanism in a more competitively neutral way. These efforts resulted in the revision of the TBA in September, 1998; finally, provisions on universal service were officially stipulated in the revised TBA. In addition, detailed enforcement regulations on universal service were enacted in December, 1999. Consequently, universal service as officially stipulated in the TBA, has been provided since 2000 based on the new universal service mechanism (Cho, 2006; Jeong, 2004; Kim, 2003).

The term “universal service” is defined in the revised TBA as a basic telecommunication service which anyone within Korean territory can use regardless of time and place with a reasonable charge. At the same time, the Act states that the detailed contents of universal service will be decided by considering the following facts, 1) the progress of information and communications technology, 2) the spread of telecommunications services, 3) public interest and security, 4) the promotion of social welfare, and 5) the promotion of informatization (an information society). The scope of universal service is stipulated in the Presidential Decree of the TBA, and includes the following: 1) wire telephone services, 2) telephone services for emergency communications, and 3) telephone services whose fees are reduced or exempted for the handicapped and the low income class (Article 2-2(1), Cited in Jeong, 2004, p. 97).

Additionally, the Ministerial Ordinance of the MIC specifies the types of wire telephone services included in the scope of universal service: local call, local public

phone service, and isolated area communication service including a wireless phone service between the continent and a ship or among ships. It also states that emergency telephone service and reduced or exempted fee services for the disabled or those with low incomes are included in the scope of universal service. A long-distance call service, a phone number guide service, a mobile phone service, and a pager service are included in the scope of exempted or reduced fee services for the handicapped and low income subscribers (Cho, 2006; Jeong, 2004; Kim, 2003). Recently, high-speed Internet service was newly included in the scope of exempted or reduced fee services for low income citizens and the handicapped in 2007 (KT, 2007).

Each element of universal service is specified in the Presidential Decree of the TBA, such as designation of a telecommunications company providing universal service, compensation for losses incurred in the process of providing universal service, and the creation of relevant financial resources. Additionally, the detailed method for the computation of compensation for universal service fees is stipulated in the Ministerial Ordinance of the MIC. In this regard, the Presidential Decree of the TBA prescribes that each service provider's losses, incurred by emergency phone service as well as services provided to low income citizens and the handicapped at exempted or reduced fees, are not compensated for by the government or other carriers. Therefore, compensation for the losses incurred by providing universal service is confined to just four telecommunications services: local phone service, local public phone service, isolated area communication service, and wireless phone service for ships (Cho, 2006; Jeong, 2004; Kim, 2003).

The framework of the Korean universal service mechanism completed in 1999 was largely influenced by the United States's USF mechanism. However, its operating

system is quite different from that of the United States's USF. Unlike the United States's USF mechanism in which actual funds are created by the levy imposed on all telecommunications carriers and universal service programs are supported by these funds, Korea's is operated through virtual funds, which implies that Korean telecommunications companies not providing universal service have a duty to provide universal service providers with financial support, instead of contributing directly to the actual USF. In detail, the Presidential Decree of the TBA stipulates that the losses incurred by universal service are computed by subtracting the income from the required cost for providing universal service. Based on this computation, the universal service providers receive reimbursement for their losses caused by universal service from other telecommunications carriers in proportion to the total price of the telecommunications service. Consequently, there is no institution or corporation to administer the USF in Korea because telecommunications carriers pay their contribution for universal service directly to universal service providers each year, according to the government's computation (Cho, 2006; Jeong, 2004; Kim, 2003).

The new universal service mechanism contributed to creating a more pro-competitive market than before, by attempting to impose the obligation of universal service on all telecommunications carriers and to compensate for the losses incurred by universal service. Also, it played a major role in providing universal service in more systematic and organized ways. Notwithstanding the introduction of the new universal service mechanism in the context of competition, however, Korea Telecom's obligation of universal service was not significantly decreased even after 2000 because the operating system of the mechanism has limitations in imposing the obligation of universal service

on all telecommunications carriers in a competitively neutral way.

First of all, in spite of the emergence of new telecommunications service providers, Korea Telecom has been designated as the sole carrier to provide universal service in local phone service, local public phone service, isolated area communication service, and wireless phone service for ships, while the obligation of emergency phone service as well as exempted and reduced fee services for low income citizens and the handicapped has been imposed on Korea Telecom and other telecommunications carriers, such as SK Telecom, Hanaro Telecom, and DACOM. This is because other telecommunications service providers, except Korea Telecom, have not been able to provide these services nationally (KT, 2007).

In this circumstance, Korea Telecom's losses incurred by universal service have not been fully compensated for by the government or other service providers because of the unique features of the computation method for universal service fees enacted by the government. According to the Ministerial Ordinance of the MIC, service providers, which experience losses from providing universal service, may be subsidized by the government or other service providers for the following services: 1) local call service whose ratio of the required cost and income is more than 110:100, 2) local public phone service whose ratio of the required cost and income is more than 130:100, 3) isolated area communication service, 4) wireless phone service for ships. These provisions imply that universal service providers are not subsidized for local call service whose ratio of the required cost and income is less than 110:100 and local public phone service whose ratio of the required cost and income is less than 130:100. Additionally, even in the case of local call service whose ratio of the required cost and income is more than 110:100, the

service provider's losses are equated to 90% of its actual losses caused by local call service given that it gets intangible benefits by providing universal service. Further, only 70% of these computed losses are considered as the amount which may be subsidized. In spite of these several steps of computation, however, the losses incurred by providing local call service to high cost areas are not compensated for if the universal service provider makes profits from its local call service as a whole.

Similarly, in the case of local public phone service whose ratio of the required cost and income is more than 130:100, the universal service provider's losses from providing local public phone service are equated to 70% of its actual losses. Additionally, 90% of these computed losses are considered as the amount which may be subsidized. Like the case of local call service, the losses incurred by public phone service are not compensated for if the universal service provider makes profits from its public phone service as a whole. In the case of isolated area communication service, compensation is limited to the losses incurred by installation of wireless transmission devices for providing local call service to isolated areas. Additionally, the amount which may be subsidized is limited to 90% of these losses. As for wireless phone service for ships, the universal service provider's losses had been fully compensated until 2003. However, its losses from providing wireless phone service for ships have been computed by Long-Run Incremental Costs (LRIC) since 2004 because the government expected that LRIC would prevent the universal service provider from imposing the costs incurred by its inefficiency on other service providers.

These computation processes of compensation for losses from providing universal service have prevented Korea Telecom, the sole universal service provider for the four

services mentioned above, from being fairly subsidized for universal service. For example, as Table 4 indicates, Korea Telecom's actual losses incurred by providing local call service to high cost areas were 2128.3 million dollars during 2000~2005, but they were equated to 200.4 million dollars (9.4% of the total losses) in the process of computation. As a result, Korea Telecom was subsidized 135.2 million dollars (6.4% of the total losses) from other service providers after the levy imposed on Korea Telecom, which implied Korea Telecom's share of the total universal service support, was computed by subtracting this amount from the computed losses of 200.4 million dollars. Additionally, as Table 5 notes, Korea Telecom's actual losses from providing public phone service were 668.5 million dollars during the same period, but they were equated to 253.3 million dollars (37.9% of the total losses). And, Korea Telecom was subsidized 171.8 million dollars (25.7% of the total losses) from other service providers after the levy imposed on Korea Telecom was subtracted from the computed losses of 253.3 million dollars. In other words, Korea Telecom paid 93.6% of the total losses from providing local call service to high cost areas and paid 74.3 % of the total losses incurred by public phone service during the period of 2000~2005 (KT, 2007).

Table 4: Losses incurred by providing local call service to high cost areas

Year	Losses (A)	Levy imposed on service providers (B)		Losses not compensated for (A-B)
		Korea Telecom	Other service providers	
2000	479.4	0	0	479.4
2001	363.2	0	0	363.2
2002	349.2	51.5	105.6	192.1
2003	451.2	13.7	29.6	407.9
2004	274.8	0	0	274.8
2005	210.5	0	0	210.5
Total	2128.3	65.2	135.2	1927.9

(Source: KT's internal document, 2007)

(Unit: million dollars)

Table 5: Losses incurred by public phone service and Compensation for them

Year	Losses (A)	Levy imposed on service providers (B)		Losses not compensated for (A-B)
		Korea Telecom	Other service providers	
2000	201.5	14.7	25.6	161.5
2001	146.2	12.5	24.0	109.7
2002	85.9	9.9	20.2	55.8
2003	81.0	16.1	34.9	30.0
2004	73.4	13.6	31.1	28.7
2005	80.5	14.6	36.1	29.8
Total	668.5	81.5	171.8	415.1

(Source: KT's internal document, 2007)

(Unit: million dollars)

Overall, as Table 6 shows, Korea Telecom's total losses incurred by providing four types of universal service – local call service, public phone service, isolated area communication service, wireless phone service for ships – were 2991.8 million dollars<sup>7</sup> during the period of 2000~2005. However, they were equated to 635.2 million dollars (21.2% of the total losses) after computation. As a result, Korea Telecom was subsidized

<sup>7</sup> This is the sum of the total from table 3 (2128.3 million dollars) plus the total from table 4 (668.5 million dollars) plus losses for isolated area communication service, and wireless phone service for ships.

428.6 million dollars (14.3% of the total losses) from other service providers after the levy imposed on Korea Telecom was subtracted from the computed losses of 635.2 million dollars. This implies that Korea Telecom paid 85.7% of the total losses incurred by providing four types of universal service during the period of 2000~2005 (KT, 2007).

Table 6: Losses incurred by universal service (Unit: million dollars)

Year	Losses (A)	Levy imposed on service providers (B)		Losses not compensated for (A-B)
		Korea Telecom	Other service providers	
2000	728.2	29.0	50.3	648.9
2001	551.5	26.1	50.3	475.1
2002	469.2	72.0	147.4	249.8
2003	560.5	38.2	82.7	439.6
2004	368.4	20.3	46.2	301.9
2005	314.0	21.0	51.7	241.3
Total	2991.8	206.6	428.6	2356.6

(Source: KT's internal document, 2007)

This mechanism to impose the majority of the universal service obligation to Korea Telecom was primarily caused by the Korean government's two policy goals which were hardly compatible: the creation of a pro-competitive universal service mechanism and the enhancement of new service providers' competitiveness against Korea Telecom. In other words, the government pursued the universal service mechanism in a pro-competitive way with the full liberalization of telecommunications in the late 1990s. At the same time, it attempted to promote latecomers' competitiveness against Korea Telecom by providing them with some advantages, such as the exempted or reduced obligation of universal service, in order to foster competition between the incumbent and new entrants. Due to these conflicting goals, ultimately, the new universal

service mechanism failed to impose the obligation of universal service on all telecommunications service providers fairly and symmetrically. As a result, Korea Telecom's losses incurred by universal service have not been fairly and symmetrically compensated for even after full-scale competition was introduced. Additionally, Korea Telecom's internal cross-subsidy still has played a major role in bolstering universal service up even after the Korean government fully liberalized the telecommunications sector.

As covered so far, the universal service mechanism initiated by the introduction of full-scale competition mainly focuses on computation of compensation for the losses from providing universal telephone service. Paradoxically, the lacunae in the existing models for universal telephone service have not prevented the government from extending universal service programs to new technologies such as the Internet. However, universal service-related laws in Korea neither stipulate how to create resources for universal service for new advanced communications services, nor how to compensate the losses incurred by providing them, even though some advanced communications services, such as mobile phone service and the Internet, along with telephone service are provided to low-income citizens and the handicapped at exempted or reduced rates by the laws.

Despite the fact that there were no laws stipulating the operating mechanism of universal service for advanced communications services in Korea, however, the government has not only enacted a couple of laws justifying universal service for the Internet, but also introduced many telecommunications policies and programs in order to provide all citizens with the Internet since the 1990s. Like that of universal service for the telephone in the 1980s, the government's justification of universal service for the Internet

largely focuses on economic and social benefits, such as the economic development and social welfare, rather than political benefits. For example, many policy documents, such as the Framework Act on Informatization Promotion (FAIP) (1995), the Act on Management of Knowledge Information Resources (MKIR) (2000), the Act on Closing the Digital Divide (Digital Divide Act) (2001), E-Korea Vision 2006 (E-Korea) (2002), National Information White Paper (White Paper) (2002, 2003), and Annual Plan for Informatization of MIC (Annual Plan) (2002, 2003) explain that the promotion of informatization enables people to access information resources and to get economic and social benefits. Ultimately, these documents aim at the promotion of public welfare through the economic development (Cho, 2006; Jeong, 2004).

In contrast to these many documents which justify the implementation of informatization, only one document, the FAIP, stipulates the ways to create resources for the promotion of informatization and the procedures for utilizing these resources. Moreover, the FAIP merely provides general directions and guidelines with regard to funding for the promotion of informatization. It states that the government should create the Informatization Promotion Fund (IPF) supported by the government's contribution, the levy collected from key telecommunications service providers, the dividends paid to the government by Korea Telecom<sup>8</sup>, and so on (Article 34-1). Also, it stipulates that the IPF should be used for the promotion of informatization, including such programs as the construction of the information superhighway, the promotion of the marginalized citizens' access to and use of information, support for human resources and research related to the information technology industry (Article 34-2). Thus even the FAIP, the only law or

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<sup>8</sup> After the full privatization of Korea Telecom, the government is no longer a shareholder so it has not received any dividends from Korea Telecom.

policy document which has the provisions on the funding for universal service for the Internet, doesn't provide a methodology for the computation of compensation for the losses incurred by providing universal service for the Internet. Due to lack of the details in terms of financial aspects or discussion of major elements of a potential program, most universal service-related laws in Korea are not effective but just enunciate a general policy commitment to implement universal service for the Internet. They impose little obligations of universal service for the Internet on telecommunications carriers, and thus no service provider is obligated to contribute to implementing universal service for the Internet.

Consequently, the development of a national informatization infrastructure and universal service for the Internet was initiated and promoted largely by the government-run telecommunications service provider. The Korean government announced the Korean Information Infrastructure (KII) Project in 1993 and introduced the master plan of the KII Project in three phases by 2005 (Jeong, 2004; KT, 2001). For this long-term project to promote informatization, the Korean government had made the most of Korea Telecom not only to construct the broadband infrastructure, but also to create financial resources needed for providing universal service of the Internet because Korea Telecom, as a state-owned enterprise, had been under the government's control before it was privatized, and thus the government could push Korea Telecom to play a major role in implementing its telecommunications policies without Korea Telecom's particular opposition, even in the case where its telecommunications policies conflicted with Korea Telecom's interest.

For instance, Korea Telecom was forced to participate in implementing the government's master plan of the KII Project to build an information superhighway in

1995, and it was appointed as the key agency to take the full responsibility for the project. Thus, Korea Telecom had to be responsible for the majority of the cost for the project as well as the development of technologies and equipment to build the information superhighway, in partnership with ETRI (Electronics and Telecommunications Research Institute) and KAIST (Korea Advanced Institute of Science & Technology). In terms of financing the project, the government required Korea Telecom to provide support of 23.1 million dollars which was more than 70% of the total cost of the project. Due to the government's KII Project, a broadband network based on ATM (Asynchronous Transmission Mode) switches and fiber optic lines was finally constructed in April, 1996. It provided 400 subscribers with 155Mbps (Million bits per second) broadband network (KT, 2001).

In addition, complying with the government's request, Korea Telecom established a master plan to convert its telephone lines based on PSTN (Public Switched Telephone Network) to fiber optic lines with ATM switches all across the country by 2015, and the government announced in 1997 that Korea Telecom would be charged with almost all the expenses of 4.5 billion dollars for the project which aimed at connecting all households and enterprises with a broadband network, despite the fact that Korea Telecom had suffered from stagnant revenues and decreasing profits since competition was introduced. As the first step in constructing an information superhighway all over the country, Korea Telecom constructed a fiber optic telecommunications network with 367 ATM switches in 144 areas and provided all state-owned and public institutions with broadband network service by August, 2000 (Jeong, 2004; KT, 2001).

In addition to its contributions to the construction of the broadband infrastructure,

the obligation of providing the Internet to rural areas was also imposed on Korea Telecom because other private telecommunications enterprises were reluctant to provide broadband network service to rural areas which were not lucrative to them. Thus, it was taken for granted that the state-owned service provider took the responsibility for investing in unprofitable rural areas to provide the Internet for the promotion of the public interest. In these circumstances, Korea Telecom was used as an effective vehicle to implement the government's universal service policies for broadband network service without fair compensation for the losses caused by providing it to rural areas. This became one of the major factors to lead to the rapid growth of broadband penetration in Korea. It reached 28.7% by 2000, just two years after Thrunet (a Korean private service provider) introduced broadband network service to the Korean telecommunications market. In addition, it increased to 46.4% by 2001, and dramatically to 72.8% by 2005. Furthermore, 95% of households in the rural areas (3.58 million households out of 3.77 million households) could access broadband networks via ADSL, cable modem, or optic fiber by 2005 if they want to and can afford to purchase broadband network service (Cho, 2006; edaily, 2005; Kirkpatrick, 2001; KT, 2007; Lee & Chan-Olmsted, 2004).

Despite the fact that there were no universal service mechanisms or funding for broadband network service, Korea was able to implement its universal service policies for the Internet with little worry about funding resources because the government had a major stake in Korea Telecom and compensation for Korea Telecom's losses from providing the Internet to high cost areas was not a big concern, before the government completed the privatization of Korea Telecom (Jeong, 2004; KT, 2007). In effect, the obligations of universal service for the Internet, such as the construction of infrastructure

and providing broadband network service to rural areas at affordable rates, were also largely imposed on the state-owned telecommunications service provider. Further, these obligations implied that the universal service mechanism was far from competitively neutral, despite the fact that the Korean universal service mechanism was created after the introduction of full-scale competition.

To summarize, the promotion of competition in the 1990s provided a momentum for Korea to consider the creation of a new universal service mechanism in a pro-competitive way. Consequently, the government had meetings with telecommunications service providers, including Korea Telecom and other private carriers, and attempted to reflect their opinions in creating a new universal service mechanism. Notwithstanding the diffusion of competition and the emergence of private telecommunications enterprises, however, universal service was still initiated and led by the government instead of market forces. In particular, the government was in charge of developing most universal service policies by using its power to influence telecommunications enterprises even after full-scale competition was introduced. In this process, the obligations of universal service for the telephone and the Internet were asymmetrically imposed on the state-owned service provider largely because of one of the government's major goals in telecommunications, the enhancement of newcomers' competitiveness against Korea Telecom. As a result, the introduction of full-scale competition did not terminate Korea Telecom's support through internal cross-subsidy for universal service. But once Korea Telecom was privatized, this system proved to be no longer sustainable—the privatization process and its consequences for universal service are discussed in the next section.

### **The contemporary period of competition after the privatization of Korea Telecom**

As mentioned in the introduction, one of the unique features of the privatization of Korea Telecom is the extraordinarily long duration of its process which mostly overlapped with the period of the liberalization of telecommunications during 1991 ~ 1997. The plan for the privatization of Korea Telecom was announced in 1987, even before competition was invited to the Korean telecommunications market. However, it was completed only in 2002, five years after full-scale competition was introduced. The main reason the privatization of Korea Telecom had taken such a long duration is that it had been heavily influenced by the changes in the political and economic environment during the privatization process (Jin, 2006).

At the beginning stage, the privatization of Korea Telecom was caused by pressure from foreign players, such as the United States, and domestic players, such as conglomerates, who wanted to enter the Korean telecommunications market (Choi, 1999; Hyun & Lent, 1999; Jin, 2006; Koh, 2001; McClelland, Weiss, & Sujarto, 1997). It was also promoted by the policy-makers at the MOC (Ministry of Communication) who considered that privatization could contribute to the improvement in Korea Telecom's managerial efficiency and competitiveness by accelerating market-oriented telecommunication reform (Kim, 2003). Additionally, the privatization of Korea Telecom was expected to raise government revenues because Korea Telecom was one of the biggest enterprises in Korea (Jin, 2006).

Among these factors, the most important cause of the privatization of Korea Telecom was pressure from foreign players, particularly the United States, and the others were secondary factors, such as to improve Korea Telecom's managerial efficiency and to

raise government revenues, given that the Korean government planned to sell up to 49% of shares of Korea Telecom and keep its ownership of Korea Telecom when it announced the plan for the privatization of Korea Telecom (Choi, 1999; Jin, 2006). If the primary goals of the privatization of Korea Telecom had been the improvement of Korea Telecom's financial and operating performance or the realization of government revenues, the government would have attempted to sell off as much of its ownership stake of Korea Telecom as possible, and ultimately hand its ownership of Korea Telecom over to the private sector.

As indicated earlier, Korea Telecom was one of the most important vehicles for the implementation of the government's telecommunications policies for social objectives, including universal service. In spite of the announcement of privatization, thus, the Korean government was eager to preserve its power over Korea Telecom even after the privatization of Korea Telecom, and it attempted to undertake the privatization of Korea Telecom at a gradual pace at first in order to achieve its own purpose and agenda in the process of privatization (Choi, 1999; Jin, 2006). Also, an unexpected recession in the Korean stock market caused by low economic growth in the late 1980s delayed the process of the privatization of Korea Telecom. Consequently, as Table 7 shows, the government was able to sell 20% of its shares of Korea Telecom in the first stage of privatization by 1994 (Jin, 2006; Kim, 2003; KISDI, 2002; Singh, 2000).

Table 7: The process of the privatization of Korea Telecom<sup>9</sup>

Year	The process of the privatization of Korea Telecom	Residual government ownership
1987	The announcement of the plan for privatization	100%
October, 1993	The first sale to domestic investors (10% of the government's shares in KT)	90%
April, 1994	The Second sale to domestic investors (4.96% of the government's shares in KT)	85.04%
November, 1994	The third sale to domestic investors (5.04% of the government's shares in KT)	80%
October, 1996	The fourth sale to domestic investors (0.05% of the government's shares in KT)	79.95%
November, 1996	The fifth sale to domestic investors (2.42% of the government's shares in KT)	77.53%
November, 1996	The sixth sale to domestic investors (3.32% of the government's shares in KT)	74.21%
December, 1996	The seventh sale to domestic investors (3% of the government's shares in KT)	71.21%
May, 1999	The first issue of DR (Depository Receipt) to foreign investors (6.67% of the government's shares in KT)	64.54%
December, 1999	The listing of KT on the Stock Exchange	
February, 2001	The eighth sale to domestic investors (1.07% of the government's shares in KT)	63.47%
June, 2001	The second issue of DR to foreign investors (17.87% of the government's shares in KT)	45.60%
January, 2002	KT's repurchase of 11.78% of the shares in KT	33.82%
May, 2002	The completion of privatization (sale of the remaining 28.37% shares to domestic investors)	0%

(Source: KISDI, 2002, p.5 cited in Kim, 2003, p. 117; residual government ownership based on this author's calculation)

However, the process of privatization was accelerated starting in the mid-1990s due to the swiftly changing political and economic circumstances. First of all, it was expedited by the Kim Young-Sam government's new development strategy initiated in

<sup>9</sup> There is a discrepancy of 5.45% in the final stage between column 2 and 3. This study fails to find out the information about the discrepancy.

1994: *Segyehwa* (globalization) of Korea, which accelerated the privatization of state-owned enterprises including Korea Telecom. It was also pushed by the inauguration of the WTO system in 1995, which put pressure on the Korean government not only to permit competition but also to promote the privatization of Korea Telecom. Additionally, the unprecedented economic recession caused by the Asian currency crisis starting in 1997 induced the Korean government to complete the full-scale privatization of Korea Telecom because the Korean government had to promise the systematic restructuring of the Korean economy which represented the diffusion of competition, deregulation, liberalization, and privatization of state-owned enterprises including Korea Telecom, in order to apply for the International Monetary Fund (IMF) bailout program which was expected to rescue Korea from the economic crisis (Choi, 1996; Jin, 2006; Kim, 2003; Koh, 2001).

Thus, while privatization was initiated mainly under foreign pressure, it acquired momentum due to domestic political and economic exigencies – the Kim Young-Sam government accelerated privatization once it adopted globalization as the new national agenda in 1994, and the Kim Dae-Jung government embraced neo-liberalism in 1997 as a way out of the currency crisis. In these political and economic circumstances, the Korean government sold off 51.63% of its shares of Korea Telecom to domestic and foreign investors in eight stages during October 1996 to January 2002. And, it took Korea Telecom public in 1999. Finally, the Korean government completed the long process of the privatization of Korea Telecom in May 2002, by selling off its remaining 28.36% stake in Korea Telecom to domestic investors (Jin, 2006; Kim, 2003).

In light of Petrazzini's (1995) definition of privatization as “the total or partial sale

of shares of a state-owned telecommunications enterprise to private investors” (p. 5), we may conclude that the Korean government successfully completed the privatization of Korea Telecom even though it had taken the extraordinarily long duration of fifteen years. Additionally, previous works (e.g., Choi, 1999; Jin, 2006; Kim, 2003), discover that the Korean government pursued its own purpose and agenda for the privatization of Korea Telecom, in spite of pressure from both domestic and international players, by taking advantage of its legal power and ownership of Korea Telecom. For example, the Korean government fulfilled its primary plan which was to make Korea Telecom a telecommunications company with no dominant owner in order to preserve its influence over Korea Telecom by preventing any one conglomerate, as the largest shareholder, from controlling the privatized Korea Telecom. To do so, the government allocated a 15% stake in Korea Telecom to the conglomerates, a 7.66% to individual and institutional buyers, and a 5.7% to the employees of Korea Telecom when selling off its remaining 28.36% stake in Korea Telecom to domestic investors. Additionally, the government issued a restriction that conglomerates must purchase the stakes in cash, as a way of plausibly distributing Korea Telecom shareholdings to domestic conglomerates. However, its great effort to prevent one conglomerate from being largest dominant shareholder of the privatized Korea Telecom was confounded because SK Telecom – the biggest mobile telecommunications company in Korea – became the privatized Korea Telecom’s largest shareholder, holding 11.34% of Korea Telecom stock. SK Telecom’s aggressive investment strategy embarrassed the government and resulted in governmental intervention into the private sector. The government openly asked SK Telecom to sell its stocks of Korea Telecom to another conglomerate. Finally, SK Telecom was forced to

agree to a swap deal with Korea Telecom in the late 2002, and thus SK Telecom traded its 9.64% stake in Korea Telecom for Korea Telecom's 9.27% stake in SK Telecom in January 2003. Thus, the government narrowly fulfilled its plan to create Korea Telecom a privatized enterprise without a dominant owner (Jin, 2006, see p. 9~10). Table 8 shows the stakeholders of Korea Telecom in October, 2008.

Table 8: Stakeholders in KT (October, 2008)

(unit: %)

Foreigners			Domestic Investors			
Individual Investors	Brandes Investment Partners	NWQ Investment Management	KT	Individual Investors	Employee Stock Ownership	People's Welfare Pension
33.85	5.79	5.76	26.0	19.40	5.60	3.60

Source: The Dong-A Ilbo (2008).

With regard to the privatization of a state-owned telecommunications enterprise, Petrazzini (1995) points out that the process is largely determined by each nation's political institutions rather than its economic circumstances. Similarly, the privatization of Korea Telecom was also largely influenced by the political circumstances since the relationships among the three major players—the Korean government, domestic conglomerates and foreign players such as the United States, WTO, and IMF—got tightly intertwined with the process of the privatization of Korea Telecom, and they heavily affected the Korean government's decisions and policies for the privatization of Korea Telecom (Jin, 2006).

Unlike the privatization of state-owned telecommunications enterprises in most other developing countries, however, the privatization of Korea Telecom has some unique characteristics. As mentioned earlier, one of these key features is that improvement in

financial and operating performance of the government-run telecommunications enterprise was not a leading impetus for the privatization of Korea Telecom, contrary to other telecommunications companies in Latin America, because Korea Telecom had enjoyed large net profits even before privatization. For example, the net profits of Korea Telecom were 1010 million dollars which was 9.8% of its annual revenues in 2000. And, they were 1087 million dollars which was 9.4% of its annual revenues in 2001 just before privatization (KISDI, 2006; KT, 2006). Additionally, in spite of pressure from foreign and domestic players who urged rapid full-scale privatization, the Korean government attempted to achieve its own purpose and agenda in the process of privatization, and thus the full-scale privatization of Korea Telecom took the extraordinarily long duration, from 1987 to 2002 (Choi, 1999; Hyun & Lent, 1999; Jin, 2006; Yoon, 1999).

As explained before, Korea Telecom had been used to implement the Korean government's telecommunications policies for social objectives, such as universal service and national security, before the completion of its privatization. Particularly, it was taken for granted that Korea Telecom should contribute to social objectives without full compensation for the losses incurred by them; this expectation continued even after privatization was initiated. The fact that Korea Telecom enjoyed large net profits as a whole in spite of its losses from contributing to social objectives enabled the government to continue this policy. These contributions of Korea Telecom to social objectives before the completion of privatization resulted in the unique evolution of universal service in Korea.

In this regard, the most important feature is that competition did not terminate Korea Telecom's status as a main universal service provider. In contrast to most other

countries' cases where the former monopolies accepted asymmetric regulation only under protest, or when they were allowed other attractive inducements – such as the permission to enter long-distance in the United States, Korea Telecom, as a state-owned enterprise, acquiesced in the asymmetric regulation even after the introduction of competition until its ownership change. Korea Telecom was still regarded as the government-run enterprise with a duty to promote social welfare during the process of privatization, and it had the financial resources and capabilities to contribute to social objectives, such as universal service. For instance, the average of Korea Telecom's annual net profits was 672 million dollars during 1995 ~ 2002 (KISDI, 2006; KT, 2006), which enabled Korea Telecom to provide financial support for implementing the government's agenda in telecommunications, such as universal service, despite the losses by its contributions to social objectives.

However, circumstances have drastically changed since Korea Telecom was privatized. The privatized Korea Telecom has attempted to get out of the government's control and reduce its contribution to universal service because profit maximization became its top priority, and it was reluctant to contribute to the unattractive universal service market, like other private enterprises. Thus, the privatized Korea Telecom has argued that the obligation of universal service should be symmetrically imposed on all service providers and that its losses caused by providing universal service should be fully subsidized in a competitively neutral and fair way. That is, the debates about the funding for universal service were heated up by the privatization of Korea Telecom in Korea (Jeong, 2006; Kim, 2003). This implies that instead of competition, privatization provided a momentum to restructure the asymmetric universal service mechanism that

imposed the obligation of universal service largely on a state-owned telecommunications enterprise in Korea. In other words, the privatization of Korea Telecom caused the universal service mechanism and the government's universal service policies to face a new stage in Korea.

#### 1) Universal service after the privatization of Korea Telecom

To begin with, the privatization of Korea Telecom influenced the government's universal service policy for broadband network service. The Korean government has employed universal service policies for broadband networks as a way to promote the economic and social development since the 1990s without a worry about financial resources, due to Korea Telecom. The government was able to drive Korea Telecom to implement its universal service policies for broadband networks without the funding mechanisms before it privatized Korea Telecom. However, the privatization of Korea Telecom required the government to devise the systematic universal service mechanism for broadband networks because the government had difficulty driving the privatized Korea Telecom to contribute to universal service for broadband networks without providing compensation for the losses by it. In order to resolve this problem, consequently, the government enacted a temporary law in 2002 that designated Korea Telecom as a dominant telecommunications service provider which has the obligation until 2005 to construct the broadband network infrastructure in rural areas. According to the temporary law which was effective until 2005, Korea Telecom provided the broadband network infrastructure to a half million households in rural areas during 2003 ~ 2005, and 95% of all Korean households were able to access broadband networks by

the end of this period. For this project, Korea Telecom invested 85.8 million dollars from the time it was privatized up to 2005 (edaily, 2005; KT, 2007; The Korea Economic Daily, 2006).

Along with the enactment of the temporary law, the government attempted to include high speed Internet in the universal service package in order to provide all citizens with broadband network access at an affordable rate, irrespective of where they live. It planned to impose the obligation of universal service for high speed Internet on all telecommunications carriers. However, the government failed to include high speed Internet in the universal service package, due to the resistance of the private telecommunications enterprises, including Korea Telecom, as well as other unresolved problems related to universal service for new advanced communications technologies, such as the debates about what kind of platform should be adopted as a standard for universal service, and whether or not mobile phone service should be included in the universal service package if high speed Internet is included (edaily, 2005; The Electronic Times, 2005; The Seoul Economic Daily, 2005).

Instead of including high speed Internet in the universal service package, thus, the government decided to introduce new universal service policies for broadband network service at the end of 2005, when the temporary law forcing Korea Telecom to construct broadband networks in rural areas was supposed to expire, in order to provide all households in rural areas with broadband network access by 2007. The newly introduced universal service policy for broadband network service was called “The Matching Fund”, which was devised to promote the construction of the broadband network infrastructure by providing central and local governments’ financial resources to private

telecommunications enterprises which took part in constructing the broadband network infrastructure in rural areas. Under the Matching Fund System, 50% of the total costs of the construction of broadband networks in rural areas was provided by the telecommunications enterprise, and the rest were provided half and half by the central and local governments. It did not designate the telecommunications carrier that should take part in this project, but the privatized Korea Telecom was selected as the sole service provider to carry out the project because the other telecommunications enterprises could not afford to provide the broadband network infrastructure to rural areas. Korea Telecom could not help participating in the project to avoid the conflict with the government, which not only was the most powerful regulator in telecommunications but also still had influence on the privatized Korea Telecom through interpersonal networks and political connections, despite the fact that it was reluctant to carry out the project which was regarded as an unprofitable business (edaily, 2005; KT, 2007; The Electronic Times, 2005; The Seoul Economic Daily, 2005).

In March and April, 2006, Korea Telecom made contracts with central government and local governments for the construction of broadband networks in rural areas during 2006~2007, under the Matching Fund System. And, as the first step of this project, Korea Telecom began to construct the broadband network infrastructure in Jeonnam province's rural areas starting in March 2006. Based on the Matching Fund System, Korea Telecom provided 50% of the total costs of the project which was 5.15 million dollars, and the central government and Jeonnam government each provided 25% of the total costs of the project. Overall, Korea Telecom provided 35.2 million dollars for the projects by the Matching Fund System during 2006 ~ 2007, and the central government and local

governments each contributed 17.6 million dollars to the projects during the same period. As a result, the broadband network infrastructure was newly provided to 131 thousand and 224 thousand households in rural and isolated areas respectively during 2006 ~ 2007, and thus only about 1% of all Korean households remained without the broadband network infrastructure by 2007. The government originally planned to complete the projects under the Matching Fund System by 2007, but it decided to extend them to 2008 in order to provide the broadband network infrastructure to all households (KT, 2007; The Korea Economic Daily, 2006).

The big change in the Korean government's universal service policies for high speed Internet after the privatization of Korea Telecom is that an administrative understanding was converted into a legal obligation. Previously, Korea Telecom funded universal service in an informal commitment to the government; but after privatization, the government enacted a law and introduced the new universal service system in order to impose the obligation of universal service on the private telecommunications enterprises which may have put their profit maximization first. The privatization of Korea Telecom caused the government to realize that it needed legal grounds to continue implementing universal service policies for broadband networks because it was not able to push the private sector to contribute to universal service without the authority of law.

Consequently, the government enacted the temporary law which forced Korea Telecom to implement the government's universal service policy for high speed Internet until 2005, and it introduced the new universal service mechanism, the Matching Fund System, to sustain the universal service policies after the temporary law expired. With the creation of the Matching Fund, the subsidy by central government and local governments has been

provided to Korea Telecom for the construction of the broadband network infrastructure in rural areas since 2006, even though it was not enough to fully compensate Korea Telecom's losses incurred by providing broadband networks to rural areas.

As discussed so far, the privatization of Korea Telecom caused changes in the Korean government's universal service policies for high speed Internet, and provided a momentum to devise the new universal service system for implementing the universal service policies which aimed at providing all citizens with an opportunity to access high speed Internet in their homes. In other words, it became a major issue how the Korean government could sustain the universal service policies for high speed Internet without a state-owned telecommunications enterprise since the private sector played a major role in implementing universal service instead of the government after the privatization of Korea Telecom. Thus, the privatization of Korea Telecom caused the government to make the universal service mechanism for high speed Internet more systematic and elaborate in that the government tried to administer the universal service policy based on the laws and cooperation with the private sector after the privatization of Korea Telecom.

The privatization of Korea Telecom also provided a momentum to reform the universal service system for telephone service because the privatized Korea Telecom strongly argued that the obligation of universal service for telephone should be fairly imposed on all telecommunications enterprises in a competitively neutral way, and thus the operating mechanism of universal service for the telephone, particularly the funding support, should be reformed because it was unfair to Korea Telecom (KT, 2007; The Electronic Times, 2006a,b,c,d; The Electronic Times, 2007). Contrary to the universal service system for high speed Internet which was newly stipulated by law simultaneously

with the privatization of Korea Telecom, the universal service mechanism for the telephone, created with the introduction of full-scale competition in 1999, was not reformed simultaneously with the privatization of Korea Telecom. The MIC stated that it needed time to study other countries' universal service systems and to seek an alternative formulation that would redefine the concepts of universal service, reappraise the scope of universal service, and create the operating mechanism of universal service in a competitively neutral way. In the interim period until this new formula could be finalized, the MIC proposed to continue the present system—despite requests from not only the privatized Korea Telecom, but also from the Regulatory Reform Committee chaired by the Prime Minister that the universal service mechanism should be reformed in a pro-competitive way, and the universal service provider should be fully compensated for its losses incurred by universal service (The Electronic Times, 2006a). This implies that the creation of universal service mechanism for high speed Internet was relatively more urgent (or at least easier) for the Korean government after the privatization of Korea Telecom than the improvement in the universal service mechanism for the telephone because the government was not able to push the privatized Korea Telecom to implement its universal service policies for high speed Internet without the universal service system defined by law or government ordinance, while it was able to sustain its universal service policy for the telephone based on the present universal service mechanism in spite of its flaws.

But eventually, the mechanisms for universal telephone service too needed reform. As a result, the government launched a project team consisting of the MIC, Korea Information Society Development Institute (KISDI), and telecommunications service

providers in April 2006, four years after the privatization of Korea Telecom. The project team began to review the present universal service mechanism in order not only to study the controversial issues related to universal service but also to reform the universal service system. Through the activities of the project team, the government tried to reform the universal service system not only for the telephone but also for advanced communications technologies including high speed Internet, and ultimately to arrive at a new framework of universal service for the information society. The project team was expected to complete the review of the present universal service mechanism by the end of 2006 and propose a draft of the new universal service system during 2007 (The Electronic Times, 2006b; The Electronic Times, 2007). Contrary to the government's expectation, however, the project team has made slow progress in drafting the new universal service mechanism due to some critical issues economically and technologically, and thus the framework of the new universal service system has not yet been shaped as of this writing, in late 2008.

The delay in making the new universal service system was largely caused by two main reasons, drastic changes in the government organizations in charge of telecommunications and complications among telecommunications carriers with regard to universal service, particularly conflicts between the privatized Korea Telecom and other service providers. Additionally, the rapid development of new communications technologies, such as the emergence of IPTV through the convergence of telecommunications and broadcasting, played a role in delaying the creation of the new universal service system.

Among these factors, the leading cause to delay a draft of the new universal

service system was the differences between Korea Telecom and other telecommunication enterprises, such as SK Telecom, LG DACOM, and Hanaro Telecom, over universal service—its scope, funding mechanism, designation of universal service providers, and compensation for the losses incurred by providing universal service. For example, Korea Telecom argued that full compensation for the universal service provider's losses caused by providing high-cost areas with local call service and public phone service should be ensured by the new universal service system, while other telecommunications carriers opposed reimbursement for them if the universal service provider would make profits from those services as a whole (KT, 2007; The Electronic Times, 2006a,c,d; The Electronic Times, 2007).

In this regard, Manager Yang Seong-Won in the Corporate Relations Department at Korea Telecom, who was a member of the project team, said that it was very difficult for telecommunications enterprises to reach agreement over universal service within a couple of months because Korea Telecom, which was not a state-owned enterprise any more, tried to receive full compensation for its losses incurred by universal service, while other telecommunications companies were eager to minimize their contributions to universal service. In addition, he pointed out that the MIC had less influence over the privatized Korea Telecom than before, and thus the MIC had difficulty coordinating the conflicts between Korea Telecom and other service providers. From these perspectives, Manager Yang indicated that the privatization of Korea Telecom made the process of drafting a new universal service mechanism more difficult and time-consuming (Yang, 2008).

In this circumstance, an unexpected delay in the drafting process occurred in late

2007. President-elect Lee Myung-Bak announced the downsizing plan of the government organizations in December 2007, and decided to abolish the MIC in January 2008. Thus, the MIC, which had been in charge of the development of the information and telecommunications industry as well as informatization in Korea since the mid-1990s, ceased to exist in February 2008. The abolishment of the MIC caused the project team for the new universal service mechanism to discontinue its activities for a couple of months until the Korea Communications Commission (KCC), the new government organization in charge of telecommunications and broadcasting, got into its stride (The Electronic Times, 2008a).

The discontinued task of drafting the new universal service system was resumed with the launch of the KCC in February 2008, and its basic principles were introduced by the KCC. With regard to the restructuring of universal service, continuing the policies of the former MIC, the KCC also attempted to create the new universal service system which would meet the needs of the new telecommunications market structure caused by fierce competition among telecommunications enterprises, the convergence of telecommunications and broadcasting, and the privatization of Korea Telecom. To achieve this goal, first of all, the KCC decided to convert the 'Virtual Universal Service Fund' (see p. 79 ~ 80) in the present universal service system to an actual fund in the new system. In effect, the new fund would be more like the universal service fund in the United States, and was expected not only to raise the financial resources for universal service fairly and symmetrically but also to administer the disbursements more efficiently. Secondly, the KCC announced that the universal service provider's losses incurred through providing local call service and public phone service to high-cost areas would be

properly compensated in the new universal service system by restructuring the computation of compensation for the losses. Thirdly, the KCC indicated that the scope of universal service would be reviewed and re-stipulated in the new universal service system in order to cope with changes in the telecommunications market (The Electronic Times, 2008b,c,d). In spite of the KCC's ambitious announcement that drafting the new universal service system would be completed by 2008, unfortunately, it is still difficult to anticipate when it would be concretely shaped and actually introduced to the Korean telecommunications market because many complex issues still remained unresolved, as of this writing. For example, if the objective is to introduce a USF similar to that of the United States, there are many unanswered questions, such as who should contribute to the USF, who administers the USF, how to operate the USF, and so on.

Based on the basic principles announced by the KCC, however, we may speculate on the framework of the new universal service system which is expected to be introduced in the near future. The influence of the changes in market structure caused by the privatization of Korea Telecom is discernible in the process: Korea Telecom, for long a compliant implementer of government policies, has after privatization acquired an independent and assertive voice that is now influencing government policy makers. It is significant how closely the KCC's policy prescriptions parallel the proposals put forward by Korea Telecom. First of all, Korea Telecom suggested that the virtual USF should be converted to the actual USF for a pro-competitive environment, and the KCC concurred in spite of opposition from some other telecommunications carriers, who feared that their contributions to universal service would be increased by the introduction of the actual USF (KT, 2007; The Electronic Times, 2008b,c,d).

Secondly and more importantly, the KCC announced that it would reform “the compensation cost cap system”<sup>10</sup> and compensate for Korea Telecom’s losses caused by providing local call service and public phone service to rural and isolated areas in the new universal service system. This was largely because the KCC realized that it will not be able to get the privatized Korea Telecom’s willing cooperation for implementing its universal service policies without providing proper subsidy for Korea Telecom’s losses due to the universal service obligation. Additionally, this was partially because the KCC considered that Korea Telecom’s revenues and net profits of local call service and public phone service had decreased since the late 1990s, due to not only the fierce competition between Korea Telecom and new entrants but also the rapid diffusion of mobile phone service and the emergence of new telecommunications technologies, such as IP (Internet Protocol) telephony, which had a heavy negative impact on Korea Telecom’s traditional businesses (KT, 2007; The Electronic Times, 2007, 2008b). The abolishment of the compensation cost cap system has been one of Korea Telecom’s top priorities in restructuring the universal service system because it has prevented Korea Telecom from being fully compensated for the losses by universal service (KT, 2007). Thus, this study may conclude that the KCC’s decision to abolish the compensation cost cap system was influenced by Korea Telecom’s proposal for the new universal service system, and it is definitely favorable to Korea Telecom.

Despite the KCC’s approaches to the main universal service issues described above, such as the USF and the compensation cost cap system, there are still many unresolved questions about which each telecommunications enterprise has its own

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<sup>10</sup> This implies that the universal service provider’s losses caused by providing universal service to high-cost areas are not compensated at all if it makes profits from providing the universal service as a whole.

answers depending on its own standpoint. For example, with regard to the scope of universal service, Korea Telecom suggests that high speed Internet should not be included in the scope of universal service because it doesn't play a role in emergency telecommunications service and mobile phone service should be included instead; meanwhile SK Telecom and LG Telecom (both mobile phone service providers) oppose Korea Telecom's suggestion (Yang, 2008). Additionally, there are differences among telecommunications enterprises about which service providers should be exempt from the obligation of universal service. In the present universal service system, regional service providers and telecommunications enterprises whose annual revenues are less than 30 million dollars are exempt from the obligation of universal service. In this regard, Korea Telecom and other big telecommunications enterprises suggest that the obligation of universal service should be imposed on regional service providers and telecommunications enterprises whose annual revenues are over 5 million dollars in the new universal service system, while regional service providers and small telecommunications enterprises whose revenues are in the range of 5 ~ 30 million dollars strongly oppose the big firms' proposal (Kim, 1998; Kim, 2003; KT, 2007; The Electronic Times, 2007). These unresolved complex issues make the creation of the new universal service system uncertain and tentative even after the lapse of more than two years since the project team began discussions on restructuring universal service.

Thus, this study has a limitation to predict the shape of the universal service system that will be introduced to the Korean telecommunications sector in the near future. As indicated before, however, the MIC's and the KCC's approaches to the restructuring of universal service have provided important and crucial clues about the framework of

the new universal service system. First of all, the new universal service system would be more systematic and elaborate in that the government has created laws and policy documents governing universal service in high speed Internet; ad hoc administrative understandings would no longer work since Korea Telecom, which had been the government's principal vehicle to implement its universal policies as a state-owned telecommunications enterprise, has been privatized. Additionally, the government may increasingly rely on legal instruments to redefine the concept and the scope of universal service in order to implement its universal service policies for new advanced services, instead of exercising its discretion. Secondly, the new universal service system would be funded through more competitively neutral mechanisms since the KCC plans to create the actual USF and reform computation of compensation for the losses due to universal service. These new mechanisms aim at imposing the obligation of universal service on all service providers symmetrically and fairly. Thirdly, the framework of the new universal service system would be heavily influenced by the private sector, particularly Korea Telecom whose status was changed after privatization to a major negotiation partner from an enterprise controlled by the government in implementing universal service. Korea Telecom is still the biggest and the most influential service provider as well as the sole telecommunications carrier which is able to provide universal service all over the country, in spite of the rapid growth of its main competitor, SK Telecom. Evidently, the Korean government needs the privatized Korea Telecom's cooperation in order to implement its universal service policies with smoothness and effectiveness because Korea Telecom has appeared as one of the main independent stakeholders in universal service since its privatization.

To summarize, the process of the improvements in the Korean universal service system starting in 2002 indicates that the government has to cooperate with the private sector to implement its universal service policies after the privatization of Korea Telecom, whereas before privatization, the Korean government could implement its universal service policies independent of the private sector due to its control over Korea Telecom and the latter's operational profits. This implies that the privatization of Korea Telecom caused significant changes in the Korean government's universal service policy formulation as well as the Korean universal service system. With the appearance of the privatized Korea Telecom, the interaction between the government and the private telecommunications enterprises, alternating between conflict and cooperation, has become a more influential factor to affect the process of universal service policy formulation rather than the government's autonomy. Consequently, universal service has become more systematic and elaborate, and simultaneously universal service policy formulation has become a more complex and time-consuming.

## Chapter 5: Conclusions

In the previous chapters, this study closely investigated the parallel changes in the telecommunications market structure and the evolution of universal service in Korea, in order to answer the research questions of this dissertation: 1) What were the goals and process of telecommunications reform in Korea? 2) Did the privatization of Korea Telecom cause the changes in universal service? If so, how did it influence universal service policy formulation as well as the universal service mechanism in Korea? 3) What does the Korean case say about the relationship between privatization and universal service?

As these research questions imply, the primary purpose of this dissertation is to contribute to a better understanding of the relationship between privatization and universal service, through the case study of Korea. As discussed in chapter 2, the impact of telecommunications reform on universal service is not clear in the literature, even though there is a broad consensus among scholars (e.g., Fan, 2005; Garbacz & Thompson, 2007, Mueller, 1997, 1999; Ros, 1997; 1999; Stehmann, 1995; Wallsten, 2001) that it has a positive effect on the telecommunications sector in terms of efficiency. Additionally, the impact of privatization on universal service has been less extensively studied in the previous works on telecommunications reform than other topics, such as the relationship between competition and efficiency, competition and universal service, and privatization and efficiency. As a result, there still remain doubts and debates about the effect of privatization on universal service. Further, the well-established ideas in the literature fail to fully explain the process of telecommunications reform and the evolution of universal

service in Korea, because of the atypical strategies which Korea has employed for network expansion and universal service. From these perspectives, this study attempted to bridge the gap between the findings in the previous works and the Korean case. It also tried to explain how the privatization of a state-owned telecommunications enterprise influences the evolution of universal service in developing countries through the chronological analysis of the Korean case. This approach largely referred to a variety of information sources, such as government documents, laws, annual reports of Korea Telecom, press reports, and Korea Telecom's internal documents as mentioned in chapter 3.

As indicated in chapter 4, the primary goal of telecommunications reform during the period of 1981 ~ 1987 in Korea was to implement regionally balanced network expansion and provide all residents with telephone service at an affordable rate, which was summarized as a slogan 'One Household, One Telephone'. The military government of the day saw its efforts to promote social objectives such as universal network coverage as a demonstration of its commitment to the public and proof of its legitimacy. Whatever the motivation, an early commitment to broad based coverage during the state-monopoly era was a key feature of telecommunications reform in Korea distinguishable from that of other countries'. The top priority of telecommunications reform during the 1980s in Korea was to display the commitment to universal service by achieving regionally balanced network expansion, while the primary purpose of most other countries' telecommunications reform in the 1980s was to improve the efficiency of their telecommunications sector. Korea was also interested in the improvement in the efficiency of its telecommunications sector, and separated the telecommunications

business from the government at the beginning stage of reform in the 1980s in order to infuse entrepreneurship into its telecommunications sector. However, the establishment of the KTA, which implied the separation of the telecommunications business from policymaking and regulation, was ultimately to achieve regionally balanced network expansion, which was the primary purpose of telecommunications reform rather than volume-oriented network expansion during the 1980s in Korea. The improvement in the efficiency of telecommunications was the secondary and lower priority than the commitment to universal service in the Korean government's list in the 1980s. In other words, it was not an ultimate goal but a means to contribute to achieving regionally balanced network expansion in an efficient and timely manner during the period of 1981 ~ 1987 in Korea. In this regard, Kim and Lee (1991) point out that "Korean telecommunications policies have traditionally put more emphasis on equity than on efficiency" (p. 31).

Such emphasis on equity of the Korean government largely influenced structural changes in telecommunications and telecommunications policies in the 1980s. First of all, the process of telecommunications reform in the 1980s, represented by the corporatization of the KTA which was thought to contribute to regionally balanced network expansion, was initiated and led by the government rather than other players, such as domestic interest groups and international organizations. Secondly, the two remarkable telecommunications policies which also aimed at regionally balanced network expansion, the IT IS and the WA, were energetically implemented by the government. Thirdly, the Korean government's primary goal of telecommunications reform largely contributed to the conceptualization of universal service, even though the

term “universal service” did not appear in the reform discourse during the 1980s. Particularly, the government’s policies for regionally balanced network expansion at the early stage of telecommunications reform largely influenced the unique features of the evolution of universal service in Korea.

With regard to the evolution of universal service in Korea, one of the unique features is that the commitment to universal service was successfully displayed by the state-owned monopolistic enterprise. Contrary to the popular idea in telecommunications policy studies that most developing countries have difficulty in promoting network expansion and securing universal service at the same time under the state-owned monopolistic era because of the monopoly’s inefficiency and insufficient financial resources for network expansion, Korea achieved volume-oriented and regionally balanced network expansion, and displayed the commitment to universal service summarized as a slogan of ‘One Household, One Telephone’ under the state-owned monopolistic era during the period of 1981 ~ 1987. This Korean case challenges the results of Jayakar’s study (1999) that “incorporation in fact had a negative impact on teledensity growth unless accompanied by privatization as well” (p. 121) and “it had a marginally positive impact (on teledensity growth) in the poor countries though the effect was not significantly different from zero” (p. 120). Contrary to Jayakar’s findings (1999), Korea corporatized its telecommunications business in 1982 by the establishment of the KTA, and achieved rapid teledensity growth during the 1980s even though incorporation of the KTA had not been accompanied by privatization until 2002.

This dissertation does not argue that the corporatization of the KTA was the sole factor to cause rapid teledensity growth in Korea during the 1980s because the two

epochal and remarkable telecommunications policies, the IT IS and the WA, also largely contributed to network expansion and universal service in the same period. Instead, this study suggests that the popular conception should be reconsidered that a state-owned monopoly is inappropriate for implementing teledensity growth due to its inherent inefficiency since the Korean case indicates that teledensity growth as well as regionally balanced network expansion could be successfully achieved under the state-owned monopolistic era. In effect, there is a contradiction between the popular conception in previous works on the impact of telecommunications market structure on network expansion and the Korean case.

To bridge the contradiction between these two perspectives, this study analyzes how Korea was able to secure network expansion and universal service at the same time under the state-owned monopolistic era. As explained in the previous chapter, Korea followed an atypical strategy of increasing the rates of telephone service at the outset of the corporatization of the KTA. State monopolies in other developing countries, where they were recognized to have a duty to secure universal service through the rate controls and cross-subsidies, suffered from insufficient financial resources for network investment; as Ros (1997) and Stehmann (1995) argue, the low subscription fees implemented to promote universal service led to low revenues for telecommunications carriers and insufficient capital for network expansion. However, the Korean case reveals that the findings of those studies are not unchallenged truths which can be applied to all developing countries. It demonstrates that state monopolies in developing countries are able to create financial resources for network investment by raising network access prices and usage charges of basic telecommunications service if residents have purchasing

power and high demand for telecommunications service. Through an atypical strategy of raising the subscription fees and telephone rates, Korea was able to domestically create the huge capital for network expansion, without the privatization of the state-owned telecommunications enterprise or heavy reliance on foreign investment or budgetary support. Korea was able to raise the telephone rates steeply by over 60% at the outset of the corporatization of the KTA with very little consumer resistance due to the wealth accumulated by the rapid economic development during the 1960s ~ 1970s period. In other words, a large supply-demand gap for telephone service in the early 1980s enabled Korea to impose extra burdens for telephone service on consumers, which helped the KTA to create financial resources for network investment domestically. As a result, Korea successfully implemented network expansion, and simultaneously displayed the commitment to universal service during the state monopoly period of the 1980s before competition or privatization was introduced. Thus, as Jayakar (1999), Kim (2003), and O'Siochru (1996) point out, Korea provides a good example to suggest that telecommunications reform, represented by competition and privatization, is not a prerequisite to the promotion of network expansion and universal service.

In Korea, the goals of telecommunications reform in the 1990s were more complex and interrelated compared to those during the period of 1981 ~ 1987. In the 1980s, regionally balanced network expansion and the commitment to universal service were the ultimate goals of changes in telecommunications market structure. In the 1990s, it was pressure from foreign players that was the catalyst for reform—with competition imminent, the main goal of the Korean government was to improve the competitiveness of domestic carriers prior to the entry of foreign service providers into the Korean

market; along with this, the commitment to universal service too played a subsidiary role. Also, telecommunications reform in the 1980s was initiated and led by the Korean government; in the 1990s, pressure from the United States and international organizations led to structural adjustments in telecommunications and was magnified by the economic crisis starting in 1997 (Choi, 1999; Hong, 1998; Hyun & Lent, 1999; Jin, 2006; Kim 2003; Koh, 2001; Yoon, 1999).

Despite pressure from foreign players, Korea attempted to secure its agenda and policy goals in the process of telecommunications reform toward market, including the promotion of universal service. In this regard, Kim and Lee (1991) asserted that efficiency in telecommunications would not be given any serious consideration by the Korean policy-makers in the near future in spite of the wave of deregulation and liberalization spread around the world because equity in telecommunications, which referred to universal service, would be the last value abandoned by them. In the similar vein, Jin (2006) argues that the major goal of the privatization of Korea Telecom starting in 1987 was not for the improvement in the efficiency and operating performance of Korea Telecom. Korea still put more emphasis on social objectives, particularly universal service, than efficiency, even though Korea began to liberalize its telecommunications market in the 1990s because of the irresistible wave of market-oriented reform spreading around the world. For example, universal service for high speed Internet was one of the top priorities of Korea in the 1990s and informatization, aimed at providing all citizens with high speed Internet at affordable rates, was energetically initiated by the government. Even as Korean policy-makers introduced competition to improve the efficiency of the telecommunications sector, it was done in a phased manner so that domestic providers

could gain experience and strength.

Thus, these mingled goals pursued by the Korean government in the 1990s, such as the improvement in the efficiency of telecommunications and the promotion of national and social objectives including universal service, caused the complex process of telecommunications reform and the unique evolution of universal service in Korea. Particularly, even as the Korean government initiated reforms mainly under pressure from foreign governments, it continued to emphasize universal service, leading to the unique features of the evolution of universal service. As Kim & Lee (1991) expected, it was still taken for granted after market-oriented telecommunications reform that universal service should be provided by the state. Additionally, the Korean policy-makers firmly believed that universal service policies should be initiated and led by the government for equity in telecommunications as well as the efficient implementation of informatization. As a result, the obligation of universal service for the telephone was largely imposed on the government-run telecommunications enterprise, despite the introduction of competition. Further, many universal service policies for new advanced telecommunications services were employed starting in the 1990s, even though there had been no conceptualized idea about the universal service package and the universal service mechanism until 1998. Thus, the obligation of universal service for new advanced services was also asymmetrically imposed on Korea Telecom in spite of the appearance of newcomers in the 1990s because Korea Telecom was not able to strongly resist those obligations before full privatization. These approaches of the Korean government to universal service played a major role in achieving the rapid proliferation of high speed Internet and the development of the broadband network infrastructure in the short period, just as the two telecommunications

policies, the IT IS and the WA, had contributed to the rapid spread of the telephone in the short period during the 1980s.

This unique feature of universal service in this period was that internal cross-subsidy within Korea Telecom still supported universal service even after the introduction of competition between the state-owned enterprises and private carriers. This also implies that the Korean government still had the initiatives in implementing its universal service policies and energetically led the promotion of universal service for high speed Internet as well as telephone after the liberalization of telecommunications, utilizing Korea Telecom which could afford to contribute financial resources to universal service. In Korea, to summarize, the popular idea that universal service should be secured by the state in spite of market-oriented reforms led to the creation of the universal service mechanism, which largely imposed the obligation of universal service on Korea Telecom without providing an incentive or full compensation.

As dealt with in the previous chapter, however, the privatization of the state-owned telecommunications enterprise confronted universal service with new challenges. It required Korean policy-makers to reconsider the traditional model of universal service and to reform the universal service mechanism in a fair and competitively neutral way. In particular, the privatization of Korea Telecom provided a momentum to terminate cross-subsidy based universal service by promoting the creation of the new, competitively neutral universal service mechanism. Additionally, it implies that the initiatives in implementing universal service policies had moved to the private sector from the government. The private sector, which played a secondary role in securing universal service in Korea, emerged as a major stakeholder in universal service after the

privatization of Korea Telecom.

The privatization of Korea Telecom was largely affected by internal and external changes in political and economic circumstances, which resulting in a complex and episodic process over a long period of time. The leading impetus to the privatization of Korea Telecom was pressure from foreign players at its early stage, while it was accelerated by the Korean government later because of the dramatically changed circumstances, such as the spread of neo-liberalism in Korea since the mid-1990s and the economic crisis starting in 1997. Particularly, the Korean government dramatically accelerated the privatization process, previously progressing in fits and starts, in order to raise revenues after the economic crisis (Jin, 2006). As Petrazzini (1995) indicates, privatization in Korea was also largely determined by the political institutions, as was the case in other developing countries.

The privatization of Korea Telecom, heavily influenced by the spread of new ideology and the political institutions, undermined the traditional idea about universal service that it should be provided by the state because Korea didn't have its own vehicle to implement its universal service policies any more. Thus, we may assume that the impact of privatization on universal service was not less than that of competition. First of all, this is because the privatization of Korea Telecom provided a momentum to spark discussion of universal service, such as how to create financial resources for universal service and how to implement universal policies for high speed Internet without the financial resources of a state-owned telecommunications enterprise. This explains why universal service emerged in the policy discourse only after the phased introduction of competition was mostly completed, and not during the eight-year period when

competition was gradually introduced. Additionally, privatization played a critical role in the creation of the new universal service mechanism, like competition which contributed to the first appearance of the universal service system in Korea. In this regard, the privatization of Korea Telecom required Korean policy-makers to adjust the universal service mechanism in a competitively neutral way because the privatized Korea Telecom, which was still a key player in universal service, did not want to provide universal service without full compensation for the losses incurred by it. Further, privatization heavily affected the process of universal service policy formulation. The Korean government had the initiatives in implementing universal service policies before the privatization of Korea Telecom, while it was not able to implement them smoothly without the cooperation of the private sector after losing its strong control over Korea Telecom. The Korean government was deprived of a useful and powerful vehicle to secure social objectives in telecommunications, including universal service, with the privatization of Korea Telecom. To summarize, the privatization of Korea Telecom caused significant changes in the universal service mechanism and universal service policy formulation not less than did the introduction of competition in Korea. Particularly, it provided a momentum to make the Korean universal service mechanism more systematic and elaborate in a pro-competitive way because universal service could be implemented only within a legal and policy framework and with the cooperation of the private sector, rather than at the government's discretion and agenda.

Table 9: Telecommunication reforms in Korea

	The 1980s reform	Competition	Privatization
Duration	1981-1987	1991-1998	1987-2002
Primary Agency	The government	International pressure	International pressure (Before mid-1990s) The government (After mid-1990s)
The government's agenda	- Regionally balanced network expansion - Universal service for the telephone	- Improvement in competitiveness and efficiency of domestic carriers - Universal service for high speed Internet	- Improvement of KT's operating and financial performance - Development of the telecommunications sector - Raise of government revenues
Key results	Establishment of the KTA	Phased introduction of competition	-Process in the long duration -No dominant owner of KT after privatization

As discussed so far, the answers for the first research question of this dissertation – What were the goals and process of telecommunications reform in Korea- are summarized as follows (see Table 9): The top priority of telecommunications reform in the 1980s, represented by the corporatization of the KTA, was to secure regionally balanced network expansion and universal service, and its process was largely initiated and led by the government which employed the two major policies, the ITIS and the WA. The purposes of telecommunications reform in the 1990s, which was mainly caused by pressure from international players, was to secure universal service and improve the competitiveness of domestic carriers at the same time in the process of market-oriented adjustments. Compared to the previous one, thus, its process was more complex and carried out at a gradual pace because the Korean government was eager to keep its

initiative in the pace and chronology of reform, in spite of pressure from international and domestic players. Evidently, the primary purpose of telecommunications reform during the period of 1980s ~ 1990s was to secure universal service and to improve the competitiveness of domestic service providers against foreign carriers, while the improvement of efficiency in telecommunications was regarded as the secondary purpose in Korea.

The answers for the second research question of this study- Did the privatization of Korea Telecom cause the changes in universal service? If so, how did it influence universal service policy formulation as well as the universal service mechanism in Korea? – are presented as follows: In Korea, the privatization of a state-owned telecommunications enterprise caused the significant changes in universal service. First of all, it provoked critical questions regarding universal service, such as how to generate universal service funds in a more competitively neutral way, and how to implement universal service policies for new advanced services without the financial resources of Korea Telecom, whose top priority became profit maximization after privatization. Instead of competition, thus, it was privatization that played a major role in terminating the asymmetric universal service mechanism that imposes the obligation of universal service largely on Korea Telecom. In terms of the process of universal service policy formulation, the relationship and interplay among the government and the private telecommunications enterprises became a more influential factor affecting the process of universal service policy formulation; policy could no longer be formed at the government's discretion because the private sector emerged as a major stakeholder in universal service, particularly Korea Telecom without whose cooperation the government

would not be able to implement its universal service policies. In other words, the privatization of Korea Telecom provided a momentum to make universal service more systematic and elaborate in that the universal service system may not be operated smoothly without the agreement between the government and the private sector. Simultaneously, it makes universal service policy formulation a more complex process of a long duration than before.

To answer the last research question of this dissertation, the key findings of this study will be presented. One of the important findings of this case study is that market-oriented reform is not the sole solution for developing countries to pursue the development of their telecommunications sector including network expansion. The popular idea in previous works on telecommunication reform indicates that a state monopoly fails to meet residents' demands for telecommunications service because of its inefficiency and the lack of financial resources for network investment. From this perspective, developing countries are encouraged to introduce market-oriented reform to telecommunications, such as competition and privatization, which is expected to resolve the inherent problems of a state monopoly. However, the Korean case suggests that a state monopoly in developing countries is able to secure network expansion and universal service without competition or privatization, through an atypical strategy to raise installation and usage charges of telecommunications service if there is a steep gap between supply and demand for service due to residents' strong purchasing power.

Secondly, the Korean case implies that a state-owned telecommunications enterprise would be a useful and effective vehicle to secure the government's agenda in telecommunications, such as universal service, even after the introduction of competition

if its financial and operating performance is good enough to contribute financial resources to social objectives. After competition was introduced to telecommunications, Korea was able to achieve the rapid development of the broadband network infrastructure and secure universal service for high speed Internet and telephone with little conflict with the private carriers that were reluctant to contribute to universal service, utilizing Korea Telecom which was controlled by the government and enjoyed large net profits in spite of the emergence of new competitors during the 1990s.

Thirdly, the Korean case demonstrates that the universal service policies initiated by the government contributed to providing residents with telecommunications services at affordable rates. Korea was able to achieve high teledensity in the short period during the 1980s due to the universal service policies for the telephone, the IT IS and the WA. Similarly, the Korea government's energetic universal service policies for high speed Internet, such as the Korean Information Infrastructure (KII) Project in 1993, have played a major role in promoting the rapid development of the broadband network infrastructure starting in the 1990s. Due to the universal service policies led by the government, Korea was able to provide 99% of all Korean households with the broadband network infrastructure by 2007, including them in rural and isolated areas. As Frieden (2005) points out, Korea might not have been able to implement the regionally balanced broadband networks in such a short period, without the universal service policies led by the government because the private sector, without compensation or incentive, tends to avoid constructing the network infrastructure in rural areas which are unattractive markets.

In this regard, some may argue that the most effective universal service policy is

to increase residents' economic power to purchase telecommunications service, consistent with the findings of some previous works on universal service (Compaine & Weinraub, 1997; Dordick, 1991; Garbacz & Thompson, 2007; Mueller, 1997, 1999; Noam, 1994). In particular, the Korean case also indicates that the increased economic power of Korean residents enabled the government to employ not only the atypical strategy of increasing installation and usage fees of the telephone, but also the two remarkable universal service policies, as the ways to secure network expansion and universal service in the 1980s. Even though consumers' economic power and competition among telecommunications enterprises would be the primary impetus to promote universal service, however, they are not enough to encourage the private sector to provide telecommunications service to unattractive markets, such as rural areas. As the Korean case demonstrates, universal service policies led by the government largely contribute to the promotion of regionally balanced network expansion and providing residents in rural areas with telecommunications service at affordable rates.

Lastly, the Korean case says that a government-run carrier can be utilized for implementing the government's agenda in telecommunications, such as universal service, in the process of market-oriented reform which mainly aims at the improvement of economic efficiency rather than the promotion of social objectives. Thus, the privatization of a state-owned telecommunications carrier might deprive the government of a useful and effective vehicle to secure social objectives at its discretion. Additionally, it makes universal service policy formulation a more complex process to be secured over a longer time-frame than before, because the government is now required to negotiate and cooperate with the private sector rather than exercise its discretion in implementing the

universal service policies after the government-run telecommunications enterprise is privatized. In a positive point of view, however, privatization plays a major role in decreasing the government's discretion and market intervention, and thus contributes to making the universal service mechanism more systematic and competitively neutral. In the Korean case, for example, privatization is a double-edged sword that has positive and negative impacts on universal service, as described in the previous chapter. Therefore, a state, which plans to privatize its telecommunications enterprise, needs to figure out how to operate the universal service system smoothly and secure universal service effectively without the government-run carrier before it completes privatization, in order to maximize its positive effects, and simultaneously minimize its negative effects on universal service.

As discussed so far, this case study of Korea seeks to provide a better understanding of the relationship between telecommunications reform and universal service. At the same time, however, it has a limitation in generalizing the impacts of changes in market structure on universal service because of the unique features which Korea has demonstrated in the process of telecommunications reform and the evolution of universal service. Korea achieved the remarkable economic development starting in the 1970s, and the demands for telecommunications service from business and residents rapidly increased. This enabled Korea Telecom to create the huge capital for network investment domestically, and it was able to enjoy large net profit before privatization, unlike other state-owned telecommunications enterprises in developing countries. Thus, atypical strategies, which Korea has employed to secure universal service as well as promote the development of its telecommunications sector, may not be directly applied to

other developing countries, even in the case that their goals in telecommunications are the same as Korea's.

In spite of this limitation, this dissertation may contribute to providing policy-makers and scholars in telecommunications with useful policy suggestions by concretely illustrating why Korea has adopted its own agenda in telecommunication and how she has successfully implemented it in the reform process. Jayakar (1999) indicates that universal service achievement varies depending on the attitudes to universal service and the policy choices of policy-makers in telecommunications, even though the macro-level parameters of the telecommunication system are the primary factors to influence universal service achievement. Consistent with his argument, finally, this study concludes that each state may have its discretion in telecommunications and be able to choose the strategies appropriate to its political, economic, and social circumstances in order to secure universal service, despite the irresistible global trend of market-oriented telecommunications reform. The available options on the policy menu for developing countries might be competition or privatization. But, a new recipe, which looks queer to those who prefer the conventional, might be the better choice for developing countries depending on their tastes, as the Korean case demonstrates.

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