

**PUBLICATION**

---

**The Telecommunications  
Market in Korea: Current  
Status and Future Challenges**

**H. S. Jung  
November 2000**

*Program on Information  
Resources Policy*

 **Center for Information Policy Research**

 **Harvard University**

The Program on Information Resources Policy is jointly sponsored by Harvard University and the Center for Information Policy Research.

*Chairman*  
Anthony G. Oettinger

*Managing Director*  
John C. B. LeGates

HongShik Jung is chief executive officer and chairman of Telson Electronics Co. Ltd. He is also a senior researcher at the Graduate School of Public Administration of Seoul National University. For nearly twenty-seven years he served as a senior Korean government official in the field of information and communications policy, and in 1988 he was Vice-Minister of the Ministry of Information and Communications.

Copyright © 2000 by the President and Fellows of Harvard College. Not to be reproduced in any form without written consent from the Program on Information Resources Policy, Harvard University, Maxwell Dworkin 125, 33 Oxford Street, Cambridge MA 02138. (617) 495-4114

E-mail: [pirp@deas.harvard.edu](mailto:pirp@deas.harvard.edu) URL: <http://www.pirp.harvard.edu/>  
ISBN 1-879716-69-0 **P-00-6**

November 2000

**PROGRAM ON INFORMATION RESOURCES POLICY**

**Harvard University**

**Center for Information Policy Research**

**Affiliates**

Anonymous Startup	Motorola, Inc.
AT&T Corp.	National Security Research, Inc.
Australian Telecommunications Users Group	National Telephone Cooperative Assoc.
BellSouth Corp.	NEC Corp. (Japan)
The Boeing Company	NEST–Boston
Booz-Allen & Hamilton, Inc.	Nippon Telegraph & Telephone Corp (Japan)
Carvajal S.A. (Colombia)	NMC/Northwestern University
Center for Excellence in Education	Research Institute of Telecommunications and Economics (Japan)
CIRCIT at RMIT (Australia)	Samara Associates
Commission of the European Communities	Siemens Corp.
Critical Path	SK Telecom Co. Ltd. (Korea)
CyberMedia Convergence Consulting	Strategy Assistance Services
CyraCom International	TRW, Inc.
DACOM (Korea)	United States Government:
ETRI (Korea)	Department of Commerce
eYak, Inc.	National Telecommunications and Information Administration
Fujitsu Research Institute (Japan)	Department of Defense
GNB Technologies	Defense Intelligence Agency
Grupo Clarin (Argentina)	National Defense University
Hanaro Telecom Corp. (Korea)	Department of Health and Human Services
Hearst Newspapers	National Library of Medicine
High Acre Systems, Inc.	Department of the Treasury
Hitachi Research Institute (Japan)	Office of the Comptroller of the Currency
IBM Corp.	Federal Communications Commission
Intel Corp.	National Security Agency
Korea Telecom	United States Postal Service
Lee Enterprises, Inc.	Upoc
Lexis-Nexis	Verizon
Eli Lilly and Co.	
Lucent Technologies	
John and Mary R. Markle Foundation	
McCann North America	
Microsoft Corp.	
MITRE Corp.	

## **Acknowledgements**

The author gratefully acknowledges the following people who reviewed and commented critically on the draft version of this report. Without their consideration, input, and encouragement, this study could not have been completed:

Seung Choon Ahn  
Cae-One Kim  
Chi-Young Kwak

Joong-Soo Ma  
Won-Ki Min  
Keuk Je Sung

These reviewers and the Program's Affiliates, however, are not responsible for or necessarily in agreement with the views expressed here, nor should they be blamed for any errors of fact or interpretation

## Note

<b>Average Exchange Rate: Wons per U.S. Dollar</b>				
<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
770.9	805.3	951.1	1399.5	1200

Sources: U.S. Department of State, 1998–2000; U.S. Bureau of Statistics, 1995–98; International Monetary Fund, 1995–98.

## Executive Summary

Korea has made significant progress in developing its telecommunications infrastructure and services market since the early 1980s. The policy priority in the 1980s was to satisfy the demand for basic telephony by constructing telecom infrastructure and establishing public telecom service providers, including KT (Korea Telecom). In the 1990s, the government actively sought to introduce competition, deregulation, and privatization of public telecom service providers and to promote enhanced telecommunications services and the information telecommunications (IT) industry. As of March 2000, 37 facilities-based services providers, 211 resale-based service providers, and more than 3,700 value-added service providers were competing in the Korean telecom services market, in which over eighteen years (1981–1999) sales had grown more than 26 times in size. This report examines the development of the telecom market in Korea, assesses its telecom policy, and offers some indications of future directions.

Such successful development was not accidental. The Korean government played a critical role in developing infrastructures and creating a deregulatory environment. Key factors for success include the following:

- rapid development of the telecom infrastructure until the early 1990s, to raise the telephone penetration rate, which served as a basis for further growth;
- creation of a competitive market structure through phased-in introduction of competition and deregulation in all areas of the telecom market; and
- vigorous competition in the mobile market, which led to a rapid diffusion of telecom services, which in turn facilitated increased choices in service for customers and in the quality of services.

Nonetheless, telecom policy in Korea needs to deal with certain pending issues: timely resolution of existing regulatory issues to ensure competition; provision of independence and authority to the regulatory body; separation of the regulatory function from industry promotion policy; and elimination of restrictions on foreign ownership in basic telecom services

Because the IT industry will be an important source of national wealth in the twenty-first century, the major players in the Korean telecom market will need to adjust to the evolving trends of the global IT industry to sustain the prosperity of the Korean IT industry. The following suggestions are offered:

- KT, the largest and oldest telecom service provider with established nationwide telecom facilities, will urgently need to transform itself into the leading comprehensive IT service provider through active structural reform and privatization and by extending its businesses beyond traditional legacy services to new IT services, such as Internet-based mobile services;

- The Korean government will need to strengthen its role as a strong supporter of an antitrust mechanism and as guardian of consumers' rights and benefits, and to establish a new business model that will incorporate not only the reinforced regulatory functions but also industrial policies; and
- All the major players will need to be well informed and prepared for the potential globalization and convergence of IT technology and related markets and legal institutions.

## Contents

<b>Acknowledgements</b> .....	iii
<b>Note</b> .....	iv
<b>Executive Summary</b> .....	v
<b>Chapter One Introduction</b> .....	1
<b>Chapter Two Changes in the Telecommunications Market in Korea</b> .....	5
2.1 The First Phase, 1980s: Satisfying Demand for Basic Telecommunications Services....	5
2.2 Structural Reform, Early 1990s.....	8
2.2.1 First Phase: July 1990 .....	8
2.2.2 Second Phase: July 1994.....	11
2.3 Full-Blown Competition in the Market, Late 1990s .....	13
2.3.1 Increasing Competition: July 1995 .....	13
2.3.2 Expansion of Competition: 1996 .....	14
2.3.3 Full-Blown Competition: 1997 .....	16
2.3.4 Expansion of Competition: After 1998.....	17
<b>Chapter Three Current Status of the Telecommunications Market in Korea</b> .....	23
3.1 Wireline Telecom Service .....	23
3.1.1 International Telephony.....	23
3.2 Long-Distance Telephony .....	25
3.3 Local Telephony .....	26
3.3.1 Wireless Telecom Services.....	27
3.2.2 Radio Paging .....	32
3.2.3 Trunked Radio Service (TRS).....	34
3.2.4 Wireless Data Transmission .....	35
3.2.5 Global Mobile Personal Communications by Satellite (GMPCS) .....	36
<b>Chapter Four Evaluation of Telecommunications Policy and Future Tasks</b> .....	39
4.1 Evaluation of Telecommunications Policy .....	39
4.2 Prospects for the Telecommunications Market .....	41
4.3 Future Tasks .....	43
<b>Appendix The Telecommunications Market in Korea: Current Status and Future Challenges</b> .....	45
<b>References</b> .....	61
<b>Acronyms</b> .....	63

## Illustrations

### Figures

<b>3-1</b>	Marketshare of Wired International Call Services .....	25
<b>3-2</b>	Growth of Mobile Telephone Services, 1993–98: Cellular and Personal Communications Services (PCS) .....	29
<b>4-1</b>	Sales Volume of the Facilities-Based Telecom Market in Korea .....	42
<b>4-2</b>	Percentage of Facilities-Based Telecom Services (Based on Sales Volume) .....	42

### Tables

<b>2-1</b>	Development of Telecommunications and Demand for Basic Services in the 1980s .....	6
<b>2-2</b>	Major Telecommunications Policies in the 1980s .....	7
<b>2-3</b>	First Structural Reform of the Telecom Industry, October 1990-April 1995 .....	10
<b>2-4</b>	First Structural Reform of the Telecom Industry, October 1990-April 1995 .....	12
<b>2-5</b>	New Service Providers and Status of Facilities-Based Service Providers .....	15
<b>2-6</b>	Existing Restrictions and World Trade Organization (WTO) Schedule of Concessions, February 1997 .....	17
<b>2-7</b>	Guidelines for New Telecom Service Providers, August 1998 .....	18
<b>2-8</b>	Growth of the Korean Telecom Services Market in the 1990s (Billions of Won).....	19
<b>2-9</b>	Major Telephone Service Providers (TSPs) .....	20
<b>2-10</b>	Marketshare of KT (Billions of Won).....	20
<b>3-1</b>	Facilities-Based and Special Service Providers for International Services .....	23
<b>3-2</b>	Sales of International Service Market (Billions of Won) .....	24
<b>3-3</b>	Current Status of Accounting Balance in Korea (U.S. \$10,000).....	24
<b>3-4</b>	Sales of Long-Distance Service Market (Billions of Won) .....	25
<b>3-5</b>	Number of Long-Distance Telephone Subscribers (Thousands of Preselected Subscribers) .....	26
<b>3-6</b>	Changes in Local Call Charges (Won) .....	27
<b>3-7</b>	Sales in the Local Service Market (Billions of Won).....	27
<b>3-8</b>	Service Providers in the Mobile Telephony Market.....	28
<b>3-9</b>	Marketshare of Mobile (Wireless) Telephone Service Providers (TSPs).....	30
<b>3-10</b>	Mobile Telephone Services Market, 1997–99.....	30
<b>3-11</b>	Rate Package Offered by Personal Communications Services (PCS) Providers .....	31



<b>3-12</b>	Mobile Operators Wireless Data Transmission Services .....	32
<b>3-13</b>	Number of Subscribers and Sales of Radio Paging Market, 1997-99 .....	33
<b>3-14</b>	Number of Subscribers to Radio Paging Service Providers (Thousands of Subscribers) .....	34
<b>3-15</b>	Trunked Radio Service (TRS) Providers .....	34
<b>3-16</b>	TRS Market in Korea .....	35
<b>3-17</b>	Number of TRS Subscribers to Each Service Provider (Individual Subscribers) .....	36
<b>3-18</b>	Number of Subscribers to and Sales of Wireless Data Transmission.....	37
<b>3-19</b>	Number of Subscribers to Data Transmission.....	37
<b>3-20</b>	Major GMPCS Operators .....	38
<b>4-1</b>	Prospective Changes in Sales Volume of the Korean Facilities-Based Market (Billions of Won).....	41

## Chapter One

### Introduction

In Korea for the past hundred years telephone services were provided exclusively by the government or by government-funded institutions, but with the privatization plan of the 1980s and the introduction of competition in the 1990s, services once regarded as a public service to be provided by government were transformed into a private service that private businesses now provide to the general public.

The history of Korean telecommunications can be traced back to September 28, 1885, when the telegraph service was started with a message sent from Hansung—today's Seoul—to Inchon. After that, telecommunications expanded, with installation of telegraph lines between Seoul and Uiju, Seoul–Pusan, and Seoul–Wonsan. But these services were not generally available to the public.<sup>1</sup>

The pioneer in Korean telecommunications was Sang Un, the nation's first telecommunications technician, who in 1882 brought the telephone to Korea from China, where it was first installed in the Korean royal palace. By 1896, a magneto telephone was installed in the royal palace, and by 1902, when telephone service was launched between Seoul and Inchon, people in Korea were able to use the telephone.

When Korea was annexed by Japan in 1905, Japan aggressively took advantage of Korea's communications facilities by taking control of Korea's communications.

Telecommunications in Korea continued to grow, however, by leaps and bounds. In 1924, the first international telephone was installed connecting Seoul and Bongchun, China; in 1908, the common-battery switchboard was developed; and in 1935, the automatic switching system was developed. In 1910, the *Kwangjaeho* was the first Korean battleship to have wireless communications equipment, which it used to communicate with Inchon.

But in the early twentieth century, such communications in Korea were used only by the Japanese, as a means of colonization and invasion, and were not available to the general public.

After Korea was liberated from Japan on August 15, 1945, Korea regained sovereignty over its communications, and the government made great efforts to rebuild the communications infrastructure by reestablishing postal and telegraph services among major cities. With the onset of the Korean War in 1950, however, communications facilities were greatly damaged. The armistice agreement of 1953 between South and North Korea allowed South Korea to rebuild its communications facilities with the help of foreign aid.

---

<sup>1</sup>Korea Telecom, Korea Telecom Museum, [On-line]. URL: <http://www.kt.co.kr:2000/museum/picture/index.htm>

During the 1960s, the Korean communications industry grew rapidly, as a part of successive Five-Year Economic Development Plans (1962–66, 1967–71, and 1972–76), managing to satisfy the demand for communications demand and laying a foundation for technological independence.

As part of the Five-Year Plans, the era of satellite communications was opened with the operation of the first and second satellite earthstations in Korea. Construction of the microwave backbone network and the installation of the coaxial carrier facility between Seoul and Pusan in 1975 created a two-way communications structure. Korea was able to accumulate technology with the domestic production of telephones and private electronic switching systems. The government also operated professional research institutions. In 1979, as a result of research, the government introduced an electronic switching system for trial operation and entered the era of optical transmission by developing and commercializing fiber optic transmission technology.

Along with economic development came an increase in services related to cultural and social needs, which led to a dramatic growth in demand for telephone services. To address increased demand, in 1981 Korea Telecom (KT) was created, to expand and manage basic telecommunications facilities.

With a view to providing telecommunications services, including basic telecommunications, to the general public, KT established a long-distance electronic switching network and by the mid-1980s had achieved nationwide automation of telephones.

Korea has been internationally acclaimed for its ability to operate state-of-the-art communications technology, such as providing error-free technical communications support during the 1988 Olympic games. Technologically, by the late 1980s Korea was the tenth country to develop a TDX-10 (time-division exchange) switching system.

Now, as the twenty-first century begins, telecommunications in Korea have laid the foundation for achieving advanced informatization, as clearly shown by the successful launch of the Mukoongwha Satellite in 1995.

The creation of KT (1981) may be regarded as the beginning of the history of telecommunications policy in Korea. In the twenty years since then, telecommunications policy in Korea has undergone great change. The privatization of KT and the introduction of competition have resulted from changes in policy. The number of wireless subscribers (21.25 million), mobile subscribers (23.44 million), and radio paging users (3.21 million) as of December 1999 clearly indicate that communications services in Korea have become more universal for the general public.<sup>2</sup>

---

<sup>2</sup>Ministry of Information and Communication (MIC), *Current Status of the Number of Wireline and Wireless Telecom Service Subscribers (as of December 1999)*, Jan. 10, 2000, [On-line]. URL: <http://www.mic.go.kr>

This report examines changes in telecommunications policy in Korea from the 1980s to the present (2000) and discusses the current status of the telecommunications market in Korea, with some indications of the future direction and market prospects of the Korean telecommunications market.



## Chapter Two

### Changes in the Telecommunications Market in Korea

The changes in the telecommunications market in Korea can be largely divided into three phases, based on changes in regulatory policies. In the 1980s, in the first phase, the government focussed mainly on satisfying basic telecom demand by increasing public investment in the telecom industry. In the second phase, which began in the early 1990s, the government recognized the importance of competition and decided to introduce competition into the market. In the third phase, which started in the late 1990s, the government increased the scope of competition in the market.

#### **2.1 The First Phase, 1980s: Satisfying Demand for Basic Telecommunications Services**

The major emphasis of telecommunications policy in Korea in the early 1980s was on solving the problem of a chronic shortage of services and equipment and on improving the low quality of telephone calls. This problem was especially severe in 1980, when the shortage exceeded 600,000, amounting to 20 percent of the total 2.82 million main lines.

The government's efforts to address this problem were initiated in December 1980, with the formulation of a basic policy, *Improving the Management Structure of the Telecommunications Business*, to secure necessary funds and to create an organization to implement the policy. In 1981, the Korea Telecommunications Authority (KTA) Act was enacted, and, in January 1982, the KTA took over the role of the Ministry of Communications (MOC) (since 1995, the Ministry of Information and Communication [MIC]), which was responsible for implementing telecommunications affairs. This change separated the policy function from the business function in Korean telecommunications.

With the creation of the KTA—the predecessor of today's KT—the telegraph and telephone bond system secured new investment funds, which allowed development of new facilities and technologies. By 1986, Korea was the tenth country to produce the TDX switching system, and by 1987 it had solved its chronic shortage and achieved nationwide automation, satisfying the demand for basic telecommunications centered on telephones. In 1988, when the number of subscribers for wireline telephony exceeded the ten million mark, Korea ushered in the era of one telephone per household, thus accomplishing its objective of satisfying the demand for basic telecommunications.

In 1989, Korea's production of terminal equipment and its fostering of the equipment industry proved to be a great success, leading to a huge telecommunications equipment market that amounted to U.S.\$7.4 billion and gaining 2.2 percent of the global market. The service and equipment market in Korea emerged as the most promising growth market for Korea's future.

**Table 2-1**  
**Development of Telecommunications and Demand for**  
**Basic Services in the 1980s**

	1981	1985	1989
<b>Number of public telecommunications providers</b>	1	2	5
<b>Number of telephone subscribers</b>			
• Facilities (000s)	3,491	7,538	13,353
• Shortage of services (000s)	497	279	1
• Penetration rate (per 100 people)	8.4	15.8	27.8
<b>Production (sales) volume of telecommunications equipment (U.S.\$)</b>	600 M*	\$1.07 B	\$2.32 B
<b>Trade surplus of telecommunications equipment (U.S.\$)</b>	-\$790 M*	\$70 M*	\$500 M

\*1982 data

Source: Ministry of Communications (MOC), Annual Report on Telecommunications.

The major focus of policy in the 1980s (see **Table 2-2**) on satisfying the demand for basic telecommunications services, which was implemented by the MOC, was different from the liberalization trend in other countries. In preparation for the trend toward liberalization of global telecommunications, in 1989 the MOC decided to promote stable management of the telecommunications industry, which was carried out by privatization of the KTA and by encouraging telecommunications carriers to develop specialized fields. This policy included:

- reviewing measures to enhance specialization of international telecommunications projects;
- specialization of mobile telecommunications;
- normalization of ship-to-shore facilities; and
- reviewing measures to foster value-added services and gradual liberalization of the use of dedicated lines.

The MOC also implemented three rounds of limited deregulation, until 1988, of the use of dedicated lines, to facilitate value-added services. In the 1980s, with developments in technology and increased demand for new telecommunications services, deregulation of value-added network (VAN) businesses in Korea became inevitable. In addition, many ways to facilitate the VAN business were recommended.

With the demand for basic telecommunications relatively satisfied by the late 1980s, the government could introduce competition and implement deregulation. The most direct motive for Korea's liberalization of its telecommunications market, however, came from the United States,

**Table 2-2**  
**Major Telecommunications Policies in the 1980s**

Date	Major Issues
<b>March 1981</b>	Enactment of Korea Telecommunications Authority Act (KTA)
<b>November 1981</b>	Confirmation of the establishment of KTA
<b>January 1982</b>	Commencement of business of KTA
<b>March 1982</b>	Establishment of Korea Data Communications (Dacom)
<b>March 1983</b>	Approval of PSTN to access telecommunications equipment
<b>December 1983</b>	Enactment and promulgation of Telecommunications Basic Act and Telecommunications Business Act
<b>September 1984</b>	Selection of Dacom as public telecommunications carrier
<b>January 1985</b>	First deregulation of telecommunications line-use policy
<b>January 1985</b>	Fostering of prospective telecommunications-related SMEs
<b>July 1985</b>	Implementation of Type Approval System
<b>March 1986</b>	Development of TDX
<b>April 1986</b>	Enactment and promulgation of the Act on Expanding the Computation Network and Facilitating Its Use
<b>June 1987</b>	Second deregulation of telecommunications line-use policy
<b>January–April 1988</b>	Additional selection of public telecommunications carriers (KOTIS, KPT, KMTC)
<b>May 1988</b>	Coordination of business affairs between KTA and Dacom (opening of KTA's nonvoice service area)
<b>December 1988</b>	Third deregulation of telecommunications line-use policy
<b>July 1989</b>	Fourth deregulation of telecommunications line-use policy
<b>December 1989</b>	Partial amendment of four telecommunications-related acts

PSTN = public switched telephone network      SMEs = small- and medium-size enterprises      TDX = time-division exchange  
Source: MOC, Annual Report on Telecommunications (1989), 8.

which then urged Korea to open its market. Korea's telecommunications market then seemed to be the largest prospective market for investment in Asia. Not only was Korea heavily dependent on the U.S. market, but Korea also had recorded a huge trade surplus for the United States, amounting to U.S.\$9.5 billion.

In February of 1989, the United States designated Korea a priority foreign country (PFC) under U.S. Trade Law, on the basis of the potential impact of Korea on the U.S. telecommunications market. Since 1989, the United States has been pressuring Korea to open up its telecom-



munications market. The United States not only demanded the rapid market opening of the telecommunications sector but also further liberalization of Korea's telecom services, the lifting of restrictions on foreign participation in the market, guaranteed interconnection, and Korea's adoption of a nondiscriminatory procedure for the telecommunications equipment procurement market.

But the telecommunications industry in Korea was then still at a stage of development in which the government was trying to satisfy the demand for basic telecommunications services based on telephony. Considering the nascent stage of its VAN market and the competitiveness of operators, the government could not then rapidly open the market nor implement liberalization measures. The MOC thus decided to liberalize the telecom market gradually and to adopt the principle of "enhancing competition in the domestic market and later opening the market for foreign competition."

Discussions by the United States and Korea on the issue of opening the telecom market clearly showed the future direction of the new global order for telecommunications. A partial accommodation of the United States's demand to open the market prompted the first structural reform in July of 1990.

Issues such as implementing structural reforms or opening the VAN market were in line with the Uruguay Round/Group of Negotiation in Services (UR/GNS) Agreement signed in December 1993. The second structural reform was carried out to respond to that Agreement and to reflect the demand for entry in the domestic market.

In the early 1990s, the United States urged additional talks on further opening the basic telecom market at the UR Agreement. Because the Korean government realized the importance of implementing structural reform in order to maintain continuing growth, Korea joined the WTO/GBT (World Trade Organization/Group on Basic Telecommunications) Agreement.<sup>3</sup>

As a result, the government had to initiate a gradual liberalization of the telecom market and to address the growing demand for technology development, it decided to expand the scope of that liberalization.

## **2.2 Structural Reform, Early 1990s**

### **2.2.1 First Phase: July 1990**

**Background.** The direct motive for the Korean government to implement structural reform was the demand by the United States for opening of the telecom market. In the late 1980s,

---

<sup>3</sup>Korea Information Society Development Institute (KISDI), *Comprehensive Report on World Trade Organization [WTO]/Group on Basic Telecommunications [GBT] Agreement* (June 1997).

although people no longer assumed that the government exclusively should provide telecom services to the general public, the private sector was not greatly interested in providing them.

With wireless technology only in the nascent stage, government control seemed realistic at that point. Another major issue was the introduction of competition into the market, which led to fierce opposition by the dominant operator, KT. Other major issues the government needed to address were enhancement of KTA's managerial efficiency and the government's responsibility to lead development of the telecom industry.

In the beginning of 1989, under pressure from U.S. demands to open the market, the MOC concluded that it was necessary to implement structural reform in the telecommunications industry. The government formed a council of experts to carry out in-depth research on such reform, which led to the establishment by the government in 1990 of the First Reform Measures for Telecommunications Business and introduced proposed revisions for relevant laws and regulations.<sup>4</sup>

**Major Development.** The basic directions of the first structural reform were the following:

- The KTA maintained its exclusivity in local telephone business, which required huge investments and facilities.
- Gradual competition was allowed in the rapidly changing mobile, long-distance, and international call areas, which required only relatively small amounts of investment.
- Early introduction of competition into the VAN area, because this area requires continual development of new services.

As indicated in **Table 2-3**, the telecommunications business was divided into facilities-based service providers and value-added service providers, and facilities-based service providers were broken into general and specific service providers.

This structural reform introduced limited competition into the international, mobile, and radio paging areas, while in the case of value-added services, it introduced full-fledged competition. For long-distance telephony, the government approved the selection of a second service provider.

The government also created the Korea Communications Commission (KCC) to resolve disputes that might occur with the entry of new service providers. KCC is in charge of coordinating the service boundaries of each operator, arbitrating disputes between service providers, establishing interconnection standards, opening networks to use by new operators, reviewing and coordinating interconnection requirements, arbitrating and mediating disputes

---

<sup>4</sup>Telecommunications Development Council, *Recommendation by the Telecommunications Development Council*, (KISDI, 1989).

between users and operators, and preventing, observing, and rectifying unfair practices of the dominant operator.

**Table 2-3**  
**First Structural Reform of the Telecom Industry,**  
**October 1990-April 1995**

Category	Facilities-Based Service Provider		Value-Added Service Provider
	General service provider	Specific service provider	
<b>Definition</b>	Operators that provide telecom services other than specific telecom services and that use their own facilities	Operators that provide limited telecom services, both geographically and technically, and that own the facilities they use	Operators that provide services using network facilities that they lease from a general or specific service provider
<b>Business area</b>	Telephony, leased lines, telegraphy, telegram, etc.	Mobile communications services (cellular, radio paging, wireless data transmission, TRS)	DB/DP, data accumulation/transmission, EDI, electronic mail, flight reservation
<b>Entrance requirement</b>	Designation by the government	Authorization	Registration
<b>Limits on ownership</b>	<ul style="list-style-type: none"> <li>• Major shareholder: 10%</li> <li>• Telecom facility manufacturer: 3%</li> <li>• Ban on foreign ownership</li> </ul>	<ul style="list-style-type: none"> <li>• Major shareholder: 33.3%</li> <li>• Telecom facility manufacturer: 10%</li> <li>• Foreign ownership: 33.3% (cannot be major shareholder)</li> <li>• Government-funded institution: 10% (cannot be major shareholder)</li> </ul>	None

DB/DP = database and dataprocessing

EDI = electronic data interface

TRS = trunked radio service

**Evaluation.** The significance of the first structural reform was that the introduction of competition into the area of international calls and mobile telephony prepared Korea for the opening of its market to foreign competition. On the basis of this reform, in 1992 twelve new radio paging operators were selected to enter the market. On the basis of the plan to privatize government-funded institutions, the SunKyong Group (SK) obtained the management rights of Korea Mobile Telecom (now, SK Telecom) in December of 1993. In February of 1994, Shinsegi Telecom was designated the second cellular operator in Korea.

Classifying service providers into general and specific and introducing the positive listing system<sup>5</sup> restricted competition, the possibility of expanding the scope of business lines, and the

<sup>5</sup>Through positive listing, the government specifies which areas of service a licensed provider is permitted to provide. A negative listing system means that a licensed carrier is permitted to provide all services except those specified by the government as a condition of license.

introduction of new services into the market. The dominant operator, KT, experienced the most disadvantages. The policies implemented by the government were inflexible and revealed many loopholes. To address these problems and to accommodate the rapidly changing telecom environment, the government prepared for the second structural reform.

### **2.2.2 Second Phase: July 1994**

**Background.** Because the first reform seemed insufficient in many ways, the second reform focussed mainly on resolving issues that had been left unresolved. Public entities that possessed their own telecom facilities, such as the Korea Electric Power Corporation (KEPCO) and the Korea Highway Corporation, demanded entry in the telecom market.

In accord with the UR/GNS Agreement of late 1993 and the start of talks on the WTO/GBT Agreement in 1994, Korea had to open its telecom market to foreign competition. Such pressure, at home and abroad, made the second structural reform necessary, to strengthen the competitiveness of domestic operators, introduce and expand competition in the basic telecom business, and facilitate the entry of new providers, including personal communications services (PCS) providers.

**Major Development.** The directions of the second structural reform are the following (see **Table 2-4**):

- To facilitate the introduction of new services and expand the scope of business lines by scrapping restrictions;
- To enhance the efficiency of and increase the opportunity for market participation by introducing competition; and
- To ensure greater independence in management through deregulation and increasing users' benefit.

On the basis of this reform, the classifications of general and specific service providers was scrapped to allow these providers to enforce competitiveness by expanding the scope of businesses as well as to set the ceiling for ownership. The government also simplified usage requirements for facilities-based service providers and abolished the notification requirement for value-added service providers. The government also allowed public corporations, including KEPCO, to participate in cable television (CATV) network operation and the program provision business.

With the second structural reform, the government designated Dacom as the second long-distance operator, thereby introducing competition in this area. The government also decided to introduce new services, such as PCS, trunked radio service (TRS), and radio data transmission, to prepare for future opening of the market.

**Table 2-4**  
**First Structural Reform of the Telecom Industry,**  
**October 1990-April 1995**

Category	Facilities-Based Service Provider	Value-Added Service Provider
<b>Definition</b>	Telecom service providers that use their own telecom facilities	Telecom service providers that lease telecom facilities from the facilities-based service providers
<b>Services</b>	Telephony, leased lines, telegraphy, mobile radio communications services (cellular, radio paging, wireless data transmission, TRS, etc.), and other services specified by the Minister	Telecom services other than those provided by facilities-based service providers
<b>Entrance requirement</b>	Authorization	Notification
<b>Limits on ownership</b>	<ul style="list-style-type: none"> <li>• Major shareholder: 33.3%</li> <li>• Foreign ownership: 33.3% (cannot be major shareholder)</li> <li>• Government-funded institutions: 10% (cannot be major shareholders; major shareholder for telephone service: 10%, foreign ownership banned)</li> </ul>	None

TRS = trunked radio service

Source: Sin-Ryang Jung, "The Development and Future of Korean Telecommunications Privatization," *Information and Communications Policy* 9, 23 (Dec. 16, 1997), 1-22.

**Evaluation.** The government decided to preserve the existing limit of 10 percent on foreign ownership, taking into account the national interest of self-developing the telephone business. The restriction would be decided in line with the WTO/GBT Agreement negotiations.

Restrictions on the expansion of KT's scope of businesses were partially lifted by the second reform. Greater independence was ensured by the implementation of privatization and the introduction of accountable management, increasing benefits to users and enhancing competitiveness.

Although the second reform eased limits on ownership imposed on facility manufacturing businesses, introduced competition into the long-distance area, and added new services (PCS, TRS) into the market, structural problems as well as entry barriers remained. Further reform was needed to address such issues as easing restrictions on pricing, accounting separation (limiting cross-subsidiaries), equal connection, interconnection charges, and establishing an independent regulatory body.

## 2.3 Full-Blown Competition in the Market, Late 1990s

### 2.3.1 Increasing Competition: July 1995

**Background.** The Ministry of Information and Communication (MIC), which opened in December of 1994 with the restructuring of government ministries, focussed mainly on competition and on encouraging participation by the private sector. Constructing a high-speed information network became necessary, and equipment manufacturers demanded entry into the telecom market.

In May of 1995, the Korean government announced at the First Asia Pacific Economic Cooperation (APEC) Telecommunications Ministerial Meeting, to facilitate competition in Korea in the telecom industry and to continue opening its market. Other countries' plans for opening the telecom market, however, were far ahead of Korea's, and Korea had therefore to prepare for potential changes in the global telecom market following the signing of the WTO/GBT Agreement.

**Major Developments.** The policy for enhancing competitiveness in the telecom business released by the MIC in July of 1995 was significant in that it outlined the final picture of the competition structure of this market. Competition was now fully introduced, and the directions were the following:

- Early introduction of competition into the market, which was carried out so that operators could secure competitiveness.
- Greater independence for KT in terms of management, by eliminating inefficiency and reviewing measures to overhaul relevant laws and regulations to ensure independence; also, new services (such as PCS) were permitted to participate in the market.
- Establishment of laws and regulations to ensure fair competition and streamlining of the process of regulation along with efficient management of telecom resources (such as spectrum allocation, numbering); creation of a KCC Secretariat to enlarge the KCC's role and, later, depending on the results of the WTO talks, designating it an independent regulatory body.

To implement such changes, the government plans, first, to select new operators under the current law and to amend the law regarding the prior public notification system, and, second, to revise domestic laws to accommodate the results of the Negotiating Group on Basic Telecommunications (NGBT) Agreement.

**Evaluation.** At this stage (mid-1990s), adoption of the policy of early introduction of competition into the market was adequate, because Korea had to prepare for pressures for opening the market. Not only increasing the number of operators but also implementing policies to support domestic operators and enhance competitiveness both were very encouraging and allowed the telecom market in Korea to be transformed fully into a competitive market.

### **2.3.2 Expansion of Competition: 1996**

**Selection of the First Service Provider: June 1996.** On the basis of plan described in the previous sections, the government decided to prevent heated competition by simultaneously providing prior notification on business areas that have been approved and increasing the scope of telecom businesses by encouraging the private sector to join, and so in December of 1995 it announced that new facilities-based service providers could participate in seven service areas, including PCS, TRS, and international phone service. In June of 1996, the government selected twenty-seven service providers in the seven areas, thus introducing competition in all areas except local phone services (see **Table 2-5**). The government took a number of issues into consideration when introducing competition into the market, including the fostering of relevant industries such as small- and medium-size enterprises (SMEs).

Many service providers were selected, on the basis of the previous measures . But with the launching of the WTO/GBT Agreement, creating a competitive and fair environment for the entry of new service providers became important. Several liberalization measures were implemented, as well as revisions in relevant laws and regulations. First, restrictions on facilities-based service providers were overhauled, including the elimination of prior notification when approving facilities-based service providers; the easing of restrictions on services provided through affiliated companies; and the streamlining of the procedure for adding new services. Second, facilities-based service providers were given greater independence to determine prices. Third, restrictions on self-owned telecommunications facilities were eased, allowing joint establishment of facilities, such as mobile telecom basestations.

In addition, the KCC was empowered to ensure fair competition in the market. It is in charge of all matters related to fair competition, and its dispute-settling function was strengthened. The KCC Secretariat was set up and a standing commissioner appointed to carry out substantial functions.

**Table 2-5**  
**New Service Providers and Status of Facilities-Based Service Providers**

Service	Existing Service Providers	New Service Providers				Number
		1996	1997	1998	1999	
<b>Wired:</b> • Local • Long-distance • International	KT		Hanaro			2
	KT, Dacom		Onse Telecom		Hanaro	4
	KT, Dacom	Onse Telecom				3
<b>Leased line</b>	KT, Dacom	Thrunet, G&G Telecom	Onse Telecom	Dreamline	Hanaro, SK Telecom, Hansol PCS, Kangwon Mobile Telecom, PowerCom	11
<b>Wireless:</b> • Mobile telephony • PCS	SK Telecom, Shinsegi Telecom					2
		KT Freetel, LG Telecom, Hansol PCS				3
<b>GMPCS</b>				SK Telecom, Dacom		2
<b>TRS</b>	Korea TRS	Anam Telecom, Seoul TRS, Saebang Telecom, Daegu TRS, Kwangju TRS, Cheju TRS	Choongnam TRS, Chungbuk Mobile Telecom, Kangwon Telecom, Saehan Telecom			11
<b>Radio paging</b>	SK Telecom, Naray, Seoul, Buil, Saerim, Kwangju, Shinwon, Chunbuk, Saehan, Kangwon, Cheju	Happy Telecom	Bukyung			13
<b>Wireless data transmission</b>		Airmidia, Intec Telecom, Hansae Telecom				3
<b>Satellite data transmission</b>					Korea Obcom	1
<b>B-WLL</b>					Dacom	1
<b>Total</b>	15	27	9	3	8	37*

\*Operators providing multiple services counted only once.

B-WLL = broadband-wireless local loop

PCS = personal communications system

Source: Ministry of Information and Communications (MIC), *White Paper: Cyber Korea 21* (1999)

GMPCS = global mobile personal communications by satellite

TRS = trunked radio service



### **2.3.3 Full-Blown Competition: 1997**

The government's decision in June of 1997 to allow the entry of new service providers into the local, long-distance, leased-line, TRS, and radio paging areas indicated that full-blown competition had been introduced into the telecom market.

The introduction of competition even into the local telephony area, previously exclusively the area of the dominant operator, meant that government efforts to create a competitive environment in the telecom market were finally completed. Further, with the introduction of competition into the local telephony area, the government prepared for new multimedia services by upgrading subscriber lines more than its initial plans had called for and facilitated the development of relevant technology. The government's efforts were significant in the sense that they prepared Korea for the WTO regime by reducing foreign ownership restrictions in all telecom markets.

**Table 2-6** shows the differences between existing restrictions and the WTO Schedule of Concession, differences that the Telecommunications Basic Act and the Telecommunications Business Act have been revised to accommodate.

The government eased restrictions on new telecom services such as Internet telephony and voice resale, which had been prohibited under law in 1997, and created a special category of service provider to foster relevant industries and develop new technologies related to improving intracorporate (or in-house) systems. It also abolished the cap on ownership and allowed anyone—domestic or foreign—to engage in business if they met certain requirements, including protection of users and financial and technical competence.

The ceiling on foreign ownership of facilities-based services is in line with the requirements stated in the WTO Schedule of Concession, and the government allowed the purchase of shares in KT abroad through depository receipts.

A council comprising several nonpermanent directors was formed to assure the public interest of facilities-based service providers and to implement efficient management. The government enforced measures for checks and balances in the relationship between owners and management by forming another council of representatives consisting of minority shareholders and employees' stock representatives to manage shareholder meetings effectively.

The government revised the Telecommunications Business Act and, as a means to enhance the competitiveness of KT, transformed KT into a government-invested institution, enacting laws related to privatization and improving management to ensure KT's greater independence from the government (MIC) and responsibility. It also abolished the Korea Telecommunications Authority Act.

**Table 2-6**  
**Existing Restrictions and World Trade Organization (WTO)**  
**Schedule of Concessions, February 1997**

Category	Existing Restrictions	Final Schedule of Concession
<b>Foreign ownership</b>	Wireline: 33% for KT as of Sept. 1998; 49% for other operators from July 1999  Restriction on single ownership: 15% for KT as of Jan. 1999; Restrictions abolished for other operators as of Sept. 1998	33% for wireline and wireless from 1998 (KT: 20%)  49% for wireline and wireless from 2001 (KT:33%)  Restriction of single ownership: Same as left (KT: 3%)
<b>Foreign company as a major shareholder</b>	Ban on KT. Other operators approved as of 1999	Restriction (ban on KT) lifted as of 1999
<b>A corporation represented by a foreigner or whose executives include a foreigner</b>	Ban on KT. Other operators approved as of 1999	Approval of foreign representative and elimination of number of executives as of 1998
<b>Resale services:</b> • Voice resale  • Others	• Restriction lifted as of 1999 (foreign ownership ceiling: 49%)  • No restrictions	• Approved from 1999 (foreign ownership ceiling: 49%) • 100% foreign ownership allowed from 2001 • 100% from 1998
<b>Supply across borders</b>	Restrictions possible	Approval under condition of signing an agreement on commercialization with domestic operators  Banning on voice resale without establishing a company until Dec. 31, 2000
<b>Restriction principle</b>	Application of domestic rules	Must satisfy restriction principles of reference paper

Sources: Korean Information Society Development Institute (KISDI), *Comprehensive Report on World Trade Organization/Group on Basic Telecommunications (WTO/GBT) Agreement* (June 1997), 63; MIC, *1999 White Paper* (1999), 5.

In 1997, the government announced standards for sharing telecommunications facilities (June) and for providing information (July), and it initiated the long-distance telephony pre-selection system (November), to ensure fair competition. Revised interconnection standards were implemented beginning in 1998, after undergoing review by KCC (see **Table 2-7**).

### **2.3.4 Expansion of Competition: After 1998**

With the WTO/GBT Agreement, which took effect in 1998, competition in the domestic telecom market became full-blown. Restrictions on market entry for new facilities-based service

**Table 2-7**  
**Guidelines for New Telecom Service Providers, August 1998**

	<b>Facilities-Based Service Provider</b>	<b>Special Service Provider</b>	<b>Value-Added Service Provider</b>
<b>Facility</b>	In possession	Leased/self-owned facilities	Leased
<b>Services</b>	Facilities-based services	Voice resale, Internet telephony, international callback, intercommunication system	All telecom services other than those provided by facilities-based service providers
<b>Entry requirement</b>	Approval	Registration	Notification
<b>Limits on ownership</b>	<ul style="list-style-type: none"> <li>• 33% for wireline and wireless (KT: 20%)</li> <li>• 49% for wireline and wireless from 2001 (KT: 33%)</li> <li>• Single person ownership: 33% (KT: 3%)</li> </ul>	When providing telephone services <ul style="list-style-type: none"> <li>• 49% from 1999</li> <li>• No restrictions from 2001</li> </ul>	None

Sources: KISDI, *Comprehensive Report on WTO/GBT Agreement* (June 1997), 63; MIC, *1999 White Paper* (1999), 5.

providers were eliminated, and because many operators were approved to join the competition in all areas, there were only a few new entrants into the facilities-based service area.

Many new operators, however, entered special service areas, such as voice resale, Internet telephony, and international callback. With the exception of the area of voice resale, foreigners may enter all areas of the Korean telecom market. As of 1999, they were allowed to provide voice resale services with an ownership of 49 percent or less, and beginning in 2001, all the restrictions will be eliminated.

In the 1990s, the Korean telecom service market grew rapidly. In 1991, the size of the market, amounting to 4.533 trillion won expanded by 1999 to 17.362 trillion won, that is, about 3.83 times the size of the market in 1991 or a doubling of the market every four years. There were several distinctive features of the telecom services market in 1990. First, the wireless telecom market experienced rapid growth. Amounting to 149 billion won in size in 1991, this market increased to 9.242 trillion won by 1999, for an increase of 62 times in size. By 1999, this market had grown larger than the wireline telecom market. Second, special telecom services, or special services, provided since 1998 gradually expanded in the market. The special service providers played an important role in transforming the market into a more competitive environment. Third, value-added service providers also went through rapid growth, particularly in 1995–99, mainly because of the increase in demand for data communications services, including Internet-based

services. Expansion of data communications led to a market reorientation, in which the most recent change is increased use of wireless Internet access by mobile telephone.

**Table 2-8**  
**Growth of the Korean Telecom Services Market in the 1990s (Billions of Won)**

Services Market	1991	1995	1999
<b>Facilities-based services</b>	4,464	8,028	15,752
• Wire	4,314	6,318	6,510
• Wireless	149	1,710	9,242
<b>Special services</b>	—	—	121
<b>Value-added services</b>	69	361	1,489
<b>Total</b>	4,533	8,389	17,362

Source: Korea Association of Information and Telecommunication (KAIT).

The year 1995 proved the turning point for the Korean telecom service market, when it was transformed from a duopoly into a competitive market structure. New service providers were introduced into both wireline and wireless, and with the entry of special service providers in 1998, full-blown competition emerged in the Korean telecom services market. In the value-added market, too, competition heated up as new service providers joined the competition.

In the 1980s, KT was the major service provider dominating the Korean telecom market. Its competitors in wireline and wireless telephony—Dacom and SK Telecom—had once been affiliated companies of KT before being privatized and transformed into independent companies. By the late 1990s, they had become KT’s major competitors.

With the introduction of competition, KT’s dominance gradually decreased. In the overall telecom services market it decreased rapidly to 63.99 percent in 1999, from 92.86 percent in 1991. In 1991–95, KT’s market dominance dropped 16.7 percent, while it decreased 12.17 percent during 1995–99 (see **Table 2-10**).

**Table 2-9**  
**Major Telephone Service Providers (TSPs)**

Services	Before 1995	After 1995
<b>Facilities-based services</b> <ul style="list-style-type: none"> <li>• Wire</li> <li>• Wireless</li> </ul>	<ul style="list-style-type: none"> <li>• KT, Dacom</li> <li>• SK Telecom, Shinsegi Telecom</li> </ul>	<ul style="list-style-type: none"> <li>• KT, Dacom, Onse Telecom, Hanaro Telecom</li> <li>• SK Telecom, Shinsegi Telecom, KT Freetel, LG Telecom, Hansol PCS</li> </ul>
<b>Special services</b>	—	SK Telink, SDS
<b>Value-added services</b>	Chollian (Dacom), HiTEL (KT)	Chollian (Dacom), HiTEL(KT), Unitel (SDS), Nownuri (Nowcom), Netsgo (SK Telecom)

KT = Korea Telecom  
LG = Lucky Goldstar

PCS = personal communications services  
SDS = Samsung Data Systems

SK = SunKyong Group

Source: Data provided by MIC.

**Table 2-10**  
**Marketshare of KT (Billions of Won)**

Market	1991	1995	1999
<b>Facilities-based services</b>	4,205	6,362	11,049
<ul style="list-style-type: none"> <li>• Wire</li> <li>• Wireless</li> </ul>	4,057 147	6,362 —	9,586 1,463
<b>Special services</b>	—	—	—
<b>Value-added services</b>	5	28	61
<b>KT total (A)</b>	4,209	6,389	11,110
<b>National total (B)</b>	4,533	8,389	17,362
<b>KT's share (A/B)</b>	92.86%	76.16%	63.99%

Source: Data provided by KISDI.

There are several reasons for the weakening of KT's market dominance. First, it was affected by the growth of the wireless market. KT decided to sell its 23 percent share of KMT to SunKyong Group (now SK Group) on January 25, 1994. As a result, it no longer had any significant influence in the wireless market. After 1995, that market experienced explosive growth and is now far larger than the wireline market. In 1997, KT reentered the wireless market with the launching of its affiliated company, KT Freetel. KT Freetel's marketshare at the end of 1999, however, amounted to only 18.2 percent, on the basis of number of subscribers.

Second, the slow growth of the wireline market also weakened KT's dominance. The wireline market is now growing gradually, but compared with wireless or value-added services, its rate of growth rate is relatively low.

Third, rapid expansion of the value-added services market in the 1990s has had a negative influence on the KT's dominance. Although KT's subsidiary, KT HiTEL, benefited from the growth of this market, its business performance was not enough to keep pace with the market's expansion.



## Chapter Three

### Current Status of the Telecommunications Market in Korea

#### 3.1 Wireline Telecom Service

##### 3.1.1 International Telephony

International telephone service is the most competitive area for wireline services. KT, Dacom, and Onse Telecom are established providers, and in 1998 and 1999 competition increased as new service providers entered this market.

**Table 3-1**

#### **Facilities-Based and Special Service Providers for International Services**

	<b>Service Provider</b>	<b>Operators</b>
<b>Facilities-based operator</b>	KT (001), Dacom (002), Onse Telecom (008)	3
<b>Special service provider</b> <ul style="list-style-type: none"><li>• Voice resale</li></ul>	<ul style="list-style-type: none"><li>• LG Distribution, SamsungSDS, Nex Telecom, I-net, Naray Telecom, HK Telecom, IC&amp;Telecom, Hyundai IT, WonTel, Hanchu Telecom, etc.</li></ul>	26
<ul style="list-style-type: none"><li>• Internet telephony</li></ul>	<ul style="list-style-type: none"><li>• Samsung SDS, Nex Telecom, I-net, Naray Telecom, HK Telecom, etc.</li></ul>	17

Note: Only Type I service providers are shown for special services as of May 20, 1999.

Since the late 1990s, the government has allowed foreign businesses to participate in the international call area. Japan's KDD acquired a 49 percent share of Korea's Prism Communications, a special service provider, for roughly U.S.\$1.7 million. Competition is expected to heat up owing to competition not only among domestic operators but also among foreign ones (see **Table 3-2**).

The total international call market, including special service providers, recorded 643 billion won in 1998, which was a 2.3 percent decrease compared with the previous year. Sales of international service by facilities-based service providers, excluding special service providers, amounted to 593.1 billion won in 1998, amounting to a 9.9 percent decrease compared with the previous year. These decreases were due mainly to drastic cuts in call charges made by the facilities-based providers to compete with charges offered by special service providers.

Of all international call services, special services were 7.8 percent in 1998, 12.5 percent in 1999, and they are expected to increase to 28.5 percent by 2004. The biggest problem in this area is the ongoing international accounting deficit, since 1998, which has led facilities-based service providers to demand measures to improve the international accounting balance (see **Table 3-3**).



**Table 3-2**  
**Sales of International Service Market (Billions of Won)**

	1996	1997	1998	1999
<b>Facilities-based operator</b>	753	658	590	653
<b>Special service provider</b>	—	—	50	79
<b>Total</b>	753	658	640	732

Note: There were no special service providers in 1996–97.

**Table 3-3**  
**Current Status of Accounting Balance in Korea (U.S. \$10,000)**

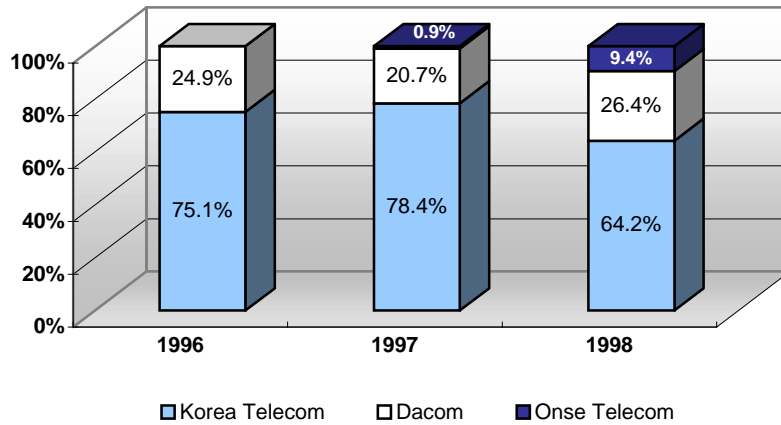
	1995	1996	1997	1998
<b>Balance</b>	4,179.8	–1,907.2	–1,327.3	–1,320

The deficit was caused by the following factors:

- Globalization, which will further increase the accounting deficit.
- Settlement of account which is carried out in dollars, so that as exchange rates fluctuate, the deficit will continue. The relatively high accounting charge of the country that requires settlement may also cause the accounting deficit.
- Lowering the receiving call charge for international calls by special service providers has also caused the deficit.
- Illegal receiving calls have also added to the international accounting deficit.

There are currently forty-six service providers offering international call services. The issues that emerge most frequently in the international service market are competition and price cuts.

KT has experienced a decline in marketshare, while Dacom has maintained a level of 20 percent and is enjoying stable growth. With the entry of Onse Telecom in 1996, competition is expected to increase. Onse Telecom had unprecedented growth in 1998, but because advertising expenses consumed 10 percent of sales, its profits and losses (P&L) structure remains relatively unstable (see **Figure 3-1**).



**Figure 3-1**  
**Marketshare of Wired International Call Services**

### 3.2 Long-Distance Telephony

The long-distance service market was a duopoly until Onse Telecom entered, as a third provider, in 1997, when it was selected by the government to provide long-distance services. It started service in December of 1999.

Although competition had been introduced into the long-distance service market in 1996, with the entry of Dacom, and users had clearly benefited from both a price decrease and improved quality of calls, the rapid spread of mobile telephony led to great demand for long-distance service through mobile telephony. With more special service providers offering long-distance services, this market no longer appeared profitable (see **Table 3-4**).

**Table 3-4**  
**Sales of Long-Distance Service Market (Billions of Won)**

	1996	1997	1998	1999
<b>Sales</b>	2,176	1,865	1,573	1,334
<b>Growth</b>	11.9%	-14.3%	-15.6%	-15.2%

Sources: Data for 1996-98 from KAIT; data for 1999 from KISDI.

As a result of the simultaneous introduction of mobile telephony and the entry of PCS, after 1996 total sales in the long-distance services market decreased rapidly. In 1998, the rate of decrease was as much as 15.6 percent, owing to the decline in number of calls during an

economic depression, price cuts by KT and Dacom in September of 1997, and the introduction of mobile telephony.

In 1999, despite an increase in subscribers owing to growth of the economy, the dramatic increase in mobile telephony led long-distance service sales to drop by 15.2 percent, amounting to 1,334 billion won. The number of long-distance subscribers was 20.249 million as of May of 1999, and on the basis of those data, KT’s marketshare increased and Dacom’s fell (see **Table 3-5**).

**Table 3-5**  
**Number of Long-Distance Telephone Subscribers**  
**(Thousands of Preselected Subscribers)**

	<b>KT</b>	<b>Dacom</b>	<b>Total</b>
<b>June 1998</b>	18,945 (94.2%)	1,176 (5.8%)	20,121
<b>December 1998</b>	19,046 (94.8%)	1,038 (5.2%)	20,083
<b>May 1999</b>	19,113 (94.4%)	1,136 (5.6%)	20,249

Source: Data provided by KT and Dacom (restricted distribution).

Compared with mobile telephony, long-distance services lacked enhanced services (for example, messaging, Internet voicemail, among others) and were therefore not competitive enough. When Onse Telecom entered the market as the third competitor, users were offered more benefits, including improved quality and convenience.

### 3.3 Local Telephony

The biggest change in the area of local service in 1999 was the introduction of competition on April 1 with the entry of Hanaro Telecom into the market. This was the final element of structural change of the telecom market, where competition had now been introduced in all areas—mobile telephony, long-distance service, and international service (see **Table 3-6**).

Although KT and Hanaro Telecom together comprised a duopoly in local telephone service, on the basis of number of subscribers as of June of 1999 KT’s marketshare amounted to 99.3 percent, while Hanaro’s amounted to 0.7 percent. Thus, KT remained dominant.

In 1998, KT’s total sales increased to 12.7 percent, or 8.7739 trillion won, compared with 7.7851 trillion won in 1997, but because 1.2 trillion won consisted of charges for land-to-mobile interconnection, KT’s total sales were around 7.5 trillion won, for a decrease of 3 to 4 percent below the previous year. Its net profit in 1998 increased by 224.1 percent above the previous year, owing to a drastic cut in personnel and an extension of the depreciation term (from five to twenty years for some telecom equipment) (see **Table 3-7**).

**Table 3-6**  
**Changes in Local Call Charges (Won)**

	<b>1980</b> (Jan. 9)	<b>1981</b> (Jun. 1)	<b>1981</b> (Dec. 9)	<b>1986</b> (Feb. 1)	<b>1993</b> (Feb. 10)	<b>1994</b> (Aug. 1)	<b>1996</b> (Dec. 1)	<b>1997</b> (Sept. 1)
<b>Local Call Charge</b>								
• Residential	12	15	20	25	30	40	41.6	45
• Pay phone	10	20	20	20	30	40	40	50

**Table 3-7**  
**Sales in the Local Service Market (Billions of Won)**

	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
<b>Sales</b>	2,984	3,050	3,072	3,078
<b>Growth rate</b>	10.7%	2.2%	0.7%	0.2%

In the first half of 1999, Hanaro Telecom recorded sales of approximately 2.5 to 3 billion won. According to its 1999 business plan, Hanaro Telecom's goal for that year was 430,000 subscribers and total sales of 80 billion won.

### 3.3.1 Wireless Telecom Services

**Mobile Telephony (Cellular, PCS).** As of March of 2000, the mobile telephony market consisted of five national service providers (SK Telecom, Shingsei Telecom, LG Telecom, KT Freetel, Hansol PCS), with SK Telecom the leading service provider (see **Table 3-8**). In April of 1996, Shinsegi Telecom entered the market, as the second service provider, introducing digital code division multiple access (CDMA) technology. The present structure of competition was formed in October of 1997, when three PCS operators also began to provide services.

As of December of 1999, SK Telecom had the largest marketshare, 43.1 percent, based on number of individual subscribers; of the other mobile operators, KT Freetel had 18.2 percent; Shinsegi Telecom 13.8 percent; LG Telecom 13.2 percent; and Hansol PCS 11.7 percent. On the basis of 1999 sales, SK Telecom had garnered roughly 46.5 percent of the total market, KT Freetel 16.9 percent, Shinsegi Telecom 14.5 percent, LG Telecom, 11.8 percent, and Hansol PCS, 10.3 percent.

With the introduction of competition into the mobile services market, the marketshare of the dominant operator, SK Telecom, has steadily declined, while that of other PCS operators, in

particular, KT Freetel, steadily increased. Every mobile operator planning to offer wireless data transmission devises new marketing strategies to target special groups, so that the future is expected to bring further changes in marketshare (see **Table 3-10**).

**Table 3-8**  
**Service Providers in the Mobile Telephony Market**

Service	Service Area	Number of Operators	Service Provider
Cellular	National	2	SK Telecom, Shinsegi Telecom
PCS	National	3	LG Telecom, KT Freetel, Hansol PCS

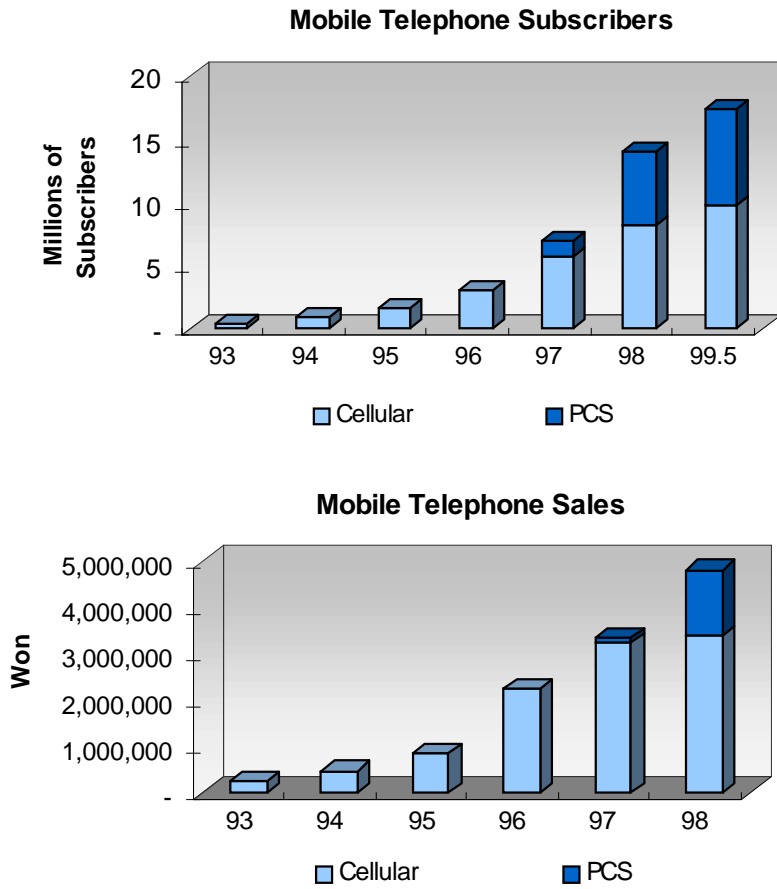
Vigorous competition since the entry of PCS providers has increased the size of the market as a whole and stimulated an unprecedented surge in the number of subscribers. Since 1994, when the mobile telephony market began to be a duopoly, both the number of subscribers and total sales have continued to grow exponentially. Compared to 1997, subscribers grew by 102 percent in 1998 and 67 percent in 1999, and sales increased by 58 percent in 1998 and 71 percent in 1999. Such rapid growth was due mainly to vital competition.

Major issues now (early 2000) for mobile service providers are to attract new subscribers and to provide additional services, such as wireless data transmission. As mobile subscribers near the 20 million mark, mobile service providers are using new marketing strategies to attract subscribers away from other service providers, rather than attempting to attract subscribers directly to mobile services. To draw subscribers from other service providers, mobile service providers are offering users special rates and rate packages. For example, SK Telecom drew more than 450,000 new subscribers in only one month with its rate package, called, "TTL" and KT Freetel attracted 320,000 new subscribers with its rate package, "My Style."<sup>6</sup>

With the continuing rise in demand for data transmission as more and more people worldwide are accessing the Internet, the provision of wireless data transmission services by mobile telephony became inevitable. Mobile service providers in Korea have been occupied with finding a way to accommodate data transmission services, because they see that in a competitive market voice transmission services alone cannot generate enough profit. Since September 1999, mobile service providers have offered wireless data transmission services using IS-95B technology, or 8 times faster than the previous technology, IS-95A, to upgrade and improve the quality of mobile services.

---

<sup>6</sup>The TTL package provides a special discount rate for teenagers; "My Style" provides a special discount rate for services used at certain hours.



**Figure 3-2**  
**Growth of Mobile Telephone Services, 1993-98:**  
**Cellular and Personal Communications Services (PCS)**

**Table 3-9**  
**Marketshare of Mobile (Wireless) Telephone**  
**Service Providers (TSPs)**

Service Provider	Sales (1999)		Subscribers (as of Dec. 1999)	
	Billions of Won	Marketshare (%)	Subscribers (000s)	Marketshare (%)
<b>SK Telecom</b>	4,025	46.5%	10,110	43.1%
<b>Shinsegi Telecom</b>	1,252	14.5%	3,238	13.8%
<b>KT Freetel</b>	1,463	16.9%	4,267	18.2%
<b>LG Telecom</b>	1,023	11.8%	3,086	13.2%
<b>Hansol PCS</b>	894	10.3%	2,741	11.7%
<b>Total</b>	8,657	100.0%	23,442	100.0%

Note: 1999 sales estimated.  
 Source: Data provided by MIC.

**Table 3-10**  
**Mobile Telephone Services Market, 1997–99**

	Number of Individual Subscribers			Sales (Billions of Won)		
	1997	1998	1999	1997	1998	1999
<b>Cellular</b>	5,777,919	8,102,474	13,303,492	3,272	3,743	4,903
<b>PCS</b>	1,132,577	5,880,003	9,979,776	90	1,579	4,215
<b>Total</b>	6,910,496	13,982,477	23,283,268	3,362	5,322	9,118

**Table 3-11**  
**Rate Packages Offered by Personal Communications**  
**Service (PCS) Providers**

Service Provider	Rate Package	Monthly Charge (Won/Month)	Call Rate (Won per 10 Seconds)			Comments
			Normal	Discount	Night	
KT Freetel	My Style	18,500 (normal = 16,000)	19	9	9	Selection of 1 from 6 discount rates
Hansol PCS	Home Zone	19,000	8	8	8	Discount rate when calling from designated area
	OneShot Free 800	69,000	13	10	10	More benefits when using more then 800 minutes. per month
	Duet	19,000	18	18	9	Free air time for 2 people calling each other when they subscribe jointly, and 100 minutes free airtime per month for other hours
LG Telecom	Good Morning	16,000	21	12	12	Economy rate for morning users
	Super Class 600	60,000	28 won after exceeding free air time			600 minutes free airtime per month
	Super Class 1000	85,000	26 won after exceeding free airtime			1000 minutes free airtime per month
	Super Class 1500	120,000	24 won after exceeding free airtime			1500 minutes free airtime per month

Mobile operators have concluded that the success of wireless data transmission lies in the usefulness of contents provided to subscribers, so they have working to make strategic alliances with Internet service providers (ISPs). For example, Hansol PCS signed an agreement with Microsoft, Dacom Chollian, and J-tel jointly to develop a technology for wireless data transmission and also formed a strategic alliance with Yahoo Korea to offer wireless Internet information services. SK Telecom also has forged strategic alliances, with ViewCom, Samsung Electronics, and Microsoft, and has concluded an agreement with Yahoo Korea. KT Freetel has agreed to cooperate on wireless Internet with SasCom and MS and formed a strategic alliance with Ericsson to offer services using wireless markup language (WML). LG Telecom has signed a priority-use contract with UP (United Planet; now Phone.com) to develop a wireless Internet technology.



**Table 3-12**  
**Mobile Operators' Wireless Data Transmission Services**

	Services
<b>SK Telecom</b>	Wireless data (packet) service: Internet access, Fax/BBS access
<b>Shinsegi Telecom</b>	Undergoing equipment tests
<b>KT Freetel</b>	Wireless data (packet) service: Internet, Fax, LAN access
<b>Hansol PCS</b>	Wireless data (packet) service: BBS, Internet, Fax, LAN access
<b>LG Telecom</b>	Wireless data (packet/circuit) service: BBS, Internet, Fax, LAN access

BBS = (electronic) bulletin board system    LAN = local area network    PCS = personal communications services  
Source: *Monthly tele.com* (June 1999).

### **3.2.2 Radio Paging**

In 1983, there were 3,700 subscribers to radio paging service in Korea, but with the introduction of competition in 1993, the number increased to 15 million by the end of 1997. As of early 2000, there was one national service provider, SK Telecom and there were twelve regional service providers, with more than two providers competing in each region. Rapid growth of mobile services has led to a decline in the sales of radio paging services and in the number of subscribers. To address this decline, radio paging service providers started new services in order to expand their line of business.

Since launching radio paging services in 1982, Korea Mobile Telecom, as the exclusive provider, had dominance in this market, but in 1993 ten new service providers entered the market as competition. The introduction of competition brought an increase in the number of subscribers, from 12.7 million in 1996 and to more than 15 million by December of 1997. After 1997, however, the number of subscribers declined, decreasing by 39.6 percent, or 9.18 million, in 1998. Sales also dropped during that period, by around 20 percent, or to 1.168 billion won. This decline continued through 1999, and the number of subscribers fell to 3.12 million. Since December of 1997, the number of subscribers declined approximately to 12 million, amounting to a 79.4 percent decrease over the next two years. Sales dropped by 52.9 percent in 1999, compared with the previous year, for total sales of 550 billion won.

**Table 3-13**  
**Number of Subscribers and Sales of Radio Paging Market, 1997-99**

	<b>1997</b>	<b>1998</b>	<b>1999</b>
<b>Number of subscribers</b>	15,194,821	9,181,820	3,129,197
<b>Growth rate (compared to previous year)</b>	19.7%	-39.6%	-65.9%
<b>Sales (billions of won)</b>	1,467	1,168	550
<b>Growth rate (compared to previous year)</b>	26.1%	-20.4%	-52.9%

Source: Data from KAIT, April 1999, July 1999.

The reasons for this dramatic decline in the radio paging market were the early introduction of PCS services and the rapid spread of mobile telephony. In addition, the number of subscriber to radio paging declined also because mobile service providers offered some of the same services radio paging services provided, such as voicemail and short messaging service (SMS). In the second half of 1998, an average of 900,000 subscribers terminated radio paging service, and in 1999, 600,000 to 700,000 per month terminated service, while the number of new subscribers stood at 200,000 to 300,000 per month.

As of 2000, the structure of the radio paging market consists of a single national service provider, SK Telecom, and twelve regional service providers. The first area of mobile telecom services into which competition was introduced was the radio paging market (1993). Soon after the government selected a second service provider to enter this market, in 1997 a third was designated, bringing the total number of service providers in the major metropolitan areas to four: three in Pusan and two for each region forming a duopoly.

Since competition was introduced into the market, the marketshare of SK Telecom, based on number of subscribers, has gradually declined, decreasing about 2 percent annually, to 45 percent as of December of 1999.

As **Figure 3-2** indicates, a comparison of the number of subscribers terminating service to that of new subscribers reveals an average decline of 4.6 percent in May of 1999. Statistics show that Seoul Mobile Telecom experienced the highest decrease rate among all service providers, 10.3 percent.

**Table 3-14**  
**Number of Subscribers to Radio Paging Service Providers**  
**(Thousands of Subscribers)**

	Dec. 1997	June 1998	Dec. 1998	June 1999	Dec. 1999
<b>Total Subscribers</b>	15,199	13,107	9,180	6,352	3,212
<b>Nationwide</b>					
• SK Telecom	7,504 (49.37%)	6,259 (47.75%)	4,336 (47.23%)	2,979 (46.90%)	1,450 (45.15%)
<b>Regional</b>					
• Subtotal	7,695 (50.63%)	6,848 (52.25%)	4,844 (52.77%)	3,373 (53.10%)	1,762 (54.85%)
• Seoul	2,300	1,994	1,349	998	462
• Narray	2,277	1,906	1,200	832	385
• Happy	406	487	458	346	222
• Others	2,712	2,461	1,837	1,197	693

( ) = Marketshare  
 Source: Data provided by MIC.

### 3.2.3 Trunked Radio Service (TRS)

Until 1998, there were eleven service providers in the trunked radio service market. KT Powertel (KT's subsidiary for TRS) had been the exclusive provider for TRS, until 1996, when Anam Telecom began providing nationwide service. Competition in this market heated up in 1996-97, when nine new regional service providers acquired licenses to offer services. Five of them, however, gave up their licenses in 1999, because of financial difficulties. As of early 2000, there were two nationwide and four regional TRS providers in Korea.

The TRS market in Korea amounted to around 12 billion won in 1999, for an increase of 70 percent compared to 1998. The number of subscribers, for the same period of the previous year, increased by 153 percent in 1998 and 31 percent in 1999.

**Table 3-15**  
**Trunked Radio Service (TRS) Providers**

Business Area	Number of Service Providers	Service Providers
<b>Nationwide</b>	2	KT Powertel, Anam Telecom
<b>Regional</b>	4	Seoul TRS, Saebang Telecom, Daegu TRS, Cheju TRS

Source: MOC.

**Table 3-16**  
**TRS Market in Korea**

	<b>1997</b>	<b>1998</b>	<b>1999</b>
<b>Number of subscribers</b>	27,880	70,584 (153.17%)	92,775 (31.44%)
<b>Sales (millions of won)</b>	7,436	7,126 (-4.17%)	12,174 (70.84%)

( ) = Growth rate compared to the same period of the previous year.  
Source: Data from KAIT.

There are several reasons for the steady growth of nationwide TRS providers. First, new demand from transportation and distribution companies, which are the largest customer base for TRS, grew as the economy showed signs of recovery. In particular, with the rapid increase in demand by taxi companies, both KT Powertel and Anam Telecom began to offer TRS to taxis in the Seoul and Pusan area. In Seoul, where more than 90 percent of subscribers are taxi companies, transportation and distribution businesses, including taxi companies, have emerged as the major source of customers.

Second, self-sustaining reorganization efforts and strategies to attract new subscribers were responsible for growth in the TRS market. KT Powertel, for example, downsized by cutting roughly 40 percent of its employees as part of structural reform to rebuild itself and secured funding through privatization. Further, KT Powertel attracted new subscribers through active market strategies—that is, dramatically cutting handset prices, offering zero-interest installment sales, and changing the distribution structure of handsets to direct sales.

KT Powertel remains the dominant service provider in the market. Although competing service providers have gradually increased their marketshare by 2 to 3 percent annually, KT Powertel has maintained a large marketshare of around 90 percent in the TRS market.

### **3.2.4 Wireless Data Transmission**

In 1996, Air Media, Intec Telecom, and Hansae Telecom received licenses to provide nationwide service, and late the next year they began to offer wireless data transmission services. Their initial plan was to provide services targeted to a vertically integrated market, such as transportation and storage. The Asian economic crisis of 1997, however, led to difficulties, because businesses and public institutions were no longer in a position to invest in their services. These difficulties were largely overcome by the offering of a new service, two-way messaging (TWM), in September of 1998, which was well received by subscribers and the number of new subscribers and sales soared.

**Table 3-17**  
**Number of TRS Subscribers to Each Service Provider**  
**(Individual Subscribers)**

	1998		1999 (May)	
	Subscribers	Marketshare	Subscribers	Marketshare
<b>KT Powertel</b>	67,250	95.3%	71,990	92%
<b>Anam Telecom</b>	1,181	1.7%	2,348	3%
<b>Regional Operator</b>	2,153	3.0%	3,874	5%
<b>Total</b>	70,584	100%	13,982	100%

Source: Data provided by MIC.

The number of subscribers to wireless data communications increased rapidly after October 1998 (see **Table 3-18**), along with sales, fueled by the new TWM service Air Media provided beginning in September of 1998. The number of subscribers to wireless data communications amounted to only 2,500 in late 1997 but as of late 1999, it had rapidly grown to 57,079. As further, the size of the market grew to 20.5 billion won in 1999, from 65 million won in 1997. Compared to other facilities-based services, however, the size of the wireless data communications market in terms of volume of sales and number of subscribers remained relatively small.

Air Media now leads the wireless data communications market, with a marketshare of over 90 percent, based on number of subscribers, while the other two service providers have secured only a minor share of the market (see **Table 3-19**).

Most subscribers to wireless data transmission are concentrated in the Seoul–Kyunggi area. Although Air Media, Intec Telecom, and Hansae Telecom all are national service providers, none has been able to secure nationwide coverage for their service offerings to the general public.

### **3.2.5 Global Mobile Personal Communications by Satellite (GMPCS)**

Most global mobile personal communications by satellite projects are undertaken by international consortia. In Korea, KT, SK Telecom, and Dacom are operators currently participating in GMPCS projects. SK Telecom was the exclusive operator providing service in November of 1998, when Iridium started service. Globalstar began to provide commercial services at the end of 1999, signalling the opening of competition in the GMPCS market.

**Table 3-18**  
**Number of Subscribers to and Sales of Wireless Data Transmission**

	<b>1997</b>	<b>1998</b>	<b>1999</b>
<b>Number of subscribers</b>	2,493	13,760 (451.95%)	57,079 (314.82%)
<b>Sales (millions of won)</b>	65	687 (956.92%)	20,524 (2,887.48%)

( ) = Growth rate compared to the same period of the previous year.  
Source: Data from KAIT.

The Iridium Project was an international project in which fifteen nations participated, including Motorola (United States), DDI (Japan), and SK Telecom. SK Telecom was licensed to provide GMPCS services in June of 1998 and began to offer Iridium service in Korea in November of 1998. The number of subscriber to Iridium service in Korea only amounted to a mere 250 in April of 1999, but with the introduction in May of the “Metro Service,” which allows roaming in 825 cities of fifty nations, new subscribers increased at an average of 300 per month.

Dacom is participating also in the Globalstar project and was licensed in June of 1998, along with SK Telecom. Service became available in March of 2000.

**Table 3-19**  
**Number of Subscribers to Data Transmission**

	<b>July 1998</b>	<b>December 1998</b>	<b>June 1999</b>	<b>December 1999</b>
<b>Air Media</b>	4,255 (72.59%)	11,586 (84.20%)	31,867 (93.37%)	55,222 (96.75%)
<b>Intec Telecom</b>	1,557 (26.56%)	2,124 (15.44%)	2,214 (6.49%)	1,807 (3.17%)
<b>Hansae Telecom</b>	50 (0.85%)	50 (0.36%)	50 (0.15%)	50 (0.09%)
<b>Total</b>	5,862	13,760	34,131	57,079

( ) = Marketshare  
Source: Data provided by MIC.

**Table 3-20**  
**Major GMPCS Operators**

	Big LEO		
	Iridium	Globalstar	ICO
<b>Project leader</b>	Motorola	Loral/Qualcomm	Inmarsat
<b>Total investment volume</b> (100 million dollars)	45	29.2	30
<b>Korean Partners</b> (starting period)	SK Telecom (Sept. 1994)	Dacom (March 1994)	KT, Samsung, Shinsegi (Nov. 1994)
<b>Marketshare of Korean Partners</b>	4.5%	6.1%	5.5%
<b>Number of satellite</b>	66	48	12
<b>Distance (km)</b>	780	1,414	10,355
<b>Start of service</b>	Nov. 1998	Oct. 1999	2000

km = kilometer

Source: Ji-Hyun Kim, Jong-Kwan Lee, and Jin-Hyun Park, "Facilities-Based Telecom Service," *Telecommunications Industrial Trend* 99-3 (October 1999).

Major telecommunications and equipment companies around the world and an international satellite organization, Inmarsat, formed an international consortium and in 1995 launched the Intermediate Circular Orbit (ICO) project, in which, in Korea, KT, Samsung Electronics, and Shinsegi Telecom are participating. ICO plans to begin satellite services in the first quarter of 2001, delivering digital voice, data, fax (facsimile), and messaging services to users all over the world.

## **Chapter Four**

### **Evaluation of Telecommunications Policy and Future Tasks**

#### **4.1 Evaluation of Telecommunications Policy**

Telecommunications policy in Korea has undergone many changes in the past decade. In particular, some policies have had a significant impact on the development of the telecommunications services industry in Korea. These include open-market entry, elimination of restrictions on expanding lines of business, increased availability of basic telecommunications facilities, and a competitive mobile telephony market.

First, the greater availability of basic telecommunications services has resulted from the government's aggressive efforts between 1980 and early 1990 toward rapid development of telecommunications infrastructures. During that time, resources were mobilized mainly to raise the telephone penetration rate. By 1988, Korea had managed to usher in the age of one telephone per household, creating a basis for government promotion of further growth in the quantity and quality of telecommunications services.

Second, the introduction of full-blown competition and the elimination of restrictions in lines of business in 1998 rapidly created a competitive market structure. Reform of the market structure began in 1990, when the government designated a second service provider in the international telecommunications services market. Since then, the government has kept up the step-by-step approach to introducing competition. This policy stance could be sustained by the licensing system, called Request for Proposal (RFP), whereby a company must wait for a government announcement that it will accept an application, or RFP, for a license. Removal of the RFP system in 1997 was critical to triggering full-blown competition in all areas of the telecommunications market. In addition, improvement in the restrictions on foreign ownership as required by the WTO agreement on basic telecommunications contributed to both the privatization of KT and to stimulating competition. Those commitments were met eighteen months earlier than scheduled.

Third, the government implemented the system of preselection of operators sooner than anticipated. Although no mechanism adequate to ensuring competition is yet in place, the government comprehends the importance of such a mechanism and is exploring the matter. Deregulation was accelerated by the introduction of free competition, but the role of government is still emphasized in government supervision of anticompetitive behavior and government protection of users' rights. The reason for such supervision is that consumer interests can best be attained through fair competition. Because the ultimate policy objective is to facilitate improved choice and better quality of services for consumers, reinforcement of regulations against unfair practices by service providers is both desirable and justifiable.



Fourth, the selection of many mobile service providers has contributed to the promotion of competition and to rapidly diffusing telecom services. Vigorous competition in the mobile market has led to unprecedented growth in the mobile market worldwide, which, in turn, has facilitated increased customer choice and quality of service. The elimination of the mandatory subscription period and the reduction of subsidies for handsets in 1999 proved timely measures to increase new subscribers. As demonstrated in the Korean mobile market, from the perspective of general market growth and the public interest, the introduction of competition is the best policy for the government to adopt.

Several points of telecommunications policy that appear still to need improvement may need consideration:

- the insufficient independence and authority of the regulatory body, the Korea Communications Commission (KCC);
- conflicts between the regulatory function and industry promotion; inadequate measures to ensure competition;
- unnecessary restrictions on telecommunications service providers; underdeveloped competition in the local telephone market;
- and inactive preparation for potential globalization and convergence of telecommunications and broadcasting.

The government might do well to consider overhauling regulatory measures in order to promote competition. Although competition has been introduced into the overall telecommunications market, certain issues may still need to be addressed. The government may need, perhaps above other considerations, to try to be consistent in its policies and to provide a strategic vision of ways to enhance competition. It might consider trying to introduce new technologies and services through market functions, to enforce competition and facilitate price decreases for telecommunication services.

To this end, the MIC might consider implementing structural reform of itself to become more suitable to a competitive market environment. Reform could establish a clear division of responsibilities between the MIC and KCC. The MIC's role might be limited to formulation of policy on telecommunications, for example, on such issues as convergence of services, and electronic commerce (e-commerce). The KCC, as the regulatory body in charge of regulating matters throughout the transition to a competitive market, may need greater authority and autonomy from the government, in order to develop the necessary measures to promote competition.

Second, the MIC might look into streamlining existing regulations as soon as possible, the better ensure competition. Among the major issues it might review are cost-oriented inter-connection charges, network diversification, price caps, cost-based service charges, universal

service, and number portability, Two important issues for the MIC to address are in-depth rationalization of the licensing system and spectrum allocation.

Third, the government might reexamine efforts to improve regulatory measures in order to enhance the efficiency of the telecommunications market and increase users' benefits. Distortions in the economy, caused by market intervention, could be corrected by assuming a neutral stance as impartial rulemaker.

Last, the government might consider abolishing restrictions on foreign ownership in the wireline and wireless markets. Such restrictions appear only to serve as obstacles to advancing the telecommunications market in the future. Foreign investment seems necessary for construction of a high-speed backbone network, promotion of competition in the local, long-distance, and leased line markets, and for diffusion of advanced services and technologies.

#### 4.2 Prospects for the Telecommunications Market

The volume of sales of the Korean telecom service market was 15.752 trillion won in 1999. The economic crisis at the end of 1997 had a strong impact on this market, slowing the growth rate in 1998. The telecom market showed signs of recovery in 1999 and is expected to reach a growth rate of 7 to 8 percent by the end of the year 2000. KISDI projects an annual growth rate of 5.9 percent during 2000–04.

**Table 4-1**  
**Prospective Change in Sales Volume of the Korean Facilities-Based Market**  
**(Billions of Won)**

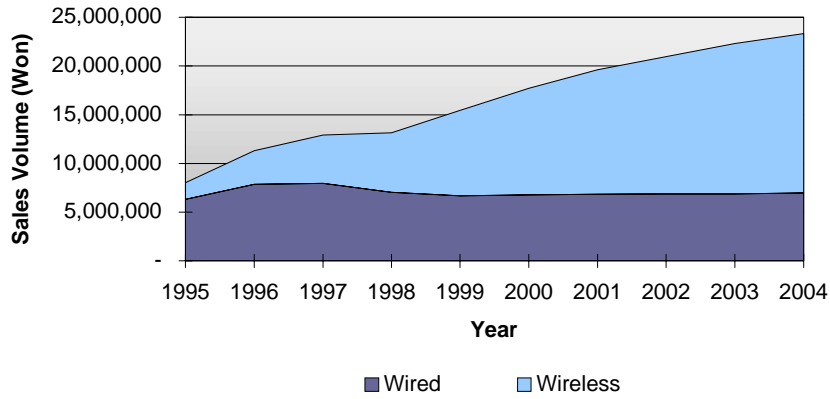
	1996	1997	1998	1999	2000	2001	2002	2003	2004	CAGR (00–04)
<b>Wire</b>	7,877	7,983	7,023	6,510	6,741		7,331	7,443	7,526	2.8%
<b>Wireless</b>	3,438	4,930	6,106	9,242	10,770	12,080	13,174	14,144	14,498	7.7%
<b>Total</b>	11,315	12,918	13,130	15,752	17,511	19,137	20,505	21,587	22,024	5.9%
<b>Growth rate</b>	40.9%	14.1%	1.7%	20.0%	11.2%	9.3%	7.1%	5.3%	2.0%	—

Notes: Local telephone connection charges and accounting charges for international calls and ship-to-shore telephone have been excluded from wireline telecommunications service from 1999 on. Mobile telephony, TRS, GMPCS, radio paging, wireless data transmission, and CT-2 services all are wireless telecommunications services; other wireless telecom services are excluded from 1999 on.

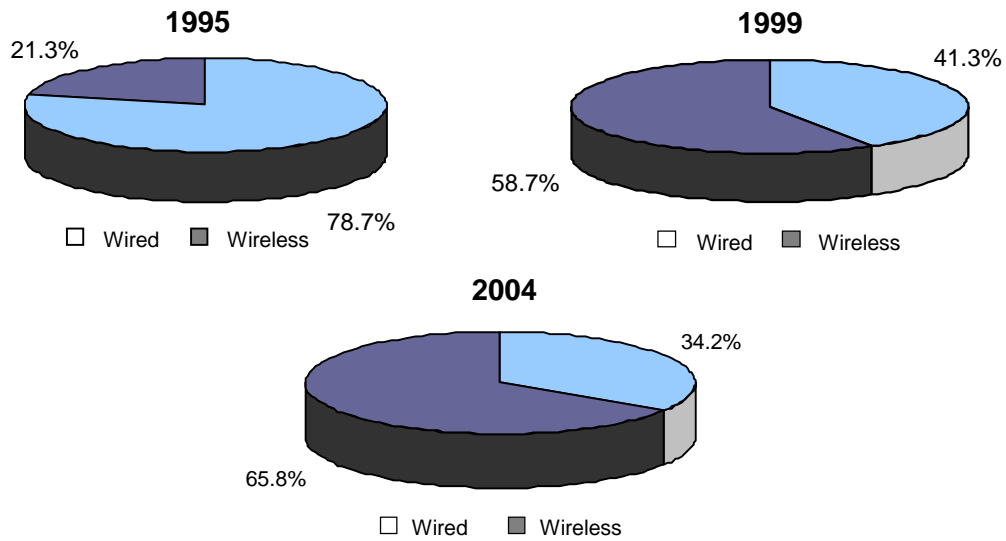
CAGR = compound annual growth rate

Source: Data for 1996–98 from KAIT; data for 1999 from KISDI.

Since 1997, the wireless telecom market has grown rapidly, while the wireline market has shrunk. Although in 1999 the wireline market showed very little growth and was smaller than the



**Figure 4-1**  
**Sales Volume of the Facilities-Based Telecom Market in Korea**



**Figure 4-2**  
**Percentage of Facilities-Based Telecom Services**  
**(Based on Sales Volume)**

### 4.3 Future Tasks

The importance of the IT industry cannot be overemphasized as a source of national wealth in the twenty-first century. To sustain the prosperity of the IT industry, the major players in the Korean telecommunications market may need, as a top policy priority, to revise their stance. Until now, they have been accustomed to market environment of government intervention, and now they may need to adjust to a market environment without that in order to accord with rapid change in the global market. Because the IT industry has a far-reaching impact on the economy and each player in the market has a different role, responsibility is not the burden of any one player alone.

First, the major service provider, KT, may need to consider active structural reform to transform itself into the leading comprehensive IT service provider (ITSP). The task for KT might well be to look into enhancing managerial effectiveness and expanding its business areas. Separation of ownership from management would be a prerequisite of managerial effectiveness. Because KT was originally established a government-invested corporation in 1981, the MIC has always been deeply involved in both its business operation and its decisionmaking process regarding management matters. The government still holds the majority share, 59 percent, and retains primary influence on the most important managerial decisions. The recently implemented Act on Privatization of KT is an encouraging sign, because this act is a government-provided legal basis for KT's managerial independence.

From a long-term perspective, however, privatization of KT appears a key element in enhancing KT's competitiveness in the IT industry. More important, KT may need to dedicate itself to active adjustment to recent trends in the IT industry, such as the growth of mobile services relative to fixed and of data services relative to voice. Mobile services are no longer complementary to fixed services. Similarly, the Internet has rapidly become the most important medium of communications for voice and data transmissions. To grow into a world-class, integrated ITSP, KT may need to consider extending its businesses strategically, from the traditional legacy services to mobile and Internet-based services. The existing organizational structure may need streamlining to support this strategy. The most efficient way to sustain the operations of many businesses may be structural separation through creation of fully self-operating subsidiaries under KT.

Second, the role of government may need to be reviewed and perhaps restructured. In the past, government has played mixed roles in the telecommunications market—policymaker, regulator, and service provider. A series of deregulations now requires government to be separate from doing business. Deregulation ought not itself be regarded as unconditional autonomy or laissez-faire, but, instead, a move toward facilitating the autonomy of the private sector, transparency of regulation, and predictability of economic activities. In particular, an effective and transparent regulation mechanism may be needed for changes in the telecommunications

environment to be embraced. The government might consider strengthening its role as a supporter of an antitrust mechanism and as the guardian of consumers' rights.

Some policy roles even, under new circumstances, would still properly fall in the purview of the government, rather than the market, such as the provision of universal service, human resource development, and fostering investment in the IT industry. In this view, the government would be expected to establish a new business model that optimally would incorporate not only reinforced regulatory functions but also industrial policies.

Third and last, the major players in the market, including government, will, of course, need to be well informed and prepared for the globalization of the telecommunications market and the convergence of IT technologies, markets, and related legal institutions. Long-term perspectives and strategies will be needed to cope with an open, liberalized market environment. The traditional division of the market into foreign and national is no longer meaningful in an age of globalization. Although domestic markets are often legally protected and may still be the most attractive in some countries, a series of trade negotiations, according to the WTO principle of progressive liberalization, may be needed to accelerate opening to the global market. Thus, the future development of the IT industry in Korea may best be attained through competition in the global market, rather than through a relatively small domestic market.

In the future, major players will well need to understand the dynamics of the IT industry, which is based primarily on rapid development of IT-related technologies. Technological development includes progress in such traditional technologies as digitalization, upgrading of networks for broadband transmission, and the convergence of different technologies. Technological progress can stimulate vertical and horizontal expansion of service areas, for example, the advent of multimedia. The current trend of mergers and acquisitions and strategic alliance can be interpreted as an effort a company with limited know-how can make to maintain its competitiveness in the market. In this respect, the government could be reorganized effectively to readjust related laws and regulations. Comprehensive IT industry policies could be established and implemented to address the rapid expansion of the multimedia market and the convergence of technologies, markets, and related legal systems.

## **Appendix**

### **The Telecommunications Market in Korea: Current Status and Future Challenges**



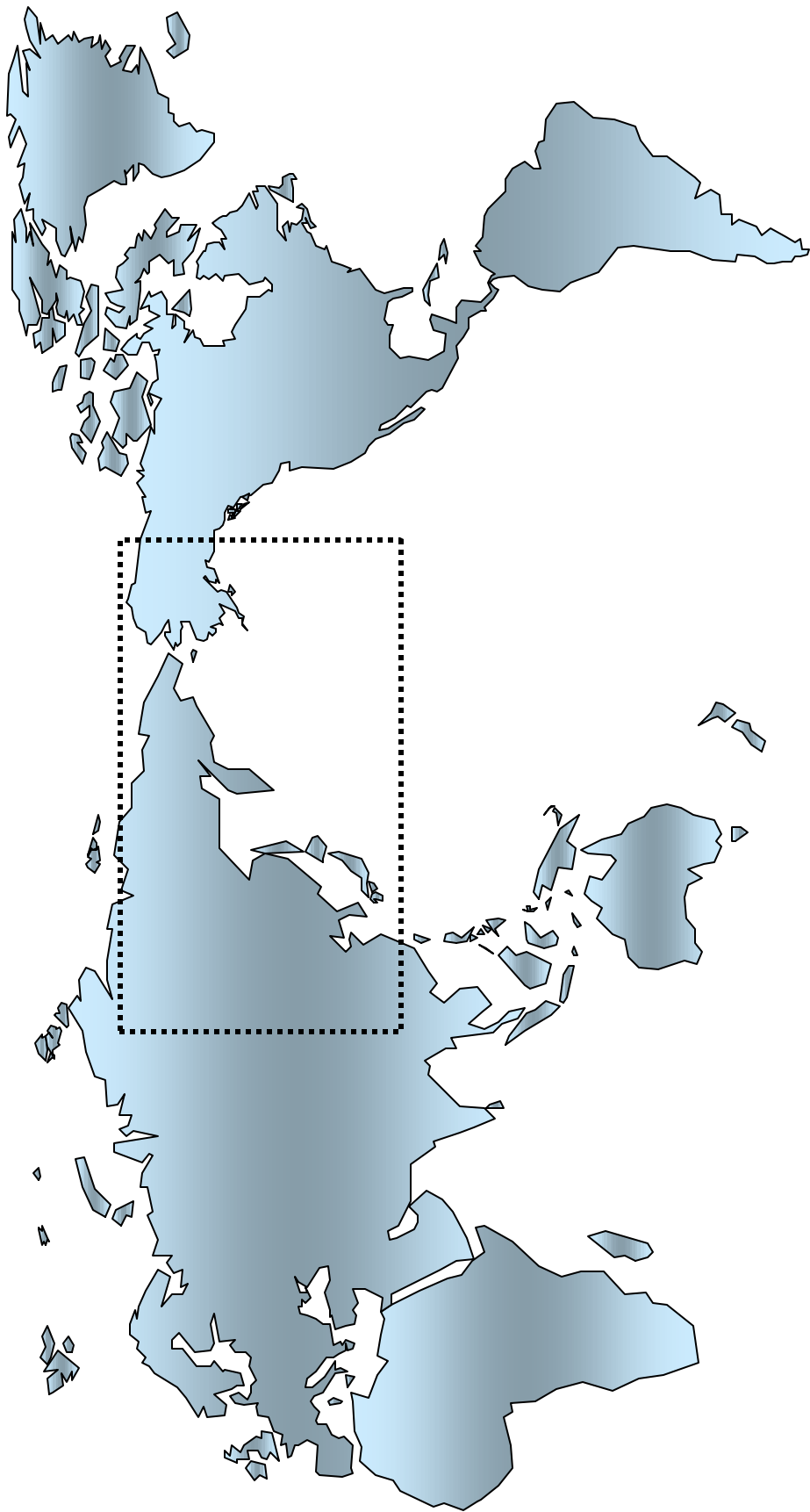
**The Telecommunications  
Market in Korea: Current Status  
and Future Challenges**

April 2000

Jung Hong Shik

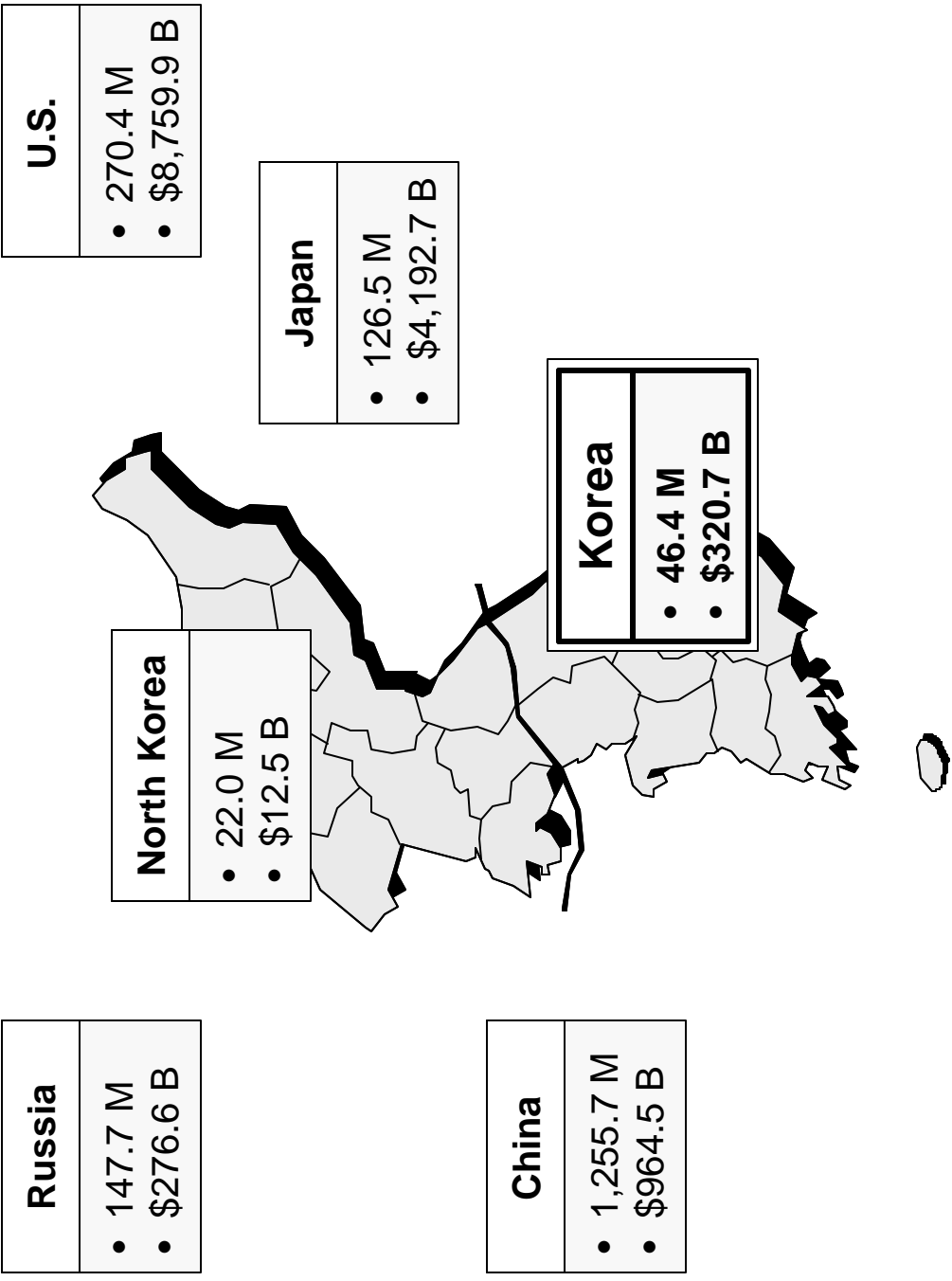
Program on Information Resources Policy  
Harvard University

**Korea Surrounded  
by Big Four Countries**





# Population and GDP of Big Four Countries: 1998



Note: GDP = U.S.\$ Source: ITU Yearbook 2000.

# Comparison of Major IT Indicators

		Korea	China	Japan	Russia	U.S.	Worldwide
Number of Telecom Subscribers (Millions) as of 1998	Fixed (wire)	34.1	11.5	110.7	29.9	248.1	1,159.6
	Mobile (wireless)	14.0	23.9	47.3	0.7	69.2	318.9
	Total (A)	48.1	35.4	158.0	30.6	317.3	1,478.5
Numbers of Internet Users (Millions) as of 1999 and 2005	1999 (B)	5.7	6.3	19.2	1.9	110.8	258.9
	2005 (C)	19.3	40.5	52.3	16.0	207.7	765.8
A / Population		1.04	0.03	1.25	0.21	1.17	0.25
C / B		3.4	6.4	2.7	8.4	1.9	2.9

Source: ITU Yearbook of Statistics 2000 (2000); Computer Industry Almanac (1999).

# Major Changes in Telecom Policy in Korea

---

- **Three phases of change based on regulatory policy**
  - 1980s; early 1990s; late 1990s
- **1980s: Satisfy basic telecom demand by increasing public investment in telecom facilities and industry and in public Telecom Services Providers (TSPs)**
  - Establishment of KT (separation from MOC), 1981
  - Enactment of the Telecommunications Business Act, 1983
  - Establishment of additional public TSPs, 1984–1988

KT = Korea Telecom  
MOC = Ministry of Communications

# Growth of Telecom Market in the 1980s

	1981	1989
Public TSPs	1	5
Facilities (U.S.\$ Millions)	3.5	13.4
Telecom Service Market (Won Billions)	647	3,012
Penetration Rate	8.4	27.8
Production of Telecom Equipment (U.S.\$ Millions)	600	2,332
Trade Balance (U.S.\$ Millions)	- 790	500

- Development of Korean automatic switching system (TDX), 1986
- Ushering in the age of one telephone per household, 1988

TDX = time division exchange

# Major Changes in Telecom Policy in Korea (continued)

---

- **1990s: Promoting enhanced telecom services and IT industry by phased-in privatization, competition, and deregulation**
- **Early 1990s:**
  - Introduction of competition between existing public TSPs and new private TSPs
  - Gradual opening of the market (USTR)
- **Late 1990s:**
  - Privatization of public TSPs, including KT
  - Full-blown competition (new private TSPs)
  - Overall open market (WTO)

IT = Information telecommunications

USTR = U.S. Trade Representatives

WTO = World Trade Organization

# Growth of Telecom Services Market in 1990s

	1991	1995	1999
<b>Facilities-Based Services</b>	4,464	8,028	15,752
• wire	4,314	6,318	6,510
• wireless	149	1,710	9,242
<b>Special Services</b>	—	—	121
<b>Value-Added Services</b>	69	361	1,489
<b>Total</b>	4,533	8,389	17,362

Unit: billion won

# Korean Classification of Service Providers

	Facilities-Based Service Providers	Special Service Providers	Value-Added Service Providers
<b>Facility</b>	Self-owned	Lease/self-owned	Leased
<b>Services</b>	Facilities-based services <ul style="list-style-type: none"> <li>• Local, long distance, etc.</li> <li>• Wire/wireless</li> </ul>	Voice resale, Internet telephony, international callback, inter-building communication system	All telecom services other than those provided by facilities-based service providers
<b>Entry Requirement</b>	Approval	Registration	Notification
<b>Foreign Ownership</b>	<ul style="list-style-type: none"> <li>• 33% for wireline and wireless (KT: 20%)</li> <li>• 49% for wireline and wireless as of 2001 (KT: 33%)</li> <li>• Single person ownership: 33% (KT: 3%)</li> </ul>	In providing voice services <ul style="list-style-type: none"> <li>• 49% from 1999</li> <li>• No restrictions as of 2001</li> </ul>	No restriction
<b>Number of TSPs (as of March 2000)</b>	37	211	3,729

# Major Telephone Service Providers (TSPs)

		Before 1995	After 1995
<b>Facilities-Based Services</b>	• Wire	KT, Dacom	KT, Dacom, Onse Telecom, Hanaro Telecom
	• Wireless	SK Telecom, Shinsegi Telecom	SK Telecom, Shinsegi Telecom, KT Freetel, LG Telecom, Hansol PCS
<b>Special Services</b>		—	SK Telink, SDS
<b>Value-Added Services</b>		Chollian (Dacom), HiTEL (KT)	Chollian (Dacom), HiTEL (KT), Unitel (SDS), Nownuri (Nowcom), Netsgo (SK Telecom)

KT = Korea Telecom  
 LG = Lucky Goldstar

PCS = personal communications services  
 SDS = Samsung Data Systems

SK = SunKyong Group



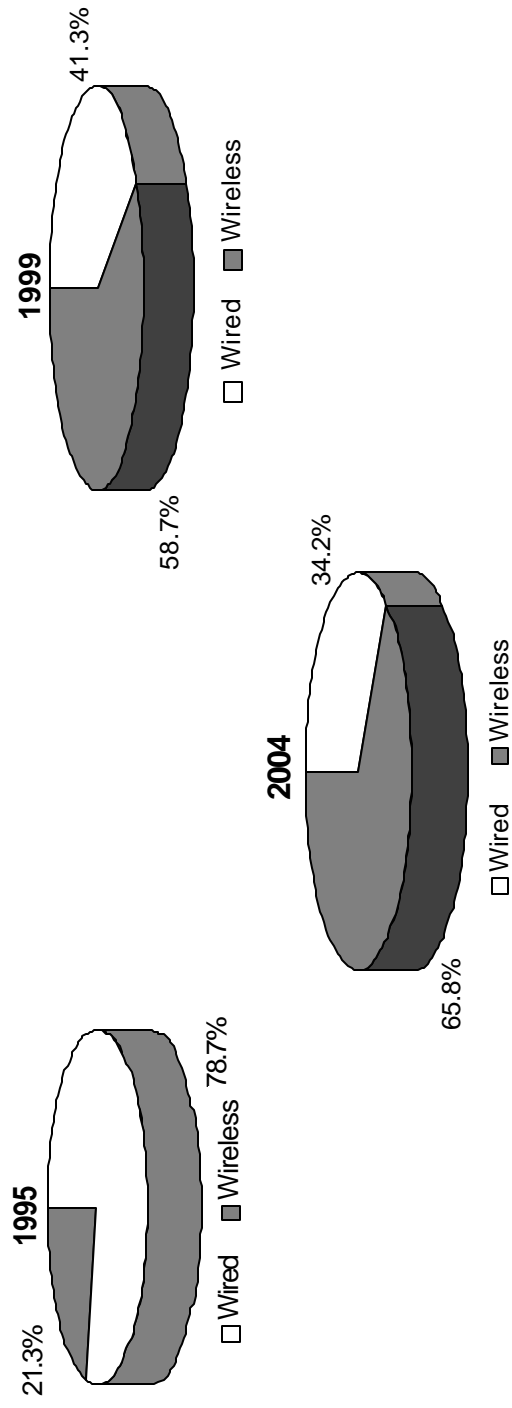
## Market Share of Korea Telecom (KT)

	1991	1995	1999
<b>Facilities Based Services</b>			
• wire	4,205	6,362	11,049
• wireless	4,057	6,362	9,586
	147	—	1,463
<b>Special Services</b>	—	—	—
<b>Value-Added Services</b>	5	28	61
<b>KT Total (A)</b>	4,209	6,389	11,110
<b>National Total (B)</b>	4,533	8,389	17,362
<b>KT's Share (A / B)</b>	92.6%	76.2%	64.0%

Unit: billion won

# Projected Facilities-Based Service Market (in billions of won)

	1995	1999	2004	CAGR (1999-2004)
<b>Wire</b>	6,318	6,510	7,526	2.8%
<b>Wireless</b>	1,710	9,242	14,498	7.7%
<b>Total</b>	8,028	15,752	22,024	5.9%



CAGR = compound annual growth rate

# Marketshare of Mobile (Wireless) TSPs

	1999 Sales		Individual Subscribers (as of Dec. 1999)	
	Billion Won	Marketshare (%)	Millions of Subscribers	Marketshare (%)
<b>SK Telecom</b>	4,025	46.5%	10.1	43.1%
<b>Shinsegi Telecom</b>	1,252	14.5%	3.2	13.8%
<b>KT Freetel</b>	1,463	16.9%	4.3	18.2%
<b>LG Telecom</b>	1,023	11.8%	3.1	13.2%
<b>Hansol PCS</b>	894	10.3%	2.7	11.7%
<b>Total</b>	8,657	100.0%	23.4	100.0%

# Evaluation of the Telecommunications Policy

---

- **Key Factors for Success**
  - Rapid deployment of telecom infrastructures at the early stage
  - Phased-in competition and deregulation
  - Main driving force: Competition in mobile services
- **Pending Issues**
  - Timely resolution of regulatory issues
  - Establishment of powerful and independent regulatory body
  - Separation between industry promotion policies and regulatory functions
  - Elimination of foreign ownership restrictions

# Major Future Tasks

---

- **Restructuring KT to become the leading comprehensive ITSP as soon as possible**
- **Establishing a new role for government in:**
  - Antitrust and consumer protection
  - Creating a new business model
- **Addressing the trend of globalization and convergence of IT technology, market, and institutions**
  - Global network and local content?

## References

- Cho, Shin, Choi, Byung-Il, and Seon-Kyou Choi, "Restructuring the Korean Telecommunications Market," *Telecommunications Policy* **20**, 5 (1996), 357–373.
- Han, Sae-Uk, "Research on the Telecommunications Policy," *Korean Journal of Information Society* **10**, 2 (1998), 101–125.
- Hong, Dong-Pyo, et al., *Mid-to-Long-Term Market Prospect of the IT Industry (2000–2004.)* Korean Information Society Development Institute (KISDI), Research Report 00-01, February 2000.
- Hwang, Chul-Jeung, *Study on the Telecommunications Act and Policies of Korea*. Seoul: Kyobo Bookstore Publishing, 1999.
- Jung, Shin-Ryang, "Liberalization Process of the Korean Telecom Market and Future Prospects," *Telecommunications Policy* **9**, 23 (Dec. 16, 1997), 1–22.
- Kim, Ji-Hyun, Jong-Kwan Lee, and Jin-Hyun Park, "Facilities-Based Telecom Service," *Telecommunications Industrial Trend 99-3* (October 1999).
- KISDI, *Comprehensive Report on the WTO/GBT Agreement*. Seoul: KISDI, June 1997.
- Korea Telecom, Korea Telecom Museum [On-line]. Available at URL: <http://www.kt.co.kr:2003/english/museum/index.htm>
- Lee, Myung-Ho, and Han-Young Lie, "WTO Negotiations on Basic Telecommunications and Future Course of Korea's Information and Telecommunications Industry," *Korean Journal of Information Society* **9**, 1 (1997).
- Ministry of Communications (MOC), *Annual Report on Telecommunications*. Seoul: MOC, 1989.
- Ministry of Information and Communication (MIC), *1999 White Paper*. Seoul: MIC, May 1999.
- Ministry of Information and Communication, *Current Status of the Number of Wireline and Wireless Telecom Service Subscribers* [On-line]. URL: <http://www.mic.go.kr>, January 2000
- 1996 Telecommunications Yearbook*. The Electronic Times, June 1996.
- Telecommunications Development Council, *Comprehensive Report on the Telecommunications Development Council*. Seoul: KISDI, 1989.



## Acronyms

APEC	Asia-Pacific Economic Cooperation
BBS	(electronic) bulletin board system
B-WLL	broadband-wireless local loop
DB/DP	database and dataprocessing
CAGR	current annual growth rate
CATV	cable television network operation
CDMA	code division multiple access
EDI	electronic data interface
fax	facsimile
GBT	Group on Basic Telecommunications
GMPCS	global mobile personal communications services
ICO	intermediate circular orbit (satellite)
ISP	Internet service provider
KAIT	Korea Association of Information and Telecommunication
KCC	Korea Communications Commission
KEPCO	Korea Electric Power Corporation
KISDI	Korea Information Society Development Institute
KT	Korea Telecom (established 1981)
KTA	Korea Telecommunications Authority (predecessor of KT)
LAN	local area network
LEO	low-earth orbit (satellite)
LRAIC	long-run average incremental cost
MIC	Ministry of Information and Communication
MOC	Ministry of Communication
NGBT	Negotiating Group on Basic Telecommunications
PCS	personal communications services
PCS	personal communications by satellite
PFC	priority foreign country



PSTN	public switched telephone network
R&D	research and development
SK	SunKyung Group
SMEs	Small and Medium Size Enterprises
SMS	short messaging service
TDX	time division exchange
TRS	trunked radio service
TSP	telephone service providers
TWM	two-way messaging (service)
UR	Uruguay Round
VAN	value-added network
WML	wireless markup language
WTO	World Trade Organization

**\*PPJUNG\***

PPJUNG

**\*ISBN 879716690\***

ISBN 1-879716-69-0