

Infrastructure Policy and Private Capital Inducement

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CONTENTS

1. Infrastructure for Development	
1.1 The Concept of Infrastructure	1
1.2 The Role of Infrastructure in Economic Growth	2
1.3 Economic Development and Infrastructure Build-Up	3
(The Korean Experience)	
2. Current Status and Future Plan for Infrastructure	
2.1 Roads	8
2.2 Railroads	9
2.3 Ports	1
2.4 Airports	3
2.5 Logistics and Distribution Centers	4
3. Introduction of Private Participation in Infrastructure	
3.1 Why Bring-In the Private Sector	6
3.2 Overview of the Initial PPI System	7
3.3 Evaluation of the Performance	2
4. Recent Policy Reform on PPI System	
4.1 What are the New Policy Measures	3
4.2 Major Institutional Reforms	3
4.3 Recent Progress in PPI Projects	8
5. Concluding Remark	29
※ List of Major Projects	23

The fierce competition under the WTO system provided a wake-up call for the importance of nations infrastructure as the basic asset for national competitiveness. The reduction in infrastructure investments in the late 1980s caused a serious traffic congestion and high cost of distribution, thus hindering the economic development.

Although the infrastructure investments have been greatly expanded in the 1990s, given the limitations of financial resources, the bottlenecks in infrastructure still exist. To increase investment beyond the means of the government, a system to encourage private sector participation in infrastructure(PPI) was introduced. However, rigid process and less than willing government attitude produced disappointing results.

Last year the government enacted a new Law and Presidential Decree on PPI. Old regime for PPI has been completely overhauled to promote domestic and overseas private investment. Transparent competitive nature of the system has been strengthened to the international standard. Previously announced PPI projects are now being reviewed to accommodate new system and new incentives.

1. Infrastructure for Development

1.1 The Concept of Infrastructure

The term being used in Korea is vaguely defined. It is often interchangeably used with social overhead capital (SOC). The latter term was frequently used in the US and elsewhere in the fifties and sixties by such development economist as R. Nurkse and A. Hirschman. Neither term, however, has been precisely defined, but it is clear that both terms are related to activities that share such technical and economic features as economies of scale and spillovers from users to non-users.

More recently the World Bank has published a special report(1994) on world infrastructure. However, it does not define the concept of infrastructure services either, but it at least illustrates what should be included when one uses the term. According to the report, the term specifically refers to those services being essential to the activities of households and to economic production.

They are classified into three major categories: 1) public utilities including telecommunications, power, piped water supply, sanitation and sewerage, solid waste collection and disposal, and piped gas; 2) public works, including roads, major dams, and canal works for irrigation and drainage; and 3) other transport sector, including urban and inter-urban railways, ports, waterways, airports and the urban transport systems in general.

Given the importance of infrastructure services, most countries in the world attempt to provide them in a manner that is both efficient and equitable. In fact, the World Bank report estimates that developing countries alone have invested approximately 200 billion dollars a year in

new infrastructure, which constituted about 4 percent of the national outputs and a fifth of their total investment. As a result there has recently been a substantial increase of infrastructure services in the areas of transport, irrigation, power, water, sanitation, telecommunications, etc.

In this paper the infrastructure is narrowly defined to include transport facilities.

1.2 The Role of Infrastructure in Economic Growth

Infrastructure provides indispensable services to production activities, and because of its positive external economy, it is essential for sustained economic growth and raising social welfare levels. The externality, lumpiness and long gestation period characteristic of infrastructure require careful planning by authorities. However, optimal strategy depends on each country's unique environment including different stages of economic development and social fabric.

The least developed country at the lower end of the per capita GDP scale invests least in absolute and relative terms. As the economy grows, the share of construction investment increases rapidly. This increase is usually explained by the need for industrialization, urbanization, basic infrastructure such as housing. When per capita GDP increases further, the share of investment tapers off slowly and then stabilizes after certain level of per capita GDP is achieved.

This is because the products of construction investments are durable goods. As stock accumulates over the years, the demand for new construction investment decreases. Advanced countries, such as the United States and Britain, maintain around 10 percent construction investment ratio. Japan however, was able to increase the value of its stock to the level of other advanced countries, only after a prolonged period of construction investment that is over 20 percent of GDP.

Many newly-developed industrial countries, experiencing rapid and compressed economic growth, will show a construction investment pattern similar to that of Japan. Korea used to invest more than 20 percent of its GNP to building up its construction stock. Currently, the level has come down to a modest figure of around 20 percent.

1.3 Economic Development and Infrastructure Build-Up : The Korean Experience

In the early 1960s, the Korean economy was locked in a “vicious circle of poverty”. In order to escape this absolute poverty, the government launched an ambitious Five-Year Economic Development Plan in 1962.

In the first Five-Year Economic Development Plan (1962–66), the government fostered import substitution industries and labor intensive light industries. Infrastructure was fortified to support production. Policy emphasis was placed on mass transportation, especially railroads. During the five year period 275km of track was laid. Due to the capital constraints, the total investment ratio recorded 21.6 percent falling short of the planned 22.7 percent. As part of government measures to efficiently mobilize investment resources, the Foreign Capital Inducement Act was passed in 1966, and foreign banks were allowed to open branches in Korea from 1967.

In the second Five-Year Economic Development Plan (1967–71), the export driven policy began to take effect in the light industrial sector. Exports grew by nearly 50 percent annually. Investment in railroads continued, but the focus was shifting toward road transportation with the construction of the Seoul–Pusan expressway. The total investment ratio was 25.1 percent, well above the planned 19.9 percent, and a large

amount of foreign capital was induced as domestic savings were insufficient to finance the enormous investment demands. On the whole, the Korean economy had laid the foundations for industrialization in the 1960s and was well prepared for the next stage of development.

Entering the 1970s, Korea experienced dramatic changes and challenges both at home and abroad. A new protectionist climate spread rapidly, along with world-wide stagflation caused by the oil crisis. Also, labor-intensive light industries were losing their international competitiveness as a result of rapid wage increases.

These circumstances forced the third Five-Year Economic Development Plan (1972–76) to modify its strategic objectives. The government orchestrated industrial restructuring by promoting heavy and chemical industries. A total of 487km of new highways were constructed in the southern part of the country, and major harbors, such as Inchon and Pusan, were upgraded. A subway system was introduced for the first time in the Seoul region. The first 10 Year Comprehensive National Physical Plan was put into effect in 1972 to coordinate physical development activities.

The fourth Five-Year Economic Development Plan (1977–81) continued to pursue similar goals. A comprehensive land, sea and air transportation system was completed, and the total investment ratio jumped to the 30 percent level. However, in carrying out such ambitious economic development plans with a conspicuously insufficient rate of domestic saving, Korea was forced to resort to the import of foreign capital and an expansion of the money supply. As a result, foreign debt piled up, and chronic inflation lingered. These unfortunate side-effects became apparent in 1980 when Korea experienced its first negative annual growth with a huge current account deficit.

In the 1980s, recognizing the far-reaching nature of structural problems, economic planners shifted their policy emphasis from growth

to stability, from government to the private sector, and from regulation to market orientation.

This change was reflected in the fifth Five-Year Economic Development Plan (1982–86). Greater emphasis was placed on the production of high-quality consumer goods, and the total investment ratio of 29 percent was kept within the planned guidelines, reversing for the first time the previous trend toward increases. The inter- and intra-urban transportation network was expanded and revamped, and construction on a subway system in the Pusan region was started. The maintenance and repair of the existing infrastructure was another chief activity. Policy reforms seem to have brought sound results. The rate of inflation, which had reached 20–30 percent per annum in the early 1980s, stabilized from 1983, and healthy annual growth rate of 6 percent was achieved during the first half of the 1980s.

As a result of this successful economic performance, social welfare and the general standard of living improved considerably. Consumer spending on durable goods rose persistently, and balanced regional growth and expanding infrastructure in remote areas became affordable goals. A minimum wage system and national pension scheme were initiated, and the national medical insurance system, which had been introduced in 1976, was expanded to cover all citizens. The name of the Five-Year Economic Development Plan was changed to the Five-Year Socio-Economic Development Plan, an indication of changing policy priorities in accordance with changing public sentiments.

During the period of the sixth Five-Year Economic Development Plan (1987–91), the Korean economy was extremely volatile. Outstanding economic performance, which started from 1986, continued into 1987 and 1988 leading up to the Seoul Olympics.

A favorable world economic environment, characterized by the “three lows” – namely, low oil prices, low international interest rates and a

low U.S. dollar – were responsible. The economy grew at a annual rate of more than 12 percent, and the current account, long saddled with a chronic deficit, registered a surplus in 1986. At the same time, the ratio of national savings to GNP increased markedly, surpassing the gross investment ratio.

Three consecutive years of economic prosperity ended suddenly in 1989. The sudden drop to 6.8 percent growth from the previous year's 12.4 percent was mainly attributed to the widening of external and internal disequilibria.

Winds of change in the political climate gave stronger voice to the worker ; labor disputes increased, and wages spiraled. This, along with the appreciation of the Korean Won, attributed to the export sluggishness. The current account slid into a deficit of 2.2 billion dollars in 1990, and the deficit widened to 8.8 billion dollars in 1991. Domestically, increased real estate prices and wage hikes further fueled private consumption beyond the supplying capacity and caused widespread inflationary pressure.

This situation was aggravated by the implementation of the “Two Million Housing Unit Construction Plan”. While the plan stabilized housing prices, some negative side effects on the general economy followed as housing investment increased by more than 60 percent in 1990 alone. The Plan disregarded the supply capacity of the construction and related industries, thus causing a labor shortage and supply bottlenecks for construction materials.

In 1993 with the change of government, “Five Year New Economic Plan” was initiated. It aimed to stabilize and globalize Korean economic system. Rigid regulations on economy were gradually lifted, markets were opened to outside world as promised in the Uruguay Round. Labor relation improved and conventional business practices were cleaned up by enhancing transparency. Investment on infrastructure was

greatly emphasized.

Up to mid-'90s economy seem to be moving on the right track. On the average around 7% of economic growth was achieved and thanks to cheap imports the price level was kept at low level. Only sign of economic trouble was the snowballing current account deficit. Many believed that the fundamentals were going strong when the economy dilapidated from within.

The driving engine of the economy was the consumption backed by strong won and imports. The ten thousand dollar per capita GDP mark was reached and Korea became a member of OECD. People were elated and the economic bubble started to grow in financial and real estate markets. As can be expected, everything collapsed in the December of 1997 with the onset of financial crisis.

After two years of painful economic reform the economy is showing a sign of recovery. However, many hurdles remain before Korea becomes an advanced country. Globalization, deregulation and decentralization are still the key words these days. These qualitative changes in our institution and state of mind pose serious problems, which are not easily solved.

In spite of the ups and downs of Korean economy over the last four decades, it is generally considered a developmental success story. We remain optimistic about the future of Korea.

2. Current Status and Future Plan for Infrastructure

As a backdrop of the economic stabilization policy and housing construction policy during the '80s and early '90s, infrastructural bottlenecks in roads, port facilities, etc. have become increasingly troublesome policy issues in Korea. The overall congestion cost was estimated to total 15 billion dollars in 1998 alone, more than 4% of GDP. With the sliding competitive edge of the Korean manufacturing industry on the international market, we need to enhance the serviceability of infrastructures in a relatively short period of time.

The recently announced Fourth Comprehensive National Physical Plan (2000 ~ 2020) outlines a very ambitious investment schedule. During the next 20 years we plan to spend a massive 415 trillion won (1999 constant price), the equivalent of around 346 billion dollars on its roads, railroads, sea- and airports.

2.1 Roads

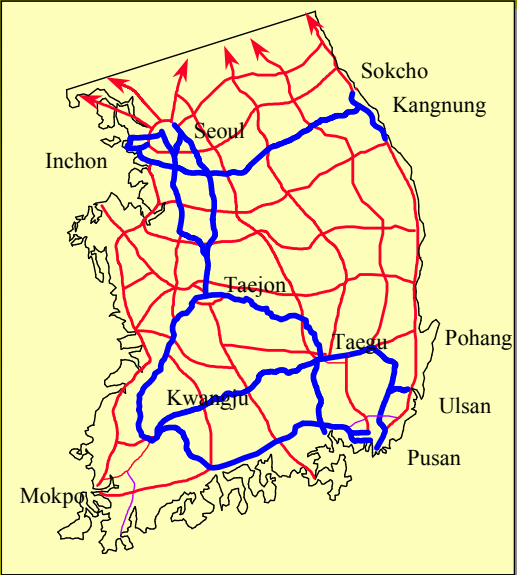
In 1998, the total length of roads is 84,968km. This figure is divided into 1,889km of express ways, 12,459km of national roads, and 70,620km of local roads. The ratio of 4-lane or above national roads is 24%. The per capita road length (as of 1995) is 1/7 of that of Japan, and 1/20 of that of U.S.

The investments in road projects have not been well coordinated due to the lack of integrated long-term planning. Another inefficiency in investment stems from the divided funding sources (transportation tax and transferred budget). One goal of the planning aspect will be the construction of basic national transportation network and improvement of its efficiency to prepare for the coming 21st century.

The basic express system is a grid-type major road network consisting of 7 major axis in North-South direction and 9 axis in East-West direction. By year 2020 the network will be completed with the total length of 6,100km. National road system will be also extended and upgraded to the length of 19,000km with the share four or more lanes raised up to 80%. Including the local roads the total length of the road will reach 200,000km.

When the South and North Korea political situation improve and economic exchange become more active the connections between the road systems of two Koreas will be pursued in terms of integrated road systems for Korean peninsula. In the long run we hope to become the central hub for Northeast Asia.

7 × 9 National Arterial Highway Network



HIGHWAY(km)

1995	1,825
2002	3,207
2020	6,100

- Existing Motorway
- Planned Motorway

2.2 Railroads

The total length of railroads is 3,118km in 1998. Of this, the length of double-line railroad is 901km and electric railroad length is 661km. The total length of railroads is 3/20 of that of Japan, and 1/5 of that of U.K. Major railroads reached their maximum capacity and the inadequate facilities cannot meet the ever-increasing demand.

There have been neither long-term plans for railroad system, nor the investment priorities. This problem has been further exacerbated by the delay in finalizing the proposed line for Seoul-Pusan High Speed Railway. The goal of the railroad sector will be the construction of national wide rail system. In longer term, integrated railroad network connecting the Korean peninsula rail networks to trans-continental railway systems such as TSR, TCR, TAR will be pursued.

Seoul-Pusan High Speed Rail Project

- Two-hour service between Seoul / Pusan
- Relieve congestion along the busiest corridor
- The Existing rail will be mainly used for freight service

Route	Seoul ~ Taejon ~ Taegu ~ Pusan
Length	426 km
Construction	1992 ~ 2004(first stage)
Estimated cost	14 bil US \$
Speed(km/h)	Operating 240, Max. 300
Capacity	520 thous. pass/day

The Seoul–Pusan High Speed Railway will be constructed by year 2010 as planned. Another line connecting southwestern part of the country will be started within the planning period of 4th National Physical Plan. Existing major railway artery will be electrified and double tracked during the first decade of 21 century. Construction and extension of railways will start in earnest in the next decade. The share of railways in transportation will increase gradually.

By year 2020, the total extension will reach 5,026km with the ratio of double–line railroads increasing from 29% to 74% and the ratio of electric rail increasing from 20% to 80%.

2.3 Ports

Korean ports' ship and cargo handling facilities are facing chronic shortage for lack of adequate investment. The average stay–over times are 55 hours for Incheon, 41 hours for Pusan, and 51 hours for Ulsan.

The goal of port sector is to minimize distribution cost while laying a foundation upon which Korea can play a major role as a center of maritime transportation in Northeast Asia. The locational advantage of Korean peninsula as a gateway to continent and the Pacific will be fully exploited by constructing integrated port system.

To achieve this goal, Kaduk harbor in Pusan and Kwangyang harbor are being constructed. The 2 mega ports will become international hub ports that will act as a transshipping point into Northeast Asian destinations.

Incheon, Asan, Ulsan and 5 other ports will serve as regional centers and the other smaller harbors will assume lesser role. To complete this hierarchial system of ports 6 new ports will be built and the rest will be expanded and upgraded.

Many of the harbors will become so called third generation ports that have the integrated network of information system and logistic function. To support this new features large scale logistic center will be built around the harbor area. In addition port management, custom, commercial information systems will be integrated into a single information system based on electronic data exchange network.

Mega Port Development

■ Gaduck Island Port in Pusan ('95~2011)

- 53 berths for 50 thou.-ton vessels to handle 5 mil. TEU containers and 40 mil. ton freight (est. cost US \$ 7 bil)

■ Gwangyang Container Port ('87~2011)

- 24 berths for 50 thou.-ton vessels to handle 2.4 mil. TEU containers (est. cost US \$ 3bil)

2.4 Airports

Currently Kimpo, Kimhae and Cheju airports handle 79% of airline passenger traffic. The capacity of Kimpo airport reached a saturation point. It is expected that there will be a continuing increase in air transportation demand in Asia-Pacific region. Therefore, it is urgent to expand the air traffic handling capacity.

The goal of airport sector will be to position Korea as an air traffic center in Northeast Asia by building a mega hub airports. New Incheon International Airport will play the role of hub airport for Northeast Asia handling the global travel demand in the region. There will be 7 other(2 are being newly constructed) regional hub airports, which will meet the short route overseas and domestic air travel demand. Other smaller airports will serve the domestic flight demand.

Inchon Int'l Airport

■ Strategy

- Hub from(to) Japan, China, SE Asia to(from) America & Europe
 - Transfer pass : 13%('94) → 35%(2011)
- Shuttle & Feeder Service to(from) Japan, China & SE Asia
- Develop seaport, teleport, int'l business center & logistics center

■ Development Plan

	Phase 1	Final	Kansai (Japan)
Construction period	2000	2020	'94
Est. cost (US \$ bil)	5	12.5	15
Site size (ha)	1,097	4,740	512 (1,199)
Capacity (mil.pass/yr)	27	100	25 (40)
Runways	2	4	1 (2)

To meet increased demand for 'fast, comfortable, just in time' transportation demand, investment on domestic flight will have high priority until the rapid railway system is in place. Commuter airline will be promoted for business and pleasure trips. It will also improve accessibility of remote areas. To support this, safety facilities of regional airports will be enhanced, additional smaller airports will be built, and extended flight schedule will be consulted with the military authority.

2.5 Logistics and Distribution Centers

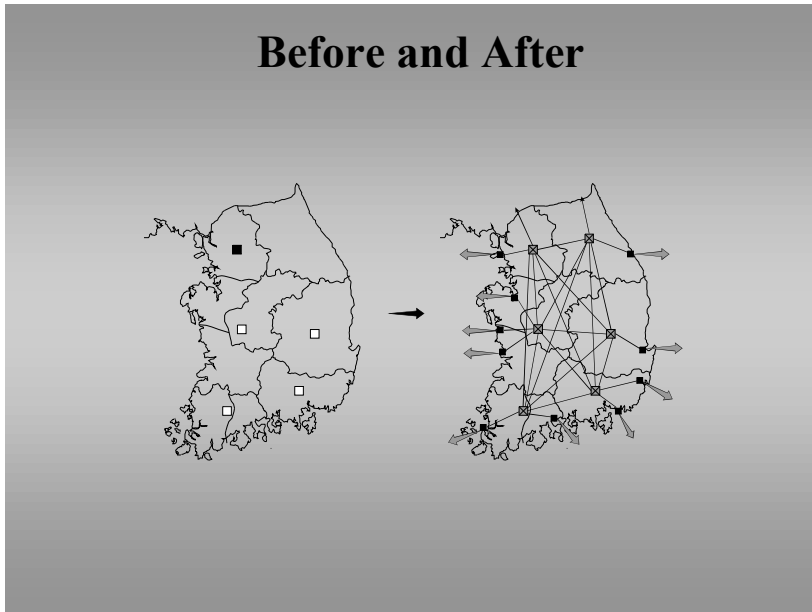
For the period of 1985 through 1995, as the economy expanded, the quantities of material shipped in Korea quadrupled. However, the concept of logistic cost was not given the proper attention it deserved. The shipping and distribution facilities such as distribution centers, shipping industries, shipping information systems in Korea do not work efficiently. Therefore, the cost associated with shipping and distribution reached 16.3% of GDP. This ratio far exceeds that of developed countries (U.S. 10.5%, Japan 8.8%) and undermines the national competitiveness.

Recently, high logistic cost has been identified as one of reasons for 'high cost and low productivity' of Korean economy, and lowering the logistic cost has become an urgent issue in Korea. To solve this problem, a nationwide distribution network will be built based on integrated development plan for shipping and distribution centers.

We have two complex container terminal and inland shipping depot located in Seoul metropolitan area and in Pusan area. Three additional inland shipping depots will be constructed. In addition, 39 lower hierarchy smaller distribution parks will be built in the near future. Private investments will be used to complete the integrated distribution information network.

Recently, doubts are being raised over the rationality of this hierarchical integrated system of logistic center. Some are saying that since Korea is a small country, 'point to point' delivery is more efficient than 'gather and deliver in stages' because of the high loading and unloading cost. The conclusion remains to be seen.

Before and After



We also have plans to informatize and standardize the industry. The logistic information network will provide such services as electronic data exchange, status report on distribution facilities and locating services, and vehicle locating services. The KS standardization of distribution facilities and equipment will be encouraged. Through this effort, Korea will leap into the leading position in shipping and distribution connecting Europe, Southeast Asia/Australia, and North American economic blocs.

3. Introduction of Private Participation in Infrastructure

The government's focus on upgrading national transportation and other facilities could not have come at a better time. However, the real test of its feasibility lies with the ability to finance such investments. The Fourth National Physical Plan intends to invest 415 trillion won(346 billion US\$) in the transport sector. Assuming the current trend of the economy to continue, the public sector(government and state owned enterprises) will be able to raise around 355 trillion won. The rest will have to come from additional efforts to raise public funds or from private sector.

3.1 Why Bring In the Private Sector

The primary source of infrastructure financing has been taxes, public bonds, and user charges. However, at this stage of economic development, when the size of the economy has so greatly expanded, the importance of government role diminishes in the SOC sector. Successful financing of investments now depends on how to efficiently raise funds from the domestic and foreign private sector.

Private funds are a relatively rich funding source. They also have the merits of flexibility and efficiency. So the government is not only looking for the monetary inflow from the private sector but also it is seeking for the creativity and efficiency in the provision of SOC services. Otherwise, from the overall economy point of view, there will be no additionality. The source of additionality may come from better planning, cheaper financing, or from expert operation of the SOC facility.

The projects with high return and fast recovery of investment should be actively solicited for the private participation. Good candidates for privately funded infrastructure projects are non-pure public projects and local public goods, such as industrial estates, electricity, telecommunication, freight depots, leisure facilities and local toll roads. Incentives, such as land acquisition by the public agency, pairing public projects with profitable projects, arranging long-term financing from public funds, tax exemptions etc. can be provided. Recently, several laws were enacted to encourage private participation in the field of infrastructure development.

3.2 Overview of the Initial PPI System

1) Private Participation in the Past and Establishment of Initial PPI System

The concept of private participation is not new in Korea. There were a number of infrastructure projects being privately initiated and financed. As of 1993 we had a total of 93 privately invested infrastructure projects worthy of 3.36 trillion won. These projects were undertaken under the provisions of the Urban Railroad Act, the Private Road Act, and other relevant laws and regulations – both central and local in nature.

Various laws governing and regulating private sector participation in infrastructure development, however, failed to draw an institutional framework whereby tax and financial and other incentives can be provided to the participants on a competitive basis. Besides these laws were not universally applicable, pertaining only to those that touched upon particular areas of concern, e.g., power generation, maritime activities and etc.

Many drawbacks were found when these laws were applied to real

situation, and recently many felt a need for more comprehensive and universally applicable legal framework in which private sector participation in infrastructure development can be enhanced. To improve the situation, one of the major efforts on the part of the government was legislation of "the Private Capital Inducement Act for the Expansion of Social Overhead Capital" (simply known as "Private Capital Inducement Act") in 1994.

This law was primarily intended to induce private investment into infrastructure development projects. It was also aimed at "introducing the private sector's efficiency into the process of design, construction, and operation and management of the infrastructure facilities." This law, unlike the one mentioned above, is specifically designed to promote private sector initiated infrastructure facilities such as transport services, power and communication facilities, water and sewer facilities, and solid or waste water disposal facilities.

2) Procedures for Private Sector Participation

① Project identification

By the mandates of the Act the government set up the Private Capital Inducement Committee. The responsibilities of the committee include formulation of infrastructure development plan and selection of projects and their implementators. The committee annually propose an annual basic plan for the private capital inducement. The plan include various infrastructure projects which are scheduled to proceed within the coming three year period, and it also specify a set of guidelines for the private sector to follow, including implementation procedures, performance standards, and particularly the process and standards for selecting franchisers. Also included in these guidelines are various regulations regarding the facility maintenance, approval of blue prints, completion

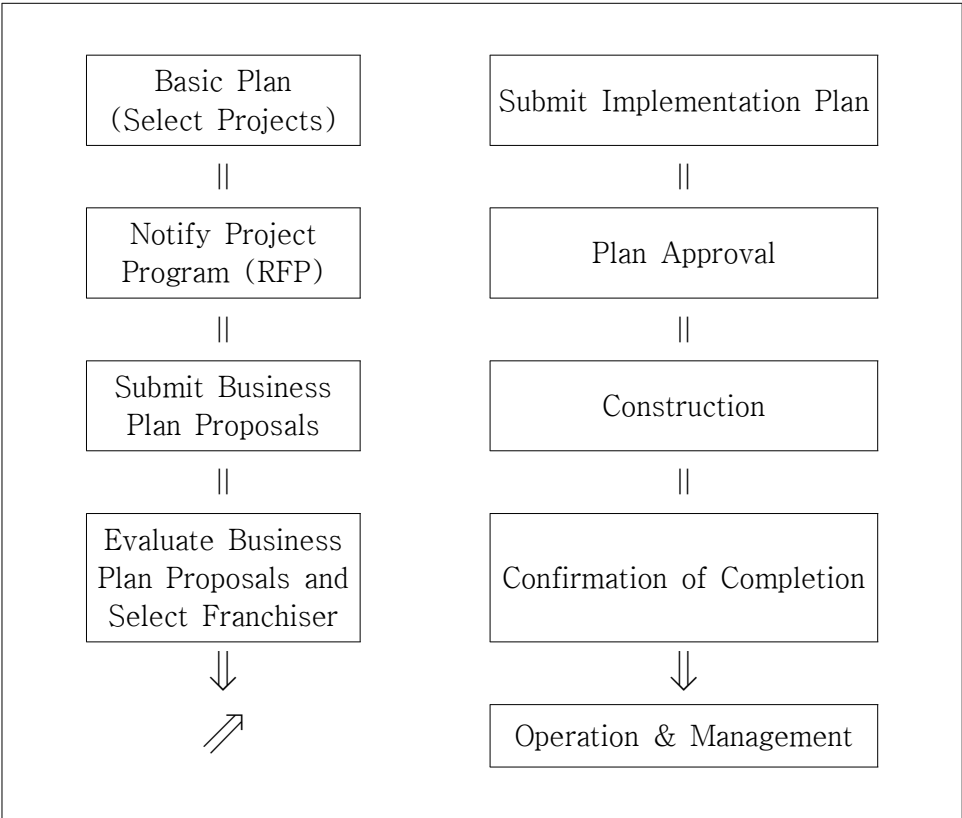
and inspection schedules, and tax/financial and other incentives provided for the franchisers.

② Selection process

Once decisions are made regarding the contents of the basic plan and projects, they are transmitted to the Private Investment Steering Committee established at the ministerial level for detailed review and action programs. The committee is advised by expert group with respect to project evaluation and appraisal.

The figure below illustrates the way in which private capital inducement apparatus operates.

<The procedure for private capital inducement>



First the steering committee develops RFP for specific project included in the basic plan. The RFP provides detailed information of the projects; the selection procedures, qualifications of potential franchiser (e.g., the status of shareholders, the franchiser's experiences and know-how in managing the facility and financial conditions), various incentives, tax and otherwise, being associated with the projects, incidental businesses if any, requirements for facility operation and management, and commercial arrangements such as the demand projection, the level of tolls and franchise period, and the procedures and guidelines for developing and submitting proposals.

This is followed by the evaluation of the proposals. The relevant authority is responsible for forming a project appraisal group which consist of academia, professionals and research staff personnel from the government funded research organizations. Upon the completion of evaluation the relevant authority designates or selects a franchiser.

The franchiser, once being selected, must submit an implementation plan which is subject to approval from the relevant authority. Again the professional advisory group gets involved in the approval procedure. When legitimately approved, the franchiser can proceed with construction of the facility. And once the construction is completed, the franchiser must obtain a certificate of completion before it assumes the facility operation and management.

③ Incentives provided

There are a number of incentives being granted to the franchisers. Some of the major ones are as follows; first, "incidental businesses" are allowed to undertake if feasible. The kinds of businesses include residential land development, urban development and redevelopment, industrial estate development, hotel and resort development and operation, freight terminal management, port services, management of

shopping centers, operation of large retail outlets, wholesale centers, or merchandise distribution centers.

They are also granted tax exemptions and reduction. For example, such allowances are made in their favor as a 50 percent reduction of capital gains tax and a 15 percent deduction for investment reserve. Financial assistances are extremely limited, but foreign loans are allowed in a limited way when they procure facility related equipments and materials from overseas. Some type of project financing package can be arranged to supplement their own financing. The infrastructure credit guarantee fund was established to help the participating firms with easy access to formal credit.

Also allowed are reduction of various charges, including those for land conversion and those being imposed on development and overcrowding, e.g., development charge or overcrowding charge. Also granted is the power of expropriation, but this is rarely exercised.

④ Some caveats

One thing that needs to be pointed out is that the RFP is too specific about the "commercial arrangements" – the range of profit, incidental businesses, franchise period, price setting, construction period, and etc. For example, the participants are allowed to have only 10 percent profit and to operate the facility no more than 50 years. Charges, fees and prices, whatever they may be called, are also a priori set by the government authorities.

What it all boils down to is that the participants are left with very few choices of their own when they engage in the infrastructure development projects. Under such an inflexible system as the one with Private Capital Inducement Act, one can hardly exercise freedom to undertake the projects creatively and enthusiastically. Innovative ideas may not be easily identified, let alone accepted, particularly the ones

being associated with new transport technologies and also with facility operation and management.

A ceiling imposed on the profit would be especially vulnerable because it impinges upon the profit motive itself, which works as a driving force in attracting the developers into the investment projects. Furthermore, the maximum allowance of 10 percent profit is too low, considering that the average annual rate of return to infrastructure projects financed by the World Bank was more than 16 percent on average. The profit rate ceiling provision needs to be seriously reconsidered together with those on franchise period, the price or charge, and the kind of transport system. With these provisions intact the system would not attract as much private capital as desired, both domestic and foreign.

Participants should be allowed to set their own price and profit range through negotiations. In other words the criteria such as price, the level of profit, the type of transport technology and franchise period, should be viewed as "variables" rather than either "constants" or "parameters." Only then the proposals would be lot more worthy of critical evaluation because they should differ in their contents and methods to finance the infrastructure projects.

3.3 Evaluation of the Performance

Through the year 1995 and 1998, 45 infrastructure projects amounting to 39 trillion won(33 billion US\$) have been offered to the private sector for bidding. Of those 7 projects have started construction and franchisers for 5 projects have been selected. In case of rest of the projects, they are either in the process of negotiation or the RFP have not yet been announced. Confer List of Major Projects at the end.

Even the 12 projects that seem to be going well, did not produce

much competition in the bidding process. We usually had just one consortium made up of construction companies with no foreign participation. Moreover, the projects are not moving according to the schedule after the financial crisis in 1997. Since 1998, no new franchiser has been selected. Apparently the result is much less than what we hoped for.

4. Recent Policy Reform on PPI System

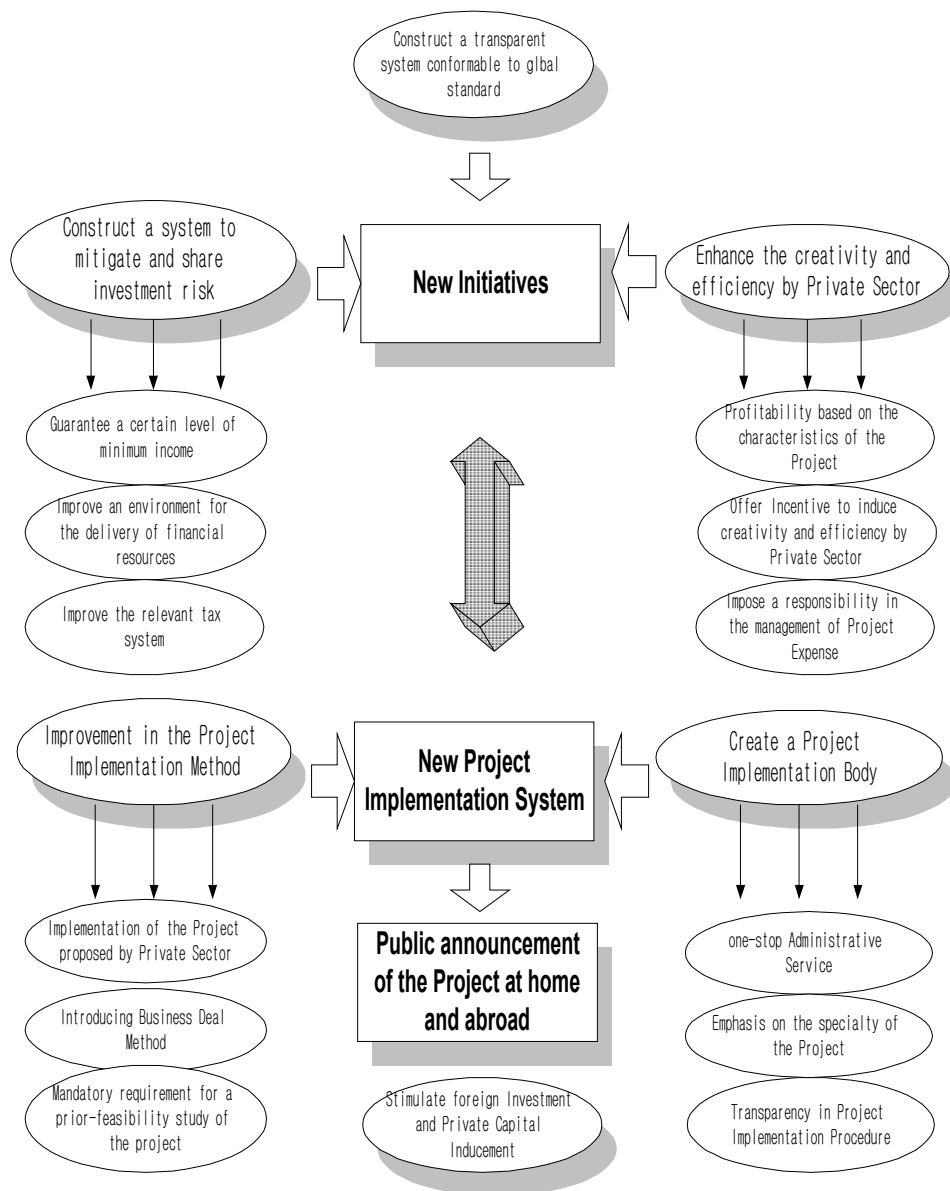
The government is now taking serious efforts to induce private sectors to the infrastructure investments and its operation. From 1997 the government, with the help of affiliated research institutes, has drafted a comprehensive policy measure emphasizing the foreign capital inducement in various forms such as loans and direct investment. The draft was used as the base for the revision work of the PPI Act in 1999.

4.1 What are the New Policy Measures

In an effort to reflect the global trend of mobilizing the private sector's creativity and efficiency in infrastructure build-up, the Korean government devised a new initiatives to encourage private participation in the infrastructure project.

Critical issues of the new initiatives are i) enhancing transparency and credibility of the project and private participation processes, ii) making room for private sector such that spontaneous participation in the project selection process and more autonomy is guaranteed thereafter and iii) all the while foreign investors' interests are kept at the top of the concern in the revision work.

<Basic Scheme of the New Initiatives>



4.2 Major Institutional Reforms

1) Improvement of Project Selection Process

Only projects with high return will be selected after feasibility and profitability studies are conducted by an internationally well known institution. The plan for the investment and subsidy from the government will be announced in a project plan in advance. The results of the feasibility and profitability analysis carried out by an internationally well known institution will be announced in the project plan.

2) Diversifying the Method of Private Participation

Previously, the facilities were classified into two categories, such as "Primary and Secondary Facility" and some incentives were offered only to the primary facility. Also, there were only BTO projects for the primary facilities and BOO projects for the secondary facilities. Foreign investors are unfamiliar with BTO project type where the franchiser can not have the ownership of the facility.

In order to stimulate foreign investment into SOC facilities, the classification is now eliminated and various types of private participation, such as BOT, BTO, BLT and ROT, will be offered to investors. Also allow the wrap addition method which match profitable and less profitable projects(or operating rights) as a package and offer for private participation.

In the old system, projects for PPI were selected by the government (solicited project). Now private offer of unsolicited project is allowed and incentives are given to the original proponent.

Some facilities such as road, seaport and railroad, whose property

right rests in the government will be announced in the project plan. Types of ownership of a facility will be announced in the project plan for a solicited project. Negotiation with the government will be carried out to determine the ownership of a facility for an unsolicited project.

3) Improving the Method of Determining the Rate of Return

Previously profitability is fixed to a constant rate of 10%. Even with the consideration of construction profits, internal rate of return was within 14%. The characteristics and risks associated with the project are not fully considered when calculating profitability rate of the project.

Items proposed by the government	Items proposed by the private sector
<ul style="list-style-type: none"> ·The size of government investment ·Maximum limit in profitability rate <ul style="list-style-type: none"> ▶ Basic interest rate + Risk Premium ·Basic quantity demanded and Concession period ·Minimum quantity demanded guaranteed by the government ·Inflation Rate and criteria in adjusting user charge 	<ul style="list-style-type: none"> ·Construction and operational cost ·Cost in the delivery of financial resources ·Profits from auxiliary businesses ·Profitability rate and fees

Instead of maintaining a constant rate of 10%, the investors should be able to determine the rate of return considering the characteristics and risks associated with the project. Transparency in the investment profitability will be maintained with the application of a new profitability rate calculation formula.

Moreover, much more autonomy will be given to the private sector in the RFP. There will be room for negotiation on the project design,

financial arrangement, expenditure schedule etc.

4) Guaranteeing Minimum Demand or Revenue

In an unsolicited project, the government will guarantee certain percentage of the total revenue. In a solicited project, a feasibility study will be carried out in advance to assess total demand. Up to 90% of total revenue can be guaranteed. When the demand or revenue is below the level guaranteed by the government, the government will provide the company with loans and subsidy, permitting a flexible option to adjust user fee and concession period. The details will be spelled out in the RFP or decided through negotiation.

5) Incentive for Reducing Costs

The Government will enter a contract with the project implementation company on the basis of fixed total cost. Before, it was 'cost plus fee' sort of arrangement. Now, the contract is in the form of total fixed cost and any expense saved from construction and operational will go to the project implementation company. For the case of an early completion, the concession period will be extended for the time saved from early completion.

6) Promoting Foreign Direct Investment for SOC Projects

Allowed the selling of operating right of profitable existing SOC facilities to relevant foreign companies, and also put option contract which foreign investors can sell a part of or all the investment asset after a certain period of time (about 10 years). Restrictions on foreign capital loan and foreign currency loan from foreign financial institution

will be relaxed if used for infrastructure projects.

7) Establishing Institutions to Promoting PPI

The Act mandates a special project implementation organization, independent of government authorities, whose main function is similar to the BOT center in the Philippines to be established. Accordingly, the Private Infrastructure Investment Center of Korea(PICKO) has been established in KRIHS in 1999.

In addition, a Fund to support PPI activity will be established this year. Fund will consist of government seed money and domestic and foreign investment.

4.3 Recent Progress in PPI Projects

12 projects that have already signed concession agreements are being reviewed to accommodate new system and new incentives by partly modifying the agreements. Of these projects, 7 are under construction on schedule including Incheon New airport highway. 3 projects underwent changes in the consortium members.

8 projects including Ilsan-Toegaewon part of Seoul ring road are under negotiation with the government. They will fully benefit from the improved new PPI system. Major issues of negotiation include rate of return on investment, mutually agreed construction cost, ways to fix risk share in revenue and exchange risk etc.

11 projects are still looking for possible proponents. Rest of the projects have been reviewed according to the sunset rule of new system and just 6 of them have been redesignated as PPI projects. No new PPI projects has been announced by the government in 1999 and 2000. However, a few projects(road, environmental facilities, GIS services etc) have been initiated

by the private sector. They are in the process of evaluation and negotiation and expected to attain final result by end of this year.

Most of the PPI projects are courting for foreign investment and some projects(Inchon New Airport Railway, Inchon New Airport Second Bridge, Kwangjoo Second Ring Road, Pusan North Harbor Bridge etc) are attracting definite interest from abroad. To facilitate private sector's efforts in attracting foreign investments PICKO has already arranged for several meetings. To name a few, PICKO held a general project introductory meeting last October. As follow up measure, during second week of March this year, PICKO travelled to Europe as part of Presidential Mission and held individual meetings with prospective investors. Another road show was held in Japan in June. We expect concrete results soon.

5. Concluding Remark

This paper has briefly described Korean SOC policy and its recent efforts on the part of the government to promote private sector participation in infrastructure development in Korea. It is a very good start and the government initiated private investment efforts will prevail.

Nonetheless there remain a number of questions which must be addressed to one way or another.

First, the underlying argument seems to be that infrastructure services are viewed less as solely a government concern and more as joint concern of the public-private sector. The primary question is who is responsible for what? Somehow there must be a "division of responsibilities" between the two sectors. It appears that the government simply transfer its responsibilities to the private sector. Equity objective is sometimes overlooked in the process.

Related questions are who pays for what and for whom? Is the system based on benefit principle? What about the deferred maintenance problems? Who pays for them? Inherent with this question is that of inter-generational share of the responsibilities in providing infrastructure services. And if the central government backs off from its own responsibilities, who will take over? The local governments? They are not readily prepared yet. Then, the question is whether or not the transfer of such responsibilities to the private sector is acceptable, both legally and politically?

Second, there are a variety of transport modes to be invested. The question is how to coordinate infrastructure development efforts which are taking place throughout the country almost all at once. Emphasis should be placed more on mixing the transport infrastructures in a way

that is most efficient. To this end projects should be arranged to have a wide range of synergistic effects. And such an effect should be included as one of the evaluation criteria.

The third question is; how much infrastructure we can afford and what kinds, and who decides the needs and how. Are the constituents willing to pay for the advanced infrastructure services? Decision makers should know the real impacts of varying levels of infrastructure investments before they can make meaningful judgements as to the appropriate level of resources to devote to any particular type of infrastructure service. Unfortunately the approach to defining needs seems to be very narrow and almost inappropriate in guiding resources allocation decisions. Before undertaking massive infrastructure development plan one must inventorize the existing infrastructure facilities, assess them both currently and in light of future usages, and identify the desired level of maintenance and improvement. This whole process seems to be missing.

All in all we need better thought-out plan for infrastructure development which can better respond to the infrastructure needs of the people. Such a plan can guide the policy makers to more efficient resources allocation and also the private participants to more rational decisions on the projects which must be both profitable and socially beneficial.

List of Major Projects

Projects Proposed in 1995

Project	Estimated cost(₩billion)	Dimension	Remarks
1. Incheon International Airport Highway	1,963	40km (6-8 lanes)	Construction began in '95
2. Cargo Terminal in Incheon	215	252,000m ²	Construction began in '98
3. Chonan-Nonsan Highway	2,119	80km (4 lanes)	Construction began in '97
4. Daegu-Daedong Highway	2,782	82km (4 lanes)	Concessionaire Designated in 1998
5. Seoul-Hanam Light Railway	223	10.5km	
6. Pusan-Kimhae Light Railway	843	24.5km	
7. Kyungin Canal	3,398	18km	Concessionaire Designated in 1998
8. New Habor in Mokpo (Phase I)	246	Pier 500m	Concessionaire Designated in 1997
9. Passenger Terminal in Incheon Harbor	250		Construction began in '97
10. Pusan-Keojae connecting Road	1,534	8km (4 lanes)	In the process of negotiation
11. Kyungin Detour Road	205	6.5km (6 lanes)	In the process of negotiation
Total	12,779		

※ no remark means either it is in the process of drawing up of the project plan or there were no proposal from the private sector.

Projects Proposed in 1996

Project	Estimated cost(₩billion)	Dimension	Remarks
1. Ilsan-Taegaewon Highway	1,687	32.6km	Concessionaire Designated in 1999
2. Gumi-Okpo Highway	592	56.6km	
3. Daejon-Dangin Highway	1,208	94.3km	
4. Euijonbu Light Railway	449	14.9km	
5. Kaduk Habor(New)	2,276	Pier 3.2km	Construction began in '97
6. North Harbor in Inchon	262	Pier 1.2km	In the process of negotiation
7. Habor in Pohang-Yongil (New)	610	Pier 1.4km	Project Plan announced '98
8. Costal Ring Road	423	3.9km	
9. Tunnel and Connecting Road in the 2nd Ring Road	223	5.4km	Construction began in '97
10. Hanam-Chunchon Road	672	66.5km	Project Plan announced '98
11. Inchon Namdong-Sihung Dori IC Road	216	13.3km	In the process of negotiation
12. Seoul-Kangwha Road	409	26.0km	
13. Ulsan Bridge and Connecting Road	202	4.4km	
Total	9,229		

Projects Proposed in 1997

Project	Estimated cost(₩billion)	Dimension	Remarks
1. Cheonan Station for the Korea High Speed Rail	95	109,000m ²	
2. Multi-purpose Cargo Terminal (central Korea)	404	595,000m ²	
3. Container Base (central inland area)	113	661,100m ²	
4. Multi-purpose Cargo Terminal & Container Base (southeastern area)	605	727,200m ²	
5. Multi-purpose Cargo Terminal & Container Base (southwestern area)	665	1,057,800m ²	Concessionaire Designated in 1998
6. Harbor in Ulsan (new)	958	Pier 4.5km	
7. Passenger Terminal and Marine Park in Pusan	83	327,200m ²	
8. Railway for Incheon International Airport	2,711	61.5km	In the process of negotiation
9. Tunnel through Mt. Umyeon	123	3.3km	Construction began in '98
10. Sansung Tunnel and Connection Highway	195	4.5km	
11. Choub Light Railway	194	7.3km	In the process of negotiation
12. Haeundae Hot Spring Resort in Pusan	211	72,700m ²	
13. Nakdong Riverside Road In Taegue	736	32.8km	
14. Bridge between Incheon Port and Incheon Int'l Airport	520	1.6km	
15. Yongin Line Railway	472	21.3km	
Total	8,805	-	

Projects Proposed in 1998

Project	Estimated cost(W billion)	Dimensions	Remarks
1. Transportation Center in Incheon International Airport	410	270,600 m ²	
2. Harbor in Masan (Phase 1)	472	Pier 2.37km	
3. Incheon Harbor- Sihwa Industrial Estate Road	278	15km (6 lanes)	
4. Ilsan Bridge	131	1.8km (6 lanes)	
5. Koyang International Convention Center	531	Area 495,000 m ² Floor Area 871,000 m ²	
Total	1,822	-	

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