In Quest of Excellence
Selected Public Policies of Korea

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Contents

Government e-Procurement System

Public Procurement Service

GePS as the Best e-Procurement Practice (UN)

The Government e-Procurement System (GePS) serves as a "Single Window" for all public procurement, efficiently providing high-quality goods, equipment and services for government organizations. The Public Procurement Service (PPS) has established the world's largest cyber market for government procurement, with US$43 billion in transactions with more than 150,000 private companies and some 30,000 public organizations.
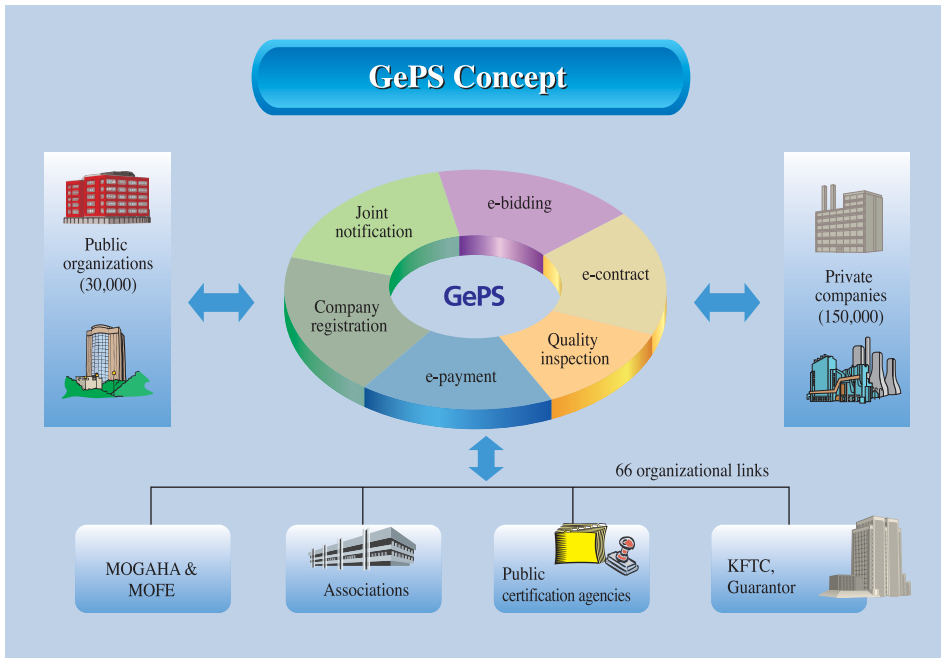
GePS: World's Best e-Procurement Model

- Online processes and integrated data sharing have enhanced the convenience and speed and reduced annual transaction costs.
- Opportunities for corruption are reduced by eliminating suppliers' visits to public offices; transactions are completed without physical contact.
- The world's largest e-marketplace has been formed, with US$43 billion in transactions a year.

GePS has enhanced efficiency in terms of the procurement administration. PPS began its procurement services online and has already realized significant cost savings. In addition, GePS has facilitated e-commerce in the private sector, as the understanding of and willingness to engage in e-commerce has been expanded after performing online transactions via this system.

All procurement information from public organizations can be accessed online through a single window. A single registration in GePS allows suppliers to participate in all public bids. The information sharing system with related public organizations and associations reduces the volume of paper documents needed for procurement. The tedious tasks of collecting bid information, applying for registration of participation in bid, signing the contract, and processing payment had been previously conducted through personal visits to each government organization. These tasks have been greatly simplified, resulting in significant time reduction and savings in expenses, thus enabling the users to conduct their work anytime and anywhere at their convenience.

The previous procurement system involved excessive paperwork, labor-intensive tasks and complicated business processes resulting in high costs and low transparency. For example, bidding information was announced only in gazettes and newspapers. Now, however, the law requires that it is announced on line via GePS. The bidding information includes estimated costs, technical specifications, and evaluation criteria. In this context, GePS is also a single repository of vender data for the entire public organization.

GePS was developed for all public organizations (central and local governments, as well as state) owned enterprises to use simply by logging on. PPS provides a one-stop service by linking GePS with external systems to process over 20,000 different procurement related documents, from contract requests, bid invitations, and bidding to contract signing, inspection and payment.

GePS Concept

Public organizations (30,000)

GePS
- e-bidding
- Joint notification
- Company registration
- e-payment
- Quality inspection
- e-contract

Private companies (150,000)

66 organizational links

MOGAHA & MOFE | Associations | Public certification agencies | KFTC, Guarantor

As a result, GePS has saved approximately US$4.5 billion in annual expenses due to digitized processes and data sharing; 90% of the cost benefits are retained by the private sector, which has been spared unnecessarily complex and costly business processes. It is used by 150,000 private companies and 30,000 public organizations. In 2004, 18 million people participated in 120,000 online bids, resulting in transactions totaling US$43 billion, making this the world's largest online marketplace.

With the simple click of a button, moreover, public institutions also purchased office supplies, software, construction materials and other items directly from the market via the online Shopping Mall. In 2005, some 470,000 Shopping Mall purchases were made, totaling US$7 billion.

PPS has continued to improve GePS. At the end of 2003, construction began on a Backup Center that would ensure continuous procurement despite damage to GePS mainframe server during a catastrophic event such as war or natural disaster. Then in 2004, PPS added a Customer Relationship Management (CRM) function to improve customer services and be able to better respond effectively to customer needs. Useful information on prices, products and companies is offered to individual customers to accommodate individual needs. PPS has also improved customer services by becoming the first Korean public institution to complete an online Call Center, which offers a video call consulting service and on-screen notices.

Moreover, the new Knowledge-based e-Catalogue System automatically searches and standardizes catalogues with various classification and code systems. Thus anyone can easily locate the product information, which in turn stimulates an even greater use of the online purchase system.

In 2005, a mobile service was added that allows users of PDAs to access bid information and participate in bids. Subsequently, a true ubiquitous e-procurement is now in place for business people by enabling mobile business on buses, trains or other means of transportation.

GePS: International Recognitions

- People from over 30 nations have attended GePS training course.
- In 2004, the UN selected GePS as a "Best Practice" in the Online Procurement category.
- GePS received the UN Public Service Award in 2003 and "Global IT Excellence Award" from World Information Technology and Services Alliance (WITSA) in 2006.

The global community recognizes the excellence of GePS, which has garnered various awards. The United Nations Department of Economic & Social Affairs (UNDESA) chose PPS as the winner of the United Nations Public Service Award in 2003.

GePS has also received attention from other international organizations, including OECD and the World Bank. The OECD indicated that Korea's e-procurement program was effective and had a strong ripple effect on information and communications technology used in the private sector.

Also OECD assessed GePS as "No further action is required". More recently in May 2006, PPS was awarded the "Global IT Excellence Award" from WITSA for its effort to innovate customer service through IT.

Even though GePS is rated so highly, PPS continues to improve its competitiveness by participating in meetings by the United Nations Center for Trade Facilitation and Electronic Business (UN/CEFACT), which promotes e-commerce standardization. In March 2005, GePS procedures were brought in line with UN standards for electronic tenders, as the Korean government helps to set a global standard for e- business processes regarding e-bidding.

Delegates from 13 countries in International Administration Development Program visit PPS

Furthermore, the growing international reputation of GePS and the ongoing effort by PPS has made it a benchmark target around the world. PPS has been invited to introduce its e-procurement system at more than 60 international seminars and conferences organized by international organizations such as the World Bank and OECD.

Representatives at the International Conference on e-Procurement

More importantly, the Korean e-procurement system has been highly praised by the international community and has been benchmarked by Hong Kong, Taiwan, Vietnam, Pakistan, Sri Lanka, Laos, Malaysia, China, Japan, Turkey, Costa Rica, Brazil, the Ukraine, Russia, Rumania and Iran. PPS has conducted a feasibility study for the government of Vietnam and Pakistan, as a part of the e-procurement consulting service.

In addition, Multilateral Development Banks (MDBs) have been closely monitoring GePS, and PPS has also given policy briefings to the World Bank, Inter-American Development Bank (IDB) and Asia Development Bank(ADB) at the end of 2005. PPS has been prompting e-procurement among MBDs, which are interested in improving procurement in developing countries. For example, PPS organizes joint seminars, provides training on e-procurement to public officials and conducts feasibility studies in various countries.

PPS plans to continue to cooperate with MDBs to diffuse and expand e-procurement to the world for further government procurement innovation. As a resource speaker of MDBs during 2006, PPS was invited to introduce on GePS at MDBs' holding workshop on e-procurement; China (April), India (May), Thailand (May), Vietnam (September) and Kazakhstan (May and October). Above all, PPS will provide e-procurement training based on GePS for Vietnamese and Kazakhstan governments' procurement officials in June and October, which is a collaborative project with MDBs.

Details		Date/Venue
Seminar participation	International Anti-Corruption Conference organized by ADB and OECD	April/Hanoi
	Global Forum on Reinventing Government	May/Seoul
	4th UN Anti-Corruption Forum	June/Brasilia
	Taiwan government's "Forum on e-Government"	June/Taiwan
	Hong Kong government's "Evolution of e-Government"	June/Hong Kong
	Expert group on integrity in public procurement	June/Paris
	Briefing on e-procurement in Turkey	November/Istanbul
	E-procurement workshop in Laos	February/Vientiane
	Report on Vietnam feasibility study commencement	March/Hanoi
	Pakistan -Report on feasibility study commencement -Report of feasibility study conclusion	May/Islamabad November/Islamabad
International conferences	Canada PWGSA	January/Ottawa
	ALPIT 2005 conference by Ministry of Information and Communications	June/Bangkok
	APEC procurement specialist conference	September/Gyeongju
Seminar organization	E-procurement conference co-hosted with ADBI and UNESCAP	June/Seoul
Visits to international financial institutions	World Bank and IDB	October/Washington
	ADB	November/Manila
Public Relations	International fair on government innovation	May/Seoul
	Benchmarking by Costa Rican broadcasting station	August/Seoul
Benchmarking visits, Training	Myanmar ICT development training group	January/Daejeon
	Vietnam Ministry of Trade & Investment	January/Seoul
	China IT benchmarking group	January/Daejeon
	WTO government procurement agreement delegation	February/Daejeon
	Japan Ministry of Economy & Industry procurement experts	March/Daejeon
	Central Officials Training Institute -Russian public officials -Malaysian public officials -Malaysian public officials	March/Daejeon April/Daejeon May/Gwacheon September/Gwacheon
	World Bank experts	May/Seoul
	Ukrainian procurement corp. visitors	June/Daejeon
	Vietnamese government auditors group	October/Daejeon
	Seoul University program for foreign public officials	October/Seoul
	Officials from Japan's Ibaraki Prefecture	November/Daejeon
	E-procurement officials from Laos	November/Seoul

GePS: Pioneer in Procurement Innovation

- The system received the BS15000 certificate (international recognition and a first for a public organization) from the British Standards Institution.
- From GePS a new niche in global IT market has been secured.

The achievement of GePS was confirmed with the bestowal of the UN Public Service Award, and its name is now a standout in e-procurement administration around the world, bolstering Korea's recognized status. Moreover, international standards organizations have reflected the procedures of GePS in their proposed standards for e-Tendering. In 2005, PPS became the first public agency to obtain the BS15000 certificate from the British Standards Institute.

PPS has been developing a strong international reputation and network for GePS. It will continue to cooperate with the World Bank, IDB and ADB in order to assist developing countries in building e-procurement systems. As a result, PPS will contribute to capacity building around the world.

PPS was selected as a "Best Practice" in e-procurement, and OECD referred to GePS as reaching the level of "no further action required". However, PPS has continued to make improvements and adopt advanced operating systems such as ITSM and ITA. In addition to these internal efforts, various forms of international cooperation are allowing PPS to share its experience in procurement efficiency and transparency with an ever-increasing international audience, leading innovation of procurement administration around the world.

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KOCCA, a New Driver for The Korean Creative Content Industry

Ministry of Culture & Tourism

KOCCA, a New Driver for The Korean Creative Content Industry

Korea Culture & Content Agency (KOCCA) was established to support The creative content industry of Korea as demand for content is skyrocketing with the rapid development of information and communication technology (ICT) and the emergence of various new media. Even though it is a private entity, KOCCA serves for the public good. The Korean Ministry of Culture and Tourism (MCT) is playing a pivotal role through KOCCA to foster the content industry, which is described as the "Korean wave", Korean contemporary pop culture.

KOCCA: Pioneering Creative Content Exports of Korea

- Impressed by the "Korean Wave", China, Japan and Southeast Asian countries are benchmarking success factors of the Korean creative content industry.
- KOCCA effectively support Korean companies' overseas marketing & promotions through overseas offices in Japan, China, the U.S., and Europe.
- KOCCA organizes the Korea pavilion at major international exhibitions like MIPCOM and MIPTV.

KOCCA provides comprehensive support to the Korean creative content industry. The Agency is laying a firm foundation for the industry's healthy growth, strengthening the nation's capability to create contents, training human resources, and facilitating export of the nation's creative products. KOCCA supports efficient investment to Korean content producers and distributors to generate synergy effect and boost international competitiveness.

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Assistant Minister | Inspector General | General Services Division | Policy Management & Public Relations Office | Religious Affairs Office | Cultural Policies Bureau | Arts Bureau | Cultural Industry Bureau | Culture Media Bureau | Tourism Bureau | Sports Bureau | The Planning & Development Commission for the Tourism & Leisure City
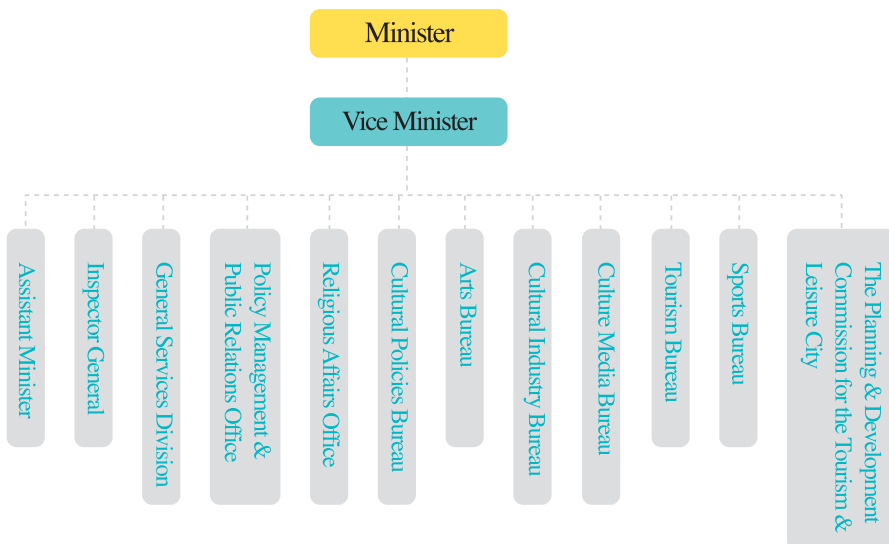
KOCCA Structure

Currently, companies in the U.S., Japan and a few other powerhouses armed with huge domestic markets and massive capital dominate the international content industry. The MCT recognizes the economic value of cultural contents and has taken strategic measures to foster the industry. To this end the Framework Act on Culture Industry Promotion was passed in February 1999 and culture technology (CT) was designated as one of the six fields for focused development in July 2001. KOCCA was established against this backdrop, creating a framework through which the government can provide systematic support to the industry so that creative and original cultural contents from Korea can be competitive internationally.

To start with, KOCCA is committed to cultivating a global mind-set and vision for cultural content professionals. The agency offers various programs to train leaders and key managers who are ready for the globalization of the industry. In addition, KOCCA supports quality creative contents creation, offering help in identifying excellent contents, assisting production equipment and technology and developing pilot products to attract fresh investment from home and abroad. KOCCA is also helping domestic companies to enter foreign markets by operating websites for overseas branch offices, promoting and marketing their products overseas, and assisting with their participation in international exhibitions.

These strategic efforts to foster the cultural content industry have started to pay off. The Korean Wave has fueled exports of Korean creative contents.

The success of the cultural content business has implications far beyond the industry. It stimulates exports of other Korean products and boosts the national image. Moreover, China, Japan and Southeast Asian countries, where the Korean Wave is strong, are analyzing the factors behind the cultural content business success of Korea and looking for ways to stimulate their own culture industries. These countries' attention is focused on KOCCA and its system of support. The agency has built credibility by carrying out international cooperation and assistance projects, and has responded quickly and flexibly to cultural content industry demand, making Korea a major cultural product provider.

Korean Wave Sweeping Beyond Asia

- The Chinese government is enthusiastic about adopting the KOCCA system of cultural content business support.
- KOCCA has improved Korea's image through cooperation with Asian countries in the content field.
- Delegations from a dozen countries (Japan, Taiwan, China, Vietnam, Australia and others) visited KOCCA to learn its support system for the creative content business.

Korea's strategic support system for the creative content industry has been benchmarked by China, Japan, Hong Kong, Taiwan and Malaysia-countries experiencing the power of Korea's pop culture through the Korean Wave phenomenon. In 2003, the Chinese government announced a policy to promote its content industry by integrating broadcasting, telecommunications, and information networks, and it is eager to create a support system similar to that of KOCCA. In 2005, the Chinese Ministry of Culture authorized the establishment of national centers to promote animation, cartoons and computer games in Shanghai, Sichuan, and Dalian. Currently, 29 such centers are in operation across China. Chinese representatives to the Korea, China, Japan have played a significant role in formulating culture industry-related policy. The annual forum has been hosted in turn by Korea, China, and Japan since 2002.

The Taiwanese government, meanwhile, announced a policy to nurture its semiconductor, display, biotech and digital content businesses in 2002. The stated goal was to expand the proportion of the content industry in total exports from 10% in 2001 to over 30% by 2006. Exchanges with Korea have been promoted to help the process. Prior to forming a content industry promotion organization, the government sent a delegation of some 30 lawmakers and high-ranking officials to Korea to benchmark KOCCA and the National Assembly Subcommittee on Culture & Tourism in 2005.

Japan is the world's second largest creative content producer. The animation exports to the U.S. was four times higher than its steel exports to the U.S. in 2002. Yet officials from Japan's Ministry of Culture, Ministry of Economy, Trade & Industry and the Digital Content Association of Japan (DCAJ) have still opted to visit Korea repeatedly since 2003. In May 2004, the Japanese government enacted a law to protect the content creation and promotion and established a film industry promotion organization under the initiative of the Federation of Japanese Industries.

Meanwhile, KOCCA hosted the 1st Asia Cultural Industry Forum in March 2005 to facilitate cooperation and exchange in the content industry. Eighteen officials from seven Southeast Asian governments and public organization attended. Since Malaysia's Multimedia Development Corporation (MDC) signed an MOU with KOCCA, KOCCA and MDC have maintained close ties through various exchanges.

In 2005 alone, 105 people from a dozen countries, including officials of the Vietnamese Ministry of Culture & Communication and the Australian Film Commission, came to Korea to benchmark KOCCA's approach for fostering the creative content industry. In China, U.K., and Germany various forums and seminars were held on ways to strengthen their cooperation with Korea in the field.

Recently, KOCCA has taken steps to expand overseas content markets over its relatively limited domestic demand. KOCCA opened branch offices in Japan, China, the U.S. and Europe, and operates Korea pavilions at major international trade fairs including MIPCOM and MIPTV.

These endeavors have started to bring about tangible results in terms of greater content export volume. Business Meetings have been held with U.S., Japanese and French companies on animation exports totaling US$70 million, and US$40 million in contracts have already been concluded. In addition, contracts signed for exports of cartoons, music, characters (licensed merchandise) and mobile content have surpassed US$30 million. The combined export total has thus reached some US$70 million, while talks are underway for additional projects totaling more than US$90 million.

Asia Cultural Industry Forum attendees visit a music studio

unit: US$ million

Increase in Korea Exports of Cultual Contents
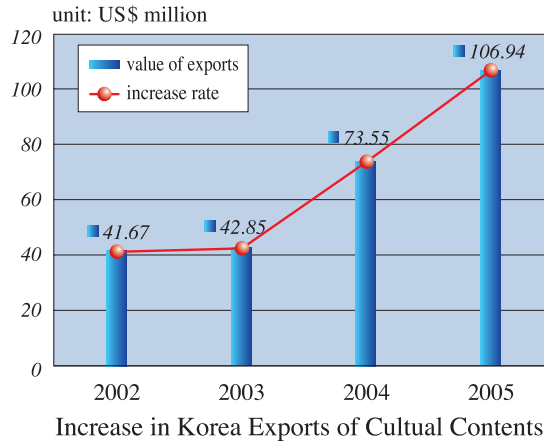
KOCCA: Internationally Recognized Locomotive of Korea's Creative Content Industry

- KOCCA is strengthening its networks with the U.S., Japan and China for cooperation in the content field.
- KOCCA is steadily supporting Korea's content industry to keep it internationally competitive.
- KOCCA is improving Korea's national image through global promotions of Korean creative content.

KOCCA's overseas marketing activities are firmly establishing Korea as a creative content powerhouse. At the same time, the agency is strengthening its networks. For example, KOCCA invited 34 prominent business persons from the U.S., U.K., France, Japan, Hong Kong and Malaysia to visit Korean creative content developers and to build ties with them.

Matchmaking at the Korea Pavilion during international exhibitions

KOCCA will strengthen partnerships with relevant private entities and academia to form the backbone of the comprehensive support system for the nation's creative content industry. The Agency is also establishing a cooperative framework with local government agencies and the business communies to promote the content industry of each region in Korea. Such efforts are helping domestic content industry players to improve their export competitiveness.

KOCCA is committed to developing the cultural content business to become a major export industry as well as to help Korea join the world's top five content providers. By enhancing its overall competency, KOCCA will realize its vision of making Korea a creative content powerhouse.

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KNPA Boasts Standout Cyber Crime Investigation Capabilities

Korean National Police Agency

International Cooperation Network

Continent	Countries
Europe	42
Asia	15
America	17
Africa	11
Oceania	5
Total	

Korean National Police Agency   Cyber Terror Response Center

KNPA Boasts Standout Cyber Crime Investigation Capabilities

The Korean National Police Agency (KNPA) is combating the spread of cyber crime by strengthening the cyber crime investigation organization, securing cyber crime experts and equipment and stepping up cooperation with overseas counterparts. The agency is also committed to arresting notorious hackers, dispatching police trainers overseas and benchmarking the best practices of other countries. Through these efforts, the KNPA is securing some of the world's best cyber crime combating capabilities and raising Korea's international status as a leader in cyber crime investigation.

KNPA Boosts Cyber Crime Investigation Capabilities & Cross-border Crime Prevention Role

- The Agency spearheaded the creation of an 89-nation cooperative network for cyber crime investigation.
- The apprehension rate of cyber criminals has improved significantly, thanks to enhanced investigation competencies.

The KNPA remains committed to improving its capability to combat rampant cyber crimes and to protect global citizens in cyber space. The Hacker Investigation Squad was formed in 1995, followed by the Cyber Crime Investigation Squad in 1999 and the current Cyber Terror Response Center (CTRC) in 2000 to better respond to rapidly changing cyber crime patterns.

In addition, the KNPA aims to prevent cyber crimes, which are growing ever more sophisticated, and to take the lead in developing new investigation tools and technologies. The Agency's endeavors include the development of state-of-the-art equipment, such as software to extract digital evidence and the operation of a cooperative network led by the CTRC. Through this network, local police agencies and police stations across the nation share information and technologies.

The Agency is also operating an online system that enables citizens to report cyber crimes and check the progress in an investigation, anywhere anytime. This system helps law enforcement to overcome limitations in investigating cyber crimes, which do not fall under the normal police jurisdictions and are less restricted by time and space than conventional offline crime is. Thanks to the system, law enforcement authorities can react more swiftly to cyber crimes.
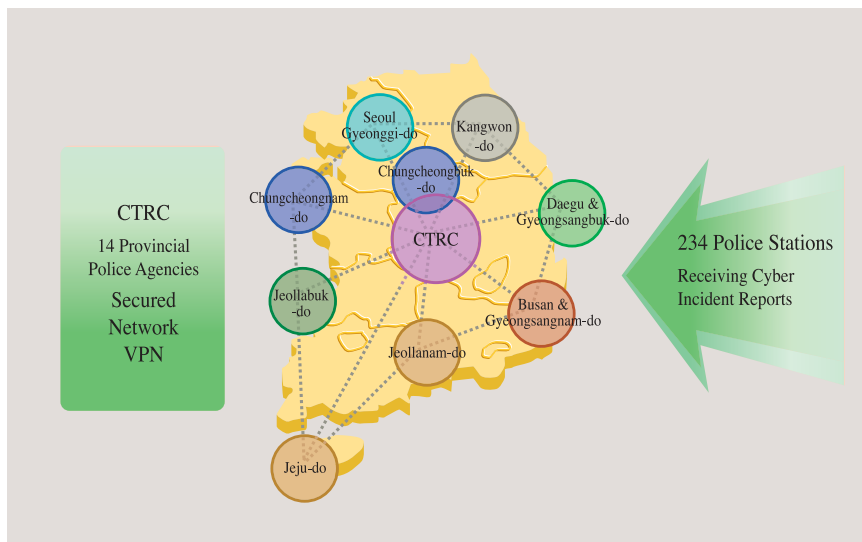
Cyber Crime Investigation Network

Cyber crimes are diversifying and growing increasingly sophisticated. The KNPA is operating a task force that provides various public services on its homepage, answering citizens' questions to help mitigate their fear of cyber crime. The website allows citizens to report cyber crimes and get counseling for cyber crime-related damage around the clock, helping the Agency to respond to cyber crime cases in a timely manner.

At the same time, the KNPA is resolutely cracking down on hacking, computer virus distribution, cyber violence and the operation of illegal websites by periodically conducting rigorous special investigations. The Agency takes particularly strong measures against cyber violence, personal information infringement and other cyber crimes that could lead to serious personal damage. Related posts are immediately deleted to prevent secondary damage from the crimes. As such KNPA stresses victim protection over capturing criminals.

The KNPA is also paying special attention to enhancing investigator professionalism, strengthening investigators' cyber crime combat skills through diverse training programs. The National Institute of Scientific Investigation offers its own training courses on cyber crime investigation and computer forensics to 240 officers every year, while commissioning external institutions at home and abroad to provide KNPA personnel with training programs on other specialized fields.

Since 2002, the KNPA hired 145 IT experts, 136 as police officers and nine as computer forensics researchers. In February 2006, the Agency added three Ph.D.s to its payroll to strengthen decryption capabilities, computer forensics and anti-hacking and computer virus efforts.

The Interpol Training Seminar for Computer Crime Investigators, 2004

The Cyber Terror Response Symposium, 2005

In December 2004, the Digital Forensics Center (DFC) was established with 14 researchers, including doctorate holders, on the staff. The Center develops investigation tools for hacking, malicious codes, decryption, network infrastructure and computer forensics and sets up legal guidelines and technological standards.

The international community's positive assessment of the KNPA's cyber crime investigation capabilities is seen in the increased incidence of international cooperation in cyber crime cases, from just one in 2000 to 77 in 2004. The CTRC works with Interpol by operating a contact point that allows investigators in 89 countries to cooperate in combating crimes in cyberspace.
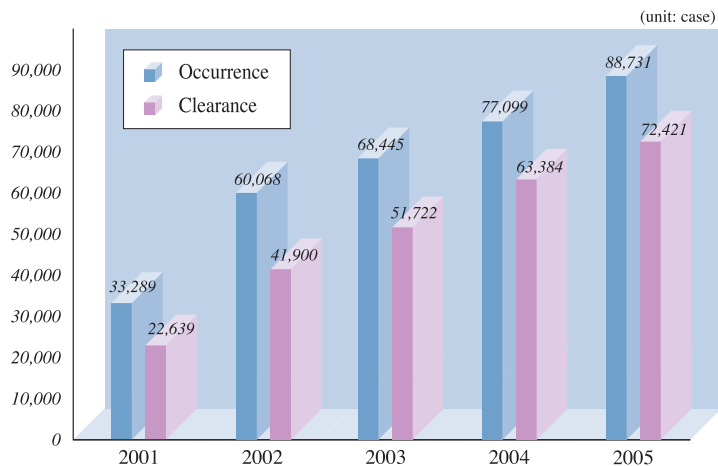
Cyber Crime Statistics - Occurrence / Clearance

In 2002, Korea hosted the 5th Interpol International Conference on Computer Crime, for the first time in Asia and the 4th Meeting of the Interpol Asia-South Pacific Working Party on IT Crime. In 2004, the 2nd Interpol Training Seminar for Computer Crime Investigators was held in Seoul. In November 2004, Korea hosted the 1st Asia-Pacific Train-the-Trainer Workshop on IT Crime Investigation at the formal request of Interpol, sharing its advanced IT crime investigation skills and systems with cyber crime investigators from across the globe. Korea's hosting of these international conferences demonstrates the world's recognition of the nation's high competence in cyber crime investigation.

The international community is now asking the KNPA to assume a greater role, as witnessed in the election of KNPA Superintendent Yang Kun-won, Korea's chief delegate, as the vice-chairperson in the 7th Meeting of the Interpol Asia-South Pacific Working Party on IT Crime held in Japan in December 2004.

CTRC: Venue for International Police Cooperation

- The KNPA has established a cooperative network with its French and British counterparts for cyber crime investigation and computer forensics
- The Agency welcomed some 300 people from about 40 countries to benchmark its advanced cyber crime combating system.
- The advanced investigation competency has resulted in the capture of notorious hackers.

Korea welcomed 176 foreign cyber crime investigators from 21 countries in 2004 and 135 more from 38 countries in 2005. These visitors benchmarked the KNPA's cyber crime combating system, investigators' specialties, training programs, state-of-the-art equipment and advanced investigation techniques.

IT Trainee Teams from seven countries, 2005

Delegations of investigators and prosecutors from five countries, 2005

The French National Police sent a group of police officers and prosecutors in 2004 and two police officers in 2005 to the Center for systematic training in CTRC's cyber crime investigation skills. To institutionalize the cooperation with its French counterpart, the Center signed a cooperation pact in cyber crime investigation and computer forensics with the French National Police in November 2005. Under the agreement, the two nations are establishing a cooperative network for combating cyber crime.

The CTRC also signed a cooperation agreement with Britain's National High Tech Crime Unit (HTCU) in October 2005 and is planning to forge similar agreements with the U.S. and other countries in 2006, helping to enhance Korea's cyber crime investigation capabilities.

A Japanese National Police Agency delegation benchmarked Korea's IT crime investigation system during its three-month visit to the CTRC in 1999. Since then, the two police agencies have maintained close cooperative ties. In October 2003, for example, the Korean and Japanese police jointly arrested a Brazilian hacker living in Japan who had manipulated the main pages of some 1,000 websites, including 58 in Korea, to display an anti-Iraq war slogan.

In May 2005, the CTRC dispatched two police trainers to the Malaysian-based Southeast Asia Regional Center for Counter Terrorism to transfer its investigation know-how and technology to the region. In October 2004, the Thai government sent a delegation consisting of 41 representatives from its police and prosecution departments and Court of Justice to the Center to study Korea's counter-cyber crime system. Thailand has used the study findings to create a similar system.

KNPA: Global Player in Cyber Crime Investigation

- The Agency has improved Korea's national image as an IT powerhouse.
- The KNPA is a front-runner in the prevention of international IT crimes the prevention of international IT crimes.

The KNPA, with its excellent cyber crime-fighting capabilities, is enhancing Korea's image in the international community. The Agency is also contributing to national security, as cyber crime is being transformed from simple pranks or theft to cyber terrorism and even cyber warfare.

The KNPA is leveraging its outstanding cyber crime investigation ability to fight international IT crimes, sharing its know-how with the rest of the world. This commitment has started to draw global attention, and foreign police agencies are requesting help and assistance from the KNPA.

The KNPA's accomplishments to date will not make it complacent. The Agency will continue to strive for global leadership in combating crime in cyber space by taking its investigation system to the next level.

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e-Customs System Used Worldwide

Korea Customs Service

e-Customs System Used Worldwide

The e-Customs system is designed to provide customers with customs services and information online. By simply logging on, clients can clear their imports or exports, receive customs duty refunds, manage import-export cargo and obtain various kinds of information, tailored to specific needs.

# e-Customs: Clear Import/Export Shipments from Anywhere

- Korea has established the world's first 100% electronic declaration-acceptance notification system.
- The system has cut annual logistics and clearance costs by US$2.2 billion.
- It can process over 160 million declaration acceptance notifications a year in real time.

Korea's e-customs system provides clients with swifter and more convenient customs services via the Korea Customs Service (KCS) portal site (http://portal.customs.go.kr). The system handles 136 customs-related processes online, including customs clearance for imports and export sand customs duty refunds, helping to lower clearance-related costs.

In the 1990s, Korea's trade environment changed rapidly. The import/export cargo volume was averaging 13% annual growth, while the number of customs officials was shrinking by about 6% a year. Clients were required to submit some 120 kinds of documents to various authorities to clear their shipments, slowing the customs clearance process, increasing logistics costs and weakening companies' competitiveness. Hence, the KCS was prompted to improve its work procedures.

The KCS decided to upgrade an online system that had been confined to storing statistical data and handling some simple customs services. Beginning with the development of an online export-cargo clearance system in 1994, the customs authority has expanded the scope of its online service to import-cargo clearance, customs duty refunds and information on cargo tracking and monitoring as well as on travelers. In 2005, it opened an Internet portal site where clients can declare imports and exports and apply for a customs duty refund anywhere and anytime.

Now the KCS is operating a comprehensive online system that covers the full scope of customs administration. The e-customs system has reduced the time needed for clearance from more than two days to within one and a half hours, and cargo handling time from over ten days to a mere 4.5 days. Reduced paperwork and simplified clearance procedures have saved some US$2.2 billion in annual logistics and customs clearance costs.
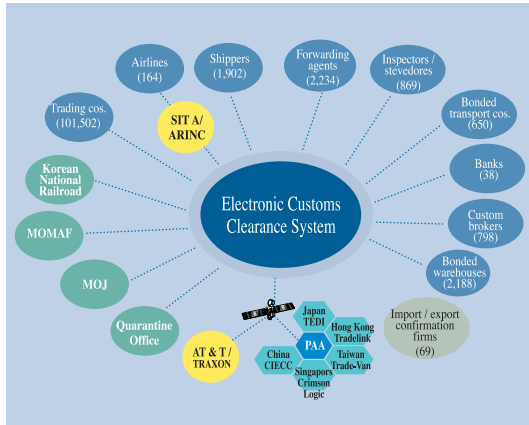
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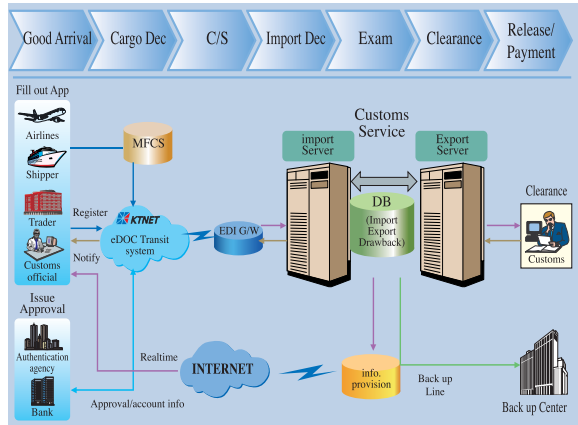
e-customs Flowchart

At the same time, the e-customs system has enhanced KCS's data analysis capabilities. The Agency's collection of penalties for illegal foreign exchange transactions, smuggling, unlawful trade practices and tax evasion has increased from US$436 million in 1998 to about US$5.6 billion in 2005. Most importantly, the e-customs system has laid the groundwork for a more transparent and efficient customs administration, eliminating the use of paper work customs clearance procedures. It is the first system to handle 100% of declaration-acceptance notifications, now more than 160 million a year, online.

Smuggling Interdiction by KCS

unit: 1,000 cases

	2000	2001	2002	2003	2004	2005
value & deals	3,606	3,604	4,021	4,318	4,635	4,720
value imports	3,209	3,223	3,802	4,037	4,337	4,782
total	6,815	6,827	7,823	8,355	8,972	9,502

Goods Passing through Customs

unit: US$ billion

	2000	2001	2002	2003	2004	2005
outbound	172,268	150,439	162,471	193,817	253,845	284,419
inbound	160,481	141,098	152,126	178,827	224,463	261,238
total	332,749	291,537	314,597	372,644	478,308	545,657
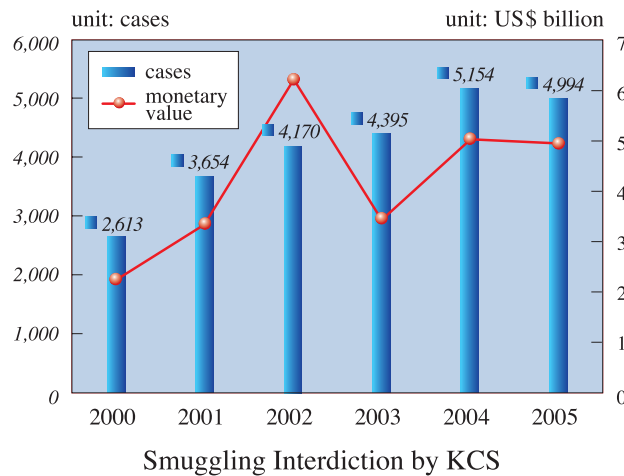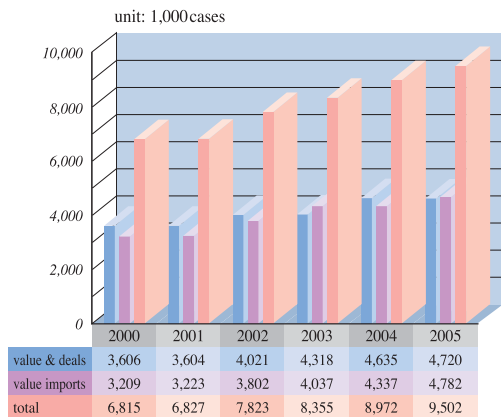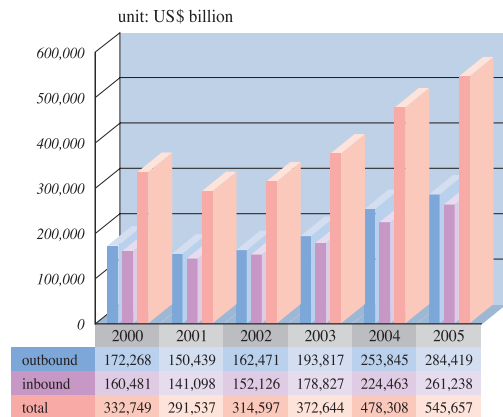
Goods Passing through Customs

e-Customs: a World-class Name in Electronic Customs Administration

- The system was selected as a "Best Practice" in the Electronic Customs Clearance category at the UN International Anti-corruption Forum in 2001
- It was also selected as a "Best Practice" in the Customs Administration Innovation category by Inter-American Development Bank and Asian Development Bank.
- The system is recognized for excellence by international organizations such as the WTO and APEC.

Korea's e-customs system has already been globally recognized as one of the world's most advanced. Its excellence was demonstrated and applauded at the 25th Korea-Hong Kong Customs Commissioner Meeting (December 2004), 11th Korea-China Customs Commissioner Meeting (December 2004), 3rd Korea-Kazakhstan Customs Commissioner Meeting (April 2005) and 3rd Korea-Mongolia Customs Commissioner Meeting (April 2005).

The service has been firmly established as a global leader in the e-customs arena by being selected as a "Best Practice" case at the UN Anti-corruption Forum in 2001. In particular, the systems for checking import/export requirements and tracking cargo made the list of the six best examples of customs administration innovations in 39 countries as assessed by Inter-American Development Bank (IDB) and Asian Development Bank (ADB).

In addition, the KCS introduced two e-customs-related services, including a cargo tracking system, to the APEC Sub-Committee on Customs Procedures (SCCP) and has recently been invited to the WTO and APEC to demonstrate its e-customs system.

Even before the international acclaim, Korea's e-customs system drew attention from Vietnam, Thailand, Kazakhstan and Mongolia. In response, the KCS has shared its e-customs know-how and provided technical support to the four countries by organizing customs commissioner meetings and signing customs cooperation agreements.

The Kazakhstan President ordered the modernization of his country's customs administration after an official visit to Korea in 2003. The Kazakhstan customs authority signed a US$400,000 deal with a consortium composed of KTNET and Samsung SDS for the modernization of its system. This consortium had played a pivotal role in the development of Korea's e-customs system.

At the same time, the Dominican Republic is benchmarking Korea's e-customs system as part of its customs administration modernization program. In particular, Dominican Customs has expressed great interest in adopting Korea's system for their customs. Seven Asian countries, including Singapore and Taiwan, have put Korea on their list of countries to benchmark and have started to send their customs officers to Korea to learn about its e-customs system. The KCS is providing technical assistance to Latin American countries as well.

A New Paradigm for Customs Administration

- The Korean e-customs system has been exported to the Kazakhstan Customs Service.
- Ubiquitous access has been achieved by linking up a global network among customs authorities.
- The system has boosted national competitiveness by helping to expand export markets.

The export of Korea's e-customs system to the Kazakhstan Customs Service served as an opportunity for the KCS to demonstrate the excellence of the system to developing countries. Other countries seeking to modernize their customs system (the Dominican Republic, Tajikistan and Kyrgyzstan) are now showing interest in Korea's e-customs system.

The export of Korea's e-customs system was made possible by the KCS's ceaseless endeavor to improve its own customs administration system as well as by an aggressive marketing campaign. The KCS is helping to cultivate new export markets by informing the world about the advanced administrative systems and technologies employed by Korea's public and private sectors. The overseas sales of the system have also enabled Korean enterprises to secure advantageous positions in those markets and established points from which Korea's trade automation infrastructure can make inroads overseas.

The export of Korea's e-customs system to developing countries has helped to create more favorable customs environments for Korean exporters. Previously, arbitrary law enforcement in these countries caused difficulties for Korean exporters in the process of customs clearance.

Meanwhile, the World Customs Organization (WCO) is pushing ahead with a project to set up an international standard for customs-related e-documents. Korea's exports are setting the stage for having the Korean system be selected as the standard.

The KCS is not satisfied with achievements to date and has set a five-year plan to further develop its customs system. Under the plan, the customs authority opened an Internet portal site where customs clients can declare imported and exported goods and request payment refunds anywhere and anytime. As such, the KCS is laying the groundwork for Korea to become a global leader in the field of ubiquitous customs services.

These efforts are resulting in a customs bloc with Korea as the focal point. Thus, Korea can play a prominent role in international bodies such as the WCO and emerge as a global leader in 21st century customs administration.

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IIAC: A Top-class Airport Operation System Envied Worldwide

Ministry of Construction & Transportation

A Top-class Airport Operation System Envied Worldwide

The state-of-the art Integrated Information Communication System (IICS) connects the airport to a single information network, allowing Incheon International Airport (IIAC) to monitor and manage the airport 24 hours a day. The IICS provides integrated data management and rapid response in emergencies, while systematized facility control ensures maximum value corresponding to customer needs and provides the best services available anywhere.

IIAC Operation System:
Integrating High-tech Facilities & High-quality Services

- IIAC placed the "Best Airport Worldwide" in the 2005 AETRA Award, which was jointly conducted by the Airport Council International (ACI) and the International Air Transport Association (IATA).
- Furthermore, IIAC was named "Best Airport in the World" by Global Traveler magazine 2004, once again demonstrating its commitment to customer service.
- Airport operation efficiency of IIAC is being maximized through continuous facility management and upgrading, enabling IIAC not only to be a world class air hub in Northeast Asia but also the world's best airport.

Transporation Center

IIAC can cater to 24 cargo airlines at a same time and handle up to 2.7 million metric tons of cargo per year with its 24-hour automated logistics systems.

IIAC is an airport of the future, capable of operating 24 hours a day under any atmospheric condition with its cutting edge Integrated Information and Communications System.

This masterpiece, shows the latest technologies available. Moreover, the state-of-the-art passenger service facilities of IIAC comply with the ISO 9001 in the basic design stage. Service quality standards as well as the world's best service program in terms of overall operation service management are also being performed.

The BHS facility of IIAC

The IICS runs Incheon International Airport like a living organism, maximizing airport service efficiency and convenience. In addition, Incheon International Airport is the first airport in Asia to feature the latest high-tech navigational aid system, ensuring over 100 meters of clearance and guiding aircraft to a safe landing. The Baggage Handling System (BHS) of IIAC delivers all baggage swiftly and accurately. The BHS is divided into two main parts: The Departure and Transfer Baggage automatically sort baggage per flights with different destinations, while the arrival baggage is being delivered for arrival passengers. The current BHS in operation has over 3,000 driver units and more than 20 kilometers of conveyors.

This baggage handling capability allows the airport to process up to 6,400 inbound passengers quickly and conveniently per hour. The Automated BHS can deliver 32,000 pieces of baggage per hour from 15 collection points. Moreover, 95% of the outbound passengers at the airport can check-in for their flight, pass through the security check and complete the departure clearance within 45 minutes, while inbound passengers pass through customs, immigration and pick up their baggage within 40 minutes after stepping off the plane.

In addition, IIAC firstly adopted in Asia "Dual View X-ray Screening", taking airport security to the next level. The system consists of passenger X-ray machines and baggage X-ray machines that scan both vertically and horizontally, providing a more thorough search for hidden smuggling goods.

Automated Baggage Handling System

Single viewer image   Dual viewer image

In addition to the above service programs, IIAC organized "Committee for Service Improvement" (CSI) to oversee ongoing quality improvements. The CSI is applied to the Korean regulations for disabled persons and international standards for facilities to assist the disabled in order to maximize efficiency and convenience. Meanwhile, IIAC continues to renovate systems in order to allow passengers-particularly the disabled, elderly and children-to use the airport facilities easily.

Using such advanced facilities and operational technologies, IIAC was named "Best Airport in the world" in 2002, 2003 and 2004 respectively.

In addition, IIAC was ranked "Best Airport Worldwide" in 2005, jointly by the IATA and ACI, and was selected one of the "World's Best Airports" by Global Traveler magazine.

IIAC originally benchmarked many of the world's leading international airports such as Changi Airport in Singapore, Hong Kong International Airport and Schiphol International in Netherland, however, Incheon International is being benchmarked from abroad.

Cutting-edge systems and operation:
In the limelight of an international benchmark

- IIAC has transferred its technical know-how to airports in China, Thailand and Angola.
- IIAC was the first airport to receive ISO 9001 certification for its airport operation category.
- IIAC has been visited 229 times by a total of 2,556 persons for benchmarking.
- IIAC exported US$240,000 for consultants working to redesign the airport in Angola.

Airports today have expanded beyond the traditional transportation gateway to become venues for the exchange of people, logistics, information and cultures. Trade, tourism, finance and information and communications can all be met at one convenient location. In line with this trend, IIAC is growing beyond a transportation base into an entirely new concept: the all-round, full-feature "Air - City". IIAC also aims the Northeast Asian air hub for integrating cargo, business and passengers, as well as being an economic engine to strengthen Korea's national competitiveness.

Airport terminal

Given their importance, airports in the world are in a severe competition to acquire the world's best facilities and operation. The opening of IIAC has captured the attention of the airport community worldwide and its operation and facilities has been served as a benchmarking model. Some visitors from abroad have shown keen interest in the "Dual View X-ray Scanning" and BHS system.

Since its opening in March 2001, a total of 2,556 people have made 229 visits to benchmark IIAC and learnt about the facilities and operation know-how. The 10-member expansion team for Passenger Terminal 3 at Beijing International Airport was the first to visit the airport, and more recently, Malaysia Airports Holdings Berhad (MAHB) visited in December 2, 2005 to benchmark IIAC's airport management and facilities operation.

"Incheon Airport has a very impressive design, and its facilities are perfect for meeting the needs of passengers," said Dato Mahat Samah, Senior General Manager of MAHB. Sixty percent of the official visits have been done by airports operators in Japan and China for their expansion and management. Other than that, Southeast Asia such as Singapore, Thailand and airports in the USA and Europe have also shown strong interest in airport operation know-how of IIAC. IIAC has been named Best Airport Worldwide according to the annual ACI / IATA Customer Satisfaction Measurement and Benchmark Program, which now covers 66 of the world's most progressive airports.

AETRA is an airport customer satisfaction benchmarking program that was jointly launched by IATA and ACI in December 2003, building on the success of IATA's Global Airport Monitor. The program is based on a questionnaire completed by passengers at the departure gate and is now the most reliable airport survey in the world.

IIAC has received considerable attention from overseas with its systematic facilities and successful operation proven by outstanding results. Airport Operators from abroad who visited IIAC have found that all areas from construction to operation and services are worthy of benchmarking.

For example, MAHB have adopted 74 items including transportation system operations and parking facilities in August 2004 after their first visit. Korean passengers who have visited Kuala Lumper International Airport might have easily found similarity as IIAC facilities due to the fact that its system has been adopted with many areas .

Moreover, Narita and Central Japan International Airports in Japan benchmarked Asia's first Dual View Security Screening and Barrier-Free passenger terminal design for the disabled. In addition, Central Japan International adopted the artificial trees and interior gardens of IIAC. Exporting technology improves the international competitiveness of IIAC and generates added value. Using such advanced facilities and operational technologies, IIAC has taken the lead in the Airport Construction Consulting Project in China, Thailand, Cambodia and Angola.

For instance, US$120,000 worth of critical know-how involving airport operation has been exported to the New Baiyun Airport in China, while US$240,000 is being used for consultants working to redesign the airport in Angola. The Thai government also requested IIAC to provide technical consulting services for Suvarnabhumi Airport. IIAC is also working with other Korean companies on projects related to the construction of new airports in Cambodia and Myanmar.

IIAC: A World-Class Air Hub in Northeast Asia

- With high-tech airport facilities, an ideal geographical location and high quality services, IIAC is emerging as the ideal logistics hub in Northeast Asia.
- To generate 10 million tourists annually, IIAC is constructing an air city complex, combining business and culture with leisure and entertainment through the strategic development of the airport's surrounding area.
- Operation capacity will be expanded to accommodate 480,000 flights, 100 million passengers and 7 million tons of cargo each year in 2020.

The 21st century is marked by a knowledge and information revolution in a global network economy. National barriers are breaking down, and all sectors-industry, culture, knowledge-are integrating. Amid such an international environment, IIAC is emerging as a world-class air hub in Northeast Asia.

A strategic and systematic airport city is under construction to provide a competitive mix of logistics, business and leisure amenities, enabling IIAC to become the Northeast Asian air-hub for integrating cargo, business and passengers services, as well as being a driving engine to strengthen Korea's national competitiveness.

IIAC continues to build upon existing services by revolutionizing logistics systems with the latest information-oriented and automated systems. The ultimate plan is to use unique hardware and software as the platform for automatic logistics and passenger transportation. Improved service through innovations in logistics enables IIAC to provide an exciting new experience for passengers and a destination that they will eagerly want to re-visit.

Customer needs and business partners are constantly changing. Strong competitiveness cannot be sustained by simply satisfying customer needs. Rather, innovative value creation is needed to offer new kinds of value after contacting customers via multiple channels, ascertaining what they need and improving upon those needs. Such features can be used to create new growth engines, taking competitiveness to the next level and providing the maximum value to satisfy customers and partners' needs. This is the way for IIAC to be the World Best Air Hub.

The ideal system cannot be built with computer hardware alone. The constant development and dissemination of services will create synergy between the most advanced airport technology and service programs and pervasively elevate airport functions. At the same time, an airport operation efficiency continues to rise.

Through these efforts, IIAC will increase its annual capacity to 480,000 flights, 100 million passengers and 7 million metric tons of cargo by 2020. At that time, IIAC will be a world-class air hub in Northeast Asia that offers the best safety and convenience.

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PCT-ROAD

Korean Intellectual Property Office

PCT-ROAD:
an International Standard for Patents

PCT-ROAD (Patent Cooperation Treaty Receiving Office Administration) is a one-stop automated patent application receiving system for national intellectual property offices. This Internet-based solution is part of the larger intellectual property office automation system developed by the Korean Intellectual Property Office (KIPO). PCT-ROAD is the first standardized patent application management system and is currently in use in many countries around the world.

PCT-ROAD System Recognized Worldwide

- International standards developed exclusively by KIPO with the World Intellectual Property Organization (WIPO)'s support.
- Automated, one-stop service for submitting international patents.

The PCT-ROAD system automates the receiving and initial processing of patent applications filed under the Patent Cooperation Treaty (PCT). The solution allows inventors to submit their applications on CD, floppy, or other digital media. PCT-ROAD makes sure the application conforms to international technical standards in the upload process, assigns an application number, issues filing confirmation, and manages international deadlines.
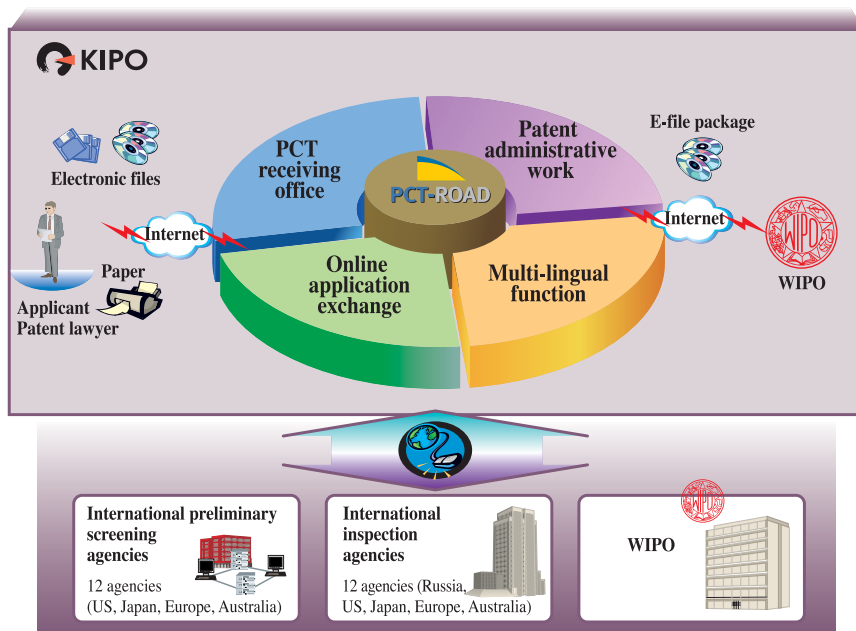
PCT-ROAD Concept Map

Prior to PCT-ROAD the WIPO developed PCT-SAFE, a solution that allows for limited electronic filing. While this software proved popular, it was limited in its features and could not easily keep pace with innovation. Further, many countries lacked the IT infrastructure to use PCT-SAFE.

These problems prompted WIPO to ask KIPO for its assistance. KIPO already developed an entire intellectual property office automation solution for its own use, and WIPO was impressed with its capabilities. In 2005 KIPO released PCT-ROAD offering a flexible solution that could easily be implemented by national intellectual property offices. WIPO offered and supported the software, with the help of KIPO, on its website (http://www.wipo.int/pctsafe/en/pctroad).

Europa Korea

PATyellow.com

IP Bulgaria.com

PCT-ROAD's implementation and growth has been reporter in Europe and Korea through PATyellow.com, c-Patent.com, *IP Law Business Technology Magazine*, and other foreign newspapers and websites. Such coverage has made PCT-ROAD a well-known system worldwide.

> *"All of the applicants can electronically file their PCT patent applications through PCT-ROAD efficiently while gaining the most benefits and receiving a financial discount".*
> *-Dr.Kamil Idris, Director General, WIPO*

Korea's PCT-ROAD Implemented Worldwide

- PCT-ROAD was selected as the international standard at the WIPO General Meeting in 2004.
- The superior function of PCT-ROAD elevated Korea's reputation as a technology leader.
- Intellectual property offices of many countries are rushing to implement PCT-ROAD.

The KIPO gained recognition for its world-class patent application system at WIPO's General Meeting where delegates from 140 WIPO member countries learned about the improvements offered by Korea's PCT-ROAD.

Differences in various countries' relevant laws and IT infrastructures have created problems in implementing PCT-ROAD. However, the system was selected as the international standard because of its excellent functions. Countries all over the world are benchmarking the system. Requests for technical consulting are soaring as countries adopt the new system and put it into operation. In 2005, the Israeli and Egyptian intellectual property organizations adopted PCT-ROAD. Israel decided on PCT-ROAD because of its efficiency, despite having done their own automation research.

Egypt's adoption of PCT-ROAD has helped to raise cooperative ties and IT information sharing between Korea and Egypt. The two countries are now promoting an exchange study program for intellectual property rights and laws.

Cooperation Meeting for PCT and Patent Information
Technologies between WIPO and KIPO(2006)

Many developing nations have asked Korea for consulting services. Korea has already assisted the patent offices of Vietnam and the Philippines. The Vietnam patent office has asked the Korean private sector for help with new business being generated from the PCT-ROAD system. India's intellectual property office received training from KIPO to supplement their own notable IT efforts. India is also a satisfied user of the PCT-ROAD system.

Activities	EGYPT	ISRAEL	VIETNAM	PHILIPPINE	INDIA
On-site Deploy	Performed	Performed	Performed	Performed	Performed
H/W Delivery	Delivered	Not Purposed	Delivered	Delivered	Not Purposed
Sample of WASP	Testing	Testing	Testing	Testing	Testing
Testing	Completed (User)	Completed (User)	Completed (User)	Completed (User)	Completed (User)

Major PCT-ROAD Implementations

In addition, the intellectual property offices of Finland and Singapore have tested PCT-ROAD successfully and are now introducing the system. North Korea, Malaysia and South Africa have asked Korea for help in benchmarking PCT-ROAD and installing the system.

Now that the PCT-ROAD system has been widely accepted, Spain's patent office requested KIPO to expand its business through joint further development of PCT-ROAD and offered KIPO 60,000 Swiss francs for development of a Spanish version of the PCT-ROAD for implementation in other countries. Development will be complete in early 2006, and it will be implemented in Cuba, Mexico, Columbia, Ecuador, and other Latin American nations. These events are elevating Korea's worldwide stature and role in patent office administration.

PCT-ROAD: the World's Top IPO System

- The KIPO is a bridge for new IT exports for private sector companies in Korea.
- Revenues of US$1.3 million are now earned from PCT-ROAD annually.
- Robust PCT-ROAD implementation is boosting Korea's competitiveness.

The convenience of the PCT-ROAD system is prompting greater use every year. To date, more than 120,000 patent applications have been filed with WIPO via PCT-ROAD. As a standardized system, its usage will save PCT applicants approximately US$378 million worldwide. Also the administration work at patent offices all over the world is being streamlined, reducing the need for redundant R&D in each country and encouraging international compliance with a single standard. Such benefits could cut costs to receiving offices by as much as US$2.2 billion.

There is a growing expectation that Korea will take the lead in helping set the international standards in this field. Korean private companies that participated in system development are now in a position to advance into the global IT market. This will result in innovative new business models in the intellectual property rights area. In addition, global adaptation of PCT-ROAD puts Korea in the lead of international technology standards for IP patent applications.

Having developed and provided PCT-ROAD, Korea is now working to integrate its system with the European Patent Office, one of the most influential in the world. Such integration will help Korean technology and standards lay the groundwork for creating the world's best patent administration brand.

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Forestation for Erosion Control Recognized by FAO

Korea Forest Service

Forestation for Erosion Control Recognized by FAO

Korea Forest Service (KFS) has technologies for creating forested environments that people and nature live in harmoniously. Beyond preventing environmental damage including flooding and air pollution, forests play important role in sustaining life. KFS has the technologies for preserving and nurturing sustainable forests amid growing human populations.

Korean Erosion Control and Reforestation Technologies Promise New Environmental Business Opportunities

- Disasters caused by deteriorative forest environment are increasingly sever today.
- Various programs for preventing deforestation and desertification in developing countries are now available such as forest management training program.

Developing forest management technologies for sustainable forest environments involves a vast spectrum of research covering both the natural and social sciences. In other words, policies and programs are created for numerous activities related to forest resources-planting, silviculture, harvesting, processing and utilization, sales and local residents' involvement. It is important that these diverse processes do not conflict with each other.

The forestation methods are numerous, and pinpointing the most effective measures for a specific location is not easy. The planting methods and suitable tree species are different according to local weather and soil conditions. Wells must be dug near the planting site to supply ample water. Sites with strong winds and shifting soil require windbreaks planted in grid patterns prior to full-scale replanting.

Restoration of a fire-damaged hillside suffering from soil erosion

Forest survey

Korea's forestlands were denuded by excessive exploitation and war during the first half of the 20th century. The Korean government decided to restore the forests in the 1960s. The first 10-year Forest Development Plan was launched in 1973 and the greening of Korea proceeded quickly. The deforestation issue has become a major global concern since the United Nations' "Earth Summit" in Rio de Janeiro in 1992. With serious environmental damage from deforestation worldwide, the international community recognizes the effectiveness of Korea's greening methods and know-how for soil and water conservation.

The forest managed well can offer a pleasant living environment and contribute to national economic development. This fact can easily be realized by comparing the healthy forests in the developed countries with the poor those in the developing nations. The economic value of forests is larger for indirect benefit coming from the promotion of environmental functions than direct returns from the wood products.

Developing nations today place a higher priority on immediate economic returns than on environmental policy for protecting forests. Indiscriminant forest destruction has accelerated the problems of soil depletion and desertification.

The environmental disaster caused by above the problems brings huge economic losses to not only the country concerned but also to the neighboring countries. The international community has tried various approaches to prevent such damage and improve the situation.
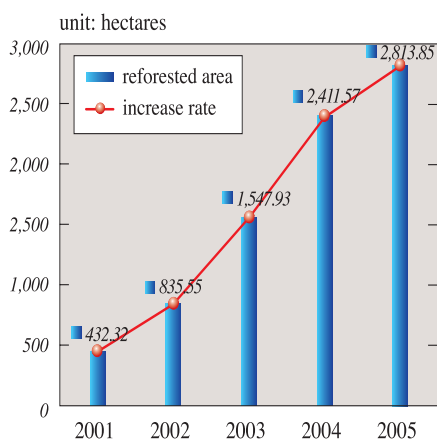

Public officials from more than 20 Asian and African and south American countries receive training on forestation

In step with this international trend, KFS has been organizing a two-week training program for public officials from developing nations (China and Mongolia among them) each year since 2001. The participants are introduced to Korea's successful effort to restore its deforested mountains. They learn techniques for sapling cultivation and silviculture to help combat desertification. They also visit costal site of tree planting projects for sand dune fixation, tree nurseries, breeding forests, and arboreta to see first-hand how Korean technology and methods work in the field. The training offers them a chance to consider new approaches to policy formulation and technology development in their home countries.

International Dissemination of Korean Technologies for Reforestation

- Technical know-how is being transferred through reforestation projects to fight desertification in Northeast Asia.
- International symposia and seminars are held regularly on desertification prevention in Northeast Asia.
- The Convention to Combat Desertification has been signed by 191 countries.

unit: hectares

reforested area
increase rate

3,000
2,500
2,000
2,500
1,000
500
0

432.32
835.55
1,547.93
2,411.57
2,813.85

2001 2002 2003 2004 2005

Korea amassed considerable technological expertise in the process of restoring its depleted forestland through 10-year Forest Development Plans during the 1970s and 1980s. Today, Korea is leveraging this know-how to play a leading role in reforestation and desertification prevention.

Increase in Reforestation Area to Prevent Desertification

Importantly, Korean methods and know-how in reforestation for erosion control have been applied in successful reforestation projects both in temperate Northeast Asia (China and Mongolia) as well as tropical Southeast Asia (Indonesia and Myanmar). Reforestation projects to prevent Chinese desertification cover 8,350 hectares (2001-05), including government-supported tree planting of 8,040 hectares (2001-05) in Western China and non-governmental tree planting of another 310 hectares in various regions. The main species used in China are the white poplar (Populus alba), scotch pine (Pinus sylvestris) and black locust (Robinia pseudoacacia).

In Mongolia, a total of 610 hectares have been reforested to combat desertification, including 500 hectares by the Northeast Asian Forest Forum (2003-05) and another 110 hectares by the Rotary Club (2005). The number of NGO projects will likely expand steadily in the future. The species most often used include the Scotch pine, aspen and Chinese pea shrub (Caragana sinica).

Korean reforestation methods transferred to China to help stop desertification

Meanwhile, the Indonesian tropical forests, sometimes referred to as "the world's lungs", are being destroyed at a rate of some 3 million hectares a year, and the deforested area has now reached 56 million hectares. The entire forest area is estimated to be 104 million hectares, of which 15% (21 million ha) has been converted to free rangeland. The remaining forestland is still disappearing fast, fueling concern over an impending global climatic disaster. However, Korean reforestation technology is now being used to restore some of the lost forests. Korean survey teams have been dispatched to Cambodia, and some forestland is being successfully restored there.

Desertification prevention project in Mongolia

A total of 191 countries, including North Korea, have signed the UN Convention to Combat Desertification to date, and South Korea's efforts in this regard are receiving more attention than ever. International joint research projects, seminars and symposia on desertification prevention through reforestation continue to be held to share technology and Northeast Asian desertification data.

Forming an International Consensus

- An interpersonal network is being built through exchanges on forestry.
- The collected data are used to develop forest resources in various nations.
- There is a growing effort to prevent damage from deforestation.

Prevention of desertification in Northeast Asia goes beyond environmental issues such as the dust and sandstorms referred to as the "Asian dust" phenomenon. The effort is closely tied to trade expansion and "resource diplomacy" (trading resources for political and financial support). Korea's provision of forestry-related technical support results in the formation of interpersonal networks that can play an important role in the future sustainable development of Northeast Asia and beyond. The government is also getting involved in desertification control projects in the former Soviet republics of Central Asia, home to many ethnic Koreans. In the process, Korea is laying the groundwork for playing a leading role globally.

The new networks are a channel for information on the current state of Korean forest R&D, inviting others to benchmark Korea. A platform has also been created for practicing "sustainable forest management" (SFM) on a global scale. At the same time, Korea can learn about forest R&D in other countries through international SFM conventions such as the United Nations Forum on Forests, and such information can assist Korea in developing overseas forest resources.

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Support Policy on Natural Gas Vehicles

Ministry of Environment

Support Policy on Natural Gas Vehicles

The Korean Ministry of Environment (ME) decided to improve urban air quality by replacing the numerous diesel-powered, exhaust-belching city buses with buses that run on clean-burning natural gas. This project resulted in the supply of more than 8,700 new buses between 2000 and 2005. At the same time, the project's success led to export contracts worth US$55 million to South America and Southeast Asia in 2004 and 2005. The project serves as an excellent example of balancing environmental preservation with industrial development.

Supplying NGVs to Alleviate Air Pollution

- Korea's air pollution composition now matches that found in advanced countries, while public demands for clean air quality have increased.
- The policy of supplying natural gas-powered buses has been successful.
- Both the central and local governments have promoted natural gas vehicles (NGVs).

The Korean government at all levels has promoted the use of NGVs to alleviate the ever-worsening air pollution in cities and satisfy citizens' growing demands for clean air. The goal is to replace all diesel-powered buses-which still generate large quantities of exhaust and are the most common city bus-with much cleaner natural gas models.

Current diesel-powered bus   New natural gas-powered bus

Until the 1990s, the main sources of air pollution in Korea were domestic heating systems and industrial facilities, and airborne emissions contained high levels of sulfur dioxide and other sulfur oxides. However, motor vehicles have become the leading cause of pollution since the late '90s, and the air pollutants are predominantly nitrogen-oxide compounds, ozone and microscopic particles-the kinds of pollution typically found in advanced economies.

These new problems could not be easily solved by the conventional approaches of tightening permissible emission levels for manufacturers, cracking down on operators or developing end-of-pipe treatment facilities. Korean engine technology in the 1990s was insufficient for achieving a rapid reduction in exhaust emissions from city buses. Thus, the public demands for cleaner air could not be met quickly.

The problem prompted the Korean government to consider ways to replace vehicles that run on petroleum derivatives with those powered by cleaner burning alternatives. In 1992, the government launched the G-7 Project, a project for development of the advanced environmental technology. One of these areas was NGV engines, which were seen as economically feasible as well as environmentally friendly.

The project started with an initial investment of US$13 billion and resulted in the development of a natural gas engine for city buses. Four buses equipped with this engine were test-operated in Incheon and Ansan (Gyeonggi Province) between July 1998 and December 1999. They proved to be virtually smoke-free and offered a comfortable ride. As such, they were well received by the general public.

The success of the pilot program allowed the government to start supplying natural-gas buses on a large scale from 2000. The Korea/Japan World Cup in 2002 accelerated the government's drive to improve urban air quality. The NGV engine technology also improved as the number of buses deployed increased: The government began mounting the engines in trash trucks in 2003 and expanded their use to school, commuter, airport and intercity buses in 2004.

Supply of NGVs
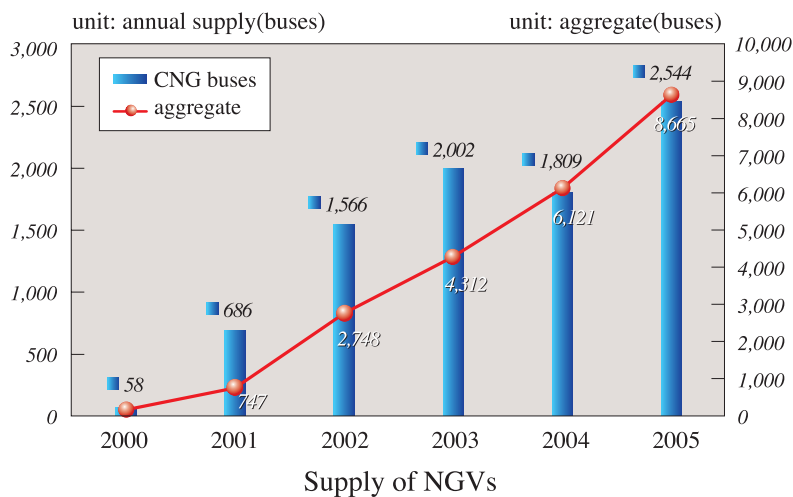
By 2005, Korea had 8,665 buses and 64 trash trucks in operation that were fueled by natural gas, with 212 natural-gas refueling stations servicing them. These numbers place Korea fifth in the world and the second in Asia, behind China. The government aims to have 23,000 natural gas-powered buses on Korean roads by 2010.

The key to the project's success has been the 50:50 matching fund contributions from the central and local governments. This approach has minimized any losses suffered by the bus companies and provided an alternative to heavy-handed environmental regulations. The government pays bus companies US$22,500 for each new NGV they buy, making up the price difference between a diesel-powered vehicle and its NGV counterpart. Moreover, bus companies are exempt from paying value-added or acquisition taxes. Initially, the clean-operating buses were only supplied to Seoul and other major cities, but the government subsidies have accelerated their adoption in smaller cities and towns (which now operate 50 nationwide).

NGV Supply Support Policy

Types of Support	City Bus Companies	Natural Gas Companies
Systemic	Regulations and recommendations in favor of NGVs	Installation in residential areas and green belts
Tax exemptions	VAT Acquisition tax	Installation fees deducted from income taxes
Business expenses	US$22,500 subsidy per bus	US$700 million loan per each refueling compressor (repaid over 5-10 yrs.)
Economic	Stabilized NG wholesale price Diesel: US$1.1/L CNG: US$0.59/m3 (Jan. '06) Exemption from pollution compensation fund	Stabilized NG wholesale price Private-use electricity priced at industrial-use rates
Other	New bus routes No write-ups for excessive exhaust emissions	

Korean NGV Policy and Technology:
a Lesson for the World

- NGVs are receiving more attention with soaring international oil prices and tightening environmental regulations.
- The world can learn from Korea's government policy and technology regarding NGVs.
- Korea is exporting NGVs and parts worldwide.

Meeting between Director of Singaporean environmental agency and Korean delegation

The NGVs and technology developed through the G-7 Project drew the attention of Southeast Asian countries for various reasons. First, the introduction program was highly successful in Korea, thanks to the coordinated support provided by the central and local governments. Moreover, oil prices have soared and environmental regulations have become stricter, while many Southeast Asian countries produce their own natural gas. Singapore, an Asian leader in environmental policy, was the venue for the Korean-Singapore NGV Road show, and the two countries signed an MOU on NGV policy and technology cooperation.

Korean representative's presentation to the Singaporean audience

Building on the success of the project, the NGV Export Promotion Joint Organization was formed, led by the Korea Association for Natural Gas Vehicles and consisting of representatives from the government, Korea Gas Corporation, the Asia-Pacific NGV Association, Hyundai Motors, Daewoo Bus, Kwang Shin Machine Industry and NGVI. The organization encourages information sharing and technology cooperation in the interest of export expansion.

Malaysian delegation in Korea in 2005

The government also takes part in various international events to introduce Korea's NGV supply policy and technology to the world. A nineteen-member delegation from the Malaysian government, the state-run oil company Petronas and Shell Oil Company visited Korea and studied the NGV supply policy and the state of technological development. Also the CEO of Westport, a Canadian firm, visited Korea to learn about the government's environment and energy policy, technology cooperation between CNG/LCNG refueling stations, and the development of vehicles using alternative energy.

Korea's technology and experience in NGV development and deployment is now being introduced overseas. As a result, Korea managed to export some US$33 million worth of NGVs and parts to 14 foreign countries in Southeast Asia, South America and Africa in 2005.

Propagation of NGVs Overseas and Future Vision

- Korean natural-gas buses have been sold in Southeast Asia, South America and Africa.
- Prospects are bright for NGV exports.
- Various promotional activities are under way for opening up new NGV markets.

Singapore, Thailand and Malaysia are studying the possibility of adopting NGVs to improve air quality. The Korean government held a briefing on its natural gas bus supply policy in Singapore in 2004 and an MOU was concluded. Since then, interest in Korean NGVs has spread beyond Southeast Asia to include South America and Africa. Korean exports of NGVs and parts rose from US$22 million in 2004 to US$33 million in 2005, and export prospects are bright in 2006 as well.

The Korean government continues to strengthen international cooperation on the environment. At the same time the government shares information on its environment-related policies and technologies and supports marketing programs to help Korean companies develop new markets for NGVs in Southeast Asia. NGV road shows are also organized to give Korea an edge in the future NGV markets of natural gas-producing countries such as Malaysia and Indonesia.
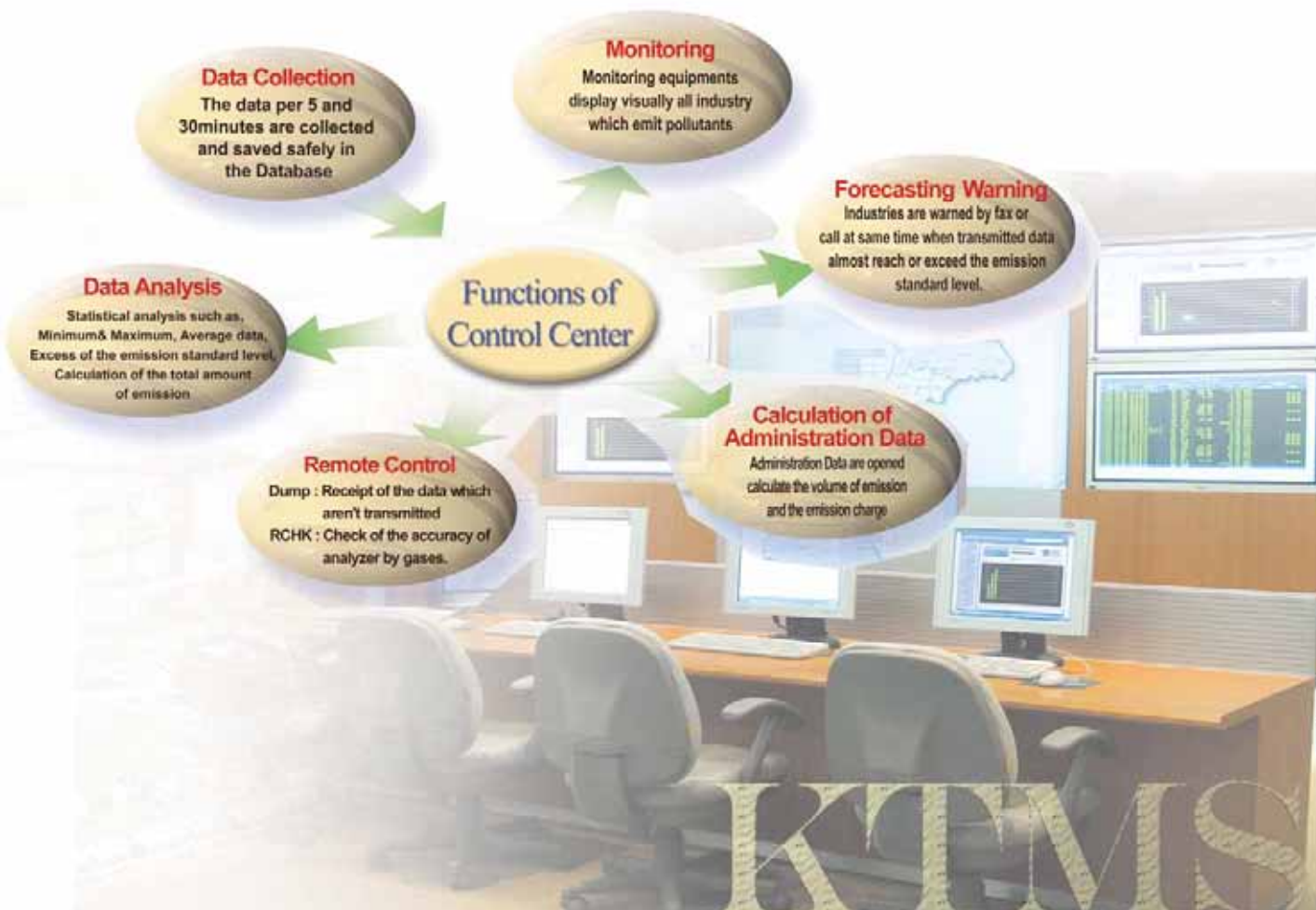
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Smokestack Tele-Monitoring System

Ministry of Environment

Data Collection
The data per 5 and 30minutes are collected and saved safely in the Database

Monitoring
Monitoring equipments display visually all industry which emit pollutants

Data Analysis
Statistical analysis such as, Minimum& Maximum, Average data, Excess of the emission standard level, Calculation of the total amount of emission

Functions of Control Center

Forecasting Warning
Industries are warned by fax or call at same time when transmitted data almost reach or exceed the emission standard level.

Remote Control
Dump : Receipt of the data which aren't transmitted
RCHK : Check of the accuracy of analyzer by gases.

Calculation of Administration Data
Administration Data are opened calculate the volume of emission and the emission charge
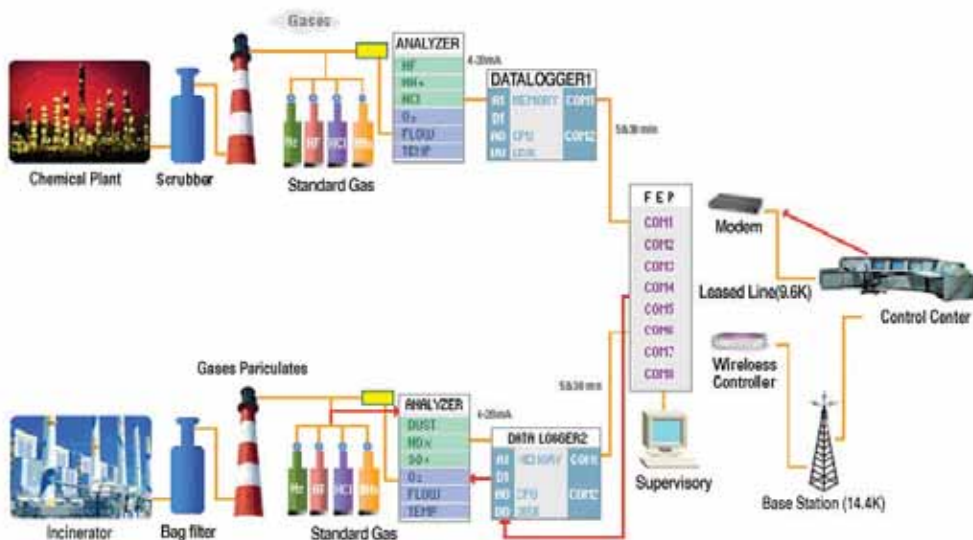
Smokestack TMS:
Advanced Pollution Prevention

The smokestack Tele-Monitoring System (TMS) automatically measures plant smokestack emission levels. This capability enables manufacturers to track their pollution generation volume remotely, while the data is transmitted via telecommunication networks to a location on the plant site for round-the-clock monitoring.

Smokestacks TMS:
Effective Way to Prevent Pollution Emissions from Smokestacks

- The functional effectiveness of the smokestack TMS has reduced the cost of operating pollution prevention facilities.
- Emissions exceeding national standard fell from 8,747 in 2002 to 4,622 in 2003.
- The technological success of the smokestack monitoring system has provided the platform for expanding smokestack TMS applications.

The plant and the control center are linked online, and the smokestack TMS measures the airborne pollutants being discharged from the smokestacks. The automatic measuring devices installed in the smokestack TMS are remote-controlled. Emission levels are ascertained in real time, prompting companies to improve their production processes. The subsequent reduction in pollution is helping to improve the quality of life for the public.

Smokestack TMS structure

The smokestack TMS implements does much more than monitor pollution levels. The data it collects and transmits are used to calculate the penalties to be imposed on polluters, improving the services that the government provides for public benefit. As such, the smokestack TMS plays an important role in ensuring administrative transparency.

The system also helps companies to control their pollution emissions in real time and thereby avoid having to pay punitive damages. Companies can dispel public controversies over their environmental record and reduce chemical and fuel costs by operating their facilities at the ideal level. The right prevention is unmistakably reflected in the effectiveness of management after the fact.

In 2002, the government enacted a system of fines to be imposed on companies for exceeding pollution limits. Within one year the number of violators had been cut almost in half, from 8,747 incidents to 4,622 incidents, clearly demonstrating the effectiveness of the smokestack TMS. Ultimately, the Korean smokestack TMS is playing a key role in improving air quality by reducing the volume of pollutants released into the atmosphere.

Smokestack TMS:
Using Korean Technology to Clean Up the Global Environment

- The technological success of the smokestack TMS is being leveraged to secure topnotch technological expertise in environmental pollution prevention.
- The excellence of Korean smokestack TMS technology is being introduced at international conferences, raising Korea's stature as a leader in the environment industry.
- China, the Philippines, Saudi Arabia and Iran have imported smokestack TMS technology from Korea.

Environmental regulations today are becoming stricter in every country, and citizens are demanding their rights for a more pleasant, cleaner environment. The seriousness of environmental issues is in the global spotlight, and the environment industry has emerged as a growth business of the 21st century. The global market for environmental protection facilities was estimated at US$650 billion in 2004 and is averaging an annual growth of 3%. The United States, Japan and other developed countries are leading the market through advanced technologies, and Korea will also be ranked among the leaders.

2005 Tripartite Roundtable Meeting on the Environment Industry

Smokestack TMS publicity activities - MCED 2004

Korea is closely watching the Southeast Asian market, which is suffering from serious pollution as a result of rapid industrialization and urbanization. Korea also industrialized very rapidly and has experience in overcoming the associated problems. In the process, the country developed advanced technologies for treating polluted air and water, and Korean technologies are more competitive than those provided by developed countries.

Amid this global backdrop, the Ministry of Environment (ME) introduced the capabilities of Korea's smokestack TMS technology, first at the 2004 Government International Innovation Expo and later at the Ministerial Conference on Environment and Development in Asia and the Pacific 2005. Briefings have also been given at roundtable discussions on the environment industry among representatives from Korea, China and Japan, among OECD countries and at the Latin America Environment Conference.

Malaysian public officials inspect the smokestack TMS

Ministry's activities have prompted more and more Asian countries to benchmark Korean success with its smokestack TMS technology. At the same time, Korea's image has been elevated worldwide. Exports have been brisk for the smokestack TMS as well as for related measuring equipment.

China is preparing for the Beijing Olympics in 2008 and has purchased US$370 thousand worth of equipment for measuring dust, flux and temperature as well as data collecting equipment. An additional US$1.53 million in exports have been concluded with Saudi Arabia, Iran, Indonesia, the United Arab Emirates, Egypt and Jordan.

In addition, environmentally developed countries such as Hong Kong and Japan have imported US$3.5 million worth of the dust and flux measuring devices-core technologies for the smokestack TMS. Some environment experts in developing countries such as Vietnam have said they need Korea's experience in smokestack TMS technology. They point out that Korea has done more for solving pollution problems or faster than the most advanced countries.

Smokestack TMS Transformed Korea from Environment Policy Importer to Exporter

- The technological superiority of the smokestack TMS has raised Korea's competitiveness in the environmental industry.
- The multiple functions of the smokestack TMS are judged to be superior to comparable technologies from the world's environmental leaders.

The technological superiority of the smokestack TMS has transformed Korea, which only a few years ago was benchmarking the examples of environment management in the most developed countries. Now, Korea's superb government policies are being tried outside the country.

People around the world are beginning to realize the superiority of the ME smokestack TMS, and exports of transmission equipment developed with domestic technology are increasing. The development of some measuring equipment has been completed with in-house technologies at Korean companies, and the growth in exports is expected to continue into the future.

The smokestack TMS wide-area management system and unified national transmission system are now recognized to be superior to what is available in the countries that lead the world's environmental industry. Such excellence can drive exports of the smokestack TMS.

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e-Government System

Ministry of Government Administration & Home Affairs

e-Government System Ranked 5th in the World

The e-Government Project, under the leadership of the Ministry of Government Administration and Home Affairs (MOGAHA), aims to maximize administrative efficiency through online management and expanded data sharing. The open and efficient availability of administrative data allows all branches of the government to participate more fully in policymaking, while individual citizens and companies can have their paperwork processed quickly online, improving the quality of government services, increasing the satisfaction of citizens and helping to raise corporate competitiveness.

Advanced e-Government System for Ubiquitous Connectivity

- Korea's e-government was ranked fifth in the UN Global e-Government Readiness Index in 2004 and 2005.
- The elimination of administrative inefficiencies has elevated government service quality.
- Greater transparency has been attained in government interactions with citizens and companies.

Korea's e-government project was launched under the banner of "achieving the World's Best Open e-Government". In August 2003, three key objectives were established: "improving services for citizens", "maximizing administrative efficiency among government agencies" and "achieving administrative democracy". Since then, services have been upgraded and work methods have been improved for greater transparency and efficiency.

Moreover, data resource management innovations and system upgrades have resulted in an integrated online environment that allows pan-government data sharing. Efforts are ongoing to enhance system efficiency and redesign work processes.

A standout feature of Korea's new e-government is the G4C (Government for Citizens) system, which has proven to be extremely efficient. The online G4C system enables citizens to use their own personal computers or the government's automated processing terminals to apply for copies of citizenship papers, automobile registrations, property registries, tax payment certificates and business registrations, to name a few. People no longer have to visit government offices directly to obtain such necessary documents.
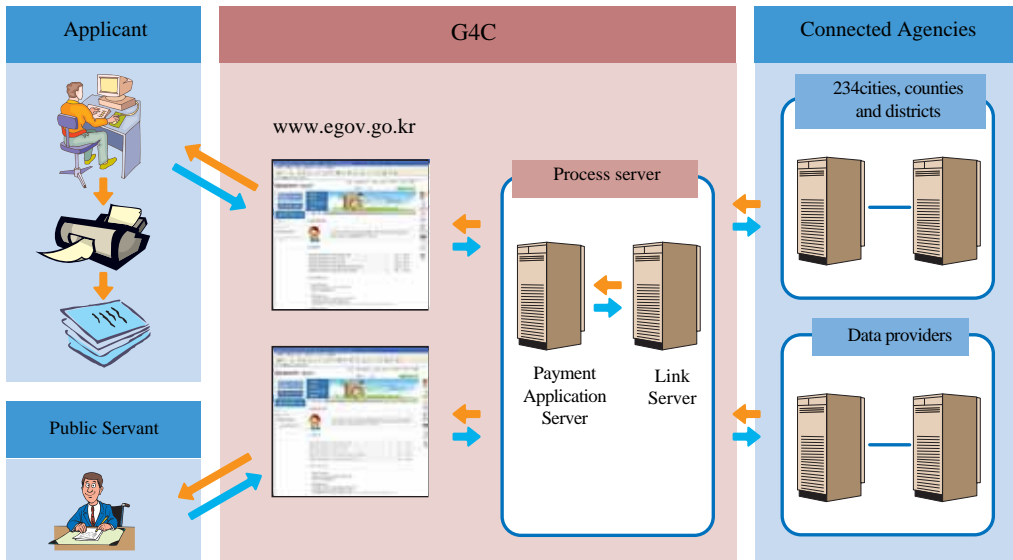
Theoretical Concept of the Korean e-Government System

Moreover, the government work method innovation drive involves the redesign of procedures to achieve a "paperless administration" All documents have been computerized and standardized for speedy, accurate processing. Most of the administrative work processes, too, have been computerized and the public can access the results online. Thus, opportunities for irregularities or delays have been eliminated at the source, bolstering public and corporate confidence in the government and heightening the transparency of government work.

The project for innovating information resource management and upgrading infrastructure has resulted in an integrated data system that covers the entire government. This system automatically creates and stores documents that result from everyday work and knowledge acquisition.

Government officials can utilize the data more effectively and provide improved knowledge-related services. At the same time, the traditionally bureaucratic and formalistic style of government administration is giving way to a more sophisticated, knowledge-based approach.

G4C is at the heart of Korea's new e-Government system which is linked to four social insurance data systems at the ministries of Health & Welfare and Labor, the unified Government e-Procurement System (GePS) at the Public Procurement Service, and the consolidated system operated by the National Tax Service. Such ubiquitous accessibility provides an administrative service environment that can be reached by anyone, at any time, from any place.

Korea's e-Government has been ranked fifth out of 191 countries in the UN Global e-Government Readiness Report in 2004 and 2005.
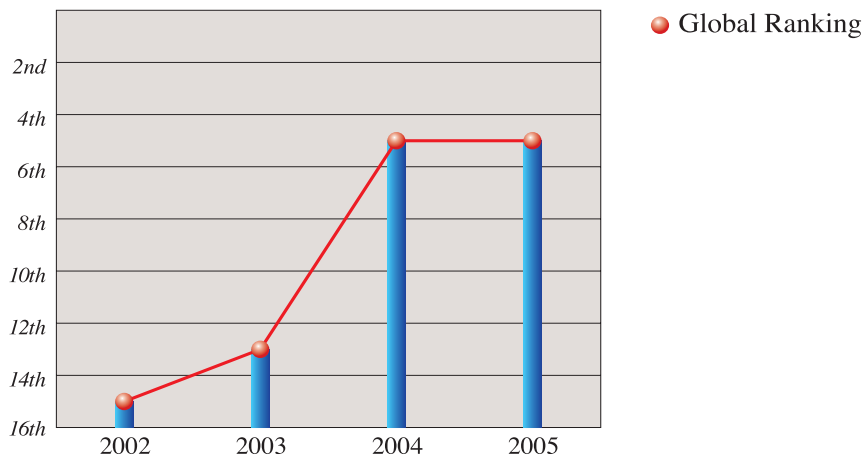
UN e-Government Readiness Ranking for Korea's e-Government

Korea e-Government: Driver of National Competitiveness

- Korea's e-government system know-how has been transferred to China, Mongolia and Uzbekistan.
- High ranking officials from more than 10 countries have visited Korea to benchmark the e-government system.
- Exports related to the e-government system have surpassed US$2 million.

Information and communication technologies (ICT) have brought a paradigm shift to all countries and are driving national economies. The progress of the world economy under the WTO has necessitated high growth in the IT industry, which now determines national competitiveness and creates value from ICT utilization. Consequently, the Korean e-government project, which promotes national information literacy, has improved government administration and is sparking exports of information technology that boost national competitiveness and bring positive changes to public services.

The importance of e-government worldwide can be seen in the number of international conferences that convene on the subject. Since 2004, Korea's e-government has also been a popular object for benchmarking for foreign government officials, especially from the developing countries.

A key feature of the Korean e-government system is G4C. This system has been studied carefully because it consolidates all the data for the public's most frequently needed documents (proof of citizenship, real estate registries, business registrations, tax payment certifications and automobile registrations). The online service frees the public from having to visit government offices in person.

International GIS seminar in Seoul in 2004

At the same time, the public can access all administrative work online on a real-time basis, bolstering public confidence in the government and raising the transparency of government work. The efficiency of Korea's new e-government has prompted many high-ranking officials from foreign governments to visit Korea and see the system first-hand.

Officials from more than 10 countries (Taiwan, China, Brunei and Malaysia among them) called on MOGAHA in 2005 to benchmark the e-government system and apply the Korean experience in their home countries. The spread of Korean e-government know-how overseas is laying the groundwork for mid- to long-term export opportunities. The Korean government helped local governments in the Dominican Republic, Panama and Mongolia with e-government master plans, earning US$1.23 million in return. An additional US$85 million was received in 2005 for projects in Colombia, Uzbekistan, Mongolia, and Vietnam involving data computerization and online access for the central bank and for citizenship documentation.

Chinese government officials from the Hainan Province benchmarking Korea e-Government

Promotion of Korea's e-Government through International Cooperation

- Active international cooperation and promotion efforts through participation and hosting of international conferences.
- Plans for enhanced PR efforts of Korea's e-government through promotion of Korea's best practices.
- Korea's e-government has been invited by France and Canada as a show case for e-government.

Proactive international cooperation and promotion efforts has largely contributed to lifting Korea's status in the global e-government scale. Not only has the Korean government been actively participating in international e-government related conferences hosted by the OECD or UN, Korea has hosted several international conferences, using it as an opportunity to demonstrate Korea's e-government status and exchange experiences with other advanced countries in e-government.

In order to address the rising demand for international cooperation, the Korean government has set up a new position in charge of international cooperation under the E-Government Headquarters and created an International Cooperation Team under the Vice Minister's Office to respond more actively and efficiently to e-government related global demands. As a result, the Korean government has been able to host four global e-government conferences in 2005, inviting many foreign dignitaries from the UN and ASEAN.

While, due to these efforts, Korea has been able to achieve satisfactory results by UN standards for the past two consecutive years, the Korean government is not stopping short at these achievements. While there are plans to distribute English e-government newsletters to foreign subscribers, there are also plans to revamp the English version website of Korea's e-government in order to provide the most up-to-date information on Korea's e-government.

This year, the Korean government has also been invited as the guest of honor to two important e-government related events abroad. In the latter part of this year, Korea will be going to France to commemorate the 120th anniversary of Korea-France Diplomatic Relations and show case Korea's e-government and e-democracy systems, while also to Canada to attend the Government Procurement Exhibition at which Korea will attend as a showcase country.

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Health Insurance Management System

Ministry of Health & Welfare

Health Insurance Management System:
Exemplary for Developing Countries

Just twelve years after its launch, Korea's public health insurance system reached the entire population, an unprecedented feat. Many a separate insurance society was used, however, causing financing inequality and management inefficiencies. The Korean Ministry of Health and Welfare (MOHW) solved the problem by integrating system financing and management. The successful reform through integration serves as a model for developing countries in Africa and the Asia-Pacific.

Integrated Health Insurance for Better Services

- The IT-based Electronic Data Interchange (EDI) system was introduced for the National Health Insurance (NHI) claim review and administration.
- Japan and other advanced countries are paying attention to the IT-based operation system.
- Operation costs have been considerably reduced through integration.

A compulsory medical insurance program was first introduced to Korea in 1977 and grew into the NHI system, which covered the whole population by 1989. However, more than 300 health insurance societies were run covering separate population groups such as the rural self-employed, the urban self-employed and salaried workers, each on a geographical or workplace basis. Moreover, the standards for determining contributions were not the same between the individual insurers. The inequalities and inconvenience caused continued public outcry.
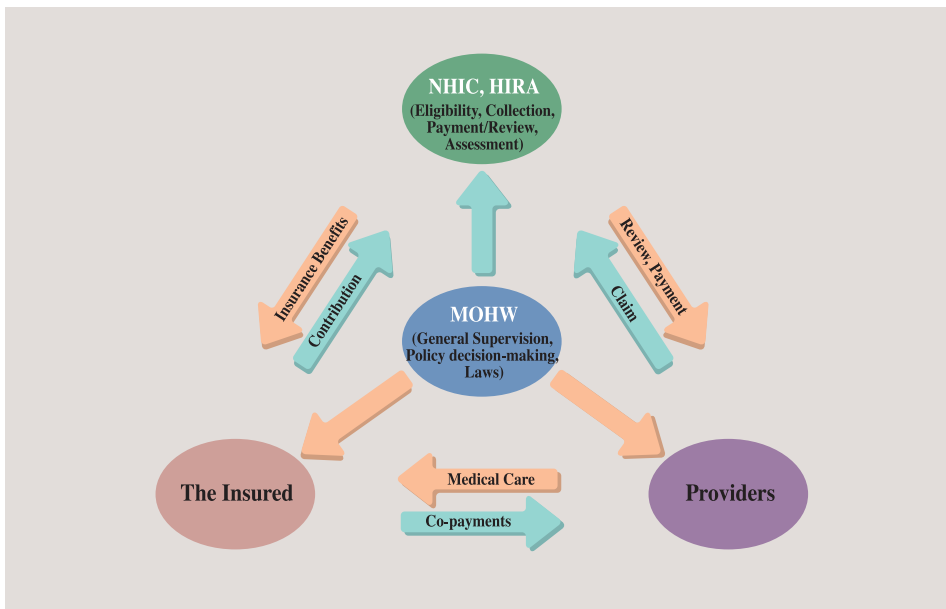
The MOHW embarked on a series of innovations to tackle these and other problems. The reform measures aimed to upgrade health insurance services for greater user satisfaction, better protect medical services recipients and institutionally stabilize the NHI program as a pillar of Korea's social security system.

Three major factors prompted the ministry to carry out its NHI system integration. The need to secure financing equitability among insurers was the first priority. Considerable differences existed in determining contribution rates. As a result, members with similar income levels could be required to contribute different amounts, depending on which insurance society they belong to. This inequality caused public grievances against and distrust in the NHI program.

Second was the operational inefficiency that resulted from using multiple insurers. The NHI program was originally operated by region and even by workplace, driving up operation costs and inconveniencing the insured. For example, NHI members had to change insurers whenever they moved to a different geographical region.

In July 2000, all the insurance societies were integrated into the National Health Insurance Corporation (NHIC). The NHIC, as the single operator of the NHI program, manages beneficiary eligibility, collects contributions, provides beneficiaries with healthcare services, and arranges health insurance benefit plans with health care providers.

The final factor was the separate health insurance funding between the individual health insurance societies before the integration reform, and the separate funding between the self-employed and the salaried workers persisted even after the NHIC was established. The separate financial arrangements went against the spirit of the reform as well as public solidarity. Without solving this problem, integration would never be complete, and the government unified the funds after extensive consultations with relevant organizations.

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The integrated NHI program corrects the inequalities; subscribers with a similar income or asset level contribute at the same rate, regardless of domicile location. At the same time, subscribers no longer need to change their insurer after moving to a new address. From an operational viewpoint, the NHI program costs were reduced significantly thanks to the economies of scale achieved from integration. The operation cost that accounted for some 8.8% of the total expense in 1999 dropped steadily, reaching 7.3% in 2000, 4.4% in 2001, and 4.0% in 2002. This is proof that the operational efficiency of the NHI system improved tremendously after integration.

On going Rednction in Administrative Costs
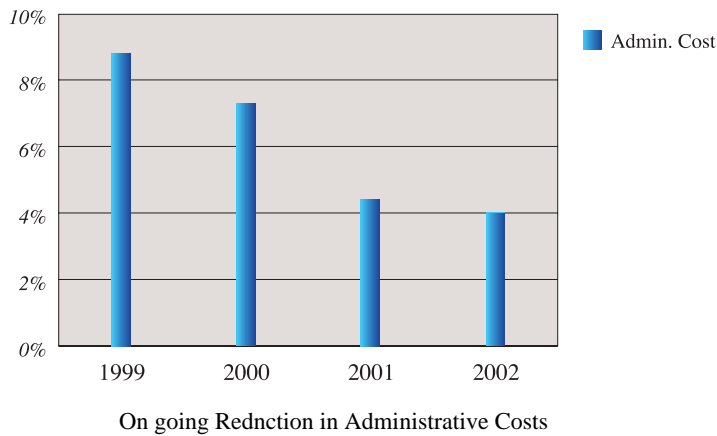
The EDI system is a noteworthy feature of Korea's NHI reform. EDI refers to the computer-to-computer exchange of data according to pre-set message standards. Data moves from one computer application to another electronically, with minimal human input. Currently more than 95% of the NHI claims are being processed by the EDI system, a far greater figure than that achieved in France or Japan. Indeed, the EDI system of Korea is being applauded by developing and developed countries alike.

NHI Operation System Internationally Recognized

- The NHIC shared its know-how in operating the NHI program at the invitation of the ILO International Training Center in Turin.
- The success of the Korean NHI system is being shared through international training programs.
- Some 150 people from 20 countries visited Korea to benchmark the NHI program operation system.

The Korean government is announcing the success of its NHI program to the world mainly in two ways. One is to operate an international training course on health insurance and the other is to invite delegations from overseas to observe the NHI program's success.

The international training course was created in collaboration among the MOHW, World Health Organization (WHO) and United Nations Economic and Social Commission in Asia and the Pacific (UNESCAP). It is designed to share Korea's valuable experiences acquired from the effective management of a public health insurance system with developing countries in the Asia-Pacific and Africa.

Korea's international status has risen, as evidenced by its entry into the OCED, and now the nation is expected to play a greater role in the international community. Moreover, the need is growing for training programs in the Asia- Pacific region, giving developing countries an opportunity to learn about social health insurance and to share in the experience of successful implementation.

The NHIC, in collaboration with the MOHW, signed an MOU with WHO and UNESCAP and then launched a two-week training course on social health insurance in Seoul in October 2004. The course covers various topics regarding Korea's NHI program as well as recent development trends in social security worldwide, healthcare financing, and claim review and payment systems.

Participants in the 1st session of the Training Course on Social Health Insurance Training, 2004

Participants in the 2nd session of the Training Course on Social Health Insurance Training, 2005

Training program participants have shown a particularly strong interest in Korea's effective management of national health insurance and in the EDI system. Korea's NHI serves a model for participants from developing countries.

In just three decades, the country achieved marvelous institutional development, sometimes, in the face of severe economic difficulties. The trainees also take research trips to the MOHW, the Health Insurance Review Agency (HIRA), pharmaceutical companies and high-tech medical equipment makers to improve their overall understanding of Korea's healthcare system. A total of 28 trainees from 14 countries (China, Malaysia, the Philippines, Mongolia and Cambodia and others) took part in the first training session in 2004, and the number increased in 2005 to 34 people from 15 countries, including 3 officials from Tanzania in Africa, as well as members of the WHO staff. In turn, people looking for NHI program operational know-how have frequently visited the NHIC. A total of 75 experts came from ten countries (Japan and Indonesia among them) in 2003, another 42 from five nations (including Tanzania) in 2004, and then 46 from five countries (including China) in 2005.

The NHIC is introducing Korea's successful national health insurance system to the world through international events such as NHIC International Symposium in 2004, the 4th International Social Security Association (ISSA) Regional Director's Meeting for Asia and the Pacific of 2005 in Seoul and the Korea-Taiwan Academic Seminar in 2005. The Corporation also sent an instructor to lecture on Korea's valuable experience at the Workshop on Social Health Insurance, held at the ILO International Training Center in Turin, Italy in 2005.

NHIC's continued effort to share

- The NHIC continues to promote its achievements to the world by offering an international training course and by receiving foreign delegations.
- The NHIC is sharing technical know-how on NHI program operation with developing countries.

The NHIC's training course on health insurance and accommodation of foreign delegations is enhancing Korea's international standing and national image, while helping developing countries to improve their social security systems. Trainees from developing countries have been highly satisfied with the practical content of the training course. Subjects covered include Korea's economic conditions when the NHI system was introduced, system expansion, problems encountered and solutions devised.

At the same time, the corporation is building a strong interpersonal network in the social security sector with developing countries in the Asia-Pacific. Most of the trainees and delegates are important policy makers in the fields of healthcare and health insurance, and this network helps to accelerate international experience sharing and cooperation, with Korea as the focal point. Recent government policy aims to expand NHI coverage further. Success in this regard will add value to Korea's NHI program as a best practice, prompting more countries to want to learn Korean know-how.

The NHIC remains committed to sharing its experience and know-how with developing countries through diverse channels, including the international training course in health insurance, foreign delegations visiting Korea to benchmark its NHI programs and consulting teams that are dispatched upon request to neighboring developing countries.

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National Finance Information System

Ministry of Finance & Economy

# NAFIS Elevates Korea's National Credit Rating

The National Finance Information System (NAFIS) was built in 2002 as part of the Korean government's Finance Management Reform Program. NAFIS links, on a real-time basis, funds with the management of assets and liabilities as well as the settlement of accounts. The flow of national finances can be ascertained at a glance, boosting efficiency, transparency and accountability, which helps to raise the nation's sovereign credit rating.

NAFIS for Transparent Financial Management

- The system brings transparency, efficiency and accountability to national financial affairs.
- The automation of national financial affairs has been furthered.
- The system provides comprehensive and systematic management data as well as financial data that are user-oriented.

The NAFIS project was launched to enhance the financial efficiency of the Korean government's fiscal administration in 2002 and has been carried out with the stated goal of ensuring transparency and accountability in government financial management. The existing platform for processing financial data, which used to operate on single-entry bookkeeping and cash-based accounting, has been effectively replaced with NAFIS, a financial data processing system that incorporates double-entry bookkeeping and accrual-based accounting, symbolizing the Korean government's commitment to more efficient fiscal operation based on more integrated and systematic framework.

NAFIS consists of three components: (1) the Standard Finance Information System for Central Offices, which is used to process budgets and settle accounts; (2) the Real-time Receipt and Payment System, which covers all government funds; and (3) the Consolidated Government Settlement and Financial Analysis System, which is used to produce and analyze consolidated financial reports for the entire government.
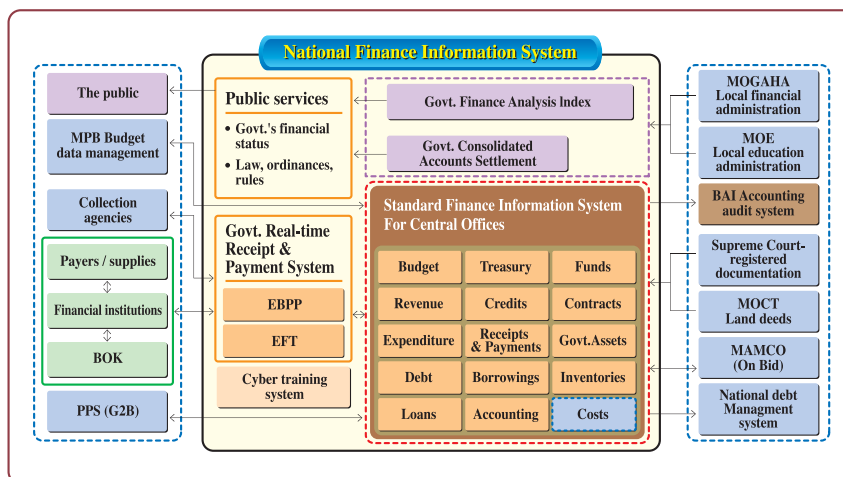
NAFIS Concept Chart

The greatest benefit that comes with NAFIS is that it enables the central government offices to integrate their financial management through a standardized data system. Every single major aspect of fiscal operations, including allocation and execution of budgetary resources, asset/cash management, and settlement of government accounts, is performed on real-time basis, as the consolidated data management and analysis allows for real-time processing of government cash positions and the electronic collection and transfer. The introduction of NAFIS also allows the finance ministry to tally up the daily figure on government-owned assets, inventories, credits and debts. Moreover, the various ledgers and supplementary account books that were previously maintained manually are now prepared and settled electronically, maximizing the efficiency of financial data processing for central government offices.

The Government Consolidated Accounts Settlement and Finance Analysis Index systems helps to hammer out the consolidated financial reports on stocks and flow of fiscal positions, and various supplementary financial details government-wide. All the data collected on budget execution and the subsequent changes in funds, assets and liabilities are updated on a daily basis.

In addition, the Government Real-time Receipt & Payment System is linked to the financial data network operated by the Korea Financial Telecommunications & Clearings Institute (KFTC) to collect funds payable to the government via electronic notification and receipt. The system is also connected with the Bank of Korea to transfer payments to creditors' accounts in real time. The use of NAFIS greatly reduced the heavy workload in entering the data accompanying more than 1.3 million National Treasury notifications issued in 2006.

As part of ongoing efforts to upgrade existing NAFIS services and improve the operational aspect of its system, short message service(SMS) has been employed to help creditors receive short mobile messages confirming the transfer of funds, and more than 293,000 such notices have been sent out in 2005. A DR (Disaster Recovery) center has also been established to enhance security and ensure continued operation in the event of a disaster by backing up enormous volume of data that are produced and stored within NAFIS over the normal course of operation. The DR System is constructed as HOT-STANDBY type; it is faster in transferring from main system to DR System than any other type.

NAFIS Optimizes Management of Government Finances

- Over 700 senior officials from Japan, Vietnam, Yemen and other nations have visited Korea to benchmark NAFIS.
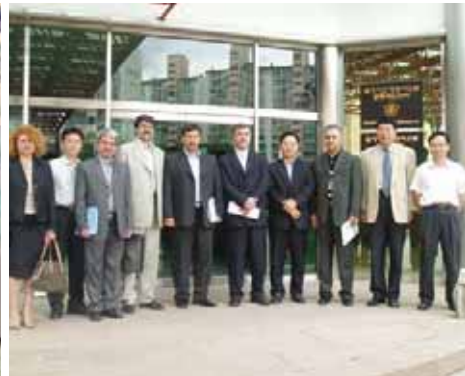- A system is now in place that optimizes the management of national finances.

The National Finance Information System has done much more than simply computerize and systematize the Korean government's existing financial administration. NAFIS is a revolutionary project that established an administration and accounting approach in step with international trends and developed the systems needed to make it work. As a result, the Korean government's financial administration has become more transparent, and operational efficiency has been raised.

The word about Korea's advanced and superbly functioning NAFIS has spread worldwide, and more than 700 senior government officials from Sri Lanka, Vietnam, Iran, Kazakhstan and elsewhere have visited the NAFIS Operation Center in Korea for benchmarking purposes. The Sri Lanka government requested assistance in establishing a master plan for its own financial information system upgrade. LG CNS, which played a pivotal role in the development and operation of NAFIS, was selected to provide consulting services to Sri Lanka.

Members of the Vietnamese Ministry of Finance visited the NAFIS Operation Center, and after returning home referred to the Korean model in designing their own national finance information system. LG CNS was chosen to lead the project.

Global Forum on Reinvention Government   Visiting guests from Iran

Other countries in Southeast Asia and South America are adopting aspects of NAFIS to suit their particular requirements. The Korean government has received a steady stream of requests for training on national accounting as well as on such issues as double-entry bookkeeping and the feasibility and cost of building computerized networks prior to the ISP stage.

Such activities have been channels for informing outsiders about the Korean government's public services and information technology developments. Exchanges have been ongoing with representatives of foreign governments, providing new opportunities for cooperation and a new export platform for domestic IT companies.

NAFIS: a World Leader

- A truly consolidated financial information system has been realized, bringing together the central government, local governments and education finances.
- The advanced NAFIS is elevating Korea's status on the global stage.

NAFIS is the backbone of a consolidated finance information system that covers the central government, local governments and education finances. This tightly-knit, real-time system of managing government finances produces data quickly and accurately for use in establishing fiscal policy. The transparency and efficiency of government financial administration have been enhanced, bolstering national competitiveness. At the same time, the stature of Korea has been elevated in the eyes of the world.

In the past, budgets were executed without detailed documentation, and results were difficult to assess. Now, the performance and productivity of individual government branches and agencies can be compared and evaluated. Each unit is now in competition with its peers, and the productivity of financial administration has risen tremendously. At the same time, the public services provided by the government have improved.

The Korean Ministry of Finance and Economy (MOFE) will continue to upgrade NAFIS and promote the excellence of the system overseas. At the same time, Korea's macroeconomic stability and equitability have been improved, along with greater transparency in the administration of national finances. Korea's international image has risen, and the nation will adhere to an advanced economic system that stands out globally.

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e-Learning System Going Global

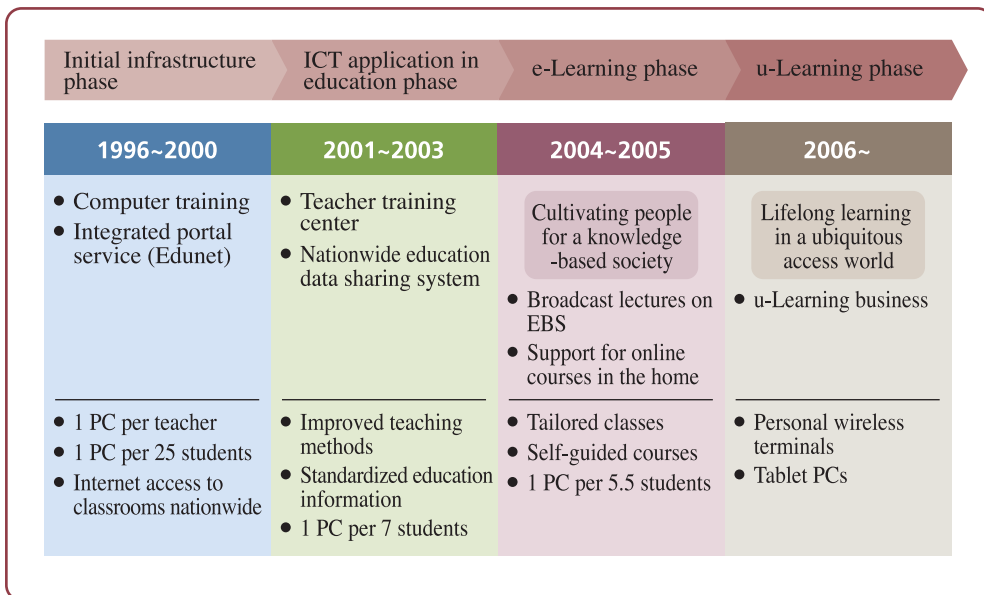Ministry of Education & Human Resources Development

e-Learning System Going Global

"e-Learning" is an educational system based on information and communication technology. The system is meant to enhance education quality, boosting students' ability to learn on their own and facilitating cooperation in education by linking schools, parents, and communities.

Korea's e-Learning System Recognized Worldwide

- The system provides courses tailored to individual learners' specific needs.
- It was ranked 5th in the e-Learning readiness assessment conducted by Britain's Economist Intelligence Unit (EIU).
- This is the first pan-national e-Learning system available.

The fundamental goal of the e-Learning system of the Korean Ministry of Education & Human Resources Development (MOE) is to provide equitable opportunities via various media to anyone who wants to learn, regardless of social class or region of residence. The system offers quality online courses that complement schools' curricula, enhancing the quality of public education and improving the performance of the public education system. The MOE also encourages lifelong time learning through the e-Learning system. To achieve these objectives, the ministry has established separate e-Learning systems for primary & secondary education, higher education and lifelong education.

Initial infrastructure phase	ICT application in education phase	e-Learning phase	u-Learning phase
1996~2000	**2001~2003**	**2004~2005**	**2006~**
• Computer training • Integrated portal service (Edunet)	• Teacher training center • Nationwide education data sharing system	Cultivating people for a knowledge -based society • Broadcast lectures on EBS • Support for online courses in the home	Lifelong learning in a ubiquitous access world • u-Learning business
• 1 PC per teacher • 1 PC per 25 students • Internet access to classrooms nationwide	• Improved teaching methods • Standardized education information • 1 PC per 7 students	• Tailored classes • Self-guided courses • 1 PC per 5.5 students	• Personal wireless terminals • Tablet PCs

Process of Applying ICT in Education

The Ministry has been working on the application of ICT in education for a decade. That effort has made possible the launching of an e-Learning system with individualized courses for primary and secondary school students. Since 1996, the MOE implemented the first and second phases of a project to create a computer-friendly education environment, laying the foundation for e-Learning. Personal computers and Internet access were supplied to and ICT-based courses were made available at primary and secondary schools.

In September 2004, the Ministry launched a "cyber home-learning service", letting primary and secondary schoolchildren take classes and courses that fit their academic abilities through video, chatting, and various other online media. This service supports students' after-school studies and encourages the participation of teachers and parents as well.
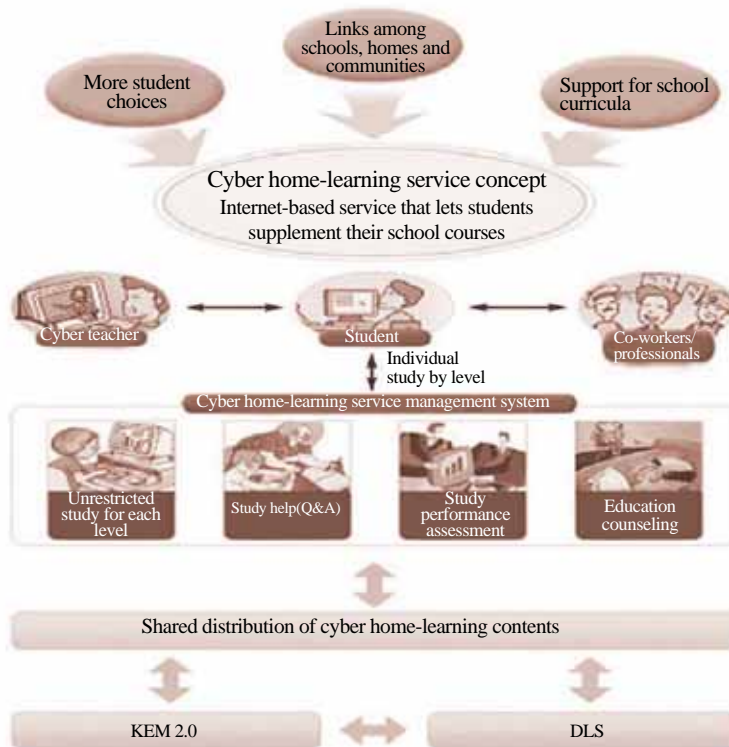

Cyber Home-Learning Service Concept

The pilot service was offered by three provincial offices of education, offering 241 cyber classes to some 4,000 primary and secondary School students in an after-school self-teaching format. The service was expanded in 2005 to school districts governed by 16 provincial offices of education, reaching about 5,000 cyber classes or some 1 million students. Cyber home-Learning Service provides diverse contents that supplement regular school curricula, improving public education quality. It also helps students to study using their own initiative, so that parents can spend less money on private tutoring.

In addition, the MOE created an "e-Campus Vision 2007" initiative to facilitate e-Learning in the "higher education" category. To this end, the Ministry zoned the nation into ten districts and set up a University E-learning Support Center for each district while linking enterprises, universities and research centers to a network promoting cooperation and joint research. Led by the Support Centers, all the participating colleges and universities now share useful information via a broadband network and have an effective support system for their students. This has promoted the balanced development of universities and geographical regions.

In addition, the ministryhas pushed ahead with a lifetime education support system to enable people to respond more capably to rapid technological development and social changes. The MOE has instituted the "Lifelong Learning Information Network" to promote the notion that learning is a never-ending process and to provide e-Learning as a means of lifetime education. The network offers access to cyber universities, regional lifelong education information centers and diverse online learning contents.
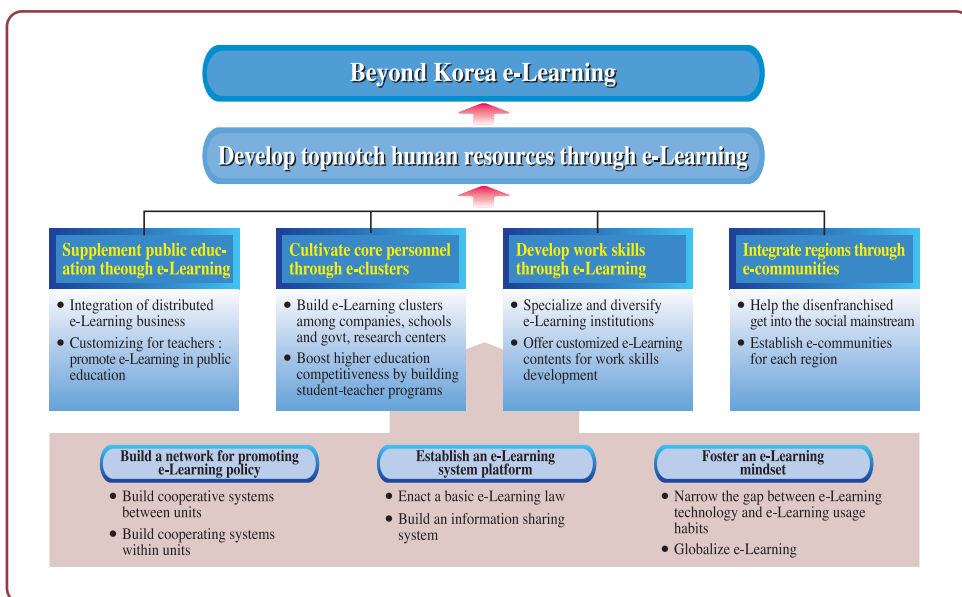
National Strategy to Develop Resources through e-Learning

The new nationwide e-Learning system and other measures to promote e-Learning have been recognized internationally. Korea was ranked 5th in the world in terms of e-Learnin readiness by the EIU, a British think-tank. Encouraged by, the MOE designated e-Learning as a core HRD strategy in 2004 and has been upgrading the e-Learning system in stages.

Korea: Global e-Learning Leader

- The nation has helped many developed and developing countries to establish e-Learning systems.
- Delegations from about 40 countries, including Japan, Mongolia and Indonesia, have visited Korea to learn about and experience its e-Learning system.
- A World Bank project is now in progress to make national educational systems computer friendly.

The MOE's successful national e-Learning system has heightened public awareness of e-learning domestically while bolstering Korea's image as an e-learning powerhouse internationally. Korea's national e-Learning system was widely publicized in diverse international conferences prompting other countries use it as a benchmark. France, Israel and various APEC member countries have asked Korea to work with them on e-Learning. In 2004 alone, some 1,200 representatives from approximately 40 countries (including Argentina, Spain, Britain, Poland, China, Vietnam and Brunei) visited the MOE and Korea Education & Resource Information Service (KERIS) to learn more about Korea's e-Learning know-how and related policies.

At the same time, the Korean government has leveraged Korea's advanced e-Learning system to establish education partnerships with developing countries. From 2003, the government has provided certain developing countries with personal computers and e-Learning contents. It has also invited teachers from those nations to receive ICT training in Korea and promoted the establishment of an international e-Learning consulting system.

Korean-French Joint Seminar on ICT and Education

In 2005, the Seoul government provided personal computers to 14 developing countries and invited education policy makers, government officials and teachers from 11 countries (the Dominican Republic, Laos, Mongolia, Bangladesh, Vietnam, Sri Lanka, Uzbekistan, Indonesia, Cambodia, Kenya, and the Philippines) to learn about Korea's e-Learning system and its experience in putting computers into education programs.

The MOE has promoted Korea's e-learning system at the Korea-France Joint Seminar on ICT & Education and the Innovative Teachers' Conference (co-organized by Microsoft and KERIS). The Ministry also opened an IT Korea e-Learning Room during the 2005 APEC Summit at the Busan Exhibition and Convention Center (BEXCO) and provided state leaders, cabinet members, CEOs and journalists from 21 countries with a chance to observe and experience Korea's world-class e-Learning technology.

IT Korea e-Learning Expo during the 2005 APEC Summit

The Korean government's diverse efforts to promote its e-Learning system abroad prompted the World Bank to seek an agreement to have Korea share its educational computerization and e-Learning programs with developing countries. A deal is expected to be finalized in the first half of 2006. Consequently, Korea's advanced e-Learning system is drawing growing attention from the rest of the world.

e-Learning System:
a New Paradigm for 21st-century Education

- The system has bolstered Korea's international standing as an e-Learning front-runner.
- Country-specific e-Learning consulting models have been established to better support developing countries in their education system computerization effort.
- Korea's e-Learning system is emerging as a new paradigm for 21st-century education.

The world is coming to realize the excellence of the Korean e-Learning system and is paying greater attention to Korea's experience and achievements. During the 2005 Asia-Pacific Economic Cooperation Summit, national leaders authorized the establishment of the APEC e-Learning Training Center in Korea. The Center will be used to share Korea's experience and know-how concerning e-Learning systems to APEC members.

Meanwhile, more developing countries are requesting Korea's support for their educational computerization, and Korea has responded by developing country-specific e-Learning consulting models. The government is also working to provide better consulting to countries that want to borrow from Korea's experience to advance their own education systems. Korea is now sending consultants and strengthening support projects.

Korea will continue to publicize the excellence of its e-Learning system to the world by holding workshops, seminars and other e-learning-related events in cooperation with other countries (France, Canada and Israel) and international organizations (World Bank, UNESCO, ASEM).

e-Learning is being highlighted as a new educational paradigm in the 21st-century knowledge-based society, and countries need to promote e-Learning to strengthen their national competitiveness. Korea remains committed to constantly improving its e-Learning system constantly, applying the most advanced e-Learning technologies, and thereby consolidating its status as a global e-Learning leader.

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KOTRA:
An International
Model of
Innovations

Ministry of Commerce, Industry & Energy

KOTRA:
An International Model of Innovations

The Korea Trade Investment Promotion Agency, more commonly known as KOTRA, was established to facilitate foreign investment in Korea and help small and medium enterprises (SMEs) of Korea to export their products. Through KOTRA, SMEs can receive the information about overseas markets and overseas market environment, and the investors also can be provided with an ombudsman service and the support for their investment projects. The Agency's diverse activities have played a significant role in Korea's rapid economic growth.

Creating New Value as a TPO by Systematizing Management Innovation

- KOTRA won the "Best of the Best" award at the 5th World Conference of Trade Promotion Organizations (TPOs) in October 2004.
- The Agency's overall organizational execution capabilities have been improved by pursuing projects through regional HQs and by building a localized organizational structure.
- New value is being generated for KOTRA through customer-oriented and results-based approaches.

KOTRA was named as the "Best of the Best" among the five award-winning TPOs at the 5th World Conference of Trade Promotion Organizations, which opened in Malta in October 2004. The honor shows the excellent results of the Agency's ongoing management innovation efforts and has made KOTRA a benchmark for the other TPOs to emulate.

It is commonly said that public organizations provide intangible services difficult to quantify. KOTRA broke down the previous bias, constantly seeking improvement by shifting the management paradigm towards "customers" and "results". The Agency's success stems from the further development of optimal support systems in conjunction with each innovation.

KOTRA has focused on building a support system to make the operational improvement an ongoing institutionalized process rather than a one-time event. KOTRA's reason for being is "the customer", which is the motto, so that a new customer relationship management (CRM) system was adopted to fundamentally change the way customers' requests are handled.

After the center system, CRM, the Balanced Scorecard (BSC) and Management By Objectives (MBO) program to enhance productivity and efficiency, and KOTRA Managerial Accounting System (KOMAS). The Integrated Human Resource Management System (iHR) and Career Development Program (CDP) have also been adopted to provide support.

Organization
- CRM / workflow creates a network linking customers with 102 overseas offices
- Responsibility has been shifted to the field

Compensation
- Integrated HR management using BSC for enhanced objectivity
- Compensation based on customer support performance evaluation through CRM / BSC

Operation
- Online access to customers' business and services provided enhances CRM
- KOMAS blocks ethical improprieties regarding public funds and resource allocation

Evaluation
- CRM is used to reflect individual performance assessment with customer performance results
- BSC / MBO provide online real-time assessments

Workflow · CRM · I-HR · KOMAS · BSC / MBO

Adoption of the CRM and the workflow system linked to it have enabled KOTRA to administrate work on the basis of the past performance and on the history of KOTRA's involvement in the customers' business. Work processes can now be shared with the customers, and KOTRA employees are learning to proceed on a customer-centric perspective. The performance management systems (BSC and MBO) are designed to control overall performances in terms of customers, business results and processes. Employees no longer focus on the quantitative issues alone.

KOTRA has also taken a step further by introducing KOMAS, which measures performance value over resource inputs. The Agency is not satisfied with the quantitative performance indicators such as the number of service users and the amount of revenue. Instead, KOTRA created more systematic and scientific performance indices.

KOTRA's recent systems-based innovations mean more than past improvement attempts did, which merely sought to heighten the awareness of the organizational members. Changing employee attitudes is undoubtedly an essential condition for improving performance. However, an improvement drive that lacks supporting systems and programs cannot resolve structural contradictions and will end up being a one-time event or a quick fix without lasting results.

KOTRA's management innovation has overcome above-mentioned shortcomings and has made systematic change. The results do not end the moment they are created but rather become the impetus for still more improvement in a virtuous cycle established within the organization.

KOTRA: Offering a New International Paradigm for Innovating TPO Management

• KOTRA received the BSCol hall of Fame aware in June 2005.
• KOTRA's management innovation is being examined extensively outside Korea.

The excellence of KOTRA's management innovation effort and results has already been recognized with a prestigious award given by the UN's International Trade Centre (ITC). Moreover, Balanced Scoreboard Collaborative Inc., the developer of the BSC concept, presented one of its Hall of Fame awards to KOTRA for its successful BSC implementation. This award reaffirms that KOTRA serves as an international role model of a strategy-focused trade promotion organization.

Even before these awards, major overseas institutions began benchmarking KOTRA's management innovation program. TPOs from Australia (Australian Trade Commission), Israel, etc. visited a local KOTRA trade office to glean information while the trade representative from the Australian Embassy in Korea made a call on the KOTRA Head Office to learn more the Agency's trade promotion activities, evaluation methods, FDI inducement effort and various support programs.

The Japan External Trade Organization (JETRO) has consistently shown interests in KOTRA's CRM and other system innovation initiatives, dispatching a six-member benchmarking team to the KOTRA Head Office in 2004. Moreover the Taiwan External Trade Development Council (TAITRA, which competes directly with KOTRA in international markets) has benchmarked KOTRA and implemented a branch office program for supporting the overseas marketing of domestic SMEs similar to that of KOTRA.

JETRO members benchmarked KOTRA

The benchmarking continued in 2005. The Vietnam Trade Promotion Agency (Vie trade) and Moscow Chamber of Commerce, which was preparing to establish a TPO at that time, visited KOTRA to study how the organization is structured and the organizational network is managed.

Indonesian President Susilo Bambang Yudhoyono visited Korea in October 2005 to attend the Asia-Pacific Economic Conference. During his stay he was introduced to the KOTRA management innovation effort. He instructed Indonesia's National Agency for Export Development (NAFED) to benchmark KOTRA and then apply the lessons learned to improve NAFED's organization and functions. Thus, a delegation of four officials from NAFED and the Indonesian Embassy in Seoul visited the KOTRA Head Office in 2006.

Expanded Roles and Functions to Support a Second Growth Surge for the Korean Economy

- KOTRA's international standing has been higher through the 2006 World Conference of TPOs.
- The overseas regional HQ-centered structure for strategic business promotion is being expanded and reorganized into industry-specific belts.
- Dissemination of KOTRA's management innovation case study is providing an overseas marketing platform for Korean SMEs.

KOTRA's management innovation program won the Best of the Best award among the world's trade promotion organizations in 2004. That honor has elevated the stature of the Agency, which will be on the committee that judges the best TPOs in their respective categories at the ITC-sponsored World Conference of TPOs in 2006.

The dissemination of the KOTRA case will put the Agency in a position to lead cooperative programs with other TPOs. In the process, a broad cooperative basis will be established with government institutions overseas with regard to marketing activities for Korean small and medium sized enterprises (SMEs).

Moreover, KOTRA will not be satisfied with achievements thus far. In 2005, the Agency announced a new vision of becoming a "top-tier trade investment agency that generates value for customers". This vision will be the platform for KOTRA's next management innovation initiative. The success of the "innovation systemization" effort, in which new systems were adopted, was to be leveraged to make further improvements in terms of quality and contents.

This new effort has accelerated improvement in KOTRA's business, shifting its objective from short-term results to market-leading performance in business transformations. KOTRA will devise strategic business models that generate value for corporate customers and government institutions, while KOTRA's organization and personnel will become more specialized. With professional services, KOTRA can direct customer demand and bring full satisfaction.

To this end, the Agency will expand and reorganize the approach to strategic business overseas, shifting the focus from the regional headquarters to a series of industry-specific belts. The KOTRA Head Office and domestic organization will be tied to the overseas offices in "belt" units that provide total marketing services for each industry. The result will be the greater opportunity for KOTRA to build competitive advantages internationally.

PostNet

Ministry of Information & Communication

PostNet:
Innovative Postal Logistics Information System in Korea

PostNet is a web-based system that links about 3,600 post offices across the nation and computerizes the information flow of postal items. The IT-based system provides real-time track and trace information of approximately 5 billion items a year to Korea Post and its customers.

PostNet: A New Paradigm for International Postal Logistics

- The diverse PostNet services have raised public satisfaction with the post office.
- The efficiency of the system has maximized cost reductions.
- Korea Post was ranked first in the Public Administration category of the Korean Customer Satisfaction Index (KCSI) in 2005.
- The current system is transitioning toward a next-generation ubiquitous postal logistics system, or u-Post, continuing Korea's international lead in setting new paradigms for postal services.

The PostNet manages a full range of postal affairs from managing data on postal traffic volume, tracking and tracing of postal items, and operating mail sorting centers, to managing mail acceptance, distribution and delivery. It is also designed to seamlessly link with the Enterprise Resource Planning (ERP) system, post office e-Commerce and financial systems, as well as external networks such as UPU, TNT, and some home-shopping enterprises.
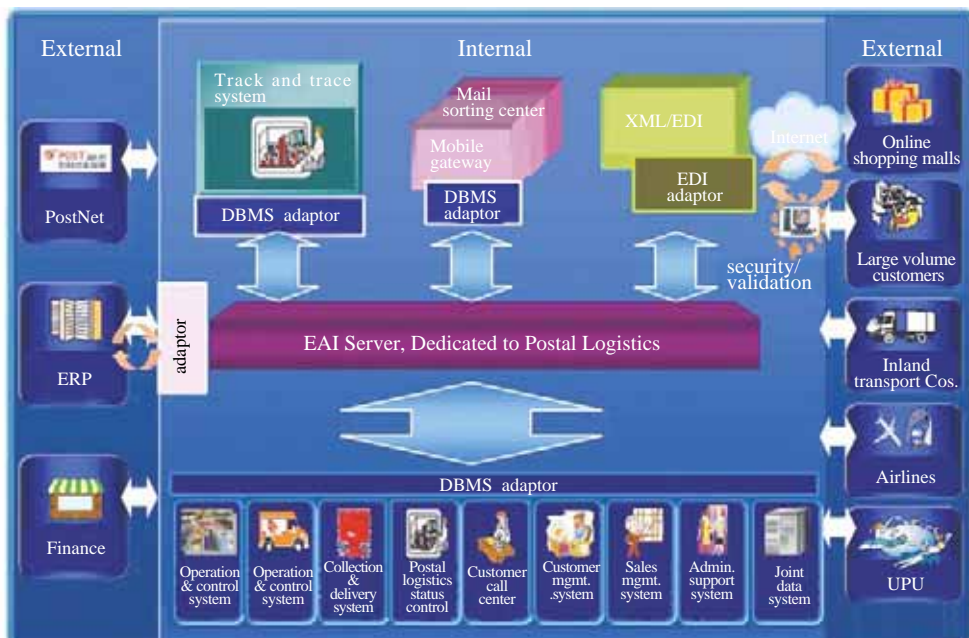
Postal Logistics System

With PostNet, Korea Post at the Ministry of Information and Communication (MIC) has made postal logistics services, from acceptance to delivery, more transparent and flexible. Effective internal planning, implementation and assessment systems are now possible, making postal services faster and more accurate.

Users can also expect more sophisticated postal services, thanks to the system's upgraded mail acceptance function and real-time track and trace. Moreover, PostNet is diversifying postal services by providing new postal logistics products and services for today's era of e-Business.

In addition to the enhanced work efficiency, Korea Post has elevated postal services overall by establishing the PostNet system. For starters, access points for customers have been diversified to include unmanned windows and online virtual windows. Thus, the acceptance of mail has become faster and more accurate, boosting customer convenience and satisfaction.

PostNet has provided a unified system for analyzing and managing customer information, enabling comprehensive customer relationship management and strategic marketing. Customer satisfaction has been raised by new short message service (SMS) that notifies customers by e-mail or mobile phone of expected delivery times and delivery confirmations.

Increase in Post Office Home Deliveries

Increase in Post Office Shopping Sales
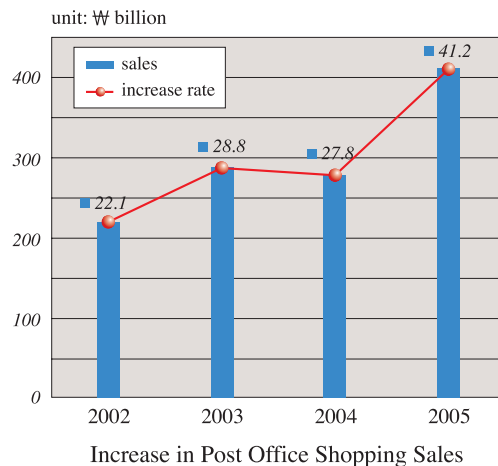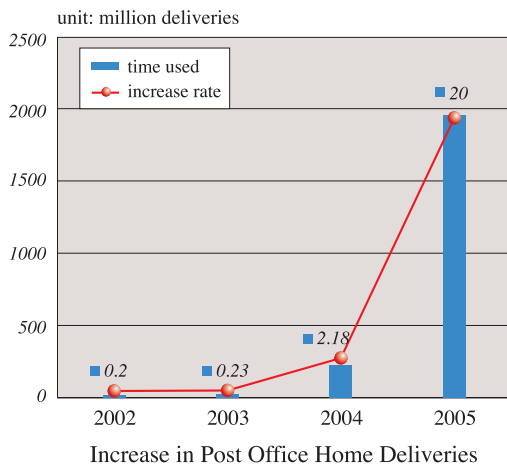
With PostNet, Korea Post can better forecast postal traffic volume, considerably reducing the number of people on queue and the time needed to process the mail. This resulted in cost cuts and enhanced the capability to handle peak volume. Paper delivery confirmation slips and receipts have been replaced by online counterparts, lowering costs even further. Real-time monitoring of mail delivery has accelerated response of failed deliveries and sudden surges in mail volume. In total, PostNet is estimated to reduce costs by approximately ₩16.4 billion annually.

Meanwhile, a door-to-door delivery information system has been created under PostNet to support B2B and B2C transactions. With the system, Korea Post offers various programs to support online shopping companies of every size. Consequently, the number of online requests for door-to-door delivery have increased from 2.18 million in 2004 to 20 million in 2005, driving sales revenue from ₩27.8 billion to ₩41.2 billion over the same period. Online track and trace service usage has also risen from 18 million times in 2004 to 107 million times in 2005.

What is more, the newly established Call Center has been linked with the track and trace systems and Customer Relationship Management (CRM) system to provide one-stop customer services. Now mail-items can be tracked and traced in real-time at more than 12 points in the logistics chain, whereas previously track and trace was only possible at 2~4 points and was not on a real-time basis.

Development of Informatization
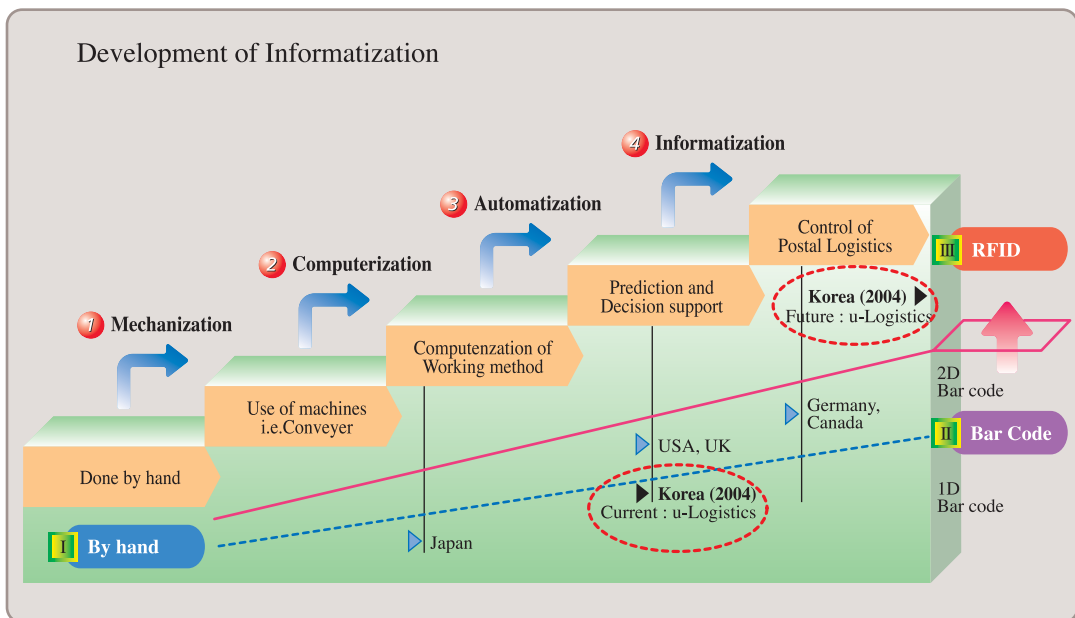
The improvements of postal service through the PostNet are widely known at home and abroad. The online postal system has enhanced Korea Post's capability to respond to customer needs quickly, consistently and reliably. The system also helped Korea Post to be ranked first in the Public Administration category of the KCSI survey in 2005. That marked the seventh consecutive year for Korea Post to obtain the top spot on the annual survey conducted by Korea Management Association Consulting (KMAC).

Instead of being complacent, Korea Post is pushing ahead with its strategic "u-Post" transition to a ubiquitous postal logistics system based on Radio Frequency Identification (RFID) technology that can upgrade the current bar code-based system.

PostNet: Narrowing Postal Logistics IT gap worldwide

- The advanced track and trace system of PostNet earned Korea Post the Gold Level EMS Cooperative Certification from UPU in 2005.
- Korea Post shared its experience in streamlining postal services in the 2005 Commonwealth of Independent States (CIS) meeting.
- Korea Post has provided consulting for Uzbekistan's post office modernization project.
- Korea Post has laid the foundation for taking Korean postal service-related IT enterprises abroad.

Overseas VIP's visit a mail center

UPU certificate for EMS service excellence

Korea Post is publicizing the excellence of PostNet performance through various international events held in Korea. Briefings on PostNet were given at the 5th High-level Postal Officials Meeting among Korea, China and Japan in 2004 and at the 9th Asia-Pacific Postal Union (APPU) Congress in 2005. The system was highly praised by over 170 APPU participants, who were representatives from foreign postal agencies or corporate CEOs. In addition to the briefings, the participants could see PostNet in action during IT equipment demonstrations.

Importantly, the flawless PostNet support for track and trace items sent by Express Mail Service (EMS, an international express mail service for both documents and merchandise) helped Korea Post to receive the Gold Level EMS Cooperative Certification in 2005 from the Universal Postal Union (UPU).

The enthusiastic promotion efforts have attracted people around the world to Korea to benchmark the superior functions of PostNet. Japan, previously Korea's benchmarking target, sent a team of a dozen postal IT experts in February 2005 to Korea Post in order to see Korea Post's IT facilities.

The Malaysian government also dispatched a delegation of some dozen IT experts in July 2005. They took a field trip to a mail sorting center and benchmarked the interaction between real postal items and the PostNet system. In the second half of 2005, postal staff of China, Vietnam, and Thailand visited Korea through the APPU Exchange Program. They studied Korea's overall postal service and PostNet innovations to see the possibility of appling what they learned in their own country's policies.

2006 World Mail Awards

In 2005, Korea Post was invited to the CIS meeting in Kazakhstan to share its experience in postal service streamlining through PostNet. The MIC and its Uzbekistani counterpart signed an MOU to have Korea Post provide consulting to Uzbekistan based on a feasibility study that was performed for Korea's own "post office modernization" initiative. Korea Post's consulting for the Uzbekistani government is likely to give domestic companies better chances to take part in Uzbekistan's postal service modernization.

The information technology used in establishing PostNet was unveiled the world during Post-Expo 2005 in Paris, France. Since then, Korea Post has signed deals with foreign postal service agencies for technology and related equipment, providing new opportunities for Korean manufacturers to export their products.

For example, Korea's Bixolon (label printer maker), InnoteleteK (manufacturer of mail collection and distribution terminals) and Samkyung Hitech (producer of mail accepting machines) are working on export deals to the US, Canada, France, Australia, and Greece. Bixolon has already finalized a €2,000 export with a French customer.

Moreover, thirty or more Asian postal administrations recognize that PostNet, equipped with a tracking and tracing system for the value-added EMS, is the best option for accommodating customers' right to know and for narrowing the digital gap in international postal services.

PostNet: Raising Korea's International Standing in Postal Logistics

- PostNet's excellence was proved at Post-Expo 2004 and 2005, and at the e-Government Conference & Exhibition in Seoul.
- The advanced information technology has laid the foundation for related domestic companies to break into overseas markets.
- A task force is supporting exports of domestic companies manufacturing postal IT equipment at the government level.

Korea's postal logistics upgrade through PostNet was introduced as a successful example of government innovation at the Post-Expo 2004 in Romania, the Post-Expo 2005 in Paris, and the e-Government Conference & Exhibition in Seoul. PostNet drew strong attention from participating policymakers seeking to streamline their own postal services. The attraction stems from superb performance as well as from diverse value-added services, including real-time tracking and tracing to meet customer needs.

The Kazakhstan government asked Korea Post to introduce its officials to PostNet. Korea Post also signed an MOU to help Uzbekistan modernize its postal services. The feasibility study for that project was completed in September 2005, opening up new export opportunities for domestic makers of postal IT products.

Meanwhile, Korea Post formed a task force team to leverage PostNet's success in order to help domestic postal IT product makers secure export orders. Initial marketing and export support includes the dispatch of postal IT cooperation teams consisting of people from the government, corporate and research sectors to potential export markets in the first half of 2006.

Their job will be to promote Korea's advanced IT-related postal applications and support domestic companies' efforts to expand into overseas markets. In June 2006, Korea Post will host a postal IT seminar for officials from about thirty postal administrations in the Asia-Pacific region to discuss ways to narrow the digital gap in the postal service field. An IT equipment exhibition will be organized in conjunction with the seminar. In addition, Korea Post will participate in the Post-Expo in Amsterdam, Netherlands in October 2006 to support Korean companies' marketing and export negotiations.

In the longer term, Korea Post will expand the task force team and open representative offices in potential export markets. These offices will collect information on the postal information technology used in advanced countries and provide IT consulting to developing countries. Following effort can help narrow the international digital gap in the postal service field as well as improve international postal service quality. Korea Post will also use the offices to promote Korea's successful innovation of postal logistics systems based on advanced information technology. That effort can facilitate exports of the PostNet system and other products by domestic IT companies.

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Three-step High Tide Alarm Program

Ministry of Maritime Affairs & Fisheries

Three-step High Tide Alarm Program: a New Paradigm in Coastal Disaster Prevention

The Three-step ("notification", "caution" and "hazard") High Tide Alarm Program integrates information technology with oceanographic observation methods to better protect lives and property and reduce monetary losses stemming from coastal disasters. Global warming and rising ocean levels are increasing the complexity and magnitude of natural maritime disaster. Adoption of this system enables the local government authorities and other relevant agencies to methodically and efficiently carry out disaster prevention measures.

Three-step High Tide Alarm Program:
a Revolutionary Approach to Coastal Disaster Prevention

- In 1999, Korea's disaster prevention agencies agreed to begin developing a high tide alarm program with three progressive states of alert.
- A triple-step system employing the Internet and wireless communications technologies was launched in 2001.
- A new paradigm for coastal disaster prevention has been created, overcoming spatial and temporal limitations.

The National Oceanographic Research Institute (NORI) developed the Three-step High Tide Alarm Program as part of the National Safety Management Enforcement Plan, which aims to minimize damage from marine disasters. Korea's superb information technology serves as a platform that incorporates local geography and past observations of tidal levels to issue warnings in three stages: (1) "notification", (2) "caution" and (3) "hazard". Real time observations are compared with past databases and provided instantaneously to disaster prevention agencies such as the National Emergency Management Agency, Korea Meteorological Administration, and local government authorities to improve disaster prevention effectiveness and offer a practical means of disaster support.
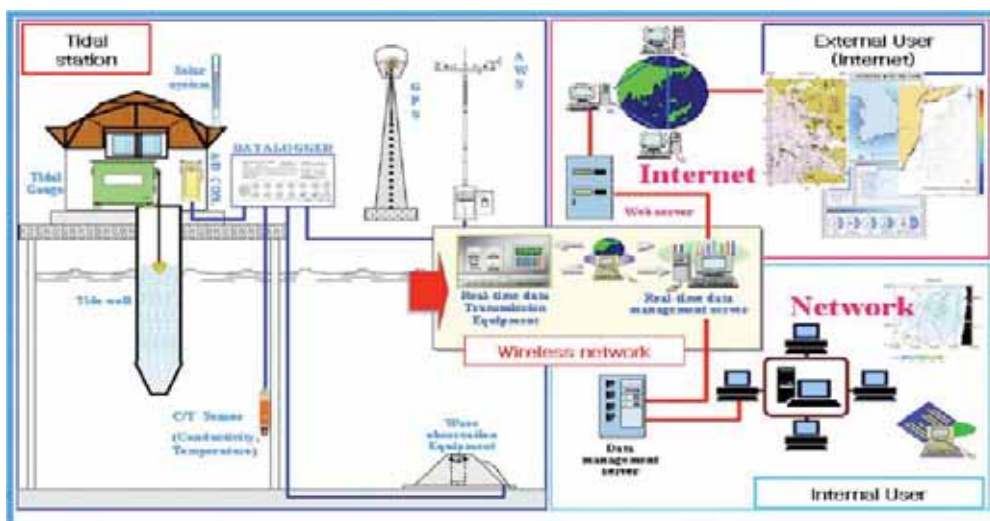
Real-time Oceanographic Data System Concept

The Three-step High Tide Alarm Program uses the tidal stations and information systems previously established, improving coastal disaster prevention capabilities without having to employ more people or a higher budget. It is designed to collect tidal data in real time and provide immediate access via the Internet. Disaster prevention agencies can quickly ascertain the situation and initiate recovery measures quickly should disaster strike.
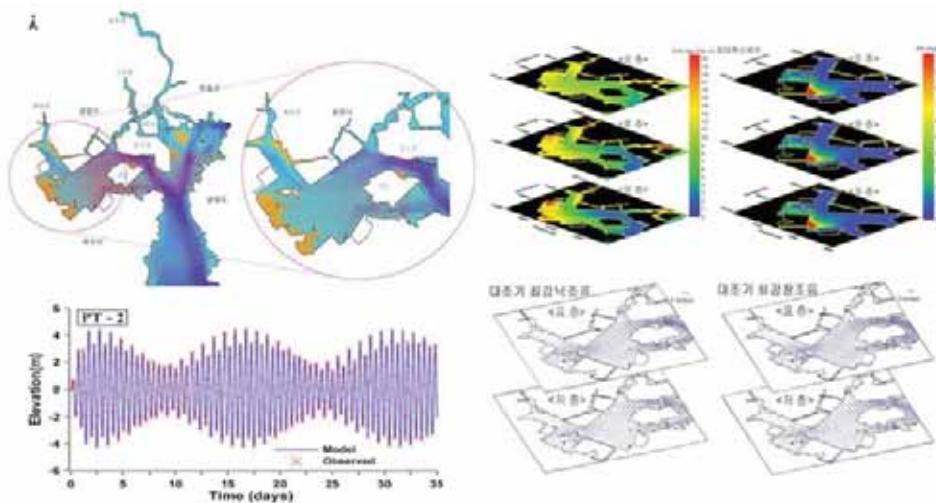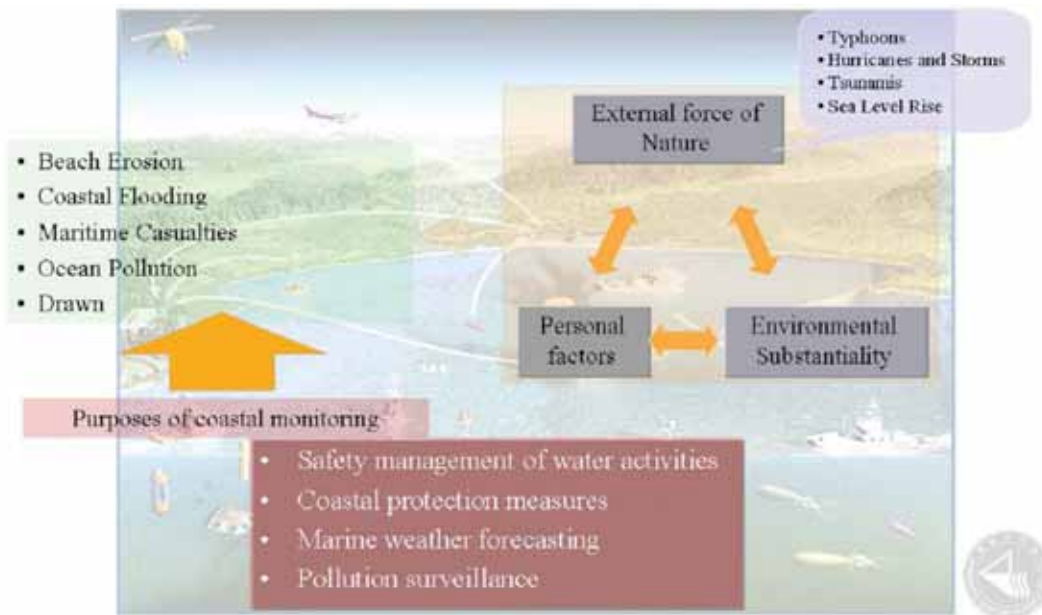
Real time Sea level Monitoring Stations for supporting Three - step High Tide Alarm system

The authorities have to pinpoint in advance which coastal areas are most vulnerable to an unusual sea level rise caused by a typhoon, earthquake or low atmospheric pressure. They must then find ways to minimize damage and establish countermeasures.

Such knowledge could not be obtained with past coastal disaster prevention approaches, however, and difficulties were encountered in formulating proper responses and monitoring the situation continuously. The authorities were unable to provide services that were sorely needed.

NORI solved this pressing problem by integrating the Internet and other platform information and communication technologies with oceanographic observation and data technologies. New services could then be offered to assist the public in real life situations, and disaster prevention agencies could enhance their effectiveness.

Initially, the program generated data on six target locations (Incheon, Boryung, Gunsan, Mokpo, Yeosu, and Busan) that were known to be particularly vulnerable to coastal disasters. The channels for transmitting the data to the relevant authorities were upgraded from the facsimile and email to an Internet site in 2001. As a result, delivery time was reduced and timeliness was enhanced, raising the usefulness of the data. The system upgrade served two distinct purposes: (1) providing the general public with access to tidal data and (2) providing a dedicated link to disaster prevention organizations for immediate notification of risk factors.

The effort to raise service quality and national disaster prevention effectiveness has been ongoing. In 2003, the number of locations being monitored was increased to fifteen, with the eventual goal being to cover the entire coastline. A real-time data sharing system was also installed at the National Emergency Management Agency to help coordinate disaster relief nationwide.

Expansion of the Three-step High Tide Alarm Program
Korean Program Benchmarked by Advanced Countries

- Korean technology is now being transferred to the U.S., Japan and Europe.
- The Japanese operate an Internet-based, two-step alarm program located in a disaster prevention data center.

In the past, Korea benchmarked various programs and work processes used in the United States, Europe and Japan to acquire the methods for analyzing and processing oceanographic observation data. Today, however, these very same countries are benchmarking Korea, which offers real-time oceanographic data transmission and Internet services backed by internationally competitive information technology.

In 2003, a Japanese delegation visited the Incheon tidal monitoring station to benchmark Korean technology related to oceanographic data services. The government introduced technical details (to include the concept and operational status) about Korea's Three-step High Tide Alarm Program during the Korea-Japan Waterway Technology Conference in 2005. Since that time, the Japanese Disaster Prevention Data Center has been operating a two-step ("unusually high tide" and "tidal wave") alarm program that employs real-time observation data.
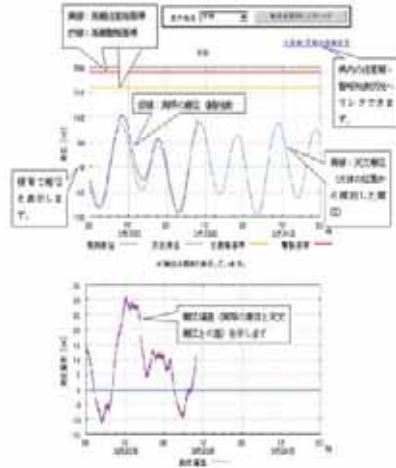
Internet-based two-step alarm program at Japan's Disaster Prevention Data Center

Three-step High Tide Alarm Program:
a New Paradigm for Operational Enhancement

- A comprehensive and systematic coastal disaster prevention program is in place at the national level.
- The Korean program is an ideal model for developing countries and other countries that lack a similar system.

The Three-step High Tide Alarm Program was developed by incorporating new ideas with improvements to existing work processes. The new approach assists the preventative measures taken by domestic disaster prevention agencies. It is also contributing significantly to the development of disaster prevention programs in other countries.

A system is in operation to monitor tidal ebb and flow and share tidal data globally. It can serve as the basis for building a practical system with a wider range of functions without having to employ many new people or invest large sums. This is the ideal approach for linking with other countries that use the same system and for assisting developing countries that have no system at all. It will contribute to improving disaster prevention in coastal countries around the world.

NORI is dedicated to minimizing loss of property and life in natural marine disasters resulting from storm surge, tsunami or sea level rise due to global warming. The Institute continues its support of real-time data sharing among disaster prevention agencies and local government organizations. At the same time, NORI will expand the data provision program and ocean monitoring network to help bolster the effectiveness of coastal disaster prevention programs of all kinds. As such, it will lead the way in international exchanges of disaster prevention data.
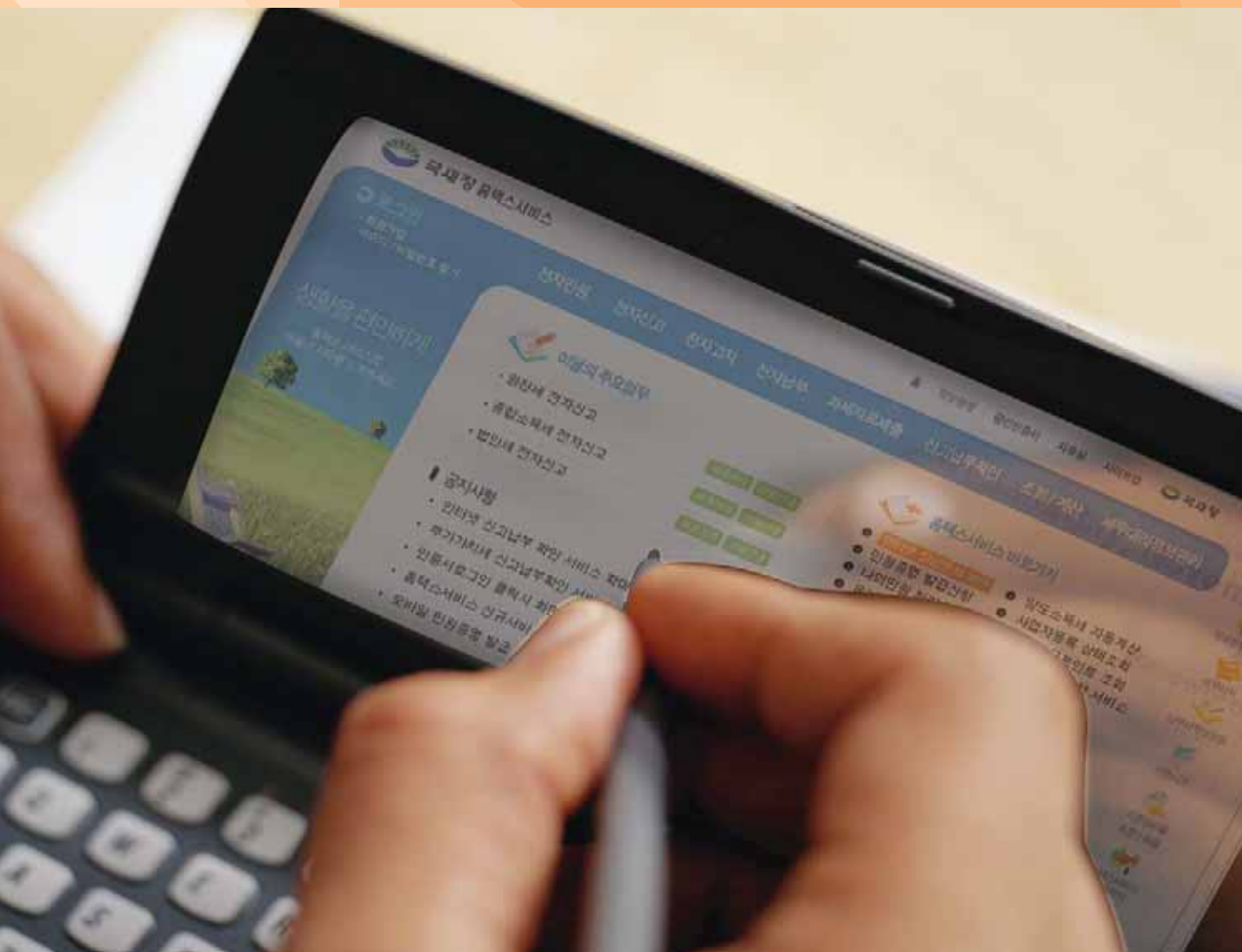
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Home Tax Service

National Tax Service

Home Tax Service:
# a Leading e-Tax Administration System

The Home Tax Service (HTS) was made possible by IT development and widespread use of the Internet. The online program lets taxpayers process a wide range of tax-related matters while at home or at work. They no longer need to suffer the inconvenience of visiting district tax offices in person.

HTS: Offering Online Services to Taxpayers

- Tax administration efficiency has been enhanced.
- The services are more taxpayer friendly.

Korea's National Tax Service (NTS) has been operating the HTS since 2002 to offer a taxpayer-friendlier environment. Diverse taxpayer services are accessible online, eliminating the need to visit the district tax offices to settle tax issues.

The HTS consists of four main categories: e-filing, e-notification, e-payment, and e-civil service. E-filing enables individual taxpayers to electronically file tax returns at home or at work. The service covers corporate tax, income tax, VAT, withholding tax and other tax types.
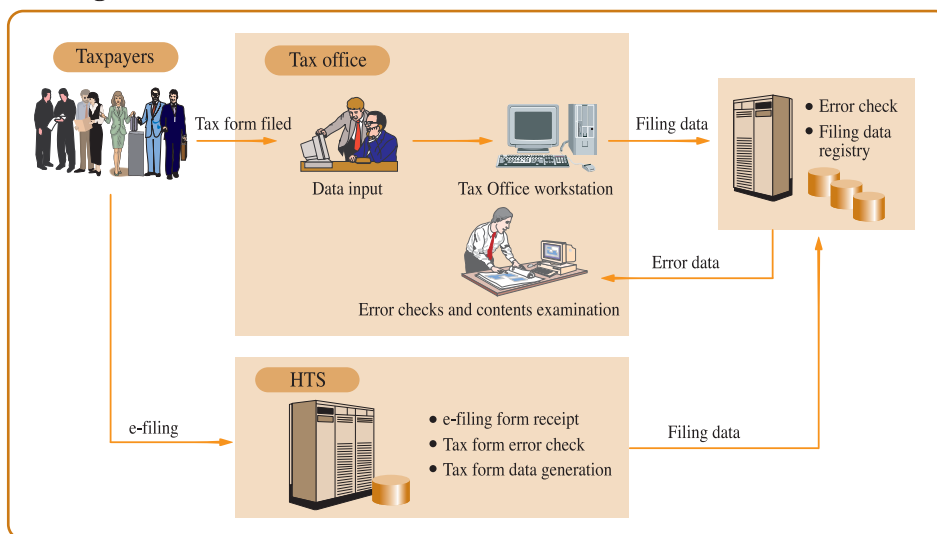

e-filing Flowchart

The e-notification service sends e-mail or SMS notifying taxpayers of their tax obligations. After receiving an e-notification, taxpayers can log on to the HTS website tofind out more details. Previously, taxpayers frequently missed tax notification letters when not at home. Thanks to this service, taxpayers who often are away on business trips or for other reasons can receive their tax notification anywhere anytime. Currently, e-notifications are only sent to taxpayers who apply for the service in advance.
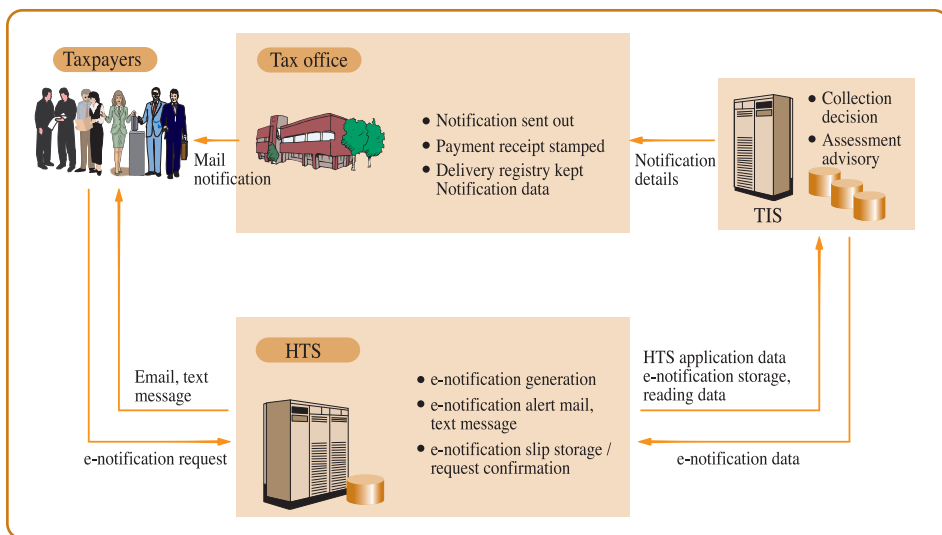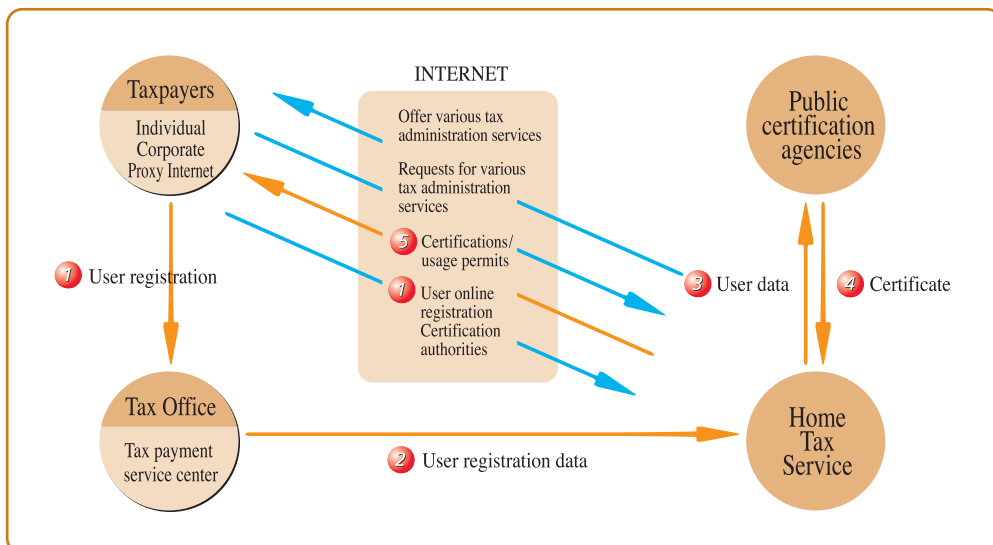

e-notification Flowchart

The e-payment service allows taxpayers to pay taxes on the HTS e-payment webpage by simply inputting the bank name, account number, and password. This service is possible because online banking services are used widely in Korea. Thanks to the e-payment service, taxpayers don't have to visit banks to pay their taxes any more.
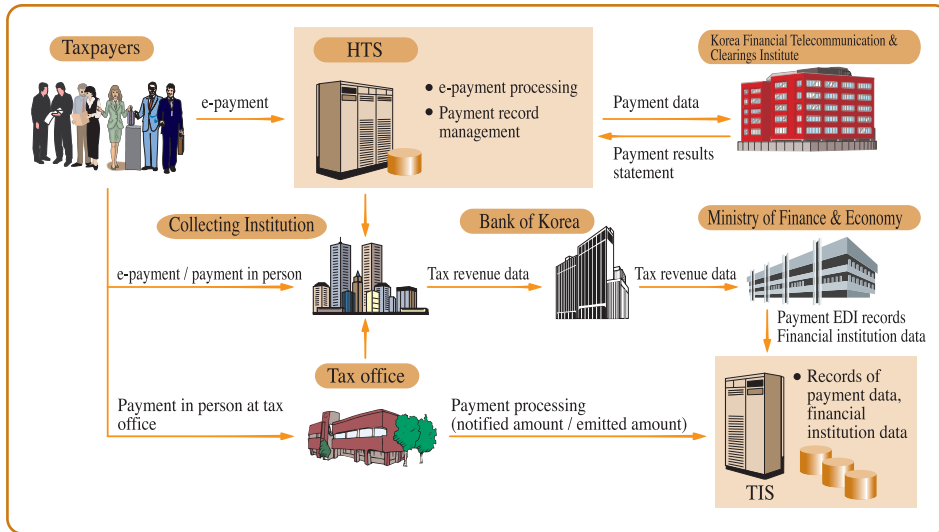
e-payment Flowchart

Finally, e-civil service permits taxpayers to apply for and receive tax-related certificates over the Internet. Applicants can print out their certificates directly from the website for submission to the institutions requesting them. HTS services also include the automatic calculation of capital gains taxes and gift taxes. Homeowners can also find out whether they are entitled to property tax exemptions.
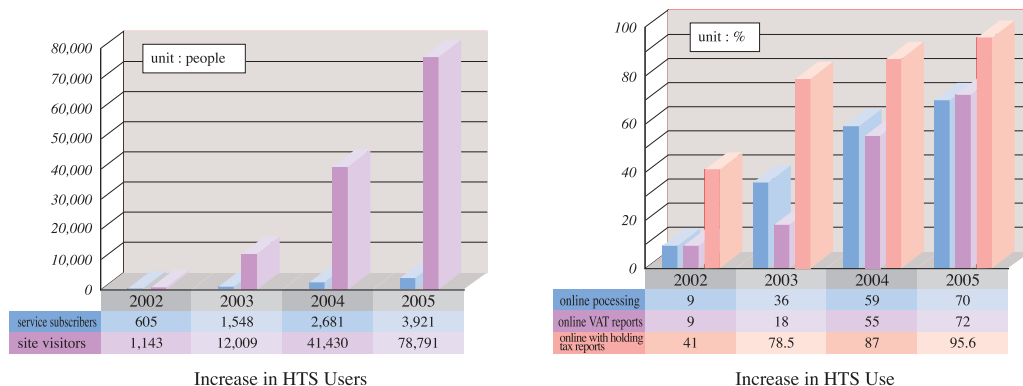

HTS Work Flowchart

Korea's tax administration has been steadily upgraded. The NTS started benchmarking e-filing systems in the US and Australia in 1999 and began work on its own e-tax service system in 2000. Initially, e-filing and e-notification services were provided for a limited number of tax types in 2002. The service was expanded in 2004 to include corporate tax and income tax, which require many supporting documents. The HTS has made tax filing and payment much easier, reducing taxpayers' transportation costs and saving time. The service benefits the NTS as well by improving tax administration efficiency. Data can be filed faster and by fewer people, and less errors are generated in the process.

HTS: World-leading e-Tax Service Created Quickly

- Diverse incentives have maximized the utilization rate.
- The system has been benchmarked by Japan, China and Vietnam.
- Mongolian tax authorities have requested advice on creating a similar e-tax service

Infrastructure is only the beginning of electronic tax administration. The system and proceduresmust be simple enough for taxpayers to appreciate the convenience, otherwise they will not use it. The NTS has continued to make its system as user-friendly as possible. Indeed, many countries that established an e-tax service system earlier than Korea still experience low utilization rates.

unit : people	2002	2003	2004	2005
service subscribers	605	1,548	2,681	3,921
site visitors	1,143	12,009	41,430	78,791

Increase in HTS Users

unit : %	2002	2003	2004	2005
online pocessing	9	36	59	70
online VAT reports	9	18	55	72
online with holding tax reports	41	78.5	87	95.6

Increase in HTS Use

One reason for this is insufficient motivation. The NTS began offering diverse incentives such as tax credits early on to get the system up and running quickly. The system improvement efforts have resulted in a more than six-fold increase in users from 600,000 in 2003 to 3.92 million (62% of all business) in 2005. The percentage of VAT e-filing increased from 13.7% in 2003 to 35.2% in 2004 and 72% by July 2005.
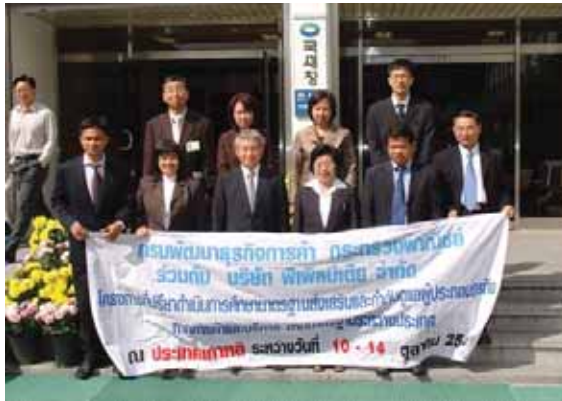
Delegation from the Thai National Tax Service

The successful operation of Korea's e-tax system is drawing attention from many developing and advanced countries alike. They are benchmarking the HTS as a successful example of a well-functioning e-tax system established in a relatively short time. Many of Korea's Asian neighbors (Japan, China, Vietnam, Malaysia, Mongolia, Pakistan and Uzbekistan)are taking tips from the HTS in their efforts to improve their own tax administration systems. Each country has sent high-ranking officials to Korea to learn about the HTS or sought advice from the NTS.

NTS Officials Consulting with Mongolian Tax Officials

The head of Iran's tax agency visited Korea, examined the HTS and benchmarked the digitization of Korea's tax administration. In the meantime, the NTS sent its officers to Mongolia at the request of the Mongolian National Tax Service to consult on the establishment of an e-tax service there. Prior to this, officials from the Mongolian tax agency had visited the NTS several times to assess Korea's advanced e-tax service.

HTS: a New Paradigm for Tax Administration

- A top-notch electronic tax administration system has been realized.
- The system has helped to enhance Korea's national image.

The NTS is elevating Korea's global stature by sharing e-tax administration know-how with neighboring countries. At the same time, the groundwork is being laid for exporting related technologies. In December 2005, for instance, the Korea IT Industry Promotion Agency (KIPA) invited high-ranking officials from six Central Asian countries to demonstrate Korea's advanced e-tax administration.

The e-tax service may the best option for addressing various problems with conventional tax administration, including irregularities, inconvenience to taxpayers, tax officials' excessive workload and slow response. The NTS is developing diverse e-tax services that allow taxpayers to use the HTS as conveniently as possible. For example, taxpayers can check their e-filing and e-payment status online.

Meanwhile, the NTS is continuously upgradingfunctions on the HTS website and surveying taxpayer satisfaction and needs. Instead of being satisfied today, the NTS will continue to improve the HTS so that the e-tax system can be a standout success story in Korea's advanced government administration.
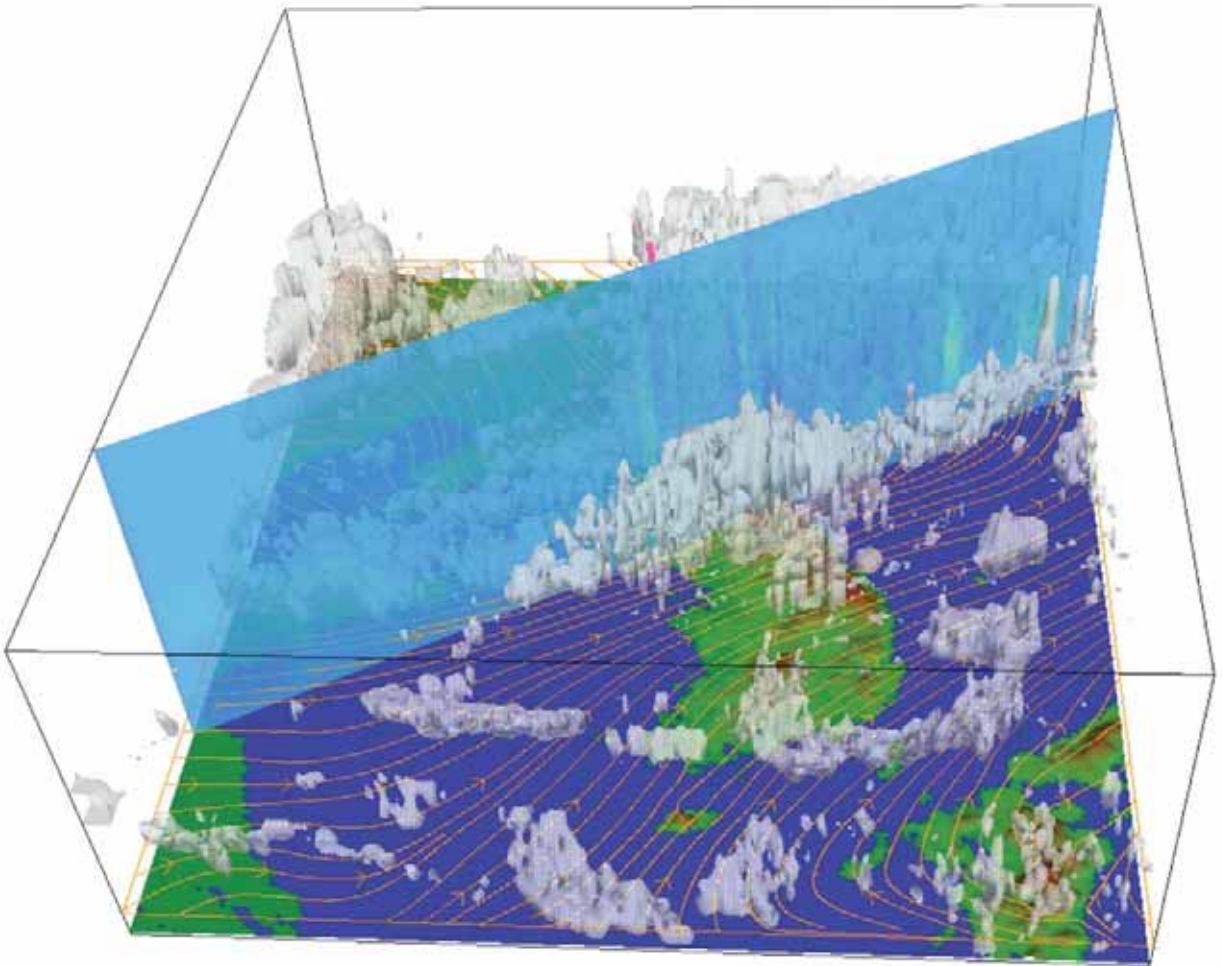
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PC Cluster-based Numerical Weather Prediction System

Korea Meteorological Administration

PC Cluster-based Numerical Weather Prediction System

The numerical weather prediction (NWP) model developed by the Korea Meteorological Administration (KMA) is based on PC clusters instead of supercomputers, which can be prohibitively expensive. Each KMA regional meteorological office operates a PC cluster-based NWP system tailored to regional climate characteristics, demonstrating Korea's advanced weather forecasting technology.

PC Cluster-based NWP System Offers Accurate Weather Prediction

- Weather data are provided in real time for aviation safety.
- Optimal systems can be configured to accommodate the conditions of individual countries.
- This is the best performing alternative to using small supercomputers.

The NWP is a computer modeling technique based on past and current atmospheric condition data. NWP systems must solve very complex equations to create a mathematical model of the atmosphere, so most of the systems today rely on supercomputers. Indeed, weather forecasting organizations are among the world's major supercomputer buyers. The NWP has developed in tandem with the supercomputer, but the costs of purchasing and maintaining supercomputers have been unaffordable for many developing countries.

The KMA's PC cluster-based NWP system is designed to perform as well as a supercomputer-based model but at a fraction of the cost. The system employs a cluster of PCs or workstations linked to a high-speed network. The agency has upgraded the system every year to maintain maximum capacity at minimum cost.

The KMA started to develop a NWP system based on a PC cluster in 1998 with the aim of enabling its regional meteorological offices to operate their own NWP systems without having to resort to supercomputers. The project, now complete, has allowed KMA regional offices to make regional weather forecasts more cost-effectively. Microprocessor performance continues to rise rapidly while prices are plummeting, paving the way for continuous upgrades in PC cluster-based NWP systems.

PC cluster-based NWP technique

The KMA first operated its NWP system at the Jeju Regional Meteorological Office in 2000. The outcome was highly successful, and operation was subsequently expanded to five regional meteorological offices and the Aviation Meteorological Office. Numerical weather prediction data provided by regional offices in real time are referenced when making weather forecasts. Most important is the weather information provided for aviation safety.

KMA Cluster-based NWP Technique Recognized by WMO

- The KMA has transferred its NWP know-how to Mongolia and Sri Lanka.
- The KMA has helped to boost national competitiveness.
- The World Meteorological Organization (WMO) has requested technical assistance in the meteorology field.

Recently, climate change is causing increasingly severe weather damage, and countries have come to recognize the economic value of weather data. Hence competition is heating up over the development of more-accurateweather forecasting systems.

The 1st Korea-Mongolia Agreements on Meteorological Cooperation

Against this backdrop, the KMA developed its own PC cluster-based NWP system, which was unveiled at the 2002 High-level Weather Policy Seminar in Seoul. The system's excellent weather prediction performance and economic benefits have drawn keen international attention since that time. The WMO has judged this to be the most effective option for cash-strapped developing countries in Asia. The UN body officially asked the KMA to participate in a project to provide NWP-related technologies to Asia's developing countries.

In addition, the KMA developed the Mongolian NWP System (MNWPS) in 2004 and transferred the technology to the Mongolian National Agency for Meteorology, Hydrology and Environment Monitoring (NAMHEM). The MNWPS success is cited as an exemplary case of meteorological cooperation, and similar requests for technology transfer continue to come from countries in Asia and Oceania. The KMA's international meteorological assistance is enhancing Korea's national competitiveness by highlighting the nation's image as a meteorological technology leader.

KMA: Front-runner in PC Cluster-based NWP Technology

- Korea's role is expanding as an Asian NWP hub.
- The KMA policy has been welcomed by the Mongolian NAMHEM.
- Korea is solidifying its status as a developer of PC cluster-based NWP technologies.

The MNWPS is the first proper NWP model in Mongolia, and local officials appreciate it as a landmark beginning of NWP there. The development of MNWPS motivated the NAMHEM staff to learn about NWP and computer systems. The NAMHEM is now striving to establish a system similar to KMA's by expanding the network bandwidth and establishing a new department devoted to system operation and maintenance.

The KMA's cooperation with Mongolia and NWP technology assistance to developing Asian countries is heightening Korean pride. World is learning that Korea is a source technology developer, and the foundation is being laid for Korea to become an Asian leader in the NWP field. Down the road, the KMA will play an important role in raising Korea's status as a technology provider by continuing to provide meteorological technology and advice to developing countries.This will help them to design and operate clusters that best fit their specific needs and weather conditions.

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Cheonggyecheon Restoration Draws Global Attention

Seoul Metropolitan Government

Cheonggyecheon Restoration Draws Global Attention

In July 2003, the Seoul Metropolitan Government launched a 27-month project to resurrect a 5.8-kilometer section of a stream which once wound through downtown Seoul. In Korea's rush toward economic development, Cheonggyecheon Stream was paved over to make way for a broad roadway that officially opened in 1961. Ten years later, the government covered the roadway with an elevated expressway, burying the stream under further layers of concrete and steel. By 2000, however, the elevated road was decrepit and posed safety problems after some three decades of use. The City's solution was to uncover a hidden cultural legacy and create an environmentally-friendly urban space for residents to enjoy.

Transforming an Eyesore into a Tourist Attraction

- The Seoul Metropolitan Government eased project opposition by keeping the public informed from beginning to end.
- The City conducted careful studies and thoroughly prepared for anticipated problems.
- The stream restoration resulted in diverse economic benefits.

Just as the elevated roads over Cheonggyecheon were decrepit eyesores, most of the buildings along the route were more than 30 years old and dilapidated. Many merchants and residents were leaving the area, and its economic vitality was waning. Development in the neighborhood had come to a standstill.

Cheonggyecheon after restoration

On top of this, some 1.6 million vehicles used the surface and elevated roads each day, and the area was a major source of traffic congestion. The air quality along the route was worse than that for the city as a whole, and the buried streambed posed safety and environmental problems. Meanwhile, the cultural and historic legacies of the stream were drawing increasing public interest.

The Cheonggye Elevated Road before the restoration project

As the problems and dangers of the old road system came to light, the Seoul Metropolitan Government promoted the Cheonggyecheon Restoration Project as the solution. The project was designed to create a park-like space in the city center that would bring culture, nature and people together and, at the same time, revive economic development downtown.

In the beginning, however, many expressed concerns over the project's ramifications. Foremost among these voices were the local merchants who would have to be relocated. Others worried about the serious traffic problems that would occur during the project, which would require more than two years to complete. The City devised countermeasures in advance to address each of these issues.

The first order of business was to form a citizens' committee and publicize the project's feasibility and merits. Citizens' opinions were collected and then reflected in the formulation of the restoration. Ideas were exchanged continuously with the merchants along the Cheonggye Elevated Road, and city officials worked hard to ensure the merchants could stay in business. They provided financial assistance for upgrading the traditional, open markets and used Cheonggyecheon vendors as the first resource when purchasing items for the municipal government.

Various measures were taken to prevent the envisioned traffic problems. The roads (both surface and elevated) that traced Cheonggyecheon's route were key arteries for the inner city. Before their closure, the government improved the functions of the public transportation system, establishing bus-only lanes and adding new bus routes to serve the downtown area. The police also cracked down on illegally parked vehicles in the project vicinity.

Restoring the cultural properties along Cheonggyecheon was not an ordinary task. Therefore, the Cultural Heritage Administration (CHA) conducted a study on excavating the historic relics in the area under restoration prior to construction. The Metropolitan Government then followed the CHA's recommendations during the project.

Gwangtong Bridge after restoration

Supyo Bridge before its relocation to Cheonggyecheon

Cheonggyecheon Restoration Project Studied by Other Countries

- Harvard University opens a course on the Cheonggyecheon Restoration Project.
- More than 2,500 officials have visited the stream on 158 different occasions for benchmarking.
- The Cheonggyecheon Restoration Project won the "Best Public Administration" prize at the International Architecture Biennale in Venice.

Seoul's Cheonggyecheon restoration has touched off similar projects in major cities outside Korea. In November 2002, the Paris Urban Planning Research Center studied the Cheonggyecheon case and will apply lessons learned to the restoration of urban streams in France. The Harvard University Graduate School of Design opened a studio course on the Cheonggyecheon in September 2003. In October 2005, the City of Osaka began a study on water in cities, using Cheonggyecheon as a model.

The Cheonggyecheon Exhibition Hall was opened in January 2003 and has become a popular destination for non-Koreans wanting to benchmark the restoration project. Over 2,500 Americans, Japanese, Germans, French, Belgians, Norwegians and others have visited Seoul on 158 different occasions to examine what the Seoul Metropolitan Government has accomplished. About half of the visitors were from Japan.

Visitors to Cheonggyecheon

Cheonggyecheon study tours have included senior city government officials such as Beijing Vice Mayor Liu Jing-min and Ulan Bator Mayor Miyeegombo Enkhboldas as well as lawmakers, professors, lawyers and other professionals. Of the total number of official visits, ninety-two were from Asia (nine different countries), seven were from Europe and five were from the U.S.

The success of the Cheonggyecheon Restoration Project played a major role in Seoul's winning a 2004 Healthiest City Award from the World Health Organization. Such global interest in the project indicates that the so-called "Korean Wave" is now spreading outside of Asia. The influence of big name Korean enterprises such as Samsung, LG, and POSCO is spreading fast in world markets. In the same fashion, the Cheonggyecheon Restoration Project is publicizing the urban competitiveness of the Korean capital.

Researchers examine a scale model of Cheonggyecheon   Researchers study photos of the construction process

The Venice International Architecture Biennale enjoys international prestige in the area of culture and the arts. Representatives from the Seoul Metropolitan Government were invited to this event in the fall of 2004 to speak about the city's culture, history and efforts to restore the environment and ecosystem. The special exhibit on the Cheonggyecheon Restoration Project won the "Best Public Administration" Prize.

Cheonggyecheon:
a World-class Tourism Brand Representing Korea

- The Italian press gives extensive coverage to the success of the Cheonggyecheon Restoration Project.
- The stream was visited by 240,000 foreign tourists in 2005 and is expected to attract over two million in 2006.
- Korea is becoming better known as an international travel destination, thanks to the Cheonggyecheon Restoration Project.

The restoration of Cheonggyecheon has put Seoul's innovative administration into the global spotlight. Officials from neighboring Japan have closely scrutinized the project. They have expressed the need to apply such case studies to stimulate social change and political leadership in a country still languishing from an economic bubble that burst more than a decade ago.

Moreover, Cheonggyecheon is quickly emerging as a new tourist attraction that is drawing both local residents and foreign visitors. A 2005 survey of foreign tourists in Seoul showed that Cheonggyecheon is now a Korean landmark, with nearly 250,000 foreign tourists having visited the stream. More than two million are predicted to do so in 2006.

The rapidly growing interest in Cheonggyecheon is prompting travel agencies to include it in their city tours. New products are being designed by linking the stream to other "Korean Wave" tours (associated with popular movies and TV dramas), and Cheonggyecheon is being positioned as one of Seoul's biggest tourism brands.

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Resource Retrieving Facility

City of Guri

Resource Retrieving Facility in the City of Guri

The City of Guri's Resource Retrieving Facility (RRF) has altered the popular image of waste incineration plants and convinced local residents that waste can be converted into valuable resources. The chimney, which typifies a waste incinerator, was designed to double as an observation tower and is known as "Guri Tower". The Tower has helped to dispel the "NIMBY" (not-in-my-backyard) perception of this type of facility on the one hand, while providing the city with a must-see landmark on the other. The RRF is a proud success story for the municipal government's environment-friendly policies.

Guri RRF: from NIMBY to Landmark

- The NIMBY stigma was removed by innovative thinking, offering residences a place to enjoy.
- The City won over residents by encouraging them to be involved in the project.
- Some ₩2.8 billion is saved a year through efficient operation.

Guri is a satellite city of Seoul and has developed steadily, resulting in a fast growing population and elevated standard of living. Such growth also challenges a municipal government with a greater variety and volume of domestic waste. Domestic waste management has thus emerged as one of the most pressing issues facing the city.

Nowadays, however, every municipal government has difficulties finding a site for a waste incineration plant, including Guri's. The city itself is in a confined area and residents were adamantly opposed to the facility, their NIMBY sentiment a formidable obstacle to the RRF project. The municipal government thought out of the box for a solution, and it worked. A potential eyesore was transformed into a valuable asset for local residents and a proud landmark representing the city.

Community Facilities in the Guri RRF Complex

This success was made possible by the municipal government's effort to get the residents involved in the facility establishment from the beginning. For example, the city empowered the residents to select the site, and the project was conducted transparently. All the while, the government explained the necessity and legitimacy of the new facility.

A special effort was made to dispel negative public perceptions of waste incineration plants. The 100m RRF chimneywas uniquely designed to double as an observation deck named the "Guri Tower". At the same time, residents' convenience and benefit was factored into the project planning. The government used its ₩10.8 billion budget to add a public soccer field, swimming pool and sauna etc. All Guri City residents can use these facilities at very reasonable rates.

The heat generated by the waste heat boiler is converted into energy for powering the on-site facilities, cutting operation cost by about ₩2.8 billion annually. Importantly, unpleasant odors are conspicuously absent from the Guri RRF because the air in the waste storage pit is supplied by forced draft fans and flows to the incinerator. The unloading dock is free of offensive odor. An electric signboard is posted near the front gate to announce polluted gas volume in flue gases and updated in real time. Residents can monitor what is going on constantly.

International Success Factors for the Guri RRF

- Some 300,000 visitors, both local and foreign have come since the 2001 startup.
- Guri City and Beijing Mirine Hi-Tech Co. are jointly constructing a domestic waste incinerator in Jiangyin, in China's Jiangsu Province.
- A total of 318 ranking officials from 26 organizations in China, Japan and other countries have visited and benchmarked the facility.

EPA-ANSA of Algeria
(April 28, 2004)

Korea-Japan Joint Air
Environment Training Team
(January 26, 2005)

Some 300,000 people have visited the Guri RRF between its opening and the end of 2005, making the facility a significant tourist attraction for the city. Most of the foreign visitors have been high-ranking government officials-city mayors, government bureau chiefs-who want to benchmark the state-of-the-art system.

Mayor of Vinh, Vietnam
(September 1, 2005)

Eleven Asian countries (Japan, China, Myanmar, Bangladesh, Pakistan, Mongolia and Indonesia among them) have learned about the air pollution prevention methods and technologies employed in the Guri RRF through the Korea International Cooperation Agency (KOICA) and the Japan International Cooperation Agency (JICA). China is particularly committed to improving its living and ecological environment in advance of the 2008 Summer Olympics.

Guri RRF visit and briefing program

A domestic waste incinerator using Korean technology and capital is now being built in Jiangyin, Jiangsu Province. The Y300 million project is being jointly carried out by Korea's Kyong-ho Engineering Architects, which played a pivotal role in the construction of the Guri RRF, and the Beijing Mirine Hi-Tech Co. When completed, the plant will have a daily incineration capacity of 1,200 tons. These achievements are the results of the Guri city government's ongoing effort to create new value from its RRF. For example, the city government invites government officials from Asia's developing countries to see and learn about the Guri RRF. This program has helped Guri to promote its RRF overseas.

Guri has worked hard to transform the image of an incinerator into that of a city park. The government hired artists to paint murals on the concrete walls and installed walking paths on the premises.

Facility image enhancement

Landscaping at the facility

Guri's Ongoing Value Creation from the RRF

- The city saves ₩350 million a year by recycling waste heat from the incinerator.
- The incinerator has furthered the city's pollution control effort and raised public awareness of alternative energy sources.

International acclaim notwithstanding, Guri continues to improve its RRF. The government will install an automated screening system to reduce the amount of waste that has to be incinerated, cutting operating costs by another ₩500 million annually. The ratio of recyclable materials recovered from the waste will be raised as well to generate an additional ₩500 million per year.

Moreover, the City will conclude a contract to sell surplus electricity from the facility to the Korea Electric Power Corporation (KEPCO). The deal is expected to cut the facility's electricity bill by an additional ₩50 million a year, raising the total annual cost reduction to ₩350 million.

At the same time the Guri government plans to establish an energy information center on the RRF premises to educate the public about alternative energy and encourage residents to save energy and prevent pollution.

Contact Point for Overseas Promotion

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