

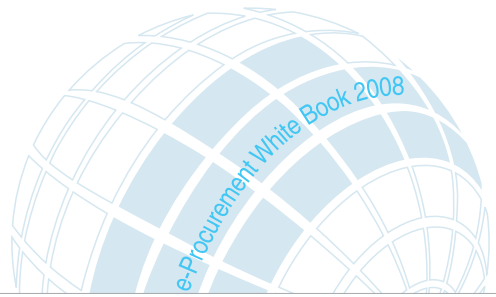
e-Procurement White Book



www.g2b.go.kr

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Foreword



PPS is the central agency which is contributed to the improvement in convenience of the nation, the tax payer, by acquiring and providing resources needed for public services of the government.

To enhance efficiency and transparency in central procurement services, PPS has promoted the digitalization of procurement administration since 1995, succeeding in the establishment of EDI (Electronic Data Interchange) in 1997, and on this ground, it established KONEPS (Korea ON-line E-Procurement System), the

national integrated e-Procurement system, in September 2002 to enable the one-stop management of separated bid information of each public organization.

KONEPS is developed to process the "One-Stop" service covering whole bid procedures via the online "Single Window" from bid notice, bidding, contracting, inspection & tallying, and payment request through to payment in linkage to 88 external-agency systems, such as administrative organizations, financial institutions, relevant associations, etc.

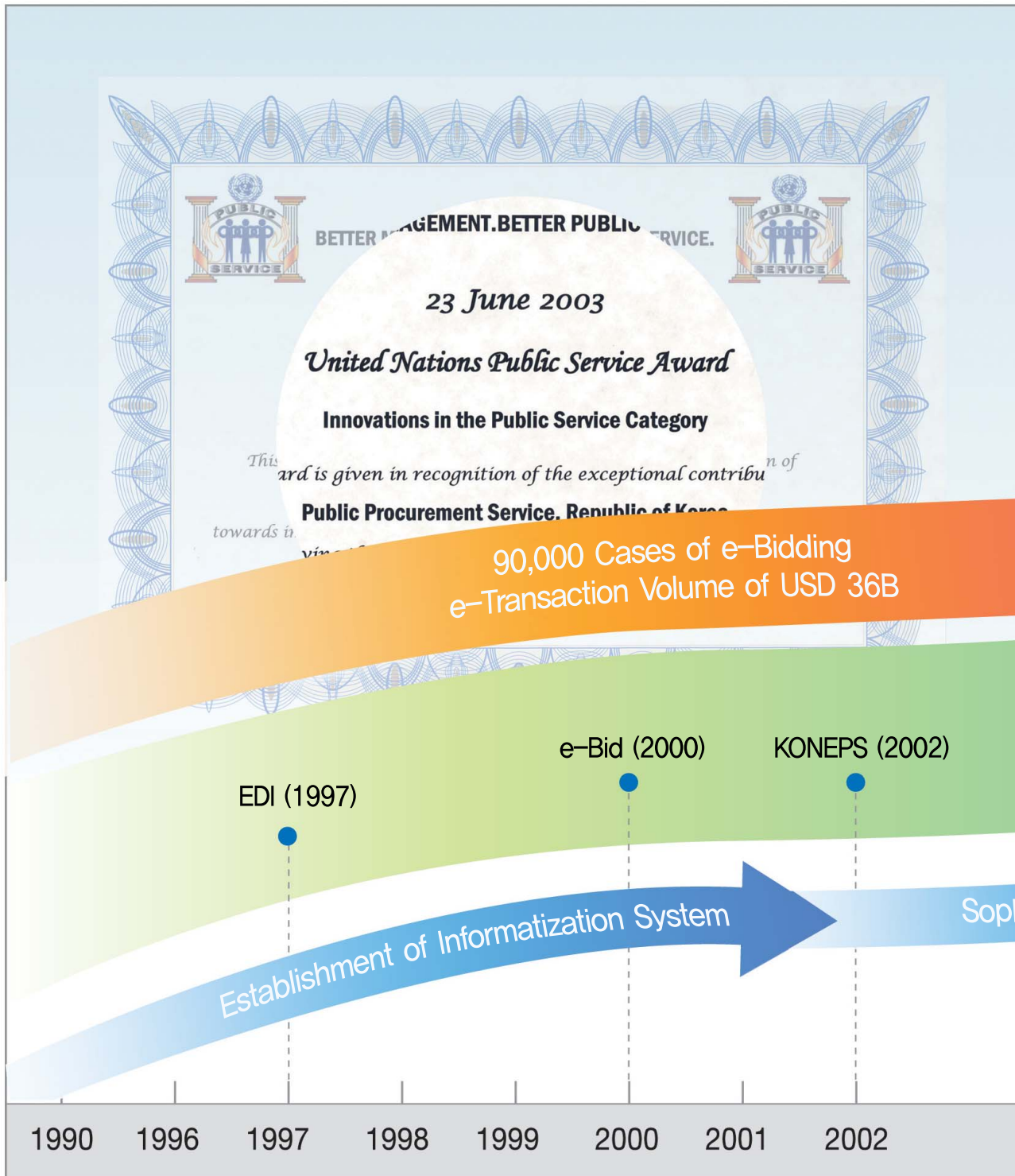
In international recognitions of the establishment and practices of KONEPS, PPS won the 'UN Public Service Award' in 2003, and acknowledgement as the 'Best Practice Model' in e-Procurement sector in 2004, as well as the honorable statement of 'No further actions are required.' Moreover, PPS has been visited by more than 50 countries which are interested in e-Procurement for the benchmarking of KONEPS.

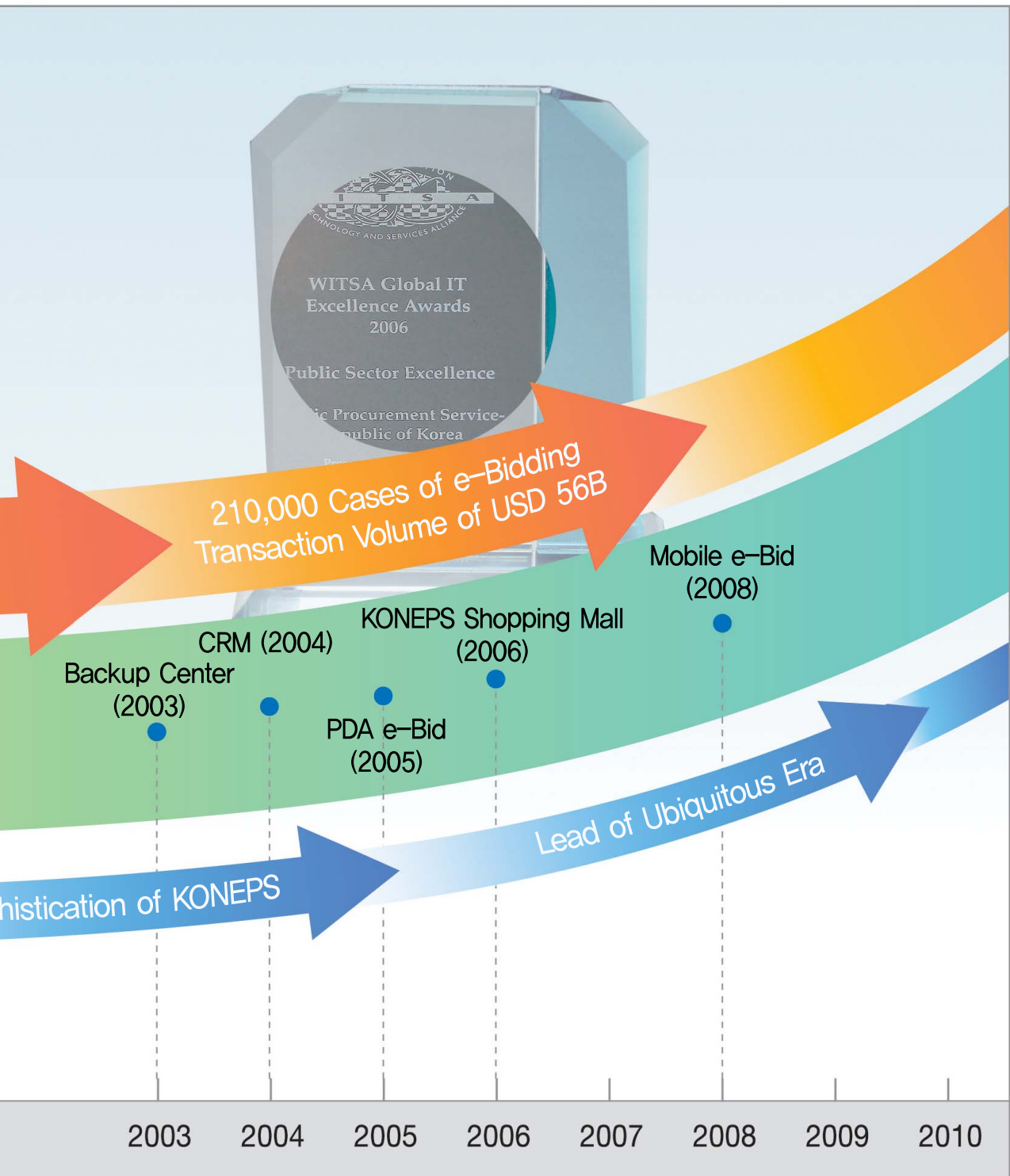
This 'e-Procurement White Book' covers the entire range from the establishment of KONEPS, its expansion and to systematic advancement with useful illustration and graphs in order to support a reader's understanding. Therefore, it is certain that this book will be able to increase the comprehension of the e-Procurement system and contribute to the development of the public procurement system in the world.

Thank you.

Administrator
Public Procurement Service
The Republic of Korea

A handwritten signature in black ink, appearing to read "Joo in Chng".





Part 1

Introduction

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Chapter 1

Role of Public Procurement Service in Government Procurement



Section 1

Significance of Government Procurement

Government procurement is the process by which a government, using financial resources (mainly from taxes), obtains material resources necessary for public activities and other tangible/intangible resources necessary for construction work & design, consulting, etc. Procurement administration is a highly calculated and reasonable collaborative behavior of formulating goals and policies to coordinate government procurement and choosing the most appropriate means to minimize opportunity costs. According to recent World Bank and OECD reports, the government procurement markets of major countries account for approximately 10~25% of their national GDP and are so closely tied to their national economy as to have great influence on related industries.

Government procurement is divided largely into centralized procurement and decentralized procurement according to the method of procurement. Centralized procurement is a system in which a central procurement agency conducts procurement on behalf of public institutions. This is commonly adopted in countries that stress the effective execution of purchase budget. Decentralized procurement is a system in which each public institution conducts procurement individually. This is usually adopted in countries where demand for decentralization is strong or a local government system has been established.

The Korean government procurement is a limited centralized system that combines centralized and decentralized procurements. It plays an important role as a means of participating in the market economy, although its role in controlling the government procurement market has been reduced with the maturation of a free market economic system.



Section 2

Role of the Public Procurement Service (PPS)

The Public Procurement Service (PPS) is an executive agency responsible for purchasing and providing quality goods and services needed by public institutions at reasonable prices. Serving as a government agency responsible for the real economy, PPS has greatly contributed to developing the national economy and improving people's living standard. It is an administrative agency operating in an anti-authoritarian and horizontal way, not based on public power. The role of PPS as an government procurement agency is as follows:

1. Minimization of Government Procurement Costs

If procurement is conducted individually by each government agency, it would cause serious problems in terms of efficiency and effectiveness. Entrusted by the people to identify and solve such problems, the government has developed a more specialized and centralized procurement system that enables highly efficient tax execution. As long as the government maintains the centralized procurement system in order to achieve maximum economic effect at minimum procurement costs, PPS is expected to play a central role in the government's efficient budget execution. This is especially significant in the modern administration that pursues a small but efficient government.

2. Implementation of National Policies in the Real Economy Sector

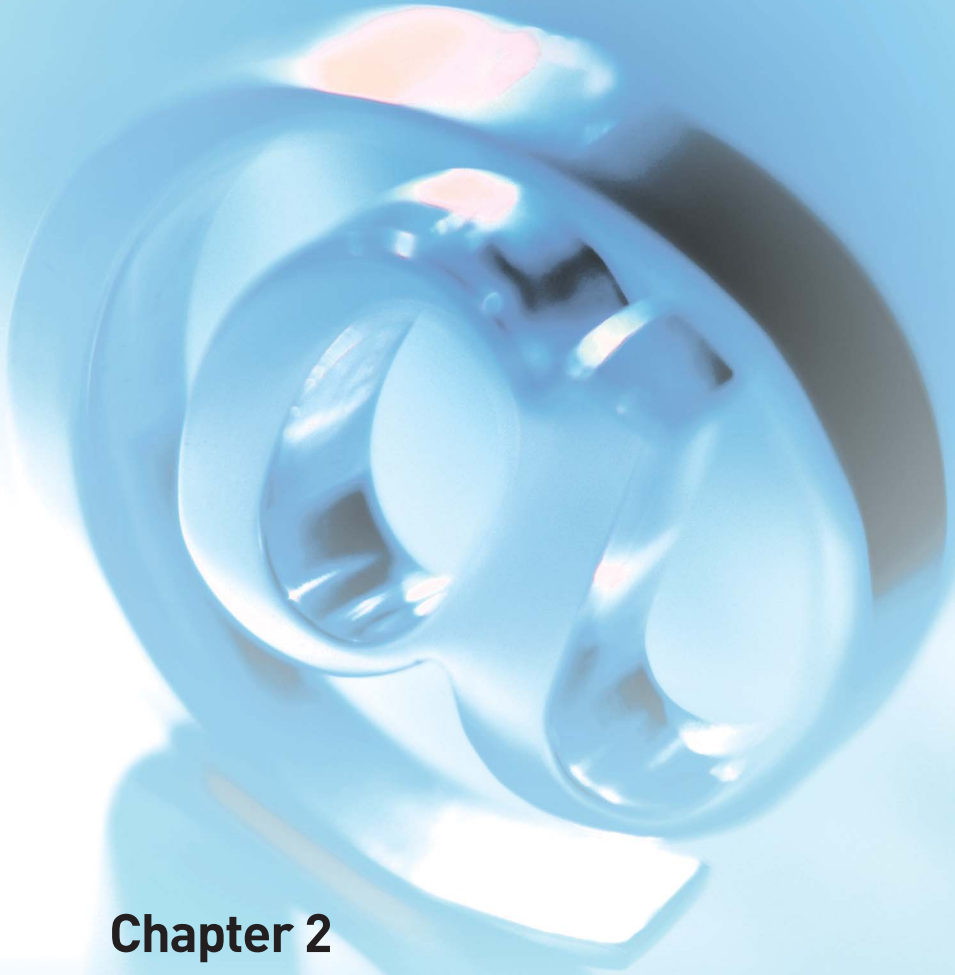
Government procurement, whether decentralized or centralized, has great influence on the national economy. Unlike private sector procurement, which is simply committed to purchasing and providing quality goods at low prices, government procurement is used as a means of protecting and nurturing national industries and improving the international payment balance through counter trade. By supporting socially disadvantaged businesses, it plays a role in realizing national policies in the real economy sector. PPS is also implementing support policies for small, venture, start-up, and socially disadvantaged businesses, economic policies for stabilizing employment, price levels, and the balance between supply and demand, and environmental policies.



3. Guarantee of Transparency & Fairness in Procurement Administration

The field of procurement is highly susceptible to public corruption, thus requiring a high level of ethical awareness among public officials. This can be realized by a centralized procurement system, since it is more effective for the inspection agency to monitor a single centralized procurement agency than multiple decentralized ones. Standardization of procurement procedures and improvement of procurement regulations can minimize negative external effects, strengthen the observance and advancement of related international standards, and thus enhance the transparency and fairness in procurement procedures. With the increasing interest in anti-corruption by international organizations like WTO, OECD and APEC, PPS will play a more important role than ever before.

PPS is currently working to minimize procurement costs, develop a national contracting system, ensure equal bidding opportunity for suppliers, and alleviate the users' inconvenience. With the global opening of procurement markets, PPS is gearing up its anti-corruption efforts by observing international standards concerning the non-discriminative treatment of foreign companies as nationals and by ensuring transparency in all procurement procedures.



Chapter 2

Background & Necessity of Digitalized Procurement Administration



Section 1

Background of Digitalized Procurement Administration

The rapid change in procurement administration environment has become a primary motive for demanding changes in the value, system and methodology of the traditional procurement administration.

This change, requiring new paradigms, is apparent in many cases, eg. the increasing demand for the globalization and opening of procurement markets to meet the expanded global economic order, the global spread of digitalization and digital e-Commerce based on the radical development of information technology, and the changes in the local government environment following the introduction of local government.

The background of digitalized procurement administration is divided into internal and external.

1. Internal Background

A. Reinforced Decentralization & Autonomy Arising from Localization

The full-scale implementation of local administration by popularly elected local government officials has led to decentralization, ie. the transfer of administrative functions and authorities to local governments. This forced PPS to redefine its role of supporting local governments through government procurement without infringing on their autonomy. The introduction of local government is very significant not only in the political aspect of enhancement of local autonomy but also in the economic aspect of efficient procurement & distribution of resources. For autonomous solution of local problems and efficient procurement & distribution of necessary resources, the traditional concentrated purchase by a central procurement agency has been converted to dispersive purchase based on local autonomy.

B. Necessity of Establishment of a Customer-Oriented Administrative System

With the trend toward openness and decentralization, demands from public institutions using PPS have become more varied and sophisticated, requiring reforms toward customer-centric



supplying business. With the current emergence of administrative reform as a new paradigm, more emphasis is being placed on the customer-centric supplying business.

C. e-Business-Based Government Procurement

e-Commerce- or e-Business-based government procurement, promoted by the development of IT technology, has elevated the status of PPS and revolutionized the method of providing supplying business. e-Business-based procurement administration means “using a network-based technology for effective management (production, accumulation, utilization, application and exchange) of goods and service information provided by PPS”.

2. External Background

A. Pressure for Opening of the Government Procurement Market

With the signing of the WTO Government Procurement Agreement in 1993, the government procurement market was opened and since then demand for guaranteeing transparency and fair competition in procurement administration has gradually increased. There was a widespread opinion that government procurement should be excluded from trade liberalization since it constitutes an important policy measure for national economic development. However, demand for opening the national procurement market has steadily increased with an emerging consensus for the importance of government procurement and a growing global pressure for free trade.

Considering that the FTA, now spreading to every part of the world, includes government procurement as one of its key negotiation agenda, the global opening of government procurement markets is expected to be gradually accelerated. This requires a guarantee of transparency and expertise in government procurement. Simplifying and freeing the government procurement market will guarantee more transparency in the legislative and administrative procedures applied to government procurement and ensure non-discriminative practices in government procurement.

B. Spread of e-Procurement throughout the World

The most important of the various factors causing paradigm changes in procurement administration is the possibility of e-Procurement based on information technology. The



rapid development in information technology has brought innovative changes to many areas of society, especially to EDI (Electronic Data Interchange) and e-Commerce.

This trend is also visible in the field of administration, and many national governments are struggling to realize digitalized procurement administration. For instance, the United States government has established the FACNET (Federal Acquisition Computer Network) to realize a web-based digitalized procurement administration based on advanced Internet technology. Thanks to the development and expansion of the Internet, each country is implementing an e-Government project to enhance the internal efficiency and productivity of government administration and improve services for the people. Each government's e-Government project is categorized as G2C (Government to Citizen), G2B (Government to Business), G2G (Government to Government), etc. Particular attention is being focused on e-Procurement, a part of the G2B project.

e-Procurement means using an IT-based network to perform one or more procurement procedures from request, approval, announcement, bidding, contracting, ordering, delivery through payment. It enables quick identification of information on e-Bidding, inter-agency joint purchase through e-Shopping mall, and money flows caused by e-Purchase. Motivated by this, many advanced countries are now seeking to establish a government e-Procurement system capable of providing one-stop services. e-Procurement in the government sector can bring about fundamental changes in procurement administration by reducing procurement costs, enhancing the transparency of the procurement market, and improving the convenience, promptness and economic efficiency of suppliers.

c. Development of IT Industry & Emergence of e-Government

The emergence and popularization of the Internet has spurred changes throughout society as well as new technological developments in the information & communication (IT) field. The growth of the IT industry and the popularization of the Internet have both created a new cyber-space environment and, accordingly, each country has set the realization of e-Government as its priority.

e-Government first appeared in the 1993 NPR (National Performance Review) report as a term describing the redesign of administration and services using information



technology. Its core is the application of electronic means such as e-Approval and network-based approach in the production and delivery of public services.

e-Government can be defined as a government whose administration depends mostly on online information technology or a government who quickly and accurately handles national affairs and services using computer or IT technology. It is customer-oriented and uses advanced IT technology in order to realize an open government. It also focuses on enhancing administrative competitiveness and improving services for the people. Due to the growing information value and the increased sharing of information offered by e-Government, all government procedures and activities are inevitably published. Transparency in the public sector creates an administrative environment free from corruption¹⁾ by exposing administration to public monitoring.

1) The factors causing corruption in the procurement field include ① non-competitive and complicated ordering systems, ② arbitrary and unreasonable procurement procedures, ③ limited publication of procurement processes/results, ④ insufficient punishment against illegal or unfair practices, ⑤ lack of surveillance and responsibility and ⑥ frequent position changes, poor information provision, discriminating publication, etc.



Section 2

Necessity of Digitalized Procurement Administration

1. Pursuit of Transparency & Fairness

Procurement administration, whose main task is to purchase, provide and manage goods and services necessary for government affairs and public services, is basically based on the economic behavior of purchasing goods and services, which corresponds to the purchasing and contracting activities conducted by private businesses. As in the purchasing and contracting activities conducted in the business sector, the traditional procurement administration was focused on the resulting aspect of fund execution, ie. ensuring efficiency and effectiveness. However, the primary source of funds for government procurement is taxes from the people, and the use of funds should strictly follow related regulations, eg. the Budget Accounting Act.

Unlike private procurement, government procurement seeks not only moral values of stressing the justification of fund execution but also reasonable values of stressing the resulting aspects of fund execution, eg. efficiency and economy. Although the traditional procurement administration didn't neglect such values as transparency and fairness, the current procurement administration puts more emphasis on transparency and fairness than ever before for the following reasons.

First, procurement administration has greatly expanded in terms of volume. According to OECD (2002), most countries today spend 10~25% of their GDP for procurement. The global government procurement market grew to 82.3% of the global goods and service exports in 1998. Similarly, the Korean government procurement market amounted to 92 trillion Won in 2007, which represented 10% of the national GDP. Today, government procurement has a great importance in the national economy and has a strong influence on the private sector. Therefore, great value is placed on ensuring transparency through publication of various information (bidding information, bidding processes, bidding results, etc.) and guaranteeing fairness by hiring qualified suppliers selected through competition.

Second, there is a current trend in which transparency and fairness are greatly valued in



trade agreements among international organizations or countries. In 1994, the WTO signed the GPA²⁾, which lays much stress on enhancing transparency rather than efficiency. In the WTO ministerial meeting held in December 1996, a task force on government procurement transparency was organized to develop the details of the transparency agreement. Other international organizations like OECD and APEC announced transparency-related government procurement principles.

Third, the introduction of EDI using information technology and the implementation of web-based e-Procurement provided effective means to ensure transparency and fairness in procurement administration. The traditional procurement administration, based on face-to-face contacts between government officials and procuring contractors, has been plagued by mistrust arising from lack of bidding information, non-publication of bidding processes, non-notification of bidding results, etc. and has always contained possibilities of fraud and corruption.

Transparency and fairness are, together with such traditional administrative values as efficiency, legality and responsibility, currently regarded as core administrative values that can prevent administrative corruption arising from illegal practices between government officials and suppliers. Systematic mechanisms need to be developed to strengthen transparency and fairness in the reform of procurement administration.

2. Pursuit of Customer-Centric Procurement Administration

PPS is a core government procurement agency responsible for managing a large percentage of the national spending for customers including public orgs. and suppliers. With the emergence of e-Government, democratization of civil society, and economic autonomy and opening, PPS is making every effort to realize customer-oriented administration.

The first thing to do to realize customer-centric procurement administration is to increase the satisfaction of public institutions using PPS by improving the quality of procured items and widening their selection of items. Procurement administration in the past was fraught with several problems, which included price-centric supplying

2) Government Procurement Agreement.



business, lack of diversity, limit of selection, delay in contracting and delivery, and inadequacy in after-contract services.

The assessment of the satisfaction of public institutions with government procurement administration is very important in that PPS-provided services, eg. providing accurate and various information on procured items and government-sponsored projects, are essential to the efficient management of the national finance.

Another factor of customer-centric procurement administration is to maintain at reasonable levels the procurement fees levied on public institutions using PPS and save suppliers from financial difficulties by using a debit system for quick payment. Objective and definite standards for procurement procedures from bidding through contracting should be given to ensure competition among suppliers. Precise screening criteria and appropriate evaluation and comparison can guarantee competition and transparency among suppliers. Guaranteeing competition among them may have the effect of reducing unnecessary costs and improving the quality of procured items and public projects.

3. Change in the Purchase Method According to the Demand Purpose

A concentrated purchase is a system in which a single central procurement agency purchases and provides goods and services needed by public institutions, while dispersive purchase is a system in which each institution purchases individually. Since concentrated and dispersive purchases have their own comparative advantages and disadvantages, each country usually adopts a procurement method that best suits its social and economic situation.

A concentrated purchase is a bulk-purchase method that has advantages in price and contracting. Thanks to the know-how held by the central procurement agency, it enables timely procurement through a purchase plan. A standardized purchase process can reduce the time period required for purchase and ensure more administrative responsibility, competition, fairness and transparency than in dispersive purchase. The purchasing power of concentrated procurement can be efficiently utilized in the operation of macroeconomic policies. However, it may exert a bad influence due to the bureaucratization of the central procurement agency and make it difficult to secure



items that well serve the purpose of each demanding agency due to excessive fairness in the procurement process.

A dispersive purchase is suitable for autonomous purchase that meets the individual demand purpose of each public institution. It has advantages of reducing costs by utilizing goods in stock and controlling the purchase volume and condition that best suit public institutions, being suitable for urgent purchase, and nurturing local small businesses. However, it requires more purchase costs than concentrated purchase, has weaknesses in price verification and item-size standardization, and has difficulty in pursuing administrative efficiency through specialization. It also has possibilities of personnel overlapping, time waste and allocation of procurement contracts by political preference.

It is therefore desirable to combine the two methods after considering not only their advantages and disadvantages but also various social conditions. Concentrated purchase is desirable in areas requiring a high level of expertise while dispersive purchase is recommended in areas requiring the advantage of autonomous purchase and quick processing.

Advanced countries are operating their government procurement system in a way to maximize the advantages of concentrated and dispersive purchases. The Korean government procurement system is also operated by combining concentrated and dispersive purchases. Despite the trend toward individual procurement by each local government, there exist practical difficulties such as the economic efficiency of concentrated purchase, lack of procurement personnel and expertise, and disputes over fairness among bidders. Because of these, there are an increasing number of cases where local government procurement is supported by PPS, the Korea's central procurement agency.

4. Expanded Purchase of Services

The traditional procurement administration was aimed at the purchase and management of goods needed by the government. This is the narrow sense of procurement administration which has been regarded as a supplementary administrative action. In today's procurement administration, however, the percentage of projects and services is shown to be higher than that of goods. The percentage of services is rapidly increasing



with the expanded outsourcing of procurement activities for improvements in administrative efficiency of each demanding agency. As a result, service purchase is emerging as one of the core paradigms of procurement administration.

5. Global Trend toward Reinforced e-Procurement

The rapid development in information technology has enabled e-Procurement leading innovative changes in procurement administration. Many advanced countries have established and operated e-Procurement as a means to actively respond to new changes in the procurement environment. The hottest issue among the WTO's member countries concerning the GPA was the utilization of information technology, eg. the Internet. Today, e-Procurement is emerging as a new paradigm drawing attention from world organizations as well as individual countries.



Chapter 3

Recent Advances in Digitalized Procurement Administration





Recent Advances in Digitalized Procurement Administration

Since the 1990s, digitalized procurement administration, ie. e-Procurement, has been viewed as one of the most important agenda in the reform of the public sector. With the end of the authoritarian administrative paradigms of the 'development-first' age and the pursuit of a democratic administrative model, establishment of a free and fair procurement administration has become a significant challenge in the public sector. In order to improve efficiency and transparency through digitalized procurement administration as part of public reform, the Korean government implemented Procurement EDI in 1999, e-Bidding in 2000, and e-Payment in 2001. In 2002, it established a national e-Procurement system called 'Narajangteo or G2B', which is one of the 11 key projects for e-Government.

<Table 1> 11 Key Projects for e-Government

Category	Project	Sponsor
Civil Services	Civil Service Reform Project (G4C)	Min of Government Administration & Home Affairs
	4 Social Insurance Information System Project	Min of Labor
	National e-Procurement System Project	PPS, Min of Finance & Economy
	Home Tax Service (HTS) System Project	National Tax Service
Internal Administration	National Financial Information System Project	Min of Finance & Economy
	Administrative District Information System Project	Min of Government Administration & Home Affairs
	National Education Information System (NEIS) Project	Min of Education
	Personnel Policy Support System (PPSS) Project	Central Personnel Committee
Infrastructure	e-Approval & e-Document Project	Min of Government Administration & Home Affairs
	e-Signature & Administrative e-Signature Project	Min of Government Administration, & Home Affairs, Min of Information & Communication
	Government Computing Environment Project	Min of Government Administration & Home Affairs, Min of Information & Communication, Min of Finance & Economy



The continuous effort by PPS and the appropriate support by the central government have greatly contributed to the successful reform of procurement administration, which is gaining worldwide recognition. PPS was awarded 'the Public Service Award (PSA)' from the UN in 2003 and recognized as the 'Best Practice Model for e-Procurement' in 2004. It also received 'Global IT Excellence Award' from WITSA in 2006 in recognition of its IT-based public service reform. KONEPS, developed by PPS, is now being introduced worldwide as an outstanding example of public reform through e-Procurement.

The e-Procurement system has greatly enhanced efficiency and transparency through reform of related laws and regulations, introduction of market competition, improvement of face-to-face contacts between government officials and procuring contractors, prevention of abuse of power by government officials, guarantee of administrative appeal for customers, reduction of paperwork, systematic management of documents, publication of information, sharing and co-use of information, publication of civil petition processing, integrated management of resources, etc. According to a research report³⁾, thanks to e-Procurement by KONEPS, businesses and public institutions were able to reduce their procurement costs by 4.5 trillion Won (USD 4.5 billion) in 2005.

Revitalization of the market economy through e-Procurement has produced intangible values, ie. advances in the national economy and public confidence in government administration. Transparency in procurement processes and responsibility of government officials in charge have greatly contributed to regaining public confidence from the people who had been dissatisfied with procurement administration due to public corruption.

Electronic processing of all procurement procedures from bidding notice through payment has reduced customer visits to PPS as well as prevented submission of overlapping documents through sharing and co-use of information. It also has had other positive effects of ensuring data accuracy, quickly handling civil petitions and

3) 'Assessment of KONEPS Effects & Future Developments' (May 2005) - International Center for Electronic Commerce (KAIST Prof. Lee Jae-Kyu et. al)



complaints through information linkage, preventing development of overlapping projects, providing statistical data for policy decision, etc.



Part 2

Development of the e-Procurement System for Centralized Procurement

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Chapter 1

Development of the Procurement EDI System



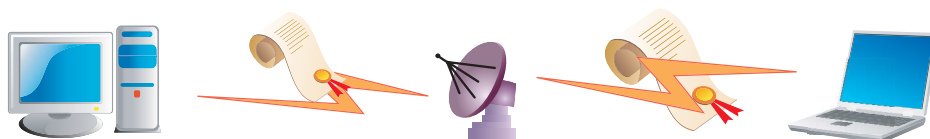


Section 1

Background of the Procurement EDI Pilot Project

EDI (Electronic Data Interchange) means replacing paper documents with electronic ones and using electronic delivery methods instead of traditional document delivery ones such as mail, telephone, and person. It refers to the electronic exchange of public administrative forms among computers in accordance with a mutually agreed-upon communication standard.

EDI : Computer to Computer Communication



Around 1970, the United States transportation industry suffered excessive competition and attempted to switch to a network-based electronic exchange of slips. The system developed in the course of it was the origin of EDI. POSCO developed Steel VAN¹⁾, the first EDI system in Korea, which enabled electronic document exchange between steel users and agencies. In 1992, EDI was first adopted in the trade sector and soon began to spread to the private and public sectors.

EDI, together with CALS (Continuous Acquisition & Logistics Support) and EC (Electronic Commerce), has emerged as a crucial measure to rectify the high-cost, low-efficiency structure of Korean businesses and public institutions.

The background of the emergence of EDI is as follows:

First, with the introduction of computers to the workplace, slips output by the computer of a company are input intact into the computer of another company. This enables

1) Value Added Network



simultaneous automatic input, accurate timing, error prevention, and improved precision. Second, with the intensification of market competition and the trend toward high-variety and low-quantity, there are frequent cases where raw materials and parts are ordered in small quantity. Frequent demand for small quantity orders has led to frequent request for large-quantity, sub-unit information and to reduced lead time.

Third, with the free use of communication lines due to the opening of the VAN business, VAN providers have taken the role of EDI vendors as communication media among different companies.

Fourth, with the diversified business forms and the increase of users, there has emerged a need to develop standard formats.

Procurement EDI has been implemented as the top priority e-Government project due to the following features.

First, it will realize a small but efficient e-Government.

Procurement administration is a business involving over 37,000 demanding agencies and over 120,000 suppliers. Therefore, automated procurement administration using EDI can reduce the time and costs incurred in the contracting process, thus improving work efficiency.

Second, it will provide a basis for e-Commerce.

EDI is the core technology for e-Commerce, the major means of transactions in the 21st century. Its introduction into the procurement field reflects the will to provide a basis for e-Commerce in the public sector and increase demand for e-Commerce in the information society.

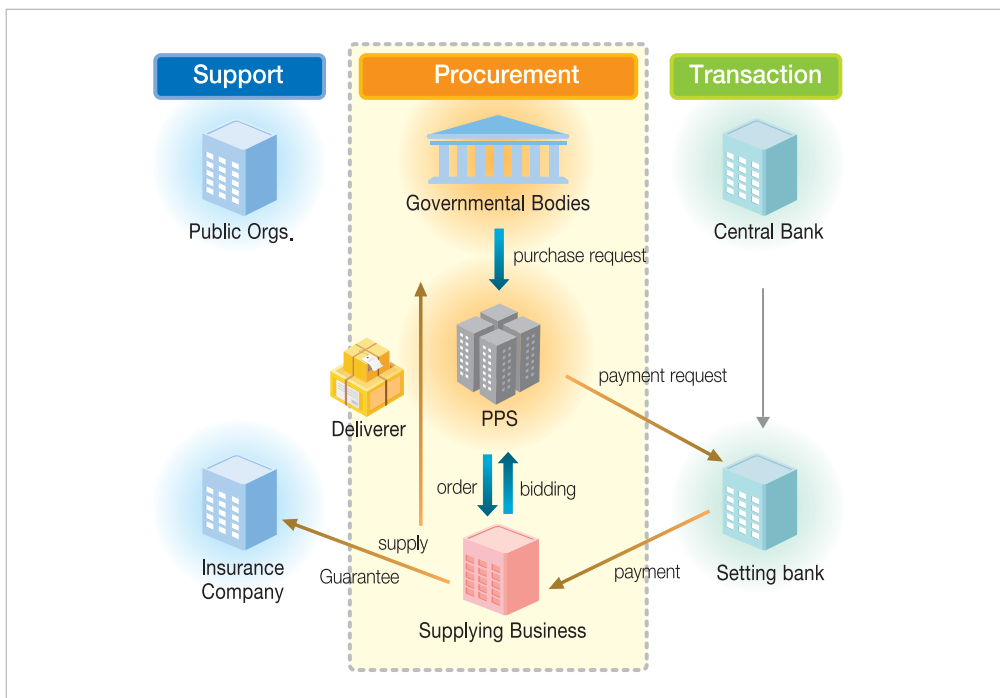
Third, it will provide a momentum for digitalization in the private sector.

Just as digitalized administration enables increased digitalization in the private sector, procurement EDI, through co-use of procurement-related information, will improve the work productivity of demanding agencies and suppliers and strengthen the national competitiveness.

Section 2 Outline of Procurement EDI

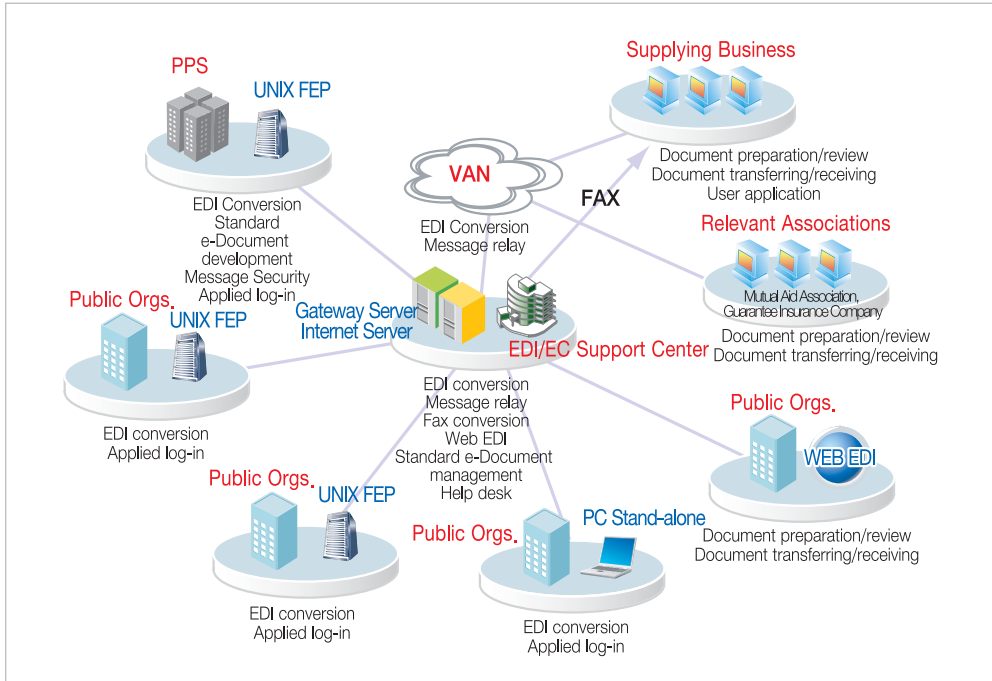
1. Analysis of relevant groups

<Picture 1> is a procurement workflow diagram illustrating the procurement process in the national public sector and the stakeholders involved in procurement administration. Government agencies are all demanding agencies in public procurement administration. When there occurs a need for a procurement item, the demanding agency submits a procurement request to PPS.



<Pic. 1> Procurement process & relevant groups

PPS receives procurement requests from demanding agencies, advises them of payment notices and delivery requests, and places orders with suppliers. Suppliers deliver orders to demanding agencies and receive payments via the Korean Central Bank from their settlement banks. The role of each agency in relation to procurement is described in <Pic. 2> & <Table 1>.



<Pic. 2> Relevant association

<Table 1> Role of Each Agency within PPS in the Development of EDI

Agency	Role
Central PPS	<ul style="list-style-type: none"> domestic / foreign purchase & supply of government resources contracting & construction management of government facilities supply/demand control of government resources, standardization, management inspection purchase & release of supplies
Central Depot	<ul style="list-style-type: none"> purchase & supply of supplies, inspection, quality control procurement of foreign supplies supplies management
Local PPSs	<ul style="list-style-type: none"> purchase & supply of local supplies procurement of foreign supplies, management & release of supplies contracting for local facility construction supplies management
Overseas Purchasing Agents	<ul style="list-style-type: none"> survey of prices in overseas markets, foreign purchase manufacturing inspection & shipment management of purchased supplies

2. Progress of the Project

Procurement EDI was implemented stage-by-stage with the goal of full implementation in 2001. Its progress is divided into 3 stages as shown in <Table 2>.

<Table 2> Progress of Procurement EDI

Stage		Business Area	Demanding Agencies (Total)	Information Link Center	Interactive VAN
Stage 1 (1997) Pilot Project Stage		Domestic (unit price contract items)	20	Pilot project	Insurance Network, Private VAN
Stage 2 Expansion Project Stage	1998~1999	Domestic (unstored & stored goods) accountin	500 (520)	Full implementation, EDI/EC support preparation	Private VAN, National Defense Procurement EDI, Financial Network
	2000~2001	Foreign purchase, facility construction contracting	2000 (2520)	System Expansion	Tariff Network, Distribution Network, Industrial Information Network
Stage 3 (since 2001) Full Implementation Stage		Full implementation	All	Full implementation	Overseas VAN

Stage 1, implemented from 1996 to 1997, is a pilot-project stage during which for the EDI system was applied to areas requiring low system development costs but with high efficiency, eg. procurement request (unit price contracting), procurement request change (unit price contracting) and accounting and the EDI/EC support center system was developed for e-Document distribution.

Stage 2, from 1998 to 2001, is an expansion stage during which the pilot system was stabilized and the application of the procurement EDI system extended to more areas and users (demanding agencies and suppliers).

Stage 3, since 2001, is a full implementation stage during which the developed procurement EDI system was applied to all areas of procurement administration.



Section 3

Procurement EDI Pilot Project

1. Outline

Government procurement has a rather complicated business system and it is not easy to realize it as an e-Commerce system. However, as the United States administration increased the demand for e-Commerce systems through digitalized federal procurement administration, the Korean government also attempted to convert public procurement administration to an e-Document exchange system for the national expansion of e-Commerce nation.

Most of all, the volume, ripple effect, feasibility of the existing procurement administration was considered in order to apply the procurement EDI-based e-Document exchange system to 10 key business areas related to domestic purchase, facility construction and accounting (See <Table 3>).

The entities involved in the pilot project include PPS, demanding agencies, suppliers, guarantee insurers, and the government EDI/EC support center system for EDI document exchange service. PPS is comprised of the Central PPS, Central Depot and local PPSs. Demanding agencies are 20 central and local government agencies. Suppliers are qualified EDI system companies with the intent to participate in the EDI pilot project. Insurers are 5 benefit societies and guarantee insurers. The e-Document exchange service is provided by the government EDI/EC support center and by suppliers and demanding agencies using a private VAN.

The procurement EDI pilot project is aimed at managing e-Document exchange in 3 major business areas, ie. domestic purchase (unit price contracting for unstored goods), facility construction, and accounting (deposit receipt). Automated unit price contracting for unstored goods was limited to business areas involving delivery request and advice. The processes improved by business process reengineering (BPR) were incorporated into the PPT-internal automated processing system.

2. Architecture of the Procurement EDI Pilot Project System

The procurement EDI pilot project system includes EDI processing-related e-Document

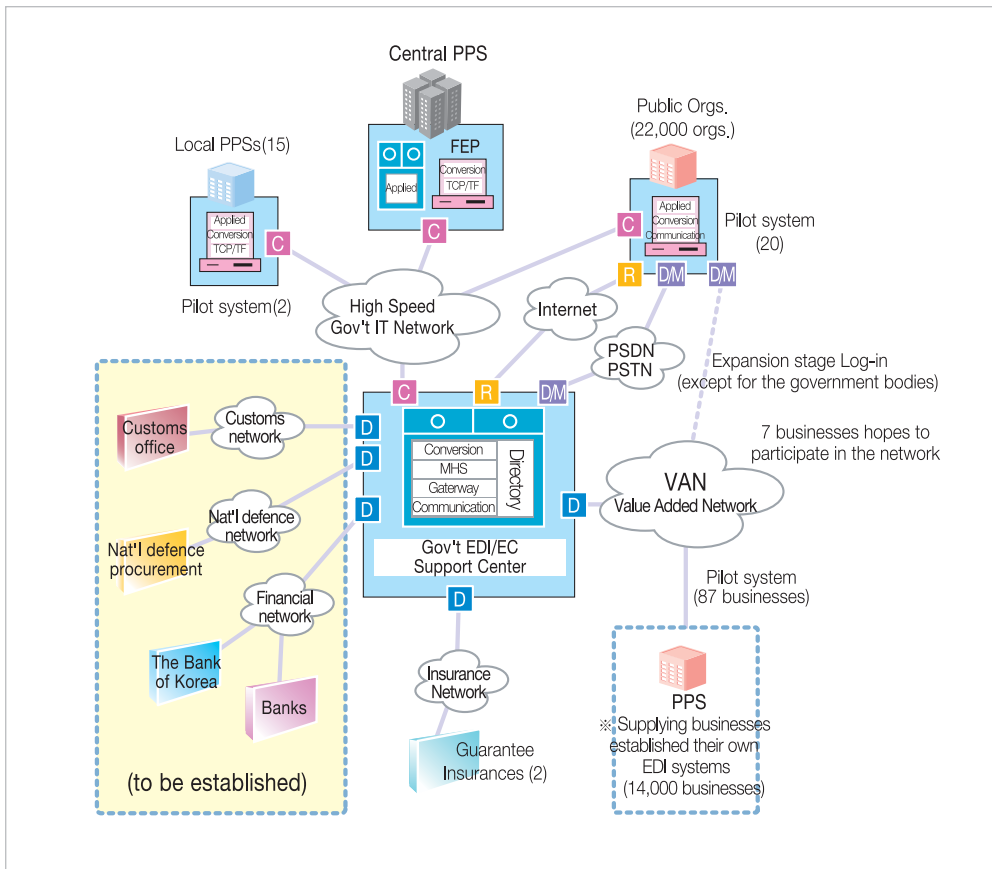
<Table 3> Business Areas & Related Forms of the Procurement EDI Project

Business Area	Task	Relevant Form	Entities Involved	Number of Transactions (1994)
Common Business (domestic, facility)	Bidding notice	Bidding Notice	Suppliers	5,366
Domestic (unstored goods)	Procurement request receipt (unit price)	Procurement Request	Demanding agencies	122,114
	Delivery request & advice (unit price)	Split Delivery Request & Advice	Suppliers Demanding agencies	122,114
	Delivery request change & notice (unit price)	Delivery Change Request, Delivery Change Notice	Suppliers Demanding agencies	36,634
	Preliminary (survey) price announcement	Preliminary Survey Price Data	Daily journals GINS providers Suppliers	2,922
	Bid security exemption letter submission	Bid security Exemption Letter	Suppliers	72,419
	Contract change request processing	Contract Change Request	Suppliers Demanding agencies	3,500
	Bidding	Bid	Suppliers	
	Long-term continuous contract request & agreement	Construction Contract Request, Long-term Continuous Contract Notice	Demanding agencies	1,159
Accounting	Bid & contract deposit receipt (domestic, foreign, facility)	Bid & Contract Deposit Receipt Notice	Suppliers Guarantee insurers Benefit societies	118,963
Total	12 document forms			485,191

relay systems of other entities involved. The EDI systems of supplier and guarantee insurers in the public sector are excluded from the pilot project system.

The EDI relay system operated by the EDI/EC support center was utilized as the environmental system for procurement EDI. This system enables exchange of procurement EDI documents, serves as a gateway to a private VAN, and implements the authentication of e-Documents. The e-Document exchange service has the function

of delivering e-Documents sent by PPS, demanding agencies and suppliers to the receivers. The EDI document conversion function serves small government agencies who don't have their own conversion system. The BBS & e-mail function provides an e-mail service as well as information on bids, preliminary prices, items, prices. Within the architecture of the procurement EDI system, PPS was committed to processing procurement-related EDI activities, developing standard documents for e-Document exchange, establishing an EDI server (Front-End Processor) for the Central PPS, Central Depot and local PPSs, and facilitating its integration with the internal business system. BPR of domestic purchase was implemented to restructure the internal infrastructure system and to discontinue existing business activities and develop new



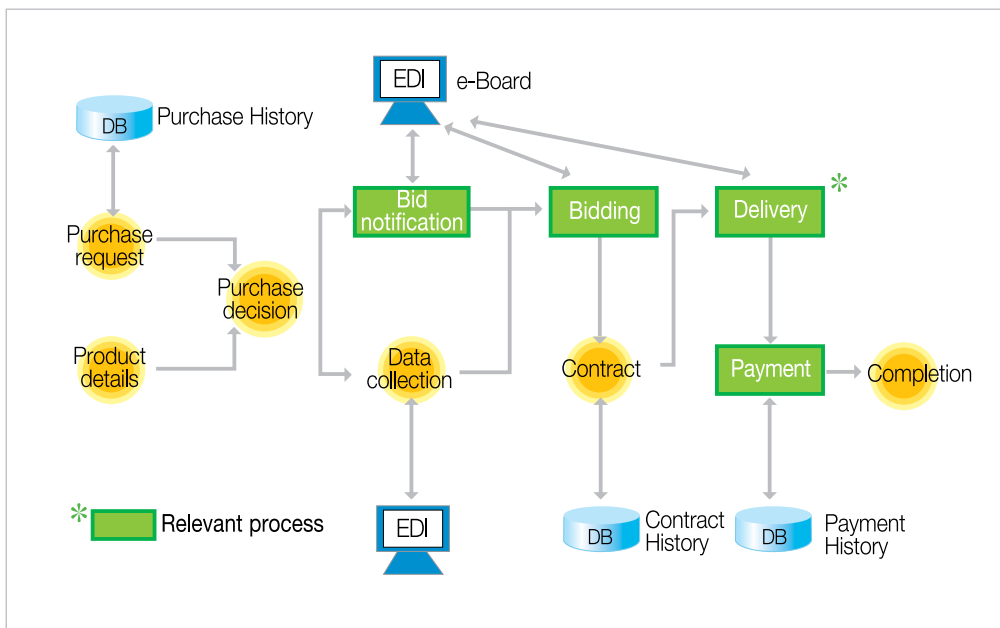
<Pic. 3> System architecture of pilot project

ones suitable for e-Commerce. Efforts were also made to automate the unit price contracting for domestic purchase of unstored goods, from procurement request through split delivery request (change).

3. Implementation of Business Process Reengineering (BPR) of Procurement EDI

The process of procurement administration can be described in 4 aspects. First, according to the purchase method, it is classified into domestic purchase, foreign purchase and facility construction and other purchase. Second, according to the contracting type, it is into lump sum contracting, unit price contracting and third-party unit price contracting. Third, according to the contract method, it is into (general, limited or designated) competitive contract and (private or group) private contract. Forth, according to the collection method, it is into advance collection and post collection.

The procurement administration process is described mainly in terms of domestic purchase as follows. Upon receiving a purchase request from a demanding agency, PPS



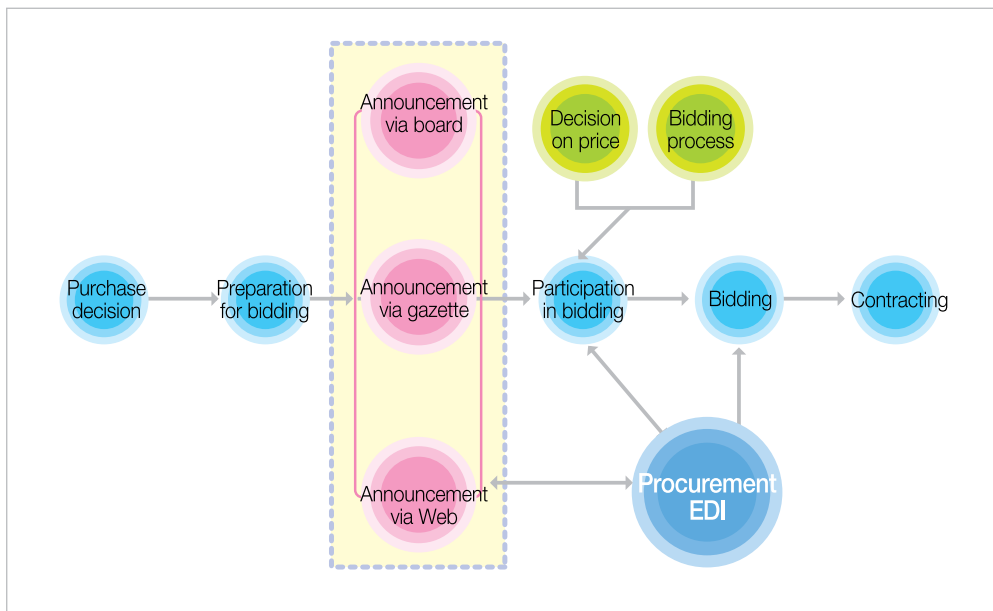
<Pic. 4> Procurement administration process

make a purchase decision after reaching an agreement on specifications with the demanding agency. A general or limited bidding notice is announced by the Ministry of Government Administration or daily newspapers. A designated competitive bidding notice is delivered to designated companies. A private contract requires a private settlement.

The official responsible for procurement decides preliminary prices from collected price data. Supplier participating in the bid submit a bid security. The successful bidder deposits bid bonds, signs a contract and delivers the contracted items.

The supplier requests payment after delivery. Upon the request, PPS makes a payment decision and notifies the demanding agency of the payment. The demanding agency advises PPS of the payment through the Bank of Korea. Then the supplier requests payment online through a national treasury agency. The national treasury agency makes the payment and advises PPS of the payment receipt.

To provide a basis for e-Commerce, the information technology of EDI/EC is applied to digitalized collection of purchase requests, bidding notice & bidding, delivery-related e-Document exchange, and payment. The systems for those business areas were designed to accommodate EDI and enable document exchange in the existing internal business



<Pic. 5> Bid process improved by using EDI

system. They were also designed to allow the end users of PPS to properly manage exchanged documents and accommodate all possible types of document processing.

The e-Bidding system includes the basic functions of the existing digitalized bidding system and provides digitalized bidding processing using EDI. In particular, development of a business scenario for e-Bidding processing and research on system implementation were undertaken to identify and address possible security problems. In addition, system requirements for e-Bidding, eg. receipt of bid security receipt files, e-Bidding, input of probable prices, verification of bidding qualifications, receipt of regular bids and EDI bids, bidding processing, e-Bidding termination, and development of security measures for e-Bidding processes, became more stringent.

The EDIFACT (KEDIFACT)²⁾ standard was applied to EDI standard documents for e-Document exchange and the MIG (Message Implementation Guide) was used as a document creation tool. This tool enables to load procurement EDI standard documents into a relational database and make them available to the public at the web server of the government EDI/EC support center.

An appropriate methodology was used to implement of BPR of the unit processes of the unit price contracting for domestic purchase of unstored goods, from procurement request through split delivery request (split delivery request change). A user-convenient GUI (Graphic User Interface) was developed as part of the aim of the BPR to develop a new client/server-based business system. Information technology was also properly used to link the existing domestic purchase system with later systems.

The procurement EDI FEP (Front End Processor)³⁾ system is supported by various functions including mult-processing, EDI standard, unmanned operation, convenience in mapping, alarming, back-up/archive and was developed in a way to allow integration with the internal business. In particular, it assures maximum standardization of failure handling in the document exchange & conversion process and loads the results into the management DB and makes them available to the users of the internal business system.

2) EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport): EDI international standards for administration, commerce and transport that were enacted in 1987 by the UN/ECE Working Party on Facilitation of International Trade Procedures

3) FEP (Front End Processor): A small computer controlling the circuit of a large computer



Section 4

Procurement EDI Expansion Project

1. Outline

In order to provide a basis for Electronic Government and strengthen the national competitiveness, it was required to overcome the limitations derived from the 1997 pilot project. A system was needed to involve not only demanding agencies in need of goods and services but also suppliers providing them. The supplier/finance/insurance/trade/tariff networks of demanding agencies had to be structured as an information

<Table 4> Services Added during the 1st Expansion Project

Category	Description
Business Area	<ul style="list-style-type: none"> • Payment, bidding-related business • Item/price list, demanding agency/supplier registration-related business • Other EDI/EC-applied documents
Applicable Documents	Development and application of 10 e-Document forms (eg. Payment Notice, Payment Receipt Advice) each year
Entities Involved	<ul style="list-style-type: none"> • PPS, all local PPSs and branches • 2,500 (total: 2,520) demanding agencies • 500 or more suppliers • Finance network, Tariff network, interactive private VAN
Expansion Plan	<ul style="list-style-type: none"> • 3-year development of 40 e-Document forms in accordance with the revised laws & systems • Offering of free S/W for EDI users • Provision & support of education for procurement EDI users • Operation of a helpdesk for handling users' complaints • Encouragement of the preferential use of agencies and suppliers with large transaction volumes • Support of the operation of stable relay systems • Provision of fee exemptions for procurement EDI users • Preferential connection to Trade/Finance/Tariff networks (In case of connection failure, other networks are available) • Quick payment settlement to enable small businesses to increase their holdings of liquid funds • Continuous improvement of relevant laws and systems • Selection of next year's EDI documents in accordance with procurement BPR, laws & systems • Next year's documents are developed a year in advance to be used for user system development.

network through which procurement administration-related documents are exchanged in the form of e-Documents to ensure quickness & accuracy. There was a need for an information system that can provide a basis for e-Commerce by enabling information exchange & sharing among relevant agencies and suppliers. In order to overcome those limitations and successfully complete the procurement EDI project, the procurement EDI expansion project was implemented two times.

The 1st expansion project was implemented to improve procurement efficiency in business areas other than procurement request receipt, procurement request change and bidding notice, which were developed during the pilot project. Additional services were added to the existing system as shown in <Table 4>.

The 2nd procurement EDI expansion project is the stage of completing the procurement EDI project. It was mainly concerned with implementation of more highly automated procurement administration and with further application of e-Bidding for enhanced system availability.

Major Concerns of the 2nd Expansion Project

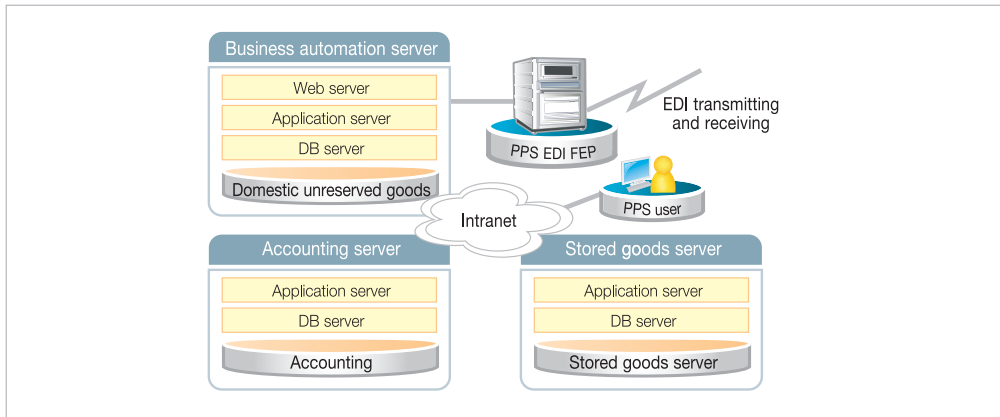
- Development of an XML document interface for PPS' automated foreign purchase & facility construction business system
- Development of e-Documents for a new business system; modification & supplementation of developed EDI documents into XML
- e-Processing of all procedures eg. bidding notice, bidding and bidding result notice; support of bidding for small-sum purchase
- Registration & management of procurement-related products; provision of product & supplier information for ordering
- Development of systems for demanding agencies and special businesses
- Introduction & development of security-related modules
- Performance improvement of the relay server of the National Computing & Administration Center

2. Architecture of the Procurement EDI Expansion Project System

The system developed for the expansion project is applied to 3 entities: PPS, Information Link Center, and demanding agency. The expansion project system includes payment, bidding-related business, item/price lists, demanding agency/supplier registration, and other EDI/EC documents, which were not covered in the pilot project. The architecture of the expansion system are described by entity in <Table 5> & <Pic. 6>.

<Table 5> Description of the Expansion Project System by Entity

Entity	Task	Description	
PPS	Automation	Domestic	Internal application automation through the introduction of EDI
		Accounting	Automation of the whole accounting process
		Stored goods	Automated integration of the unstored goods system
		Official document distribution	Conversion of government official documents into e-Documents
		Application connection	Interaction between internal application and EDI system
	e-Catalog	Provision of supplier product information in catalog form	
	Customer information provision	Restructuring of management of information on procurement EDI customers, eg. demanding agencies and suppliers; provision of customer information via web using X.500	
	e-Bidding security	Strengthening of human security during bidding execution; e-Bidding information (message) security	
	Conversion registration	Creation of a conversion script file & its registration into conversion S/W in order for an application system to read a standard e-Document	
Information Link Center	Relay system support	Document tracking, document authorization, management of EDI users & system operation	
	Web operation	Homepage management & operation	
	Security system	Standard e-Document encryption/decryption & e-Signature	
	User authorization	User authorization key issuance & management system development	
Demanding Agency (Public Orgs.)	Single PC package	Development of a single PC S/W for exchange of added standard e-Documents	
	Web EDI	Development of a homepage for exchange of added standard e-Documents	
	Version management server	Single PC package version management & distribution management	



<Pic. 6> System architecture of the expansion project target system

There are 14 forms of standard e-Documents covering domestic purchase, accounting and other purchases. The descriptions of them are summarized in <Table 6>.

<Table 6> Descriptions of Standard e-Documents

Form	Description
Delivery Request	An e-Document PPS, having received a procurement request for domestic stored goods from a demanding agency, uses to request a carrier for delivery from PPS to the demanding agency
Delivery Confirmation (Note)	The demanding agency takes delivery of domestic stored goods from PPS and sends a delivery confirmation (note) to the supplier and PPS. Then PPS checks it against the procurement request from the demanding agency and notifies the demanding agency of the results.
Payment Request	To request payment, the supplier prepares a payment request based on the delivery receipt sent by the demanding agency and sends it in EDI form to PPS.
Retention Payment Request	An EDI document the supplier uses to request PPS for retention payment.
Advance Payment Request	An EDI document the supplier uses to request PPS for advance payment.
Delivery & Receipt	Upon receipt of procurement request from a demanding agency, PPS requests the supplier to deliver. Upon delivery receipt, the demanding agency advises the supplier and PPS of the 'delivery & receipt' in EDI form.
Payment Notice	In case of advance notice, the notice is prepared in EDI form and then sent to the demanding agency. In case of post notice, the notice is prepared base on the delivery & receipt from the demanding agency and then sent to the demanding agency.

Payment Order (Online Banking Request)	The demanding agency, having received the notice in EDI form, prepares and sends an e-Document that requests a national treasury agency (bank) for a transfer from the demanding agency's account to the national treasury (PPS' account). According to the Payment Decision, PPS prepares and sends an e-Document that requests the national treasury agency (bank) for a transfer from the national treasury to the demanding agency's account.
Payment Receipt Advice	The national treasury agency, having received a payment order from the demanding agency or PPS and made the account transfer, prepares and sends the payment receipt to the demanding agency or PPS.
Payment Advice (Finance)	The national treasury agency receives a notice in EDI form from PPS and advises PPS of the demanding agency's payment.
Standard Contract	Standard contracts between PPS and a supplier are prepared in e-Document without the full contract text. The contract exchange is made by sending the data required by the agreed standard, not the full text. The standard contract contains e-Signatures for the purpose of non-repudiation concerning message integrity and e-Document preparation & forwarding. The order of e-Signatures is determined considering business characteristics.
Demanding Agency Supplier Change Request	An e-Document used the demanding agency or supplier to request a change in case of a change in its situation.
Common Official Document	An e-Document PPS uses to inform suppliers or demanding agencies of official notices.
Common Response	An e-Document agencies or suppliers participating in procurement EDI use for business communication. It contains common matters not covered by the EDI e-Document, or instructions on document handling.

3. The Effects of the Procurement EDI Expansion Project

Based on the systems developed through the procurement EDI pilot project, PPS has implemented facility construction e-Contracting and incorporated most of the procurement processes into the procurement EDI system. Through the expansion project, it has also converted all the previous documents into EDI form.

In 1999, the total number of transactions processed by PPS, demanding agencies and suppliers was over 1.5 million. The application of procurement EDI has led to reduced processing time, reduced document volume due to the conversion into an e-Document system and reduced payment lead time, thus enhancing the productivity and efficiency of procurement administration.

The expansion of procurement EDI is expected to have the effect of reducing the costs by 50.2 billion Won annually.

<Table 7> Cost-Reduction Effect Due to Procurement EDI Expansion (Source: '98 Procurement EDI Expansion Project Planning)

Category	PPS	Demanding Agencies	Suppliers	Total
1. Reduced processing time				
Processed documents	1,204,919	782,616	790,989	2,778,524
Reduced time (hour)	1,781,400	1,446,853	2,054,911	5,283,164
Cost per hour (Won)	7,796	7,796	8,698	
Reduced cost (mil. Won)	13,888	11,280	17,874	43,042
2. Reduced document volume				
Reduced documents	684,813	283,479	550,897	1,519,189
Reduced cost per document (Won)	126	126	126	
Reduced cost (mil. Won)	86	36	69	191
3. Reduced postage				
Number of mailings	684,813	283,479	968,292	
Cost per mailing (Won)	190	190		
Reduced cost (mil. Won)	130	54		184
4. Reduced financial cost				
Domestic supply amount ('97) (mil. Won)			5,154,700	
Financial cost			Annually 12%	
Reduced payment lead time			4 days	
Reduced financial cost (mil. Won)			6,779	6,779
Reduced cost: total (mil. Won)	14,104	11,370	24,722	50,196



Chapter 2

Development of the e-Bidding System (GoBIMS)





Section 1

Outline of the Development of the e-Bidding System

The current e-Bidding system, which enables to send a bid through cyber-space, was first introduced by the procurement EDI pilot project in 1997. However, due to the conflicts of interest involved in e-Bidding and insufficient laws and systems, the development of an e-Bidding system was intended to be implemented after its pilot application to the facility construction area. However this was also unsuccessful due to insufficient laws and systems, just enabling e-Bidding by OMR card. In the end, the introduction of an e-Bidding system, promoted by the procurement EDI pilot project, turned out to be unsuccessful. It was attempted again by the “government procurement EDI/EC expansion project” in 2000.

<Table 8> The Budget Size of the Government Procurement EDI/EC Expansion Project

(Unit: mil. Won)

Agency	S/W Development	S/W Purchase	H/W Purchase	Total
• Public Procurement Service	3,857	126	4	3,986
Procurement EDI System	2,500	44	–	2,544
e-Bidding System	522	–	4	525
Procurement EC System	834	82	917	–
• National Information Society Agency	597	189	413	1,197
Total	2,454	315	413	5,183

“The procurement EDI/EC expansion project” was implemented from May 2000 until April 2001. It expanded the coverage of electronic procurement EDI/EC in the domestic purchase and accounting areas to cover the foreign purchase and facility construction areas. It also contributed to expanding Internet shopping malls. In a nutshell, the procurement EDI/EC expansion project is a completion of “the procurement EDI project”, which began in 1997.

The development of an e-Bidding system was implemented from May to October 2000



by PPS and its contractor(Samsung SDS). On September 20, 2000, a temporary homepage was opened to issue e-Signatures to suppliers and register them as e-Bidding users. The e-Bidding system began its operation with the opening ceremony held in COEX, Seoul, on November 3. It began full operation in January 2001, when the National Contracting Act, the basis for e-Bidding, was amended.

In order to allow PPS to play a leading role as the national contract management agency, the e-Bidding system was scheduled to be developed by October 2001, earlier than the expansion project. It took over 5 months to complete the system. In spite of time pressure, the opening ceremony was able to be held as scheduled on November 3. This was thanks to the intensive use of more manpower than planned. Some personnel responsible for the core aspects of the system were tied up developing the system for over 3 months, over 18 hours a day. As a result, the first e-Bidding system in the public and private sectors was created.



Section 2

Features of the e-Bidding System Development

1. Priority Decision for e-Procurement Management

The most distinctive feature of the e-Bidding system development is absolute business priority decision. As outlined in Progress of the Project, the e-Bidding system development was not an independent project but a part of ‘the procurement EDI/EC expansion project (2000)’. Its development was implemented after business area analysis and design and later accelerated by the use of additional manpower. This was done to keep the promise to “complete the e-Bidding system development by October”, as already announced internally and externally. At first, the contract was scheduled to be signed in February or March and the development was to be completed over 7~8months. However, the contract was signed around the end of May due to unexpected delays in the budget preparation process. Nevertheless, the goal of completing the system development by October was maintained from the judgement that it should go into operation in November and undergo a testing period for 2 months prior to the full implementation of e-Bidding in January 2001.

The amended 「The Act on Contracts to Which the State is a Party」, the basis for e-Bidding, was scheduled to go into effect in January 2001. It was therefore judged that the system should undergo a verification process in November and December by implementing small-sum e-Bidding for private contract purchase.

There was another judgement that PPS should develop the system earlier than other agencies in order to, besides enhancing its status as the national contracting agency, prevent other agencies from developing their own e-Bidding system. PPS' failure to produce leading results would possibly make its e-Bidding system, initially developed as a government-wide system, available only to PPS itself. This could make it difficult to expect the positive effect of preventing overlapped system development and reducing the national budget through the standardization and co-use of the national contracting system. For the reasons above, PPS gave a priority to the e-Bidding system development, like a private business who may be driven out of the market due to its delay in new product release. If PPS develops and establishes the system earlier than other agencies, it can



provide them the opportunity to benchmarking. The development and operation of the e-Bidding system has achieved the desired effect of reducing the national budget by reducing the factors that motivate other agencies to develop their own system.

The reduction of the national was also the goal of the 「Innovative Planning Service for G2B Promotion」 project, which was jointly sponsored by 8 government agencies including Min of Strategy & Finance. A 「single procurement window」 was proposed to be set up to enhance the convenience of businesses and prevent budget waste. The operation of the GoBIMS has allowed other agencies to implement e-Bidding using PPS system without developing their own system.

2. Improvement of Relevant Laws & Systems

Another feature of the e-Bidding system development is the improvement of relevant laws and systems. Theoretically speaking, it is most appropriate to, through BPR (Business Process Reengineering), develop a bidding system that is appropriate for online bidding. However, as in many digitalization projects, the system was developed in such a way that it fits into the existing system, leaving unsatisfactory outcomes. The e-Bidding system development was basically designed to accommodate all the existing business procedures and systems. Nevertheless, some systems needed to be newly created for the following two reasons.

The first was that there were no existing systems in place. Another was that there were needed some regulations for preventing bidding-related conflicts and ensuring legal stability.

The former includes regulating the confirmation and time of e-Document exchange and clarifying the validity and responsibility of e-Signature based on the Framework Act on Electronic Commerce and Digital Signature Act. The latter includes regulations on system failure handling and successful bidder declaration.

The new regulations adopted in the course of the e-Bidding system development include Stipulations for e-Bidders (Sep. 19. 2000), Stipulations for e-Bidding executives (Nov. 13. 2000), Special guidelines for facility construction e-Bidding (Sep. 28. 2000), Special guidelines for purchase e-Bidding (Oct. 10. 2000).

Stipulations for e-Bidders defines the rights and duties of PPS and bidder (suppliers) in relation to the participation in and use of e-Bidding prior to the commencement of

registration on September 20, 2000. For registration, users are required to undergo an agreement procedure. Stipulations for e-Bidding executives defines the rights and duties of the public institutions and PPS, the system operator, in relation to the co-use of the e-Bidding system. For registration as an e-Bidding executive, officials from public institutions are required to undergo an agreement procedure.

The registration of public institutions was commenced after the system was opened in November 2000. Special guidelines for facility and purchase e-Bidding was prepared prior to the formal mock bidding scheduled for the end of October and contains the contents unique to e-Bidding.

All above regulations have a mutually complementary relationship in the system development. Problems arising from the regulation process are reflected in the system. The system development results are reflected in the regulations to complete the system.

3. Systematic Connection to Relevant Agency Systems

To allow public institutions or demanding agencies to access the e-Bidding system to do their e-Bidding work online, the e-Bidding system requires a systematic connection to their systems, as shown in <Picture 7>.

The basic services involved in the e-Bidding system are the certified authentication services provided by KOSCOM, KICA, NCA, etc. Without an e-Signature certificate issued by a certified authority, bidding executives or suppliers are not allowed to participate in a bidding. For complete security, every work process system is connected to the certified authority's system to confirm the validity of the certificate. With an invalid certificate that does not provide legal protection, bidding participation is impossible. All systems are connected via the Internet.

The NCA, a third-party government agency, issues an encryption certificate to every bidding. When a bidding executive posts a bidding notice, bidders receive the encryption key and encrypt their bid using this key. Therefore, it is impossible to open a bid without the encryption key.

Even th PPS system mangers cannot regenerate an encryption key without the cooperation of the NCA and the bidding executive concerned. Bids are protected by dual or triple security measures.

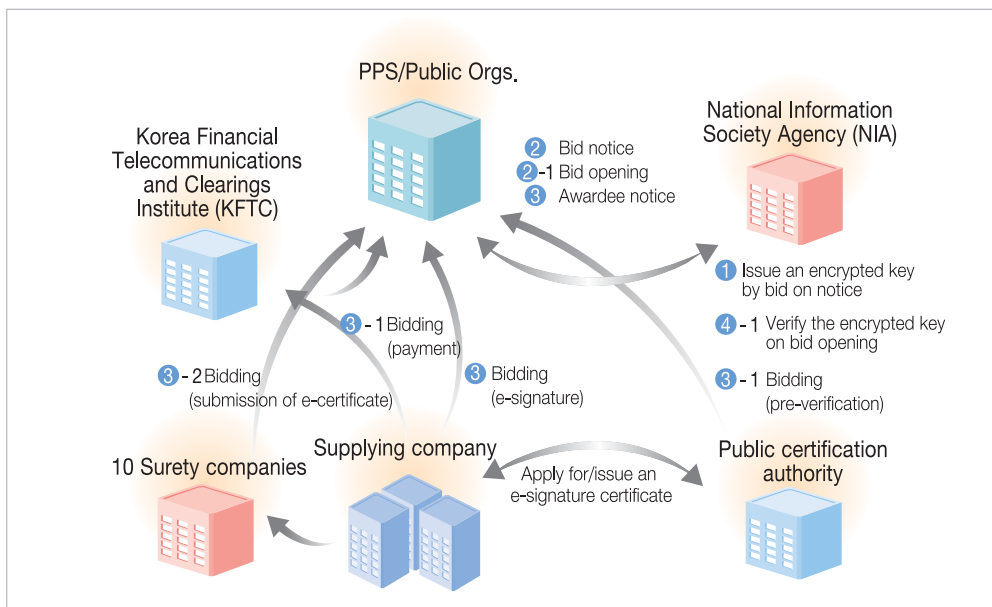
In the case of collecting the bidding fee according to the conditions contained in the

bidding notice, the KFTC (Korea Financial Telecommunications & Clearings Institute) provides an Internet banking service that enables a transfer from a supplier's account to the noticing agency through the Internet payment relay system. Without paying the fee, it is impossible to participate in the bid.

Last, suppliers, using the system connection among 10 guarantee insurers, visit their guarantee insurer to prepare a bidding guarantee and send it in e-Documents to PPS. They don't need to submit their guarantee to the noticing agency.

4. Sensitivity & Adaptability

Considering how desperate suppliers feel to get a contract for hundreds of millions to tens of billions of Won, transparency and security are important keys to the success of the e-Bidding system. It is therefore very important to ensure confidence that there won't occur any security problem in the bidding process. The bidding process needs to be completed within the stated time period so as to maintain the confidence in the e-Bidding system and induce bidders to accept the result. Any failure with an e-Payment system can be readily addressed.



<Pic. 7> Linkage system of relevant organizations

A delay in handling the failure won't pose any serious problem. However, this is not the case of e-Bidding. If a failure occurs during the closing time, it will cause a delay in bidding processing and produce innocent victims. This will lead to law suits. The stable operation of the e-Bidding system is the key element to its success.

5. Legal Stability for the Application of the Certified Authentication Services

The most important feature of the e-Bidding system is the application of e-Signature issued by a certified authority. To address the problems arising from the non-face-to-face nature of e-Commerce, the government designated certified authorities with prescribed qualifications. The certified authentication services provided by certified authorities provides the basis on which to ensure stability in all e-Commerce areas ie. Internet banking, Internet shopping, and Internet petitioning. The effects of the certified authentication services are as shown in <Table 9>.

<Table 9> The Effects of the Certified Authentication Services

Effect	Description
Authentication	Identification of transaction parties
Integrity	Verification of changes in exchanged e-Documents
Confidentiality	Reference by third-parties
Non-Repudiation	Non-repudiation of e-Document exchange

A common user management & encryption procedure is insufficient in conducting a real-time online bidding involving conflicts of interest. The certified authentication services ie. authentication, integrity, confidentiality and non-repudiation are necessary in order to ensure legal stability. Authentication and non-repudiation have the same effect as the seal on the bid. Integrity and confidentiality provide adequate security for the bid. The services have been improved in the technical as well as legal aspects. Article 6 of the Framework Act on Electronic Commerce defines the legal validity of e-Signature as follows.



Article 6 (Validity of e-Signature) ① Except as otherwise provided in any other Acts, an e-Signature authenticated by a certified authority under Article 16 shall be deemed to be a legally effective signature or seal.

② An e-Document with an e-Signature under Paragraph 1 shall be presumed not to have been altered since it was signed by the creator.

Under Article 6 Paragraph 1, the seal on the bid can be replaced and a normally e-Signed bid has the same legal validity as a sealed one. This is closely related to authentication and non-repudiation. A bid submitted online plays the same role as the one submitted by the supplier itself.

Even a bid sealed and submitted by someone other than the person concerned is deemed to have the same legal validity. Without such legal and technical validity of e-Signature, it is impossible to implement a bidding, a highly sensitive task, via the Internet. As a result, e-Signature, which was introduced in the early stage of the e-Bidding system development provides the basis on which to ensure stability in e-Bidding involving conflicts of interest.

The NCA, KOSCOM, KICA, and KFTC were designated as the certified authorities to provide the authentication services needed to implement e-Signature. PPS basically reached an agreement to apply all the authentication services provided by the certified authorities in the order that they are incorporated into the e-Bidding system. Then it began to develop a system for the application of the certified authentication services and, on September 19, signed the 「Agreement on the Application of the Certified Authentication Services of PPS e-Bidding System」with the KOSCOM and KICA. The historical registration of e-Bidding suppliers began on September 20.

6. Spread of the e-Bidding System

The e-Bidding system could spread to public institutions for the following 4 important reasons.

The first is 「the Guidelines for the Use of the Government Bidding Integrated

Management System_J, which began to be implemented on March 2000. The Guidelines, composed of 8 chapters and 54 sections, are instructions on e-Bidding operation & execution by public institutions. The Guidelines is a systematic and prescribed guidelines containing e-Bidding-related administrative and technical information, eg. bidding notice examples.

The second is the online issuance of e-Signature certificates by bid executives, which began to be implemented on March 15, 2000. With the coming introduction of a payment system for certificates issued to suppliers, e-Bidding executives had consultation with certified authorities in order that, from March on, certificates are issued online and e-Bidding is executed using PPS-held information.

Each agency was previously required to individually contact a certified authority for registration for e-Bidding. From March on, however, it became possible to set up and register a certificate on the Internet.

The third is the Guidelines for Spread of e-Bidding, which was published by Min of Strategy & Finance on April 14, 2000. The Guidelines recommends that agencies without their own e-Bidding system use PPS system for budget reduction and national contracting standardization. This enhanced the status of PPS system. The Guidelines presented the principles of using PPS' e-Bidding system and encouraged wider use of it.

The last is the online payment of bidding fees via the KFTC, which was implemented in May 2000. A number of local governments and educational organizations made up for their lacking local tax revenues with bidding fees. PPS started system development in February and succeeded in developing the function of paying bidding fees using the KFTC's Internet Relay Settlement System in over 3 months, enabling suppliers to pay fees from their account to the noticing agency's registered account. This has greatly influenced the spread of e-Bidding to local governments.

In July 2000, Min of Public Administration & Security concluded that all local governments should jointly use the e-Bidding system. In September, Min of Land, Transport & Maritime Affairs concluded that all its subagencies should jointly use the e-Bidding system. Despite other over 10 individually developed e-Bidding systems, PPS e-Bidding system has become the government's e-Bidding system.



<Table 10> Use of e-Bidding by Public Agencies (End of March, 2001)

Agency	Goods Purchase		Facility Construction & Service		Total	
	Biddings	Applicants	Biddings	Applicants	Biddings	Applicants
PPS	1,036	2,910	135	44,593	1,171	47,503
Other Agencies	16	66	14	1,783	30	1,849
Total	1,052	2,976	149	46,376	1,201	49,352

* Other Agencies include Korea Railroad, Seoul · Jeonbuk Regional Communications Offices, Korea Agricultural & Rural Infrastructure Corporation, Korea Resources Corporation and Korea Tobacco & Ginseng Corporation (42 bid notices have been posted by 13 agencies including Construction Safety Management Center of Seoul)

* Korea Railroad and Min of Information & Communications implemented full use of e-Bidding for domestic procurement in April.

Section 3 Opening of the e-Bidding Age

1. Birth of the e-Bidding System (GoBIMS)

In September 2000, PPS opened the e-Bidding homepage at www.ebid.go.kr to provide e-Bidding services. The reason PPS could use the domain name 'ebid', which means Electronic Bid, was because it developed an e-Bidding system much earlier than other public agencies.



<Pic. 8> e-Bidding Web Site

The e-Bidding homepage is a temporary one for providing users with information (eg. Notices, Q&A) and enabling user registration. After its opening on November 3, it was used as an e-Bidding system homepage. This was because it was developed too hastily to provide various functions.

On January 11, 2001, despite its bad start, the e-Bidding homepage was reborn with the name "GoBIMS".

GoBIMS reinforced its basic functions (eg. Data Depository) and provided links to PPS

business directories listed on PPS homepage (www.pps.go.kr) to enable users to access data concerning PPS and public bidding procedures at one place and download data concerning e-Bidding application (eg. relevant regulations, users manuals). Moreover, the Hot News function was added to allow quick retrieval of e-Bidding-related data.

The most important feature of the new homepage is the function implied by its name GoBIMS (Government Bidding Integrated Management System). The function is strikingly different from that implied by the name of the old homepage “PPS e-Bidding”. ‘PPS e-Bidding’ implies ‘e-Bidding implemented by PPS’ while ‘Government Bidding Integrated Management System’ implies e-Bidding by all public agencies as well as PPS. It also includes notice of all bids, ie. both e-Bids and written bids.

With the increasing co-use of GoBIMS by public agencies the per-agency, BBS serves to provide each agency with a convenient method to notice suppliers of any missing information. This suggests that GoBIMS is not just PPS system but the nationwide e-Bidding system.



<Pic. 9> GoBIMS website



2. Opening Ceremony for the e-Bidding System

The e-Bidding system development was completed at the end of September 2000. For the next one month, the system conducted a mock bidding. Finally, on November 3, 2000, an “opening ceremony for the e-Bidding system” was held in COEX, Seoul, attended by more than 150 guests including Jin Nyom Minister of Finance & Economy, Lee Seok-Yeon, the Secretary-General of the Citizens Coalition for Economic Justice, and representative of government organizations, civic groups and businesses. It signaled the opening of the government procurement e-Bidding age.

The successful opening ceremony was also attended by representatives of SI businesses and certified authorities.

The opening ceremony was fully covered by the press and television, including KBS, MBC, KTV, Dong-a Daily, Hankook Daily, Electronic Newspaper, and Yonhap News Agency.

With the opening of the e-Bidding age, it became possible for bidders to participate in a bidding conducted by a public agency via the Internet without traveling to the site. The e-Bidding system ensured the legal validity of non-face-to-face online bidding by applying the e-Signature and time-stamping services provided by certified authorities under the Basic e-Commerce Act and Digital Signature Act.

The e-Bidding system was intended to be jointly used by public agencies with a high rate of independent purchasing, eg. Korea Railroad. This enabled to implement a bidding using PC without any additional investment.

The opening of the e-Bidding age, which started in PPS, drew considerable attention from every sector of society because it was the first outcome of the e-Commerce development policy driven by the government. Under the goal of becoming a leading e-Commerce country by 2003, the government established a master plan for e-Commerce development in the early 2001 and since then has been implementing various policies in the private and public sectors.

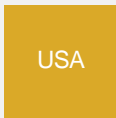
For full use of the e-Bidding system, PPS devoted considerable time to ensuring stability. Thanks to certified authentication, an e-Bid submitted with an e-Signature on it has the same effect as the one submitted with a seal on it. The need for certified authentication has been recognized by many countries around the world, eg. USA and

Japan but there have been few cases of it. Meanwhile, Korea has early established a certified authentication system due to e-Bidding.

With the opening of the e-Bidding system on November 3, 2000, Korea became the world's fourth country to implement e-Bidding, preceded by the USA, Singapore and Hongkong. Considering that Hongkong and Singapore implement e-Bidding for goods purchase contracts only, not for facility construction contracts, Korea can be considered to be the world's second country to e-Bidding, only next to the USA.

e-Bidding Implementation in Other Countries

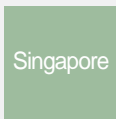
(November 2000)



- Many agencies under the Dept of Defense are implementing e-Bidding. The Procurement Department is using the DIBBS (DSCC Internet Bid Board System) to implement Internet-based e-Bidding.
- The 8th Army began to implement e-Bidding in 1997. In 1999, 95% of the total bidding was implemented through the e-Bidding system.
- 7 state governments including California and Texas are implementing e-Bidding.



- GSD (Government Supplies Department), Hongkong's central procurement agency, developed and has been operating the ETS (Electronic Tendering System).
- ETS provides various functions such as supplier registration, bidding notice, bid receipt, successful bidder notice, etc.
- Sealed Bidding was also accepted except for cases where complicated specifications are required.
- The actual operator is C&T, a private business. For its service, HK\$800.00 should be paid annually to C&T or HK\$20.00 should be paid each time to C&T (Free for registered suppliers).



- Ministry of Defense (MINDEF) is operating an e-Bidding system named MIPS (Mindef Internet Procurement System)
- The system provides various functions such as bidding notice, estimate submission, purchase order receipt and invoice. e-Bidding is available for standardized market goods worth S\$30,000 or less.

3. Korea's First e-Bidding Implementation

Even after the opening of the e-Bidding system, PPS still had yet to make full use of it. Several pilot implementations were conducted to establish a plan for full implementation.

Under Article 26, Paragraph 1 Item 5 of the 「Act on Contracts to which the State is a Party」, it has been decided that, as of November 1, 2000, e-Bidding will be implemented for constructions with an estimated price of 100 million Won or less (70 million Won for special constructions, 50 million Won for electricity · IT · fire constructions). It has also been agreed that, as of January 1, 2001, e-Bidding will be implemented for lump-sum constructions with an estimated price of 5 billion Won or below.

On December 13 2000 at 3 pm, for the first time after the opening of the e-Bidding system, the Seoul local PPS conducted the Communications Corporation's e-Bidding for the construction of the Itaewon 2-dong parking lot. The e-Bidding was participated in by 121 businesses, who submitted their bid by 2 pm.

It took only less than 5 minutes to complete all the procedures from expected price selection through dual bidding inspection to bidding result announcement and post the bidding result on the homepage. Given the fact that the Electricity Corporation's traditional bidding for the construction of the Itaewon 2-dong public parking lot required 45minutes, e-Bidding is a highly effective way to reduce time. e-Bidding has a special significance in the current situation where the number of participating bidders is so large that mailed bids are opened a day before the bidding.

There were visible positive results from e-Bidding, eg. reduction of time and cost and prevention of bid preparation errors. Despite these advantages, however, only 3 out of 10 e-Biddings for facility construction were conducted during December. This was due to lacks of system requirements, understanding among suppliers and legislative support for e-Bidding and due to some officials' negligence arising from lack of their awareness of cyber transaction.

PPS introduced a bidding observer system to allow bidders to observe the bidding process. Upon bidding completion, PPS publicized the bidding prices, the selected preliminary prices, the preliminary price selection numbers and the number of participating bidders on the Internet, thus enabling participating bidders to monitor all procedures in real time. The dual preliminary prices and the selection results were also publicized to enhance transparency in all e-Bidding procedures. Furthermore, PPS



continuously promoted the advantages of e-Bidding to raise the awareness of e-Bidding among suppliers and users.

4. Expanded Use of the e-Bidding System

A. Efforts for the Spread of e-Bidding

From its planning stage, the e-Bidding system was developed as a general-purpose system available to both PPS and other public agencies. With the expectation that it would be used by many public enterprises in its development stage, PPS made a lot of efforts for the spread of the system, e.g holding workshops to meet the requirements of various agencies concerned.

However, from November 3, 2000 to February 2001, the government e-Bidding system was used for only 7 e-Biddings made by two public agencies, ie. Korea Railroad and Korea Agricultural & Rural Infrastructure Corporation. During the same period, 140 mock biddings were conducted by public agencies, eg. Korea Tobacco & Ginseng Corporation and Busan Regional Communications Office, in order to help raise the understanding of e-Bidding among officials concerned and suppliers.

72 bidding executives from 15 agencies already completed their user registration. The full-scale spread of the e-Bidding system began in March 2001.

The backgrounds of e-Bidding expansion included the online issuance of e-Signature certificates for bidding executives, the 2001 Guidelines for e-Bidding Expansion (Ministry of Planning & Budget), the online payment of bidding fees, etc.

B. Simplification of the Registration Procedure for Public Agencies & Education for the Spread of e-Bidding

The traditional bidding process required each agency to request a certified authority for its registration for e-Bidding. However, with the start of the online e-Signature certificate issuance by bidding executives, it became possible for public agencies to conveniently set up a certificate on the Internet.

The registration procedure was simplified and education for users from public agencies was provided in order to encourage their use of the e-Bidding system. From January to February, 2001, 18 explanatory meetings were held for facility suppliers. From March 5 to the late November, over 110 explanatory meetings were held for

over 3,700 from over 2,100 agencies to provide education on e-Bidding.

To address the lack of personnel responsible for education on e-Bidding, PPS, in association with Ministry of Industrial Resources, provided regular education at the e-Commerce Resources Center (ECRC). The education was also provided at its 23 local centers.

C. Development of Government Policy for Joint Use by Public Agencies

Just as the simplification of the user registration procedure for public agencies and the implementation of the guidelines provided the basis for e-Bidding expansion, the 「e-Bidding Expansion Guidelines for Realization of e-Government」, released by Ministry of Planning & Budget in April 2001, provided the direct impetus for the accelerated expansion of e-Bidding among public agencies.

As part of its cost-reduction effort through the provision and co-use of e-Government administrative services, Ministry of Planning & Budget developed a policy for the joint use of GoBIMS by all public agencies. Developed through continuous collaboration between PPS and Ministry of Planning & Budget, the Guidelines presented the principles of using PPS' e-Bidding system and encouraged wider use of it.

D. Online Payment of Bidding Fees & Expanded Co-Use of the e-Bidding System by Local Governments

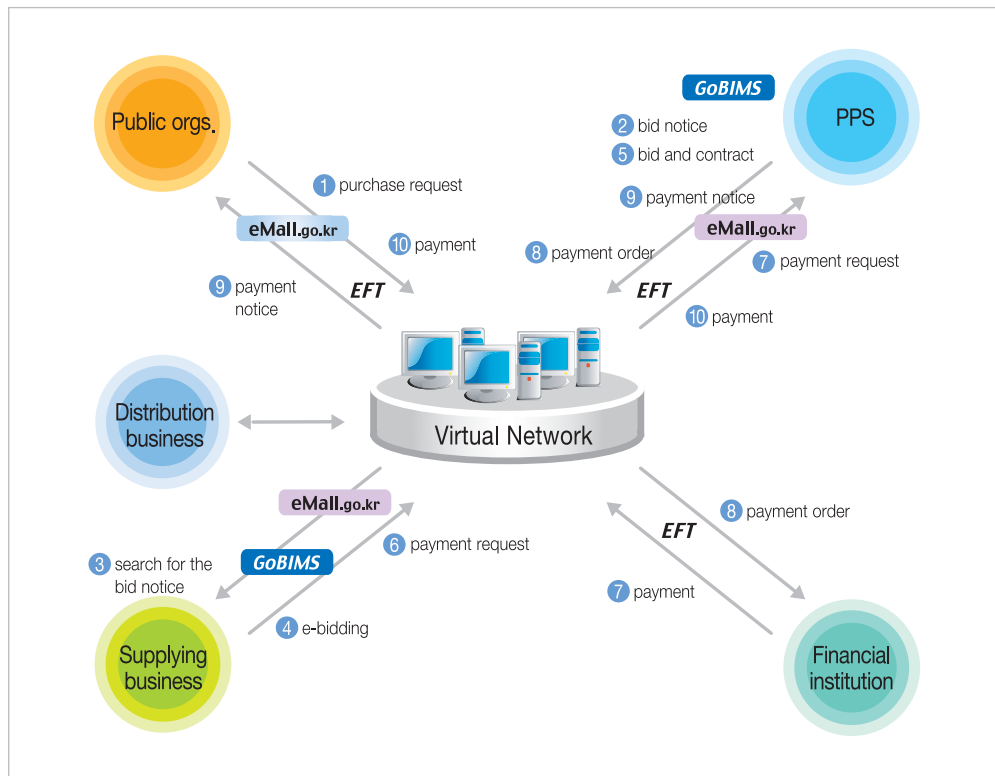
Despite Ministry of Planning & Budget's Guidelines for co-use of e-Bidding, local governments depended on e-Bidding less frequently. In May 2001, however, it became possible to pay bidding fees online using the KFTC. Since then, a growing number of local governments have begun to use the e-Bidding system.

As mentioned before, a number of local governments and educational organizations made up for their lacking local tax revenues with bidding fees from participating bidders. Considering this reality, PPS developed the function of paying bidding fees using the KFTC's Internet Relay Settlement System over 3 months, enabling all local governments to use e-Bidding. As a result, it became possible for local governments and bidders to handle their transactions online using the e-Bidding system.

Section 4
Digitalization of e-Bidding-Related Business Processes

1. Completion of the Procurement EDI/EC System

The e-Bidding system development is not an independent project but a part of the procurement EDI/EC expansion project. PPS has paved the way for the reduction of time and cost and for the realization of a small but efficient e-Government by converting the annual over 4 million documents exchanged among PPS, public agencies and suppliers into electronic form and enabling their network-based exchange. From 1997 to 2001, PPS implemented the procurement EDI/EC project steadily and stage-by-stage in order to promote e-Commerce in the private sector.



<Pic. 10> Exchange of EDI

Meanwhile, PPS established an Internet shopping mall in October 1998 to allow public agencies to purchase administrative goods with one click. In March 2001, PPS began to operate 'Procurement e-Mall', through which EDI and Internet shopping mall were restructured into XML-based administrative goods purchase and unit price contracting. The completion of the system for e-Document exchange among PPS, public agencies and suppliers has provided the basis on which to realize Paper-less Office, where electronic, not paper, documents are exchanged in cyber-space.

2. Development & Operation of the e-Payment System

The 2 major forms of e-Commerce in the government procurement sector are e-Procurement and e-Payment.

PPS implemented various government procurement e-Commerce activities such as procurement EDI/EC, Internet shopping mall and e-Bidding and, as a result, e-Commerce was rapidly expanded. However, the wide use of e-Commerce was limited by the non-electronic payment processing. Electronic processing of all procurement procedures from procurement request receipt to payment, or automated end-to-end processing, required the realization of e-Payment, which is the true core of e-Procurement.

Major advanced countries have enabled automated payment processing using e-Payment means such as government purchase card. In the USA in 1999, the GSA paid 1 billion dollars electronically using a program called SmartPay. 72% of the state governments are known to have developed or be developing an e-Payment system. Other advanced countries such as Australia and U.K. have also focused on providing government procurement e-Commerce services, especially e-Payment.

PPS has also implemented electronic fund transfer (EFT) since 1998. However, the interaction with the procurement EDI network and KFTC's financial EDI network was not realized due to banks' unwillingness to participate. In 2000, PPS changed its direction and sought to realize the interaction with the Bank of Korea for electronic fund transfer.

After over a year of preparation for system development and standardization, PPS abandoned its 50 year-long method of manually issuing national treasury checks for



payment to suppliers. On June 18, 2001, PPS began to implement the EFT service that enables electronic account transfer on a computer terminal in the office.

The previous payment method was based on the issuance of national treasury checks. Upon receiving a payment request from the supplier, the national treasury agency made a payment transfer via the KFTC to the supplier's bank account.

With the conversion to the EFT method, the central PPS adds up the payment amounts reported by local PPSs and reports the total payment amount to the Bank of Korea. Then the Bank of Korea makes an electronic fund transfer to the suppliers' bank accounts. This has reduced the time taken for suppliers to receive their payment by over 30 minutes on average and allowed PPS to save the administrative costs required for national treasury check issuance.

3. Entrance into the e-Guarantee Age

Following the introduction of the e-Bidding system in November 2000 and the implementation of the e-Payment system in June 2001, PPS began to provide an electronic guarantee service as a means to realize a digital government on August 13, 2001.

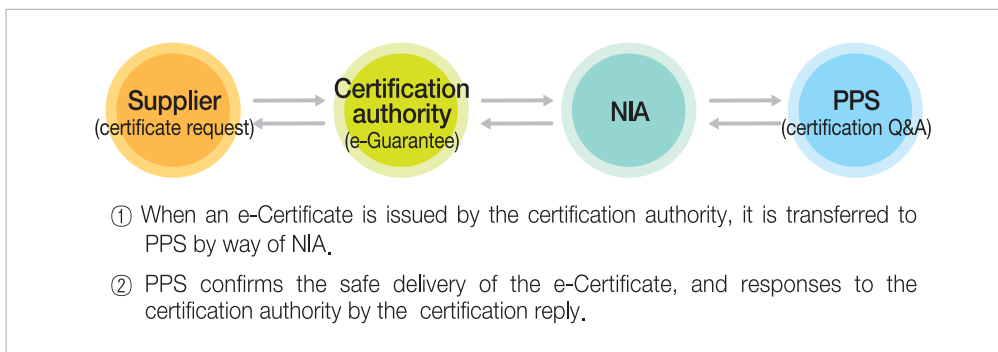
In the past, suppliers wishing to participate in a bidding or contracting were required to make the first visit to a guarantee insurer to get a guarantee printed on paper and make the second visit to PPS to submit it. With the e-Guarantee service, however, it became possible to process a guarantee business on a computer terminal in the office without visiting a guarantee insurer or PPS.

The e-Guarantee business was implemented as part of the government procurement EDI/EC expansion project (2000). Other businesses of the project began to be provided in March 2001. The delayed implementation of the e-Guarantee service was due to the need for adequate time to determine the persons or agencies eligible for the e-Guarantee service through consultations with 10 guarantee insurers and sign an agreement concerning the implementation of the e-Guarantee system, and due to the delay in improvement to the guarantee insurers' internal systems.

The electronic receipt of a written guarantee is conducted as <Pic.11>. The supplier requests for a guarantee by computer. Then, the guarantee insurer concerned issues an e-Guarantee and sends it via NCA to PPS. Finally, PPS sends back a guarantee response

to the guarantee insurer.

Suppliers were no longer required to visit a guarantee insurer or public agency to receive and submit a guarantee, thus reducing their time and cost. Guarantee insurers were also no longer required to issue guarantees in paper form, thus reducing their issuance costs and enhancing their competitiveness. As a result, civil services were greatly improved and operating expenses were reduced by about 12 billion Won annually.



<Pic. 11> Conceptual workflow of e-Guarantee

The e-Guarantee system is available to both PPS and other public agencies using the GoBIMS. As a result, the use of PPS e-Commerce system could spread rapidly to all government and public agencies, thus making a significant contribution to the realization of an e-Government.



Part 3

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Chapter 1

Outline of the Establishment of the National Integrated e-Procurement System (G2B)



Section 1 Background

The public procurement volume of Korea covered 47% (USD 67 B) of total the budget volum (USD 142B) as of 2001 when the national integrated c-procurement system was established, which had a potential effect on national economy in Korea.

The procurement administration was conducted traditionally based on complicated processes and documents. This process originated from a convention in which the government had to clarify the limit of responsibility in executing the government budget on the basis of a contract with a private business and to secure the legitimacy of a procedure. In addition, public administration has its own characteristic in that it is a cross-governmental common service. For the administration of an organization and promotion of business, this procurement service is essential to purchase goods or contract construction.

For this reason, mammoth procurement agencies such as PPS, HQ for National Defense Acquisition and Korea Electric Power Corporation established their own e-Procurement systems. PPS established a basic plan for e-Procurement in 1966 and set up a procurement EDI/EC system, and public corporations such as the Ministry of National Defense (MND), Korea Electric Power Corporation (KEPCO) and Korea National Housing Corporation (KNHC) have operated an internal procurement information management system, a business automation system and a data interchange system with private business.

However, the operation of an e-Procurement system in a certain agency produced satisfactory results in some parts, but absence of a single window for public procurement made users inconvenient, which stirred public organizations including Korea Specialty Constructors Association and Korea Electrical Contractors Association to appeal for the unification of e-bidding systems¹⁾, and caused organizations to overlap in investment due to lack of standardization because of individual establishment of e-Procurement systems.

1) Even if many public sectors have used GoBIMS since 2001, but it was not mandatory; instead, some agencies was running its own e-bidding system.



So far, there have been no single window to have a glance at total procurement information of public organizations such as central bodies, local autonomies, public corporations, etc., and no exchange of information between public organizations. In short, each business had to collect bid information from every organization and frequently submit required data to public agencies to participate in bid, causing lots of inconvenience and increase in costs.

In spite of achievements of some agencies, most public organizations conducted procurement tasks based on paper documents and personal contacts with private business, which left a room for corruption.

Therefore, the government promoted the establishment project of the national integrated e-Procurement system (G2B²) to provide solution to problems of existing systems through cross-governmental efforts. In particular, ‘the e-Government Special Committee’ selected and promoted this project as one of 11 e-Government projects, which enabled initiation of the cross-governmental promotion system and concentration of inter-governmental capability.

2) Government To Business: Government-business e-Transaction



Section 2

Objective of Promotion

The G2B project sets its goal to drastically redesign procurement works which was conducted in a complicated manner and paper-based, process all procurement procedures online through the internet, and establish a ‘single window’, consequently enhance the efficiency and transparency in public procurement. As G4C is a comprehensive e-Government service for the public, so G2B is for business as part of the e-Government.

In particular, the G2B project, first, aimed to provide a contact point between public organization and private business by making a procurement single window. A Procurement Service can not only access the internet single window and search all order information of end users, but even participate in all bidding of public sectors and check out all bidding processes on a real time basis following one-time registration with G2B .

Second, the project set the goal at the development of e-Procurement process support function (ASP³⁾). It enabled both end users and suppliers to conduct procurement business based on standardized business procedures by logging into G2B without establishing other certain systems; and regarding central procurement processes in which a public organization conducts procurement tasks through PPS, it served as a public procurement portal to provide services in linkage to the existing procurement EDI system through G2B.

Last, it set its sights on the standardization project to improve the product classification system based on the UNSPSC⁴⁾ system which is suitable for e-Transaction for compatibility with private e-Commerce business and observance of international standards. It added open an administrative standard and a technical standard to a product classification system, a management number which identify an end user and a supplier and e-Data standard, so that it can secure general usability of the system, thus enabled linkage to external systems.

3) ASP (Application Service Providers): A sort of function to provide software to consumers through software management/distribution and network via the central data center.

4) UNSPSC (United Nations Standard Products and Services Code): A classification system developed by UNDP and ECCMA in order to meet a current e-Transaction on the basis of a modern industrial structure.



Chapter 2

Project Details



 Section 1

Scope of the Project

1. Scope of 「Establishment Service of Innovation Project for Promotion of G2B」

The first stage-establishment service of an innovation project-set the range from the establishment of an infrastructure for national e-Procurement including policy making of the establishment of the national e-Procurement system and standardization of relevant information and forms to the innovation of procurement works for e-Procurement process (BPR⁵⁾) and the formulation of the information strategy policy which makes an establishment strategy of the information system.

Therefore, objects to be revised in regulations, business reengineering policy and system establishment policy were included in a scope of the project as follows:

A. Formation of the establishment strategy of the national e-Procurement system

First of all, the strategy is to reform overall improvement policy of the national e-Procurement system and procurement function of a public organization by providing the scope of the entire G2B project and the conceptual architecture of e-Procurement and showing the promotion strategy and promotion policy, thus to display step-by-step improvement progresses including the establishment of a change management scheme and installation of a single window of present an improved.

Furthermore, it conducts researches on effective incentive policies, such as drawing a road map for allotment of duties and collaboration scheme between public sectors and private and public agencies regarding the promotion of the G2B project, and reflecting programs on the budget categories including practical training and systematic PR policy for the expansion of the e-Procurement system and the result of inspection and

5) BPR (Business Process Reengineering): A process by which an effective stream of business process suitable for a new business environment including informatization was formed, and it includes the improvement of an existing tasks.

evaluation of the system performance. It also includes the provision of an analysis tool which can analyze far-reaching effects of G2B, including the evaluation of economic efficiency in public and private sectors resulted from e-Procurement.

B. Business process reengineering (BPR)

First, its mission is to analyze the current status of foreign procurement works and best practices by analyzing procurement-related tasks and their problems, and to review of digitalization and establish a promotion policy in linkage to procurement-related systems, such as e-Signature, finance & goods management and procurement EDI for the improvement of business process in a public agency.

Second, it also includes founding the information sharing policy to do away with the document submission system in an effort to promote package provision of whole procurement information through one-time registration and forming the improvement policy of information sharing processes which covers electricity, IT, construction, technical resources and business performance, etc.

Last, it contains revising relevant regulations to spread government procurement e-Transaction by demonstrating necessary measures, such as the revision of laws and regulations and per-sector requirements for the implementation of BPR results, and providing the establishment policy of e-Payment and relevant systems to consolidate legal volition of e-Procurement.

C. Standardization of G2B-related contents and e-Documents

First, it contains displaying the expansion policy of the government standard as the national standard by standardizing an e-Catalog exchange and realization system through the formation of the government-standardized e-Catalog system and by defining the classification system of article values and property sets using GDAS (Global Data Alignment System).

Second, it covers the development of mapping policy between new and old codes which gradually converts the existing government goods codes to new codes in an attempt to efficiently utilize the government goods identification codes, the establishment of a goods code in the wake of a new standard catalog system and the

formulation of a standardization policy of e-Procurement-related forms including registration, e-Bidding, e-Contracting and e-Payment.

D. Establishment ISP of a procurement single window and security of informatization infrastructure

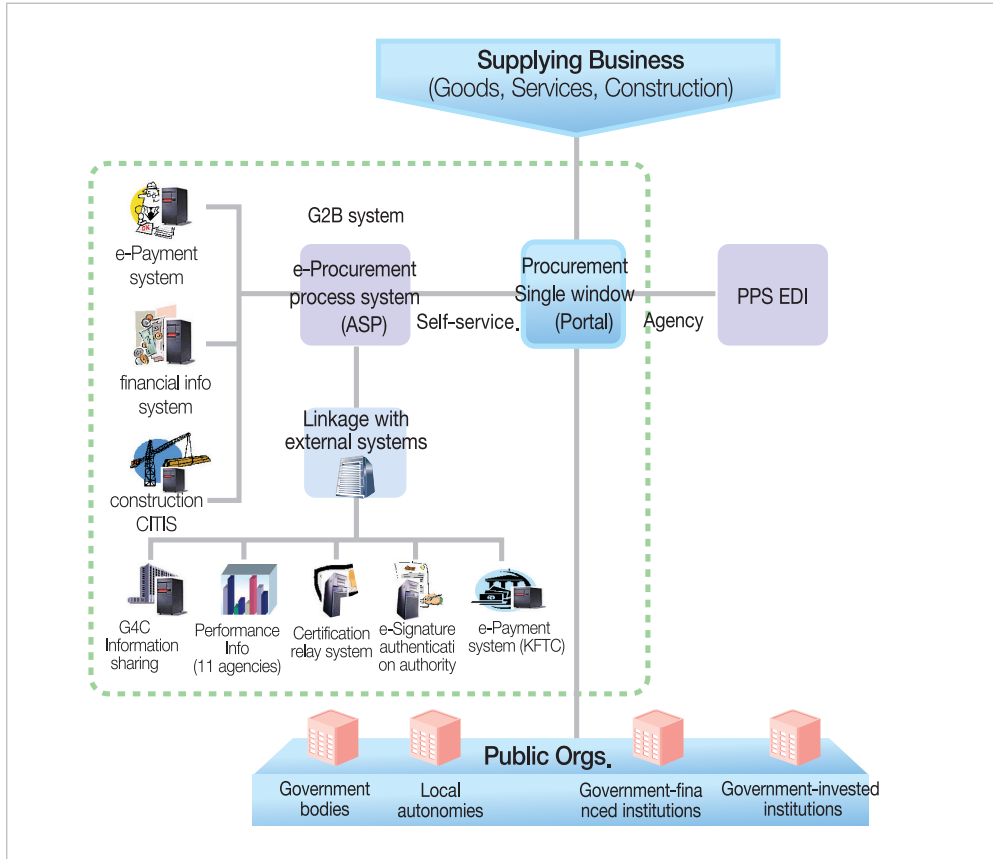
First, it should present a system configuration scheme (centralized or decentralized) for effective e-Procurement in order to help draw a design of a technical architecture and its applied system with respect to the G2B single window; and plus, it is to provide the public-private system linkage plan considering private e-Commerce-related matters (e-Catalog, e-Marketplace, hosting service, etc.), such as the system to collect/operate/manage/use e-Catalog data and its operation policy.

Second, it has to provide a linkage policy with the information join-utilization center (G4C) when sharing information between institutions to abolish the document submission system, and present a policy for a hosting service of e-Procurement (ASP) and marketing agency.

Last, it also involving the scope and policy for inter-system linkage to support the establishment of the way to link between the existing e-Bidding system of each agency and internal systems of institutions, the extraction of data bases which enable information sharing for procurement process and the plan for linkage with private e-Market places. In addition, it includes duty allotment between private and public sectors in the wake of the development and operation of the system, the establishment policy of the integrated information system which covers data of electricity, IT, construction resources and business performance history and the revision of required details, such as regulations and ordinances, database and necessary measures for each institution for the implementation of ISP outputs.

2. Scope of the System establishment project

The scope of this project refers to the development of a service be used based on the result of establishment service of the innovation plan, and it ranges from portal, user registration/management, e-Procurement ASP, goods classification and standardization of codes to external links.



<Pic. 1> Conceptual framework of the target system



Section 2

Realization of One-Stop via Inter-System Linkage

The G2B system provides an ‘one-stop’ service and conducts businesses in linkage to over 50 external systems for sharing information. As for an individual user, it helps share documents and data through the standardized e-Signature and the standard XML data interchange, and regarding a sector which needs external linkages including certification or payment, it provides a service in which a user can deal with all procurement tasks in the G2B system.

As an example, the system secured safety in online transaction by linking the e-Signature which is equivalent to the signet in legal effect to 6 certification authorizations and MOGAHA e-Signature, and abolished the submission system of the business registration certificate and the certificate of tax payment by linking with G4C. Moreover, it shared information of business management, performance and technician records in linkage to 11 construction-related associations, which enabled online transaction of certificates with 11 certification authorities, such as down payment, bid, contract, guarantee against defaults, etc. The linkage with the Korea Financial Telecommunications & Clearings Institute (KFTC) and the dBrain of the Ministry of Finance & Economy (MOFE) realized the e-Payment of goods through the national treasury or commercial banks. In addition, it helped a customer use the G2B system preventing without double input in linkage to the standard e-Payment system. <table 1> shows major system linkages.

<Table 1> Main External System Linkage

System	Linkage Information	Purpose
G4C (Ministry of Government Administration and Home Affairs: MOGAHA)	<ul style="list-style-type: none"> • Company registration information • Tax Payment receipt 	<ul style="list-style-type: none"> • Sharing information that the public institutions possess by on-line get ride of paperless document.

System	Linkage Information	Purpose
Administration e-Signature (MOGAHA)	<ul style="list-style-type: none"> • Certification information 	<ul style="list-style-type: none"> • On-line official seal secures stability of on-line transaction of public institutions.
e-Signature (6 official certification institutions)	<ul style="list-style-type: none"> • Certification information 	<ul style="list-style-type: none"> • e-Signature with mutual linkage is applied to secure e-Commerce.
Information such as a company's actual performance (11 facility related associations)	<ul style="list-style-type: none"> • Information of a company's actual performance 	<ul style="list-style-type: none"> • sharing information with 5 associations such as CAK(basic information, actual result information, management information, allowance rate information)and providing construction eligibility examination and PQ basic materials.
	<ul style="list-style-type: none"> • Information of engineers 	<ul style="list-style-type: none"> • By linkage with construction engineer DB (construction engineers, architects, supervisors, survey, engineering association), sharing engineers information for PQ examination
National budget information (MOFE)	<ul style="list-style-type: none"> • Contract information • Payment information 	<ul style="list-style-type: none"> • On-line payment from national institutions' accounts to private banks for private companies.
Online payment (KFTC)	<ul style="list-style-type: none"> • Payment information • Account Information 	<ul style="list-style-type: none"> • On-line payment from local government's or public a company's bank to private company's.
Certificate (11 Certification Authorities)	<ul style="list-style-type: none"> • Contract Information • Contract Information • Certification Information 	<ul style="list-style-type: none"> • Certification Authorities submit on-line guarantee to each institution.
7 existing e-Procurement institutions	<ul style="list-style-type: none"> • Bidding Information • Company information 	<ul style="list-style-type: none"> • The company with e-Procurement system announce bidding without double input to G2B • Sharing company information in G2B
CITIS (Ministry of Construction and Transportation)	<ul style="list-style-type: none"> • Contract Information 	<ul style="list-style-type: none"> • Prevention of double input by linking business management function of G2B and CITIS
construction industry DB (Ministry of Construction and Transportation)	<ul style="list-style-type: none"> • Bidding information • disqualification information 	<ul style="list-style-type: none"> • Providing G2B bidding and disqualification information to construction industry DB of MOCT to check a company's actual results.
Standard on-line authorization (Individual Institution)	<ul style="list-style-type: none"> • Document Circulation Information • On-line Authorization Information 	<ul style="list-style-type: none"> • By applying standard on-line authorization system, document that is generated by G2B is linked with interior on-line authorization system.



Chapter 3

Project Progress



G2B project consists of the two steps: The first step is “Establishment of Innovative Plans for G2B,” where development method for G2B system construction was prepared after advance preparation of analyzing situations of procurement administration and its problems and the second is “Construction of G2B system⁶⁾”.



Section 1

Step 1 - Establishment of Innovative Plans for G2B (From April 2001 to January 2002)

First, G2B Project was selected as a new innovative project in administration information team of government innovation committee in January 2001 for efficiency and transparency of procurement administration. In January in the same year, Ministry of Planning and Budget collected professional opinions for G2B project on inconvenience and demands of personnels of each department, e-Procurement and demands of 7 public companies that already constructed e-Bidding system, and opinions of private procurement companies. It held a meeting with Ministry of Commerce, Industry & Energy, Ministry of Information and Communication and PPS to discuss this project on April 3, 2001.

In this meeting, there was a consensus that G2B project that is related to many departments must be neutral without interest of each department and single project system must be prepared by an institution that possesses budget necessary for this project. Therefore, head of administration innovation team of Ministry of Planning and Budget became the head of this project and 9 government officials from institutions such as Ministry of Planning and Budget, Ministry of Commerce, Industry and Energy,

6) In September 2002, according to notification of the minister of Finance & Economy, the official project name was changed into G2B and as a result of G2B project name competition that was done in the late of 2002, from 2003, Narajangteo was used for its nickname and GePS (Government e-Procurement System), as English name. For this competition, total 4,000 suggestions were received.



Ministry of Information and Communication, and PPS consisted of 「G2B Steering Team⁷⁾」(April 14).

On May, G2B Steering Team Meeting was held, where planning and schedule of the project was decided under the principle that states the existing system and DB will be maximized for this system construction. On June, after finalizing the project called 「Innovative Plan Establishment Service for G2B Activation」, the research service bidding was officially announced. And then, to select private service company for this project, private company initiated evaluation committee was constituted (3 government officials and 6 private sector professionals) and through technology and cost evaluation, Samsung SDS consortium was selected on July 20, whose project cost is 12 billion 50 million Won.

Meanwhile, considering many interest group are involved in G2B activation project, South Korean government tried to collect opinions of interest groups such as procurement companies, private economy groups, related associations, private standardization groups, internet companies, and public institutions.

In August 2001, a meeting of G2B activation out-sourcing Service (August 7) was hosted by the vice-minister of Planning and Budget. 100 members of public organization, procurement companies, the Federation of Korean Industries and guarantee and authorization associations from electronic special committee, G2B activation actual affair team, central government, local government, and public company joined this meeting to discuss innovation of public procurement procedure, cost efficiency of private procurement companies. And for personnels who are involved in G2B projects, commencement workshop was held (August 28 to 29) and design direction of final model for G2B was established after understanding the situation of procurement and way of its improvement.

The interim report meeting was held on November 13 to review and evaluate the results of service business that was performed so far. In a workshop for G2B personnels (November 14), analysis of problems and improvements in the national procurement

7) This team consists of 9 groups such as Ministry of Finance and Economy, MND, MOPAS, MKE, Ministry of Information and Communication, MLTM, Ministry of Planning and Budget, PPS, and The Bank of Korea.

strategy, project direction, items, facility/service process standardization, and list system were intensively discussed.

On December 11, public hearing was held to establish G2B activation method based on research service results that has been achieved to collect opinions on service contents of G2B system, use range of public institution, and participation of private companies.

Also, G2B activation counselling committee consisted of academic circle, private economic groups and internet companies and the meeting was held three times to finalize research service project of 「Innovative Plan Establishment for G2B Activation」 (January 22, 2002).

In addition, to prevent overlapped projects of e-Procurement of individual institutions, and to connect it with G2B system, a overlapped-development prevention guide was delivered to public institutions on June 1, and 21, 2001.

Since codes between private and public item classification and procurement companies are different, compatibility during transaction with private companies is not secured. Therefore, the necessity to standardize on-line transaction was raised. Therefore, G2B Actual Affair Team held a meeting with standard groups and private companies such as ECIF, Korean Institutes of Distribution and Logistics and Korea e-Business Association three times (April 30, November 30 and December 7, 2001). To match domestic and international standards, standard of the government commodity classification, electronic catalog attribute and procurement company identification code were decided.



Section 2

Step 2 - Full Promotion of G2B Project (February 2002 - December 31)

For step 2 of the system construction, project principles was established in terms of economy to prevent possible changes that may happen due to construction of the government unification of computation environment. it was hosted by PPS that has experiences for a system construction and operation.

In February 2002, PPS decided the project plan and announced it. And through technology evaluation⁸⁾ and cost evaluation, contract of a system construction project with Samsung SDS consortium were made on March 29 by a cost of 24.9 billion Won. In addition, in April 2002, G2B Steering Team for construction of system and DB (head of the team is director of commodity information of PPS), linkage between different systems, improvement of law system and standardization. And G2B Supporting Association that consists of Ministry of Planning and Budget and Ministry of Information and Communication and private professionals.

Also, through project analysis (April), specific design workshop (May), various opinions of public institutions, and procurement companies were collected for development direction. And then, program, hardware, DB, and the homepage was completed, education for public institution users and call center personnels were done. On September 30,2002, when revised law started to enforce, full scaled-service was launched.

Furthermore, laws that were presented in step one were revised. Among them, national contract enforcement decree that Ministry of Finance and Economy is charged of and enforcement decree of procurement business law was revised on July 30,2002 and The Enforcement Decree of the Act on Contract to which the State is a Party was revised on

8) Technology Evaluation Committee consists of three members from internal departments (One member from Ministry of Information and Communication, Ministry of Planning and Budget, and PPS), and six members from external institutions.

August 24 and started to be valid from September 30. Enforcement decree of local finance act under the jurisdiction of Ministry of Government Administration and Home Affairs was revised and executed on November 29. On September 28, according to enforcement decree of national contract law that minister of Ministry of Finance and Economy revised, G2B was notified as designated information transaction unit. Therefore, legal base for e-Procurement were settled by establishing law for promotion of electronic business, e-Commerce basic laws and e-Signature laws.

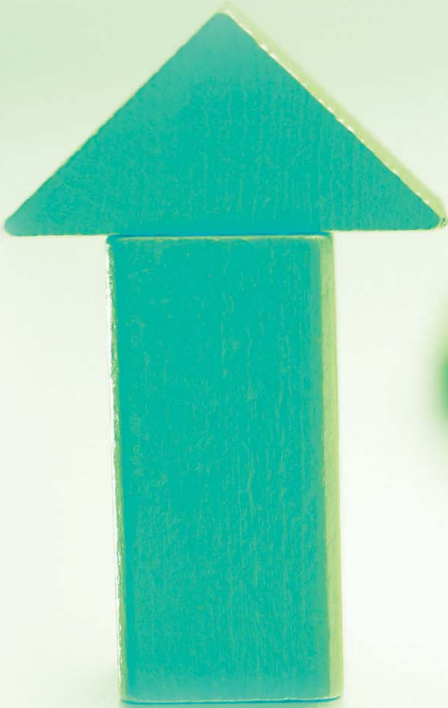
<Table 2> G2B Project Progress

Step	Progress
<ul style="list-style-type: none"> • Step 1: Establishment of Basic Plan for G2B Activation (April 2001 to January 2002) 	
April 2001	「G2B Steering Team」(April.14)
July 2001	Research Service Project of Innovative Plan Establishment Service for G2B Activation」 (July 20)
January 2002	Establishment of BPR and Information Strategy Plan (ISP) (1.21)
<ul style="list-style-type: none"> • Step 2: Full Grown Promotion of G2B Project (February 2002 to December 31) 	
March 2002	Selecting G2B system business company (March 29) and starting development (April 12) * Contractor: Samsung SDS consortium (Cost: 24,900,000,000 Won)
September 2002	Starting G2B total service (September 12) and opening it officially (September 30)
October - December 2002	Linkage with National Finance Information System and G4C



Chapter 4

Promotion System



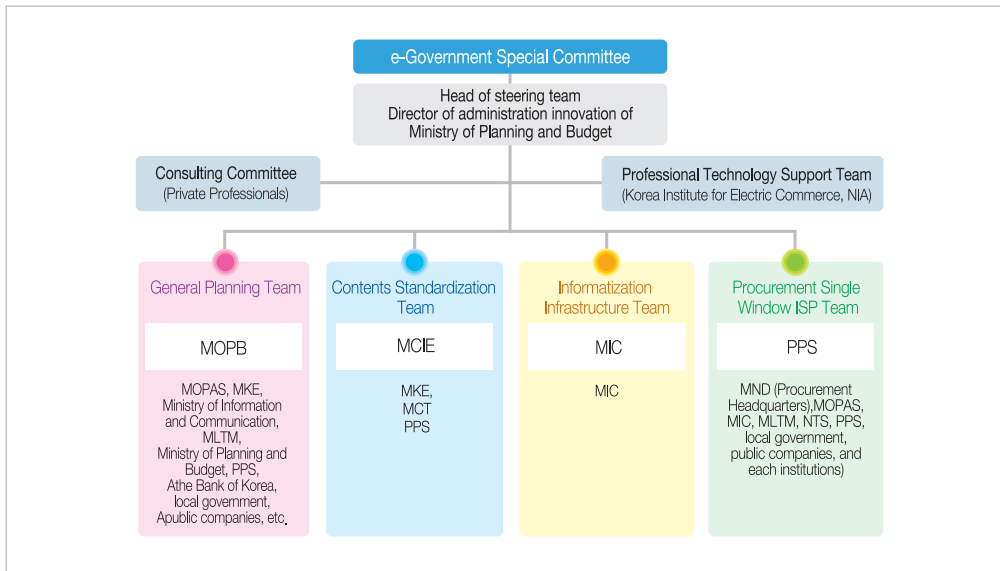


Section 1

Promotion System of Establishment of G2B Activation Innovation Plan

Pan-government promotion system of G2B is the key factor for its success. It is impossible to perform BPR when each department has a different procedure for procurement if there is no government's cooperation. Since G2B project is not the one that can simply construct a system for a single business, active cooperation of each department related to procurement administration is essential.

G2B actual affair team (head of the team: director of administration innovation of Ministry of Planning and Budget) that various government department joined under the e-Government special committee was established. For the service project of this project, Ministry of Planning and Budget was a representative host group, and Ministry of Information and Communication and PPS supported this project together⁹⁾. The promotion system is seen in <Picture 2> and <Table 3>.



<Pic. 2> Promotion System of Innovation Plan Service for G2B Activation

⁹⁾ The hosting institution are administration team 2 of Ministry of Planning and Budget, Information Support Department of Ministry of Information and Communication, and Information Management Department of PPS.

<Table 3> Organization and Role of Promotion Team

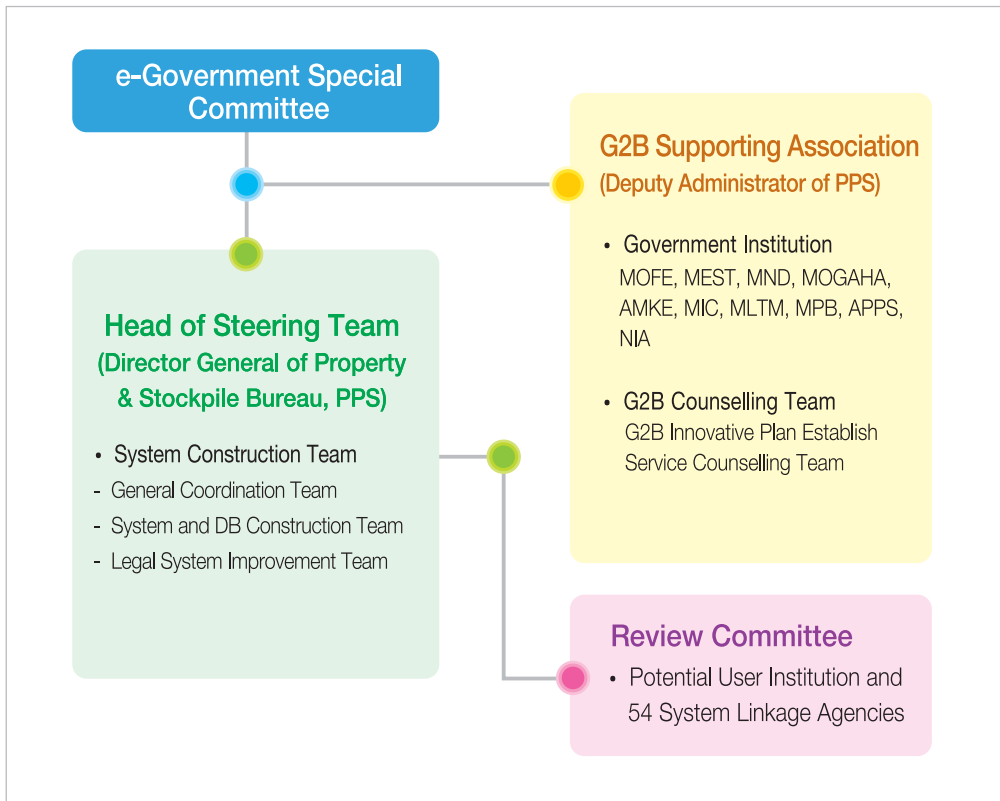
Section	Organization	Role
Steering Team	<ul style="list-style-type: none"> • Head of Team: Administration Innovation Director of MOSF • MND, MOPAS, MKE, Ministry of Information and Communication, MLTM, MPB, PPS, The Bank of Korea, Local government, public company's director • Person in charge of professional technology support groups. 	<ul style="list-style-type: none"> • Plan establishment and budget acquirement • business adjustment between actual working groups • Establishment and adjustment of security system • Establishment of evaluation plan and application of evaluation results
General Planning Team	<ul style="list-style-type: none"> • Head of Team: Director of Administration Team 2 of Ministry of Planning and Budget • MOPAS, MKE, Ministry of Information and Communication, Ministry of Construction and Transportation. • Ministry of Planning and Budget, PPS, the Bank of Korea, local government and public company's director • Person in charge of professional technology support groups. 	<ul style="list-style-type: none"> • Establishment of the basic plan and general management of the project • Standardization of common legal system • Adjustment of cooperation system between working groups • Performance of evaluation • Review of activation methods of G2B ※ General management of procurement business, BPR/ISP
Actual Operation Team	<ul style="list-style-type: none"> • Head of team of contents standardization: Director of e-Commerce in MKE • Head of Information Infrastructure Team: Director of Information Support Department of Ministry of Information and Communication • Head of Procurement Single Window ISP: Director of Information Administration department in PPS 	<ul style="list-style-type: none"> • Establishment and execution of specific plans of each field. • Submitting current materials • Performance of standardization of related law, system • co-management of service business • Review of service result
Consulting Committee	<ul style="list-style-type: none"> • It consists of private professionals in the fields of law, administration and information technology. (about 15 persons) 	<ul style="list-style-type: none"> • Consulting standardization and improvement of project organizations, methods, and laws.
Professional Technology Support Groups	<ul style="list-style-type: none"> • NIA • KIEC, etc. 	<ul style="list-style-type: none"> • Professional technology consulting • Management of information promotion fund
Service Business Entity	-	<ul style="list-style-type: none"> • Performance of strategy / BPR / ISP • Through a single window, procurement information service system is constructed.



Section 2

Promotion Systems of System Construction Project

Step 2 was performed by PPS as a single window hosting agency¹⁰⁾ because this project had short period of time to complete and PPS has experience to construct e-Procurement system and operate it. <Picture 3> and <Table 4> show each government department and cooperative promotion system.



<Pic. 3> Project System of G2B Construction Project

10) PPS designated information and planning department as the general management department and performed this project with information management department and catalog information department.

<Table 4> Organization and Role of Promotion System

Organization		Main Role
e-Government Special Committee		<ul style="list-style-type: none"> • Project management and adjustment of different opinions between departments
	Consulting Committee	<ul style="list-style-type: none"> • Checking system construction according to G2B activation service results • Consulting technology related to system construction and infrastructure
G2B Support Association	Consulting Committee	<ul style="list-style-type: none"> • MPB <ul style="list-style-type: none"> - Discussing and supporting law amendment, standardization and system linkage • MOFE <ul style="list-style-type: none"> - Discussion of law revise such as national contract law - Discussion of linkage method of national finance information system • MEST: Agreement of linkage with national education administration information system • MOGAHA <ul style="list-style-type: none"> - Revise of law related to use of local government - Agreement of G4C and standard e-Payment system linkage method - Discussion of e-Seal and e-Signature compatibility system • MND: Discussion of national defence EDI linkage • MCIE: Discussion of standardization of e-Document and e-Catalogue <ul style="list-style-type: none"> - Exterior private professionals included • MIC (NIA) <ul style="list-style-type: none"> - Discussion of relevant system linkage infrastructure • MOCT: Discussion of construction CALS linkage • NIA (Host agency): Discussion of project management progress
Steering Team		<ul style="list-style-type: none"> • System Construction Team (PPS) <ul style="list-style-type: none"> - General Adjustment Team - System and DB Construction Team - Law and Legal System Revise Team • Review Committee (54 agencies) <ul style="list-style-type: none"> - Potential user agencies <ul style="list-style-type: none"> · Verification of application of development function to actual business · Preparing linkage with each agency's e-Procurement system · Participation Hopeful agencies such as the national agencies, local government and public companies. - External Linkage and Standardization related agency <ul style="list-style-type: none"> · Each association, construction technology researchers construction CALS association, etc.

To perform system construction business, e-Government special committee checked and adjusted the system construction situation and its problems regularly, and G2B supporting association held meetings to support decision of development direction, and legal amendment and to provide linkage with exterior groups. Head of G2B system construction Team from PPS (Head of the team: Director General of commodity information of PPS) performed the construction of actual system and DB.

Specifically, according to the existing G2B activation innovation plans, to construct G2B system, G2B supporting association plays a role in adjusting different opinions between government agencies such as standardization, legal amendment and system linkage. The review committee that consists of the potential user agencies and exterior linkage groups held workshops twice and every entity does its best to build the system that every agency can use together.



Chapter 5

Features in the Process of Promotion



Section 1

Securing Amicable Performances through a Gradational Approach to Amendment of Law and System

There was a necessity to amend laws and ordinances in the fields of central government contract ordinance, enforcement regulations, public procurement ordinance, and local finance ordinance, which was resulted from G2B renovation plan-establishing service. This amendment work re-verifies the legislative system improvements which were derived from the service, and the amendment was finished through reviewing the related laws synthetically as in <table 5>

Amendment of laws in constructing the electronic government is a core fact which makes the project either successful or fail as much as construction of the real system. G2B did not have a wide range in amending the laws, it was agreed in the direction of amendment in the previous BPR/ISP, and in the process of agreement the amendment got accomplished fairly well with the help of the Ministry of Finance and Economy, the Ministry of Planning and Budget, the Office of Supply, and the government offices concerned. Before launching the service, as a result, the whole related laws and regulations underwent the amendment and the service could be given under the perfect circumstances of administration.

It is notable in the amendment of the laws and regulations to minimize the confusion in changing the system through the interim measures. By December 31, 2002, several new functions with interim measures¹¹⁾ enabled to use the previous systems. This was for the institutions not ready to use G2B because they did not get an e-Signature, a training to use G2B, and etc. According to the newly amended laws and regulations, each public

11) An example; an additional clause to the Enforcement Decree of Act on Contracts to Which the State is a Party

②(interim measures about the designated information processing system) by December 31, 2002, the directors and the contract-officials in the offices of the central government can make contracts under the previous provisions, if they have unavoidable reasons not to use the designated information processing system, despite the amendments in article 22, article 33, article 36 clause 12-2, article 39, article 40 clause 3, and article 76 clause 6 or 8.



institution performed procuring goods with G2B from September 30, 2002, and it could take its time to get ready to use G2B while working according to the previous regulations if it was in some unavoidable circumstances.

<Table 5> Present Status in Amendment of Laws related with G2B

Laws	Contents of Amendment	Date
Enforcement Decree of Act on Contracts to which the State is a Party	<ul style="list-style-type: none"> - Realization of a single procurement by performing the duties (article 33) of posting a notice of tender in the designated information processing system instead of an official gazette or a newspaper - Electron bid performance excluding an off-line bid with the enforcement of the electron bid status in the laws (article 39) - Systemization of managing the manufacturers information with performing the regulation (article 76) forcing to use the designated information processing system to post and report the restraining illegal manufacturers - Enforcing to report the entire contract records through the designated information processing system (article 94) - Enactment of the base provisions in using the designated information processing system (article 96) 	Amend: July 30 Effective: September 30
Enforcement Decree of Government Procurement Act	<ul style="list-style-type: none"> - Introducing a competitive Multiple Award Schedule (MAS) regulation by selecting more than two manufacturers, which induces a competition of price and quality in the process of supply (article 7, clause 2) - It is a fundamental rule for public org. to pay the price directly to the manufacturers, but in the case of a requirement of the public org. to pay for the goods in relation with the shortage of the budget, it is possible to pay the price on behalf of the public org. (article 12) 	Amend: July 30 Effective: September 30
Enforcement Rules on Act on Contracts to which the State is a Party	<ul style="list-style-type: none"> - Enactment of the base provisions in sharing the informations of manufacturers registered in G2B with other public institutions (article 15) 	Amend: August 24 Effective: September 30
Enforcement Decree of Local Finance	<ul style="list-style-type: none"> - Enforcing to post area restricting bid in the designated information system (article 70) - Systemization of managing the manufacturers information with performing the regulation (article 71) forcing to use the designated information processing system to post and report the restraining illegal manufacturers 	Amend & Effective: November 29



Section 2

Securing Inter-Compatibility of the System Due to the Open Technology Standard

The base technology of constructing G2B system is a document circulating method which includes e-Signature and document security technology with PKI¹²⁾, SOAP, and ebXML electron document standard. It can also be described as a constructing technology on the basis of JAVA for a large-scale web-servicing. With this system it enables to transact electronically through the internet safely, which claims caution, and with the reflection of the current technology, it enables easier to exchange informations and documents with any other current working system.

Especially to secure the stability of electronic transactions, the end-to-end security system based on the electronic document was achieved through applying authorized e-Signature to every operation and transmitting the documents made in the sender's computer to the receiver's computer. In a bid, the security was enforced with the 'government-authorized encrypting algorithm' in which newly issued keys are to be used for each bid. Because the keys based on PKI are issued from the National Information Society Agency which is another institution and controlled personally by the official in charge, even the system operator cannot get the keys. In case the official in charge lost the key, he/she must request the Public Procurement Service to re-issue the key according to the provided procedures and the National Information Society Agency reissues the key with a request of the Public Procurement Service. With this procedure the unshakable security system was achieved.

To improve the mutual compatibility of the system, properties in the system which identifies personal users and institutions were kept to observe the open standards. For example, a company's business registration number becomes its registered number and the administrative branch codes under control of the MOGAHA become their registered numbers. There were some problems which required another protocols to

12) PKI (Public Key Infrastructure) : a base technology which processes authentications and denial-blockades perfectly encrypted with a different open-key and a personal-key from both senders and receivers.



connect each system because every administrative branch had its own registered number.

As it was said, with the features of G2B system which a lot of institutions use and which must connect to a lot of outer systems, applying and observing the open standard can play a key role in the connections of each system.



Section 3

Constructing Organic Inter-agency Cooperation System by Establishing Entire-governmental Promotion System

The G2B system is a common project which needs inter-agency cooperations such as amendment of laws and regulations, and promotion to use it. The most difficult problem that appeared in constructing the hardware system was to reflect the requirements of the unspecified public institutions to the system effectively, and to draw cooperation of the related institutions to connect the system to more than 50 external systems. It was a very important matter in that the system should not merely be established, but be effective in use for system users.

To build the most effective system, first in the stage of planning G2B, the practical promotion committee was composed with the MPB, the opinions of the relevant government ministries were gathered through a meeting. The direction of constructing the system was decided through collecting enough opinions of the construction associations, the standard associations, and the relevant government ministries. To draw positive participations of public institutions and close cooperations from the private sectors, various opinions from both the relevant government ministries and experts in private organizations were gathered through three briefing sessions (starting, interim, and final session), two workshops, a public hearing, and three advisory committee meetings.

This procedure was achieved due to the whole government development promotion system¹³⁾ in both the first and the second national enterprises. In the stage of building the system as well as the innovation planning, the opinions were tuned through assigning roles and from the beginning the joint promotion system such as G2B supporting committee, investigation committee was built to have a conference with related agencies under the PPS that had experiences of electronic procurements. In

13) See Chapter 4 Promotion System



other words, it is a primary rule to have a conference with each related institution, however, in case there is either a different opinion or an outstanding problem, the decision can be made rapidly by the G2B supporting committee and the special committee on electronic government.

One of the well known settlements by the special committee on electronic government was about paying the transfer service charge of commercial banks, which was solved at last. The Public Procurement Service had several conferences with KFTC and some commercial banks, but development plan was not found. This was submitted to the meeting of the special committee July 31 by the G2B supporting committee, and the development direction was decided in a joint meeting of the special committee, the related institutions, KFTC, a local autonomous entity which had a municipal account, and executives of commercial banks on August 7¹⁴).

Also the G2B supporting committee and the investigation committee which were composed of about 60 institutions played a role for collecting users' opinions. Especially the investigation committee which was usually made up of related institutions played a key role in analysing the performance and verifying the system. About 90 institutions participated in the Workshop for Analysing Performance (April 25~26) and Planning Workshop (May 28~29) to confirm the direction of constructing the system.

14) There was a conflict about the electronic funds transfer between commercial banks and a local autonomous entity. The former maintained that the fee should be charged to every case and the latter maintained that the fee can be preserved to the management profit of municipal account. It was agreed that the fee should be 300 Won each in principle but it can be changed under the agreement between the public institution and the commercial bank which has municipal account.



Section 4

The System Stabilizing at an Early Stage through Phased Construction Strategy

G2B secured operation stability in constructing the system with systematically phased promotion strategy. On August 19, the system operating environment was checked and application base was expanded with opening a part of the service such as user registration. On September 12, operation stability of the core function was checked with opening major external services like electronic bidding and shopping mall. Since the regular service started on September 30 when the amended laws and regulations were effective, the system has worked without any problems. The first and the second phased service opening enabled the system to be stabilized before opening fully to the users. While tuned up with other exterior systems which had a different development schedule, the project schedule was adjusted to secure more stability of the system by setting the time limit on December 31.

The related laws and regulations have amended before supplying the service and the administrating base was achieved without any fault through adjusting subordinate clauses like stipulation and agreement for external institutions. In amending the related laws and regulations, as interim measures were made for the institutions which were not ready to use the system to use the previous procedure the public institutions were made suited for the new system easily¹⁵⁾.

Lastly, the developing period was shortened with the knowledge of the existing electronic procurement system and its infrastructure and the strategy which absorbed about 24,000 public institutions and about 65,000 suppliers that used the previous electronic procurement system as new users of G2B to secure the stability at the starting point was successful.

Like this way, despite the short period of 5 months to perform the whole project such as analysis, design, development, and testing, constructing the system was completed successfully.

15) Regardless of interim measures, the most important bidding announcement was unified to G2B from September 30 according to the abolition of the official procurement gazette by the MOGAHA. The abolition of the gazette contributed to expanding G2B at an early stage in that it brought a chance to separately give the information to many public institutions which did not get the information of the abolition and required to post their demand at the gazette.



Chapter 6

Major Contents of National Integrated e-Procurement System (G2B)





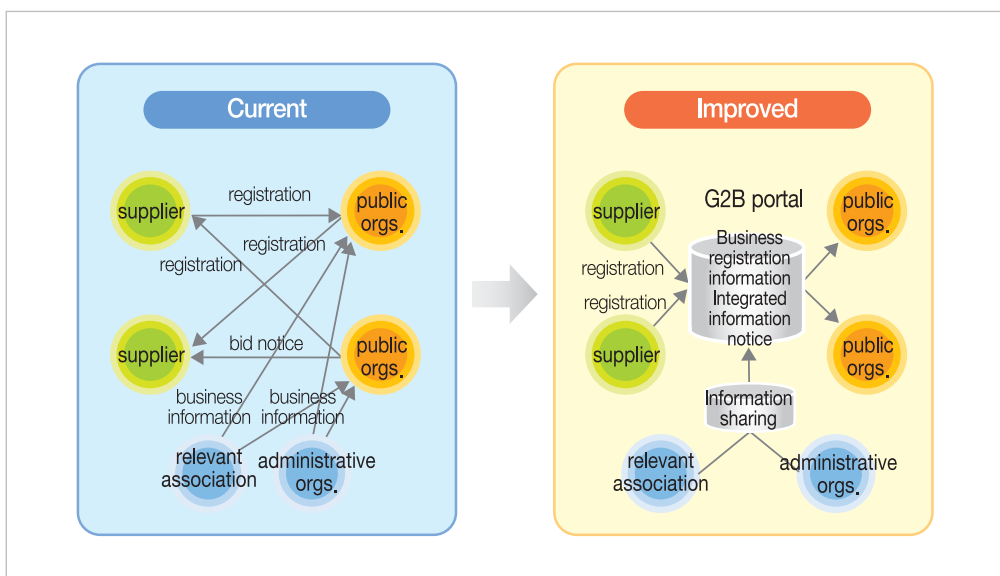
Section 1

One-Time Registration on G2B System Enables Users to Participate in Every Public Bidding

To take part in an open bid, suppliers must check the announced information in the official gazette, paper, a bulletin board, or each web-site of the institution, which took time and effort, and questions about reliability and balance of the information arose.

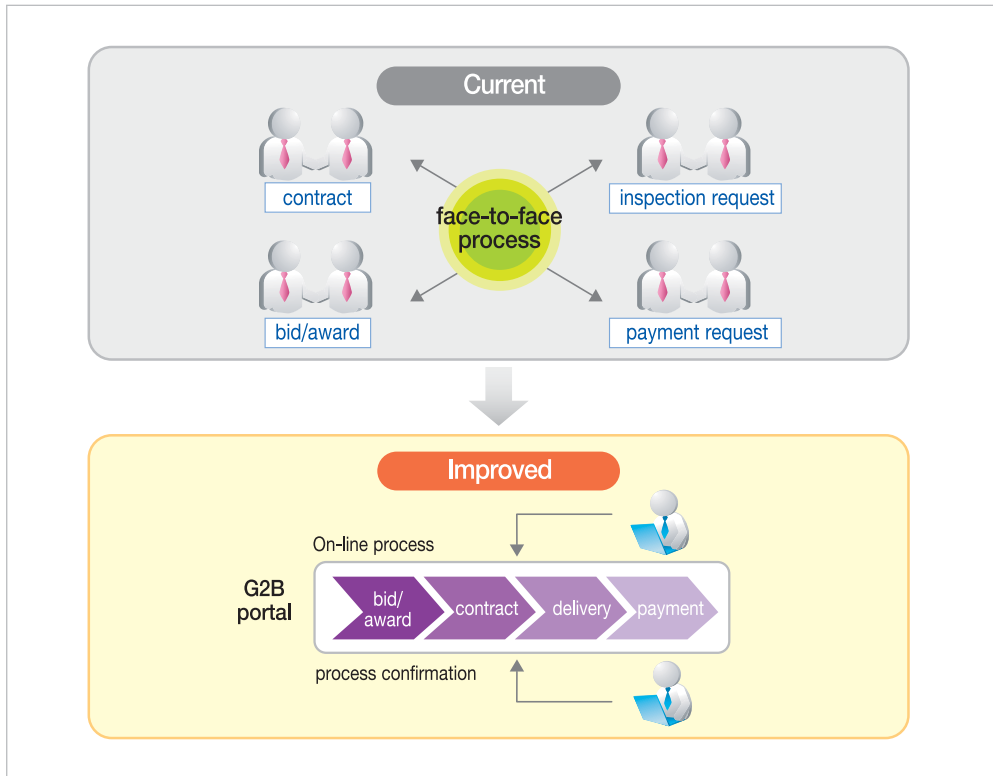
The national contract laws needed amending to place every order information on the G2B system. Bidding information was provided to the public through one-stop service by the e-Procurement Single Window (www.g2b.go.kr). Bidding information of 7 institutions that had the electronic bidding system such as the Defense Acquisition Program Administration (DAPA) was linked to be announced on the system, which made the system perfect as a one-stop service.

Before the G2B system, every bidder should register or apply for bidding participation at each announcing organization, however, sharing the information of the registered companies between institutions enabled companies to participate in the bids of the public institutions such as national organizations, local governments, and public enterprises, once a company registered in G2B as a bidder.



Section 2
One Registration on G2B System Enables Users to Participate in Every Bidding

The Government for Citizen system (G4C) of the MOGAHA is linked to G2B to share the information, which enables bidders not to submit the certificate for business proprietor registration, the certificate of local taxes and the qualifying documents for facilities. This reduces required documents largely. Especially about 166 documents for procurement such as a bidding paper, a contract, an inspection & acceptance paper are transformed electronically, which used to be submitted to the institutions directly or by mail. The companies do not need to visit the institutions to submit the papers, instead they can submit the papers by internet. The process of handling the documents is open and aboveboard with on-line system and open treatment.



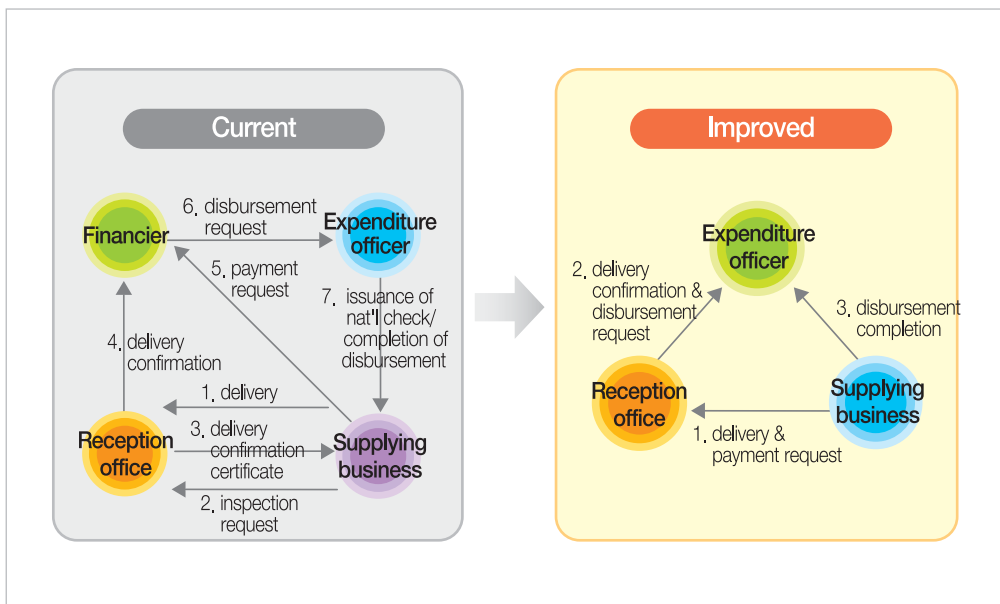


Section 3

Reduction of the Required Time for Payment with Improvement of the Payment Procedure

Through the internet, the confirmation of delivery such as requiring inspection & acceptance, and requiring verification of completion can be done, and according to the requirement, the inspection & acceptance and claiming payment can be done, too. Also the procedure of payment can be simplified because the department of contract, the department of acceptance, and the department of expenditure can work on the same system.

Especially the public institutions are connected with the national finance information system of the Ministry of Finance and Economy, and other institutions are connected with the B2B system of KFTC. With these connected systems the required time to pay was reduced immensely because the transfer of funds by internet was possible.



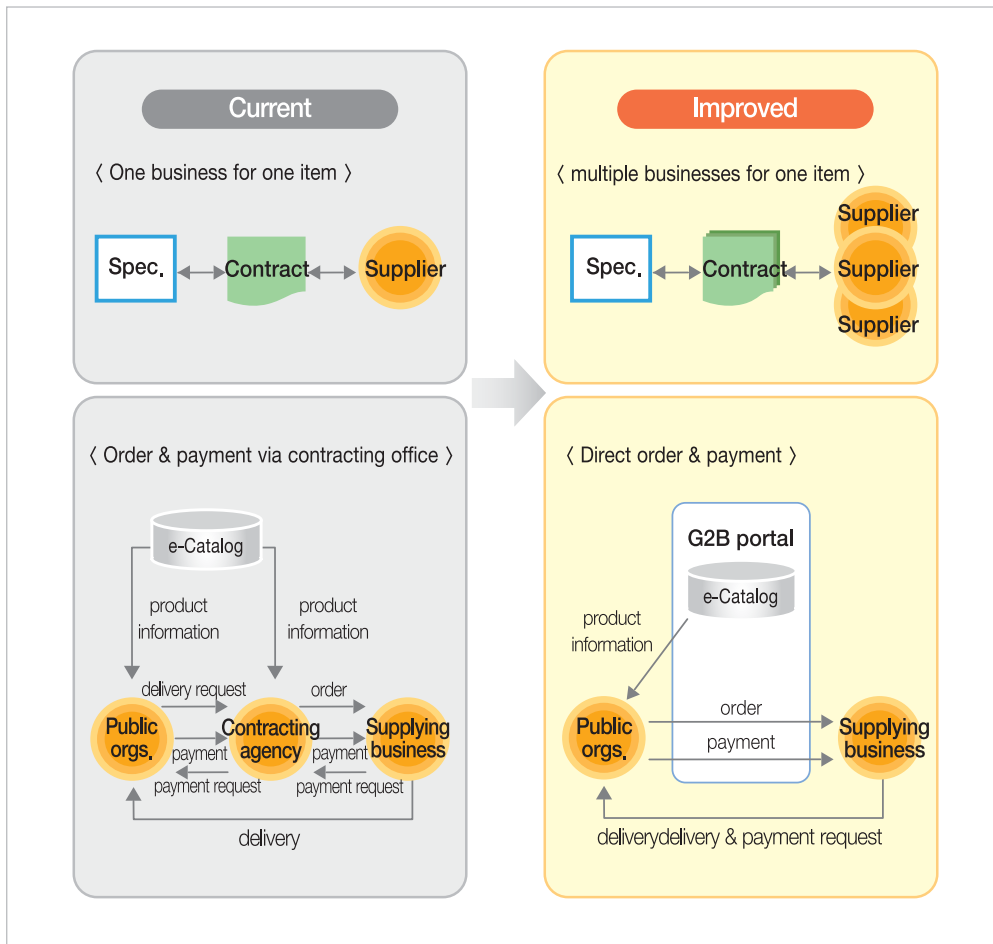


Section 4

Expanding MAS and Improving the System for Direct Order and Direct Payment

The convenience of the public institutions as users was enlarged through the quality and price competition between suppliers by way of multiple contract for the identical items which were supplied on demand.

The wide range of choices for the public institutions which purchase items at a shopping mall was achieved through a direct contact to the company in case of orders and payment.



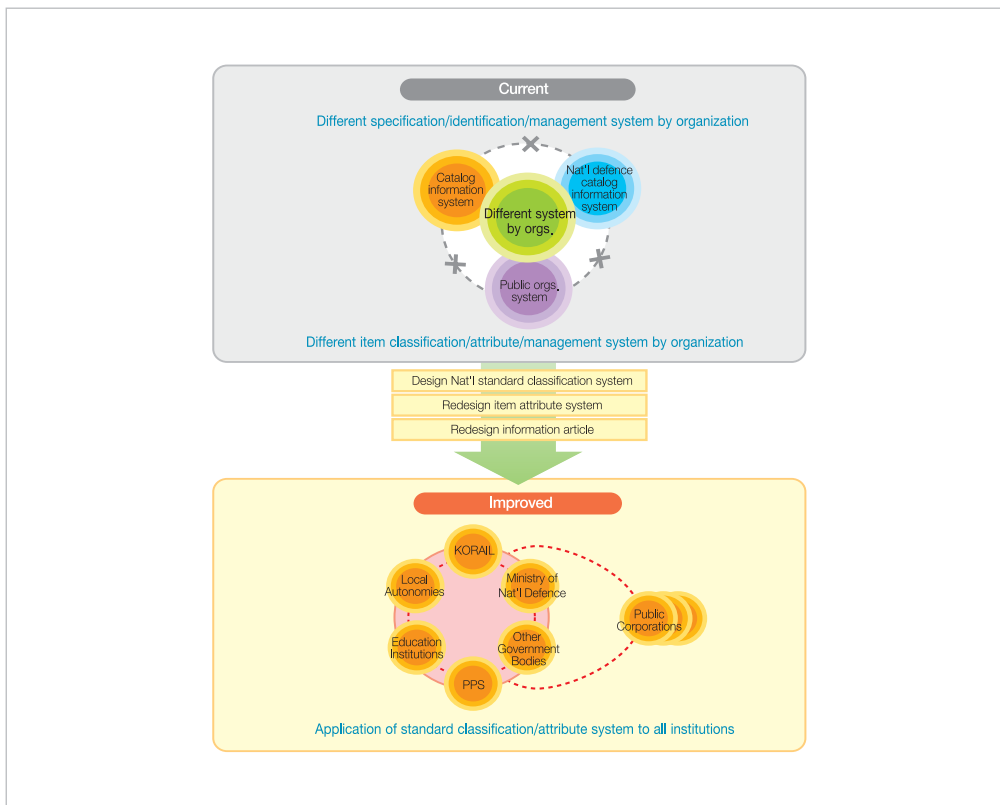


Section 5

International Standardization of the classifying system for administrative items

It was thought to reduce waste for overlapping construction of code-system through the standardization of the classifying system for administrative items which used to be dealt differently in each institution and to be compatible at both the private shopping malls and the international relations. Especially registering, searching, and using the items in G2B system can be done rapidly through both changing the classifying system suited to electronic transaction and applying UNSPSC recommended by UN to G2B.

The base for quality expansion of product information was established through the improvement, which can be suited to the international standard, in features such as size in detail, terms and conditions of business, and manufacturer information.





Chapter 7

Effects Expected





Effects Expected

In a broad view, the expected effects of G2B system is to give convenience to the companies, to secure transparency and fairness of the procurement, and to lead improvement of the private electronic transaction.

First, transparency of the public procurement is raised dramatically. The former procurement which was principled to contact directly in a way of face to face is conducted in on-line, which makes chances for manufacturers to meet public officials directly rare and in which transparency of the public procurement appear effective. Because orders of the public institutions are open to the public on a single web-site, the differences among the institutions can be compared easily. With this method, it seems that a fair bidding competition will be promoted with checking of limited competitive ordering method such as size-restriction. Both relatively reduced public officials' decision making ability, and standardized performing process with the system raise the transparency.

Second, the base material can be accumulated for establishing strategy of procurement through collecting basic statistical data such as entire number of bidding. It was not easy to get a concrete statistical information except a broad information about the size of nationwide procurement. It is expected to be used as a basic information for establishing the strategy of the future procurement because the chances are great to grasp the whole statistical procurement through G2B.

Finally, the improvement of efficiency and transparency in an amount of a huge procurement market which is about 10% of GDP can secure the national competitiveness. With this, a material infrastructure such as private business networks, and authorized e-Signature, and experiences of G2B can be linked to trust for the private e-Commerce. As a result, it is expected to serve largely for expanding the e-Business mind and promoting the private e-Commerce.



Part 4

Embodiment of Ubiquitous Procurement

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Chapter 1

Securing the Stability of KONEPS (G2B), and Introduction of Advanced Management System





Section 1

Electronic Procurement Service for 24 Hours a Day and 365 Days in a Year without Discontinuance

1. Strengthening security and improving efficiency continuously for the stable performance

The stability and the reliability of the system are the most important in G2B Service because from tens of million Won's worth to tens of billion Won's worth contract of goods, services, and constructions are to be controlled by a system which includes managing process for announcement, bidding participation, disqualification, contract and payment. The stability and the security of the system are the most important factors, in that if G2B System broke or fail to work, there should be a disaster.

PPS has prepared for the obstacles to provide non-stop service 24 hours a day and 365 days a year saving extra data and installing dual fire-wall which separated the major server from the network mechanically from the beginning of constructing G2B. Additionally, to protect the system from an outer hacking the security system equipment was set up physically, and an irrelevant access from outside has been observed with an invasion detecting system. The security is controlled under periodical security diagnosis, and governmental authorizing encrypted PKI is applied to bidding form.¹⁾ Especially, to secure safe e-Procurement, two external security diagnosis were conducted in 2003 in addition to ordinary self-security diagnosis. With the diagnoses of February and December, the stability of G2B was tested objectively and it was intended to find probable weakness.

To expand using the system, improvement of the performance responding to the requirements of the users is needed. To achieve this improvement, without any further budget, about 1,900 programs are improved with only a self-information-oriented

1) PKI (Public Key Infrastructure): which is a managing system to use and manage the public key code system safely, and which is a base structure for internet users to exchange information safely with a pair of a public key and a personal key issued from a certificate authority.

organizing. Continuous improvement of the G2B from performance like speed to development like new items makes users utilize the system easily and the internal information capacity maximized.

Finally, to strengthen management system, an operation system which automatically regulates access control and log files is introduced to protect the system from program change and obstacle occurrence by user mistakes, and information protection is strengthened with the detailed managing regulations such as private information protection regulations, outside order security managing regulations, personal security managing regulations, and procedure of emergency calamity.

As a result, impediment rate decreased 0.2% in 2003 to 0.05% in 2005, and 'no impediment management' was achieved in 2006.

2. Construction of G2B Back-up service center for disaster & calamity

A. Progress of System Construction

G2B which all the public institutions use together is a national key system of which performance can affect the procurements of the institutions if the service stops. It began to secure the budget for constructing the back-up center in 2003 when the system construction finished, and the back-up system of which construction began in October was finished at the end of December through a revised supplementary budget for information-oriented promotion fund.

The construction level of the back-up system is defined as the restoration level which is 4 hour previous data of the impediment, and the project has been performed in the form of constructing Mirror site. To get an efficient and rapid restoration, the restoration target was divided as the first order such as portal-integrated announcement and e-Procurement, and the second order such as list management and catalog.

- * First Order: Portal, Integrated announcement, e-Procurement, Document circulation, User-registration, Electronic Payment, G2B Web, EDI
- * Second Order: List Management, Catalog, Electronic Warranty, Company Record and Checking out technical skilled personnel, Cash, e-Procurement (Public institutions), Intrusion Detection, Fire-wall, Key management, Groupware



For about 2 months, which is a short term, to construct the system all the introduction of equipment, system construction, and BCP consulting are executed simultaneously, and the stability and the restoration possibility of the system are examined continuously through several trial practices.

In government collective back-up center which is located in Yongin, Gyeonggi-do, the back-up center was established. Accordingly though some problems break out in the main computer in Daejeon Government Office Building, the service restoration can be done within 4 hours and all the data are backed-up in real-time. The computation capacity of the back-up center is designed to make up 50% which is at the level of the main center capacity in Daejeon. To provide a ceaseless procurement service 24 hours a day, 365 days a year, the substantiality of the back-up center is intended.

B. Contents of the system construction

SAN circumstance was composed of one DB server which unified three DB servers through synthesizing functional server systems in main computer center. Efficient back-up was achieved with organizing all the 7 application servers into 3 servers to make SAN and NAS circumstances and with the real-time long-distance data dual performance (TrueCopy, SyncMirror) by disk solution.

To secure the stable circumstance, a wide high-band network which was 1.2Gbps four-port-channeled DWDM was constructed between the two centers; 2 port Fiber channel and 2 port Gigabit Ethernet channel. A detour route network to the back-up center was constructed with high-speed nationwide network (ATM: Asynchronous Transfer Mode), commercial LAN connection, NAS, and integrated storage between the centers.

C. Effects of the system construction

Effects of the back-up system can be analysed as three parts; performance of the ceaseless government electronic procurement service, minimizing the extent of damage & loss in case of impediment, and guarantee of the reliability in the government procurement service.

First, it was secured to perform the ceaseless government electronic procurement service, and to perform the continuous procurement of about 30,000 public institutions and about 120,000 companies with a system in which a core procurement performance



could be maintained continuously as a primary government performance.

Second, the information-oriented performing cost of the off-line documents was minimized through preventing major information from sweeping away in G2B system. Through the stable preservation of bidding and contract data, the loss of national economic activity and administration caused by disaster was minimized; minimizing the waste and the cost for resuming the service.

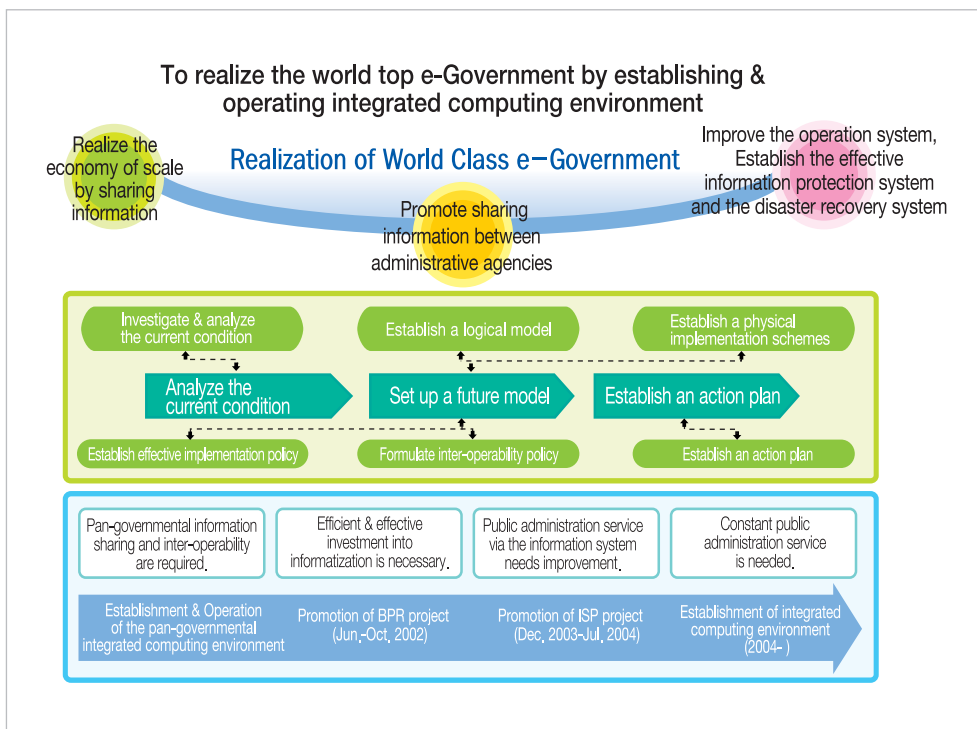
Finally, with raising the reliability of G2B through the stable operation of G2B service, it was achieved ultimately to gain the public reliability to the procurement administration.

3. Transferring main computer system to National Computing & Information Agency (NCIA)

A. Promotion background

There were some problems in constructing and managing the information system at each public institution independently. Above all, 55% of the central government agencies had a small computer room less than about 99 β \geq , and their computing circumstances are weak in that they had insufficient basic computing equipment. Furthermore, because most of the national major information systems are stored in the general buildings which could not suffice the IDC (Internet Data Center) standard 49% have a malfunction more than once a month, and 43% have a malfunction more than an average of 30 minutes per month. Additionally, compared to the average number of the servers per person in a private advanced company, which is 11.3, that of the government is 1.8, which means that the management efficiency is remarkably low. Recently, in spite of the increases in numbers of information-oriented enterprise and in demanding for human labour resulted from expanding on-line performances, the rate of the government information-oriented human labour is just 2.1%, which deepens the unbalance of supply and demand for the information-oriented human labour. To solve this kind of problem, and under the absolute necessity of unifying the computing circumstance to construct the electronic government base suited to future information circumstance, government sought for methods to construct and manage the unified computer center. As a result, intended attacks with viruses and hacking, and restoration measures for the disaster are achieved including high-quality services such as

minimum of the service impediment, construction of the computer operating circumstance all 24 hour round, and etc. Construction of a unified center was established, which had systematic responses to the problems; deepening the dependence on the information system, increasing demand for the stable and continuous services, weakness in specialty of information-oriented human labour, and the limit of offering the stable service due to the weak circumstances of computing.



<Pic. 1> Goal of Establishment of NCIA (Nat'l Computing & Information Agency)

B. Promotion Progress

The government established Business Process Reengineering (BPR) for efficient management of nationwide computing environment in October 2002, which was one of ‘11 core projects of the e-Government Special Committee’ authorized by MOGAHA, MIC, MPB to construct the unified computing center. With this basis, 31 key projects of Participation Government & Electronic Government ‘Road Map’ were



confirmed in August 2003, and Information Strategic Planning was established under MOGAHA, MIC in July 2004, and MOGAHA took the control of the project through electronic government function transfer in May.

Oct. 2002	Provided efficient BPR policy of pan-governmental integrated computing environment
Aug. 2003	Selected as the 31st project in the e-government road map of the president Roh's participatory government,
Jul. 2004	Established ISP on "the establishment of Pan-governmental integrated computing environment,"
Aug. 31. 2004	Reported "major issues for government innovation policy" to the president.
Sep. 7. 2004	Reported "Promotion policy on the establishment of Pan-governmental integrated computing environment," to the Cabinet meeting.
Oct. 1. 2004	Reported to the Presidential committee on government innovation & decentralization

To construct 1st center government office building, Memorandum of Understanding (MOU) for lease was established with KT Daedeok Institute, in which the 1st center would be located, in December 2004, and the regulations for establishing the promoting organization of the unified government computing center were established by instructions of the president. Also Samsung SDS-LGCNS consortium selected as a performer was contracted with on the project of constructing 1st step operation system in the 1st center. The basic plan for the 1st center construction was built with this process. The promoting organization of the unified government computing center was launched in February 2005, and the joint workshop of the departments in the organization was held. Like this, the 1st unified government center transfer project started in earnest.

To pursue the 1st project of 3 steps for transferring the unified government computing center successfully, thorough preparation was needed. The transfer preparation was composed in detail of a launching report, a preliminary inspection, a transfer operating, and a safety & emergency counterplan. With the general and thorough analysis of the current information source in each move-in institution's information system, the target



equipment such as the system, the network, and the security system, and the type of equipment to move-in were selected. As detailed transfer plan was established, transferring the information system of the institutions was done easily and the stable service was maintained. The transfer preparation included the detailed transferring contents and procedure in stages including substitute securing plan for simple transfer, transfer preparation list, transfer execution plan, human resource supporting plan, transportation plan, test plan, emergency plan, stabilizing plan, and so on.

PPS transferred the main computing system into the integrated computing center in Daedeok Research Complex during the New Year Holiday in 2006, and is operating the system currently.



Section 2

Erection of Advanced IT Service Management Standard and Management Model

1. Present management condition of G2B (KONEPS)

The Public Procurement Service, like other agencies, contracted with broad external supporting human resources on the whole business, and managed under the system of supervising the external human resources by more than one registered employee in each section

However, in accordance with the stabilized G2B, this information-oriented organization system suited to the large-scale development promotion has some problems as follows:

A. In the management organization

As the dependence on the external human resources caused by the continuously enlarged scale of the system increased, professionalism of the registered employees weakened. Chances to make inefficient performance like a difficult decision making existed all the time because the internal and the external employees do the same work, and as one employee took both development and management at the same time, at which the employee took the new development more seriously than the current system stability, there was a chance to get down the stability of management. There also was deficiency in extra human resources to input into the new information-oriented work all the time because all the internal staff were engaged in the management directly or indirectly.

B. In Contract Structure

There were no motivating factors to the contractors in raising the quality of the service because of the existing contract structure centered on human resources. The circumstance in which human resources in maintenance were often switched due to the yearly contract could make the stability of the system deteriorated, and the users'

requirement for improving the system could not be answered promptly, because the range of the maintenance was not clear.

Also, as it was insufficient to calculate the exact work load and to manage the outcome, there were no motivating factors in promoting the quality of the service and improving the function, and it was difficult to expect to increase the efficiency through the management improvement. Because of the circumstance like that, it was hard to get a prompt support for the requirement of the additional development and the systematic step-by-step service level management, which made the service users' discontents raised in and out.

C. In Management System

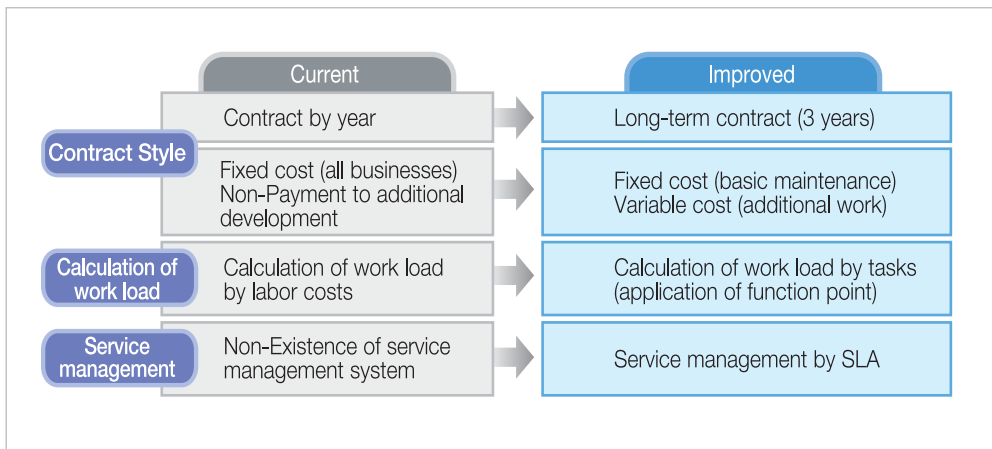
Regarding electronic bidding which is one of the major services in G2B, although there were internal controlling and technical security equipment which could identify the latest e-Signature and the encryption, there was negative recognition outside all the time, and an unnecessary civil petition, media attention, and prosecutor's investigation came up at occasion due to the doubt on reliability of electronic bidding management.

The stability threatening factors caused by dualistic management were expected because the separation and the transfer of the existing infrastructure equipment and the operating staff which came from the construction of the unified government center driven by entire government, and the control measures and the dealing process of the entrusted business caused by conversion to entrusted management system were needed. The existing management dependent on the ability and know-how of each person was pointed as a problem because business dealing process which was not fully standardized was insufficient.

2. Introduction of a new outsourcing system

The Public Procurement Service came to practice complementary measures on the basis of managing experience of G2B. PPS introduced a new outsourcing system in which both the internal affairs demanding high specialty and the network management which was the core part in security would be dealt directly by officials in charge of information, and the external program management such as electronic bidding which

required relatively high technical specialty and which served to many and unspecified people would totally be in the hands of external companies. In other words, long-term outsourcing contract to which a technical upgrade unit cost was reflected with the repletion of input human resource calculating system and existing yearly contract was introduced. Furthermore, not the management of input human resources but the conclusion of the previously discussed Service Level Agreement (SLA)²⁾ could give a change to the IT service ordering paradigm.



<Pic. 2> Improvement of IT Out-Sourcing System

A. Reforming contract: changed to three year long-term contract system

First of all, three year long-term contract was made to secure the stability of management staff and to improve yearly the service step-by-step.

Second, it was changed from the existing fixed payment to the altering payment system calculated after the job performance which could be assigned additionally.

The daily basic management work could be separated from the additional development work, but the additional development which could not be estimated in

2) Service Level Agreement (SLA): With various indices such as the program malfunctioning rate and the timely modifying rate, to evaluate the system operating performance. With this evaluation, incentives or penalties can be given.



advance could be paid with verifying the assignment finished. This could lead the consignors to improve their services willingly and to receive the compensation corresponding to the work load.

B. Changing work-load calculating system from labor cost to task-centered price assessment

To the management service scale the price is calculated with Function Point system introduced to measure exact workload. Thus the input standard of human resources was deleted in contract, and business management focused on performing the assignment was possible through the price calculation to the workload per unit.

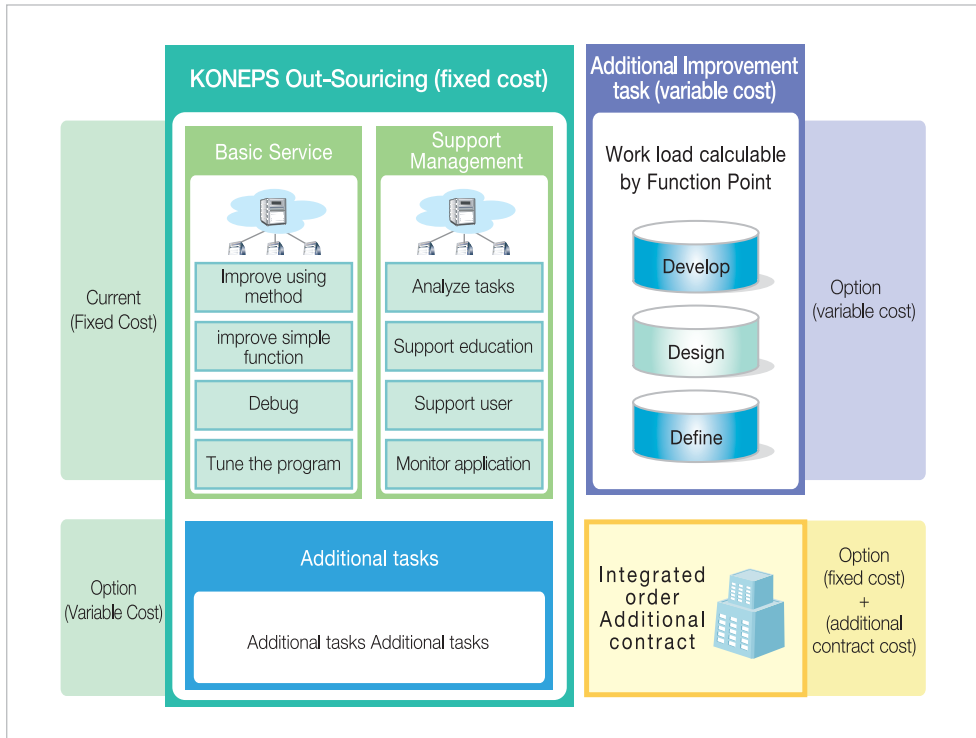
※ Function Point System

- Software is divided into unit function such as internal files/external reference files/input function/output function/searching function and whole development costs are calculated by the previously fixed price at each function. Out of the former developer centered cost calculating system such as quantity of a program (the number of line) through approaching in the viewpoint of users like requirement function, it can prevent developer from appropriating too much for unnecessarily enlarged program
- It was proposed by IBM, the U.S., in 1979 and revitalized in 1994. IFPUG (International Function Point User Group) made and distributed the standard price in the whole world. According to this, Korea Function Point Users Group (KFPUG) reformed the national standard. It was posted by the Ministry of Information and Communication that from business price standard, software development calculation was described as a basic system

Through not the input human resources management but the previous agreed service management, it was achieved to secure the stability of management, and the management-entrusted company was contracted separately to manage a certain degree of service as a result index.

<Table 1> Work load & reward calculation by type

Type of Contract	Contents
G2B management entrust contract (fixed rate, basic contract)	<ul style="list-style-type: none"> • Target: management and maintenance of applied programs for external service of G2B • Standard: Calculating the function point of the whole G2B, Calculating the cost on the basis of the function point, Selecting the input human resources system in a part to which the function point system cannot be applied • Payment: fixed payment per month on the basis of the yearly management cost
Constant service development contract	<ul style="list-style-type: none"> • Contract conclusion: with the analysis of the workload, constant service development contract can be concluded • Payment: Submit the related materials to get paid quarterly
Service level agreement	<ul style="list-style-type: none"> • Target: The range of G2B management entrust contract • Payment: Reflecting at the end of the year with evaluating the yearly service level, Credit/Earnback introduction



<Pic. 3> KONEPS Out-Sourcing Contract Model



To settle down this new outsourcing model, the Public Procurement Service established and pursued step-by-step operation method. The Agency selected indices and SLA to manage the service level two months before, and prepared to start the evaluation of each index from the date in contract. In the first year of service operation, 2005, the Agency verified the exact calculation standard of the additional part which needs improvement on the basis of the measured work load, and measured initial value to decide the goal of the service level, which was applied to be an example. In 2006, and in 2007, the Agency tried to settle down the service level management system and the new contract system securely, and to show a good example of the entrusted management with help of purchasing headquarter in the whole government.

Meanwhile, to be successful in the renovating management entrust models, a task centered workload should be calculated exactly, and to be exact in calculation, the high specialty of the staff in charge is needed. Thus right after deciding operation method, one of the officials was selected to take a course for an expert with the best support. As a result, he achieved an international license of CFPS (Certified Function Point Specialist) for the first of public officials.

It is notable that one of the officials in the Public Procurement Service achieved CFPS for the first of public officials... The Public Procurement Service expected to calculate the software development cost suited to the international standard and to perform the contract management with the achievement of specialist Yi, Hae-Jeong.

[Electronic Times Internet, June 10, 2005]

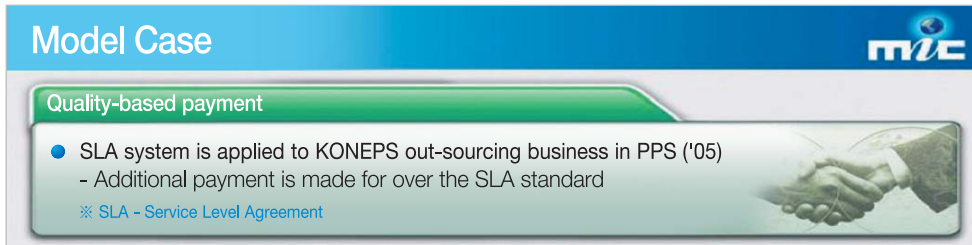
The successful construction of the new entrust management model of the Public Procurement Service became the best example in realization of electronic government, which made foreign institutions want to benchmark it enthusiastically. Changing the contract system like ours, which was approved to be needed in the academics, the businesses, and the public institutions as well as the Agency itself, was hardly applied to realization because there were a strict budget, deficient specialty in calculating work load, and a burden to be inspected in accordance with the first trial. It played a role of a pioneer. The successful example was spreaded by media and personal report, and the procedure of the project and benchmark were asked to be shown.



<Table 2> Actual results of spreading to the public institutions

No.	Date	Contents	Institutions
1	June 2006	<ul style="list-style-type: none"> Address the renovative example of the entrust management - Announce people in IT infrastructure of Industry-University-Research-Government corporation in the seminar of "Outsourcing for Business Renovation" 	Sogang Univ.
2	April 2006	<ul style="list-style-type: none"> Address the renovative example of the entrust management 	Daejeon Regional Meteorological Administration
3	January 2006	<ul style="list-style-type: none"> Benchmarking visit for renovative content of entrust management contract 	Republic of Korea Army Headquarters
4	December 2005	<ul style="list-style-type: none"> IT service management consulting benchmarking agreement with Korea Local Information Research & Development Institute 	MOGAHA
5	November 2005	<ul style="list-style-type: none"> G2B entrust management contract advanced model benchmarking visit 	Korea Customs Service
6	November 2005	<ul style="list-style-type: none"> renovative examples of G2B management and security strategy benchmarking visit 	Korea Local Information Research & Development Institute / Korea Electric Power Corporation
7	November 2005	<ul style="list-style-type: none"> Address of advanced examples of G2B entrust management - host : public institution orderers association - target : about 200 public institution orderers 	about 200 persons in charge at public institutions
8	October 2005	<ul style="list-style-type: none"> G2B entrust management contract benchmarking visit - Introduction and investigation of contract system of the Agency such as long-term continual contract, and result-centered management to the Ministry of Information and Communication 	MIC Knowledge Information Center

Additionally, in the whole-government conference which was held with the supervision of the president on March 24, 2006 to promote the environment for worthwhile payment of SW, the renovation of the entrust management was selected as a good example. Many people gave favorable comments that PPS led quality-centered SW worthwhile payment with the introduction of SLA to entrust maintenance management.



<Pic. 4> Presentation at Forum

The Public Procurement Service played an important role in opening the national barren IT outsourcing market by outsourcing G2B system management. Especially, it was renovative for order institution to choose not labor cost but task-centered FP as payment because of this, G2B system was selected as a good example in the conference of expanding method for SW public purchasing which was supervised by President Roh Moo-hyun..

[The Digital Times, April 5, 2006]

The expected effects which can be brought to maintenance companies and PPS by the construction of the new out-sourcing model are as follows.

First, the maintenance companies can secure the stable management of human resources and promoting affairs in a long-term viewpoint, and the sound management by getting compensation in response to the workload without any irrelevant direction of the orderers.

In addition, if there is an additional development besides the basic workload, PPS will pay additionally by verifying the work finished. With this system, the Agency can make the entrusted companies improve the service willingly, the service level rise and the stability of management secured through not managing the input labour but managing the service level which was agreed previously.

Also, a model to strengthen the competitiveness of national IT service industry is provided with the advance of public IT entrust management system. In other words, with the reasonable management such as the first continuous long-term contract in public institutions, and the service level management, the IT management



development model was established, and compare, analysis, and improvement were secured with the management dependent on the clear standards.

3. Constructing IT service management system (ITSM) and accomplishing ISO 20000 international certification

The Public Procurement Service is in pursuit of constructing the stable and reliable system management through the standardized system management as well as system standardizing. Service level and obstacle prevention are secured constantly with operating the internal IT service to international standards.

The Public Procurement Service introduced the process and management which followed the international standard (ITIL)³⁾ which was related with the IT service management, and achieved BS15000⁴⁾ which is the international standard for IT service management for the first of the public institutions in November 2005. In a row, ISO20000⁵⁾ was achieved automatically by passing the first after-work test of BS15000 in March 2006.

A. Construction of IT service management system (ITSM) based on ITIL

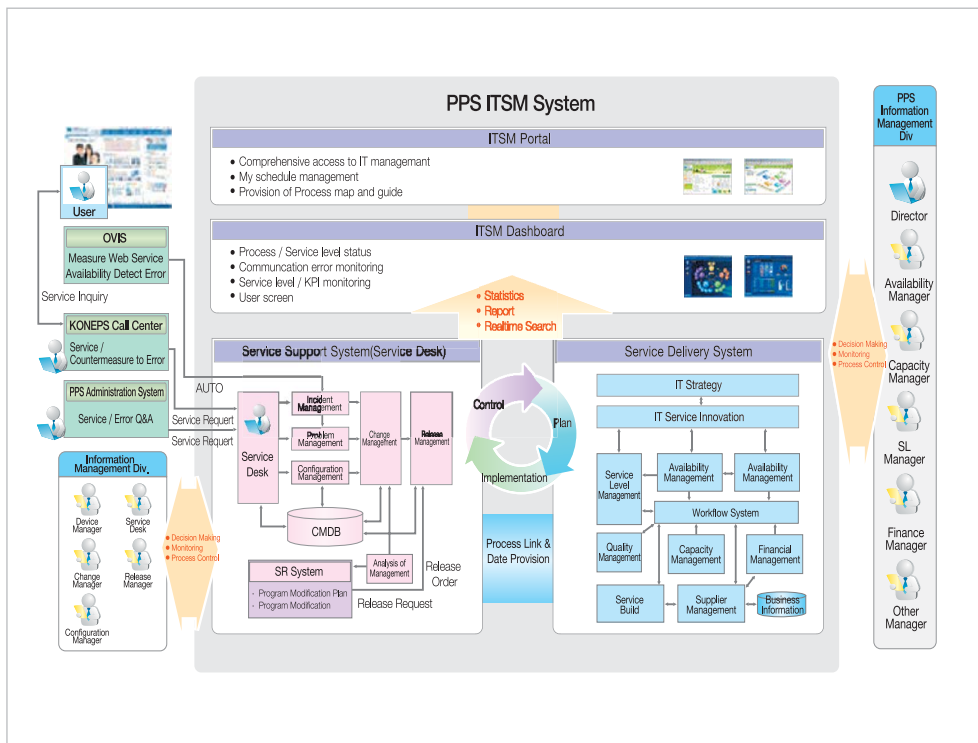
It was expected to transfer every infrastructure equipment of the system to the government unified computer center in the Ministry of Information and Communication in January 2006. In accordance with bisecting the management organization of G2B e-Procurement system, to secure the service stability and to construct the system for unified management of all the IT services came out

3) ITIL (Information Technology Infrastructure Library): a guidebook for management as a gathering of Best Practicers to provide and manage the efficient IT service

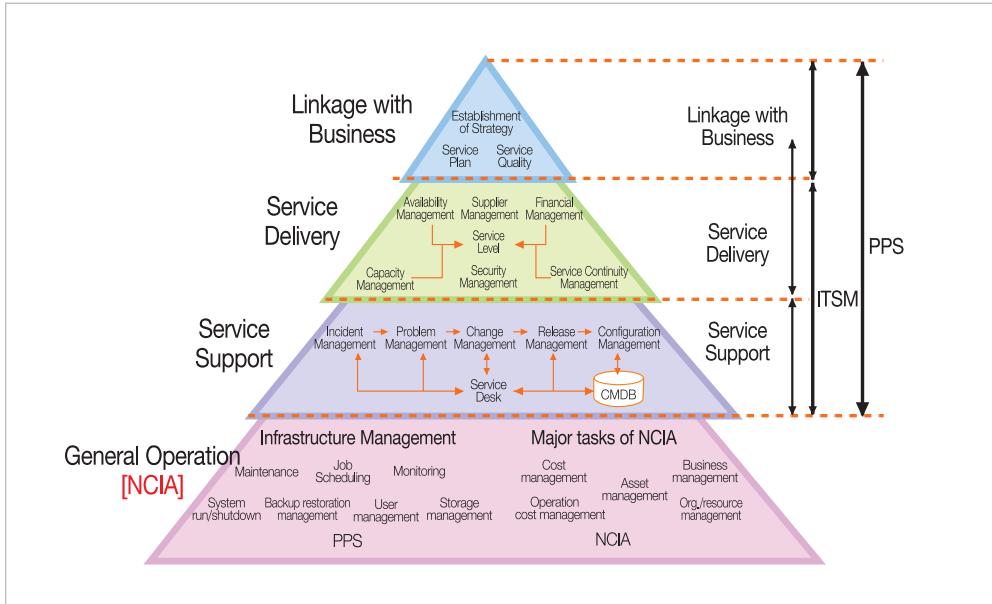
4) BS15000: an example of the world standard model on IT service management, It is the only international certificate which is constructed on the basis of ITIL, and with which the suitability of ITSM could be verified. It was built with the mutual agreement between British Standards Institution and Office of Government Commerce. Many countries select BS15000 as a certified model to ITSM because BS15000 can be a prime power to manage IT service continually, and it can lead the companies to the improvement of the service quality.

5) ISO20000: BS15000 which was the national standard of U.K. about IT service management turned to the international standard ISO20000 on December 16, 2005.

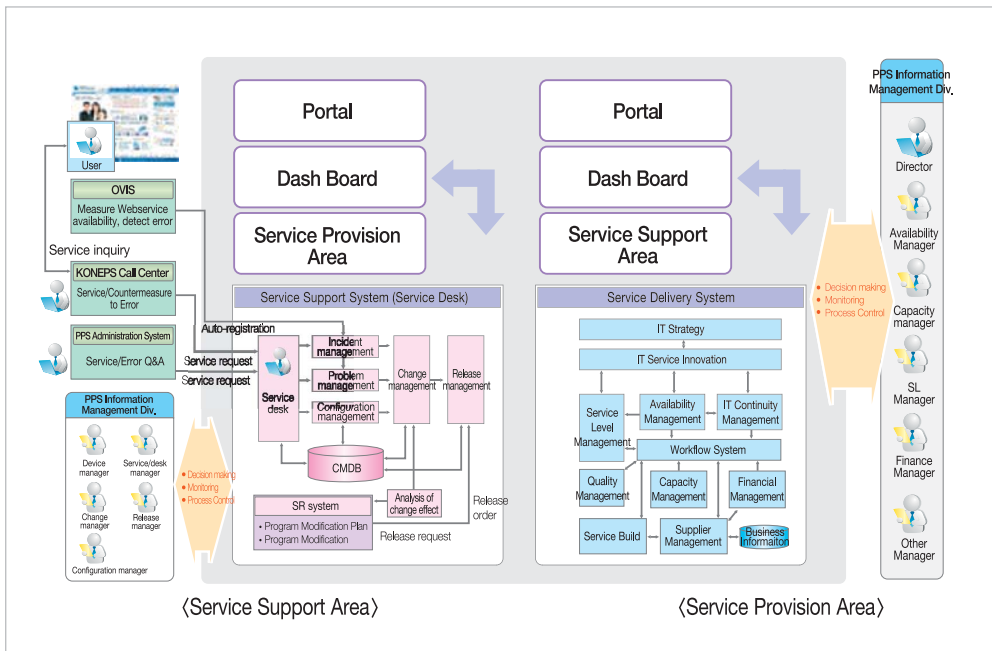
remarkably. The management system which could play a role in distinguishing roles and responsibility between the management organizations was needed outmost. A detailed project to construct ITSM was confirmed in November 2005, and the development composed of three steps was launched from March 2006 to October. Step one: the general service-desk was built in the service support filed to improve customer satisfaction measurement with the guarantee of rapidity and continuity to the clients through managing the customer-oriented system and after-work inspecting BS15000 by March 2006. Customer satisfaction was achieved through tracking-management and improving customer requirements for the problems such as obstacles, changing, and reflecting to the system. The management stability was achieved by intensifying prevention as a result of the weak point analysis.



<Pic. 5> PPS ITSM Conceptual Framework



<Pic. 6> Service System of PPS ITSM



<Pic. 7> Scope of Service Support & Service Provision in PPS ITSM

Step two: By July, unified user supporting service was provided to link the system with the existing management system through information linking to the unified service-desk of ITSM. The circumstances of customer requirement receipt and the after-work procedure were shared with the existing government-procurement consulting system in a call center, and customer satisfaction was immensely improved through unified management of the requirement of the internal users to the internal management system.

Step three: the efficiency data on the infrastructure management system by focusing on building the automatic system in the area of Service Delivery were collected and the automatic management system was built by October to expand the capacity of the system and to manage the capacity which could estimate the efficiency in system resource. Also, to manage the outsourcing contract, the real time level management service indices were confirmed about the service management, and the measure system was automated. Additionally, the system which could inform the manager of IT service level in real time was built through constructing the early warning Dash Board to analyse the service condition and to decide without delay.

The Dash Board can monitor the ITSM management including real time obstacles, monthly PKI condition, monthly SLA condition, service supporting management condition, SLA condition, and so on.



<Pic. 8> Dashboard of PPS ITSM

For instance, the service supporting area was built to prevent the service impediment in relation with the ITSM based Public Procurement Service process definition, the process manager appointment and role & charge definition (KPI), the unified contact point of customer service requirement (SPoC), the effect analysis system (Change



Miner V4.0) introduction, connection to the SR system (shape management), the history information management on the performance of dealing process, the knowledge sharing of prevention performance and management history, the connection to the related system, and the connection to availability management tool. The service providing area was built to conduct the ITSM based Public Procurement Service process definition (12 processes), the process manager appointment and role & charge definition (KPI), introduction of the service level management solution (CA Unicenter), introduction of Workflow products (automation of affair running), the capacity progress analysis (OVP), the availability condition tool appliance (OVIS), the quality management such as receipt, agreement, progress, and approval, and plan-execution-evaluation functions.

At last, the result indices were drawn to improve the ITSM management process incessantly, and the work process flow chart and guidebook were completed through performing the general IT service consulting which could make the standards to the management.

The effects and the results from constructing the automation system uniting every IT service management are as follows:

First, the real management efficiency and the service improvement were achieved through accumulating ITIL management process and know-how which were built only in the process, and in the long term, the service improvement and the efficiency of the information material insertion were increased.

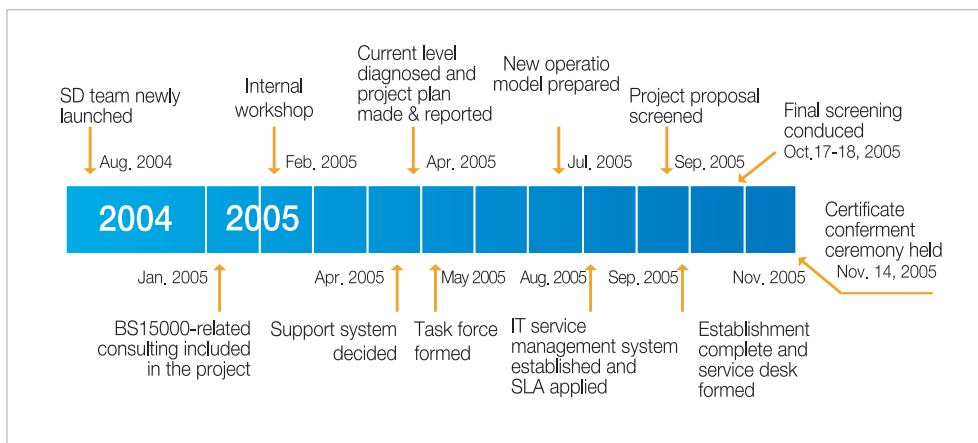
Second, IT service quality was improved magnificently by providing a single contact point for customers through the connection between the call center and the general service-desk in the organization, and the customer satisfaction was increased much. In the internal part, the rapidity of manager's decision making and evaluation was intended by automatically measuring and providing the service level and the virtual management condition on the information system.

Finally, it was attributed to build the base for the new consulting business related with constructing the Agency information system in the future in that the public institutions and the private companies wanted to benchmark the management knowledge because the Agency showed the public IT service management standard by making the national IT service management system advanced.

B. Achievement of ISO20000 (former BS15000), an international certificate

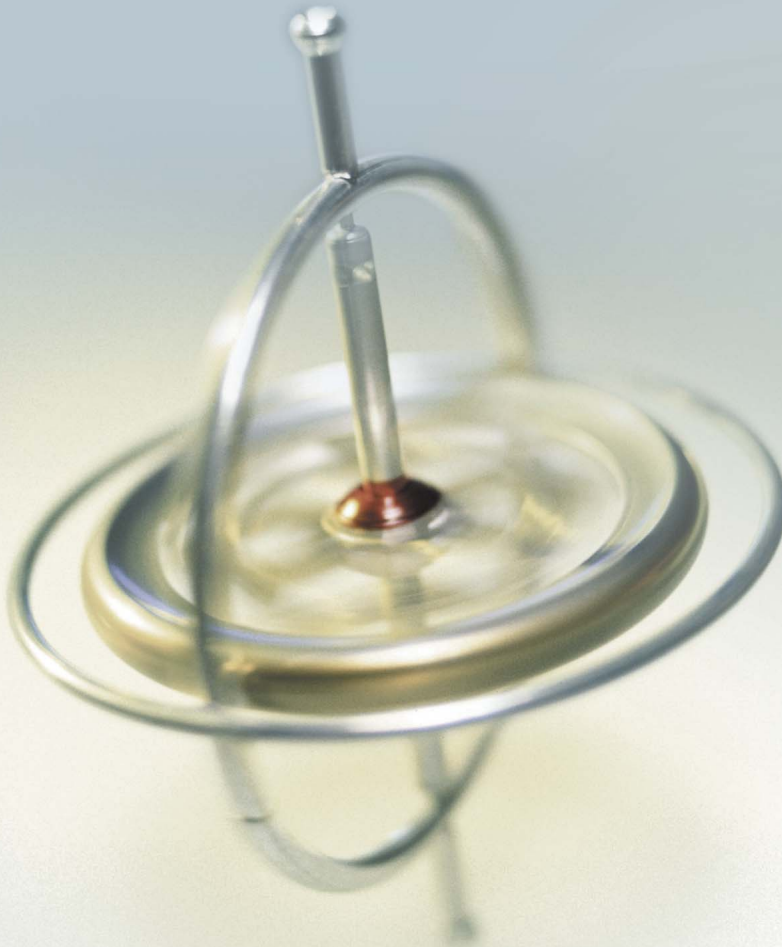
G2B system achieved BS15000 on November 14, 2005 with about a year preparation. It was the first out of the national public institutions and the 6th in the country. It means that the IT service system of the Public Procurement Service is suited to the international standard in the whole management like the service development.

The department of general service and entrust management (Service Delivery) was built newly in August 2004 to achieve the certification and by passing the final test in October 2005, BS15000 was achieved in November 2005, which meant that the Public Procurement Service should take the test every 6 months to maintain the certification.



<Pic. 9> Work flow to Get BS 15000 Certification

The Public Procurement Service, as the first public institution, which introduced the advanced procedure in the information system management by achieving BS15000 secured the management reliability, and reformed the customer & user centered IT service management system out of the supplier centered point.



Chapter 2

Evolution as a u-Procurement Available at Any Time and Anywhere



The Public Procurement Service made the electronic procurement process through G2B, the accumulation of various procurement information, and the common usage process. It was a big achievement to provide the unified procurement information of all the institutions and to play a key role as a single window.

But in the meantime, the Agency provided the electronic procurement service which was not user-centered but supplier-centered and process-centered. There was a limit in accessing the information because the service was provided mainly by internet. It meant that the Agency could not provide a really suitable service to the customer requirements in that it provided uniform information with many and unspecified people.

With the internet based electronic procurement, the information of the price and the companies was easy to achieve. This made the purchase of each institution go rise. The circumstance around the procurement was changed rapidly with the increased self-procurement with many political factors such as decentralization of power in functions.

As Korea Railroad Corporation, such a big client, became a public corporation, it was changed into the arbitrary-user institution, and it was expected to decrease in the amount of procurement because the range of free purchase in local autonomous entities was expanded. It meant that the Agency, a special accounting institution run by procurement commission, was faced with the big management risk caused by low profit with decreasing actual result despite increasing cost.

To overcome the risk and create a new growing method to jump again, the Agency made a practical research group composed of 4 internal secretaries and administrative officials and 4 external IT experts. Strong-Weak-Opportunity-Threatening (SWOT) was the first analysis of the group. With the exact internal and external circumstance analyses, the suitable strategies to each condition were needed. As a result of SWOT analysis, It was selected as a core strategy to provide customer-oriented service by introducing CRM⁶⁾ and to realize the ubiquitous procurement without visiting the Agency.

6) CRM (Customer Relation Management): a term indicating necessary software or methodology for companies to manage clients. CRM means customer-centered management in which companies can collect and analyse the information of the current and the potential clients, They can make clients' purchasing behaviour indexation by changing the collected information into marketing information. With this they can develop a marketing program.



Section 1

Providing the Customer-oriented Customer Supporting Service on the Basis of CRM

1. Outline

First, to optimize the service for the public, the high degree of electronic procurement service strategy based on CRM was built in February 2004. It was selected as a goal to provide the client-oriented differentiated service by CRM, and to raise the accessibility to the service.

There was some opposition in the Agency when CRM introduction was decided. Especially, the department of information which tried enthusiastically to stabilize the G2B System showed some indifference and opposition saying “It's not our work but the planning office's” or “It has just stabilized, but what's happened again?” In spite of these opinions, the chief and the CIO kept going on introducing CRM.

As there was no example of introducing CRM in the public institutions, to benchmark the examples from private companies and foreign countries was essential. The budget to construct CRM was supported with the information oriented promoting fund. After beginning the project, promotion charge team (30 people), supporting team from each department and intendance (30 people), and user committee from public institutions and companies (50 parts) were composed and managed.

Especially, the key factor to success of the information oriented project was to collect various opinions of users systematically and effectively, and to reflect the requirements of users fully on the system construction. To collect opinions of users, forums were conducted in each department once a week for 3 months. Two workshops participated by about 200 people from public institutions, the Agency, and companies were held.

It seemed that there was no resistance to change because the Agency tried to lead voluntary participation by holding forums and meetings, and collecting various opinions of users in and out of the institution in the course of constructing CRM system. However, in the middle of the construction, the internally potential resistance appeared with “We have been bothered in the name of innovation. This time, we are going to be choked by CRM. In public institution, why does marketing need?”, and “Ultimately,

CRM is a sales. Do we have to go out to sale? That's enough.”

To settle down the resistance, the chief made himself a leader to change. The chief addressed in the staff meeting of June 2004 that “It's up to customers to decide whether the service is good or bad. Products which are not sold are just exhibits in the museum.” and in the marketing strategy conference that “If the electronic procurement is the first renovation, the second renovation is the service renovation through CRM and marketing.”

2. Construction Contents

A. Constructing the general DB of clients by subdividing clients

Constructing CRM is a totally different meaningful project from the one pursued by the Public Procurement Service. Up to the present, to make the procurement information-oriented was to make the procurement process an electronic service. However constructing CRM is to analyse clients with G2B management data, and with the analyzed data it is to realize the system to perform the normal management by drawing ways to manage clients, which is very strange.

To analyse the clients, subdividing clients was performed with the evaluation model which was concerned with profits and royalties. As a result, the countermeasure strategy and the countermeasure plan suited to each group of clients are derived. To grasp the client information, client value was analysed with the data which showed royalties and customer profitability. The data belonged to EDI DW and G2B DW data kept in the Public Procurement Service. On the basis of the result from the analysis, clients were subdivided.

The procurement commission and the deposit were used as a representative profit variable, and the rate of using the Agency as a representative variable to royalties. Totally 4 distinguished client groups (VIP group, activation-needed group, maintenance group, ordinary group) were made on the basis of factors of profit and royalty through grouping analysis in 5,774 institutions. As a result, it could be found that 5.4% institutions took up more than 80% of the whole deposit. Especially, countermeasure strategy to the group of clients was established to raise the profit through conducting marketing to 178 institution which had high profit and low loyalty.



<Table 3> Countermeasure strategy to the group of clients

Group	Features	Countermeasure Strategy	Detailed Countermeasures
VIP Group	Core Predominance Group in need of strengthening and maintaining profit & royalty	Maintaining royalty	<ul style="list-style-type: none"> To assign full-time staff in Call Center/To serve first To serve first in package service (supervision / design-examination) Seminar or Workshop (Manager/Staff in charge) Personal Mileage&Rewarding system To provide Happy-Call service
Activation-needed Group	Activation-needed Group in high-profit but low-use	Strengthening royalty	<ul style="list-style-type: none"> To organize a full-time team treating management-needed demand institution To promote merits by using the Public Procurement Service To lead to order by personal mileage To campaign to use the Public Procurement Service through the information of performing plan indication To recommend products by group preference analysis
Maintenance Group	Political Preferential Treatment needed Group in low-profit but high-use	Seceding Prevention Program	<ul style="list-style-type: none"> To inform customers in self-procurement increase of the standards of the Public Procurement Service To campaign the package service To figure out causes and discomforts of clients in contract decrease through survey
Ordinary Group	Group in low-royalty and low-profit	Basic Service Providing (Profit rising)	<ul style="list-style-type: none"> To provide information on the state of contract Official-documentation about the results of the national treasury reduction personalized on-line training Information deliverer campaign

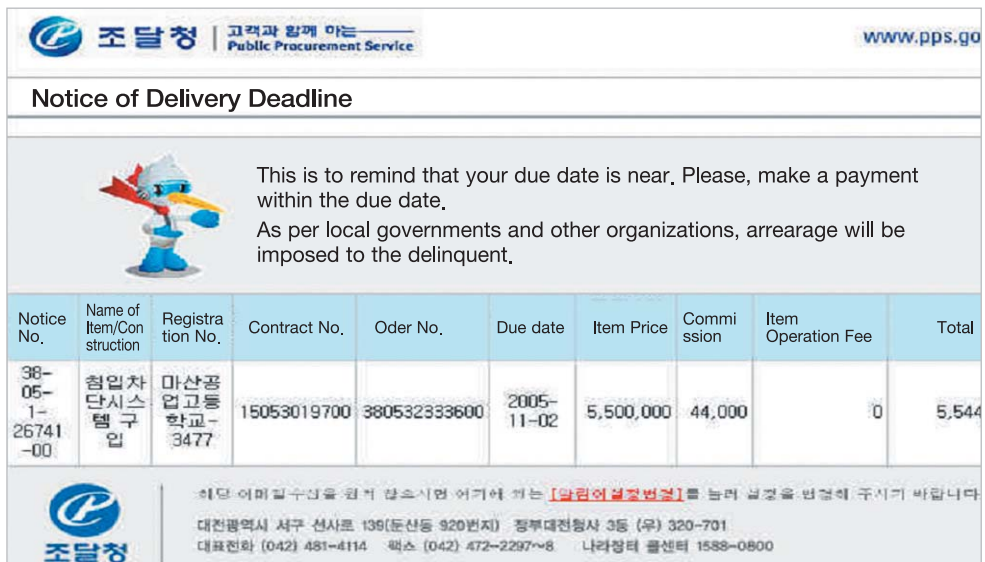
B. Deliverer service to provide the needed information by the client oriented channel

Campaigns to provide specific customers with customer oriented service actively are activities which deliver the differentiated information and respond to the customers reaction to satisfy customers and to promote the service by efficient channel.

To design an efficient campaign, a campaign system organically linked to each system (DB server & channel) was introduced, and it was composed of various functions; a campaign plan, a campaign design, a campaign execution, a campaign analysis, and so on.


Although the purpose of the civil campaign lies in creating profits, that of the Public Procurement Service focuses on providing specific customers with the customer oriented information. Thus it can be called not campaign but called the “Alimee, or the Delivery Alert System.”

The deliverer guide service of the time limit of procurement payment is provided to users by e-mail, and The Happy Call service is directly provided by a counselor with an OutBound Call. The information of procurement payment is provided in real time by SMS.



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Notice of Delivery Deadline

 This is to remind that your due date is near, Please, make a payment within the due date.
As per local governments and other organizations, arrearage will be imposed to the delinquent.

Notice No.	Name of Item/Construction	Registration No.	Contract No.	Oder No.	Due date	Item Price	Commi ssion	Item Operation Fee	Total
38-05-1-26741-00	첨입차단시스템구입	마산공업고등학교-3477	15053019700	380532333600	2005-11-02	5,500,000	44,000	0	5,544

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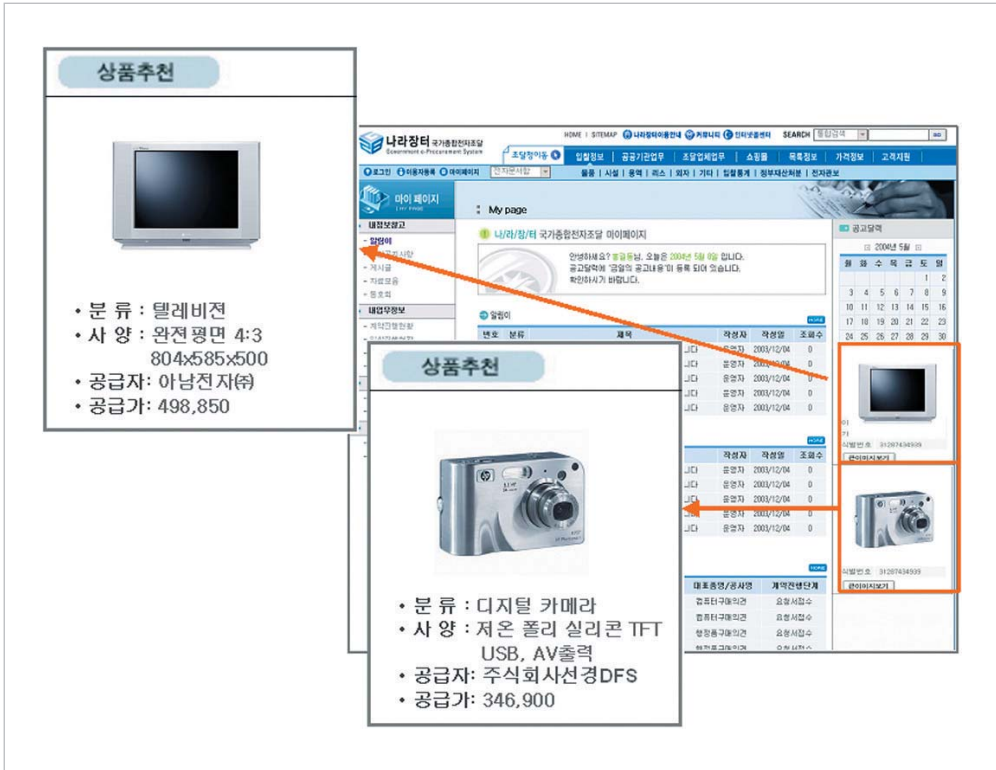
<Pic. 10> Illustration of Alert Service Information (Delivery Deadline)

Especially, in case of Short Massaging Service (SMS) on mobile phones, all the customers received the procurement information in a lump, but only the concerned product and the concerned price information could be delivered to the public institutions, and only the bidding information concerned with the business type, the price, and the region could be delivered to the suppliers. Also, in 2004, the early stage of introduction, it was applied to major business to provide users with convenience. In 2007, however, the requirement of users for providing the real time information was increased, which caused about 40 services to be supplied such as providing the information about the civil affair process by SMS.



<Table 4> SMS service providing status

Period	aNumber of Items	Major Service Contents
2004 ~ December 2006	10	<ul style="list-style-type: none"> • To guide changes and cancels of bidding announcement to participating companies • To guide invalidity/rebidding to participating companies • To guide to the bidder when bidding successful • To guide renewal of certificate prior to expiration • To guide to related company when payment finished • To guide to related institution when user didn't see the bill • To guide conclusion of foreign contract • To guide contents of civil affair process on homepage
March 2007	10	<ul style="list-style-type: none"> • To guide results of requests and changes of bidding participation registration • To guide to supply company when transmitting written supply demand • To guide to supply company when transmitting total amount contract • To guide to demand institution when transmitting prepayment/payment bill • To transmit the related material to on-site explanation participation/appointed companies, registered supply companies, and qualified supply companies of PQ test/real result investigation
June 2007	6	<ul style="list-style-type: none"> • To guide dealing results of requesting a demand institution registration (approval/return) • To guide requirement amount report receiving, written notice receiving, and blanked basic amount • To guide settlement opening to the related company and the bidding administrator when users have a private settlement electronically
September 2007	15	<ul style="list-style-type: none"> • To guide dealing results of certificate request (approval/return) • To guide changes of demand institution information when occurs • To guide results of saving/foreign company registration (approval/return/reserving) • To guide changes of the companies(preventing illegal transaction/bad credit rating) • To guide receiving contract draft/estimate request/delivery request when contracting itself • To guide inspection / order receiving • To guide interesting bidding announcement • To guide Bid opening delay reason (Bidding administrator, Participating companies) • To guide an advance standard registration / reply • When selecting "no successful bidder," guided with the related companies



<Pic. 11> A Screen of Recommended Products by Customers

3. Enforcement Effects

CRM is not a new concept in private companies which pursue profits, but it is not common to introduce CRM in the public sector. As the Public Procurement Service is a public institution which carries out the similar business to the private companies business, it must consider both the public weal and the profits. The background to introduce CRM first out of the public institutions was attributed to the features of the Agency.

In September 2004, as the CRM system was built, the procurement information was changed into the customer oriented service which had been provided to all of the users at the same time. As a result, the degree of satisfaction of the public institutions and the companies was 69.3 and 68.0 respectively in 2003. It rose hugely up to 74.2 and 74.8 respectively in 2004. With one-to-one marketing based on the CRM such as the suited



product recommend, the sales figures of G2B shopping mall went up from 5.1 trillion Won in 2003 to 6.7 trillion Won in 2004 by 32%. Especially, the actual procurement record which was expected to decrease in accordance with the free procurement at each institution went up from 22 trillion Won in 2003 to 23.7 trillion Won in 2004 by 7.9%. In addition to this external achievement, it is valuable that the importance of the customers was recognized by the organization with the introduction of CRM, and the CRM based marketing to secure the satisfaction of customers was recognized as a necessity by everyone.



Section 2

Providing the Wireless Electronic Bidding Service

With CRM, in December 2004, the strategy “Ubiquitous electronic procurement available anywhere and anytime” was established in accordance with the u-Korea strategy of the participation government. It was decided to introduce and apply the mobile electronic bidding service with portable personal unit.

First of all, in mobile service, the mobile procurement information service was performed first, and with the result, the wireless electronic bidding was promoted to minimize the trial and error and to maximize the investigation effect. Consequently, the basis on which suppliers could get the necessary information anytime and anywhere by using PDA to access to G2B was achieved with providing “PDA bidding information reference service” from March 2004.

However, there were much resistance and cold criticism on the introduction of the wireless electronic bidding in the organization. There were many thoughts such as a skeptical viewpoint about the real service use rate and the risk followed by introducing the unverified technology, and the provider centered service in a way of not the demand-leading but the advanced technology leading. People were persuaded with “Anyone can do satisfy customers with what they want. The real innovation is to provide the service which customers can not realize necessary.”

<Table 5> PDA mobile service progress

Service Date	Content
March 2004	• Simple bidding information & announcement reference service
January 2005	• Mobile bidding service
July 2005	• Bidding participation fee payment service
November 2005	• Common demand and supply protocol submission service



With the internal persuasion, to introduce PDA mobile bidding service, the construction of the wireless electronic bidding pilot system made the previous dangerous facts analysed and the detailed construction established from January 2004 to June. The security verification which was the most important part in the electronic bidding was confirmed by an model operation of PDA using mobile electronic bidding service from December 2004. To expand the wireless electronic bidding which was finished development, there were big advertisements in the media and in G2B, and 9 simulated wireless electronic bidding events in December 2004.

The real ubiquitous electronic bidding era was opened in March 2005 by applying the mobile electronic bidding service to all the bidding through complementing functions and the requirement, which was possible through applying the mobile e-Bidding to small sum e-Bidding in January 2005.

To secure the reliability and the security is the most important factor. As in the ordinary e-Bidding system, in the mobile e-Bidding the on-line transaction based on the authorized certificate was selected by adopting the generally authorized certificate agreed with the authorized certificate institution in October 2004. Especially, though it was said that mobile business era began it was achieved to use the certificate generally in the wireless part which people didn't use much.

Though this mobile e-Bidding with PDA was a supporting measure for users who could not use their computers, totally about 3,000 users took part in bidding with PDA in 2005, the first year of the introduction. It was a good example showing that the e-Bidding service was settling down as a U-electronic procurement which could be used at anytime and anywhere.

<Table 6> Mobile Bidding by Year

Section	2005	2006	2007	Total Amount
Bidding	3,164	8,738	10,205	22,107

Convenience of the entrepreneurs was maximized with using the ubiquitous electronic government at anytime and anywhere through PDA wireless electronic bidding service. Security problem in mobile business was solved and using PDA was expanded, which promoted the development of technology and the formation of the market in the country.



Section 3

The Operation of the First Procurement Web Call Center by Public Organization

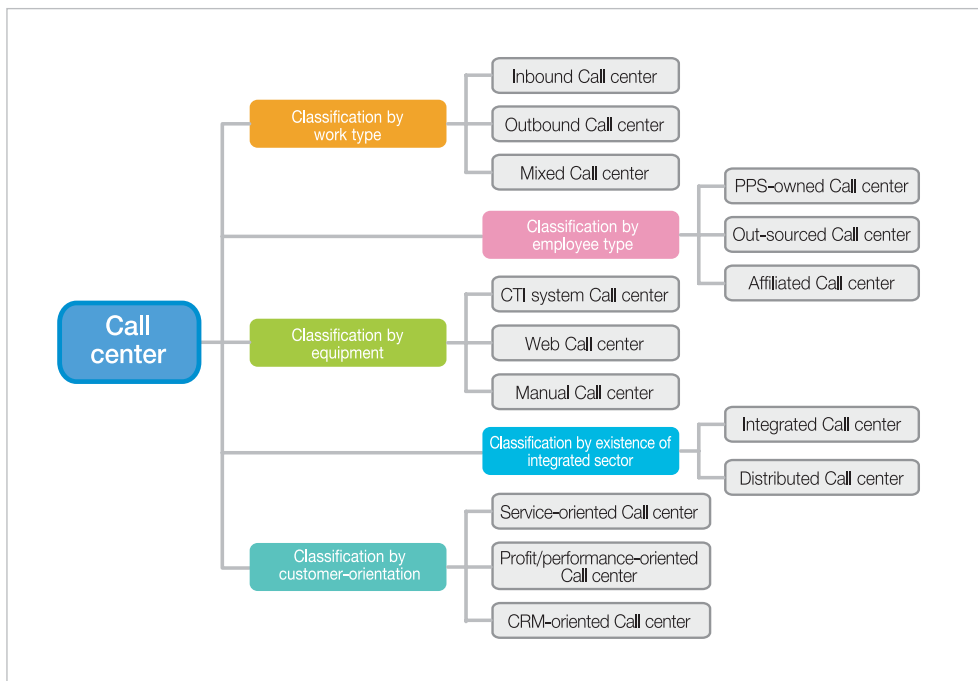
1. Overview

A. Definition of Call Center

The call center is a communication interface between enterprises and customers by using telecommunication methodology. The call center performs inbound service to listen to customers' requirements and solve their complaints and outbound service to promote active sales, marketing, and campaign etc.

B. Types of government's procurement call centers

The types of government's procurement call centers operated by Public Procurement Service (PPS) is classified like following. Firstly according to the service characteristics, there is an inbound type for mainly counseling customers' inquiries.

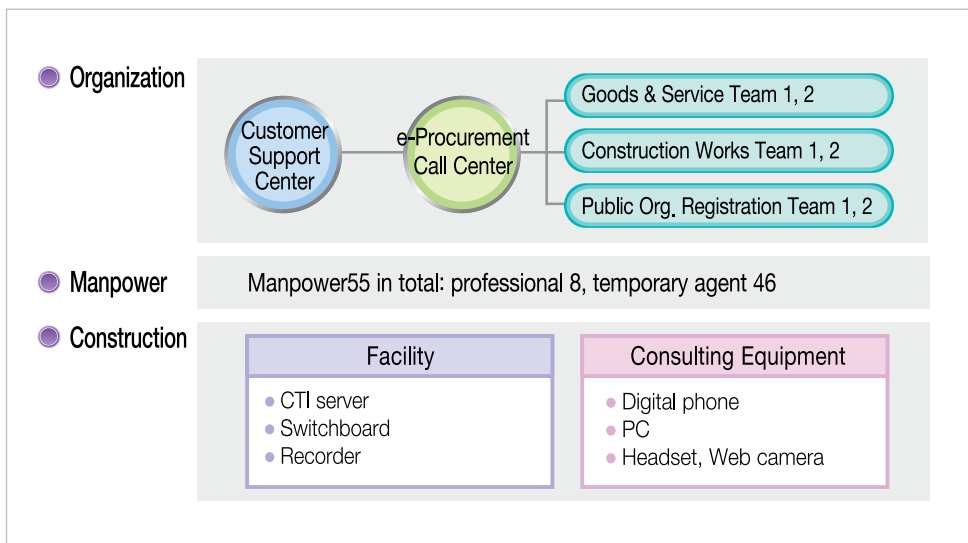


According to the form of organization structure, there is a direct control-call center which is directly controlled by insiders of the organization. According to the type of equipment, there is a web-call center using internet and computers to consult with customers. Moreover depending on whether being integrated or not, there is an integrated type which gathers calls into one place and integrates them. A service oriented-call center can be classified depending on the customer service characteristics, providing information, answering inquires, and so on.

To strengthen marketing activities through providing customized service to customers, the government procurement call center is focusing on outbound call counselling and proceeding ‘Happy Call⁷⁾’ towards a CRM type-call center.

C. Organization of Government Procurement Call Center

The employees of the electronic procurement call center consist of 1 secretary who is in charge of the overall call center operation, 1 secretary for internet counseling, 7 counseling specialists under 6th-grade officials, and 46 temporary counselors. Main



<Pic. 12> Call Center: Organization, Resource and Facility

7) Happy Call: Counselling, researching customer complaints, and making confirmation calls after supplying products etc.

equipment which is necessary for counseling is 1 set of CIT (Computer Telephony Integration) server, a switchboard with 60 circuits, a recorder system with 60 channels, and a PDP electric sign. For personal counselling equipment, a digital telephone, a PC, headset, and a web camera are necessary. With these kind of equipment, it makes it possible to provide phone counselling as well as web counselling for the best service for customers.

2. Implementation Process of Web Call Center

<Table 7> Major Implementation Process

• Sep. 2002	Commenced the service of Government Procurement Call Center (outsourcing) - Main functions: Counsel about inquires related to using Korea ON-line e-Procurement System (34 persons)
• Jan. 2004	Switchover to direct management system (Expanding the scope of counseling service to entire fields of procurement)
• Feb. 2004	Assigned 7 permanent employees
• Mar. 2004	Opened Web Call Center (The first one by the government)
• Apr. 2004	Establishment of the recorder system and counsel intelligence information system
• Sep. 2004	Operation of CRM Call Center - Happy Call, Campaign, Sending customized e-mails
• Jan. 2005	Registering demand agencies and issuing public institution's certificates
• Mar. 2005	Total 39 agents (increased 5 more)
• Dec. 2005	Total 41 agents (increased 2 more)
• Mar. 2006	Employment trilateral conference call system to raise customer satisfaction
• Mar. 2006	Assigned 10 more permanent employees as an effort to countermeasure for sharp increase of calls
• Oct. 2006	Won CQM Certification (The best service organization among government call centers)
• Jan. 2007	Total 46 agents (increased 5 more)
• Oct. 2007	Open-ended contract with agents (22 out of 46 employees)



A. Commencement of Government Procurement Call Center

To response inquiry calls from the public organizations and companies as procurement participant, government procurement call center was established while implementing and operating Korea On-line e-Procurement System (G2B) as one of the 11 main projects by Electronic Government (2002. 9). The company which had established Korea On-line e-Procurement System operated and managed the call center, and PPS performed controlling and supervising the operation.

When the call center was established, 34 agents were responding customers using G2B with wire telephones, e-Mails and Q&A bulletin board on website. The contents of the responses, however, were limited to inquires about using G2B, and it was impossible to counsel about procurement related inquiries because of the lack of counsellor's expertise. In case of the inquiry about procurements, the line transferred two or three times to give proper answers, and it caused customer complaints.

B. Switchover of Government Procurement Call Center to Direct Management System

With boosting of counselling requests and diversity of counseling fields, the need of one-stop service for overall government procurement was increased. So, the operation system of government procurement call center was changed to direct management on January 1st, 2004 and 7 permanent employees were assigned to the center to cover counsels about even professional procurement fields.

By the switchover to direct management system, the supply of counsel personnels became stable, and with expanding the range of counsels from the limited service only related to G2B to overall procurement, the calls from customers converged excessively. On January of 2005, one permanent employee was added and on March of 2005, 5 more were added. So, total 8 permanent employees and 39 agents responded to customers' inquiries.

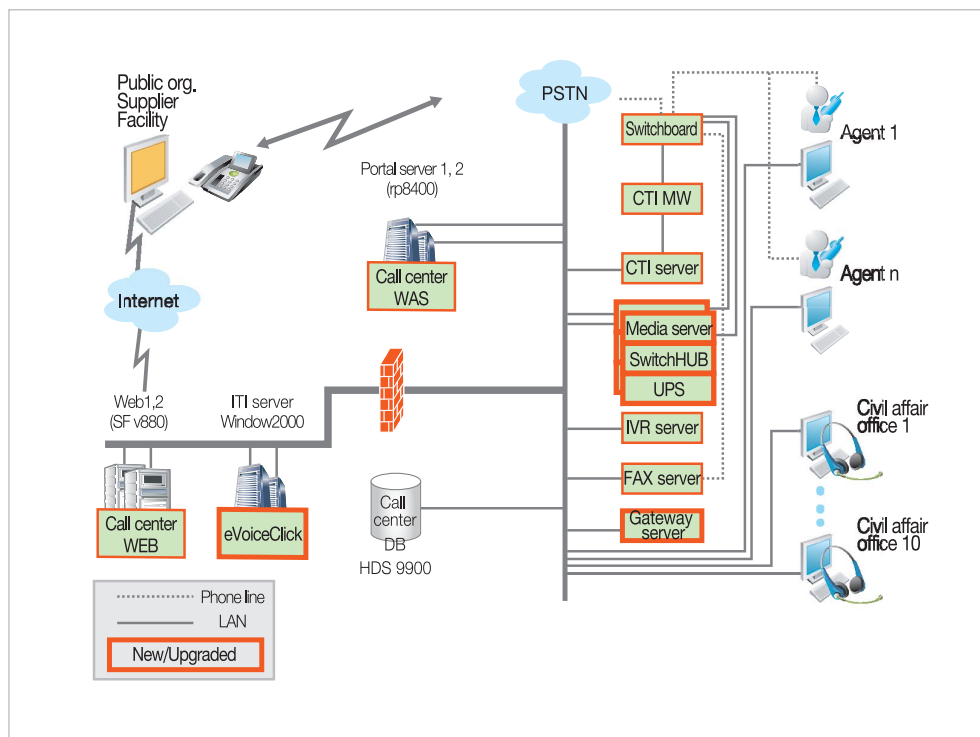
Moreover, the kindness and speciality were strengthened by having employees with expertise knowledge about domestic and foreign capital or facilities fields

counsel customers with one-stop service. Finally, the customer satisfaction about G2B was greatly improved.

C. Establishment and Operation of Web Call Center

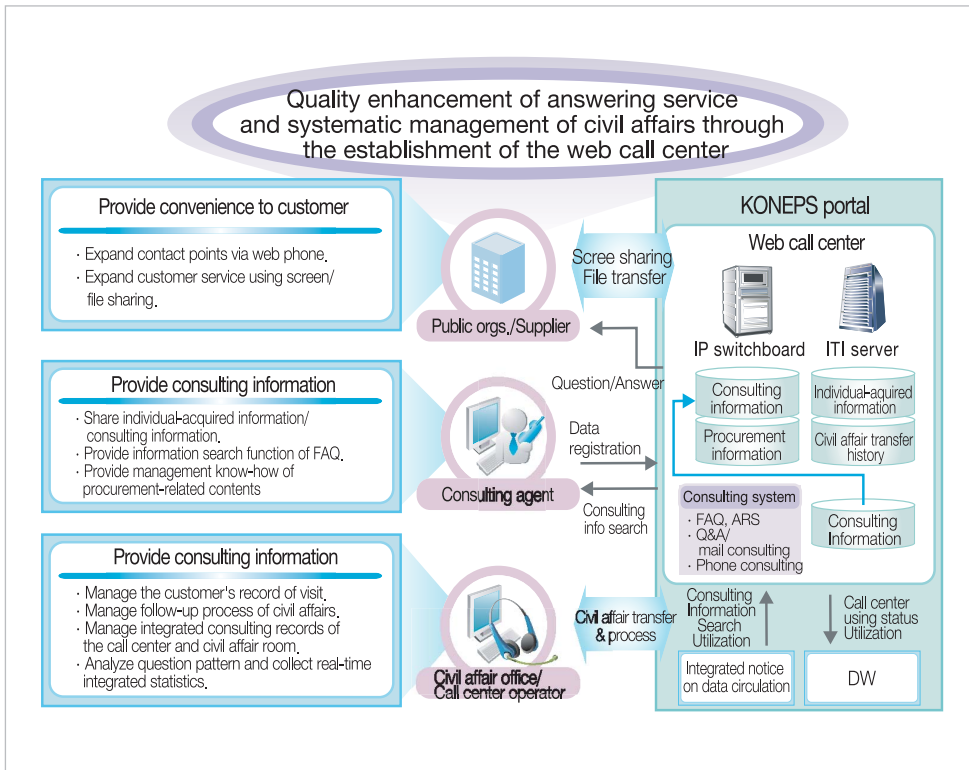
The web call center which was firstly established (on March 31st, 2004) and operated by government was not wire phone system service but the next generation call center system which provides service using information telecommunication technology like chatting, sound, image etc. to customers.

If customers click a button on the webpage of Web Call Center for consulting, people can use a variety of features. There are Web Call Through feature with voice over IP service which makes people talk with agents directly, Video Conference feature which provides real-time facing communication with agents,



<Pic. 13> Conceptual Framework of Web Call Center

Web Chatting feature which makes it possible to exchange necessary information linking with voice and video features, Escorted Browsing Feature by which clients and counselors share real-time screen and conversation, and File Transferring feature which help file transferring between them.



The government procurement web call center installed the internet counselling feature which people can inquire by clicking the internet call center on top of Web site. Furthermore, while having internet counsels or telephone counsels, if it is difficult to understand, the counsellor can look at the customer's PC screen to provide solutions. This web sharing feature provided much conveniences to customers who have huge information gap and brought up high quality counselling.

(1) Consultation through Internet Phone While Using Korea On-line e-Procurement System (G2B)

● Customer Access

The screenshot shows the '나라장터' (Korea On-line e-Procurement System) website in Microsoft Internet Explorer. The browser address bar shows 'http://www.g2b.go.kr/g1.a01.htm'. The website header includes navigation menus for '입찰정보', '공공기업업무', and '조달업체업무'. A callout box points to the '인터넷콜센터' (Internet Call Center) button, stating: "While using KONEPS, user can ask for help by clicking the 'Internet Call Center' button." Another callout points to a registration form, stating: "The user inserts basic information before consulting with an agent. (In case of Log-in status, this stage is automatically passed)." A third callout points to a download progress bar, stating: "The relevant software program is downloaded; after basic installation, 'Connecting to an agent' is on the screen. The user is waiting for a moment ...".

● Counseling Receipt

The screenshot shows the 'TALKS CS Agent' software interface. A dialog box titled 'Microsoft Internet Explorer' displays a consultation request: "운영진 님으로부터 호출요청이 왔습니다. 응답하시겠습니까?" (A consultation request has come from the operator. Do you want to respond?). Below the text, it shows "상대편태: 화상상담" (Consultation type: Video consultation) and "고객ID: C19537010005". A red box highlights the "확인" (Yes) button. A callout box states: "When the screen of consultation request pops up, the agent clicks the 'Yes' button. If the consultation type is 'voice/video consultation, click both the 'SoftPhone,' and 'Answer'". To the right, the agent's control panel shows a "RECALL CALL" button and a "SoftPhone" icon. A callout box above the agent's control panel says: "An agent is waiting for consultation, and...".

(2) Web Sharing While Talking through Internet Phone

● Application of Web Sharing

Customer

When the chat windows pop up on the screens of both the agent and a customer, the agent can begin consulting with the customer in a second.

Agent

The window notifying the agent's access pops up. When clicking "Yes" button, the customer can talk with the agent.

Before Web sharing, the agent give the information of the Web sharing process.

● Web Sharing

Customer

Agent

After clicking the "Web sharing" button, the customer and the agent can share the PC monitor.

The agent can draw a circle to explain the menu to the customer by clicking the "Drawing" button, while drawing, the customer cannot input any words or click buttons.

● Concluding the Consultation and Ending Web Sharing

Agent

After consulting, click "Exit" button to finish consultation,

When clicking "Consultation close" button, the consultation is finished,

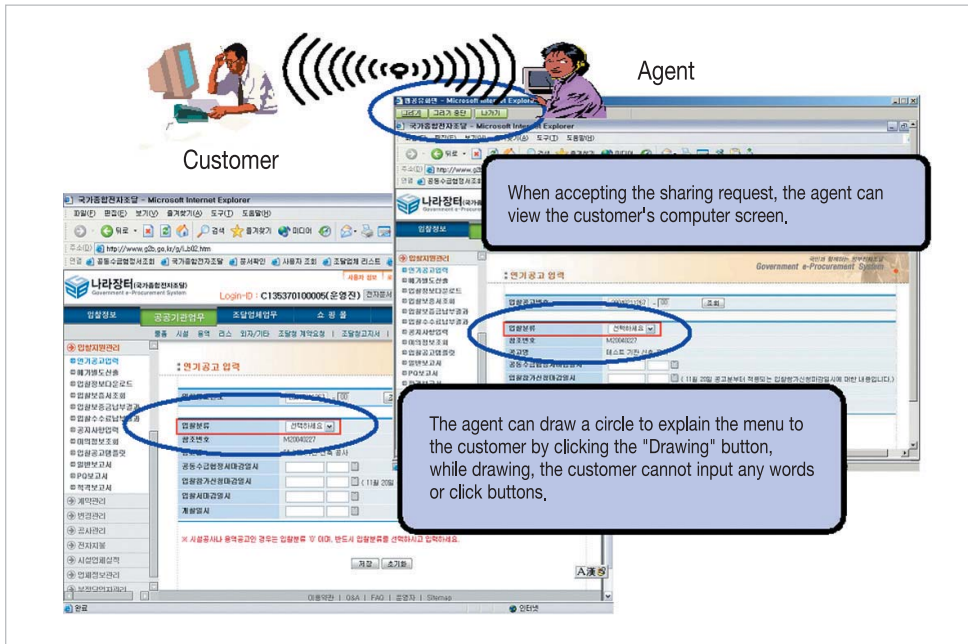
(3) Web Sharing While Talking through Phone

● Application of Web Sharing

When clicking on the "Internet Call Center" menu, the customer can share the monitor screen with the agent,

When hard to understand explanation, the customer inputs the password given by the agent,

● Web Sharing



3. Strengthening CRM to Establish Customer Interaction Center

When operating call centers, as the importance of CRM became a hot issue, the service needed to be transformed from preexisting unified service to an individualized one by grasping each customer's situation to maximize the customer satisfaction. This means that the development of service was realized from the passive service form to preceding service one and from a one-way communication to customers to two-ways one with customers.

Moreover, the web call center for the electric procurement reinforced CRM with consistent countermeasures by unified management which had the contents of counsels, customers' information and records, contact history through various channels like internet, telephone, email etc integrated and managed systematically. If the clients can leave a specific time when he or she wish to talk, the counselor can call back him or her on the wanted time. This is call reservation system and it was established on August 24th, 2004. The active and aggressive measures for CRM like newsletter e-Mailing, reservation calls, resolving complaints and tele marketing.

4. Establishment of Monitoring System for Counselling Quality

A. Establishment of Helper System

The Helper System provides solution tools for complaints and updating programs for new contents and coinages, so it helps counselors to search necessary information promptly in regard to laws, FAQ, announcement, G2B web documents etc. on their monitors.

To review counselors' kindness, there is recording and monitoring system which records the counseling conversation, and the status of counseling is displayed on the sign in real-time. The recorded data and systems will be utilized to improve the quality of consulting, and many kinds of regular training courses and assessment like induction course and technical education also improved courteousness and professionalism.

Classification	Period/Frequency	Contents
New employee	2 Months	- KONEPS process - Introduction to procurement works
Expert course	1 week/ 2 per month	- Procurement expert course - OJT by an expert
Literacy course	1 per quarter	- Consulting training of external agency
Monitoring	1 per month	- Recording and monitoring of consultation
Test	1 per quarter	- General course of KONEPS and procurement

<Pic. 14> Education and Evaluation

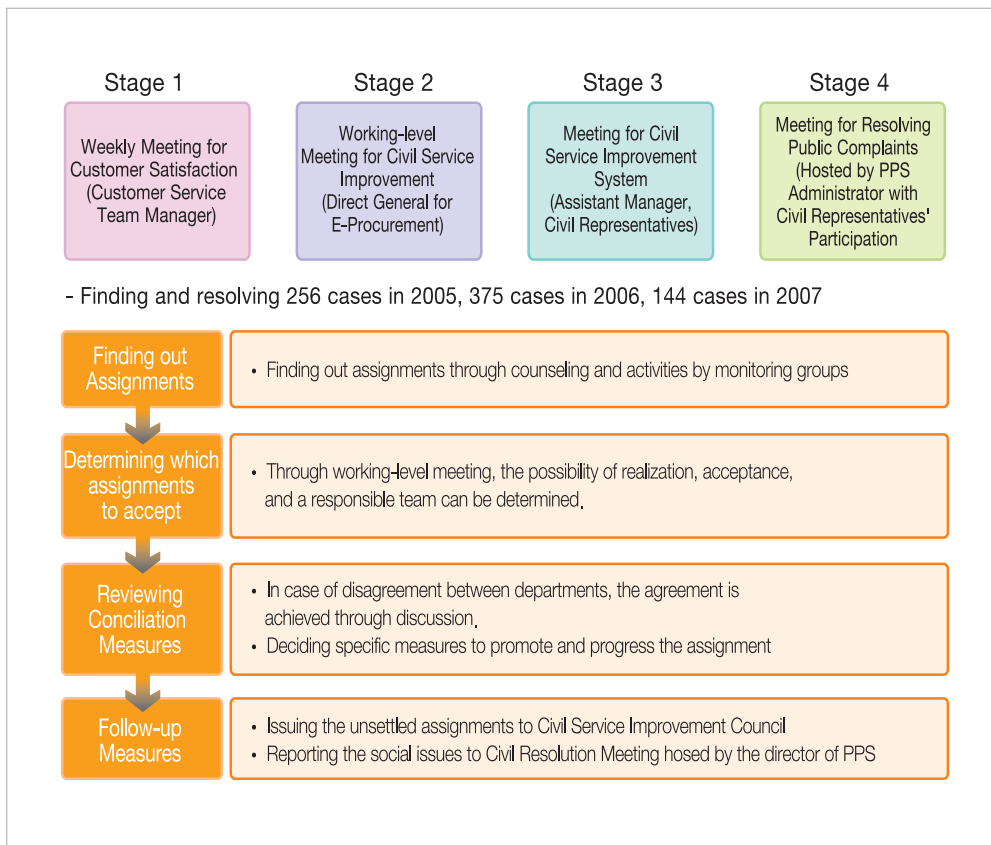
B. Operation of “Customers' Opinion” Monitoring system

Channels like call center and e-Procurement monitoring groups which consist of civil, public organization and suppliers for receiving petition and suggesting comments are used to gather civil complaints and opinions. The received “Customers' Opinion” is analyzed weekly or yearly, so the results can be reflected in performance improvement. Moreover, by surveying the satisfaction about the dealt problems, the results of survey was applied to systemize the evaluation system.

5. Others

By linking public organizations' registering works with counseling calls at the call center, 37,000 public organizations' registrations were accomplished smoothly. And, weekly meeting for customer satisfaction is held to gather customers' comments or opinions which arouse while counseling and find problems to be solved and improved. In this way, the web call cent of government procurement became an innovative leader. Depending on types of complaints, the civil service improvement system with four stages was operated continuously and 114 questions and problems arose while counseling were improved through the deliberation of council.

<Table 8> The Four Staged Participatory Civil Service Improvement System of Procurement

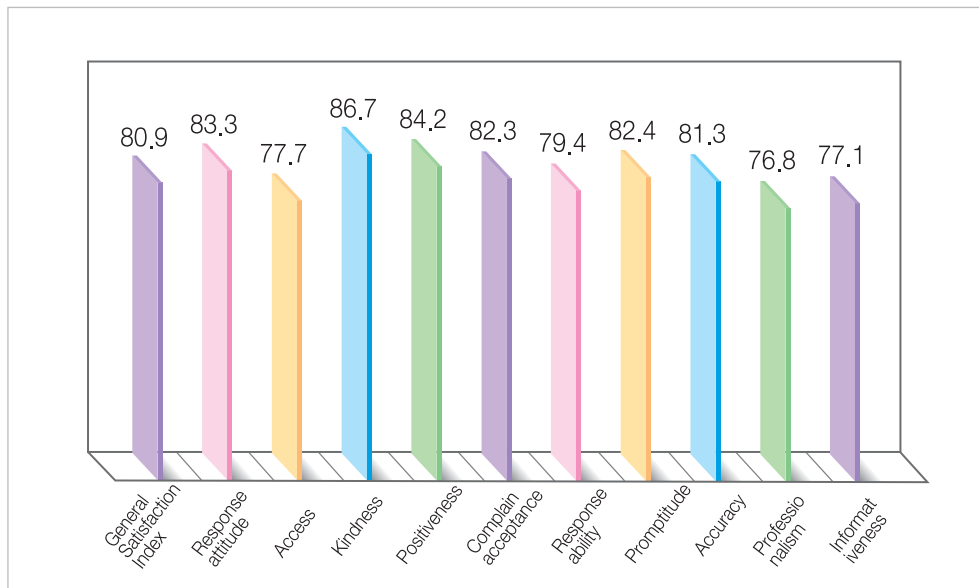


6. Implementation Effects

A. Improvement of Customer Satisfaction

Using the government procurement web call center, the courteous and prompt counsel was achieved through the one-stop service about the overall procurement related jobs. In 2006, the comprehensive index of customer satisfaction was 80.9 scores which was very satisfactory. And, the score of counselors' kindness was 86.7 and the score of professionalism was 76.8 scores to show that people were mostly satisfied.

This is the result of the establishment of web call center to perform personalized contact effectively through web sharing, and it helped to provide customers with a convenient access route.



<Pic. 15> Satisfaction Survey Results of the Call Center Service in 2006

B. Increase of Consultation Results

As increasing the number of bidding organizations and users using G2B, inquiry calls were also sharply increased. Since providing one-stop service on procurement related jobs, the number of calls had increased up to 26.1% from 636,691 calls in 2005 to 802,624 calls in 2006. In 2007, 16.9% increased to have 937,877 calls. The business



division put in the call center phone number as representative call, so every inquiry call was handled at the call center with one-stop service. It made it to reduce direct calls to business division so it created favourable working environment for staff in the division to concentrate on their works.

C. Commencing the Customized Service by Strengthening CRM-type Call Center

The commencement of Happy Call system maximized customer satisfaction with strengthening customer-oriented service. The services consist of 'Call Back' system construction, amending the enactment and regulations relating to contracts, and sending e-Mail with additional bidding information. The target clients are the contractors who implemented supplies over 3 hundred million Won, constructions over 10 billion Won.



Section 4

Commencing the Mobile Service for Inspection of Procurement Goods

In 2006, the mobile service for inspection on procurement goods was commenced. The government supplies like the cement mixers and concrete mixers could not be inspected through the internet because the internet service are not available in most construction sites. Because the inspection of these cases was processed in written format the ubiquitous inspection system should be realized sooner than any other fields.

For the safety of transaction, the mobile inspection service was built to use a certificate. The technology validity on the mobile inspection service was reviewed. The results showed that it is possible to realize the mobile inspection service by integrating the bidding service with civil courier services.

Like the system which a courier service company is applying, when a supplier supplies government resources to sites, he or she is supposed to get a signature of the person in charge of the work on PDA screen, and then the image of signature will be encoded to be saved as digital signature. This system prevents any kinds of counterfeit behaviors or distortion. The saved data is transferred to G2B Server to be check by the government officer in the side of demanding organization and he or she can inspect and test the supplied products.



<Pic. 16> PDA Screen showing delivery confirmation

After the officer receives the suppliers' inspection application form and check the saved information and signatures in regard to supply, he or she issues receipt on the supply. As the supply inspection is processed electronically through PDA, other related works can be processed electronically and much time and costs taken for the works can be saved.



Section 5

Implementation of Mobile Office

1. Overview

The Mobile Office is a working system which makes it possible for staff who has to be out for business or meeting very often to access to the intranet of the company from outside and process the works, so it called “remote office”.

In the case of PPS, staff in charge of construction managing works has to stay in the construction sites 4 or 6 days a week and staff in charge of purchasing should go on a business trip frequently to survey prices. More and more product exhibits are holding outside of PPS complex, more business trips are needed for promotion and customer relationship management.

And thus, oversea buyers staying in 5 cities like New York, Chicago, Tokyo, London, Shanghai promptly share the gathered information of oversea prices, raw materials, market survey, and foreign products with other colleagues and they also get to know the internal situation of PSS. Because the internal systems like procurement EDI, EDMS etc. can be operated at the inside of PPS only, it was impossible for staff to access the internal system from the outside of the company and it caused the loss of efficiency.

2. Progress of Project Promotion

A. Mobile Office Implementation using VPN (Dec. 2001)

As the 1st stafe of PPS project, the implementation of mobile office was established in 2001, and the mobile office was finally built using Virtual Private Network (VPN).

The introduction of equipment for implementing mobile office is as follows;

<Table 9> The status of introduction of VPN equipment

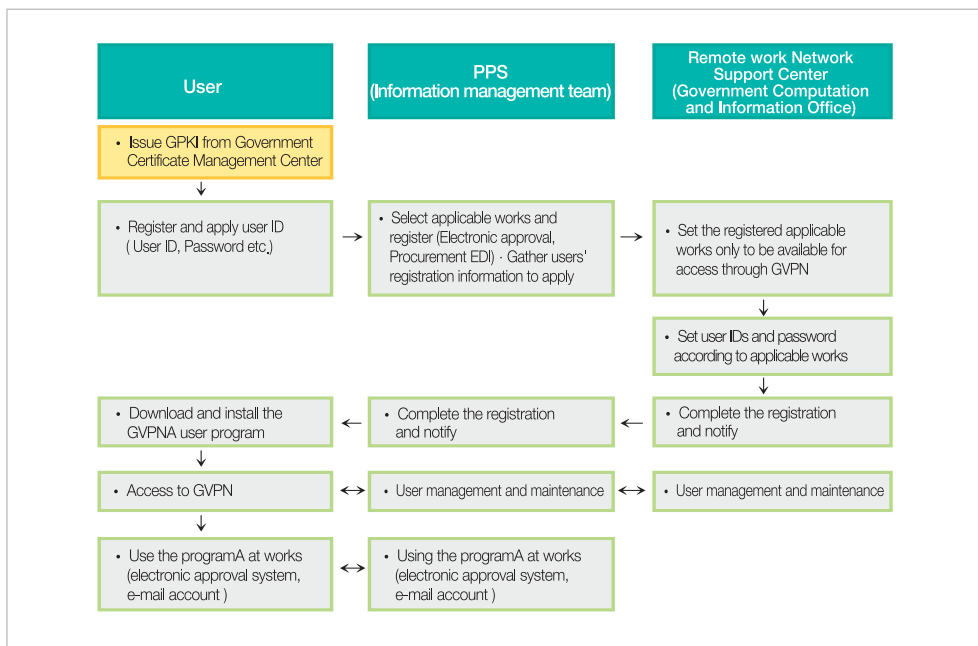
Kinds of the equipment	unit	Places to be installed	Others
SecuwayGate 2000	1 ea	1 for Headquarters	
SecuwayCenter 2000	1 ea	1 for Headquarters	including system
SecuwayCard 2000	45 set	Mobile buyers (including overseas purchasing officer)	

B. The Implementation of Mobile Office Using Government Virtual Private Network (GVPN) Mar. 2005

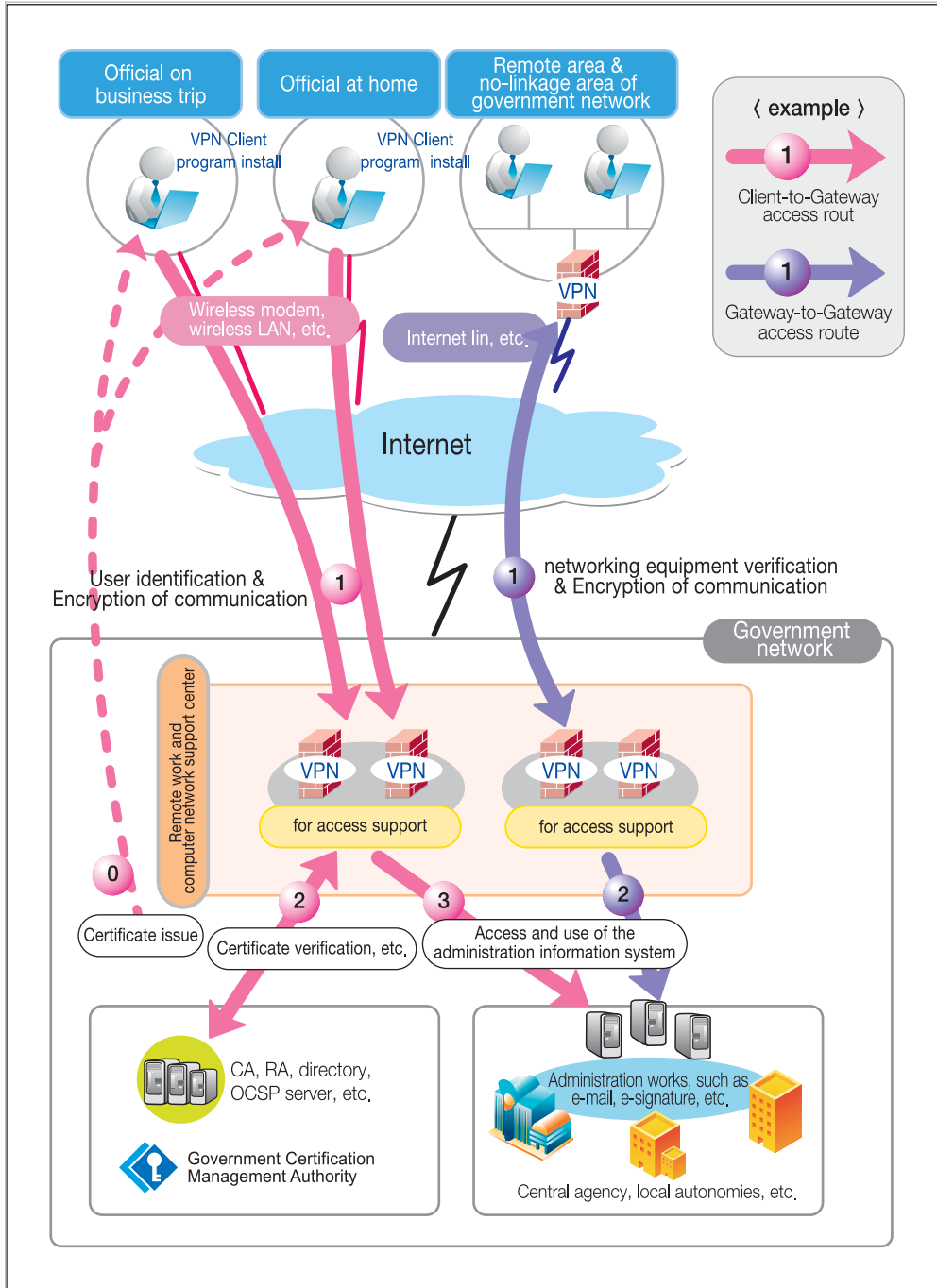
The MOGAHA operated the GPKI based GVPN for accessing securely to the various administrative information service systems in early 2005.

As the 2nd project of PPS, the mobile office environment using GVPN and GPKI which the MOGAHA had built was accomplished. Since the encoding system of transferred contents and users' identification was supported by GVPN system of the MOGAHA, PPS was able to establish the remote office environment at no extra cost.

PPS determined the works and assignment to be processed via using GVPN and users of GVPN can issue IDs by applying to the MOGAHA. Because the internal and external assignments and works were integrated into PPS information system, workers altogether, it is impossible to restrict authorization by assignments but by users. Due to this, users need to issue a certificate and install it on the users' PC. The flow of the processing and accessing procedures using GVPN are as follows in the <Pic. 17> & <Pic. 18>



<Pic. 17> GVPN Using Procedure



<Pic. 18> GVPN Process Chart



3. Implementation Effects

With constructing a convenient working environment to perform works anywhere at any time, the work efficiency was greatly improved. For example, information (overseas price research, raw material market research, foreign product news etc.) which overseas purchasing officials from five areas (New York, Chicago, Tokyo, London, San Francisco) collected can be shared promptly, and they can also learn government's inside news quickly.

In the long term, this is an establishment of infrastructure to realize Electric Government, and it also formed the foundation to countermeasure flexibly for telecommuting or remote working enthronement



Part 5

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Chapter 1

Construction of KONEPS Shopping Mall



Section 1

Background of the Construction

PPS purchases and supplies requested resources by demanders according to the laws of procurement business. Among the purchases, the goods up to 6.6 trillion Won scale (2007) was transacted through the e-commerce medium, KONEPS Shopping Mall. This is almost half of the total domestic purchase by PPS, which is 13.2 trillion Won, so we can assume how invaluable the role of shopping mall is. Looking back in history of the development of current comprehensive shopping mall, consumptive office supplies which were stored in PPS's central distributing warehouse had been offered to demanding organizations upon their request (stored goods). But on October of 1999, PPS built an e-mall for the e-commerce of consumptive office supplies.

After that, G2B started its business on September, 2002 and it operated two shopping malls named 'Contract Product Mall' and 'Market Goods Mall'. On April of 2006, the Market Goods Mall offering non contracted products was closed, and on July, the Contract Product Mall was renovated and developed to be 'KONEPS Shopping Mall'.

The shopping section was just one of the G2B's menus and it was the Contract Product Mall. The mall adopted a supplying type that one supplier makes a contract for only one product to be supplied. The public organizations, however, as consumer felt much inconvenience and it was obviously very old fashion.

There was a great limitation on operating the shopping mall. Contrary to the process that PPS selected only one supplier who suggested the lowest price, a new procurement system, MAS which selected several suppliers passed suitability test was started in 2005 and settled. To build a 'comprehensive shopping mall' which suits to the MAS system, a team for the shopping mall was organized with 16 people on February, 2006. The shopping mall was commenced on January 1, 2006.



Section 2

Constructed Contents and its Effects

1. Constructed Contents on Shopping Mall Site

The webpage format or outline is important in the online shopping mall where every business is done through online. User interface was designed considering quick and easy access to main information and service and it has advanced design which delivers reliability and innovation of the shopping mall.

Making the most of the existing database, the search feature was intensified and advanced. The ‘My page’ which only existed on the KONEPS portal was integrated into the new shopping mall to consider user's convenience as much as possible. If there is not a product which purchaser wants to buy, there is a registering corner for applying a new product to be updated so, the wished product will be added promptly on the shopping mall.

Since the establishment of comprehensive shopping mall was very unique and has no paralleled in history, media and press showed much interests. Most of all, as the shopping mall considered convenience of procurement companies very much, it was acclaimed as considerate government organization's service.



<Pic. 1> Main page of KONEPS Shopping Mall Website

Formally, users had to log in Koneps and click the contracted products and process to make purchases, but now there is a separate shopping (<http://shopping.g2b.go.kr>) and it helps users' easy and direct access.

Since the establishment of comprehensive shopping mall was very unique and has no paralleled in history, media and press showed much interests. Most of all, as the shopping mall considered convenience of procurement companies very much, it was acclaimed as considerate government organization's service.

YTN [July 5, 2006]

The biggest comprehensive shopping mall of the government organization was opened. and customers can purchase goods with one click. This is a historic development of procurement business. and it is estimated that the shopping mall will give broaden options and much convenience to public organizations and more opportunities to small business to participate the procurement business...

2. Effects of the Comprehensive Shopping Mall's Establishment

A. Speediness and convenience of the product purchase

With the shopping mall's establishment, a separate contract procedure between a public organization and a buyer was not necessary and the buyer could purchase product he or she want on the online shopping mall at any time. Buyer could purchase various quality products with competitive prices, so instead of the complaints like “Penny wise, pound foolish”, more consumer organizations are satisfied now.

Previously, there were 6 steps of order procedure for consumers to select products and order, but it was improved to 4 steps for speedy purchasing. Moreover, the delivery was greatly shortened to 3 or 4 days, so the level of shopping mall's service is comparable to civil shopping malls.

B. Lowered Entry Barrier of Procurement

PPS shopping mall lowered the entry barrier to help small and medium-sized businesses (SMB) to expand their market for sales while finding and producing



excellent products with new technology. So, the shopping mall played an valuable role to the small and medium-sized enterprises like an oasis.

The shopping mall showed a way of turning around that an online shopping is not only a place for making profits but also a supporting organization for small business. From the beginning of the shopping mall's construction, PPS considered small business not to be at the disadvantage comparing to larger companies and helped their product promotion.

Maeil Economy [August 23, 2006]

PPS shopping mall help suffering small-medium enterprises to make quiet a lot of profit. With the reason that the shopping mall is government certified, it is give practical support both to expand market and to make a profit like catching two rabbits...

Section 3 Service Promotion

1. Purchasing Decision-making System

Due to the expansion of customer base and their various demands, the number of products is expected to increase and purchasers have to spend more time and efforts to search the product they want. For a good decision-making when purchasing products, accurate and enough information should be provided for convenient comparative analysis among various products,

A. Comparison of the Products and suppliers

The comparative analysis service will help customer's decision making with specific information relating to the suppliers and products. The information includes the suppliers' credit rating, delivery delay rates, products' specifications (format, size, materials), business stoppage history within recent two years, etc.

B. Customer evaluation and Q&A

It also provides information about customer satisfaction with four items like product quality, price, delivery, repair service. This service help consumers to save much time for making a decision, and providing the comments on certain products by buyers assure the product's reliability. For further information, there is a window for communication between suppliers and buyers. Through this service, buyers can make inquires directly to suppliers or to consumers who had experienced the product.



<Pic. 2> Customer's Evaluation

C. Customer preference

By selecting five bestseller products and five best searching items on the SMB products, it provides sort of customer preference information. It is assumed that this service will greatly help SMB to promote their product effectively.



<Pic. 3> Customer's Selection, Top 5 (S&M Business)

2. Organizing the best product club

As an effort to promote the quality certificate products, NEF products, obligatory purchasing products, and government supported strategic products, etc., PPS organized 'the best product club' on June, 2007.

If looking into the club's operational aspect, the members of the best product club manage club members, and they have main operational authority to approve posting the contents of all promotional materials submitted by manufactures.

A. Configuration of Main screen

The best product club played a role as a marketing window for best product manufacturers to promote their products, and its goal is to expand sales and help consumers to obtain quality products conveniently.

As the front page can be usually the most effective promotional page, the

distribution standards of the main page were set to provide equal opportunity. The biggest image at ① is given to a weekly best seller, so five selected company submit their own promotional images to post. The best seller corner at ② is chosen by weekly service records and CIs of club member companies are posted on that corner.



<Pic. 4> Main Page of KONEPS Best Product Club Website

B. “Every best product is here.”

As a place for the promotion of products and companies, “Every best product is here.” corner provides searching features by product categories (③) and by names of company, and supplying products can be searched easily. In this corner, the suppliers are able to promote their technology and its excellence and the demanders are able to receive more information about the suppliers besides the products. So, the stronger reliability can be established between them.



<Pic 5> 『Every best product is here.』

C. My Q&A

Through the communication channel between demanding organizations as purchaser and suppliers, it is possible to inquire about products and product's repair service.



Section 4

Effects of the Operation

The shopping mall brought a consumer-oriented contract system (MAS) and MAS processing system as well as the innovation to the paradigm of procurement deals. It was a good turning point for PPS to develop a great e-Commerce medium which can attract more customers.

As an intensive effort to diversify the kinds of supplying goods, the number of items were increased from 27,000 items in 2005 to 207,000 items on December, 2007, which is almost 7 times increase within 2 years. The result had been realized because the dealing items could be expanded even to small items like artificial turf, plants and stationary which were too small to deal on the procurement market.



Chapter 2

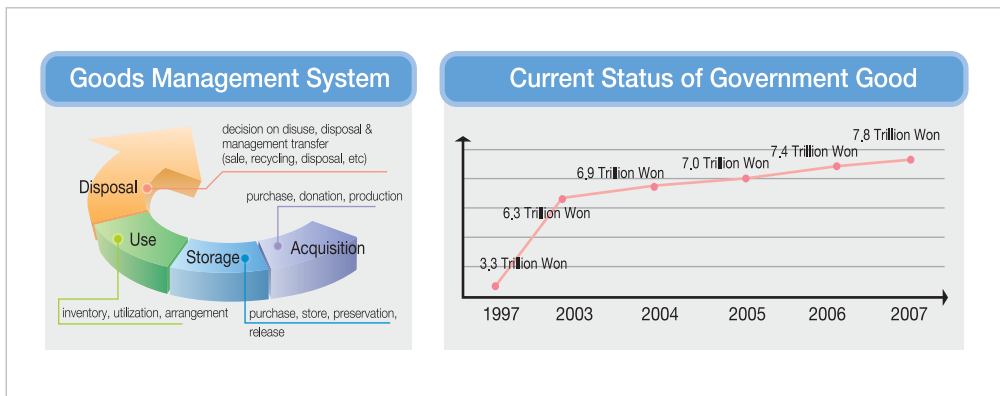
Establishment of Efficient Product Management System Based on RFID



Section 1 Background

The government property management is very important work that a government organization efficiently manages goods which were purchased to provide administrative service, so the improvement of productivity is achieved and the relevant budget can be saved in the process from purchasing and selling.

Due to the recent expansion of funds scale, the kinds of item are highly verified and the management works on goods (purchasing, inventory, disposition) became complicated. Therefore, an efficient and systematic management is required.



<Pic. 6> Goods Management System and Current Status of Government Goods

With the construction of National Finance Information System (NAFIS), the digitalization of the national property management had gained a foothold. But, the practical works like inventory management, transfer records, purchasing, disposition etc. were still done the old-fashioned way, by hand. As the inefficiency increased, the exact grasping on stocks and other situation was impossible and budget wastes continued to purchase the currently stocked goods again or to scrap reusable goods. Finally, each organization checked inventories to sort unused goods and disused goods and suggested recycling solution. The portion of disused goods are increasing every year and currently almost 90% of them is disposed.

<Table 1> The Status of Disused Goods by Year

Classification	2001	2002	2003	2004	2005	2006	2007
Holding Goods (A)	52,265	58,263	63,374	69,736	70,542	74,373	78,186
Disused Goods (B)	1,353	1,567	1,824	2,750	2,796	3,882	3,785
(usuable)	(166)	(140)	(133)	(296)	(364)	(414)	(610)
(unusable)	(1,187)	(1,427)	(1,691)	(2,454)	(2,432)	(3,468)	(3,175)
Portion (B/A)	2.6%	2.7%	2.9%	3.9%	4.0%	5.2%	4.8%

Also, according to the integration plan of national funds information, the roles of national property management need to be set again. A totally different government account processing system which was different from the existing methods like bookkeeping by double entry was applied and the applied scope of the funds information was expanded to local autonomous entities, government subsidiary institutes, and public companies. Since the plan was to construct a system which can grasp the entire national funds status ultimately, a new systematic methodology is necessary to manage real time information about products' life cycle beyond doing inventory.

Meanwhile, to replace bar codes or magnetic tags generally used in the distribution industry, RFID technology are disseminated. The RFID is a technology that attaches a small electronic tag on the products and reads it with readers remotely.

In the case of using RFID technology, reading several tags at once is possible to save working time, and it is accurate processing because it is processed base on each products' information. In the case of foreign countries, Wall Mart and DoD of the states are using the RFID techology to manage the goods and it is also disseminating to domestic distribution industries like mailing, managing books, goods, wastes etc.

PPS is a coordination organization to manage government property matters, so we are attaching an RFID tag on each products to know whole procedures from purchasing to disposal transparently. The counstruction of RFID property management system solved previously mentioned problems on existing managing system.

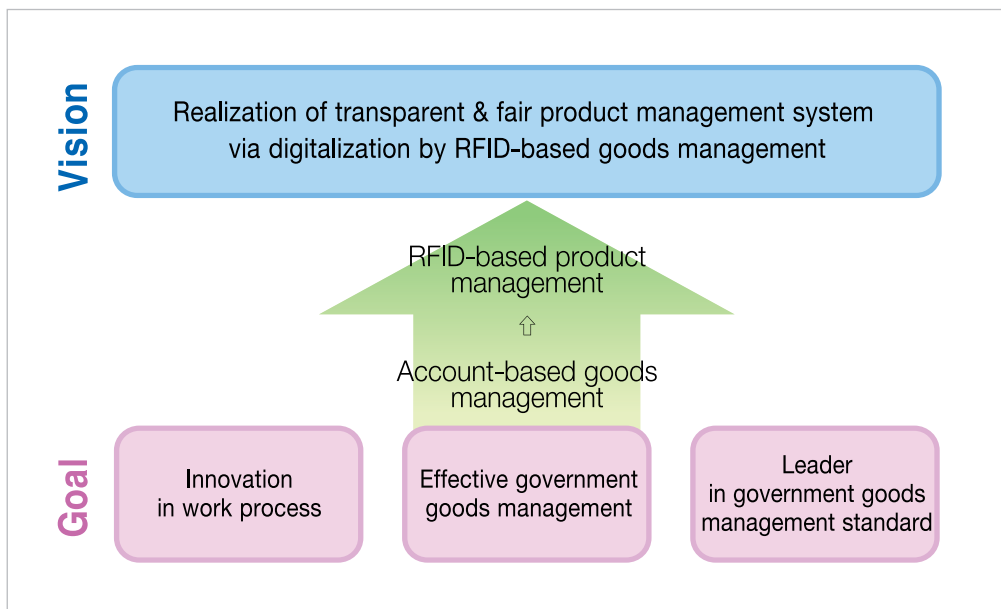
Section 2 Business Mission

Through the construction of RFID property management system, existing national goods progress which had been performed by manual works was transformed to electronic system. Its goal was to realize transparent and efficient system to show standards of managing resources as a advanced nation's system.

First, as a leading national property management organization in the world, PPS should develop a better property management process to provide better service to government organizations.

Secondly, through on-line process of the property management system, every procedure like purchasing, storing, using, inventory ect. should be real-time operated because efficient resource distribution and saving budget becomes possible.

Thirdly, by constructing the standard system of national property information like RFID codes or a guideline for tag-attaching, e-Commerce of civil areas can be promoted. The RFID's diffusion to civil areas is one of PPS' goals.



<Pic. 7> Project Goal

 Section 3
Scope and Contents of the Business

To have an organic processing method for works done among suppliers, administrators, and demanders, PPS set the scope and contents of the business like “Upgrading of RFID property management system”, “Mapping out information strategic plans”, “Diffusion of RFID property management system”, “RFID standardization”, “Improved amendment of relevant laws and regulations” etc.

The RFID property management portal system makes it possible to process procurement works and property management works easily and promptly through analysing the current process of management system, and it should be constructed to be a single window on the fields of procurement.

Considering organizations' desire to introduce the system and their necessities comprehensively, RFID property management system will introduced to all national institutes step by step by 2010. From 2008, PPS will support and share the system and technology, but the desired organization should prepare the cost of electronic tags in principle.

<Table 2> Expected organizations to use RFID property management system

Classification	2006	2007	2008	2009	2010
Central Administrative Organizations (65)	3	23	10	15	All
Local and public organizations	Sharing the desired system and technology				

With preparing a guideline and standards in regards to RFID standardization like tag attachment and attaching goods, compatibility among nations will be preserved and it will lead natural diffusion to national organizations.

For spreading and settlements of RFID property management system usage by civil organizations, PPS amended the regulations, so suppliers should attach tags on goods to supply them and it will be applied to every product registered in KONEPS shopping mall step by stem by year 2011.



Section 4 Business Progress

1. The example construction and diffusion of RFID property management system (Stage 1)

The construction of property management system based on RFID was embarked on July, 2004 when PPS firstly built business plans and it became a selected project in the contest of new technology application business hosted by National Information Society Agency to make a budget. After selecting suppliers on September, 2004, a task force was formed for the innovative system using RFID to analyze, to design, to implement and to testify the system. By gathering opinions and solutions about requirements arose while testifying the system at the weekly or monthly meeting, the demonstration version of system based on the RFID was successfully constructed.

The RFID property management system is improved by complementing the features developed in previous NAFIS system and it was constructed to real-time process every works from registration to disposal using RFID technology. The application for PDA which used in construction sites remotely was developed and programmed by PPS.

Furthermore, through researching activities by the RFID code research team of MIC, own programmed RFID reader for the use of unique property management was developed. The code accommodated the international standards ISO/IEC 15459 and applied KONEPS codes regulated in the information laws to have unified RFID code system in Korea.

2. Mapping out informatized strategic plans (ISP) (Stage 2)

To prepare medium- and long-term measures for developing RFID property management system, PPS mapped out "informatized strategic plans" on December of 2006 through 4 month discussion with receiving budget from National Information Society Agency (NIA)

In regards to the advance of the system, firstly a building plans will be made for an organic processing of every procedure from purchasing to disposal by linking with dBrain to be operated in 2007, KONEPS, on bid, etc.

Secondly, for organizations using RFID system to feel the outcome, providing specific data and training should be done and mapping out necessary system to reflect and testify the actual status of each organization are in need.

Thirdly, it is necessary to seek national measures to have efficiency on managing property because nationwide companies relating to procurement could use the system.

Furthermore, a road map from year 2007 to year 2010 will be made for spreading the system to nationwide organizations which desire to use RFID property management system. PPS will also provide the guideline of RFID's introduction and procurement's tagging regulations as well as the improvement directions to settle the RFID system down.

3. Upgrading of RFID property management system (Stage 3)

Based on the contents of ISP projects in 2006, the business plans was determined on March of 2007, the upgrading project of RFID system was started on May of 2007, and the project was completed on November of 2007.

To establish a portal system which various users can access, PPS examined problems in four organizations which using the RFID property management system and reviewed what improvement is necessary within each organization. This examination was performed and analysed linking with other systems like the digital budget account system (dBrain) to develop a efficient system.

Especially, the dBrain system, which is national organizations' budget account and property management systems, can not check the inconsistency with bookkeeping and the data needs too much manual input works, so it caused a lot of complaints. But, checking with the RFID reader, which can save input data automatically, solved these problems.

The newly built RFID property management system became a property management hub to accommodate more expanded users from existing national organizations to local and public procurement suppliers. As it is possible to check the status and flow of property perfectly, PPS became a leader who is able to making property management related policies and to do on-line inspection effectively.

While developing the system, the diffusion targeting to national institutes started together. On May of 2007, after evaluating the willingness and potential effects of desired organizations to use the system, the organization like the Presidential Secretariat, Prime minister's office was selected to be applied. Through reviewing each

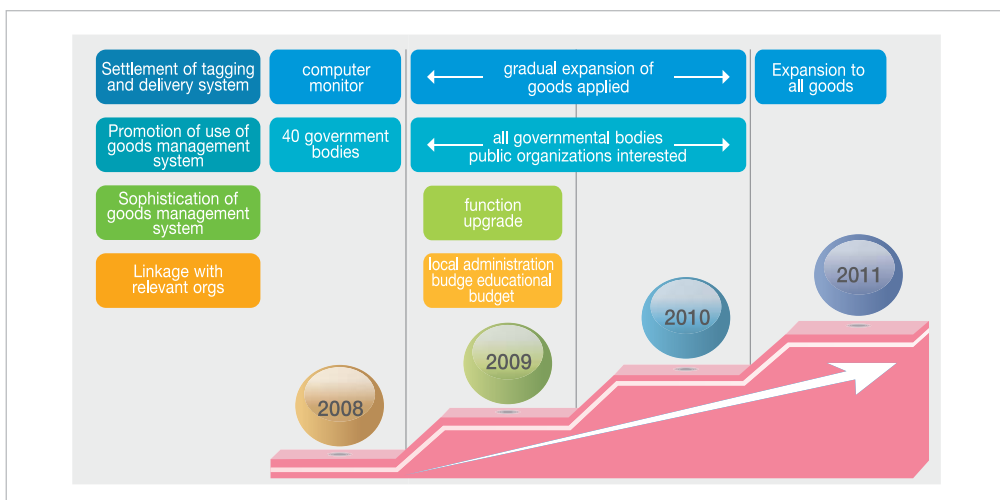
institutes' property, the tag attachment on 800,000 items was accomplished and the system diffusion was completed on November of 2007.

For standardization of RFID property managing codes, the RFID codes based on ISO15459 was used when constructing the property management system in 2005 and the codes was selected as national property management codes after discussing with associated organizations.

To assist organizations to adopt the system in the future, “Guideline for RFID property management” was made to refer to. This guideline include specific information like the introduction of RFID technology and required equipment, expected outcomes using the system, goods possible to attach tags and the attaching position, contents inputting, issuing methods etc.

The same regulations materials also includes RFID target users, how to use, how to register, how to attach the tag, and the general procedures and it has suppliers to attach tags on goods by themselves.

It received positive responses from reducing inspection time for Telly and the workload of managing administrator, and these response helped the system diffusion to other procurement suppliers. By holding hearings with procurement suppliers, the target organizations to be applied will be expanded by year 2011 step by step. The government's RFID diffusion project is expected to influence on about 120,000 companies.



<Pic. 8> Expansion of RFID Utilization



Section 5

Implementation Effects

First, the previous manual works of property management transformed to electronic system to process works accurately and promptly. At the same time, it also saves working time because it is possible to recognize several products at once. The administrator's burden was reduced and the thoughts about the goods managing works were also changed, and transparency and productivity were enhanced,

Secondly, PPS had suffered difficulties to have statistic data on goods information, so we only did inventory. In the case of organizations using RFID system, however, can obtain exact data on stocked goods, so its transparency was improved to apply and join the government new policies and regulation.

Thirdly, by using RFID system, the total working time to process the property management from purchasing to disposal was saved up to 86%. If organizations process by using tagging on the goods, 15 days from purchasing and 400 days from inventory can be saved, so total 1,373 days are expected to be saved by 2011. If the time is calculated to cost, its worth will be 24.05 billion Won.

<Table 3> The effects of productivity improvement by using RFID system

Classification	Manual	Using RFID	Improved Productivity	Standard
Obtaining	80 seconds	30 seconds	167%	Consuming time for processing per case
Movement	90 seconds	30 seconds	200%	
Disposal of disused goods	150 seconds	20 seconds	650%	
Inventory	20,770 seconds	5,383 seconds	285%	Total process time



Section 6

Future Plans for Developments

PPS will expand the achievements from the RFID based property management to every national organizations by year 2010, and they will promote it actively to local organizations and nation invested companies which wish to use it. Through the activities, PPS will foster the RFID property management system to be a hub for all trades of national property management between public organizations. This will realize the efficiency on managing overall national physical resources.

Furthermore, when suppliers deliver goods to the organization which was introduced RFID property management system, the suppliers are expected to attach tags. It will applied only to bulk supply like PCs and will expanded to all products supplied through KONEPS shopping mall by 2011, so the RFID techonolgy will be transferred up to 120,000 suppliers.


In 2008, PPS will attend RFID/USN conference in Korea on October and EPC global US conference in the states on November to present the first case of establishing a property management system which makes is possible to search costs per programs and utilizing RFID linking with the budget accounting system (dBrain) as an example of electronic innovation of government organization.



Chapter 3

Establishment of the Intelligent Product Information System





Section 1 Background

Since the legislation of “Act on the Management and Use of Information on Commodity Lists” in 1991, PPS has been distributing unique numbers to relevant products in order to effectively manage the existing and expected goods which belong to the central and local governments. In addition, it has collected and managed common/individual attribute information of government goods, which enables provision of the standardized product catalog information to the public via cataloging about one million items in total as of September, 2007. The information is currently used by 30,000 public organizations and 120,000 private businesses <Table 4>.

<Table 4> Establishment of PPS e-Catalog (December 2007)

Classification	~2003	2004	2005	2006	2007	Total
Product Info	408,558	93,581	117,907	190,515	238,202	1,048,763
Sum Total	408,558	502,139	620,046	810,561	1,048,763	

In addition, PPS established the Product Catalog Information System based on UNSPSC¹⁾ which was believed to be suitable for e-Transaction in order for the compatibility with private e-Commerce businesses and the observance of the international standard right after the establishment of KONEPS in September 2002. As a result, PPS enabled public organizations and private businesses to effectively utilize functions of product cataloging request and product information search, and it is promoting e-Transaction through linking and sharing private product information. Recognizing product classification and e-Catalog as major factors for public-private

1) UNSPSC (The United Nations Standard Products and Services Code): A code of products and services developed for e-Transaction by the UNDP (United Nations Development Program), a special organization of UN. It is most commonly used world-wide.

e-Transaction, the government realized the necessity of the standardization of the government goods classification and linkage and joint operation of product information between public and private sectors. More over, the Board of Audit and Inspection recommended in July 2001 that PPS conceive a plan to secure compatibility with the B2B e-Catalog of the Ministry of Commerce, Industry and Energy, and the Government Policy Evaluation Committee of the Office for Government Policy Coordination had a determination to apply the UNSPSC code as a classification standard during “the Evaluation on Promotion Policy of B2B e-Commerce” in July 2002. It also suggested the measures for inter-linkage through the private-public cooperative system and information sharing and inter-linkage with the Ministry of National Defense, and presented the necessity of improvement in the private-public cooperative systems such as the formation of joint frameworks based on the UNSPSC code and adoption of the expanded code in industry in April 2003.

The KONEPS product catalog information operated by PPS is used by both public organizations and private businesses, so its use range is far-reaching and including all product items in Korea. Moreover, PPS is doing its duty as the e-Catalog standardization agency for management of industrial products and promotion of e-Transaction. To promote product catalog information owned by PPS, it is required that linking and sharing with not only B2Bs in public sectors but private sectors. Namely, the substantial e-Transaction should be conducted through linkage and sharing of product information.

For effective and useful linkage, the systematic definition and management of the classification system, attribute and terminology should first be first considered, and the meta standard reference system which is or can be linked with several (or all) standards in e-Transaction market is needed.

Meanwhile, the number of B2B businesses which want to participate in public procurement are remarkably increasing, which can contribute to the cultivation of a new market of business and the promotion of e-Transaction. Moreover, the linkage between G2B and B2B is producing social/economic synergy as well as the expansion of market.

Recognizing that the creation of one standard among various standard systems which is

on the rise these days is realistically impossible, PPS established the Ontology²⁾-based intelligent product information system in order to realize linking and sharing e-Catalogs which belong to private businesses in the principle that it accepts variety in standard. The establishment of the intelligent product information system is expected to play a central role as a reference system in e-Transaction in the current point of view that the KONEPS system is activated and various standards is existing in B2B businesses. In addition, the establishment of this standard product information system is anticipated to lower the barrier, so that private businesses can advance into public procuring markets and e-Commercing markets, and be a flexible alternative to multilateral domestic/foreign e-Transaction standards.

2) Ontology (Standard reference system): A next-generation information technology which can define vocabulary or concepts and identify inter-relations between them in order for a computer to share knowledge with a human being, so that the computer can understand the meaning of input information and find the target information. PPS obtained the patent for the ontology of the intelligent product information system in October 2005. This ontology system can establish more than 3,000 cases of product information DBs. When a user inserts relevant information such as product name, manufacturer, model name and specifications, etc., the system provides the user a similar products on a realtime basis by auto-classifying and double-checking overlapping products.



Section 2

Project Goal

Due to the ontology-based intelligent product information system, PPS is using its product information as the substantial national standard, and is promoting the expansion of PPS product information by upgrading the quality of product information which has been provided to internal/external customers.

The promotional strategies of the intelligent product information system are as follows: First, it will enhance the efficiency in maintenance & management of e-Catalogs by streamlining its contents via the standardization of e-Catalogs contents. Second, it will maximize the decrease of content management costs, effectiveness of cataloging process and external reliability by establishing the e-Catalog automation system. Third, it will foster the activation of e-Transaction by setting up the linkage system with private e-Business and sharing product information between private and public sectors in contribution to domestic industry. Last, it will play an essential role as the North-East product hub by establishing the world-first ontology-based product information system and leading the preparation of the linkage base with the international standard.



Section 3

Scope and Content of Project

The scope of the intelligent product information system covers “the establishment of the Ontology-based intelligent product information system”, “the establishment of the e-Catalog contents”, “the automation of e-Catalog management process” and “the establishment of e-Business linkage system” with a view to enabling the product information to be effectively used in public organizations, supplying businesses and B2B through the promotion of ISP <Pic. 9>.

<Table 5> The scope of the establishment of the intelligent product information system

Classification	Main contents
Ontology-based Intelligent Product Information System	Established with a view to accepting variety of standards in consideration of the situation in which various standard systems are on the rise and expanding linkage to B2B.
e-Catalog contents	Established as the system which can maintain consistency in product classification schemas in order to faultlessly share product information because PPS and B2B use classification systems which contains various schemas.
Automation of catalog management process	Established as the system which formalize the classification process and automatically process the procedure by improving cataloging process to minimize a worker's subjective judgement and reducing cost and time caused by old-fashioned work processes in which a business worker used to insert and classify a huge amount of data.
e-Business linkage system	Established as the system used to support mapping and catalog systems in order to link and utilize information between private B2B product information which are categorized by business category or business type and PPS product information.



Section 4 Project Progress

To minimize the risky factors in establishing the product information system which was newly applied and to promote the project successfully, PPS took gradual progresses.

1. Establishment of Private-Public e-Catalog System

PPS made an in-depth review for the promotion of the product information system which had already been operated in PPS and for the substantial utilization policy in e-Transaction. In addition, it visited public organizations such as Ministry of Construction and Transportation (MOCT) and the Ministry of Commerce, Industry and Energy (MOCIE) and private businesses including the e-Transaction forum in order to discuss the possibility of public-private cooperation for the establishment of ideal product codes for e-Transaction based on the Act on the Management and Use of Information on Commodity Lists and the way to standardize different code systems, and finally to ask cooperation for the utilization of PPS product catalog information.

In discussion, two conclusions were induced: 1. B2B should be proliferated through private-public cooperation and 2. the product information system must be established via standardizing goods classification and identification systems which were required in e-Transaction between public & private sectors and private & foreign sectors.

Acknowledging successes in integration of e-Catalog primarily depends on cooperation with private sectors, PPS signed the MOU with the Integrated Forum on Electronic Commerce (ECIF) on the standardization of goods & services classification in September 2002. It also established the MOU with the Korea e-Business Association (KOEB) on support for the B2B pilot project in July 2003, drawing agreements in cooperation for operation between G2B and B2B, mutual supports for the establishment of inter-business network sharing which was established by MOCIE and the establishment of the intelligent product information

system which was established by PPS, and sharing information of the classification & attributes system.

In case of 48 B2B pilot projects in which 2,000 businesses participated, PPS's product information sharing would enable private-public standardization and solve the problem pointed out by the Board of Audit & Inspection and the Office for Government Policy and Coordination.

Meanwhile, PPS established MOU with Korea Hospital Association on the standardization of e-Catalog of medical equipment in March 2004, with Korea Federation of Small & Medium Business on the establishment and cooperation of CMS in August 2004, and with Defense Acquisition Program Administration on linkage and joint utilization of private-military common goods, consequently paving a way to link or share PPS product information.

2. Establishment of the Intelligent Product Information System

A. Establishment of the ontology-based intelligent product information system (stage 1)

Based on “the information strategy planning (ISP) for the establishment of the ontology system”, PPS confirmed the business project in May 2004 and signed MOU with Seoul National University (CSE Laboratory) on “the establishment of the ontology-based intelligent product information system” in the same year.

For the successful establishment and effective management of the system, PPS formed the task force on June 14, 2004 and held the progress report meeting in October 2004 to review and evaluate interim findings.

Problems found in the meeting were analyzed and modified results were reflected in December 2004 on the follow-up processes - “the provision of the standard ontology model,” “the establishment of the standard database,” “the ontology generation system,” “the ontology management system” and “ontology reference system” - and officially began its service in February 2005.

B. 1st enhancement of the intelligent product information system (stage 2)

The objective of this system establishment (2nd) was to promote customer service

and enhance the performance of the intelligent product information system. On the basis of the previously established system in 2004, PPS settled the project plan in April 2005, and concluded MOU with Seoul National University (CSE Laboratory) in May the same year. Moreover, It formed the joint task force with the Korea e-Business Association (KOEB) and held a kick-off meeting to explain the outlines of the system establishment.

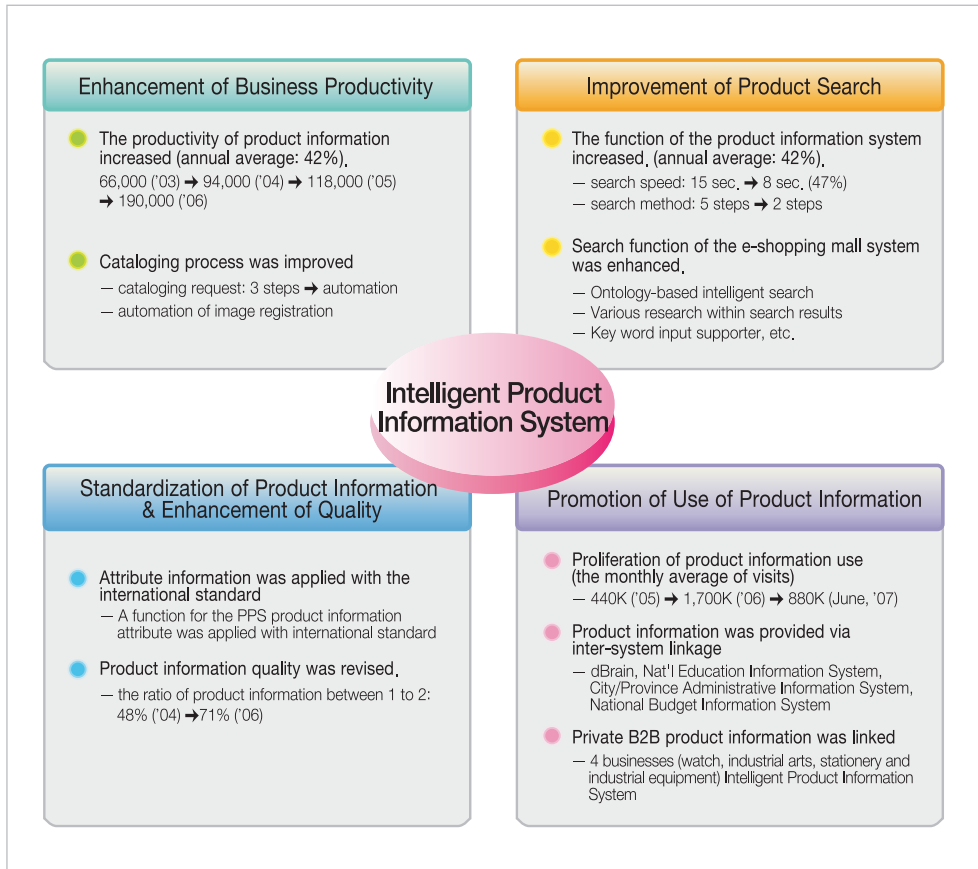
Following the progress report meeting in which interim findings were reviewed and evaluated, and problems were analyzed and changes were reflected, PPS finally finished the whole process system in December 2005-“the support system of automatic generation of ontology-based product catalog,” “the mapping/cataloging support system of the ontology-based B2B-G2B product information” and “the transaction information provision system via linkage between the product information system and the KONEPS shopping mall.”

In addition, with this world-first application of the ontology technology to product information, PPS held a patent for invention in the same year.

C. 2nd enhancement of the intelligent product information system (stage 3)

PPS have the project plan complete in July 2006, and concluded MOU in August with Seoul National University (CSE Laboratory) on the system establishment in order to improve the performance of the intelligent product information system, enhance product information quality and develop the ontology-based product information search system (upgraded the KONEPS shopping mall). Furthermore, it formed the joint task force with the Shopping Mall Team, held launching meeting on August 29, and gave a presentation on the system establishment.

The interim meeting in which interim findings of the project was reviewed and evaluated was held in November. Problems were analyzed and modified contents were reflected on the revised project, and “the ontology-based product information search system on the e-Shopping mall,” “the product attribute information registration standard/automation system” and “the product image registration automation system” were established in December 2006.



<Pic. 9> Establishment Effect of Intelligent Product Information System



Chapter 4

Integrated Supplying Business Through DW (Data Warehouse)³⁾





Section 1 Outline

Users save and search data in the database in order to conduct business using infrastructures such as EDI and the KONEPS system. When a user gives an order to extract data from the same database for extra analysis of information, the system can be overloaded, consequently causing substantial disruption to prompt business process. In addition, the infra system was generally designed in database type for business process, so it is not suitable for various and professional information analysis. Thus, it is necessary to establish separate database systems to analyze information for decision making of PPS officials and public organizations, and extract statistics information to meet user's demands. In this regard, PPS promoted development of the DW system as part of “the integrated procurement information system (DW) and e-Market place projects” for 10 months from June 19, 2001. The first established DW model is composed of common reports which can enable 516 multi analyses by collecting user demands based on lots of reports of the procurement EDI program (domestic/foreign procurement, construction, stockpiling, accounting and public administration-related supplies) which had already been used.

Moreover, PPS launched the second DW project from September 2, 2003 to September 1, 2004 as part of “the enhancement project of customer-oriented service of the national integrated e-Procurement (G2B),” which was supported by the Ministry of Information and Communication through the information project in 2003. However, the procurement accounting service was excluded from the DW establishment scope of the enhancement project in the background that the service is to be classified as an original procurement work according to the informatization support program, so the service was used in linkage to the system which was established in the first DW project.

In the second project, 1,381 multi analyses and statistics reports were developed by reflecting surveys from the procurement EDI works (domestic/foreign procurement, construction, stockpiling and public administration-related supplies), various KONEPS reports, employees of PPS & public organizations and supplying businesses based on the DW system which had been established in the first project.

3) DW (Data Warehouse): A database used to convert data in databases of an infra system to a common format and manage them in unification. It is utilized as an information management system supporting internal decision which includes in function data storage and analysis. In PPS, it is referred to as the procurement EDI system.



Section 2

Details of Contents Established

A Data Mart⁴⁾ for the support to marketing and CRM (Customer Relationship Management) in order for PPS officials who use the DW system and KONEPS users to conduct their own businesses without problems with the procurement EDI which is the source of the integrated procurement information system (DW) and KONEPS.

<Table 6> Established Contents in Business and Information Classification

Classification	Strategy & Management Information	Comprehensive Analysis	Domestic Procurement	Foreign Procurement	Construction	Administration	Stockpiling	KONEPS (In)	KONEPS (Ex)	Total
Decision Making	120	164	35	0	12	3	26	0	0	360
Statistics Analysis	0	0	208	84	187	281	74	109	78	1,021
Total	120	164	243	84	199	284	100	109	78	1,381

<Table 7> Background Operation

Classification	ODS table	EDW table	Cube	ETL program
Total	469	467	29	828

1. Establishment of Integrated ODS & EDW

PPS established ODS (Operation Data Store)⁵⁾ by integrating data which had been separated by works (procurement EDI, KONEPS, catalog) into data which were end users/suppliers/goods-oriented. With the integrated ODS, it could accumulate infra system data on a realtime basis, minimize overloads of the procurement EDI or KONEPS when

4) Data Mart: In general a data mart is a small-sized data warehouse which extracts and store some data which attract a certain user.

5) ODS: Operation Data Store

users searched for information via DW and provided the ground of DW development.

In addition, PPS set up EDW (Enterprise Data Warehouse) to help a user extract an analysis tool or statistics reports in a best optimized manner which were needed in view of a user, and to make up the Data Mart which had been needed in a unit business, enabling it response to a user's demand as fast as possible.

In particular, the ETL⁷⁾ process which extracted and transform all data provided by the DW system and load them into the EDW⁸⁾ is conducted from 00:30 through 07:30, when the EDW table and CUBE is generated, and thus, a user can get necessary outputs through an analysis tool and a statistics report.

2. Decision Support and Establishment of Statistics Analysis Model

PPS first laid groundwork for the supporting system to strategic decision making of both the internal customer of PPS and customers of public organizations and supplying businesses. It also set up multi-dimensional data model to analyze information effectively and profoundly using OLAP (On Line Analytical Processing)⁹⁾ and added a variety of statistics information and visual functions to support decision making.

Above all, the DW portal screen was separated according to the interests of internal users such as senior officials and normal employees. For senior officials, it designed the screen to provide necessary information for general analysis of procurement business and decision making process; for normal employees, it formed the screen to furnish detailed data for tasks concerned and reports for statistics analysis. Beside the separation, PPS improved the system to provide customized services by characteristics of central/local offices.

7) ETL (Extraction, Transformation, Loading, synonym with ETT): All processes, such as extracting necessary data from the source system, transforming, transferring and loading it to the target system.

8) EDW: It include not only the DW-expanded model that emphasizes various inter-system interface and data integration which occurred in a course of trying to expand the existing DW to company-wide bounds, but also BPR domains which contain process standard and improvement of business information. Further, it becomes the data source for various analytic applications, such as CRM and BSC.

9) OLAP: Utilizes the data collected through a process by which a user analyzes information by an interface style from various angles.

The screenshot displays the Administrator's Portal interface. At the top, there is a navigation menu with options like '전략경영정보', '종합분석', '내자', '행정용품', '시설', '외자', '비축', '경리', '나라장터', and 'My Documents'. The main content area is divided into several sections:

- 2005년도 조달사업 집행실적(2005.09.14)**: A table showing procurement performance by category.

구분	연간계획 (A)	전년동기 실적(B)	집행실적 누계(C)	진도(%)	
				계획대비 (C/A)	전년동기 대비(C/B)
총계	238,600	162,713	175,803	73.7	108.0
내자	96,800	73,620	69,885	72.2	94.9
시설	124,000	80,299	96,004	77.4	119.6
외자	6,600	3,877	3,965	60.4	102.8
비축	11,200	4,917	5,928	52.9	120.6
- 일일 입찰 및 시당 결과 / 계획**: A section for daily bidding and results, with sub-sections for '구매' and '시설'.
- 회전자금 시재액 현황**: A table showing current cash status.

전일시재액 : -100억원 (단위 : 억원)						
06월 15일	07월 15일	08월 15일	09월 15일	10월 15일	11월 15일	12월 15일
3,529	1,160	880	-100	6,220	6,382	6,518
- 조달요령증감추이정보**: A table showing procurement order trends.

소관별	전체	국가기관	지자체	교육기관	투자기관	임역기관
건수증감률	2.3%	12.7%	-2.4%	2.7%	0.3%	7.7%
금액증감률	-25.5%	-44.7%	2.7%	-36.6%	-24.6%	40.9%
- 계약 대기현황 : 총 599건 (금액 : 2,100억원)**: A table showing contract waiting status.

구분	건수	금액
구매	599건	2,100억원
시설	0건	0억원
- 중앙조달과 자체조달 규모 비교**: A table comparing central and self-procurement.

	물품	시설	용역	합계
중앙조달	6,847 (82%)	40,638 (65%)	532 (11%)	48,016 (63%)
자체 조달	1,481 (18%)	22,154 (35%)	4,501 (89%)	28,136 (37%)
합계	8,328 (100%)	62,792 (100%)	5,033 (100%)	76,153 (100%)

<Pic. 10> Screen of Administrator's Portal

The screenshot displays the Normal User's Portal interface. At the top, there is a navigation menu with options like '전략경영정보', '종합분석', '내자', '행정용품', '시설', '외자', '비축', '경리', '나라장터', and 'My Documents'. The main content area features a banner for 'DW Portal Service' and a dashboard with several service icons:

- 구매 권의중**: [2건]
- 공고 대기**: [0건]
- 계약 대기**: [5건]
- 계약 대기**: [1건]

Below the dashboard, there is a section for '공지사항' (Public Notices) and '신규(수정)레포트' (New/Updated Reports).

<Pic. 11> Screen of Normal User's Portal

The number of reports were 1,400, which were prepared within DW to assist decision making and statistics analysis. It provided the 'My Documents' folder in order to enhance a user's convenience including report access in case that the user wanted to manipulate the data that he/she used to make use of, and added search function, so that a user could easily find the data he/she needed and run the report on the report menu searched.

On the other hand, PPS made it easier for a user to search and use 78 of all reports in the integrated procurement information system.

<Table 8> Analyzed details in analysis types

Analysis Type	Analyzed Details
Strategic management information	procurement performance, management information, public org./supplier information, main contract information, etc.
Comprehensive analysis	customer analysis, purchase/deliver/provision analysis, commission analysis, per-business EDI history, etc.
Domestic goods	contract, delivery, purchase & provision, termination, accounting-related statistics, etc.
Foreign goods	purchase performance, shipping status, purchase service, etc.
Stockpiles	general statistics, settlement statistics, future option statistics, etc.
Storage	statistics, purchase, contract, provision, termination, stock-related statistics analysis, stock lists, etc.
Accounting	current collection resolutions, uncollected amount, payment, return by business, etc.
KONEPS	use record of KONEPS, basic statistics of KONEPS, etc.



<Pic. 12> Screenshot of DW Analysis Information Search System



Section 3

Establishment Effects

PPS can provide immediately diverse decision support information and statistics analysis information which are needed by internal users and external customers (public organizations and supplying businesses) due to the establishment of the integrated procurement information system. Therefore, this system can not only back up all public organizations and supplying businesses which use KONEPS with decision support and the enhancement of customer satisfaction, but also assist PPS with the establishment of marketing strategy by analyzing various types and patterns of customers.

Moreover, it reduced time and money for searching and recycling information, and removed inefficiency in repeated works, thus increasing effectiveness of works.



Part 6

Leading the World via Expansion of KONEPS

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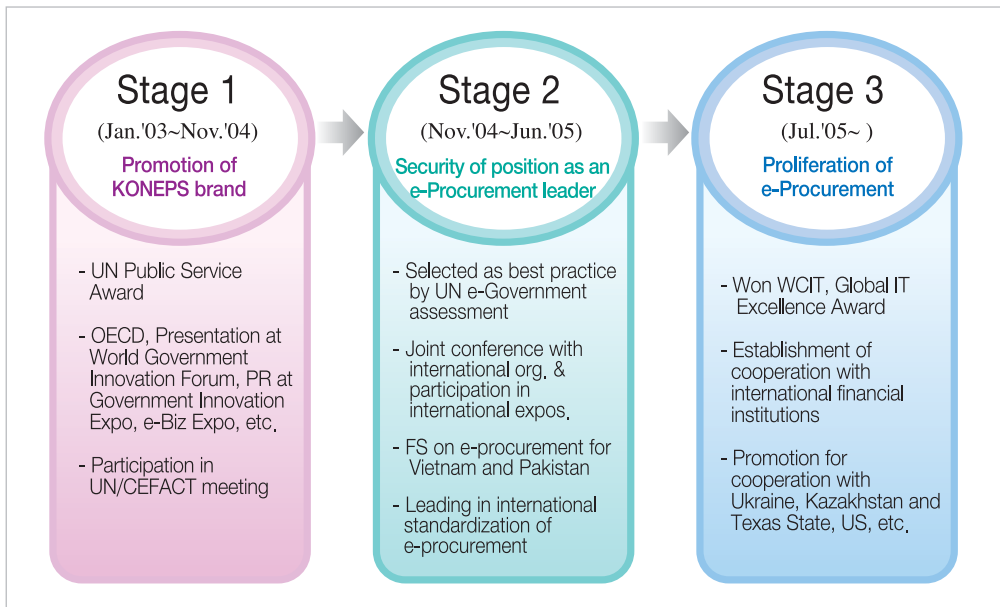
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Chapter 1

KONEPS, a Global Market of the World





<Pic. 1> Promotion of e-Procurement into the world



Section 1

Promotion of KONEPS as a Global Brand

With the First UN Public Service Award in 2003 and the WCIT Global IT Excellence Award in 2006, KONEPS gained its reputation of excellence in the world. However, PPS did not find satisfaction in them, but intensified its international cooperation activities by proclaiming ‘KONEPS,’ the English name of Narajangteo in October 2006 which had been used as the domestic name for the national e-Procurement system. As a result, it made a tangible achievement that the KONEPS brand was chosen as one of the 2006 government selections, the international-authorized brand and one of 10 government innovation brands. It is still serving to run an e-Procurement capacity building program for developing countries, regional joint seminars, and trying to export e-Procurement policy to Central & South American regions.

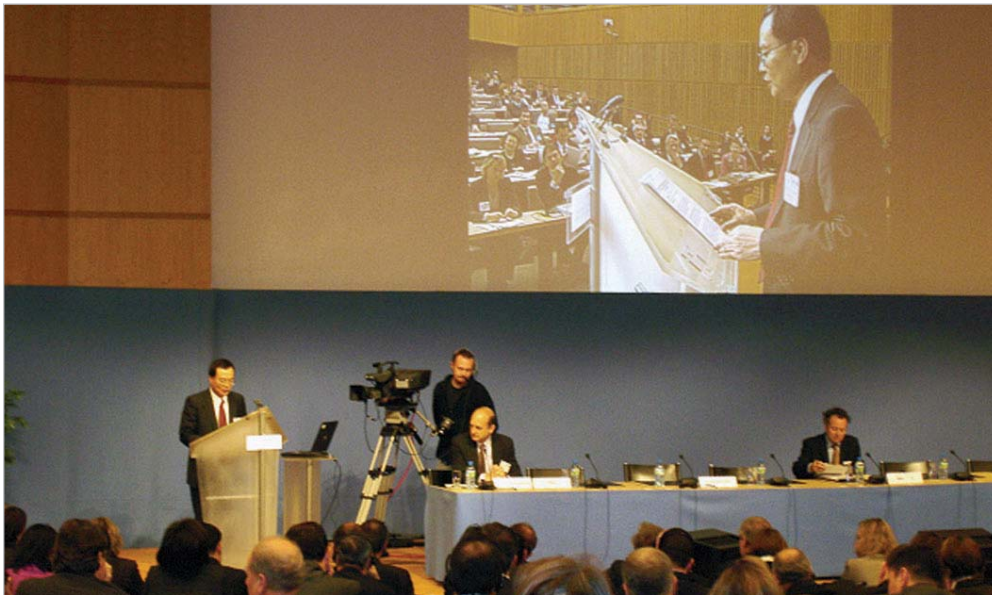
As the first step for public relations of the KONEPS brand, PPS began a series of activities coupled with international institutions. It classified external customers into



four groups - a general civilian, a specialist group, a potential customer and an existing customer - and selected target countries for the export of KONEPS in an attempt to sublimate a commercial-level PR or a sporadic event, and promote a marketing-typed PR activities to upgrade the brand value of an agency and its service.

Since the service competitiveness, supported by KONEPS as the national integrated procurement system, gave satisfaction to both the public organization and the supplying business, its project gained its foothold in the e-Government project from the beginning. Based on this name recognition, PPS gave presentations in various international conferences jointly with international communities, such as UN, the World Bank, Asia Development Bank (ADB), Inter-American Development Bank (IDB), International Anti-Corruption Conference (IACC), etc. In particular, PPS administrator promoted KONEPS at 'The Global Forum on Governance: Fighting Corruption and Promoting Integrity in Public Procurement' in Paris in November, 2004 through his keynote speech with the title 'Policy for Fighting Corruption and Increasing Transparency in Public Procurement.'

<Pic. 2> OECD Anti-corruption Global Forum on Procurement



PPS Administrator Choi gives a presentation at 'OECD Anti-corruption Global Forum on Procurement', France. (November 11, 2004)

Since then, PPS has served to disseminate the superiority of Korean e-Procurement in international arenas more than 160 times from 2003 to 2007 through presentations on e-Procurement practice at diverse events, such as diverse international workshops and exhibitions. To realize international standardization, PPS has continuously participated in the groups (TBG 17 and TBG 6) of UN/CEFACT, and finally had the KONEPS bid processes reflected in the UN standards in 2005. In 2006, each article of the KONEPS e-Documents on the processes was reflected in the UN standards.



Section 2

Initiation of Know-How on e-Procurement Administration into 50 Countries

PPS intensified international marketing for the purpose of promoting KONEPS as an e-Procurement global brand; in this respect, it reached in range not only to Southeast Asia, but to ECA (Europe and Central Asia) and Central & South American regions. It also endeavored to share success story and experience with international societies and expand its practices in the world by giving presentations and co-hosting international workshops with international institutions including the World Bank. In the result of those efforts, the KONEPS brand became more famous as the symbol of e-Procurement in the world than inside the country.

The name recognition gained in international communities made Korea the target nation for benchmarking from foreign countries. Not only Asian countries including Japan, China, Hong Kong, Taiwan, Vietnam, Pakistan, Sri Lanka and Laos, but other 50 foreign countries such as Turkey, Costa Rica, Brazil, Ukraine, Russia and Romania dispatched benchmarking squads to Korea in order to inherit know-how on e-Procurement administration. In consequence, PPS won an official commendation by the Office for Government Policy and Coordination in November 2005 for its recognition as ‘the most learned government policy by foreign countries.’

In acknowledgement of these performances, there are not a few countries which try to discard the tradition of merely taking a visit to Korea for presentation, but instead, to send their study tour delegates to PPS to learn in-depth knowledge, such as the strategy of system establishment, encryption and operational method, etc. Delegates from Bangladesh, Vietnam, Mongolia, Thailand, Saudi Arabia in Asia and even Ethiopia in Africa dispatched specialists to Korea with an aim to get a deep knowledge of KONEPS for two or four days. Moreover, Malaysia, whose e-Procurement system was developed and provided by a private company sent to Korea and supported its system developers and high-ranking officials of the Ministry of Finance to be trained at PPS for several days to upgrade its system performance.

Particularly, at the end of 2007, Alan Garcia Perez, the president of Peru, who himself



had expressed a plan to establish the e-Procurement system in his country, made a request to Korea through the CEO of PetroPeru the government-owned corporation to present KONEPS to the Peruvian government in view of the innovation in public procurement. Accordingly, PPS sent a special group to Peru and gave a presentation on innovation in public procurement administration and a diversity of services provided by KONEPS in front of about 400 public servants on Peru.

Section 3 KONEPS as the English Brand of 'Narajangteo'

'Narajangteo' was created through public suggestion in 2002. PPS made a plan to entitle the legal name, 'the national integrated e-Procurement system,' a new name through the internet in November 2002, to make it easier for people to call and remember it. The conduction of



<Pic. 3> KONEPS Logo

public naming contest was made to promote a new system as well as the decision of a new brand name. A total of 3,925 join the event, and the judges concurred in selecting 'Narajangteo.' As of 2004, PPS has created and applied the agency symbol mark, the



<Pic. 4> KONEPS Proclamation Ceremony

character (Narmi) and the slogan for agency-wide image integration.

As a matter of fact, Narajangteo has been settled as the domestic brand of the national integrated e-Procurement system since 2002, and recognized as one of the best and well-made Korean brands. In case of the English name, however, GePS (Gov't electronic Procurement system), the modified English version of the national integrated e-Procurement system, was not considered to be original and characteristic. PPS searched and found that each country has its unique and original image, slogan and brand name. It was necessary to make a new and striking English brand which could easily appeal to people in the world in order to push GePS up to the international brand. Hence, it changed GePS to KONEPS in October 2006, which was born by the public contest, and set sail for globalization of the brand.

From GePS to KONEPS

PPS changed its name of e-Procurement system from GePS to KONEPS.

KONEPS is the abbreviation of Korea ON-line E-Procurement System, the name that considered originality, pronunciation and mnemonics. Most of all, KONEPS gained the highest point among internal employees and experts in that the pronunciation reminds people of 'Synapse, a junction of neural networks of a human body, which can also recall the Korean synapse.

In addition, the Taegeuk line which represents a fast and accurate e-Business was added on the design, so that it can appeal to both the inside of Korea and the world. This concept of design was not merely applied to be in harmony with PPS symbol mark, but to be expanded in application to 'Korea Business Platform', the brand slogan of KONEPS.



Chapter 2

Infrastructure for Policy Export



The objective of a series of activities in which PPS promoted KONEPS as a global brand in e-Procurement and expanded e-Procurement in the world jointly with international organizations were not simply to let the world recognize the excellence of KONEPS. Gaining international recognitions of KONEPS would be the best solutions to a public distrust of government procurement. International acknowledgment made it possible for e-Bidding process of KONEPS to be reflected to the international standard, and further to find some achievements.

On the other hand, one thing unsatisfied is found that the policy export and international cooperation of KONEPS had not been processed based on mid/long-term strategy, but had been done periodically. Up to those days, PPS had processed international activities in sporadic manners, so it was in want of comprehensive networks to link a policy export to a system export. Therefore, an idea was suggested that PPS needed to have a focus more on the export of KONEPS policy and the establishment of the master plan for international collaboration in terms of systematic promotion of strategy than simple presentations or co-hosting of workshops. Moreover, it was necessary that PPS establish a mutual tie for cooperation with the Korea International Cooperation Agency (KOICA) and the Export-Import Bank of Korea (KEXIM) which are in charge of financial support.



Section 1

Promotion of Cooperative System with Relevant Associations

To foster the effective international cooperation, PPS signed MOU with domestic institutions concerned including KEXIM, and reorganized internal systems.

It spent huge amount money and time (about over two years) to establish partnership with countries interested in e-Procurement to maximize synergy via building up partnership with relevant agencies promoting international collaboration.

PPS delegation took a visit to the World Bank, IDB and ADB to construct human networks in 2005, and established MOUs on business cooperation in 2006 with the Korea IT Industry Promotion Agency (KIPA) which was responsible for e-Government cooperation with foreign communities and KEXIM which was in charge of Economic Development Cooperation Fund (EDCF). In addition, PPS signed an MOU with the

Ministry of Information and Communication (MIC) in January 2006, with an aim to share external information of e-Procurement, so as to support EDCF to potential countries which was expected to introduce the e-Procurement system to their home.

The MOU signed with KIPA and KEXIM included the cooperation in regard to laying the groundwork for mutual aids from the business initiation, so that they could promote the advancement of e-Government to foreign lands by means of overseas expansion of relevant businesses and promotion of inter-government collaboration in economy. Moreover, it reached an agreement with the Korea Agency for Digital Opportunity and Promotion (KADO) in co-hosting an e-Procurement capacity building program for developing countries, and drew a promise from KOICA to support each other in the event of establishing an e-Procurement pilot system in Vietnam.

1. Cooperation with KIPA: Support to the feasibility study (FS) for developing country

Collaborator	Collaboration in Detail
PPS	• cultivation of a target country, provision of cooperative relation
	• discussion on F/S implementation and follow-up business
KIPA	• financial support for F/S
	• selection of the business for F/S

2. Cooperation with KADO: Conduction of training for officials of developing countries

Institution	Collaboration in Detail
PPS	• exploitation of a new target country
	• program design, education material and training
KADO	• administrative details
	• full payment of expenses for invitations, training, etc.



3. Cooperation with KOICA: Support to the establishment of an e-Procurement pilot system in Vietnam

Org.	Collaboration in Detail
PPS	<ul style="list-style-type: none"> • cooperative base, completion of F/S <hr/> <ul style="list-style-type: none"> • discussion on the establishment of an e-Procurement pilot system, legal framework and consulting on e-Procurement
KOICA	<ul style="list-style-type: none"> • financial support for the pilot system <hr/> <ul style="list-style-type: none"> • selection of a system establisher and implementation of the projec



Section 2

Co-host of e-Procurement Workshop with International Financial Institution

To promote expansion and dissemination of e-Procurement in the world, PPS embarked upon an international business of collaboration together with international organizations including the World Bank, which are holding information and funds for developing countries. It held an international workshop on e-Procurement jointly with ADB and UNESCAP in June 2005, and successfully finished an e-Procurement which was held in Astana, Kazakhstan in May 2006 visited by Kazakhstan officials and relevant staff responsible for e-Government.



- 60 experts from 34 countries and international organizations participated in the workshop. (UNESCAP Secretary & ADBI Dean participated)
- Mainly discussed on each country's e-Procurement practice, successful story, security standardizations, legal frameworks.

<Pic. 5> e-Procurement Workshop (Jun. 2006)



- 17 high-ranking officials including administrator and director general of Kazakhstan, Azerbaijan, Armenia and Georgia participated in the event.
- 4 senior consultants from the World Bank joined.
- each country's e-Procurement practice was presented and inter-country cooperative strategy was discussed.

<Pic. 6> Joint conference with the World Bank (Nov. 2006)

Encouraged by the success, PPS held a workshop on innovation in e-Procurement in Seoul in November 2006 with participation of officials from 4 countries in ECA region. This Seoul workshop in which high-ranking officials from 4 countries - Azerbaijan, Kazakhstan, Armenia and Georgia - participated attracted attentions from participating countries in the Korean procurement system and KONEPS.

In return for the event, PPS dispatched an official group which was made up of public officials & private specialists including a KONEPS developer to the ECA 4 countries in January 2007. It had opportunities to meet with a minister of finance in each country and discussed mutual collaboration. In particular, it signed an MOU with Armenia and Georgia on education, consulting on e-Procurement.

In January, 2008, PPS hosted an e-Procurement workshop in support of the Inter-American Development Bank (IDB) in Panama, targeting 23 countries in the Central & South American region (CSA) and the e-Procurement capacity building program with IDB in Seoul in June with 15 participants invited from 4 countries (Costa Rica, Jamaica, Peru and Uruguay) in CSA. Moreover, PPS held an international e-Procurement workshop with a title, 'Workshop on Government Procurement Reform through IT' jointly with the African Development Bank (AfDB) in Seoul on October 27-30, 2008, which was visited by 19 high-ranking officials from 9 African countries and organized in line with the 2nd KOAFEC Ministerial Conference. Among them, Tunisia and Senegal which were interested in an e-Procurement system signed the MOU on e-Procurement cooperation with PPS, in which PPS and its partner country came to an agreement that they would support to the education and training for e-Procurement and provision of relevant consulting and other technical assistances.

Without resting on this position, PPS is planning to gradually expand this cooperative business with a new international financial mammoth partners like AfDB in order to disseminate the KONEPS-based e-Procurement system in the world, subsequently not only leading the globe in e-Procurement, but further being a frontier in u-Procurement, the next step for procurement in the near future in harmony with other u-Procurement-related international institutions and societies.



-15 specialists from 4 CSA countries and IDB participated in the workshop.

-PPS and 4 country-participants had a chance to share with each other their best practices, successful stories, security standardizations and legal frameworks.

<Pic. 7> e-Procurement Capacity Building Workshop (Jun. 2008)



-19 IT and procurement experts from 9 countries and an official of AfDB joined the workshop.

-Aimed to learn each country's e-Procurement practices, useful information in public procurement, best practice of PPS in government innovation through e-Procurement, etc.

<Pic. 8> e-Procurement Workshop (Oct. 2008)





Chapter 3

Export of KONEPS to the World



Countries in the world are very active in introducing the e-Procurement system in their country to enhance transparency and efficiency in public procurement which covers 10~20% of GDP in total. The advanced countries has been operating the e-Procurement system with their own IT technology, and developing countries are promoting IT business via the support from international organizations including the world bank.

As for the advanced country, each system provides separated services by its content, but KONEPS provides integrated services from business registration, bid, contract and to payment, which help to gain competitiveness. Above all, the e-Procurement system was involved in the WTO Agreement on Government Procurement and FTA, by which the expansion of e-Procurement in the world is a matter of time.

As KONEPS was recognized as the e-Procurement 'best practice mode' from international communities like UN, the chance for KONEPS export became higher. Based on the request of Vietnam for the support to the e-Procurement pilot system, PPS is planning to establish the system during 2008 via the ODA program of the Korean government. By this, the KONEPS-based e-Procurement will be established outside Korea for the first time. In 2007, PPS helped the Armenian government with the preparation for a business proposal in consultation in order to establish the e-Procurement system, and supported Mongolia and Georgia governments with feasibility studies on the establishment of the e-Procurement system. In addition, it held a workshop on e-Procurement for procurement experts in Peru, coming to an agreement that each government will continue cooperative relations for e-Procurement.

In consideration of KONEPS export, PPS modularized an e-Bidding part to have it accustomed to foreign procurement process in September 2006. It means, PPS made an effective preparation for the export of KONEPS to foreign countries by modularizing major parts of e-Bidding process from bid notice to awarding in goods, construction and service areas in case that a foreign government requests for the e-Bidding system applied to KONEPS.



Section 1

Promotional Strategy for KONEPS Export

PPS established 'Promotion Strategy for KONEPS Export' in January 2007 so as to expand and disseminate KONEPS to global societies.

It first classified target counties by region, and then graded them according to economic level, IT infrastructure and strong will to introduce the system. In this way, PPS can differentiate them in a cooperation scheme and maximize the limited power of international cooperation, which PPS believe will make it faster to realize the KONEPS export. Regarding a country

which shows positiveness in introducing the system, PPS will assist it with FS, and based on the result, it will gradually promote the establishment of the e-Procurement system jointly with domestic institutions related to financial support for a transitional country.



<Pic. 9> 4 Steps for KONEPS Export

PPS selected target countries after grasping levels of and interests in e-Procurement of those countries to export KONEPS. The selection progress is as follows: First, a country's will should be considered based on participation of benchmarking and international workshops, followed by IT infrastructure, corruption degree and economic trade level. Second, education and training should be done against targeting countries. After supporting e-Procurement training for target country officials by utilizing programs run by KADO and KOICA, a potential country of e-Procurement business among target countries is to be assisted with FS. Expenses for this program are to be supported by KADO and KOICA. Regarding the country which was supported with FS, PPS will provide it with an e-Procurement pilot system (grant) and promote the e-Procurement system export. Last, considering the country which is provided with the pilot system, the establishment of the e-Procurement system through an EDCF loan will be promoted.

Based on this strategy, PPS administrator took a business trip to 4 ECA countries in January 2007, and signed MOUs with Georgia and Armenia on cooperation in e-Procurement.

Meanwhile, the Mongolian delegation which visited PPS for KONEPS benchmarking in March 2007 expressed its strong drive to develop the e-Procurement system like KONEPS, requesting for the FS in the Mongolian government.

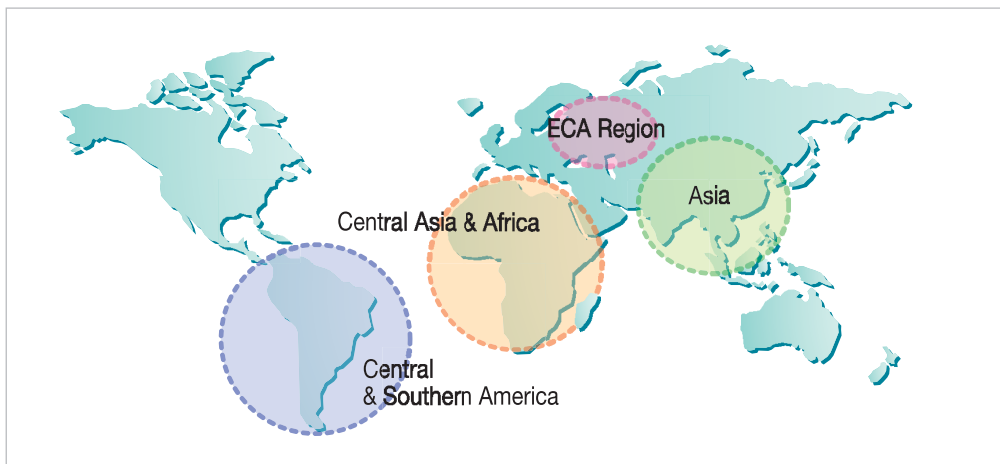
As a follow-up, PPS is in the discussion of the establishment of the system in Georgia and Mongolia by using ODA (Official Development Assistance) on the result of the FS consulting, and the Mongolian government is under consultation of the development of the e-Procurement pilot system in the near future. In regard to the Vietnamese government which was more active in introducing the e-Procurement system in its country, PPS will assist in setting up the pilot system in 2008 in joint support with KOICA.



Section 2

Selection of the Target Country for e-Procurement

PPS drew up 4 groups according to the potential of developing countries with a view to exporting KONEPS.



<Pic. 10> 4 Regions for e-Procurement Export

It first divided them into 4 groups based on IT infrastructure and economic level, and then set up different strategies on the groups. This tactics resulted from the judgement that all the projects essentially depend on our financial condition despite the fact that developing countries long for the our technical assistance. The table below is a classification of 4 groups based on the ODA program.

<Table 1> Classification based on the Potential

Classification	EDCF-linked	Potential	KOICA-linked	Priority applied
IT Infra Level	Above Avr.	Below Avr.	Above Avr.	Above Avr.
Economy Level	Above Avr.	Below	Avr.	Above Avr.
CPI	Avr.	Below	Avr.	Avr.
EDCF Potential	○	○	○	×
KOICA Potential	×	○	○	×



Section 3

Education and Training for Target Countries

To establish the infrastructure for developing the e-Procurement system, a training program takes its part. PPS has shared its know-how of e-Procurement with more than 30 countries since 2003. There are countries increasing in the number which dispatch their study tour team to Korea in order not only to learn know-how on success in e-Procurement, but also learn more deeply about detailed information, such as technical parts including the establishment strategy, encryption and operational methods. To meet this demand, PPS has developed a new paradigm of education and training suitable for target partners and provided customized programs to them. It also provided a special program in order for visitors to experience excellence of KONEPS through English virtual experience program of KONEPS, and published and distributed KONEPS PR CDs in their languages. Indeed, it promoted international cooperation with some of CIS countries which showed interests in e-Procurement when visiting those areas in January 2007 with the Russian-version KONEPS CD. Moreover, it made PR CDs in other languages (Chinese and Spanish) and displayed at an e-Government exhibition, and used them for marketing tours.

It broke from the one-way trade of providing our information to benchmarking delegates; instead, it changed its paradigm of communication in which it encouraged visitors to exchange procurement-related information with each other, so that it can accumulate various information of countries, and thus it would develop another win-win program for e-Procurement cooperation by utilizing those data.

With this content, PPS hosted an e-Procurement capacity building program for developing countries jointly with KADO on July 3-10 (8 days) in 2007.

KADO was in charge of invitation budget and program operation, and PPS supported the program with decision on target country and program design. PPS confirmed 19 members from 12 countries including Asia, Africa and Central & South America based on recommendation from existing countries and each embassy.

The program was focused on the infrastructure for e-Procurement including the

purchase system and construction contract system in Korea. It also contained the program of visit to relevant institution and culture to introduce the development process and cultural section in Korea. Most of all, lectures on e-Procurement infrastructures required for e-Procurement, such as ‘regulations on e-Transaction,’ ‘encryption & e-Signature’ and ‘e-Catalog’ became the main attraction of participants.

PPS will not stop to prepare for education & training programs for the expansion of e-Procurement to developing countries in the future. In addition, it is making all-out efforts to provide a best environment for maximization of internal performance for the purpose of supporting these programs. It focused on cultivation and management of a new partner country by recruiting an international cooperation expert to enhance information analysis of e-Procurement level of other developing countries and their interests in introducing the system in foreign countries. To improve internal English proficiency, PPS has been running an English study club (With KONEPS) to help relevant employees improve their English and have an opportunity to use English to communicate with foreigners, thus upgrading their professionalism.



Section 4

Visualization of Policy Export by Dispatching a Market Exploration Team

The Market Exploration Team that intends to investigate validity of e-Procurement is very important in terms of policy export strategy of KONEPS.

PPS, in 2005, dispatched the market exploration team to South America along with MOFAT and KOTRA to introduce KONEPS to government officials who work for procurement, finance and e-Government and to provide e-Procurement related technology consulting. In Peru, exchange of procurement information and the future cooperation with a director of procurement department and high ranking lawmakers were discussed.

In January 2007, government and non-government joint KONEPS team was dispatched to Kazakhstan, Azerbaijan, Georgia, and Armenia and had meetings with minister of finance and procurement department who are in charge of procurement administration to construct the cooperative system on e-Procurement. MOU was finished with Georgia, and Armenia and in Armenia there was held an interview with media to promote the superiority and efficiency of KONEPS.



Clockwise from the left: Meeting with the Minister of Finance of Kazakhstan (Jan. 24, 2007)

Meeting with the Deputy Minister of Information and Communication of Azerbaijan (Jan. 26, 2007)

Press Conference with Armenian journalists (Jan. 31, 2007)

<Pic. 11> Visit of PPS Administrator to ECA Countries



- Signed MOU with Georgia on e-Procurement cooperation in November 2006, which was resulted from PPS-WB joint workshop. (Jan. 2007)
- Dispatched pre-inspection team for FS (Mar. 2007)
- Conducted FS for e-Procurement. (Jul. 2007)



- Signed MOU with Georgia on e-Procurement cooperation in November 2006, which was resulted from PPS-WB joint workshop. (Jan. 2007)
- Dispatched pre-inspection team for FS (Mar. 2007)
- Conducted FS for e-Procurement. (Jul. 2007)
- Signed MOU with Armenia on e-Procurement cooperation. (Sep. 2005)
- Discussed technical consulting implementation for the proposal support for e-Procurement project (Mar. 2007)
- Conducted the feasibility study on e-Procurement (Jul. 2007)

<Pic. 12> Establishment of MOU with Georgia and Armenia (January 29, 2007)



- 5 Mongolian officials visited PPS for e-Procurement benchmarking (Feb. 26-28, 2007)
- Signed MOU with Mongolia on e-Procurement cooperation (Jun. 7 2007)
- Conducted FS on e-Procurement business for Mongolia (Jul. 2007)

<Pic. 13> MOU with Mongolia on e-Procurement Cooperation (June 2007)



- PPS Administrator visited CONSIP of Italy for discussion on e-Procurement cooperation (Sep. 2, 2008)
- Signed MOU with Italy on e-Procurement cooperation (Sep. 2, 2008)

<Pic. 14> MOU with Italy on e-Procurement Cooperation (September 2008)



- PPS Administrator visited NARMPP of Romania for discussion on e-Procurement collaboration (Oct. 1, 2008)
- Signed MOU with Romania on e-Procurement collaboration (Oct. 1, 2008)

<Pic. 15> MOU with Romania on e-Procurement Collaboration (October 2008)



- 2nd KOAFEC Ministerial Conference was held in Seoul on Oct. 27-30, 2008.
- PPS Administrator signed MOU on e-Procurement collaboration with Tunisian HCPP during KOAFEC Ministerial Conference (Oct. 28, 2008)

<Pic. 16> MOU with Tunisia on e-Procurement Collaboration (October 2008)



- PPS Administrator signed Trilateral MOU on e-Procurement collaboration between PPS, ADIE and ARMP during KOAFEC Ministerial Conference (Oct. 28, 2008)

<Pic. 17> MOU with Senegal on e-Procurement Collaboration (October 2008)

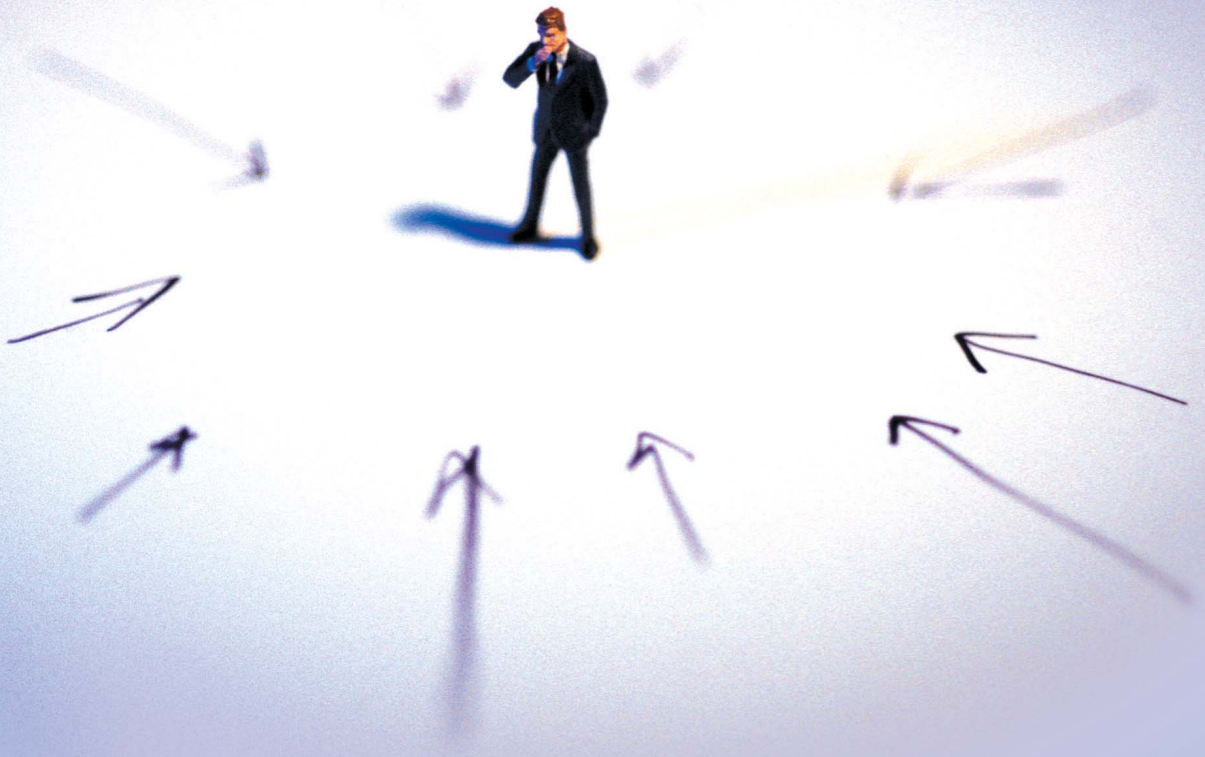


Section 5

The Future Task of KONEPS Policy Export

PPS drew a three year plan called the “KONEPS Policy Export Road Map” in the early 2007 to effectively perform it and promote KONEPS export to international market.

There are some challenge that PPS faces to successfully enter the international market. To acquire competitiveness of KONEPS to compete the advance countries' e-Procurement. KONEPS system must be more advanced. Also, through cooperation with other government agencies that are charged of international trading, ability of international cooperation of KONEPS and synergy effect must be reconsidered. Specifically, in terms of economy cooperation fund that supports the developing countries during a stage of system export discussion with them, preferential interest rate must be applied to functions that has global competitiveness. Also, cooperation with international financial groups to support e-Government of the developing countries must be intensified. Functional unit system that can be applied to countries that are interested in introducing e-Procurement regardless of IT infrastructure must be developed.



Chapter 4

Leading the International Standardization of e-Procurement



Section 1

Necessity of Standardization of e-Procurement and the Current Situation of the Projects

1. Necessity of Standardization of Electronic Procurement

The failure of development of Japanese Sony home video players are the most famous case to show the importance of standardization. In 1975, Sony developed a Betamax video player for the first time in the world and created a new market for that. However, a year after, Japanese another company, JVC developed a VHS video player, and a rival company of Sony, Matsushita adapted this technology to their own video player in 1977. Additionally, they opened the specification to the public to provide various products technical support. As a result, they swept over the home video market. Finally, Sony that stucked to Vetamax with technical superiority abandoned this technology in 1988. This Sony case tells us that despite development of the new product and technological superiority if its universality and standardization are not acquired in the market, the product cannot survive. The same case can be found in Apple computer with better technology, which however was defeated by IBM computer that achieved technical universality by opening the specification.

The above case can apply to electronic procurement which is one of the electronic government fields. Public Procurement Service (PPS) developed a electronic tender system in the fourth in the world. Since year 2002, all public agencies have been using this system, and yearly 21 million persons participate in internet tender. For last five years, 93 Million persons have participated in 780,000 electronic tenders, which is the world largest electronic tender market. Because of this achievement, in 2004 KONEPS was designated the best practice of e-Procurement by UN. For this e-Procurement system to be successful, it needs international standardization not to follow the failure of cases of Japanese Sony or Apple computer. To prevent this failure and intensify the competitiveness of national information and communication companies, PPS has been interested in standardization.



Before national and international standardization on document interchange, because of the different environments of each agency, connections between systems faced big obstacles in the discussion stage. The negotiation on how to connect each system took so long. The small difference of connection system caused the difficulty of management of interior systems, which resulted in blocking the expansion and development of connection. The application of international standard to construction of system will minimize the negotiation process from contents to connection methods and activate cooperative use of procurement contents by expanding the connection only by reciprocal certification without an agency's assignment.

KONEPS is a system that electronizes the entire procurement process for the first time nationally and internationally. This system applied international standard to business process and document items, which made KONEPS the number one e-Procurement system in the world. It will intensify its application ability to constantly changing world standards.

2. Standardization of KONEPS System

A. Change of Document interchange Standard Platform of PPS

e-Document platform that was started in 1997 as procurement EDI system reached the current form after changes of four steps.

e-Document standard of the early procurement EDI system was UN/EDIFACT¹⁾S93A. The main procurement documents of 13 pieces was interchanged through the relay of computer centers in a way of X.400 messaging. At that time, public institutions used CS (Client & Server) based PC package or circulation system that PPS provided. Procurement companies received service through VAN (Value Added Network) company such as Korea Telecom (KT).

The second expansion project of EDI which was performed in 2000 adapted XML document that was new at that time as standard. For 20,000 institutions that asked central procurement, PPS e-Mall was constructed. XML documents that borrowed the

1) It is EDI (Electronic Data Interchange) for Administration, Commerce and Transport by UN, EDIFACT in 1987



existing EDI document form was interchanged. At that time, since forms and interchange standards of XML document was not established, the existing X.400 messaging that was provided by relay of computer centers and privately used XML interchange methods were applied selectively.

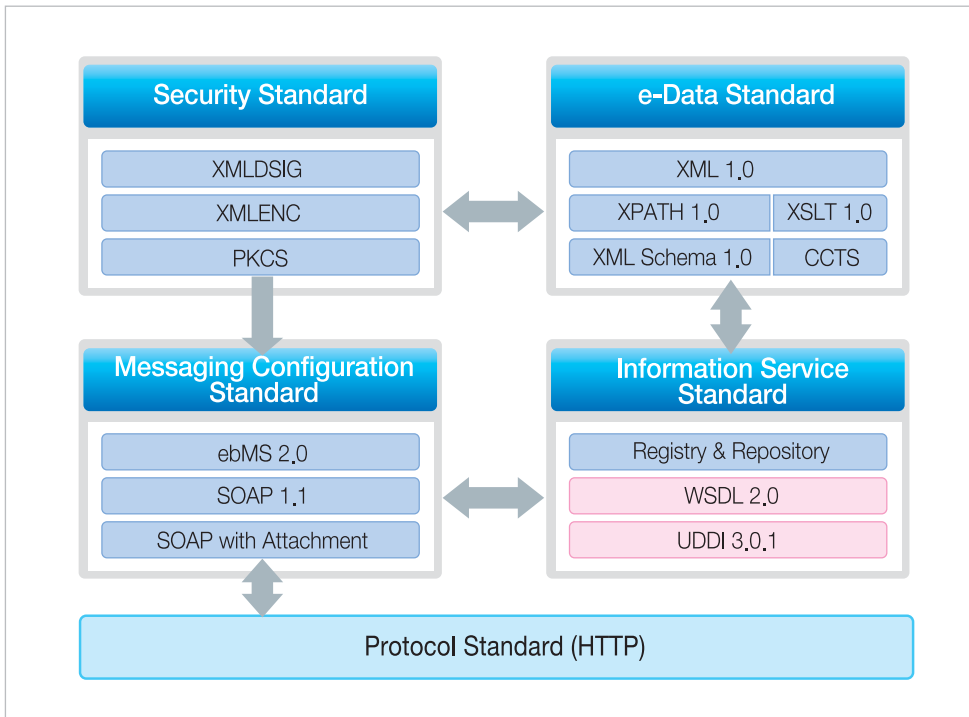
The document interchange method of PPS changed very much by constructing KONEPS system in 2002. The future possibility of XML already was verified. Although in 2000, XML was decided, because there was no trustful standard, construction of public procurement system for the entire nation in 2002 was the most difficult problem that business entities faced. In May 2001, technology details of ebXML²⁾ was reorganized as an international standard platform for e-Commerce in Vienna in Austria. In South Korea, “e-Document development guideline of Component style” of KIEC was presented. These international and domestic measures for the next generation platform were an crucial factor to decide the standard platform of KONEPS. Also, as that time, because KONEPS faced problems to connect data among other entity's system, introduction of standard platform was necessary.

The standard platform of KONEPS was developed more by “KONEPS customer oriented service innovation project” in 2004. It provided a new perspective of service integration and introduced web sites. Although KONEPS possessed many contents that are necessary for public procurement, it was looking for change of a way of interchange due to system overload caused by large scaled data, overlap of data, temporal error of linkage data. In fact, in 2004, a project called “construction of standard linkage system” aimed at constructing standard platform by which procurement contents could be shared with other institutions that had systems by providing web service because many contents that are needed for procurement do not have to be transferred by big scaled of data bundle.

B. Standard Platform of KONEPS System

2) ebXML(Electronic Business XML): It is an representative international standard e-Biz framework that was developed by UN/CEFACT and OASIS, which are most prestigious in e-Biz standardization. It consists of technology details of common XML semantics and related document structure.

The basic infra structure of standard linkage service of KONEPS consists of security, e-Document, messaging structure, and standard of information service structure. International standard was applied to each part. Among these, security applied XMLDSIG (XML-Signature Syntax and Processing W3C Recommendation 12 February 2002), XML Encryption (XML Encryption Syntax and Processing W3C Recommendation 10 December 2002), and PKCS#7. Messaging applied ebMS 2.0 (ebXML Message Service Specification), SOAP 1.1 (Simple Object Access Protocol 1.1), and SOAP Message with Attachments. 243 kinds of e-Documents that KONEPS uses was made based on XML1.0 Second Edition and international standards such as XPATH1.0, XSLT1.0, and XML Schema1.0, CCTS1.58 were applied. By information service added in 2004, R&R (Registry & Repository) of ebXML, web service's WSDL (Web Services Description Language) 1.1, UDDI (Universal Description Discovery and Integration) and 3.0.1 were introduced.



<Pic. 18> KONEPS standard platform



C. KONEPS Registry

KONEPS registry provides classification system information of e-Document and commodity list standard such as XML schema and template. Specifically, it provides 227 kinds of service including integrated contract information, procurement contents information, searching service for e-Document that is stored by each institution and procurement process service such as calculation of service print cost.

Characteristics of KONEPS registry is to satisfy standard size of web service as well as ebXML. Registry part of service broker among a basic architecture of KONEPS web service follows a basic structure of UDDI3.0 Spec. and at the same time, includes partial definition of ebXML RIM2.0 standard. It uses OperationalInfo, which is an option in UDDI Spec. to manage history of each entity. When linkage with global registry is necessary, it will use for replication. To satisfy both UDDI and RIM at the same time, KONEPS did mapping of entity of UDDI and RIM seen as Picture 5 below. Based on these, entity of KONEPS web service were constituted.

<Table 2> UDDI, RIM, KONEPS Registry Entity Map

UDDI 3.0	ebXML RIM 2.0	KONEPS Registry
businessEntity	Organization	Linkage_Linkage institution
businessService	Service	Linkage_Service
bindingTemplate	ServiceBinding	Linkage_Service Binding
operational Info	N / A	Linkage_Operation Management
tModel	ClassificationScheme ExternalLink	Linkage_TMODELMaster Linkage_TMODEL
keyedReference	Classification	Linkage_ReferenceTMODEL
tModelInstanceInfo	SpecificationLink	Linkage_Service Link

D. Application Case of KONEPS Web Service

Integrated contract information and linkage client modules clearly show the application of KONEPS web service.

Integrated contract information generated by each procurement institution is collected by web service to KONEPS. This is opened by KONEPS portal site and becomes



basic information for reference issue of warranty institution. The central procurement must be connected to a system of institution that has contract to provide contract information and also must be connected to payment system of national finance system or commodity management system. Therefore, KONEPS web service is a proper form to satisfy these various demands of institution systems. KONEPS secures consistency and credibility of service because it meets request of contract information through a service module that is registered in web service

Web service type is applied to standard linkage module that PPS provides to the related institutions. Data for transmission log of data and statue check is provided to web service between linkage serve and clients. Business module that requests service and transmits it is registered to service of linkage server, which reduces management difficulty of distribution of the existing client modules.

E. Application Method of e-Document Standard

e-Document of KONEPS was developed by a broad range of agreement and discussion of procurement institutions from proposal, analysis, to development. By “Innovation plan for activation of KONEPS” hosted by Ministry of Finance and Economy, law and systems related to procurement were reviewed. As a result, 280 kinds of e-Document structure standard system and development were presented, which KONEPS required. For development of e-Document, 52 institutions and 200 personnels participated in analysis workshops and reviewed the results of e-Document of development objects and business process of each field. e-document that was designed in design workshop were re-checked for close examination.

By applying core components type that UN/CEFACT³⁾ recommends, it can be re-used when other development of e-Document and other institutions want reference from PPS's document design. Also, standard signature algorithm such as RSA-SHA

3) UN/CEFACT (United Nations Center for Trade Facilitation and Electronic Business): It is an international e-Biz standardization organization under UN and is in charged of promotion of international trade in 19 TBG (International Trade and Business Process Group) groups. It initiated enactment of international e-Biz standard, ebXML with OASIS. After 2001, OASIS has been in chared of infrastructure technology and UN/CEFACT, of standardization of contents such as items and process.



and KCDSA-HAS160 were used. TAG generation rules of XML documents observed CCTS rules such as Object Class, Property Term, and Representation Term for mutual application and extensibility with international specifications.

Currently, KONEPS has e-Document interchange committee that consists of 15 procurement institutions and companies. Its members cooperates for procurement business standardization and document standardization. Procurement Sub-committee notifies 67 kinds of e-Document as national standard including 54 kinds of e-Document that is used in KONEPS and 13 kinds that is used in Ministry of Defence.

F. The International standards that KONEPS adapts

The international standards that KONEPS adapts as follows:

- Messaging

- Schema for the SOAP/1.1 envelope

- <http://schemas.xmlsoap.org/soap/envelope/>

- Simple Object Access Protocol (SOAP) 1.1 [SOAP]

- <http://www.w3.org/TR/SOAP>

- SOAP Message with Attachments [SOAPAttach]

- <http://www.w3.org/TR/SOAP-attachments>

- ebXML TRP Version 2.0

- CC library Generation Rule

- ebXML CCTS version 1.58

- XML Document Generation Standard

- Extensible Markup Language (XML) 1.0 Second Edition

- <http://www.w3.org/TR/REC-xml>

- XML Schema Part0: Primer

- <http://www.w3.org/TR/xmlschema-0>

- XML Schema Part1: Structures

- <http://www.w3.org/TR/xmlschema-1>

- XML Schema Part2: DataTypes



<http://www.w3.org/TR/xmlschema-2>
XSL Transformations (XSLT) Version 1.0
<http://www.w3.org/TR/xslt>

- XML e-Signature

XML-Signature Syntax and Processing W3C Recommendation 12 February 2002
<http://www.w3.org/TR/xmlsig-core/>

- Codification

XML Encryption Syntax and Processing
<http://www.w3.org/TR/xmlenc-core/>
<http://www.w3.org/2000/09/xmlsig>

- XPath

XML Path Language (XPath) Version 1.0
<http://www.w3.org/TR/xpath>

- Web Service

WSDL (Web Services Description Language) 1.1
<http://www.w3.org/TR/wsdl>
UDDI (Universal Description Discovery and Integration) 3.0.1
<http://uddi.org/pubs/uddi-v3.0.1-20031014.htm>



Section 2

Conclusion of International Standard Unitary Proposal of KONEPS e-Procurement Process

KONEPS international standardization activity started as a part of various promotions to inform KONEPS's superiority. Now, broad experience and understanding on UN/CEFACT, e-Business standard enactment is accumulated and PPS plays a dominant role in standardization. Therefore, sufficient counter-measures and strategy are prepared in advance. However, in the early stage, there were many unclear understanding for that. In May 2003, there were domestic standardization meetings and in Seoul, international standardization forum was hosted. It was coincident to realized that this forum included electronic bidding project. According to a director's instruction that PPS had to participate in e-Bidding standardization, PPS promoted KONEPS's importance in Seoul Forum held in September 2003 and participated in small group meeting for standardization and checked out the participation scope of PPS.

UN/CEFACT supervises 19 small groups which is TBG and performs each industrial sections' standardization. PPS participated in standardization of e-Bidding project, which was TBG⁴⁾ (Architecture, Engineering and Construction) domain. At that time, standardization of e-Bidding was already selected as a formal project of UN/CEFACT in Barcelona meeting in March 2002 and the final agreement was just ahead. PPS presented a report titled “Korea's Progress Report on e-Procurement Business” in January 2004 in Paris Interim Meeting, which is about analysis of KONEPS's e-Bidding process and standard document. Our suggestion created discussion on whether the existing e-Bidding standardization project must be finished without consideration of Korea's suggestion or additional discussion or agreement were needed. Finally, in March 2004, the fourth regular forum held in Bohn of Germany agreed that after reviewing KONEPS e-Bidding process, it would be determined in the next forum in September 2004.

4) TBG6 (Architecture, Engineering and Construction Domain): It is an UN/CEFACT working group that is in charge of electronic message standard development and management of international construction industry.



By this agreement, bilateral meeting with Japan that had led e-Bidding project in June 2004 was held in Tokyo. In this meeting, an agreement that included 10 business processing process and 87 document items of KONEPS were created.

Along with this agreement, there was another big achievement, which TBG17⁵⁾, which manages standardization generally, accepted e-Bidding process suggested.

TBG17 is a group that reviews and mediates standards that are suggested by each industrial standard and other standardization groups. The general mediation group activity is to decide e-Bidding standards quickly and also to participate in enactment of international standards of other industrial sections such as finance and trading.

After the unitary proposal on standardization was set, e-Bidding standardization in UN/CEFACT was unfolded to two directions. The first one is to enlarge standards centered on facility to goods and service. To do this, the representatives of South Korea and Japan had a meeting in Seoul on December 2004 again. Here, new proposal of e-Bidding standard was arranged. We worked on to receive official confirmation from UN/CEFACT. At that time, only rough guideline on ebXML, which is e-Biz standard platform existed. And there was no international standards based on this and confirmation procedure was also imperfect.

After all, TBG17 started drawing procedures and standard basic proposals. To do that, PPS kept participating in special meetings as well as regular forums.

In the sixth forum of UN/CEFACT that was held in Kuala Lumpur in Malaysia in March 2005, TBG Steering Committee⁸⁾ acknowledged the standards of e-Bidding process that was initiated by seven countries including South Korea for two and a half years. On June, UN/CEFACT Plenary⁹⁾ which is the highest decision making agency of

5) TBG17(Harmonization): It is a general group that mediates and reviews standards that are suggested by TBG groups or each standardization group.

6) BRS: Business Requirement Specification

7) RSM: Requirement Specification Mapping

8) TBG Steering Committee: The decision making group consisting of the chair and vice-chairs of TBG, the business standardization group of UN/CEFACT.

9) UN/CEFACT Plenary: The highest decision making group composed of the chairs of each country's UN/CEFACT which holds annual plenary meeting. As for the Korea, the president of KIEC is the representative of Korea.



<Table. 3> Results of Agreement of Tokyo Interim Meeting

section	Main agreement	Additional Information
BRS ⁶⁾	① Three cases related to correction of terms of 「Business Registration」 - Term of 'Pre-qualification' was corrected by our suggestion	Accepted
	② Four cases related to 「Bidding Guarantee」 - Two parties agreed that proper process or relation with guarantee agency would be separated as different procedure and we would submit amendment by May 15.	Accepted
	③ Three cases related to 「Public Institutions Information」 - Bidding itself is an object, and according to scopes of standard draft that is applied to trading between institutions, BRS was not accepted. - It will applied to RSM to prepare for the future extension.	Accepted
	④ One case related to 「cooperative supply and demand consortium」 - Since the general review for cooperative supply and demand process was needed, it was excluded from the first version. It was agreed that the improved version would be accepted.	Unaccepted
	※ All the procedures are not mandatory but selective and it was agreed that those that each country decides will be accepted.	
RSM ⁷⁾	① 57 cases including budgets for bidding announcement, information for public institutions, and pre-price.	Accepted
	② 30 cases such as details that will be included in bidding announcement and information attachment information	Accepted
	③ Agreement on presentation of special documents related to guarantee to ask to BRS only.	Accepted
	④ 7 cases of cooperative supply and demand (consortium) and re-bidding that were determined to be excluded in the first draft.	Unaccepted
	※ Reconstitution after negotiating the general details and systems.	

UN/CEFACT agreed this and it was officially announced as international standard. AS for standards of e-Document items, by 2007, after basic items of e-Documents were concluded, after resolution of Stockholm meeting in 2007, it was announced as draft standard of UN/CEFACT. 296 items of 11 e-Documents including business procedures of 11 areas and bidding announcement document are registered as standards.



Countries and institutions that develop e-Bidding system by using these standard document items can make e-Bidding document and in the future when e-Documents of procurement are exchanged between countries, standardization of additional documents is not necessary.

PPS will lead international standardization of e-Procurement procedure without satisfying the achievement that we made KONEPS e-Bidding procurement an international standard.





Part 7

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Chapter 1

Achievement of e-Procurement and Evaluation





Section 1

Growing to the World Best Government e-Procurement Market

After October 2002, when service started, KONEPS has been rapidly developed as public procurement by consistent development of performance, development of various contents and improvement of laws. Transaction actual results through KONEPS was up to December 2007, total 55,924.1 Billion Won, which is 27.7% increase compared to the last year. 37,000 public organizations and 120,000 procurement businesses were enrolled through KONEPS. 200,000 persons who belong to those institutions were enrolled as users for procurement business. 180,000 daily average users visited KONEPS. Among them, 44,000 persons logged in to KONEPS for business. 327,000 public announcements of 12,000 institutions are posted in KONEPS for comparative bidding and private contracts.

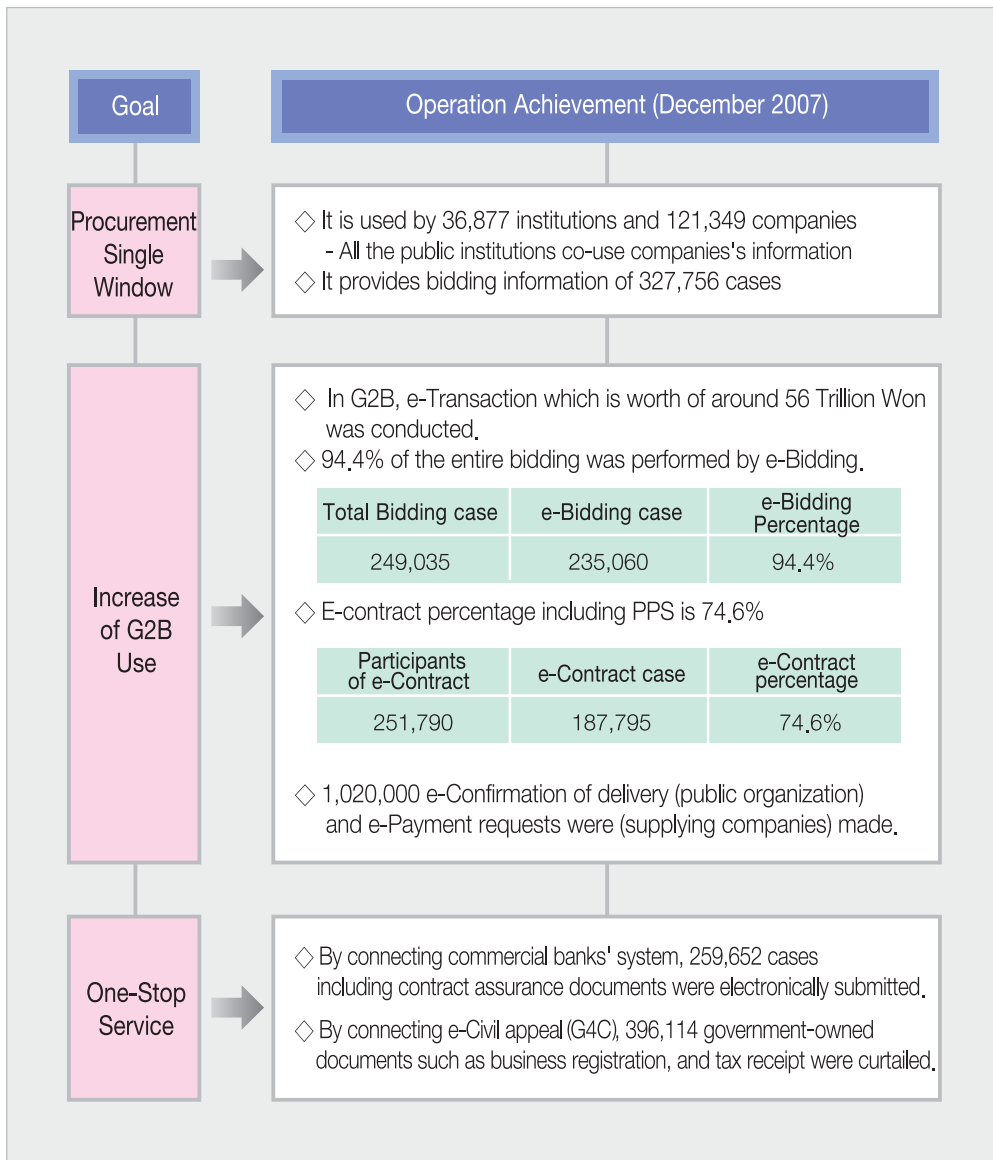
In terms of public announcement of bidding, ratio of e-Bidding of institutions that perform procurement business by KONEPS was 94.4%. Among 235,060 public announcements of e-Bidding, small purchase cases that make private contracts possible are 157,948, which occupies 67.2%. Specifically, e-Contract which was promoted by active marketing drastically increased along with starting service of the digital budget account system (dBrain). The entire e-Contract including PPS is 74.6%, which means 34.8% increase compared to the last year.

Also, through the e-Shopping mall, 683,000 cases which is worth of 6,650 Billion Korean Won were traded by e-Contract. When a company registers their bidding qualification in KONEPS, personnels of public organizations can request estimate according to registered items and trade. In terms of estimate sheet that is made for public organization to buy small sum of deals and for small companies to enlarge their market, procurement companies transact 1,794 cases, which is worth of 4.5 billion Won with public organization. This indicates 155.6% increase, compared to the last year. When procurement companies ask delivery confirmation through KONEPS, 580,000 cases were transacted by public organizations. It gradually increases.

Through KONEPS that connects assurance companies like banks, 260,000 pieces of e-Assurance document such as contract assurance were issued, which indicates 80.9% increase compared to the last year. Surely, PPS exempts the bid bonds by substituting it into the payment note. In terms of other cases that use KONEPS, there are 396,000 cases that

issue business registration and tax payment certification through G4C, which is e-Civil appeal of the MOGAHA and KONEPS. This indicates 72.1% increase compared to the last year.

<Pic. 1> Operation Achievement and Summary of KONEPS





Section 2

Enhancement of Efficiency in Procurement Administration

The most important achievement of construction of KONEPS is to increase efficiency of procurement business which was manually done so it took so long.

In the past, it took half a day or a day for a procurement company to register a bid of public institutions. However, after checking the announcement of bid in KONEPS website, it takes only 1 minute to complete the bidding process. And it takes only about 20 minutes to check out the result of bidding. In the past, it took at least two hours. Information such as disqualification sum of money, disqualification company, participation companies is noticed so it is unnecessary to call the person who is in charge of this business.

<Table 1> Comparison of Pre-KONEPS and Post-KONEPS service

Section	Before KONEPS service	After KONEPS service
Business Registration	- Application necessary whenever bidding happens	- After register in KONEPS once, company is allowed to participated in every public bidding.
Contract Request	- By paper document	- By on-line
Bidding Announcemen	- asking official gazette or newspapers for announcement -The procurement company had to check every institutions to get as much information as possible in person.	- Posting bidding announcement in KONEPS site - They can get bidding information by KONEPS.
Bidding Execution	- Application had to be submitted in site or by mail and then opened in the bid opening site.	- After receiving e-Application by computer then bidding is executed.
Contract Management	- After filling the application with related document attached, hand-written signature was needed.	- After the initial contract and changed it by on-line, e-Signature is needed.
Payment	- Asking tally request by hand and payment	- Asking tally request and payment by on-line



Along with saving time, KONEPS helps save financially. In the past, it costed 100,000 to 300,000 Won to check bidding information to companies that provide bidding information and also to register bidding, they paid payment for issuing attached documents and traffic cost. However, KONEPS helps reduce substantial cost to check information and register bidding by logging in the website.

According to effect evaluation research results of KONEPS¹⁾, it is estimated that it reduces procurement transaction cost of 4,500 billion Won yearly, (up to December, 2005) The public institutions save yearly 5,000 billion Won by e-Procurement procedure and private companies do yearly total 4,000 billion Won by procurement process standardization.

<Table 2> Cost Reduction Effect by KONEPS Introduction

Business (4 trillion Won)	Public Organization (0.5 trillion Won)
<ul style="list-style-type: none"> • Cost of visiting government offices: 2.7 trillion Won • Procurement process standardization: 0.7 trillion Won • Related system connection effect: 0.4 trillion Won • Simplifying procurement process: 0.2 trillion Won 	<ul style="list-style-type: none"> • Reduction cost of time that was caused by manual work of public organizations: 0.5 trillion Won

1) (C)International Center for Electron Commerce (KAIST professor Lee Jegyu) Research Service (May 2005)



Section 3

Realization of Crystal-clear Procurement Administration

After operation of KONEPS, through single portal site, every information such as bidding, disqualification results, and so on is opened in real time. The entire process of procurement became automatized so face-to-face contact of public officers and companies decreased, which resulted in transparent administration.

Also, since announcing contents of public organizations was provided combinedly, the difference of them can be easily compared, which helps verify announcing methods that limit competition such as standard limitation, facilitate fair bidding competition, enable standardized business and reduce public officer's decisions. Eventually these play important role to enhance the open and transparent administration.

The transparency of PPS increases year by year since information on the bidding and its results were opened. This demonstrates that the process of government procurement that were blamed because of corruption is open and transparent after KONEPS. Korea Independent Commission Against Corruption (KICAC) announced that the degree of transparency of PPS increases 27.2% from late 2002 to late 2005. This result became the world exemplary case so developing countries that consider their government transparency try to benchmark our project.

Furthermore, Transparency International (TI), World Anti-Corruption Forum and Anti-corruption Global Forum of procurement of OECD announced KONEPS as success case that increased transparency through digitalization. In April 2007, Korean Journalist Association endowed an award to PPS because they acknowledged promotion of transparency for the international society.



Section 4

Contribution to Activation of Non-governmental e-Commerce

By redesigning and standardizing different procurement process according to institutions, forms, items classification codes, electronic catalogs, and by using verified database such as registration management of public institutions and procurement companies, procurement business came to be drastically simplified.



Section 5

Promotion of Status of South Korea with World Representative Brand

KONEPS service was given various innovation awards in South Korea and also it was recognized as the most developed e-Procurement system by the international society, which plays an important role in raising status of e-Government of South Korea.

In June 2003, KONEPS received Public Service Award by UN because they recognized it as high level of administration service among the world public service institutions. This award given by UN aims at increase the world public service quality and recognition of the public to the public service. PPS received this award for the first time in Asian-Pacific area because PPS electrified procurement business, provides customer-oriented service and opened the procurement process to the public. OECD, in a report on South Korea's company information policy in May 2004, evaluated the level of e-Procurement of South Korea as “no further action required.” UN, in November 2004, selected 23 best practice models in world e-Government level evaluation. Among them, KONEPS was designated as one of the best representative case in public procurement. Also, in May 2006, 2006 World Congress on Information Technology (WCIT)) selected KONEPS as the best case that best uses IT among the world public service and endowed ‘Global IT Excellence Award.’

After Public Service Award was given by UN, the number of countries that want to benchmark KONEPS increases and world presses came to be interested in it. In August 2005, Teleticka, which is the largest broadcasting company in Costa Rica reported ubiquitous e-Procurement by PDA. In March 2007, “The Times of India” that is the biggest daily newspaper in India reported the promotion of transparency by KONEPS in Korea.

Through case presentation in International Administration Association, publication in the international journal (2003), ADB/UNESCAP joint e-Procurement international conference (2004), and in 2006, publication of an article on “The Government e-Procurement System in Korea” in Encyclopedia of Digital Government, achievement of KONEPS has been academically studied.

| Receiving WCIT 'Global IT Excellence Award'

World Information Technology and Services Alliance (WITSA), consortium of 67 countries grants 'Global IT Excellence Award' to three categories such as public sector, private sector, and digital opportunity.

For the public sector, the criteria of the award are efficient public service through IT, reduction of cost and time of government operation, and improvement of information accessibility. In 2006, this award was very competitive because institutions for this award were 16 from 10 countries including USA, Japan, Finland, and Australia, which are all strong powers of IT. Despite

the competitiveness, PPS won this award because it performs automatized business from procurement request and payment, opens every information on bidding in real time, provides one-stop service that connects 80 outside system, and reduces transaction cost which is yearly 4.5 billion US dollars. It was selected as the representative case that does costumer-oriented service by IT.

In Information Technology Olympic where the ceremony was held is hosted by WCIT every two years, where the world leaders such as Bill Gates, and Bill Clinton participate in and predict main issues and the future of ICT industry. In the 2006 award ceremony, 2000 IT officials from total 80 countries including chair of Microsoft (MS), Steve Ballmer, Malaysia prime minister, Bagawa, former US state secretary, Colin Powell were joined.



■ The Domestic and International Evaluation on KONEPS

| Domestic Evaluation |

- ① Distinguished Service Medal of e-Commerce awarded (Hosted by Josun Daily, Maeil Economy Daily, and Korean Commerce Net), (November 2003)
 - The Best Award of e-Commerce is given to a company or a group that contributes systematic company management, technology development and expansion of technology based products through e-Commerce.
 - PPS received this award because it was recognized to contribute development of e-Commerce in the public section.
- ② The Distinguished DB Award in the public institution from Korea Data Base Promotion Center (August 2004)
 - The Center awarded this prize to PPS because it acknowledges improvement of domestic DB quality through systematic DB quality management.
- ③ Designated as the distinguished institution of foreign benchmarking by Office for Government Policy Coordination (November 2005)
 - An award for the distinguished institution of foreign benchmarking was introduced for the first time in 2005 to promote international cooperation as well as to raise the international status of South Korea by informing the Korean distinguished institutions to the world.
 - PPS was designated as the distinguished institution of foreign benchmarking because the Office recognized PPS as a group that performed international promotion and policy export by e-Procurement system.
- ④ Technology Award received by Society for e-Business Studies (March 2006)
 - This award is given to a group, institution or an individual that achieves original applied technology and prominent results of research development in the field of e-Commerce.
 - PPS received this award because they acknowledge that PPS leads e-Commerce in public procurement by technology development and activation of e-Certification, codification, web service, wireless e-Bidding, e-Account transfer, and construction of intelligent product information system and also because it exports policy brand
- ⑤ Distinguished Service Medal awarded by Korea Journalist Association (April 2007)
 - It acknowledged PPS as an institution that increased transparency by expending e-Procurement and international cooperation.



| International Evaluation |

- ① UN Public Service Award (June 2003)
 - UN offers this award to inform the importance of public service to the public and to improve service of the public institution in July 2000.
 - PPS was selected as the first in Asian-Pacific area in innovation field of public service.
- ② OECD recognized KONEPS as the World Best Level (May 2004)
 - OECD, in a report on South Korea's company information policy mentions that South Korea activates e-Procurement and provides exemplary case of IT use and lead the expansion of non-government e-Commerce.
 - It evaluates the level of e-Procurement of South Korea as "no further action required."
- ③ UN selects KONEPS as the Best Practice Model of e-Procurement (November 2004)
 - UN Global e-Government Readiness Report issued in 2004 recognized PPS as the best institution that provides on-stop service among 23 cases from 11 countries.
 - KONEPS is the only system in e-Procurement, which become chosen as the world representative example.
- ④ UN reflected KONEPS as e-Bidding standard. (March 2005)
 - The sixth forum of UN/CEFACT, which is international standardization meeting in trading and e-Trading passes e-Bidding process of PPS as standard.
 - When every country wants to construct e-Bidding system according to standard procedure of UN, it must follow PPS process.
 - Therefore, South Korea can lead e-Bidding in the world and reinforces competitiveness in terms of export of e-Procurement.
- ⑤ Global IT Excellence Award of WITSA received. (May 2006)
 - KONEPS received Global IT Excellence Award in the public field, which WITSA endows every two years.
- ⑥ e-Asia Award by AFACT (August 2007)
 - AFACT selected KONEPS as an extinguished case in e-Business in Public Sector.





Chapter 2

The Future Task of e-Procurement





Section 1

Environmental Change of e-Procurement

Recently because IT technology and Know-how of systems spreads fast and are copied, there is a trend that a closed system of an individual customized service is changed to open interface and closely correlate each other. Web environment comes to a user centered-service development based on Web 2.0²⁾ by participation and openness of users, and connection between systems.

Also, as IT technology is developed, new formed integrated product and service is provided, which is called Digital Convergence³⁾. Ubiquitous service is dispersed very quickly so to construct integrating service that provides information constantly is a key for success of a business. KONEPS reflects this tendency and reinforces connection between systems, expands counselling service and develops user-centered service. Specifically, from 2006 when KONEPS started to provide paid service, the demand on service improvement of e-Procurement gradually increases. So to match this demand, PPS faces challenges that it provides new service, and various contents and stabilizes system.

Meanwhile, as rules of e-Procurement is applied to government procurement agreement of WTO and FTA, it is expected that international expansion of e-Procurement will be accelerated. Specifically, most developing countries plans to introduce e-Procurement system, necessity of international cooperation through KONEPS for international standardization, policy, and export of e-Procurement process increases.

2) Web 2.0: It is the currently used, evolved web model. Generally, it has openness of information, mobility and connectivity, which is distinguished from Web 1.0.

3) Digital Convergence: It is a new united product that binds all information technology to an instrument and a service. There are three kinds: combination of wire and wireless, of communication and broadcasting, and of on-line and off-line.



Section 2 The Future Task

Since IT environment rapidly changes and level of users' demand increases, and international policy changes, it is time to prepare for new future demand. Therefore, PPS plans to re-establish its mission and vision for e-Procurement and prepare for mid and long term development strategy to achieve them.

1. The Mid and Long Term Development Strategy for Improvement of KONEPS

1) Mission and Vision

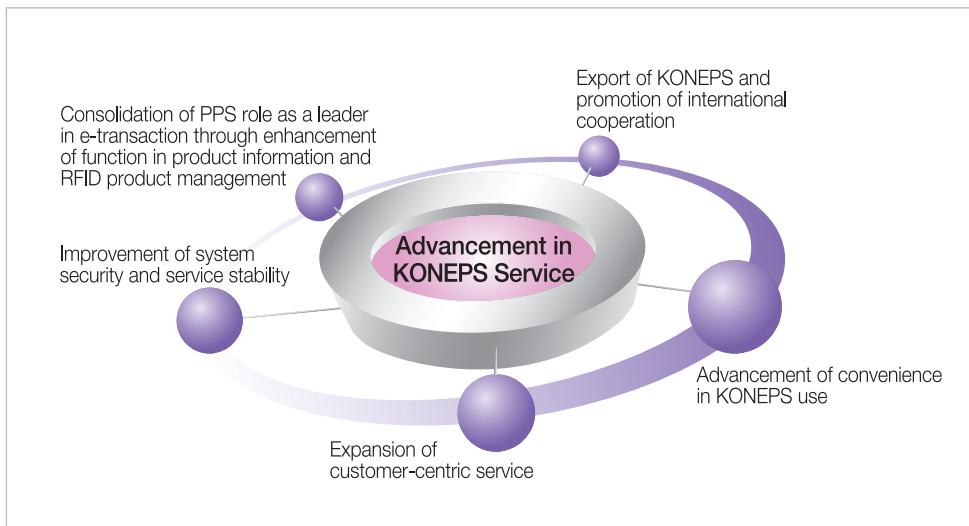
Mission

To help automatical business execution of procurement of the public institutions, PPS provides various contents and consulting service as well as infrastructure such as knowledge, information, programs and system.

Vision

The World Best e-Procurement Service Provider
Global Leader @ e-Procurement Service

2) Mid & Long term development strategy for Vision



1) Reconsidering convenience of KONEPS

To increase convenience of KONEPS, it must provide customized service according to users and functions by reconstructing KONEPS as service-oriented architecture.⁴⁾ To do that, PPS plans to realize information search function that can match non-governmental search portal sites and ubiquitous procurement so that users can use anytime and anywhere.

e-Bidding service that has been provided by PDA will be provided by cell phones. To protect the ID theft, finger print or iris recognition technology that is connected to cell phones will be applied.

Also, for users to make their own system to ask procurement information such as price and cost accounting without accessing KONEPS directly, web service will be expanded and in the long run, SOA based web service system will be constructed.

And, the updated search engine that can match private company's portal sites will be introduced to help users find items easily that is in bidding only with words included in document attached to bidding announcement and to provide convenience by classifying business fields.

2) Expanding Customer Centered Service

To prepare for globalized knowledge society with the future system, for KONEPS it is necessary to acquire e-Procurement contents.

To do that, first, company evaluation system must be constructed for support of decision making of public organizations, to help public organizations select high quality item and good contractors. Also, We will keep expanding contents of general shopping mall service, which achieved business actual results of total 650 billion Won in 2007.

To do multi-dimensional analysis of actual bidding records, contract results, shopping results in shopping mall and results of support for local business according to business

4) SOA (Service-Oriented Architecture): It is information technology architecture that is constructed by service unit and components that make possible co-ownership and re-use of information system as service model, information transfer and protocol.



types, periods, and public institutions, high-quality statistic information will be created so information that public institutions such as National Assembly, and the Board of Audit and Inspection ask will be provided.

And the KONEPS education that was mainly performed by off-line will be done by e-Learning education system so that more users can take advantage of this education.

3) Reconsidering System safety and service stability

First, by separating e-Bidding system and other systems inside KONEPS, e-Bidding service, which is a key function of KONEPS will be more stabilized.

Also, currently, to acquire the universal accessability of KONEPS system that is restricted to MS-Windows and Internet Explorer, open software such as Linux and Apache will be applied.

4) Through improving item information and RFID item management, e-Commerce transaction is reinforced.

KONEPS operates the unified code system of international standard by introducing UNSPSC item classification system but in the future, its coincidence will be reinforced by creating contents that provides high quality item classification service and improving search function.

To do that, first, updated merchandise information that both public and private sectors will use and e-Commerce support will be expanded by strategic connection with systems of other institutions. Through this, after merchandise information is registered in any classification systems, it is connected to other classification system, which constructs merchandise information mapping system. As soon as a company registers its merchandise, it will be sued everywhere when needed by every institution.

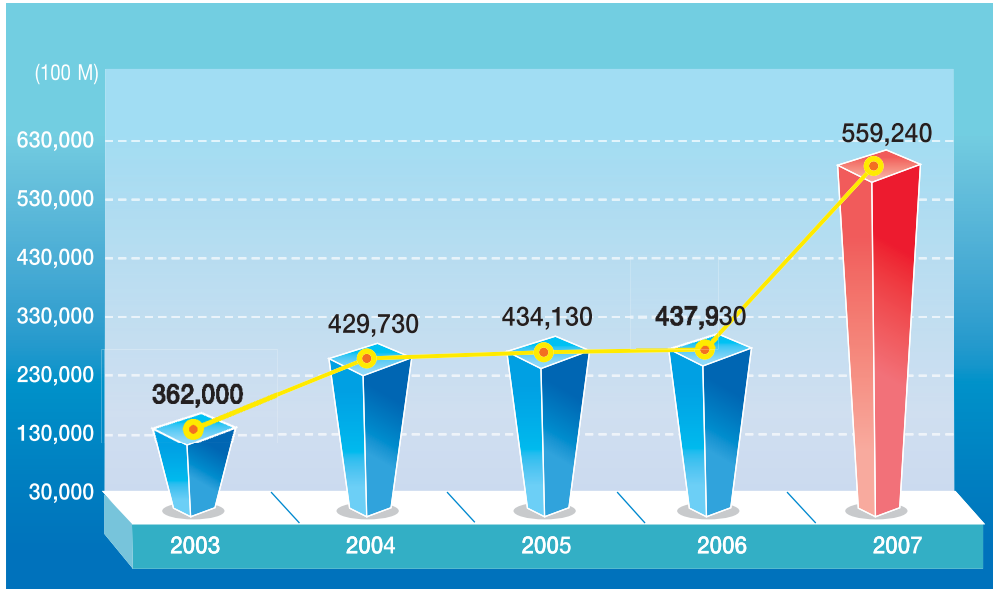
By helping users re-process merchandise information of KONEPS in their own system for their business activity, a role as hub of merchandise information will be reinforced.

5) Reinforcement of KONEPS policy export and International Cooperation

PPS prepared for “KONEPS policy export road map” that embraces three year plan to effectively execute its policy export in the early 2007.

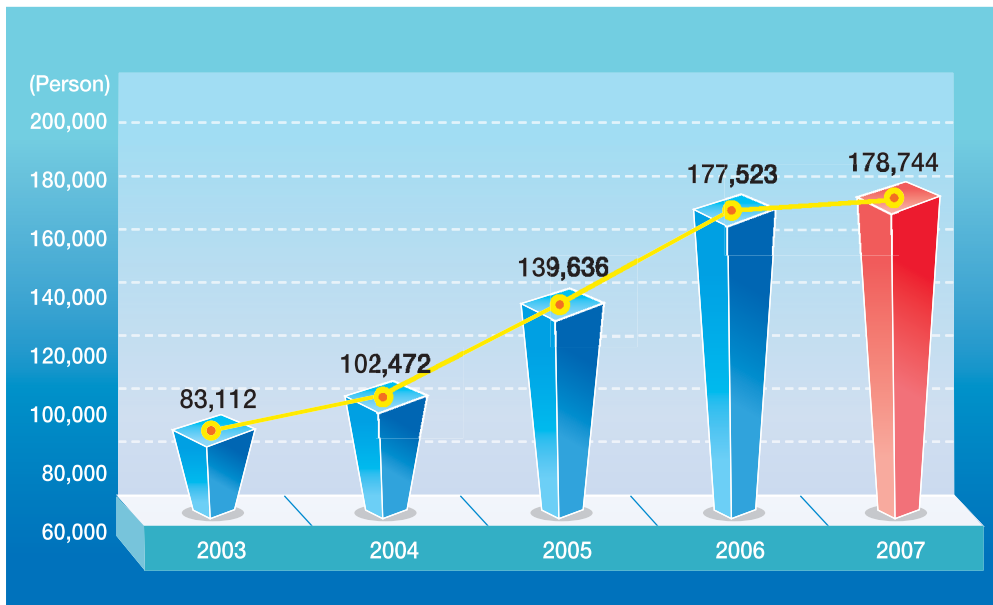
According to a master plan on KONEPS international cooperation, currently, we discuss the agreement with Vietnam government about construction of e-Procurement system of Vietnam. Furthermore, PPS will send a market exploration team to South America, East Europe, and Africa as well as South East Asia and will hold the international workshops on e-Procurement to intensify the relationship with these countries for KONEPS policy export. Specifically, after a key country for each area is selected, validity investigation will be performed, demonstration system will be constructed. The participation in the project will be decided to acquire establish the bridgehead in each area. In 2010 when this project will be successfully accomplished, KONEPS will be the representative system that can enhance transparency and efficiency of public procurement in the international society.

1. e-Transaction Volume via KONEPS

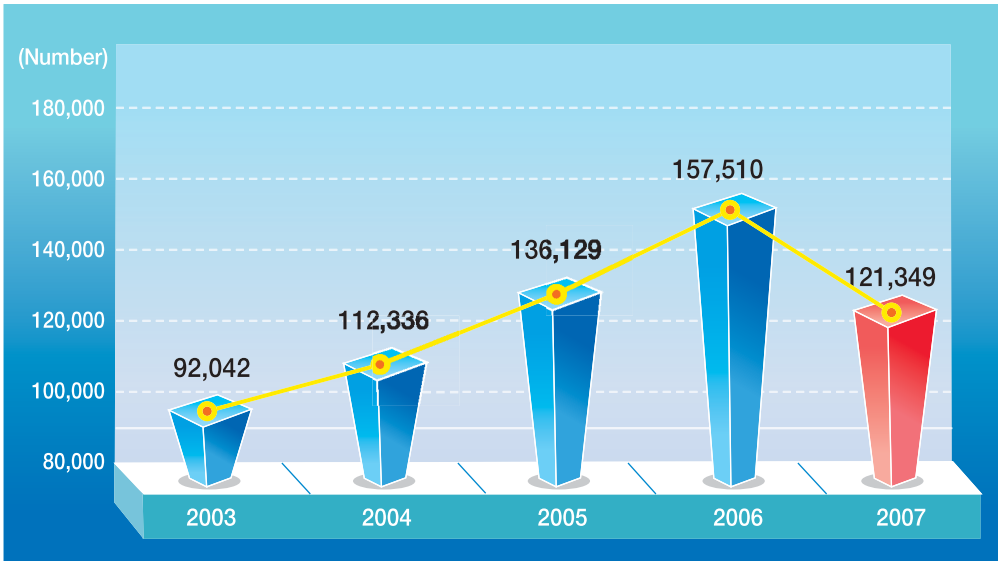


※ Note : Total volume in performance of e-Bid, e-Contract and e-Shopping mall conducted by PPS and public organizations through KONEPS.

2. Daily Hits to KONEPS

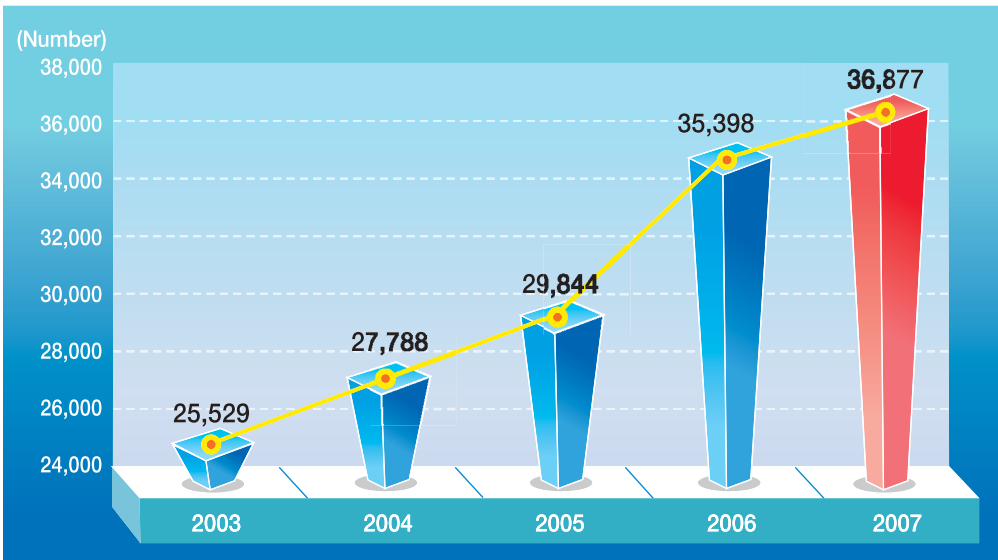


3. Registration of Supplier with KONEPS



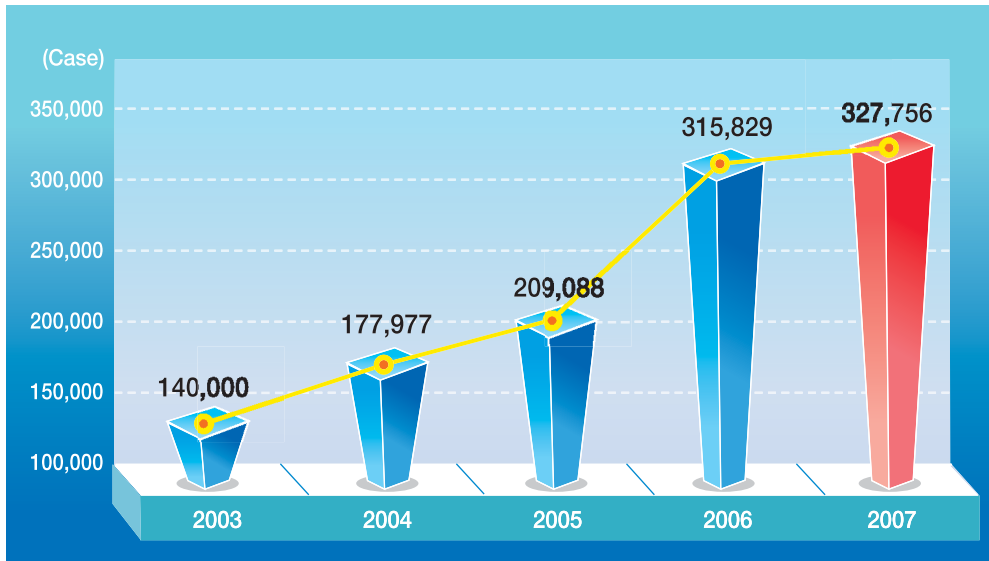
※ Note: The registration of 2007 decreased in number due to the renewal of supplying business information in April through September, 2007. (The business which failed to renew information can participate in e-Bidding immediately after a new business registration process.)

4. Registration of Public Organization with KONEPS



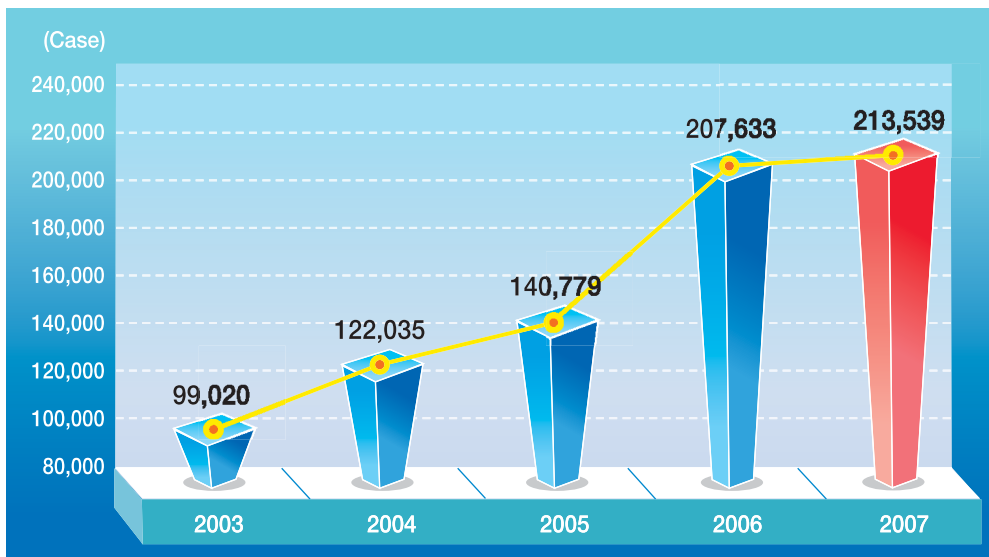
※ Note: Central government, local government other public institutions and its subsidiaries
(Based on Business Registration Certificate)

5. Bid Notice through KONEPS



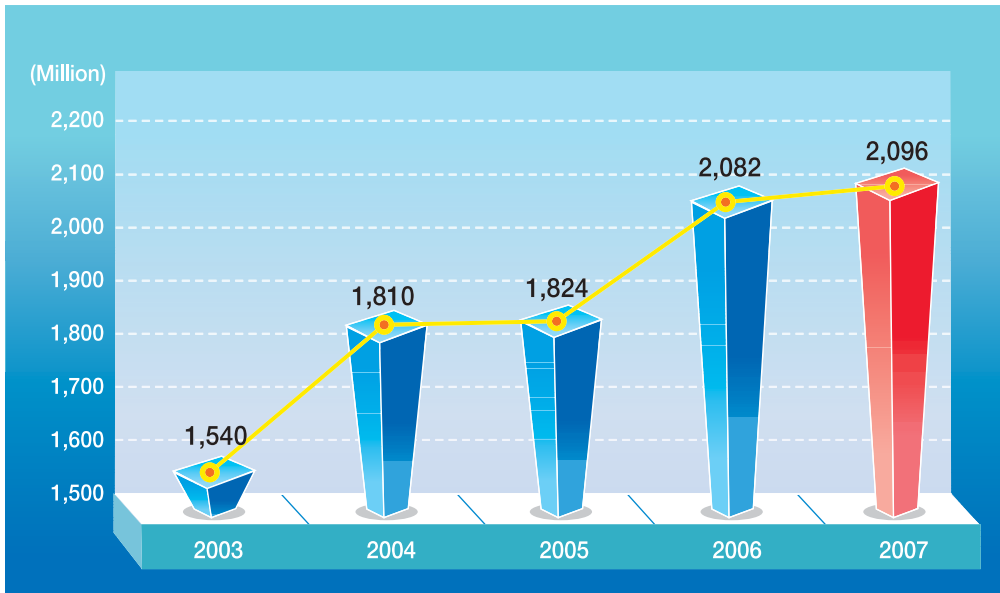
※ Note: From 2006, a local government is required to execute bid via KONEPS even in case of small amount of contract (i.e. private contract), which increased the number of bid notices.

6. Execution of e-Bidding

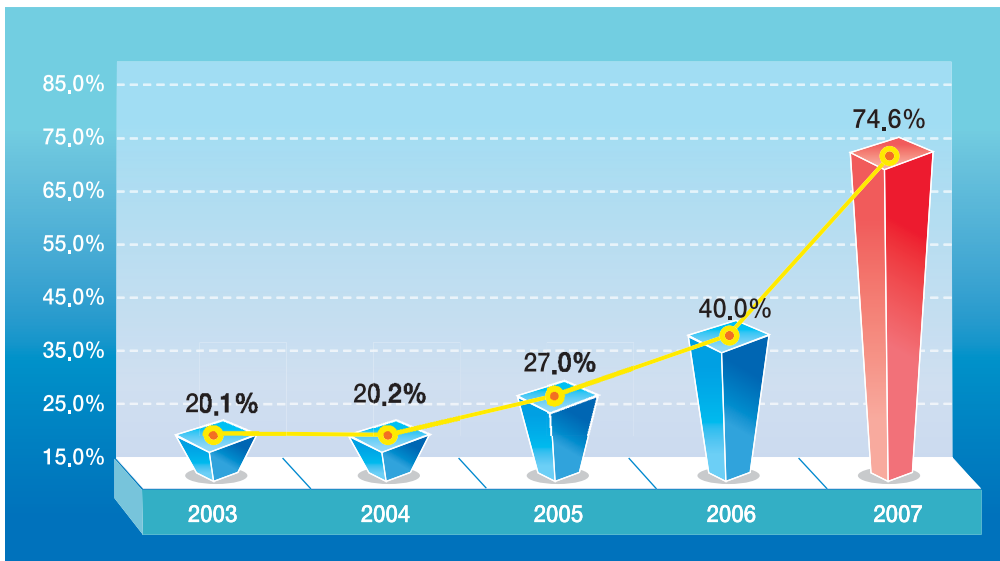


※ Note: See the Note of "Bid Notice through KONEPS"

7. Participant in e-Bidding

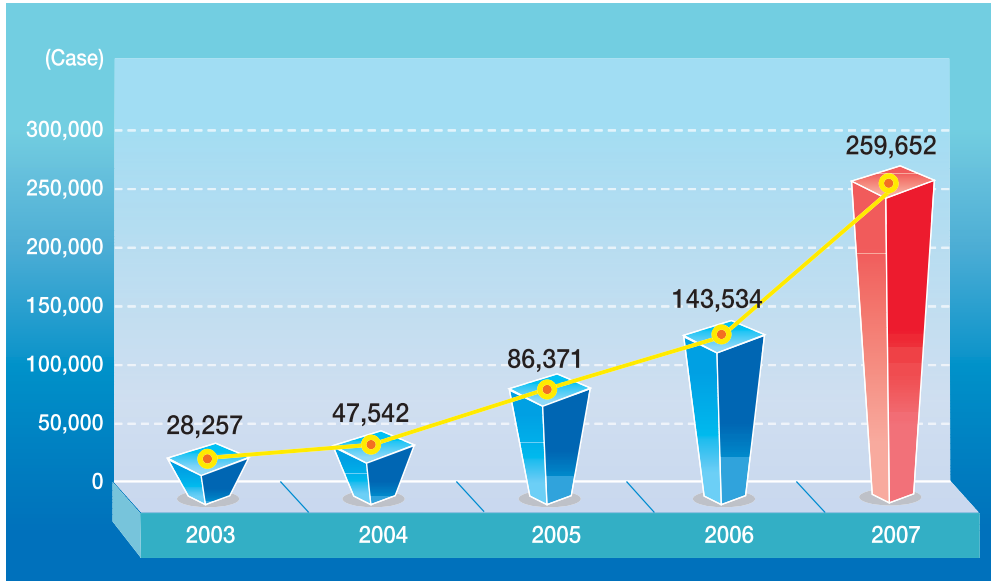


8. Use of e-Contract



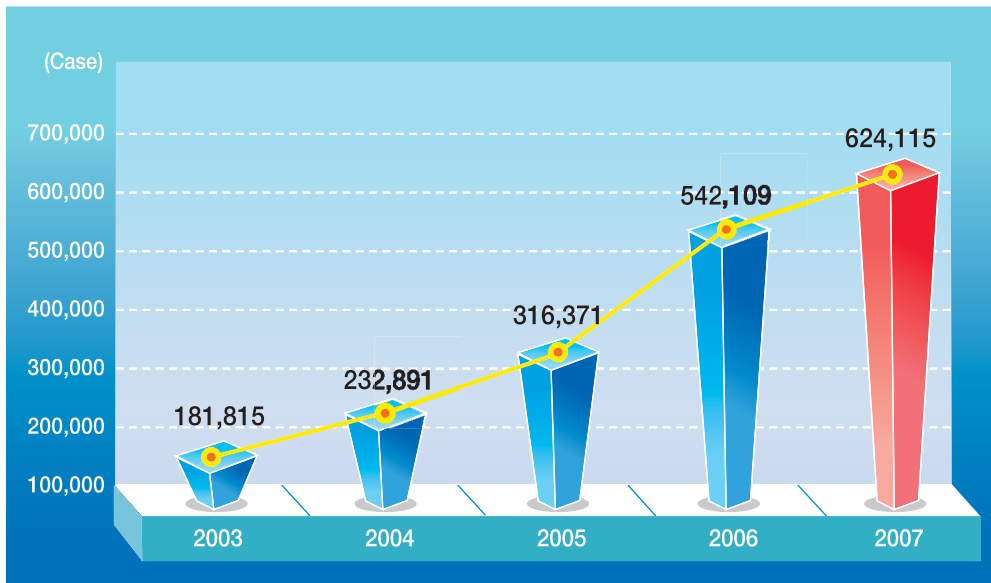
※ Note: The use of e-Contract remarkably increased resulted from promotion of e-Contract by educating KONEPS users and rewarding excellent organizations for transparent procurement from 2005.
Rate of use: e-Contract/e-Bid

9. Use of e-Certificate



※ Note: It increased in proportion to the use of e-Contract.

10. e-Delivery



※ Note: It increased in proportion to the use of e-Contract.



Government e-Procurement System Launching Ceremony (Nov. 3, 2000)

PPS established the Government e-Procurement System (GoBIMS) before KONEPS to realize the transparency in procurement administration.



The Nat'l Integrated e-Procurement System Launching Ceremony (Sep. 30, 2002)

PPS established the Nat'l Integrated e-Procurement System as one of 11 e-Government projects to digitalize the procurement process which is government-common business.

KONEPS in Pictures



KONEPS PR Booth at the Government Innovation Expo. (Jul. 2004)

KONEPS, the global brand of e-Procurement was presented to visitors at COEX Expo.



PPS gained BS15000 from BSI (British Standards Institutions) (Nov. 14, 2005)

PPS gained BS15000 from BSI, which was the first case in government bodies, in recognition for running KONEPS based on the international standards.



The Intelligent Product Information System Launching Ceremony (Mar. 3, 2006)

The Intelligent Procurement Information System was launched, which enabled e-Transaction by linking product information between G2B and B2B.



Presentation on the Registration of Product Information with KONEPS Shopping Mall (Jun. 13, 2006)

The presentation fair in order to show supplying business how to register product information with the government largest shopping mall was held before the system opened in July 2006.



KONEPS e-Bidding Demonstration (Oct. 26, 2006)

NGO and supplying representatives witnessed the e-Bidding security of KONEPS through quasi-checking.



Operation of the Government Procurement Call Center (Sep. 2002 ~ Present)

About 100 M cases of inquiries are received through the Call Center, asking of e-Procurement service or KONEPS.



「KONEPS」 Proclamation Ceremony (Oct. 10, 2006)

PPS changed the domestic name of e-Procurement Narajangteo to KONEPS for its 4th launching anniversary, and proclaimed its new name.

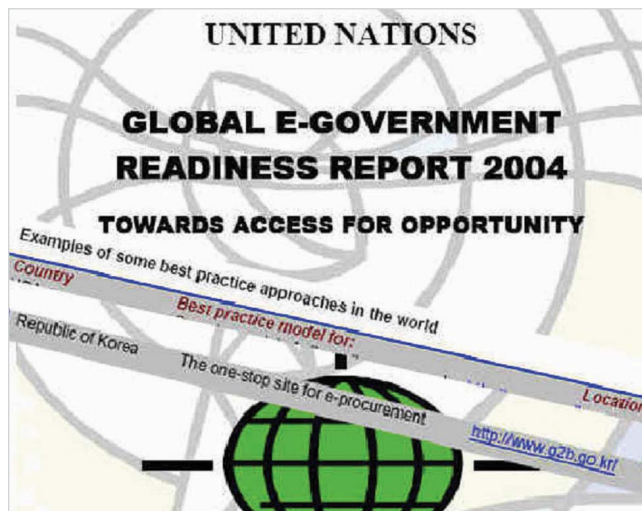


International Recognition of KONEPS



「UN Public Service Award」 (Jun. 23, 2003)

PPS won the UN Public Service Award for its outstanding performances in public procurement through KONEPS.



UN valued KONEPS as 「Best Practice Model」 (Nov. 2004)

UN evaluated KONEPS as 「Best Practice Model」 in the e-Government Index.



「Global IT Excellence Awards」 at WCIT (May 2006)

WITSA endowed PPS with Global Excellence Award in recognition of its prominent achievements in the service innovation sector using IT.



「e-Asia Award」 (Aug. 9, 2007)

PPS received e-ASA Award from AFACT for its excellent practices in e-Business in Public Sector.



1. Establishment of MOU with Foreign Countries



Vietnam (Nov. 26, 2004)



Georgia (Jan. 29, 2007)



Armenia (Jan. 30, 2007)

International Cooperation Via KONEPS in Pictures



Mongolia (Jun. 7, 2007)

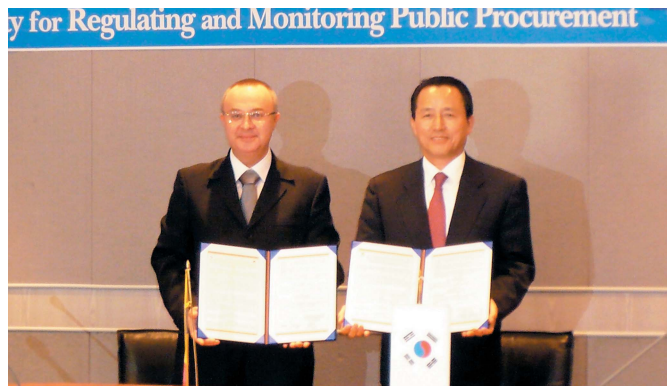


Ethiopia (Dec. 7, 2007)



Italy (Sep. 2, 2008)

International Cooperation Via KONEPS in Pictures



Romania (Oct. 1, 2008)



Tunisia (Oct. 28, 2008)



Senegal (Oct. 28, 2008)

2. Introduction of KONEPS in International Conferences



KONEPS at OCED Global Forum on Anti-Corruption (Nov. 2004)

PPS administrator introduced KONEPS at 「OECD Global Forum on Anti-Corruption」 which enhanced transparency in government procurement and curbed corruption.



PPS-ADB Institut and e-UNESCAP Co-hosted the International Conference on e-Procurement (Jun. 20-25, 2005)

34 procurement experts from foreign countries including China participated in the international conference on e-Procurement which was held at COEX, Seoul as to present each country's current e-Procurement status and best practices in procurement administration.

International Cooperation Via KONEPS in Pictures



e-Procurement Capacity Building Program for Foreign Procurement Officials (Jul. 3-10, 2006)

PPS-KADO co-hosted the e-Procurement training program for 12 procurement officials from 9 countries in Asia, Europe, Central & South America and Africa regions including Vietnam, Mongolia and Georgia.



PPS-World Bank Co-hosted the e-Procurement Workshop for Officials in 4 CIS Countries (Nov. 28-29, 2006)

23 procurement officials from 4 CIS countries – Kazakhstan, Azerbaijan, Armenia and Georgia – participated in the Workshop on e-Government Procurement Reform in Seoul.



PPS-UN Governance Center jointly hosted e-Procurement Capacity Building Programme (Dec. 19-21, 2006)

PPS invited procurement officials from 10 countries in Asia, and provided the e-Procurement capacity building program in Seoul.



Private-Public Task Force visited 4 countries for e-Procurement export (Jan. 22-Feb. 3, 2007)

PPS administrator with KIPA staff visited 4 OS countries to promote cooperation for e-Procurement. Pic: KONEPS is introduced to Armenian officials (Jan. 31, 2007)

International Cooperation Via KONEPS in Pictures



KONEPS Presentation in Peru (Dec. 15-20, 2007)

PPS made a presentation for Peruvian procurement officials who were in promotion of e-Procurement. P/c: PPS deputy administrator introduced KONEPS at a broadcasting station in Peru.



KONEPS in PPS-IDB Panama Workshop (Jan. 22-24, 2008)

The Joint e-Procurement Workshop was held in Panama on January 22-24, 2008. PPS made a presentation of a world class e-Procurement system, KONEPS. P/c: The PPS deputy administrator introduced KONEPS in presentation

KONEPS in IPPC 2008 (Aug. 28-30, 2008)

The 3rd International Public Procurement Conference was held in Amsterdam, the Netherlands on August 28–30, 2008. The PPS administrator made a presentation of Korea's e-Procurement and KONEPS.

Pic.: PPS Administrator Soo Man Chang delivers a keynote speech at IPPC 2008



Presentation of Innovation via KONEPS at KOAFEC IT Cooperation Forum (Oct. 27-30, 2008)

The 2nd KOAFEC Ministerial Conference was held in Seoul on October 27–30 with 33 ministers participated from over 30 countries in the African region. PPS presented the success story in procurement innovation through IT, KONEPS.

Pic.: The PPS administrator Soo Man Chang delivers a key note speech at the IT Cooperation Forum of the conference on October 29.

KONEPS Bench Markers from Foreign Countries



Malaysian Officials (Aug. 17, 2004)



KOTI Int'l Public Administration Course Trainees (Apr. 4, 2006)



KOTI Int'l PAIT Course Trainees (Mar. 21, 2005)



World Bank and Argentina Officials (Jun. 20, 2006)



Russian Officials (Apr. 12, 2005)



Bangladesh Officials (Nov. 11, 2006)



Mongolian Officials
(Feb. 26, 2007)



Saudi Arabia MOF Officials
(May 31, 2007)



LOGODI Training Course, Egyptian
Trainees (Feb. 28, 2007)



Thailand MOF Officials
(Sep. 27, 2007)



Deputy Minister of MOF, China
(Apr. 23, 2007)



Head of PPA, Ethiopia
(Dec. 6, 2007)

KONEPS Bench Markers from Foreign Countries



Turkey PPA President
(Jan. 17, 2008)



Indonesia UNCAC Implementation Team
(Mar. 14, 2008)



Deputy Minister of Commerce I.R. of Iran
(May 8, 2008)



Bangladesh Middle Manager Group
(Aug. 5, 2008)

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