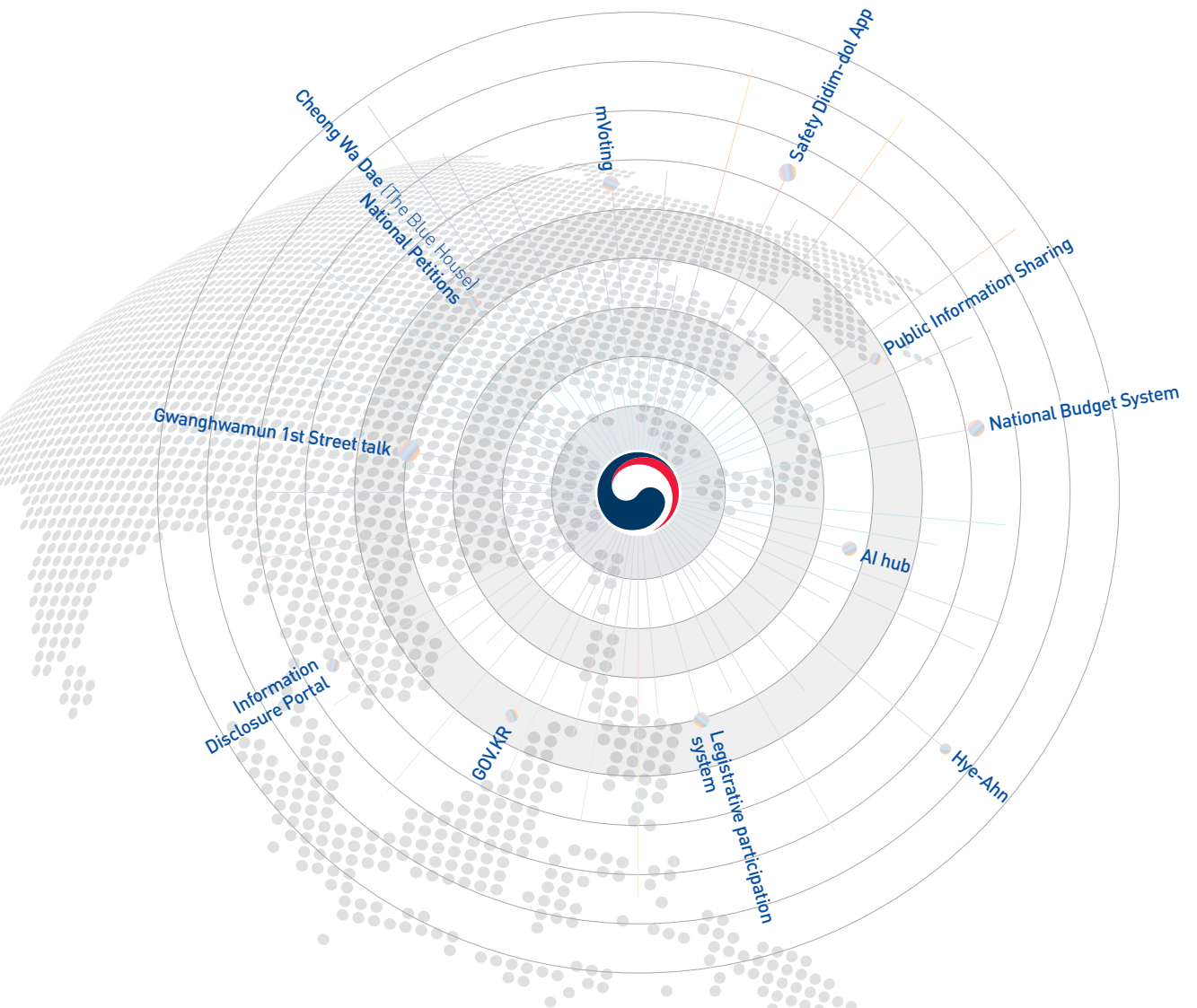
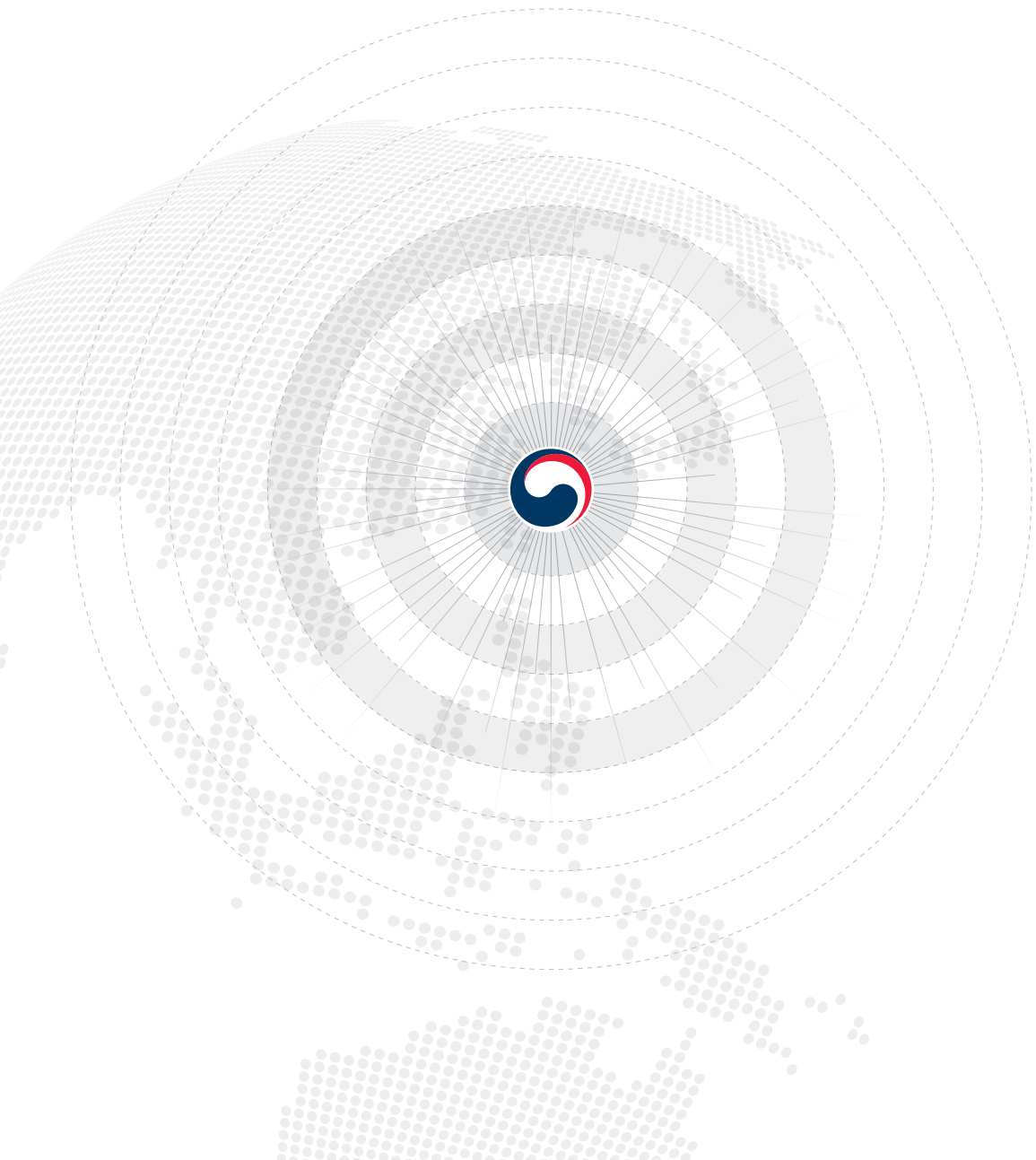


All that Digital Gov. KOREA



All that
Digital Gov.
KOREA



All that Digital Gov. KOREA



All that Digital Gov. KOREA (originally titled FAQs 50) has been drawn up to describe the most recent status of and data representing Korea's e-Government, under the initiative of the Global e-Government Division of the MOIS (Ministry of the Interior and Safety) and the Department of Global ICT Cooperation of NIA (National Information society Agency).

Korea's Digital Government has become a public brand recognized around the world, thanks to the interest and enthusiasm until now of the government ministries in our e-Government partner countries, and their officials who have visited Korea as invited trainees.

As part of our knowledge sharing with our digital government partners concerning the process of Korea's short-term growth, we have drawn up a list of FAQs that have arisen in the course of our efforts to promote global cooperation.

The Global Digital Government Cooperation Team would like to express its deepest gratitude to the many writers involved, from both within and outside NIA, for their contributions to the publication of FAQs50 in March 2019 and providing a solid foundation for this final booklet of All that Digital Gov. KOREA introducing the digital government in Korea.

"All that Digital Gov. KOREA," a high-level e-Government booklet able to represent the Republic of Korea. Thank you also to those who participated on the Supervisory Committee.

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Thank you all for your very valuable help on this booklet introducing our Digital Government in Korea, which can serve as an important foundation for future cooperation.



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PART

01

Introduction to the MOIS and e-Government of the Republic of Korea

About the Ministry of the Interior and Safety (MOIS) of the Republic of Korea

The Ministry of the Interior and Safety (MOIS) is a government department with the exclusive responsibility for driving e-Government development, leading government transformation by connecting the central and regional districts, and ensuring sustainable development in which the government, businesses, civic groups and individuals collaborate by utilizing intellectual information technology.

Under the slogan of "Enjoy your e-Government," and with objectives including Citizen Experience, Intelligent Government, and a sustainable Digital New Deal, the Ministry of the Interior and Safety (MOIS) is achieving government innovation through efforts to realize the following:



Ministry of
the Interior and Safety

01. Implementation of efficient online-based e-Government

Implementing a transparent and efficient digital government characterized by the processing of all government administrative work online

Enhancing administrative productivity by allowing the digitalization of diverse information owned by administrative institutions

02. Expansion of international intercourse/cooperation in the e-Government system

Expanding its role and responsibility in a leading e-Government country (ranked 1st in a UN e-Government Survey three times consecutively (2010, '12 and '14))

Informing other countries of outstanding e-government policies/systems/knowhow, and supporting e-Government exportation

03. Promotion of informatization of regional communities

Creating regional information infrastructures and promoting informatization by developing and distributing information policies to strengthen regions' competitiveness and improve local residents' qualities of life

Reducing the information gaps between cities and counties and between generations, and building a unified information community

04. Implementation of mobile e-Government

Providing infrastructure to support the settlement into place of mobile administrative services, and promoting safe and convenient mobile services

Providing accessible mobile services without boundaries, to increase government work efficiency

05. Efficient operation of Cloud-based e-Government

Integrating digital resources and expanding the Information Technology Architecture (EA) for effective e-Government operation

06. Formation of safe e-Government through establishment of information safety system

Consolidating the information security implementation systems and expanding the infrastructure to promote safe e-Government systems

07. Implementation of a safe society through ensuring personal information security

Creating a safe online environment for citizens by promoting realistic and effective personal information protection policies

Besides the above tasks, as a pivotal department in government operation and as a general disaster and safety control department, the Ministry of the Interior and Safety (MOIS) also has the following responsibilities to protect citizens from diverse disasters and manage the government's administrative affairs:

Operating cabinet meetings, proclaiming policies or treaties, managing government agencies and employing quota plans, comprehensive planning for government innovation, e-Government, protecting personal information, managing government buildings, administering local autonomous bodies, supporting local autonomous bodies' clerical work and taxation systems, supporting backward regions, mediating conflicts between local autonomous bodies, supporting elections and referendums, establishing/managing/modifying policies concerning safety and disaster control and other specific tasks such as disaster prevention, civil defense and emergency prevention

Currently located at 13, Jeongbu 2 Cheongsa-ro, Sejong-si, the Republic of Korea, the Ministry of the Interior and Safety (MOIS) was inaugurated by merger on July 26, 2017 of the former Ministry of Government Administration and Home Affairs and the Ministry of Public Safety and Security

01

Background of Korean e-Government

—
Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Definition of Concept of Korean e-Government

In 1996 the [First Framework Act on Informatization Promotion] defined e-Government as a “democratic government which provides maximum services at minimum cost by utilizing information and communication technology.” The [Electronic Government Act], enacted on 2001, then defined e-Government as “a government which utilizes information technology to digitalize clerical work and therefore efficiently carry out administrative duties not only linking different administrative offices but also involving the nation's citizens.”

Background of Korean e-Government Development

Since its adoption of a computer system in government organization for the first time in 1967, the Korean Government, by continuously encouraging the utilization of computers as well as a digitalization of administrative systems, has been able to assure its e-governmental ability to improve national industrial development, administrative efficiency, and public service development. In December of 1994 the Korean Government established the Ministry of Information and Communication (MOIC), to effectively and efficiently drive information society development in each individual area. Since then the MOIC has played a command center role in the informatization process.

In 1998 the government expanded its vision and strategy for e-government to encompass a

nationwide informatization policy, and redefined e-government as “a government which, through innovation of the entire administrative process, enables its citizens and businesses to utilize the various administrative and public information more easily and pioneers the knowledge informatization of the Korean Peninsula.”

After that the Korean Government recognized the development of e-Government as one of its key tasks, and promoted projects such as e-Government Project 11, e-Government Roadmap Project 31, Smart e-Government, Government 30 and other important e-Government related projects. Through completing such projects, Korea has been able to establish an e-Government system that is highly accredited around the world.

Characteristics of Korean e-Government

The Korean e-Government system has been developed and improved by the forming of a virtuous cycle between infrastructure (services) and service policies and regulations. The rise of new ICT technology has created demands on the new administrative services system, and to satisfy these demands the government has reformed the related laws and regulations. As a result, new e-Government services have been introduced. In such services, time plays a key role in the transformation of the administrative environment, and as new ICT technology is introduced the phase of remodeling of the old e-government system begins. In the history of the Korean e-Government system, innovative evolution and progressive evolution have happened simultaneously. The emergence of a new innovated administrative paradigm becomes a catalyst to imminent innovative evolution. And progressive evolution continues until the next cycle of innovation begins, in a process that repeats itself about every 10 to 15 years.



Pursuing an Intelligent e-Government System

As the economic scale expands and society develops, the administrative demands subdivide and become diversified. To meet such demands, a continuous restructuring of administrative services

is required. The 4th Industrial Revolution, by promoting the interactions of human beings and industry with technologies such as IoT, Cloud, Big Data and AI, is expected to completely transform our lives and the ways in which we work. To meet the arrival of this new paradigm, Korea has established its [2020 e-Government Framework], by introducing these next-generation technologies to its e-Government system.

The main three ideas of the [2020 e-Government Framework] are the following. First, the utilization of intellectual information technology (AI, IoT, Cloud, Big Data, Mobile, etc.) as prime methods of e-Government. The goal is to expand the public-private sector partnership not only for administrative purposes but also in its political, social and cultural aspects by utilizing such technology. Second, the transformation of services into integrated personalized services, which can reflect each citizen's compensative attributes and demands. Third, contributing to a new structure in which not only the government's innovation but also the government, businesses, civic groups and individuals collaborate with each other to develop the value of society. Finally, under the vision of "Enjoy your e-Government," Korea has selected National Sensibility Services, Cutting-edge Administrative Services based on Intellectual Technology, and a Sustainable Digital New Deal as its Big Three Goals.

Results of e-Government

The Korean e-Government has provided the people with convenient civil services through the expansion of remote civil service consulting systems and public participation, and driven innovations in the way the public works through information-sharing communication and cooperation. Also R&D and the application of new technologies has led to the creation of public demand and jobs in industry. These achievements are summarized by area as follows:

First, the e-Government, driven not only by the government but also by the private sector, the public and the people promoted as one, has changed people's lives greatly. In the past, people had to visit the government offices in the districts in which they lived in person and file complaints, but now they can handle civil petition application, processing, and filing of the related documents with just a few mouse clicks from their homes. People's lives have also become more convenient as e-government services can be used at anytime and anywhere through smartphones. Second, through e-Government, the administrative work of government and other public institutions has also been radically reformed. In the past there were difficulties in the sharing of information among organizations, but now, with an information system linked to a network between

governments, the time and the number of documents required by government employees has been drastically reduced. Third, government resources are now scientifically and efficiently managed after the building of a pan-government integrated computing environment and Cloud utilization. Fourth, large-scale government investments have been made through e-Government implementation, which has helped to enhance national competitiveness through the development from manufacturing-oriented industries to the software-oriented, Internet of Things and artificial intelligence-based information technologies supporting the current super-high-tech industries. Companies have also been able to enhance their competitiveness through the more easy handling of various licensing, import and export reporting and processing of tax filings through online e-Government services. Finally, through e-Government, society has become more transparent. Various licensing and bidding processes (such as for building administration, electronic procurement, etc.) are now handled transparently through the e-Government system, resulting in a significant decrease in irregularities and corruption.

02

Background of Korean e-Government Development

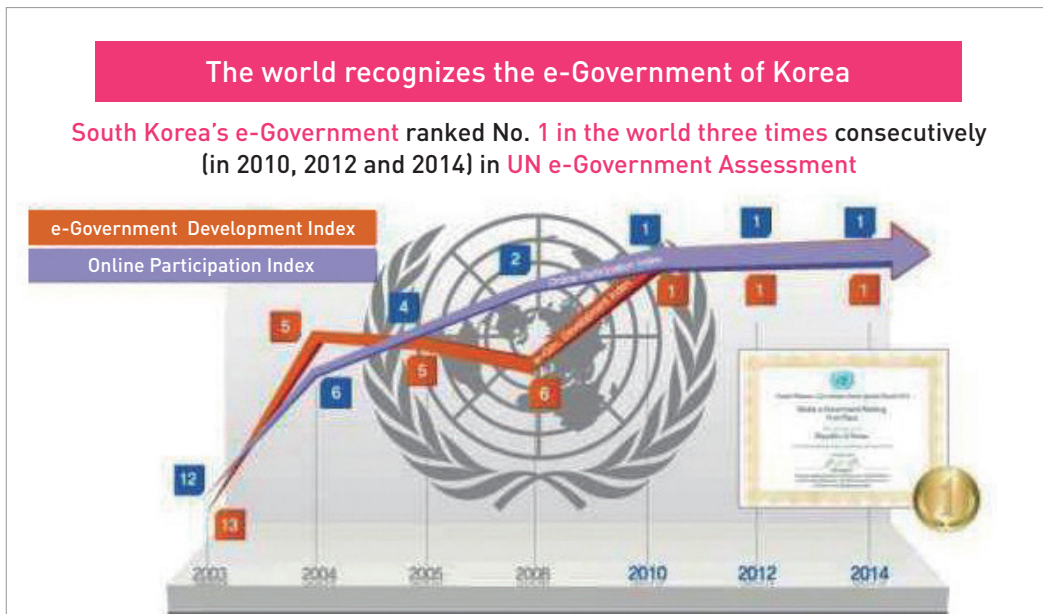
Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

e-Government Infrastructure (1967~1997)

Korea set a national agenda under the slogan of 'Although we were late in industrialization, let's take the lead in informatization!' and promoted e-Government based on the government's strong will to push ahead with this together with efforts in industry and academia. Fifty years later it has gained the title of a top-class e-Government in this world, having ranked first three consecutive times in an evaluation by a UN e-Government agency, and its e-Government exports have reached \$500 million.



Advanced e-Government Implementation (1998~2012)

South Korea has been pursuing the computerization of government administrative affairs since it first began using IBM computers in the Bureau of Economic Planning statistics office in 1967. In order to reduce the time spent by and the cost of manual labor, the government focused on utilizing simple accounting services such as the history of information and batch processing of cumulated data. From the late 1970s it became time to lay the foundation for e-Government through the pursuit of systematic computerization projects, including a pilot project to computerize the administrative system in North Chungcheong Province.

From the early 1980s to the late 1990s the government established a plan for a national computing network, and promoted five major national network projects-administration, finance, educational research, national defense and public security computer networks-on two occasions, to solve problems such as overlapping investment among ministries and the inability to link information due to insufficient standardization across ministries. Through this process, the computerization of major administrative areas related to residents, real estate, automobiles, customs clearance and weather conditions, which are the foundation of the e-Government, has been carried out. The G2G (Government-to-Government) Service, which enables not only the digitalization of the internal work of government agencies but also information linking between state agencies, was established on full scale through the establishment of high-speed national and public information communication networks. During this period, a department in charge of administrative computerization was set up in the Ministry of Government Administration, and the Ministry of Information and Communication was launched as the command center for informatization and played key role in the establishment of the national computer network, along with the Network Coordination Committee and the Korea National Institute of Technology. Also, the Act on the Promotion of Utilization and Supply of Computer Networks, the Framework Act on Promotion of Informatization, the Act on the Protection of Communication Secrets, the Act on the Disclosure of Information to Public Institutions, and the Software Development Promotion Act were passed and came into operation.

At the end of 1997, facing the foreign currency crisis, the newly launched Kim Dae-Jung government promoted the construction of e-Government to overcome the economic crisis. During this period a special committee for e-Government was formed, to coordinate opinions among ministries, decide on the priorities among projects, and conduct a review and evaluation of the results of the projects implemented. Further, it selected 11 tasks for e-Government such as 'Innovation of services to the people and businesses,' 'enhancing the productivity of administration' and

'construction of an e-Government infrastructure.' The subsequent Roh Moo-hyun administration then selected and promoted the tasks of 'Lead the way to work,' 'public service innovation,' 'information resource management innovation' and 'legislative revision' as four major areas of its e-Government 31 roadmap tasks. Through this, the government focused on implementing transparent administration through pushing innovation in the way administration operates, increasing efficiency in administration through innovation in information resource management, and promoting participation in administration through innovation in government services. During this period, the G4C (Government for Citizens) e-Government service for the public was launched in earnest, with the dissemination of high-speed information communication networks and the internet to the public. The most universally used e-Government services such as 'Minwon 24 (Civil Petition)', 'Nara Market (Government e-shopping mall)', 'Home Tax (Electronic National Tax System)', 'Public Information Sharing System', 'dBrain (Digital Budget Accounting System)', 'Korea Information System of Criminal Justice Services (KICS)', 'Saeol (Administration Information System for Local Governments)', and 'Happy e-Um (welfare system)' were all established during this period, and two-way services (G4C) crossing the boundaries among government departments were activated, through information linkages and joint usage of the various individual systems. At the infrastructure level, deployment of the high-speed national network was completed in 2005, while national information communication services exclusively for state agencies or local governments with secured security, stability and quality were established in 2009. From 1999 the electronic authentication and security system for safe e-administration was expanded, and the information protection base was strengthened. With the establishment of e-Government in each ministry, the government constructed a pan-government integrated computer center to efficiently manage the rapidly increasing information resources such as hardware, and this reduced costs by more than 30 percent. The Electronic Government Act, the basis of e-Government establishment, was also enacted, and included implementation of e-Government Principles, Administrative Responsibilities, Electronic Civil Service Handling, Electronic Administration Management, and the Common Use of Administrative Information, with the Ministry of the Interior and Safety undertaking the role of the command center for e-Government promotion.

World's Leading Intelligent Government (2013~Present)

e-Government services are being upgraded to new levels. In this period, the existing public services scattered across institutions have begun to be collected in a single location and also provided to beneficiaries in personalized formats. Incorporated with the new technologies such as Cloud, Big Data, Location-based Technology, RFID Sensors, Mobile Technologies and Smartphone-based Mobile Site Administration, various mobile public services have been provided. Public data have also been actively made available to the private sector for the development of services using public information, and the efficiency of Cloud-based information resources is being promoted. Based on such efforts, Korea's e-Government services have led a global administrative "Hallyu" (Korean Wave), by achieving the top spot in the UN's e-Government assessment three times in a row while \$500 million in e-Government exports have been recorded. Finally, the Korea government has established a framework for e-Government 2020, aimed at changing the ICT technologies and shifting its paradigms to suit the era of the 4th Industrial Revolution.

03

Roadmap Management System and Top 31 Key Contents

—
**Sustainable Development
Goals and Areas**



- ✓ Social Sustainability
- ✓ Economic Sustainability
- ✓ Environmental Sustainability

Key Contents

After the e-Government infrastructure had been established under the People's Government (1998-2002), the Participatory Government was launched amid growing public expectations for the specific performances of e-Government projects. The Participatory Government had expressed interest in increasing the effectiveness of government innovation through the linking of government innovation with e-Government. Accordingly, in August 2003 an e-Government roadmap consisting of four major areas, ten major agendas, and 31 tasks was announced, to promote creation of a pan-government electronic government related to government innovation. To achieve the vision and goals of the Participatory Government, this e-Government roadmap presented the objectives of promoting participatory democracy, establishing a balanced developed society, implementing the era of Northeast Asia, and achieving an era of per capita national income of \$20,000. Accordingly, e-Government was focused on implementing advanced administration by pursuing transparent administration through innovation in the ways in which civil servants worked, efficient administration through innovation in information resource management, and participatory administration through innovation in government services.

Ideas and Performances

The implementation of the world's best open e-Government pursued by the Participatory

Government has contributed to Korea's political and administrative entry into developed nation status. The three main philosophies of e-Government in this era of the Participatory Government were as follow. First, the establishment of a network government through service delivery innovation. The aim here was to implement e-Government services through the utilization of information and communication technologies crucial to the overcoming of time and space constraints, to thereby expand the quantity and upgrade the quality of various civil services. Second, the implementation of a knowledge government through improved administrative efficiency and transparency. Through e-Government, the government would increase the transparency of its administration and the accountability of public offices by dramatic expansions in the disclosure, sharing and joint use of administrative information held by the government. Third, the establishment of a Participatory Government bringing the real sovereignty of the people into materialization.

Roadmap

The 31st e-Government Roadmap Project was led by the e-Government Special Committee, launched in April 2003. The e-Government Special Committee consisted of 15 members from various professional areas, twice as many as in the past, in an effort to live up to the philosophy of the Participatory Government.

This structure defined the e-Government of this era as 'Participatory Governance,' in which numerous outside expert opinions were invested in making decisions. While the e-Government Special Committee explored and promoted the e-Government Roadmap, related ministries such as the Ministry of Government Administration and Home Affairs and the Ministry of Information and Communication provided administrative support, and National Information Society Agency supplied technical support.

The e-Government Special Committee developed roadmaps, evaluated their implementation processes, and performed the functions of adjusting them as needed. In the Participatory Government, a presidential policy office similar to the Executive Office of the President (EOP) of the US and the General de la Presence (SGP) of France managed the issues related to and the progress of the e-government roadmap. The main issues, however, were discussed and decided on during meetings on state affairs attended by the President. In 2004, the administrative support and execution functions of the e-government roadmap were unified within the Ministry of Government Administration and Home Affairs, and unlike the previous administration the

Participatory Government moved the government innovation and e-government functions from the current Ministry of Strategy and Finance to the Ministry of Government Administration and Home Affairs, with National Information Society Agency kept in charge of providing technology support. The e-Government system underwent major changes when the first Government Innovative Decentralization Committee was dismissed and the second committee launched in April 2005. While the first Committee had been operated mainly by six specialized committees—for administrative reform, personnel reform, e-Government, fiscal taxation, Innovation management and records management—the second Committee was composed of only two specialized committees, the Innovation Planning Special Committee and the Innovation Assessment Special Committee. Inheriting the roles and functions of the previous e-Government Special Committee, a new e-Government Special Committee re-emerged. The statuses of the official members of the committee were also upgraded to the vice-ministerial level. This upgrade was based on a judgment that coordination between ministries is important given the huge amount of taxpayers' money being spent on e-government projects, and also took into account the experience of the 'Government of the People' and trends in the developed world. Therefore, in June 2005, the second e-Government Special Committee was launched, and included as its members 13 civilians as well as vice ministers from the Ministry of Government Administration and Home Affairs, the Ministry of Information and Communication and the Ministry of Strategy and Finance.

Description and Management System of the 31 Main e-Government Roadmap Contents

Field of Promotion	Agenda	Roadmap and Title	Organizing Body
Work System Transformation	Establishment of Electronic Work Process	01. Digitalization of Documenting Process	Ministry of Government Administration and Home Affairs / National Archives of Korea
		02. Enhancement of National and Regional Fiscal Statuses	Ministry of Government Administration and Home Affairs / Ministry of Finance and Economy
		03. Implementation of e-Local Government	Ministry of Government Administration and Home Affairs
		04. Electronic Auditing System	Board of Audit and Inspection
		05. Implementation of Electronic National Assembly	Ministry of State Affairs
		06. Establishment of Integrated Criminal Justice Information System	Ministry of Justice / Supreme Public Prosecutor / National Police Agency / Court Administration
		07. Comprehensive Informatization for Personnel Administration	Civil Service Commission / Ministry of Government Administration and Home Affairs
		08. Informatization of Foreign Affairs and Trade	Ministry of Foreign Affairs and Trade

Field of Promotion	Agenda	Roadmap and Title	Organizing Body
Work System Transformation	Establishment of Electronic Work Process	09. Real-time Management of State Affairs	Presidential Office / Ministry of Government Administration and Home Affairs
	Common Use of Administrative Information	10. Expansion of Public Administration Information Sharing	Ministry of Government Administration and Home Affairs
	Service-Oriented Redevelopment	11. Development of BRM (Property Linkage Model)	Ministry of Government Administration and Home Affairs
Public Service Innovation	Enhancing Public Services	12. Enhancement of Internet Civil Service System	Ministry of Government Administration and Home Affairs
		13. General Service for National Security Management	National Emergency Management Agency
		14. Linkage and Advancement of Construction, Land and Registration System	Ministry of Construction and Transportation / Ministry of Government Administration and Home Affairs
		15. Advancement of Comprehensive National Tax Service	National Tax Service
		16. National Welfare Service	Ministry of Health and Welfare
		17. Food and Drug Information Service	Korea Food and Drug Administration / Ministry of Agriculture and Fisheries
		18. Employment Information Service	Department of Labor
		19. Administrative Appeals Internet Service	Ministry of Government Legislation
	Enhancing Enterprise Services	20. Single Window Enterprise Support Service	Ministry of Commerce, Industry and Energy
		21. Comprehensive National Logistics Service	Ministry of Maritime Affairs and Fisheries / Korea Customs Service
		22. Electronic Trade Service	Ministry of Commerce, Industry and Energy / Korea Customs Service
23. Foreigner Support Service		Ministry of Commerce, Industry and Energy / Ministry of Justice / Ministry of Labor	
24. Support for e-Government's Overseas Advancement		Ministry of Information and Communication	
Expanding Public Electronic Participation	25. Public Online Participation	Ministry of Government Administration and Home Affairs / National Election Commission	
Information Resource Management Innovation	Standardization of Information Resources	26. Establishment of Pan-Government Integrated Computing Environment	Ministry of Information and Communication
		27. Advancement of e-Government Communication Network	Ministry of Information and Communication
		28. Application of Pan-Government Information Technology Architecture	Ministry of Information and Communication

Field of Promotion	Agenda	Roadmap and Title	Organizing Body
Information Resource Management Innovation	Strengthening of Information Protection System	29. Establishment of Information Protection System	National Intelligence Service / Ministry of Public Administration / Ministry of Information and Communication
	Specialization of Informatization Personnel and Organizations	30. Reinforcement and Maintenance of Informatization Personnel and Operational Organizations	Ministry of Government Administration and Home Affairs
Legal Maintenance	Realigning Electronic Government-Related Legislation	31. Electronic Government Implementation and Realigning of Safety Legislation	Government Innovation Committee

04

Method of Financing of e-Government in Korea

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

The Importance of Stable Financing

Recognizing the importance of securing the resources needed to establish its information and communication infrastructure and e-Government, South Korea utilized diverse funding methods. The 'settlement after investment' method was used to establish the long-term national computing network, and an Informatization Promotion Fund was created to establish the high-speed information network. Furthermore, through the setting of e-Government as a national agenda of the president, the government budget for the program was funded.

Settlement after Investment

To establish the national infrastructure network, a total of about 780 billion won was needed over 10 years. To cope with this tremendous scale of required funding, the presidential office's Office of Economic Affairs chose to set up a subsidiary of the Korea Telecommunications Corporation (currently KT) to provide the necessary funds. The method was for Korea Data Telecom, a promotion agency dedicated to the building of this national network, to first invest the cost of the project with its funds, and later then retrieve the funds invested from a subsidiary of the Korea Telecommunication Corporation. The government established the National Computerization Agency (now National Information Society Agency) in 1987, in order to settle the actual costs of

the project to build the inter-government computer network, and implemented strict management of the budget expenditure.

Development and Application of Informatization Promotion Fund

Korea had inherited the Informatization Promotion Fund (1993-1995), which if had operated under the “Act on Research and Development of Information Communication” from 1996. Between 1993 and 2001 a total of 7.3714 trillion won were injected into the Informatization Promotion Fund, in order to establish high-speed networks, promote information services, develop the IT industry and advance IT research. Through this bold and resilient input of the Informatization Promotion Fund, Korea had laid the foundation for its knowledge and information society by establishing a high-speed information communication network (155M – 5Gbps) able to be used by anyone anywhere. Currently, 10,400 elementary, middle and high schools nationwide are connected to high-speed Internet, and more than one in two Koreans use the Internet (1,630,000 persons in 1997 -> 24.38 million persons in 2001). The foundation for e-Government implementation was also established with this fund, and included the creation of the electronic document distribution environment for all central government agencies and an expansion of the GC infrastructure including the national tax D/B.

Securing e-Government Funding

Under the People's Government, Korea had adopted an e-Government vision and policies that put e-Government at the core of the national informatization policy, and e-government was later adopted as a national agenda of the president, enabling the government to secure necessary business expenses from the government budget in a stable manner under the president's strong leadership. The bold financial investments in the e-Government project reached 2,322 million won during the People's Government, 9,245 million won under the Participatory Government, 5,661 million won during the Lee Myung-Bak administration, and 3,980 million under the Park Geun-Hye government.

e-Government Financial Support System

Duration	Financial System	Ministry in Charge	Legislation
1987 ~ 1992	Settlement after Investment	Postal Service	Computer Network System Legislation
1993 ~ 2004	Informatization Promotion Fund	Ministry of information and Communication	Basic Act on Promotion of Informatization (General Account for Informatization)
2005 ~ Present	General Accounting Budget	Ministry of the Interior and Safety	Budget Accounting Act (General Accounting, e-Government Contributions)

05

Key Factors behind e-Government Success

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Key Success Factors of e-Government

The key factors behind the success of Korea's e-Government can be summarized altogether as the "promotion of a sustainable e-Government through a virtuous cycle." The Korean Government's strong leadership and promotion system, its establishment of insightful medium- and long-term plans, its creation of forward demand through bold and continuous investment, the active ICT industry and corporate development and expansion of the market, and the people's culture of accepting new technologies and services have all led to a virtuous cycle connected by active e-Government use to lead thereby to the formation of a sustainable advanced e-Government system.

Strong Leadership and Adoption of State Affairs Tasks

Information systems such as e-Government should not be expected to be created all at once but must evolve, which means that having strong leadership and a system to drive the process is required if it is to grow successfully into a sound system. South Korea's former presidents adopted e-Government as parts of their national agendas, and provided continuous attention and financial and institutional support. And because of this continuous attention to and adaptation of e-Government projects such as e-Government Project 11, e-Government Roadmap Project 31,

and Smart e-Government, Korea has been able to establish the world's best electronic government system.

Bold and Continuous Financial Investment

Korea implemented a 'selection and concentration' strategy to establish its early basic national information systems and the Korea Public Session for the Internet (PUBNet). 'Selection and concentration' was a strategy most suitable to achieving a high performance with limited resources. In the face of predominant opinions that the e-Government promotion plan was infeasible due to the astronomical amount of funds required for it, the Korea government solved the budget problem by adopting the "settlement after Investment" method as part of its fiscal strategy. This financial strategy has become a highly beneficial operating model for e-Government projects in other countries.

Continuous financial investment is essential to promoting government innovation through the e-Government system. However, it is difficult to carry out long-term and large-scale investments with only the government's general budget. To overcome this financial difficulty, the Korean government steadily secured the funds necessary in the early stages of its e-government project by utilizing parts of Korea Telecom's revenues from telecommunication services each year as informatization promotion funds. Since then, even since the e-Government entered a mature stage, more than 1 percent of the national budget each year has been invested in e-government and other national informatization.

Operation of Pan-governmental, Permanent Promotion System

Another key to the successful promotion of e-Government is close cooperation and coordination among the related agencies. Korea has displayed leadership to secure such cooperation by setting up a special committee for e-Government under the direct control of the president, and allowing that committee to oversee the selection, monitoring and assessment of the important e-Government tasks. Also, in cases where the interests of different ministries and agencies have been sharply divided, the presidents have shown leadership by taking active steps to resolve the issues concerned.

The Korean government launched the Ministry of Information and Communication (MOIS) as the

ministry in charge of overseeing information and communication and informatization, to secure the expertise and continuity of policies, while the Ministry of Government Administration and Home Affairs (MOGAH) was enabling e-Government implementation across the entire nation, encompassing both the central and local governments. In addition, National Information Society Agency (NIA), the Korea Internet & Security Agency (KISA), the Korea Information Society Development Institute (KISDI), the Korea Local Information Research and Development Institute (KLID), the National IT Industry Promotion Agency (NIPA), and the Electronics and Telecommunications Research Institute (ETRI) were all established, to respond actively to technical issues arising in the process of e-Government promotion.

Reform of Legal System and Enactment of e-Government Act

A major obstacle to new e-Government services with ICT was a legal system designed to fit the existing offline administrative environment centered around paper documents. Specific e-Government policies, projects and legal institutional grounds for operation had become necessary, and the Korean government therefore promoted legal system readjustment while pushing ahead with its e-Government projects.

To efficiently adjust the complex legal system, the e-Government Special Committee, which holds a neutral position, led the reformation and investigated and analyzed all elements in the existing legal system that needed to be readjusted in the process of promoting e-Government. After careful investigation and study of the existing legal system, the e-Government Special Committee either revised or newly enacted 187 laws. In addition, by establishing the world's first e-Government Act in 2001, the Korean government was able to provide the basis for the mitigation of factors causing legal obstacles.

#5. Culture of Acceptance of New Technologies and Services

During the early stages of its e-Government project, the Korean government devoted institutional efforts to ensuring that the public did not suffer difficulties in using the new e-Government services, by promoting computer education for the entire population. As a result of its efforts, Korean citizens have shown very rapid adaptation to goods and services involving new ICT technologies. This culture of acceptance of new technologies has contributed to the successful settlement into place of e-Government, including the activation of Internet-based e-Government services as well as of mobile and SNS-based services.

06

Legal System of e-Government

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Background of e-Government Act

South Korea has pursued various policies to ensure the transparency and efficiency of all administrative tasks carried out between administrative agencies, as well as between these agencies, the people and businesses, by reforming the ways in which government works in line with its informatization and by digitalizing all business processes. As 'e-Government' emerged as a major national policy agenda in the late 1990s, a full-scale project was carried out to implement it. For the implementation of e-Government, the Korean government enacted in 2001 the [Act on the Promotion of e-Government, Administrative Tasks for Implementing e-Government], the first legislation of its kind in the world. This Act, which was designed mainly to facilitate the implementation and operation of e-Government, the electronification of administrative management, the digitalization of public services, a reduction of paperwork, and the promotion of e-Government projects, was amended as the "e-Government Act" in March 2007. From that time to the present, the [e-Government Act] has served as the basic law behind e-Government implementation.

Main Contents of e-Government Act

The main contents of the [e-Government Act] center around the provision and utilization of e-Government services, including basic principles for e-Government policy promotion,

digitalization of the civil petition processes, and the introduction of new technology-based e-Government services. The Act also stipulates the establishment and utilization of electronic documents, administrative electronic signatures and common data utilization infrastructure systems, the joint use of administrative information, the introduction and utilization of information technology arcades to strengthen the operational foundations of e-government, the creation of an efficient management base for information resources, and the designation of electronic government project promotion and diagnosis and international cooperation agencies as means of implementing the e-government projects.

Classification	Main Contents
General Rules	Purpose, Definition, Responsibilities of Administrative Agencies and Civil Servants, Principles of e-Government, Establishment of e-Government Basic Plans, Establishment and Inspection of Agency-specific Plans
Delivering and Utilizing e-Government Services	Electronic Civil Petition Processing Provision and Promotion of e-Government Services
Electronic Administrative Management	Preparation of Electronic Documentation, Validation and Effects, Transmission, Sending and Arrival Periods, Administrative Electronic Signature Certification, Establishment and Utilization of Common Data Utilization Infrastructures, Electronic Business Performances, Reduction of Paper-based Document Use
Common Use of Administrative Information	Efficient Management and Utilization of Administrative Information, Joint Administrative Information Utilization Center, Application for and Approval of Joint Administrative Information Use, Right to Access Written Consent of Subject of Information, Claims for Expenses for Joint Use
Reinforcement of e-Government Operation Foundation	Introduction of Information Technology Architecture and Establishment of Efficient Management Foundation for Information Resource Utilization, Improvement of Information System Reliability and Safety
Promotion of Consent for e-Government Implementation	Promotion and Support of e-Government Projects, Consignment of Business Management, Promotion and Support of Regional Informatization Projects, Prior Consultation, Performance Analysis and Diagnosis, International e-Government Cooperation, Designation of Specialized Agencies

● e-Government Concepts and Scopes of Application

The [e-Government Act] defines “e-Government” as a government which utilizes information technology to digitalize the work of its administrative agencies and public institutions in order to efficiently carry out administrative work between agencies and the people. This definition applies to various public institutions such as the National Assembly, the Court, the Constitutional Court and the Central Election Commission, the Central Administrative Agencies (including those under the president and the prime minister) and their affiliated agencies, and the administrative bodies of local governments, along with government-funded organizations, corporations, special corporations, and schools.

● Principles of e-Government Promotion

The basic principles of e-Government are the following. First, when promoting e-government consideration should be given first to matters such as e-Literacy of the people's services, innovation and productivity and efficiency of the administrative work, securing the safety and reliability of the information systems, the protection of personal information and privacy, increasing the disclosure and joint use of administrative information, the prevention of overlapping investments and the enhancement of interoperability, and the related measures necessary to enhancing e-government should be taken. Second, it is required of the administrative agencies that they base their efforts on the information technology architecture when implementing, operating and developing the electronic government. Third, the administrative agencies should not require applicants to submit items that can be verified electronically through joint sharing of administrative information between each other. And finally, the personal information held and managed by administrative agencies must not be used against the wills of the parties concerned except as provided for under the Act.

● Establishing Basic Plan for e-Government

Every five years the National Assembly, the court, the government, and other central administrative institutions must establish their basic e-government plans. In the [e-Government Act], it is specified that items such as the basic directions of e-government implementation and the directions of medium- to long-term development, the readjustment of statutes and systems, promotion of the provision and utilization of e-government services, electronic administrative management, and expansion of the common use of administrative information should be included in the new basic e-government plans. Administrative and public agencies should also establish their own individual e-government plans every five years, and submit them to the heads of the central agencies responsible for administrative affairs.

Other Miscellaneous Laws and Guidelines for e-Government

In addition to the "e-Government Act," there are 10 statutes related to the disclosure of administrative information, the making available of public data, the protection of personal information, the procuring of security and the management of software businesses connected with the establishment and operation of e-government. Various guidelines and standards based

on e-government-related statutes also play important roles in e-government implementation. Examples of such e-Government related statutes include guidelines on the construction and operation of information systems, guidelines of administrative information sharing and database designs, administrative standard codes, secure coding, web security guidelines, mobile common platform utilization guidelines, web accessibility guidelines, service compatibility guidelines, and supervision regulations.

07

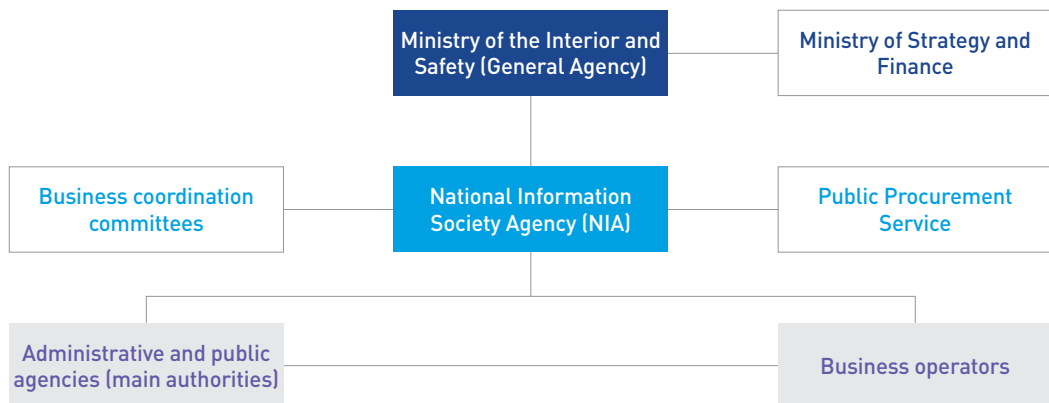
e-Government Governance

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview of Governance under e-Government Act



As the agency in overall charge of e-Government, the Ministry of the Interior and Safety (MOIS) oversees the development of plans for its implementation and the securing of budget from the Ministry of Strategy and Finance, while also contributing its own funds. National Information Society Agency (NIA), as a specialized agency, supports the distribution of services developed through the related projects, while the business coordination committees review the project proposals and business plans for support projects. The administrative and public institutions select the service operators for implementations of the various projects, by establishing the project plans and preparing the requests for proposals. Finally, the Ministry of Strategy and

Finance is in charge of providing the necessary budget and support, and utilizing the balance remaining after budget execution for other projects.

Roles of Ministry of the Interior and Safety (MOIS)

The e-Government Bureau of the Ministry of the Interior and Safety (MOIS) handles all administrative affairs of the government online, and promotes the enhancement of administrative productivity through the digitalization and sharing of information from administrative agencies and promoting policies to develop and support informatization of the local communities. Especially, in order to advance the e-Government system, the MOIS implements mobile administrative services such as mobile e-Government, promotes the utilization of Cloud computing and integration of information resources and information technology architectures, and implements safe e-Government by strengthening the information protection system and expanding the information protection infrastructure, including privacy policies, to thereby ensure safe management of the people's personal information and counteract any adverse functions of the related technological developments. Furthermore, the Ministry of the Interior and Safety supports exports of e-Government-related knowhow, and is working to expand Korea's role as a leading e-Government nation.

Roles of Central Administrative Office

The Ministry of the Interior and Safety (MOIS) defines the "Central Administrative Office" as a combination of central administrative agencies, their subordinate affiliated agencies, and the autonomous local governments.

The Head of the Central Administrative Office can designate, change, or cancel the standardized information resources (hereinafter referred to as "shared services") that can be utilized by administrative agencies and the private sector, after consultation with the relevant administrative departments. Its purpose is to find and select excellent information resources among them, which it can then distribute to the other administrative agencies.

e-Government Promotion Committee

The e-Government Promotion Committee, affiliated with the Ministry of the Interior and Safety, is an organization that reviews, examines and makes adjustments related to matters concerning the establishment, implementation and promotion of e-Government plans and policies. The e-Government Promotion Committee conducts deliberations on the directions and strategies for e-Government promotion, the establishment, implementation and evaluation of the basic plans, improvements of the relevant legal systems and policies, and reviews and coordination of the related projects. With support from the Minister of the Interior and Safety and civilian experts as co-chairs, the e-Government Promotion Committee emphasizes policy and technical cooperation with the private sector. As one example, the committee operates an e-Government public-private partnership forum, composed of industry-academic experts and government officials, and entrusts it with the role of carrying out professional research and consulting on e-Government related policies and technologies. Further, the e-Government Promotion Committee can present agendas to the Information and Communication Strategy Committee, if deemed necessary for the efficient promotion of e-Government in relation to the IC Strategy Committee's efforts for national informatization.

Professional Supporting Agencies (NIA, KLID)

The agencies in charge of policy and business promotion and support at the practical level are National Information Society Agency (NIA) and the Korea Local Information Research & Development Institute (KLID). National Information Society Agency (NIA), founded based on the Framework Act on National Informatization, supports the Ministry of the Interior and Safety with its electronic government headquarters. These agencies have been promoting practical policies and projects, including the expansion of the national computer network that laid the foundation for the spread of informatization and e-Government. Currently these agencies are supporting the operations of e-Government promotion systems, conducting research on the related legal systems and policies, developing e-Government support projects, and implementing and managing e-Government. They also provide support for information system and information resource management, and work to promote EA and national data management policies. They in addition actively support tasks such as the promotion of policies and businesses for mobile e-government, public innovations based on intelligent information technology such as artificial

intelligence, and the promotion of projects for discovering application services in the face of the approaching intelligent information society. The Korea Local Information Research & Development Institution (KLID), established under the [e-Government Act], aims to strengthen regional competitiveness and improve the qualities of life of residents through regional informatization. The KLID contributes mainly to the promotion of e-Governments by establishing and operating local governments' administrative information systems, fixing information system failures and strengthening security systems, and conducting research and consultation on the development of systematic informatization by local governments.

08

Personal Information Privacy & Security

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Strengthening Foundation of Personal Information Privacy

Since August 2014 the Korean government has been striving to minimize the collection of personal information in order to prevent possible personal information misuses or abuses and leakage incidents, by for example allowing residents' registration numbers to be collected only when necessary for business and legal purposes. From 2016 the Government limited the scope of legislation authorizing the collection of residents' registration numbers to laws, presidential decrees, and the rules of the National Assembly, the Supreme Court, the Constitutional Court, the Central Election Commission and the Board of Audit and Inspection.

The Personal Information Protection Committee, through its personal information violation assessment system, has strictly reviewed the legitimacies of the resident registration number collection legislations that the individual ministries have proposed to newly establish. In addition, it has strictly managed and controlled the uses of residents' registration numbers by including the current statuses of enactment and revision of the legislations in its annual report on personal information protection. Furthermore, to minimize damage and personal information violations, the committee has devoted administrative, technical and physical efforts to securing personal information safety, and its standards are being continuously supplemented and improved.

Privacy Protection Activities

Article 33 of the Personal Information Protection Act requires that public institutions carry out personal information impact assessments to prevent breaches of personal information security. A personal information impact assessment involves an evaluation designed to prevent incidents of infringement in advance, through the analysis and mitigation of risk factors that could cause violations of personal information privacy of the subjects of information due to the operation of personal information files. The government also conducts an annual monitoring of personal information exposures on public sector websites through an "early warning system for personal information exposure." It is required that individual information detected for exposure be deleted immediately from the sites. In addition, the government also provides technical support to small businesses and non-profit organizations to help them prevent the recurrence of personal information exposures on their homepages.

Meanwhile, to facilitate the finding of data related to personal information protection, the Government also operates a comprehensive portal for personal information protection (www.privacy.go.kr). To enhance users' convenience, the government continuously updates and supplements the contents of its online education for personal information managers, handlers, students, and ordinary people, and continuously improves and supplements a variety of data related to personal information.

Strengthening Status Evaluation on Personal Information

More than 300 on-site inspections are carried out every year, including pre-emptive inspections and special inspections conducted in response for example to reports of violations and the receipts of civil petitions. Through this process, the government strives to enhance the level of privacy protection in society by disclosing to the media a list of companies at which there have been large leakages of personal information and imposing substantial fines on such companies. The government also encourages self-inspection and improvement through its efforts to raise awareness of this issue.

Further, all public institutions are examined every two years for the implementation of safety assurance measures. The survey of the safety assurance action management statuses of the individual identification information processors comprises 26 key inspection items in accordance with the safety assurance action criteria, and the organization submits the results of its inspection

of safety measure implementation for each item so that the implementation status can be identified and remedial actions taken as necessary. Analysis of the status of safety measure implementation according to the results of the survey, and opinions collected from the surveyed are used as reference materials when developing policies related to the implementation of safety measures in the future. Also, through assessment of the level of management of personal information protection, the government provides diagnostic indicators and consults with the public institutions concerned to ensure that they maintain safe levels of protection by identifying their levels of protection and ensuring that they undertake improvements in areas where protection is judged to be insufficient.

Strengthening the Rights of Information Subjects

The Ministry of the Interior and Safety has been operating an "e-privacy clean service" since July 2010, to minimize damage such as the illegal use of others' names and infringements of privacy caused by personal information leakage and misuse, and to ensure information subjects' rights to self-determination of the uses of their private information. The e-Privacy clean service checks personal identification details required for membership registrations, age identification (adult identification) and real-name authentication on the Internet, and supports membership withdrawals from websites that are suspected of identity theft or no longer necessary. Since August 2017, with the introduction of the convenient 'Mobile Phone Authentication Service,' practical integrated identity verification has become available in place of the previous system under which separate identity verification had to be gone through each time a new service was used.

Raising the Perception of Privacy

While providing tour trainings for public institutions and businesses, the government encourages the various public institutions, government officials, and educational institutions to implement education on personal information protection, and provides specialized training for employees in charge of personal information protection on a quarterly basis, to enhance their work proficiency.

Laws on Privacy

Area	Legislation	Link
Privacy Act and Subordinate Statutes	Personal Information Protection Act	Law aimed at protecting individuals' freedoms and rights by stipulating matters concerning the processing and protection of personal information and thereby helping to realize personal dignity and value. http://elaw.klri.re.kr/kor_service/lawView.do?hseq=35739&lang=ENG
	Enforcement Decree of the Personal Information Protection Act	Regulations on matters covered by the Personal Information Protection Act, and those required for its implementation http://elaw.klri.re.kr/kor_service/lawView.do?hseq=37363&lang=ENG
	Enforcement Rules of the Personal Information Protection Act	Enforcement of the Personal Information Protection Act, and other matters as stipulated by the Enforcement Decree of the Act (Korean) http://10.180.117.75/LSW/lSc.do?menuId=0&p1=&subMenu=1&nwYn=1&section=&tabNo=&query=%EA%B0%9C%EC%9D%B8%EC%A0%95%EB%B3%B4%20%EB%B3%B4%ED%98%B8%EB%B2%95#undefined
	Standard Privacy Guidelines	Specify the criteria for processing of personal information, the types of personal information breaches, and the details of preventive measures (Korean) http://10.180.117.75/LSW/admRulLsInfoP.do?admRulSeq=2100000093757
	Criteria for securing personal information safety	The necessary criteria for securing of safety to prevent personal information from being lost, stolen, leaked, falsified or damaged (Korean) http://10.180.117.75/LSW/admRulLsInfoP.do?admRulSeq=2100000093770
	Notice on the Certification of the Personal Information Management System, etc.	Establishes the requirements for authentication of privacy management systems (Korean) http://10.180.117.75/LSW/admRulLsInfoP.do?admRulSeq=2100000093807
	Regulations on the Protection of Personal Information and the Designation of Self-regulatory Organizations, etc.	Promote and support autonomous personal information protection activities by stipulating matters concerning the designation of organizations that implement self-regulation in relation to personal information protection (Korean) http://10.180.117.75/LSW/admRulLsInfoP.do?admRulSeq=2100000093064
	Notice on Personal Information Impact Assessment	Establishes detailed criteria concerning the procedures for designation of and impact assessment by the evaluating institutions (Korean) http://10.180.117.75/LSW/admRulLsInfoP.do?admRulSeq=2100000093255

Area	Legislation	Link
Acts on the Protection of Personal Information in the Information and Communication Network Sector	Act on the Promotion of Information Network Utilization and Information Protection, etc.	<p>Enacted to protect personal information in the information and communication sector, it provides protection measures for each stage including personal information collection, utilization, provision, management and cancellation, and the rights of the information users</p> <hr/> <p>http://elaw.klri.re.kr/kor_service/lawView.do?hseq=38422&lang=ENG</p>
Acts on the Utilization and Protection of Credit Information	Act on the Utilization and Protection of Credit Information	<p>Includes regulation of the collection, investigation and processing, distribution, utilization and management of credit information, as well as the protection of credit information subjects, in order to protect people's privacy and prevent the misuse or abuse of credit information</p> <hr/> <p>http://elaw.klri.re.kr/kor_service/lawView.do?hseq=42569&lang=ENG</p>

09

Elimination of Digital Divide

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Background of Policy to Eliminate Digital Divide

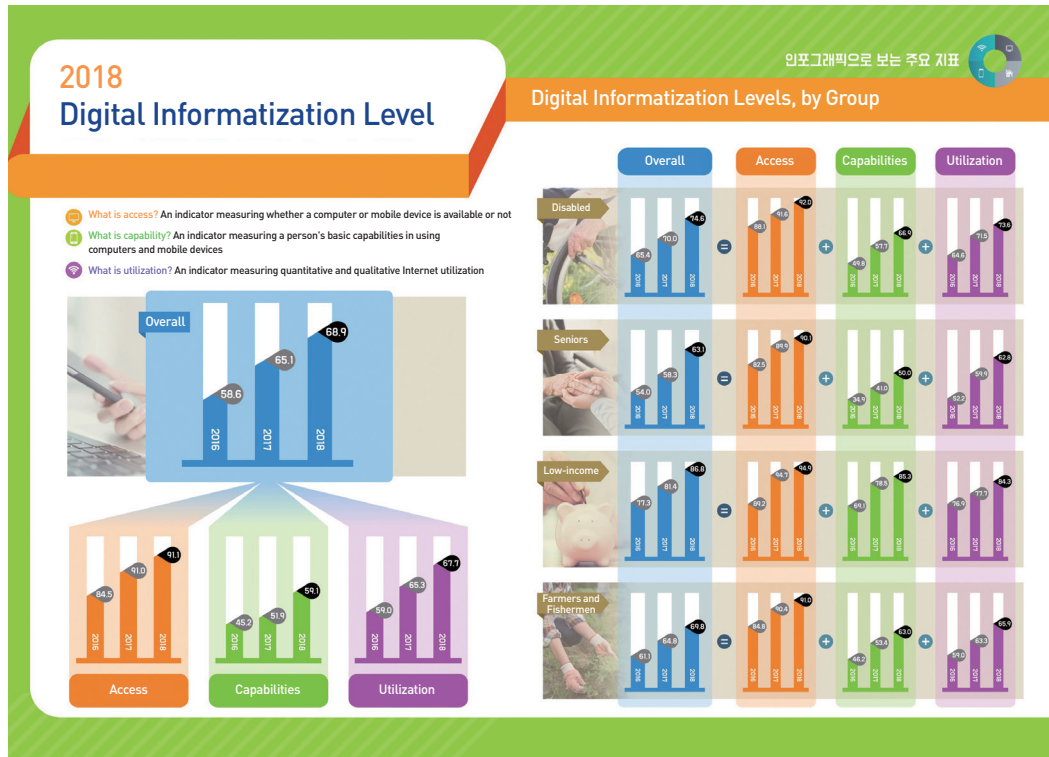
In 1999, through the 10th Informatization Promotion Committee, the '25 Million Person Informatization Education Plan' was finalized. This led to the establishment of detailed execution plans for each ministry's jurisdiction, to "build a foundation for informatization education that would make Korea a country that uses computers best in the world."

However, with the advancement of informatization, the issue of the digital divide disadvantaging farmers, housewives, the disabled and the self-employed has emerged. At the 4th Informatization Strategy Meeting on April 6, 2000, held to solve such problems, Minister of Information and Communication Ahn Byung-Yup reported that the government would expand the number of housewives receiving internet education to 2 million, by installing 100 additional Internet Plazas in 196 township units across the country. President Kim Dae-Jung asked government ministries and agencies to devote continuous efforts to preventing people from becoming alienated and suffering from issues caused by the progress of informatization development. In line with the presidents' request, informatization education plans were established and implemented by the different ministries every year, as part of the implementation plan for promoting informatization.

Major Contents and Achievements of Policies for Eliminating Digital Divide

South Korea's policies to address the digital divide are centered mainly on "building a base for

information infrastructure and accessibility” and “guaranteed information utilization capacity” targeting the information-vulnerable groups, especially the disabled, the elderly, farmers and fishermen, and marriage immigrants. Due to such measures to address it, the digital divide has continued to narrow year after year.



● Building Information Infrastructure and Accessibility Foundation

Through its policy efforts the government has established a PC- and Internet-based information access environment in which anyone can use and access information. In particular, broadband network deployment has been completed in farming and fishing villages of less than 50 households, and has contributed to increasing the digital informatization levels of vulnerable groups (65.1 percent in 2017 → 68.9 percent in 2018). By sector, the digital access of the information-vulnerable groups is 91.1 percent, their capacity level 59.1%, and their utilization level 67.7%. Notably, their capacity level has increased the most compared to 2017, by 7.2% (from 51.9%).

Institutional supplemental efforts have also been promoted, including the establishment of national standards for web access (2005), the introduction of a web access quality certification system (2007) to ensure the accessibility of information for information-vulnerable groups, and

mandatory assurance of mobile app access (2018; revision of Framework Act on National Intelligence Service).

● Securing Information Utilization

The Korean government has promoted informatization education for the entire nation (10 million persons) and for the vulnerable (5 million persons), so that members of the information-vulnerable groups can use ICT such as the Internet and mobile devices without difficulties. Meanwhile, to enhance the efficiency of policies for enhancing information utilization capabilities, the curriculum has been subdivided to comprise various types including collective, visiting, and online informatization education, and been implemented to fit the levels and situations of the vulnerable groups concerned.

Future Policy Directions

In November 2018 Korea developed an "ICT for All" promotion strategy, as a new strategy for addressing digital inequality to help minimize the digital divide and provide the benefits of technology equally. This strategy presents six major initiatives—the creation of a non-discriminatory infrastructure for assuring access to information by the vulnerable, the promotion of digital migration for the underprivileged, the enhancement of mobile and intelligent information service usage capacities, the promotion of participation in economic and social activities using ICT, the promotion of digital social innovation projects for solving the problems of the information-vulnerable, and the creation of a pan-social digital engagement infrastructure.

However, in an intelligent information society where innovative changes in people's lives are occurring as intelligent information technologies such as IoT, Cloud and Big Data are applied throughout the economy and society, the digital divide can widen to cause digital inequality. Moreover, there are concerns that a vicious circle of digital inequality resulting from inability to utilize technology could lead to economic and social inequality and discrimination. The government therefore plans to actively implement policies to minimize the occurrence of digital inequality through efforts such as creating a foundation for enhancing access to information technology for the disabled and the elderly, providing support for the education necessary to improve the capacities of the vulnerable to use digital services centered around real-life needs, identifying a model for digital social innovation (DSI) able to solve social problems using information and communication technology, and providing the related support.

10

Mobile e-Government Service Policy

Sustainable Development Goals and Areas



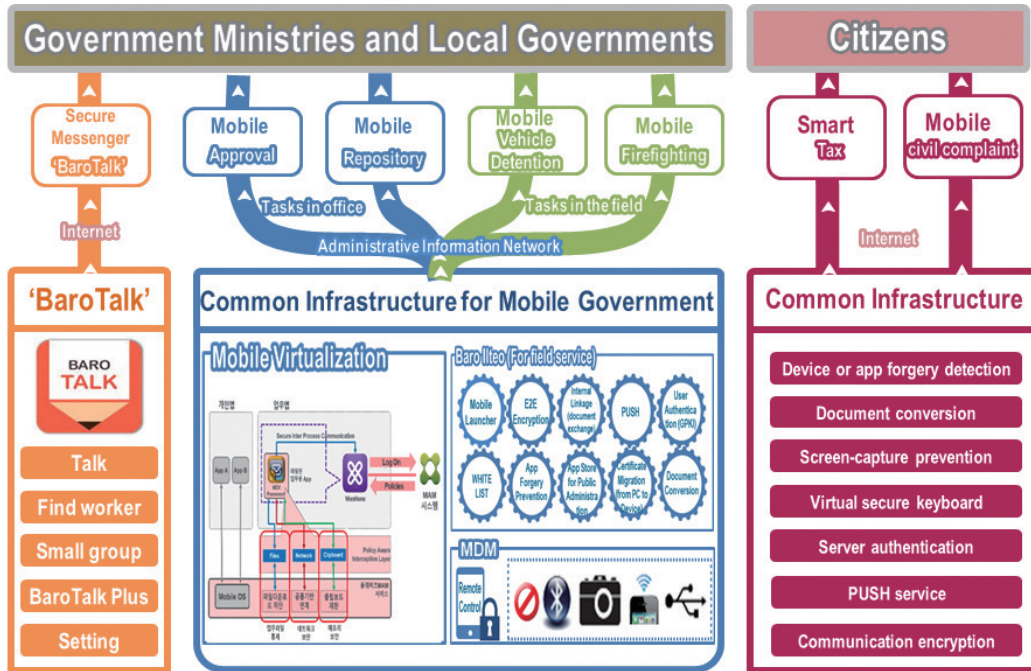
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Background

There are two main reasons for the promotion of mobile e-Government in Korea. First, with the rise of smartphone use since 2010 and the emergence of a generation now more mobile- than PC-friendly, there has been a growing need for e-government services useable even with smartphones. Second, in line with Korea's policy to relocate its administrative capital to the Sejong Special Self-Governing Province, the demands of government officials for mobile device administrative processing during business trips has increased. In response to these changes in the environment, mobile e-Government has been introduced on full scale.

Directions of Promotion

South Korea's mobile e-government is being pushed toward the goal of an "Implementation of mobile e-Government available at anytime and anywhere" with two separate areas of services: mobile internal administration services and mobile civil services. To effectively implement the mobile e-Government, the Ministry of the Interior and Safety has developed and is operating a common infrastructure for mobile services and a variety of services for individual ministries. The current concept diagram of Korea's mobile e-Government services is shown below:



● Common Base of Mobile e-Government

The area in blue in the "Conceptual Diagram of Mobile e-Government Services" shown above is the common infrastructure for the mobile e-government, i.e. the system developed to provide the joint security functions necessary for the provision of mobile administrative services for government officials. The mobile administrative system services are divided into onsite and internal services, depending on the nature of the work concerned. Onsite administration services facilitate government officials' completion of tasks such as facilities maintenance, disaster management and field visits, by shortening the work processes and supporting real-time responses. Internal administration services support current businesses such as electronic payment, mail and service management.

The main functions of the common infrastructure are to provide a safe environment for app execution through the administrative app store, management of apps' performance rights after execution, and finally the execution of administrative apps after the carrying out of security procedures such as user and handset authentication.

● Common Base for Mobile Public Services

The area in purple in the "Conceptual Diagram of Mobile e-Government Services" is the common infrastructure for mobile public services. It illustrates the common security features of services that handle sensitive public information. However, mobile public services have relatively low security requirements compared to mobile administrative services, and many services do not use common security infrastructure systems.

As of the end of 2018 the number of mobile public services provided by the government was about 900, and including services provided through other private platforms there were a total of about 1,300 services being provided.

Considerations in Implementing Mobile e-Government

Considerations in South Korea's mobile e-government drive include the following. First, the security of mobile services and convenience of their users. For security purposes, functions related to personal mobile devices or terminals can be controlled and cumbersome procedures required. Since these procedures naturally increase a user's sense of rejection, it should always be considered that this can reduce the rate of utilization. Second, there should be a focus on the opening up of public data to vitalize private app services. For example, the government is making public data such as weather information and public transportation service information available to the private sector for its use, and if the private sector develops app services that utilize them it will check and abolish overlapping services to encourage more active private services. Third, the provision of simple information and the development of public relations services should be avoided. When mobile services become inevitably needed, it should be checked whether a reactive web format can be implemented in lieu of app development. After development, continuous management and updates must be made. Accordingly, Korea conducts surveys and measures on public apps every year, in order to deal with services that are not used much or not managed. Fourth, it should be ensured that mobile apps do not require excessive access to handsets. It is noted that excessive demands for access rights unrelated to the actual services can slow these services down and lead to security incidents in which users' information is leaked. Users should also be informed of the functions of terminals and access to information through instructions and consent procedures.

11

Regional Informatization Policy

Sustainable Development Goals and Areas



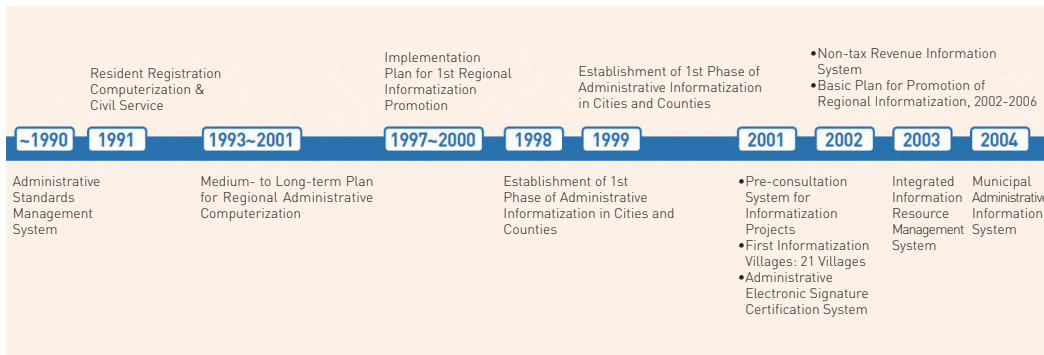
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

History of Regional Informatization

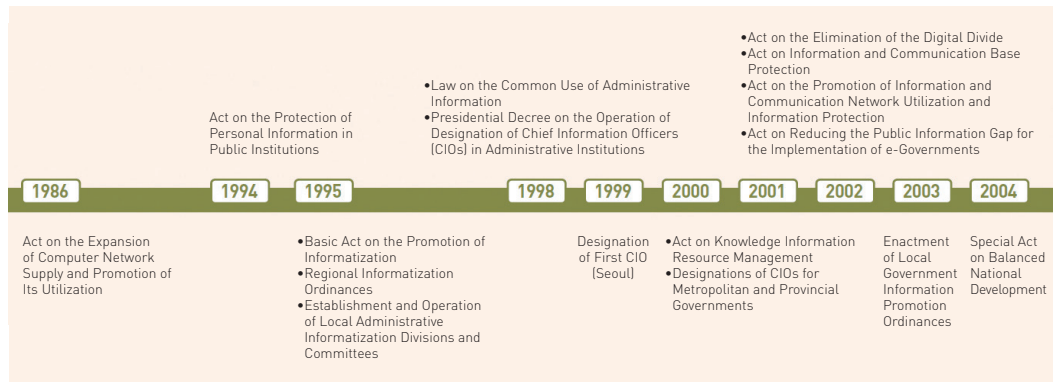
● Implementation Process

Regional informatization means balanced development among regions through the narrowing of gaps among regions that have emerged in the process of industrialization and the promotion of regional informatization so that all citizens can use various information related to their living more easily at anytime and anywhere, which will lead finally to the implementation of balanced regional development. The history of regional informatization laws and systems is given below:

Regional Informatization



Legal System for Regional Informatization



● General Status

Regional Informatization Organization and Human Resources

All cities and provinces across the country organize and operate independent informatization departments. The local government with the largest informatization divisions is the Seoul Metropolitan Government, with five officers and one data center set up in the National Information Planning Center. The second largest is Gyeonggi Province, which has three offices set up in the National Informatization Planning Center, comprising 76 members in 12 teams. Besides the Seoul Metropolitan Government and Gyeonggi Province, the Incheon Metropolitan Government and the Daejeon Metropolitan Government each operate two or more departments in charge of informatization, and the Daejeon Metropolitan Government has the highest ratio of informatization personnel relative to its total number of government employees.

Since 1995 local autonomous governments have begun to create departments dedicated to cities having large populations and sound financial conditions, and besides the autonomous districts of Seoul and Daegu the counties and districts have mostly been organized into units of departments in charge of general or administrative affairs. With the opening up of public data, the interests of local governments in scientific administration and the improvement of systematic public services using big data have been rising.

Regional Informatization Business and Budget

According to the data for the 2019 Implementation Plan for National Intelligence, the total number of projects for 2019 planned was 8,479 and the budget was set at 131.47 billion won. Compared to 2018, the number of projects had increased by 860 (7,619 → 8,479; 11.3 percent)

and the size of the budget by 106.8 billion won (1.2079 trillion won → 1.3147 trillion won; 8.8 percent).

With regard to the forms of the businesses concerned, the government is pushing informatization projects with a focus on continuing projects (83.2 percent, 1.0932 trillion won) more than on new projects, and with regard to the project type it is focusing on maintenance projects, with a total investment of 513.3 billion won being made in 4,495 projects. This figure accounts for 39.0 percent of the total budget. Although the overall budget for supporting informatization is small, there is a plan to continue investing in the spread of informatization (3.77 billion won) and the development of informatization personnel (3.4 billion won).

(Units: Projects, 100 million won, %)

Division	Results (2017)	Status (2018)	Plan(2019)			Rates of Change	
			Provinces	Cities & Counties	Total	Compared to 2017	Compared to 2018
Number of Projects	7,004	7,619	1,610	6,869	8,479	8.8	11.3
Budget	10,506	12,079	4,840	8,307	13,147	15.0	8.8

● Top 10 Issues in Regional Informatization

The top 10 issues related to regional informatization in 2017 were as follow:

Issue	Details
Big Data	Encourage data management and big data analytics
4th Industrial Revolution	Promote 'Adjustment of Local Autonomy for Government Innovation' for Smart Administrative Implementation, based on the 4th Industrial Revolution
Artificial Intelligence (AI)	Improve residents' satisfaction with administration by improving administrative processes utilizing artificial intelligence
Drones and Robots	Use drone and robot technologies in fields closely related to residents' lives
Smart Cities	Optimize citizens' convenience, centering on urban management and service efficiency
Cloud	Improve administrative efficiency with cloud-based government implementation, based on a central-local government cooperative network
Cyber Protection and Technology	Need for 'governance of cooperation' between industry and related institutions in each field, rather than centralized governance
Virtual Reality (VR) and Augmented Reality (AR)	Provide residents services through combining the government's administrative services with VR and AR technologies
Public Data	Open up public data with supplemented quality, and thereby increase transmission effects
Self-driving Cars and Connected Cars	Need for preemptive policy measures and preparation of systems diverging from existing regulation-oriented policies

Regional Informatization Policy

● Implementation System

The implementation system for regional informatization has been changed repeatedly as the paradigm of the government has changed. In the era of Government 1.0, first of all, with the establishment and enforcement of the [Framework Act on Promotion of Informatization] and the [Act on Expansion of the Supply of National Computing Networks], owing to the demands for rapid achievement informatization projects for the administrative affairs of local governments were seen as different from the present, and pushed unilaterally by central government ministries. Since then the implementation of local autonomy has strengthened the capabilities of local governments, making them more active in building and operating informatization projects suited to their regions' characteristics. During this era the regional informatization promotion systems have been developed to create new efficiencies and value through linkages between and integration of various fields to meet the changing paradigm of new informatization in which the importance of knowledge information utilization has been highlighted. Finally, at the end of 2017, when the Moon Jae-in government was launched it proposed new intelligent government planning and a smart nation as new directions for national informatization.

● National and Regional Informatization Policies

Regional informatization is recognized as a part of national informatization, and it is therefore necessary to look into the process of national informatization promotion. The government has announced a "2020 e-Government Basic Plan," presenting directions to follow to achieve a people-oriented e-government that provides the people with basics such as efficiency, transparency and public services as well as enjoyable lives. Currently, the tasks for responding to the 4th Industrial Revolution comprise the carrying out of four major strategies involving 1,102 projects and the expenditure of 358.7 billion won, with the focus among them being on the promotion of intelligent innovation projects. In 2019, projects among the '4th Industrial Revolution Response Tasks' account for 13.0% of all projects and 27.3% of the total informatization-related budget.

(Units: projects, 100 million won, %)

Strategies for Responding to 4th Industrial Revolution	Number of Projects	Budget	Percentage (Budget)
1. Promoting intelligent innovation	572	2,403	67.0
2. Securing growth-powered technologies	42	176	4.9
3. Creating an Industrial Infrastructure and ecosystem	198	320	8.9
4. Responses to future changes in society	93	385	10.7
5. Other	197	303	8.5
Subtotal	1,102	3,587	100

● Direction of Regional Informatization Policy in the Age of Regional Decentralization

With the transformation of the informatization paradigm and decentralization of informatization due to the innovative development of intelligent information communication technologies, major changes in the regional informatization service policy environments are taking place. Especially, local governments' informatizations are being transformed mainly into informatizations for the people and revitalizations of the local economies. Regional informatization driven by local governments in this way has already gone beyond simply facilitating efficiency and innovation at the work stage, and should be developed sufficiently to stand as a representative of the 4th Industrial Revolution era while also achieving a shift to regional informatization that can work to drive the regions' economic growth.

12

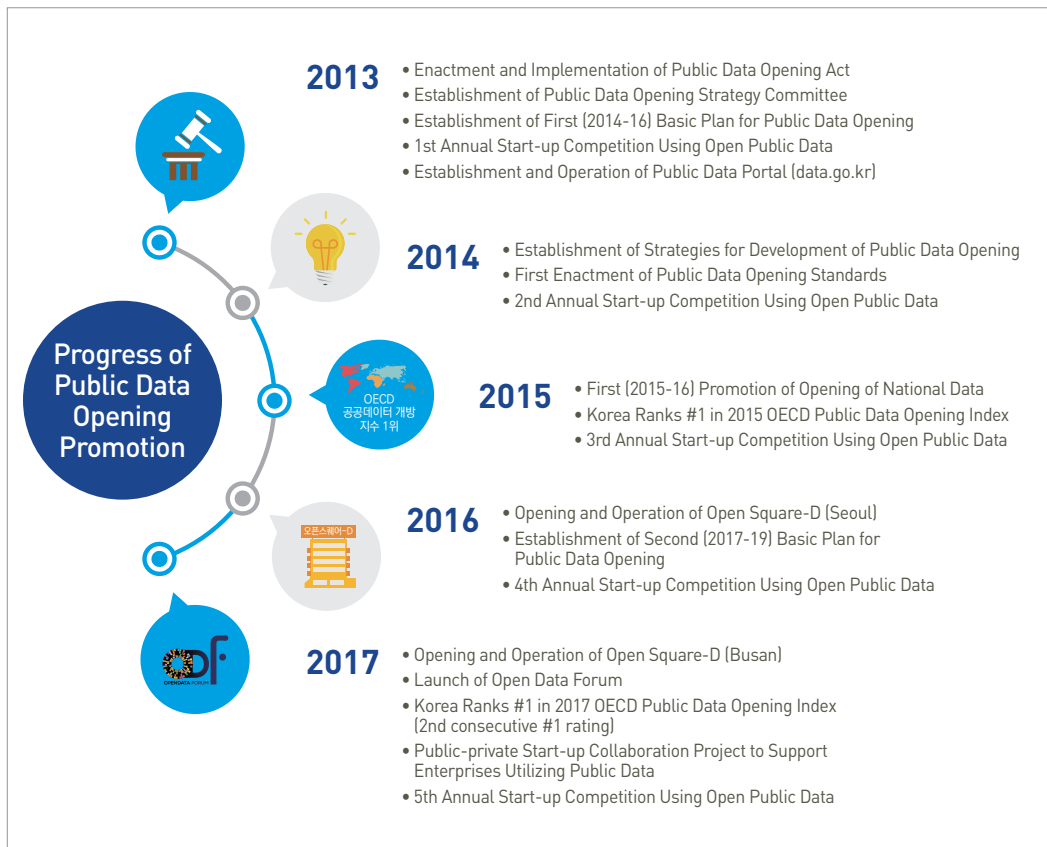
Open Data

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Progress of Public Data Opening and Utilization Policy



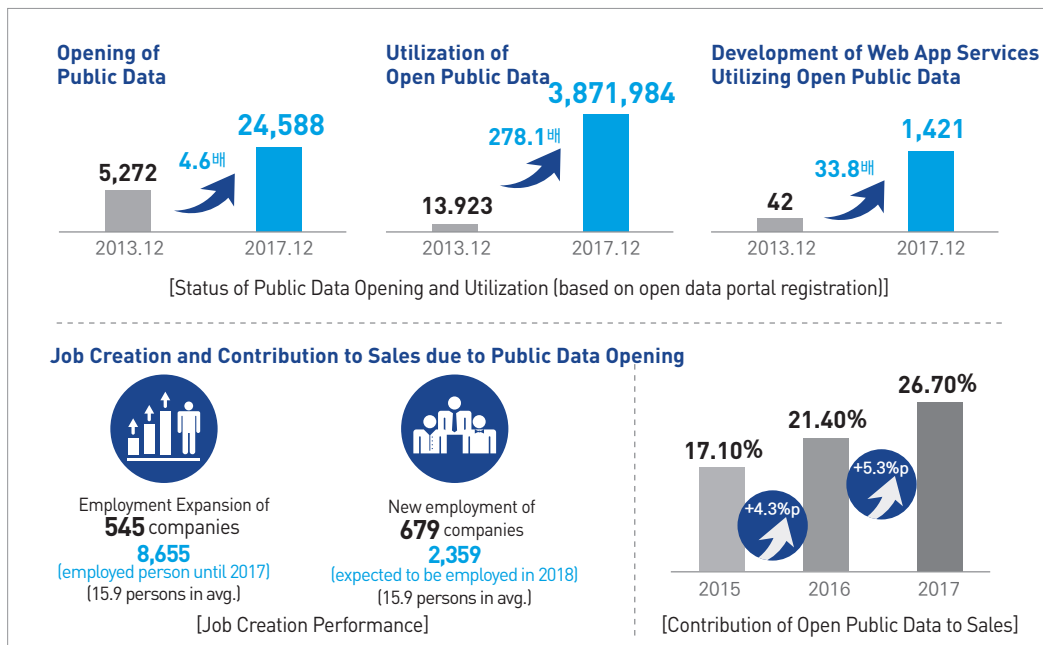
If the informatization society (3rd Industrial Revolution) has broken global boundaries through the spread of computers and the Internet and media and online service innovations, and contributed to enabling machines to partially take over the work of human beings, the intelligence information society (4th Industrial Revolution) is producing economic and social values over a wide range, with intelligent machines (robots) coexisting with humans and "data" as a key resource.

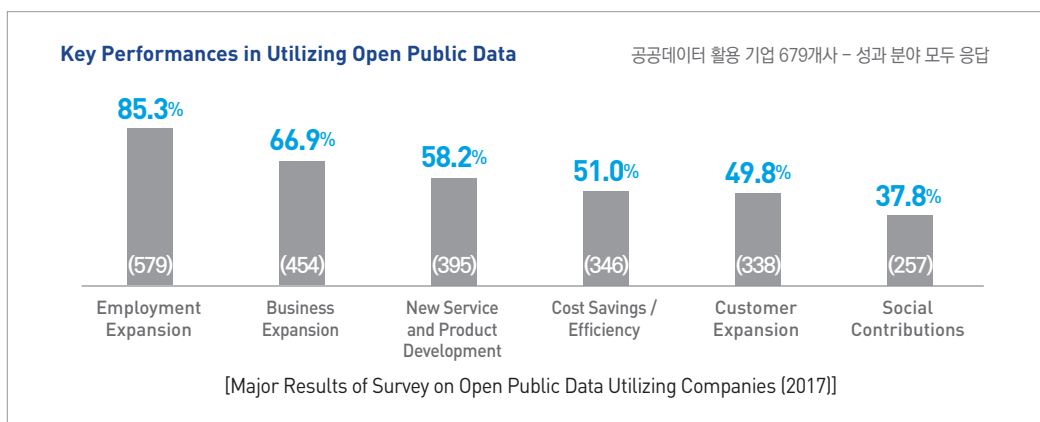
Korea's policy for the opening up of public data and promotion of its utilization was institutionalized through the Public Data Act in 2013. To create a pan-national data ecosystem the government has steadily developed basic plans and corresponding policies for the past six years (2014 to 2019; two three-year plans). As a result, Korea has ranked first in the OECD's Public Data Opening Index for the past three consecutive years (2015-18).

Open Data Utilization and Key Statistics

Since starting at 5,200 items in December 2013, the opening of public data has increased 4.7 times (to 25,184 items as of September 2018), while the utilization of open public data has grown 464 times and the development of web and app services related to public data 41.5 times.

In addition, the opening up of public data has enabled an expansion in employment of 8,600 people at 545 companies, and the contribution to sales through public data opening has been 26.70%.











Open Data Utilizing Web and App Services with More than 1 Million Downloads

The table below lists prime examples of mobile app services using open public data in areas related to fine dust (environment), education, food and health, social welfare, health care, culture and tourism, national land management and logistics. Today also, our companies are creating their own success stories and searching for new innovative ideas by utilizing bountiful open public data resources.

<A Case Study of Start-up Companies Using Public Data: Apps Developed by Private Enterprises with 1 Million or More Downloads>

Area	App	App Logo	Services (description)	Utilized Open Data (agency)
Environment and Climate	Mise mise		<ul style="list-style-type: none"> Real-time fine dust information and forecasting 	Air Pollution Information Checking Service (Korea Environment Corporation)
Education	lam school		<ul style="list-style-type: none"> School notices, home correspondence, school lunch news, class notification letter replies 	Nice - School Food Data (Korea Institute of Education Information)
Food and Health	Hwa hae		<ul style="list-style-type: none"> Essential cosmetics app used by 7 million people in Korea 	Data on raw materials and ingredients used in cosmetics (Food and Drug Administration)

Area	App	App Logo	Services (description)	Utilized Open Data (agency)
Social Welfare	Pawin hand		<ul style="list-style-type: none"> • Warm-hearted service connecting people with abandoned animals in shelters across the country 	Checking with pet protection agency, animal protection management abandoned animal search (Ministry of Agriculture, Food and Rural Affairs - Animal and Plant Quarantine Agency)
Health Care	Good Doc		<ul style="list-style-type: none"> • Help searching for clinics open during nights and weekends, • "When sick on the weekend, I go to the pharmacy"~ • Expert advice 	Location information for consignment hospitals (Korea Veterans' Welfare and Health Care Corporation) Hospital/Pharmacy Location Information (Health Insurance Review & Assessment Service)
Culture and Tourism	Good choice		<ul style="list-style-type: none"> • Provides hotel and pension reservation services, and theme park, water park, and indoor experience information 	Tourism Information Service in Korean Tourism Information Service in English (Korea Tourism Organization)
Land Management	Hogang nono		Displays apartment floor area prices and sales prices at a glance on map for comparing real estate prices	Actual transaction data on apartment sales (Ministry of Land, Infrastructure and Transport)

App Ranking Provided by (www.appannie.com)

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Cloud Policy

**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Cloud Policy Direction for National Informatization

Korea's Implementation of cloud policy began on full scale in September 2015 with the implementation of the world's first "Cloud Computing Development and User Protection Act" (the "Cloud Computing Act" in short). In November of that same year, five ministries jointly developed and announced the first basic cloud computing development plan.

In the first basic plan, nine detailed initiatives were set up. Among them, the introduction of a preemptive Cloud for the public sector, expanding cloud use in the private sector, and creation of a cloud industry development environment with enhanced private cloud utilization in the public sector were included. The Ministry of Science and ICT (MSIT) also opened a "Public Cloud Support Center" in the Korea Information & Technology Promotion Agency (April 2016), in order to support the promotion of private cloud use by the public sector. The MSIT, by reflecting priority use of cloud systems in its Guidelines for Preparation of National Informatization Implementation (March 2017), ICT & Management Regulation (January 2017), and ICT Fund Management Regulation (December 2017), has promoted the priority use of cloud systems. It is also actively pushing ahead the distribution and utilization of cloud services through its establishment of 'Seat (www.ceart.kr)' a cloud store supporting the use of public-sector cloud services (January 2016), and linking it with the Nara Marketplace of the Public Procurement Service (March 2017).

Furthermore, to accelerate the expansion of the private cloud market, the government has

explored and promoted leading projects suitable for cloud use including usage in national ICT R&D, in SW education, in election management, at universities, and at small libraries (2015 to the present).

In line with Article 5 of the Cloud Computing Act (Framework and Implementation Plan), the 2nd Framework Plan for Cloud Computing Development (2019-20) was announced in December 2018. The major driving tasks of this framework include improving the laws and system for utilizing Cloud computing, strengthening competitiveness in platform-centered markets, creating a reliable ecosystem, and creating innovative cases by incorporating Cloud use through pan-ministerial collaboration. The government continues to implement policies to expand the use of cloud computing by expanding the span of users and the scope of private cloud usage in the public sector, by improving its cloud adoption initiatives, by establishing cloud security certification and response systems, and by building and expanding the e-Government Cloud platforms.

G-Cloud Services to Vitalize Cloud Computing

The National Intelligence Service's G-Cloud Service (NIRS) is a good example of an attempt to incorporate cloud computing into an administrative environment. The Korean government's cloud computing policy is divided into two focuses—on building its own cloud network, and on utilizing private cloud services. The NIRS falls into the first category, in which the NIS created its own G-cloud services and has transferred 60% of its system to its G-cloud.

From 2015 the 'Big Data Common Base Platform' was converted to the G-Cloud Service, and after the Big Data Common Base's application of cloud services a cloud system was constructed for the On-Nara system. Under the government's 3.0 Cloud Plan, it established the PaaS/SaaS platform, which can accommodate pan-government cloud services, on G-Cloud IaaS. As a result, 'On-Nara', a standard system for document management of government agencies, was established to serve as a cloud-based service.

Since August 2016 the Korean government has established a common cloud foundation that supports functions such as simultaneous connections with multiple agencies, automatic capacity adjustment, and integrated account management. In 2017 the government effectively converted the central government's On-Nara system to a cloud-based system, and converted its records management system into a Cloud-type administrative service model. In addition, Cloud repositories for work data sharing and collaboration have expanded to central departments since

2017. The government is planning to open a new Cloud-specified data center in 2021, and expects to thus save about 40% in budget expenditure (37.37 billion won or more, based on 2013-2017 figures).


The advantages of switching to G-Cloud can be explained in three main ways:


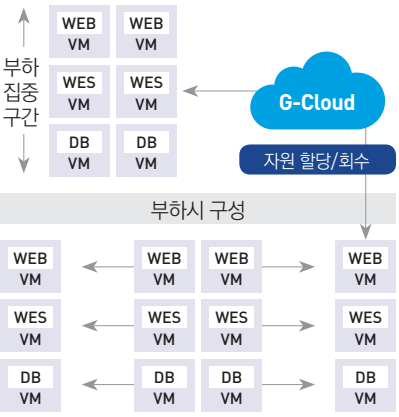
- ① Allows an acceleration of system deployment through the utilization of standardized virtual server auto-assignment
- ② Improves efficiency in resource utilization through centralization of infrastructures and co-usage of resources
- ③ Stabilizes system operations through flexible resource allocation depending upon the situation

G-Cloud Service Case Study

Currently G-cloud services are provided by all government departments in Korea, including the Ministry of Education (National College Scholastic Ability Test, one-click reporting on education expenses, etc.) and Statistics Korea (Population Survey, Total Survey on Agricultural and Fisheries Industries, Basic Survey on Households, etc.) The following figure lists some representative cases involving Statistics Korea and the Ministry of Education:

G-Cloud Transformation: Cases of Excellence

Statistics Korea e-Census Integrated System		Ministry of Education Korean College Scholastic Ability Test												
<ul style="list-style-type: none"> • Population & Housing Total Survey System (Internet Surveys, Homepage, Cyber Education) • Agricultural and Fisheries Industries Survey System (Internet Surveys, Homepage, Cyber Education) • Business Systems 	Components of Service	<ul style="list-style-type: none"> • Access with both PCs and mobile devices • Submit application, print out test identification letter, choose test location, verify answers, provide sample questions, and check status of application and test results 												
<ul style="list-style-type: none"> • Since an unspecified number of concurrent connections are made, assurances of user convenience and performance are needed. • After completion of total survey service, resource usage needs to be changed to another task 	Characteristics of Service	<ul style="list-style-type: none"> • Heavy traffic congestion at times of announcement of successful applicants • Tremendous increase in number of applicants <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="font-size: small;">연도</th> <th style="font-size: small;">2009 (연2회)</th> <th style="font-size: small;">2010 (연3회)</th> <th style="font-size: small;">2011 (연3회)</th> <th style="font-size: small;">2012 (연4회)</th> <th style="font-size: small;">2013 (연4회)</th> </tr> </thead> <tbody> <tr> <td style="font-size: small;">응시자수 (명)</td> <td>7만 6,577</td> <td>8만 1,179</td> <td>11만 8,309</td> <td>15만 7,008</td> <td>34만 801</td> </tr> </tbody> </table>	연도	2009 (연2회)	2010 (연3회)	2011 (연3회)	2012 (연4회)	2013 (연4회)	응시자수 (명)	7만 6,577	8만 1,179	11만 8,309	15만 7,008	34만 801
연도	2009 (연2회)	2010 (연3회)	2011 (연3회)	2012 (연4회)	2013 (연4회)									
응시자수 (명)	7만 6,577	8만 1,179	11만 8,309	15만 7,008	34만 801									

<p>Statistics Korea e-Census Integrated System</p>	 <p>Volumes of Service Users</p>	<p>Ministry of Education Korean College Scholastic Ability Test</p>
<ul style="list-style-type: none"> • Total number of users: expected to be more than 30% of population • Concurrent connected users: expected to be more than 38,000 		<ul style="list-style-type: none"> • Total number of users: 1,185,223 • Concurrently connected users: maximum of approx. 5,000 (number of expected concurrently connected users during five minutes of application receipt and results announcement periods)
<ul style="list-style-type: none"> • Proves stability of G-Cloud system by processing of mass numbers of concurrent connections • Saves costs through usage of system for certain purposes and then reusing resources for other tasks 	<p>Significances of Applications</p>	<ul style="list-style-type: none"> • Proves stability of G-Cloud system by processing of mass numbers of concurrent connections • Allows efficient use of resources through rapid resource expansion and collection
<ul style="list-style-type: none"> • X86 / Open SW • Internet Network 20 / Task Network 7 	<p>Components of Systems</p>	 <p>The diagram illustrates the G-Cloud architecture. At the top, a blue cloud labeled 'G-Cloud' is connected to a box labeled '자원 할당/회수' (Resource Allocation/Recovery). Below this, a grey bar labeled '부하시 구성' (Configuration during load) shows a grid of VMs. On the left, a vertical label '부하 집중 구간' (Load Concentration Period) with arrows indicates a specific time interval. The VMs are organized into three rows: WEB VM, WES VM, and DB VM. Each row contains four VMs, with arrows indicating bidirectional communication between adjacent VMs in the same row. The 'G-Cloud' cloud is connected to the central VMs in each row.</p>

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Analysis of Obstacles to e-Government, and Solutions

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Securing a Stable e-Government Budget

The biggest obstacle to the e-Government business is the difficulty of securing the required stable and large-volume budget for a long period of time. To solve this problem, while seeking to raise 780 billion Won—an astronomical amount that could not be supported by government funds alone—Korea pursued the method known as “settlement after Investment.” This method allowed Korea Data Telecom, a government agency dedicated to establishment of the national network, to first invest the cost of the project with its own funds and then retrieve those funds later from a subsidiary of the Korea Telecommunications Corporation.

During this period the Korean Government was also working on the construction of five national infrastructure projects (1987-1996)—for Administration, Finance, Education & Research, National Defense and Public Security. And to keep account of the actual budget used for these projects, the government established the Korea Advanced Institute of Information Technology (currently National Information Society Agency), to carry out strict monitoring of the government budget use.

Since then, in order to secure the funds for continuous promotion of e-Government the Korean government has built a foundation for e-Government realization, including the promotion of informatization, the creation of infrastructures for the information and communication industries, and the upgrading of information and communication infrastructures. In addition, e-Government

has been adopted as a key policy of the national informatization plan, while at the same time being selected as an agenda of the president to thus lay the groundwork for stable government budget support with necessary project expenses under strong presidential leadership.

Focal Point for e-Government Project Promotion

Coordination and mitigation of conflicts between the relevant agencies is very important for the successful promotion of e-Government projects. From the beginning of e-government implementation, the Korean Government established a special committee for e-Government under the direct control of the president, and led pan-ministerial cooperation by putting this committee in charge of the selection, monitoring and assessment of important e-government tasks, while the president showed active leadership in solving problems if the interests of ministries conflicted. As shown in the following table, the consulting committee has been continually managed with the responsibility of mediating and adjusting such conflicts of interest among ministries:

Implementing Organizations of Main e-Government Projects

Period	Main Project	Committee	Chair	Managing Department
1987~1996	1st National Basic Information System	Network Coordination Committee	Prime Minister	Postal Service Ministry
	2nd National Basic Information System		Minister of Postal Service [Communication Ministry]	Postal Service Ministry
1996~2000	National Informatization Promotion Project	National Informatization Promotional Committee	Prime Minister	Ministry of Information and Communication
2001~2002	e-Government 11 Tasks	Presidential Advisory Committee on Electronic Government	Civilian Experts	Ministry of Information and Communication / Ministry of Planning and Budget / Ministry of Government Administration and Home Affairs
2003~2007	e-Government Roadmap 31 Tasks	e-Government Special Committee	Civilian Experts	Ministry of Public Administration and Security (now the Ministry of the Interior and Safety)
		Presidential Advisory Committee on Electronic Government		

Establishment of Organization-to-Organization Data Sharing System

Data sharing among government agencies is a crucial factor not only in terms of efficiency of government work but also in terms of public service and government transparency. However, the earlier that a country starts informatization the more difficult it is to establish a system for information-sharing among agencies, owing to the lack of a sense of collaboration rather than to technical constraints as each agency develops its own information system under the push of the government.

In the process of promoting informatization Korea also produced numerous silos of data in different agencies and fields, and it was almost impossible to establish a physical system for sharing between agencies. To solve this problem the Public Information Sharing Center (PISC) was established. The PISC serves as a channel for viewing, opening and referring to data in other departmental jurisdictions online, through the relaying of official documents between government ministries.

Based on this information sharing system the 'One-Screen Lookup Service', an application designed to facilitate effective information sharing, was created. This is a program that automatically retrieves all documental data related to verification and approval and provides it on a single screen. This service was created in view of the fact that the procedures of public work are mostly predefined and structured by regulations. Through this service, which defines the data required by task characteristics and provides the procedures for extracting the data on a single screen on the computer, civil servants can review the records under other agencies' jurisdictions required for particular tasks on their own computers, while the people can apply with civil petitions without having to visit the related administrative offices to obtain the required documents. In the past, for example, in order just to get a passport issued, a person had to go through a process of checking and review by the seven data retention agencies—of resident registration information (the local government office), military service information (Military Manpower Administration) and immigration facts (Immigration Office), driver's licenses (National Police Agency), family registers, marriage relationships, and adoption records (Supreme Court). Using the current single screen lookup service, however, all required data can now be processed at once.

Legal System Maintenance and Support

The promotion of public sector informatization including e-Government is virtually impossible to implement unless there is a legal basis for implementation. The reason that Korea has been able to successfully maintain a consistent national informatization policy for the past 50 years is that it has prepared the required legal and institutional mechanisms according to the needs of the times. Various laws were enacted at each stage of e-Government evolution, including the Software Development Promotion Act (1988, full revision as the Software Industry Promotion Act in 2000), the Framework Act on Informatization Promotion (1996), the Electronic Signature Act (1999), the Public Administration Act (2001), the Public Information Act (1994, full revision in 2004), and the Public Administration Act (2010).

The Framework Act on Informatization Promotion, the most comprehensive act on national informatization, was expanded and replaced by the Framework Act on National Informatization in 2009. In particular, the enactment of the e-Government Act, which came into effect on July 1, 2001, had great significance, and its declarative regulation on e-Government services provided a basis for the active promotion of the e-Government projects.



Common based Infrastructure

15	Establishment of the National Basic Information System	70
16	e-Government Network	75
17	Disaster and Safety Communication Network	79
18	Electronic Signature Certificate Management System	82
19	e-Government Interoperability and Standard Framework	85
20	Establishment of Pan-Government National Information Resources Service (NIRS), and Integration of Information Resources	89
21	Pan-Government Enterprise Architecture	92
22	Public Information Sharing (Information Sharing Portal)	96
23	Records Management	100

PART

02

15

Establishment of the **National Basic Information System**

—
Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Introduction and Utilization of Computers, Public Administration Computerization Project (1978~1987)

In the 1970s national institutions began to adopt and utilize computers for their administrative work. Foreign computers were pouring into South Korean institutions, and recognizing the need for optimizing and integrating their introduction at national institutions the government established the Administrative Computerization Committee under the Ministry of Government Administration. The Ministry of Government Administration executed the computerization process by selecting dozens of major administrative tasks at the local administration level, and requiring that they be carried out using computers in the first administrative computerization project (1978~1982). In 1982 it then formulated the unification of administrative tasks, establishment of databases at multiple levels, and establishment of a national network connecting the counties through the second administrative computerization project (1983~1987). Later, through the Informational Industry Development Committee, organized around the Presidential Secretariat in May 1983, and the National Basic Information System Coordinating Committee, reorganized from the Informational Industry Development Committee, the project to build a National Basic Information System in five different areas was promoted, leading on to broader and full-scale implementation of computerization at the national level.

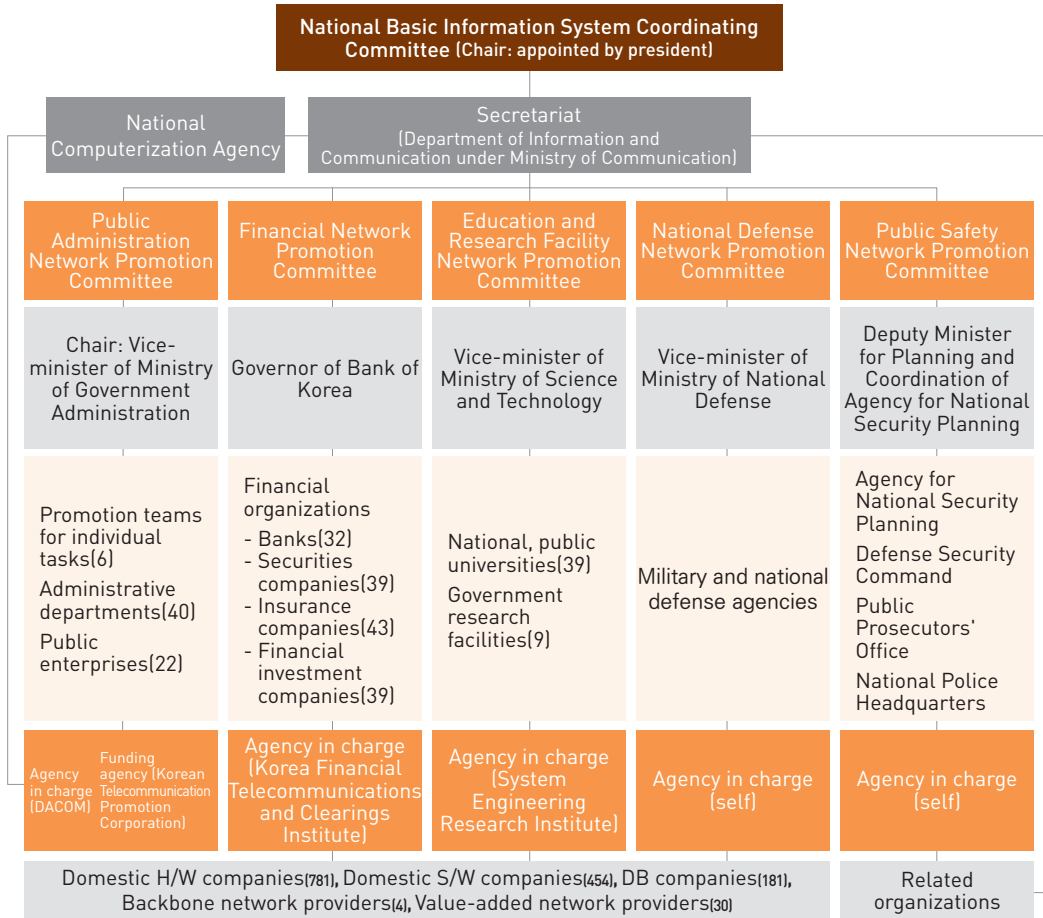
First Project of National Basic Information System and Public Administration Network (1987~1991)

The project of establishing the National Basic Information System was designed with the aim of systematizing and standardizing the computerization process through the installations of host computers in different administrative districts and the distribution of computer terminals to towns, townships and villages, and then connecting them through communication links. The project also enhanced civil service performance through the computerization of administrative tasks of government employees and automation of various civil affairs, and sought to advance the information industry through the development and introduction of domestically produced host computers.

The project of establishing the National Basic Information System was carried out by creating networks in five distinct areas: the public administration network (government/public enterprises), the financial network (banks/insurance companies/securities companies), the education-research network (universities/research facilities), the national defense network (national defense agencies), and the public safety network (public safety agencies). While the respective government departments oversaw their individual areas, the Informational Industry Development Committee (which later became the National Basic Information System Coordinating Committee) came to have a strong promotion system as the Chief of Staff to the President became its chair. The first National Basic Information System project, which was carried out from 1987 to 1991, focused on the public administration network and the computerization of six tasks (resident registration, real estate, automobiles, customs clearance, employment, and economic statistics). The computerization of resident registration connected 3,700 towns, townships and village offices online through the establishment of a database. The computerization of real estate management services involved the databasing of 32 million lots of land and forest land registers, and connected 273 cities, counties and districts online. With the computerization of automobile management services more than 100 related organizations were connected in a computer network, with a database of all car registrations in the entire country. Through the computerization of customs administration services the tasks of customs clearance and tariff imposition were computerized, and 109 institutions including customs offices, banks and bonded areas were connected online. The computerization of employment management services provided job information among job seekers and companies recruiting workers, by connecting 49 locations including 36 local labor offices and employment centers. The computerization of the economic statistics management

services enabled the related agencies to share a database of all 52 kinds of statistics in 20 categories reported to the National Statistical Office.

Organization Chart for National Basic Information System Implementation



※ Sources: National Information Society Agency, The History of Informatization Policy Development in Korea

Second Project of National Basic Information System and Public Administration Network (1992~1996)

Following the first project, the second project of the National Basic Information System was aimed at changing the administration system to make it more efficient and focused on the convenience of the public. It pursued completion of the National Basic Information System by promoting the joint usage of information through connections among the networks. The second project for the public administration network carried out seven tasks focused on the convenience

and welfare of the citizens, the management of industrial property rights, and the improvement of industrial competitiveness. The work of building the postal network involved seven host computers, 6,271 PCs and 3,427 communication lines for 3,455 regular post offices and 240 supervisory post offices nationwide. The public welfare computerization aimed to computerize the statistical work of health care and the records of national psychiatric hospitals, as well as to prepare a standardized electronic document system. The EDI-based customs automation linked 3,832 export-import related agencies across the country, including 41 customs offices, 417 customs brokerage offices, 1,782 traders and 45 banks, through computer networks. The information management service for industrial property rights developed a database and data search function for patent administration as well as patent and utility models. The computerization of weather services involved tasks such as weather forecasting along with the connection of networks among the Korea Meteorological Administration and the disaster prevention agencies. Due to inadequate funding, the product registration management service was given an extended period for completion, and was later directed by the Public Procurement Service. The fishing vessel management service computerized the permits, inspections and tax credit processing for 77,000 fishing boats, and connected 137 cities, counties and districts with 170 organizations including the Korea Fishing Vessel Association in a network. The resident registration network, the land management network, and the passport management network were representative examples of real-time information sharing systems, aimed at resolving the inconveniences of citizens who had until then needed to visit diverse government offices in order to acquire civil documents.

Legal System, Budget, Support Organizations, etc.

In 1986 the "Act on Expansion of Dissemination and Promotion of Utilization of Information Systems" was enacted, in order to promote the establishment of the National Basic Information System. It was fully implemented from 1987 after arranging of the necessary funds and organization of the promotion system. The Ministry of Communication served as the secretariat, and the National Computerization Agency (currently National Information Society Agency) was founded to provide support with technology, standardization and supervision. The essential funds for promoting the public administration network project were procured by up-front investment and repayment in annual settlements through Korea Data Communication, a management agency dedicated to establishing the administrative computing network. In addition, the

development, purchase and operation of computer systems were achieved by establishment of the Korean Telecommunication Promotion Corporation as a subsidiary of the Korea Telecommunication Authority.

The database of the public administration data, computerization of the work, and system for information sharing among administrative agencies, which were the goals of National Basic Information System construction, have since become the foundations for the development of e-Government in Korea.

16

e-Government Network

**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

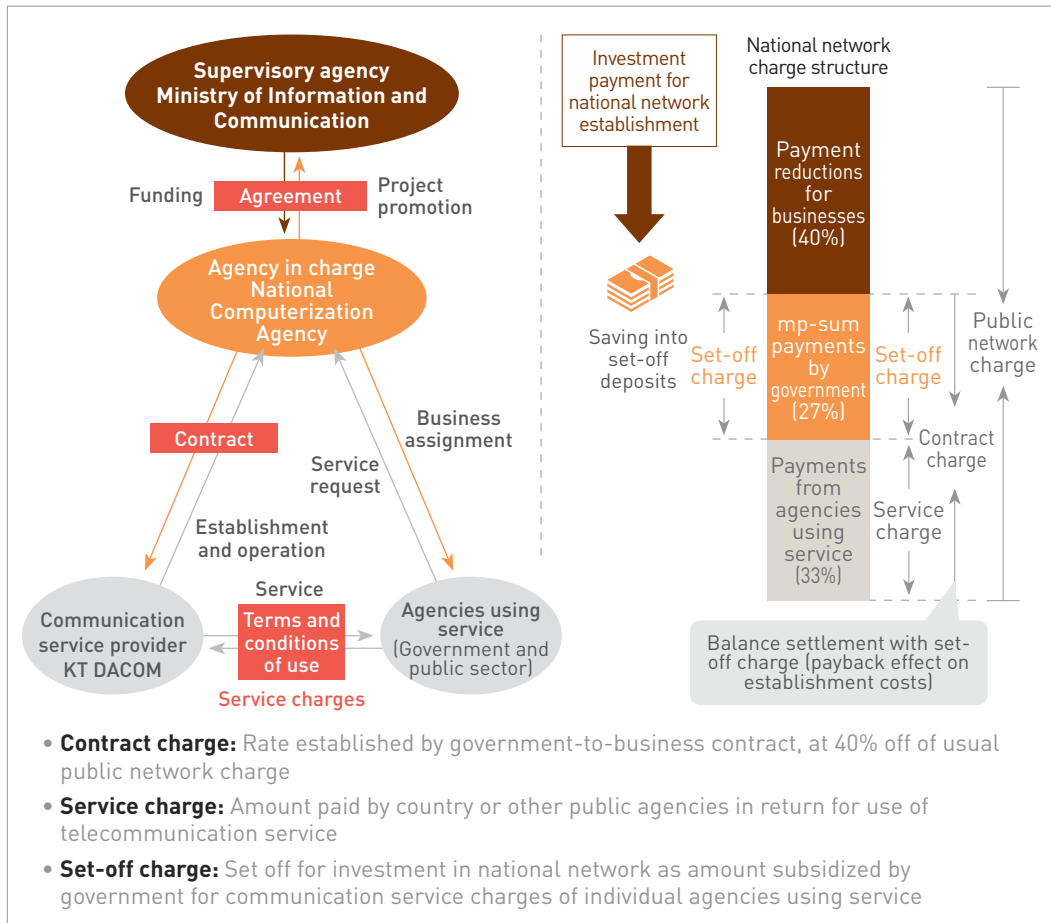
Information Superhighway Infrastructure Construction Project, and Establishment of Administrative Network (1996~2005)

In around 1993, when the National Basic Information System establishment project was completed, planning of the Information Superhighway Infrastructure Construction Project began. While the National Basic Information System was for government and public use, the Information Superhighway Infrastructure Construction Project was separated into three different parts: the constructions of a public network for the people, of a national network for government and public agencies, and of an advanced network for the testing and verification of technologies. Regarding the national network, centering around the Ministry of Information and Communication (the Ministry of Communication formerly), the National Computerization Agency became the assigned agency in charge, KT and DACOM were the telecommunications business operators, and the government supported establishment of the backbone of the national network, with the local loops to be built with the service providers' own resources. The divestment funds through privatization of KT accounted for a large portion of the funds required on the government side. The circuit service fees paid by all government agencies and public institutions also provided a big part of the funds needed for the private telecommunications business operators. The Ministry of Information and Communication arranged and operated the service for the government agencies and public institutions, while also devising and carrying out the strategy for up-front investment and settlement of the costs for national network establishment.

Under the Information Superhighway system, the public administration network directed by the Ministry of Government Administration and Home Affairs purchased the private line service, ATM circuit switch service and internet service, and organized the service network. At that time there were three service networks in the Ministry of Government Administration and Home Affairs. First, the government offices in Seoul, Gwacheon and Daejeon were linked through the government superhighway network set up with a router network and LAN with the private line service purchased from the national information superhighway network. The integrated information network of local administration also purchased the ATM circuit switch service of the national information superhighway network, and connected 16 major cities and provinces, along with 254 cities, counties and districts. Finally, there was nationwide toll network that enabled the making of long distance phone calls between administrative agencies at local telephone fees. These three different networks belonged to the Ministry of Information and Communication, and had to be unified.

In 1998, when the 11 tasks of e-Government were conceived, the integration began with the proposal by the National Computerization Agency to establish a government intranet (e-Government network). The government superhighway network and the local administration information network were merged and unified at the national network level, by connecting all departments and local governments. The government offices of cities, counties and districts served as access points within the relevant areas, linking up with the regional offices of other ministries, which enabled the integrated network of the Ministry of Government Administration and Home Affairs (now the MOIS) to function as the pan-government backbone network. The Ministry also sought to enhance pan-government security and reduce costs by making long-distance connections available at local charges. This was also related to the establishment of the Integrated Data Center for government use. The integration of these two networks was ultimately completed in December 2016, after conclusion of the Information Superhighway Network Project

Information Superhighway Service Establishment System



Broadband Convergence Information and Communication Infrastructure Construction Project, and Establishment of National Information Network (2005~Present)

From around 2003, when the Information Superhighway Infrastructure Construction project was completed, Korea demonstrated its technological prowess by having the fastest internet speed in the world and the highest internet utilization rate. However, to maintain this position the country needed to achieve faster broadband internet speed, to establish a mobile communication network, and to provide future convergence services. Therefore, the Ministry of Information and Communication promoted the Broadband Convergence Information and Communication Infrastructure Construction Project from 2004 to 2010, to foster the world's top environment for information and communication services. The key point was the offering of convergence services, such as live-stream (IPTV, mIPTV), voice over Internet protocol (VoIP, mVoIP) and video phone

(both cable and wireless) services, as well as digitalization of the cable network by expansion of the broadband network, through speeding up the internet to 50–100Mbps (Broadband internet) from single-digit Mbps and having people use smartphones at 1Mbps. At the same time, various ubiquitous applications such as u-Home, u-City, u-Work, u-Learning and u-Health were also developed, to help in the spread of such services and to respond to the age of convergence. The funds were raised in a Public-Private Partnership (PPP), and the funds for the governmental pilot project (ranging from approximately a few billion to ten billion won per year) came from an information and communication promotion fund made by frequency allocation, with the funds required by service providers coming from their own resources as well at the ratio of 1:N. The Broadband Convergence Network (BCN) was also built with the service providers' own funds. Because the BCN Project was a commercial network for private businesses, the e-Government network for the administrative agencies, the school network and the national defense network were entrusted respectively to the Ministry of Government Administration and Home Affairs, the Ministry of Education, and the Ministry of National Defense. Regarding the e-Government network (the public administration network), around which the project was centered, the Ministry of Government Administration and Home Affairs organized and oversaw the e-Government communications network with support from the National Computerization Agency. This service system-oriented business method, through which network services such as the VoIP service, mobile communication service and CCTV circuit service are jointly purchased from the service providers, was started in 2006 for all administrative agencies. Following introduction of the VoIP service, the aforementioned toll network service of the Ministry of Government Administration and Home Affairs came to an end. The e-Government Communications Network Project, overseen currently by the National Computerization Agency, is different from the e-Government Convergence Network mentioned earlier which serves as the backbone for the administrative agencies and local governments.

At present the e-Government Convergence Network is called the National Backbone Network and the e-Government Communications Network the Government Network Service, with the two of them in combination known as Korea-Net. In comparison with the Five National Basic Information Systems from the perspective of the targeted agencies, Korea-Net can be seen as similar in its range to the past administrative network centered around administrative agencies and local governments, since it excludes certain public agencies such as government-invested organizations and accommodates only government institutions, while educational institutions and financial agencies are managed separately.

17

Disaster and Safety Communication Network

Sustainable Development Goals and Areas

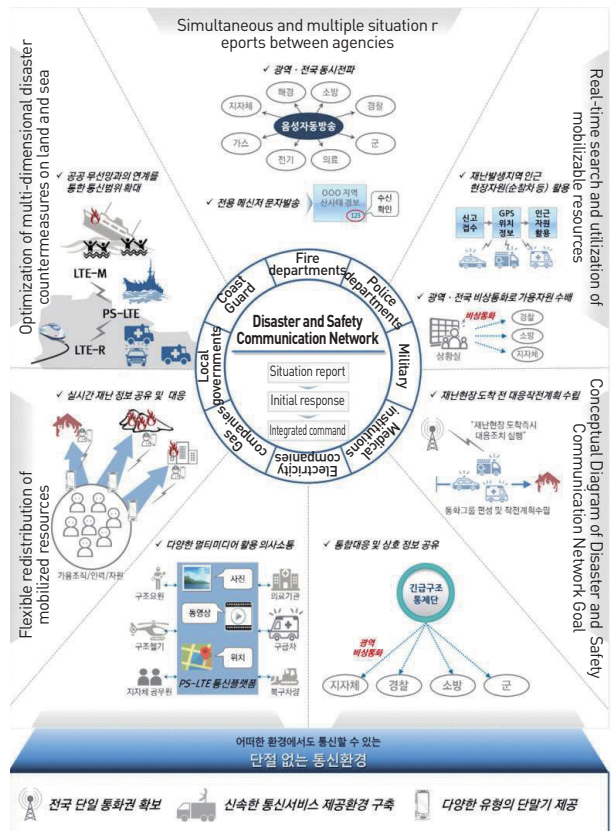


- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Background to Promotion of Disaster and Safety Network

In March 2004 the government enacted the “Framework Act on the Management of Disasters and Safety” and the “Framework Guidelines for National Crisis Management,” and devised a nationwide Integrated Disaster Management System as a priority measure for mitigation of disasters. The government in addition for-mulated a framework plan for national safety management, and has devoted great efforts for national crisis and safety management by consolidating the previous disaster prevention and disaster management plans and dividing the consolidated

Conceptual Diagram of Disaster and Safety Communication Network Goal



plan up into framework and execution plans for the central ministries, safety management plans for local governments, and detailed execution plans for the agencies responsible for disaster management. However, the need for establishing a full-scale disaster and safety network was raised by the Sewol Ferry Disaster, as there were difficulties in responding promptly to that disaster because a system for mutual communication among the different disaster response agencies had not been established given the differing types of wireless technologies that they used. This experience led to the launch of a project for establishing a single disaster safety communication network across the country, to enable disaster response organizations such as fire departments, the police, the Coast Guard, the military and local governments to respond in swift manners under a single command system.

Current State of Disaster and Safety Network

The government wanted to establish an integrated nationwide wireless communication network based on trunked radio systems, but due to the monopolistic market structure of foreign companies, problems of technological dependence, and conflicts between businesses it was able to establish such a system only in Seoul and Gyeonggi Province. Although it has a name different from that of the single command system, the Disaster and Safety Network was established for the same purposes—to enable disaster response agencies such as fire departments and the police to respond collectively in cases of disaster, and for use in disaster management work during ordinary times.

The Disaster and Safety Network selected PS-LTE technology based on LTE, in order to unify the different communication methods of agencies and regions into one united communication method. PS-LTE technology makes possible the smooth transmission of mission critical voice information and multimedia information such as data, photos and videos, so that rescue missions can be operated smoothly at the sites in events of disaster. Unlike the LTE technology in commercial networks, PS-LTE provides multilateral mutual call functions from the command headquarters to the rescue sites, enabling smooth command system operation. In order to protect the lives and safety of the people, the network also provides emergency communication functions so that communication functions and security can be maintained even in the worst situations such as massive disasters. The Disaster and Safety Network, built with the goal of securing nationwide coverage based on a self-managed network, uses a bandwidth of 20MHz (uplink 10MHZ, downlink 10MHZ) in the 700MHz band.

The project to construct a single nationwide disaster and safety network is a large-scale three-year

project that will be carried out from 2018 to 2020, with the network coming into pilot operation between 2021 and 2025, and will cost about 1.5 trillion won. Once it is built it will support communication on conditions at the disaster sites, the damages that have occurred, the management operations, and command between the disaster site and headquarters and between the officers on site and the disaster agencies. Based on its infrastructure, it is also expected that the disaster and safety network will contribute to not only upgrading disaster safety management but also fostering new industries and creating jobs through its adoption of major technologies of the 4th Industrial Revolution such as IoT, Big Data and Artificial Intelligence.

18

Electronic Signature Certificate Management System

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

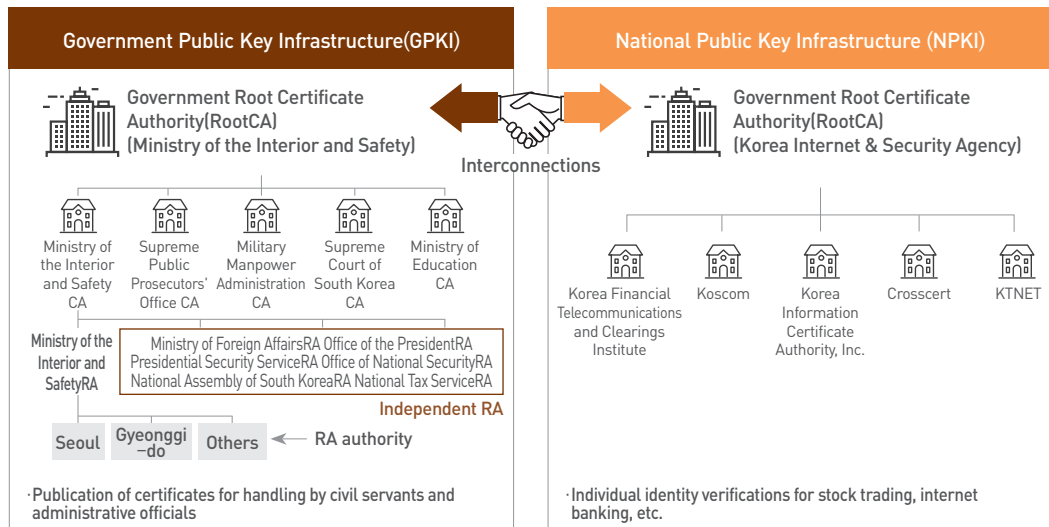
Electronic Signature Certificate Management

Traditionally, Koreans have used stamps or signatures in their processing of civil documents or in business transactions, and it is the same with electronic civil documents and business transactions. In 1999, before the internet had become popularized, the government enacted the “Digital Signature Act” and the “Framework Act on Electronic Commerce.” The “Digital Signature Act” prescribes the electronic signature authentication system for securing the safety and reliability of electronic transactions through identification of the transaction counterparties, the verification of electronic documents to check for forgeries or modifications, and the non-repudiation of the written documents.

The electronic signature system of Korea is operated in two different systems—of the National Public Key Infrastructure (NPKI), founded based on the “Digital Signature Act,” and the Government Public Key Infrastructure (GPKI), founded under the “Framework Act on Electronic Commerce.” Currently, in the case of official electronic signatures, the Korea Internet & Security Agency is the root certificate authority while there are five independent, private certificate authorities: Korea Information Certificate Authority Inc., Koscom, Korea Financial Telecommunications & Clearings Institute, KTNET and Crosscert. In the case meanwhile of administrative electronic signatures, the Ministry of the Interior and Safety has established and operated the Government Certification Management Authority, to establish secure electronic

administration by enhancing the security of electronic document distribution and transmission for public use between administrative agencies, verifying the identities of people filing civil petitions while processing their petitions via the internet, and securing the confidentiality of such documents. The Ministry of the Interior and Safety is the root certificate authority, and there are five more certificate authorities including the Ministry of Justice, the Military Manpower Administration, the Supreme Prosecutors' Office, and the Ministry of Education.

Administrative Electronic Signature Certificate System



Electronic Signature Certification

Compared to traditional identification methods based on user IDs and passwords, electronic signature certification is characterized by excellent security of personal information and a non-repudiation function in electronic business transactions. The use of electronic signature certification was thus made mandatory for internet banking in September 2002, and for use of the online stock exchange in March 2003. In 2005 a system was implemented for revitalizing the use of electronic signature certification for electronic transactions via credit cards. Since then electronic signature certification has proliferated to all kinds of electronic transactions including electronic civil petition filing, tax returns and electronic procurement. In line with the increase in mobile devices and IoT, certification is utilized in building and operating the device authentication systems for identity authentication of various information and communications equipment such as diverse devices and network cameras.

Integrated Certificate System

Certain crucial systems had been protected only by usage of user IDs and passwords, because the various administrative agencies or transaction systems used different user certificates and access management, and danger thus remained of exposures of important data while workloads were increasing as people needed to change their account and access information every time they changed positions during personnel reshufflings. Moreover, in order to alleviate the inconvenience of having to log on for every use of the e-Government systems and to enhance reliability, the Single Sign On (SSO) system was established in 2009 for government services. In 2010 agencies systemized their Single Sign On and accessibility management through the Integrated Accessibility Management System (Single Sign On Gateway).

Reinforcement of Data Protection Infrastructure

As information and communication technology is utilized throughout society overall, electronic infringements including hacking, computer viruses and the distribution of other malware have become more intelligent, and the related damage is growing. The South Korean government has been strengthening its information protection base and information protection activities, since elements of the protection of key information resources such as the information protection infrastructure and general information protection can be national security-level issues. To provide secure products with safety and reliability, the government has been operating an information system assessment certification system since 1998, and has also operated a security assessment system in which state agencies review security-related matters in advance when deploying information systems.

In addition, the government has since 2009 been developing and operating a Government-Information Security Management System designed for governments and public agencies, which it merged with the private information security management system in 2014 and began operating a unified information security management system.

19

e-Government Interoperability and Standard Framework

Sustainable Development Goals and Areas



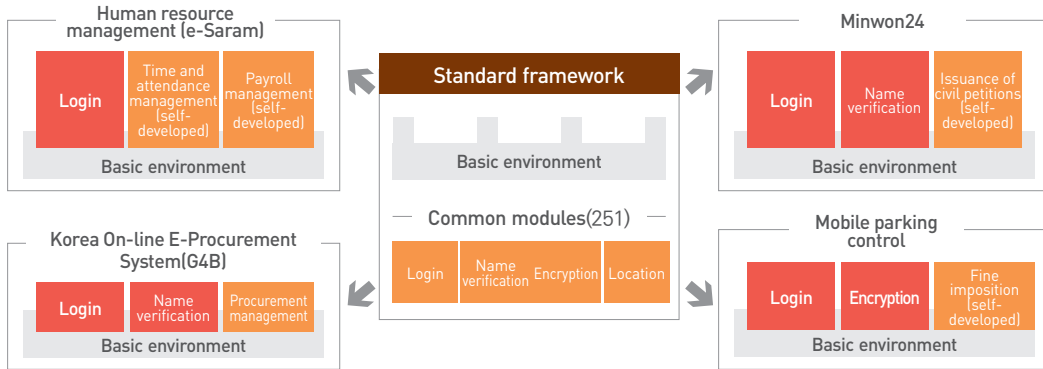
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Background of e-Government Interoperability and Standard Framework

As each different government department provided e-Government services, the quality of administrative services continually improved. However, because the main information systems in the country were build on the development bases (basic software structures, development tools and reuse modules; "development frameworks" hereafter) of specific companies, the systems had become subordinate to those companies, which had led to increases in cost due to developments of identical systems and worked as an obstacle to participation in bidding by small businesses lacking in technological skills.

In order to solve these problems the government promoted establishment of an "e-Government Standard Framework." The e-Government Standard Framework standardized the development framework required for establishment and operation of information systems in the public sector, by engineering of the basic environment and common modules needed for the related software development in advance. Standardization of the development framework was promoted in order to strengthen the interoperability of information systems and prevent them from being technologically dependent on only certain companies, thus increasing the possibilities for small and medium-sized businesses to participate in the information industry.

Concept of e-Government Standard Framework | When using the e-Government Standard Framework to build an information system, common modules (components) are reused and individual service-specific functions are developed on their own in the infrastructure provided by the standard framework, leading to increased interoperability and avoiding the subordination of certain technologies to specific companies only.



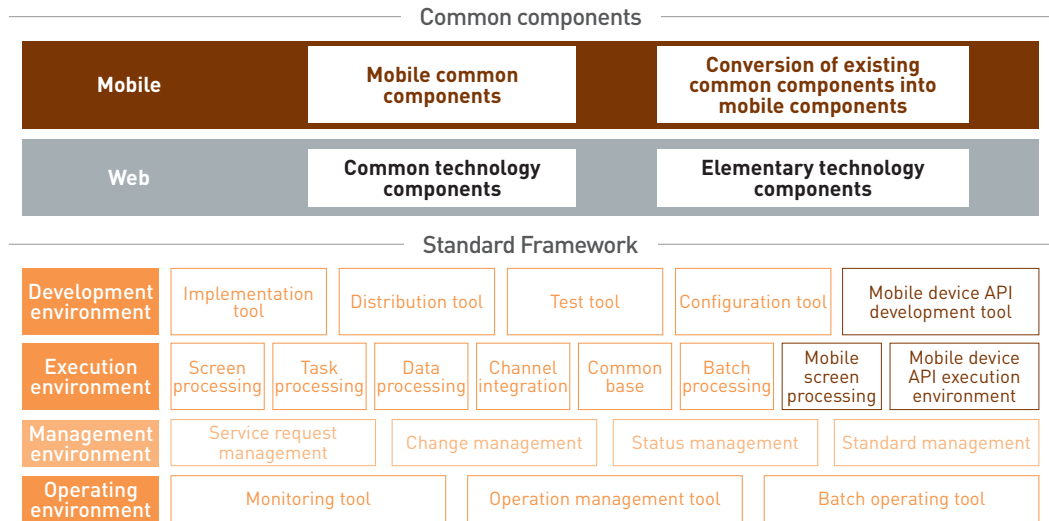
Main Contents of e-Government Standard Framework

In the five-stage project (2008~2012) of building the e-Government Standard Framework, the common components were constructed by extrapolating 250 components of high development productivity and investment efficiency, in consideration of the development, execution, operation and management environments, the frequency of overlapping developments, reusability, and standardization applicability. Recently, applying the mobile users' experience, the government has developed and begun to support 41 main components optimized for mobile devices. The execution environment performs the function of supporting easier standardization, for example of screen, business and data processing, during business program development. The development environment comprises various tools that offer convenience and efficiency to developers in software development. The management environment provides the functions of managing technical support requests and application statuses. The operating environment consists of communication tools for system operation and tools for monitoring of information systems based on the standard framework. In addition, the government provides mobile execution and development environments founded on mobile website templates, so that developers can utilize users' experiences and application programming interfaces for the implementation of mobile environment-based public services. The common components include common functions that are reusable in the development of web-based application software in e-Government projects, and a common component for mobile web-based services.

National Information society Agency is operating the standard framework portal site (www.

egovframe.go.kr), to provide services of technical support and education to facilitate the application and spread of the e-Government Standard Framework, and is providing online support such as diverse information for business owners and developers.

Figure: e-Government Standard Framework Organization



Key Performance of e-Government Standard Framework

Since June 2009, when the e-Government Standard Framework was first made public, the standard framework has been actively introduced and utilized in the private sector as well as the public information systems. It has been utilized in 2,837 projects (total budget 2.67 trillion won) so far, and as of 2018 58.8% of new businesses in the public sector are using the e-Government Standard Framework. In addition, as requested by private businesses, an interoperability service that confirms whether a commercial solution works is provided in conjunction with the functions provided by the standard framework, and products with 217 different functions such as DBMS, WAS and CMS can receive service confirmations. To facilitate the spread of the standard framework, about 8,841 people have been educated through free regular education for developers provided one a month, while 2,956 students have received customized education for public institutions and schools. Externally, in the “Future Gov Awards 2010” organized by Singapore, Korea's e-Government Standard Framework competed in October 2010 against 869 public informatization projects from 16 countries in the Asia-Pacific region, and won three awards—for Government Organization of the Year, Technological Leadership, and Government Transformation

of the Year. In January 2011, the standard framework received CMMI certification, an international standard for quality certification of S/W. Due to the strength of the standard framework which has received both domestic and international technical excellence verifications, and to its being an open software, it has been introduced to 22 projects in nine foreign countries (85.3 billion won in scale). In Mexico, notably, the Mexico Standard Framework Center has been established with the e-Government Standard Framework used as the domestic technical standard. The Korean government has signed MOUs with eight countries, including South Africa, and is working with seven countries, including the Philippines and Tunisia, to provide technical support and spread the standard framework.

20

Establishment of **Pan-Government National Information Resources Service (NIRS)**, and **Integration of Information Resources**

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Deployment Background

In the 2000s, as the e-Government project was being actively implemented, it was expected that the government's computer resources including hardware would increase more rapidly, and a discussion arose of the need for an integrated computer environment for more efficient utilization of computer resources. However, many agencies objected to this due to concerns about declines in the influence and control of individual agencies.

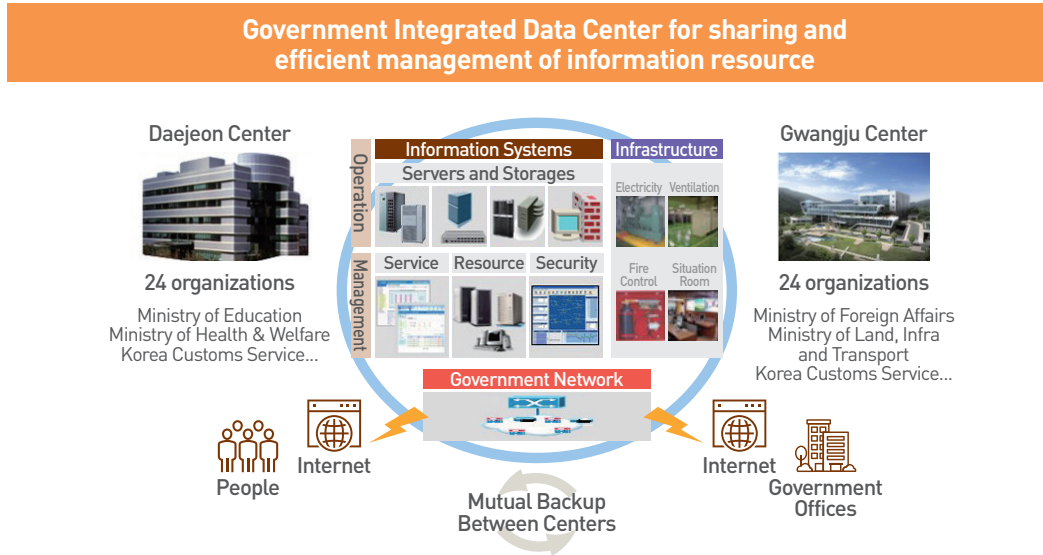
For this reason the integration was carried out step by step, starting with business process reengineering (BPR) related to the government's construction of an integrated computing environment.

Deployment Process

The ISP for construction of a pan-government integrated computer environment was established in July 2004, and following its establishment the basic plan was finalized in October 2004.

The National Information Resources Service was launched in November 2005, and the information systems of 20 central administrative agencies including the Korea Communications Commission, the Ministry of the Interior, and the Korea Customs Service were relocated to the Pan-Government National Information Resources Service by October of the following year.

IT Infra Integration



After the site for the Second Center of National Information Resources Service was arranged in Gwangju in April 2005, the construction of its building was completed in June 2007, followed by transfers of the information systems of 19 central government agencies including the Ministry of Land, Infrastructure and Transport and the National Police Agency by December of that same year. Subsequently there was a reorganization of government agencies and some other agencies moved in additionally. As of 2015, therefore, the First Center of National Information Resources Service was occupied by 25 agencies, and the Second Center of National Information Resources Service by 22 agencies.

In order to efficiently manage the information systems of the 47 agencies occupying these two centers, the National Total Operation Platform System (nTOPS) was developed, and the information systems of the tenant agencies are now jointly operated. In addition, stable and high-quality services are provided to the tenant agencies through standardization of the processing of the members' business operations.

For complete information protection, a strong integrated security management system consisting of eight layers of defense wall and a four-stage analysis system was established, and a system was developed to detect and eliminate problems in advance through simulated hacking drills and vulnerability checking.

After the first phase of location integration was completed by December 2007, the National Information Resources Service launched a project to integrate the information resources as the

second phase in 2008. A survey conducted after location integration showed that about 70% of the computer equipment were using less than 30% of the server capacities available to them. However, it was impossible to share spare available equipment among agencies due to the lack of integrated management of information resources, and the budgets for adoption of new equipment and operation of information systems were increasing every year.

With the objective of integrating the information resource management, the integrated standard model was selected through analyzing the demands for computer equipment of each agency, and a pool of high-capacity, high-performance integrated servers was established as a standby resource for responding to the demands for computer equipment by different agencies. The integration of information resources on the hardware side is implemented by establishing a management system that effectively allocates, recovers and reassigns integrated resources in line with the resource demands of the individual agencies.

Effects of Integration

The effectiveness of the National Information Resources Service is manifested in various areas. The rate of information system operation is achieving near 100%, and this has led to greatly improved expertise of information resource management as shown by the operating system's winning of international certifications in four key areas: IT services, infrastructure, disaster management and information protection. In addition, since integration the average time lost due to computer problems per piece of equipment has fallen from 67 minutes to 3.6 seconds, with the goal of non-stop e-Government service having thus been realized. As the government overall has jointly purchased, deployed and operated the necessary computer resources, costs have been reduced by 30% during the purchase phase and also by 30% during the operation and maintenance phases. In 2017 the Ministry of the Interior and Safety completed the transfer of 740 tasks to cloud computing and as a result reduced the costs of e-Government establishment and operation by 40%. As for the effects in terms of revitalizing industry, the increased introduction of universal servers and open software that can be localized has contributed greatly to improved competitiveness in the domestic information technology industry. According to a preliminary feasibility study by the Ministry of Economy and Finance, the economic benefits of the National Information Resources Service are estimated at 921 billion won, with 5,775 jobs having been induced and another 405.8 billion won in transmission effects to the local economies.

21

Pan-Government Enterprise Architecture

**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

What Is the System Needed for e-Government Implementation (EA) and Pan-Government EA? What Are Its Effects?

Enterprise Architecture is a management system that identifies the informatization-related elements of an agency, such as its current tasks, tasks desired in the future, information systems and data, and sets down a comprehensive informatization design based on the mutual relationships among these elements from the perspective of the agency, as well as a system for managing informatization based on this design. Incorporating EA into the investment activities in informatization in the public sector can facilitate the effective management of the complex and vast information resources held by the agencies, and induce the planned and systematic promotion of informatization through analysis of differences in statuses and goals.

● Expedited and Integrated Service Quality Improvement

Since 2008 all services provided by the government have been analyzed step by step. The analysis has drawn finalized models for the different services from the users' points of view rather than those of the service providers. Such finalized models are managed through the target architecture of Pan-Government EA, and each agency promotes its informatization projects, aimed toward these models, thus accomplishing gradual area-specific integration. For example, the processing of import-export trade for enterprises previously required phases of 75 procedures and took an average of four weeks. Since completion of the integration project

by service area, the work processing procedure has been reduced to 15 stages, and the processing time declined as well to one week.

Consumers of EA include not only the people and businesses, but also the government. More than 100 agencies were in the past individually involved in releases of seized vehicles. However, since the area-specific service integration this is now all handled together by one agency.

- **Reduction of Investment Budget for National Informatization, and Securing of New Investment Opportunities**

The Pan-Government EA system can be utilized for carrying out reviews of informatization projects planned and promoted by individual departments. The investment budget can be adjusted by the identification in advance of projects that conflict with the target architecture based on type of demand, project overlapping between ministries, and projects with similarities to each other.

- **Continuous Efforts to Improve Service Quality and Transparent National Informatization**

The Pan-Government EA system provides the improvement goals and criteria for 10 areas of service and data in which improvements are urgently needed for the sake of consumer (citizens, businesses, government employees, etc.) convenience, and such goals are helpful to the government informatization projects.

A portal (GEAP, www.geap.go.kr) is operated for the sharing of information managed through the Pan-Government EA. This portal is managed in accordance with the service classifications based on consumer type, through integration of the EA information managed by the individual institutions. The integrated EA information of individual agencies is shared with all agencies registered on the portal.

As of December 2018 there were 16,622 information systems and 67,897 informatization projects of 1,257 government agencies registered in conjunction with the National Information Resources Service, along with 216,646 pieces of hardware and 192,772 items of software registered. The Pan-Government EA portal also shares real-time status information. In addition, a service for inquiry about the statuses of informatization projects and the amounts of investment provided by the different agencies is offered in the form of a dashboard.

How Are the Agencies and Systems that Proposed EA Managed?

The Pan-Government EA system is the result of collaboration among the Presidential Committee on National Informatization, various government ministries, local governments, quasi-government agencies and private experts who want to see all government services provided in a convenient and integrated form designed for the convenience of the service users.

● Proposal of Presidential Committee on National Informatization

The Pan-Government EA project was proposed by the Presidential Committee on National Informatization. This Committee, as the top supervisory agency in charge of national informatization (participated on jointly by government officials and private experts), presented a new type of service provision plan designed for the people's convenience. The Pan-Government EA project was promoted as part of the national informatization policy, and the Presidential Committee on National Informatization has performed major tasks such as harmonization of interests among agencies while promoting the project.

● Result of Collaboration of Ministry of the Interior and Safety and Other Relevant Public Institutions

The Ministry of the Interior and Safety, as the main agency overseeing promotion of the project, has established the necessary policies and led creation of the legal systems for execution of the Pan-Government EA project. In addition, as the expert support organization, National Information Society Agency is managing projects to establish the Pan-Government EA and conducting research for the vitalization of Pan-Government EA.

Other central administrative agencies, local governments and public institutions have participated in designing the service-specific goals of the Pan-Government EA, through consultative groups of practitioners. Since then they have provided opinions and advice to help improve the Pan-Government EA, through regular online communication channels.

● Cooperation of Government Budget Agencies and Government Evaluation Agencies

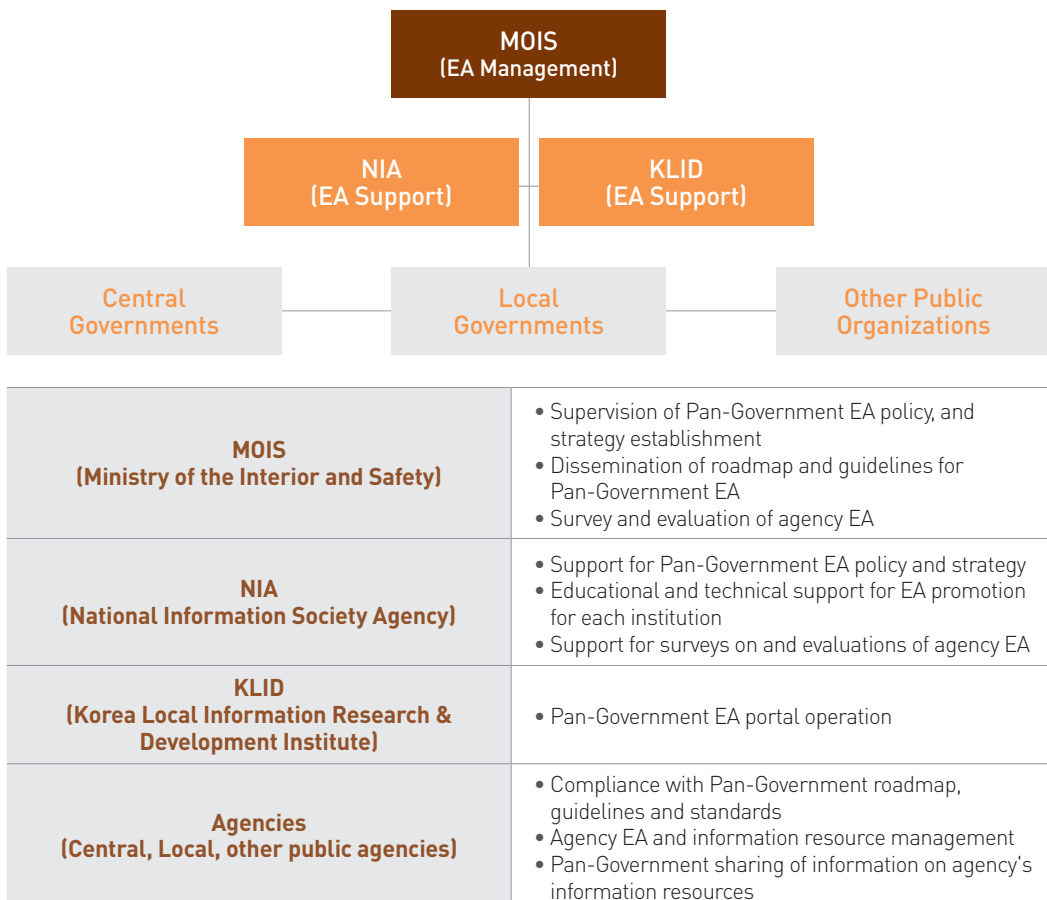
Major stakeholders include the Prime Minister's Secretariat and the Ministry of Economy and Finance. When assessing the work of the administrative agencies through the Pan-Government EA, the Prime Minister's Secretariat measures the performances of EA of individual agencies and reflects its findings in the annual evaluation of the government. The Ministry of Economy and Finance links the Pan-Government EA and the process of drawing up the informatization

budget, and utilizes its findings in establishing the national budget in the informatization sector.

Other central administrative agencies, local governments and public institutions use the Pan-Government EA system for planning and promoting their informatization projects, and review the suitability and validity of projects by checking whether they are in conjunction with national administrative goals, or whether they overlap with other projects being carried out by other institutions.

● Current Pan-Government Implementation System and Role of the Different Institutions

The Korean EA promotion system is organized with focuses put on the Ministry of the Interior and Safety, National Information Society Agency, and the Korea Local Information Research & Development Institute. The following illustrates the EA promotion system and the roles of each agency in it:



22

Public Information Sharing (Information Sharing Portal)

(<http://www.pisc.go.kr>)

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**Sustainable Development
Goals and Areas**

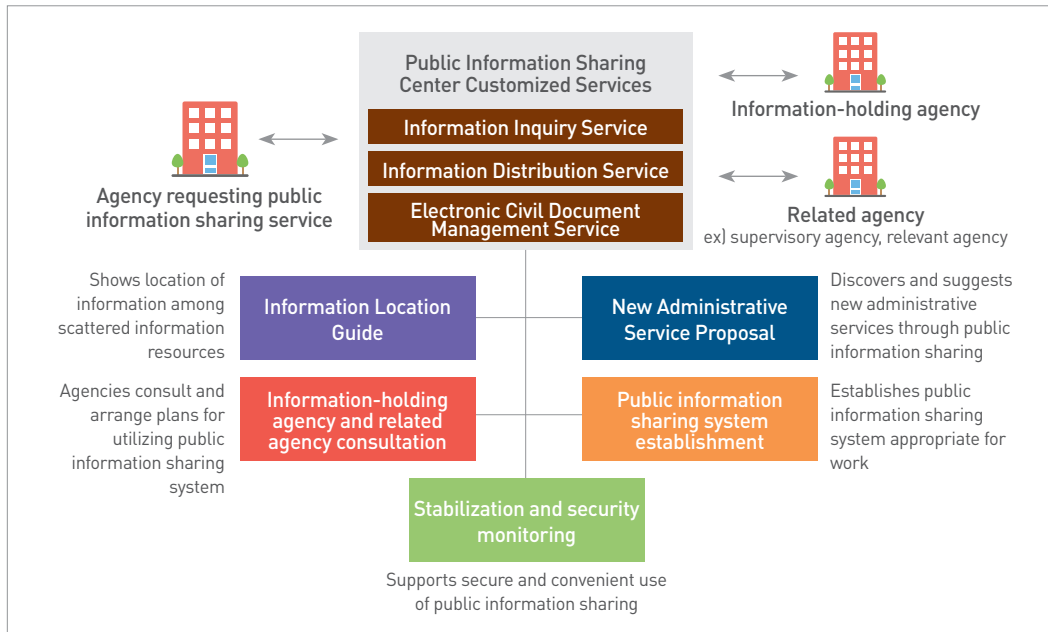


- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview of Public Information Sharing

A public information sharing platform is a service that allows a government employee in charge of providing a civil service to process the work involved by searching for and verifying the necessary information via the computer network, without any need for document submission by the person who needs the civil service or another government agency that possesses the information. By enabling administrative agencies, public institutions, financial agencies and educational institutions to share information and process the tasks electronically, the platform provides citizens convenience in filing civil petitions and using the civil service and permits the government to perform the related administrative tasks more effectively.

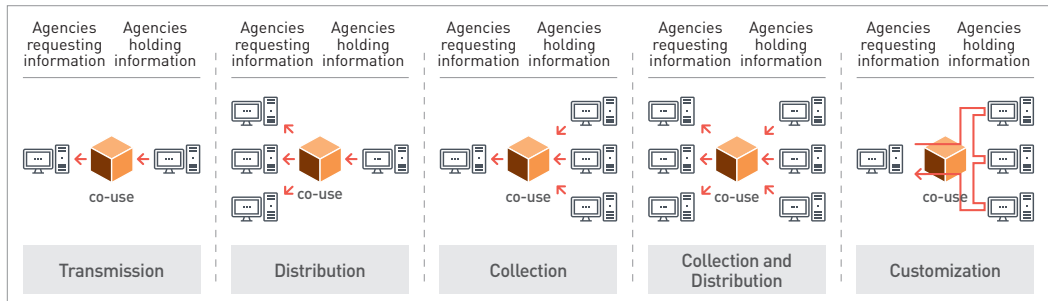
Schematic Design and Key Services of Public Information Sharing



● Information Distribution Service

Encrypts information to realize secure exchanges of information across agencies

Information Distribution Types



● Support for Completion of Civil Petitions without Visits: Electronic Civil Document Management Service

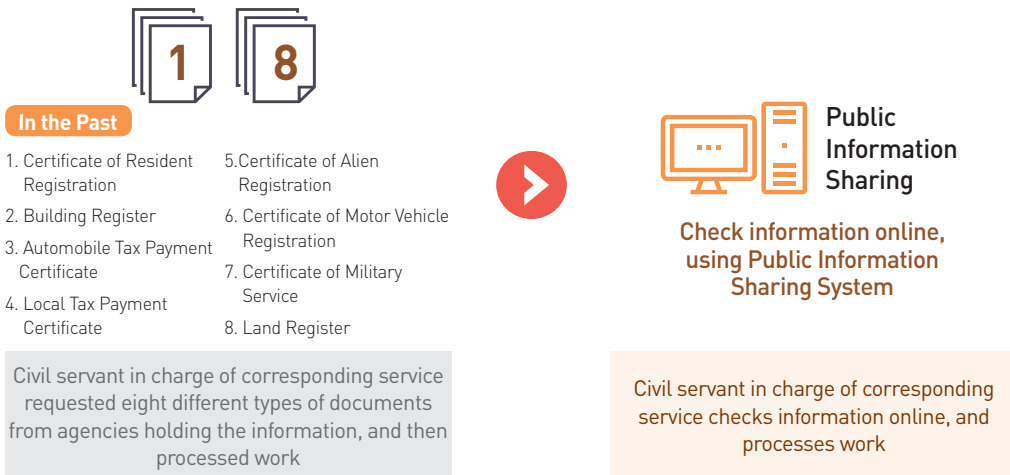
When citizens prepare and submit documents needed to receive civil services or file civil petitions on the internet, the service electronically documentifies the submitted documents or petitions and the responses of the agencies processing the requested services and issuing the documents.

To facilitate the use of electronic civil document management services by civil service providers,

functions such as authenticity verification, PDF conversion, a dedicated viewer, and voice 2D coding are provided as an integrated package.

● **Simplification of Civil Petition Handling through Administrative Information Inquiry Service**

Including passport applications and basic pension applications, 160 types of documents required for 2,500 civil services can be viewed and verified through the information inquiry system.

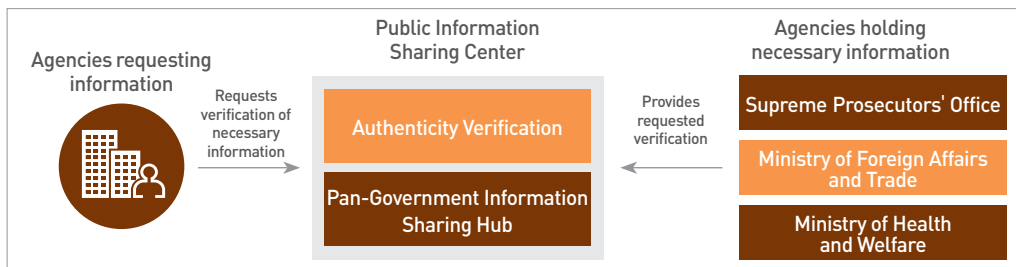


● **Establishment of system for customized information retrieval**

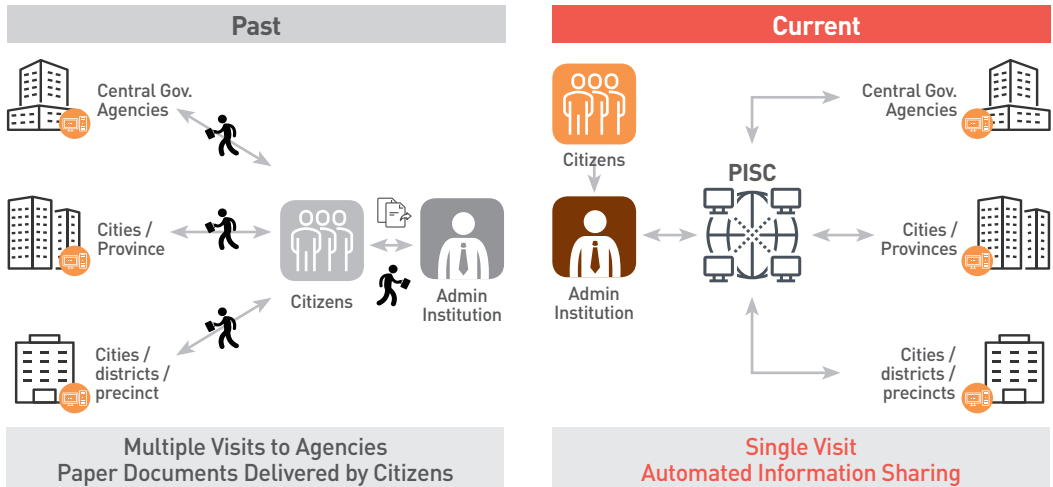
To enhance personal information protection, only the items of information in the required documents that are absolutely essential to the job are extracted, and then provided on one screen.

● **Provision of Authenticity Verification Service**

To prevent information leakage or misuse or abuse of information in cases of verification of people's military service or tax statuses, the service only verifies whether the information is authentic or not.

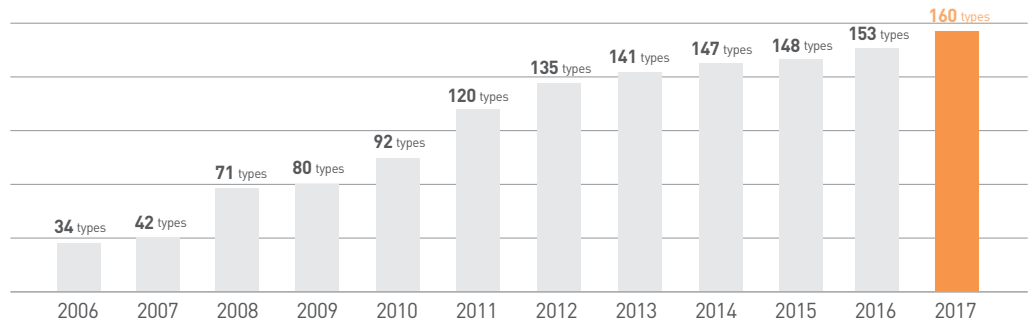


Major Achievements of Public Information Sharing



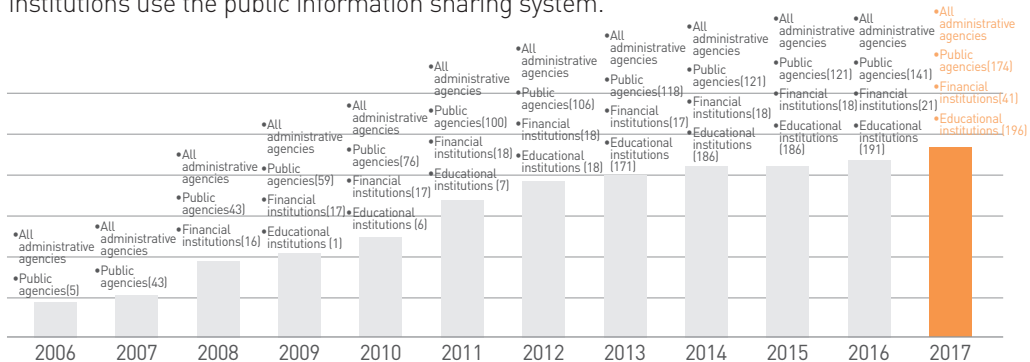
- **Civil Petition Processing Possible without Submission of Required Documents**

Including copies and abstracts of Certificates of Resident Registration, Certificates of Registered Seals, Health Certificates and Certificates of Income, 160 kinds of civil documents can be issued.



- **Continual Increase in Number of Agencies Using Public Information Sharing**

All administrative agencies, 174 public agencies, 41 financial institutions, and 196 educational institutions use the public information sharing system.



23

Records Management

—
**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

The Goal and Role of Public Records Management

The National Archives of Korea, the central institution for records management, oversees the management of public records in Korea. As a permanent records management institution, the National Archives of Korea collects and systematically preserves major national records so that all citizens may utilize them easily and conveniently. To this end, the National Archives of Korea performs the following tasks:

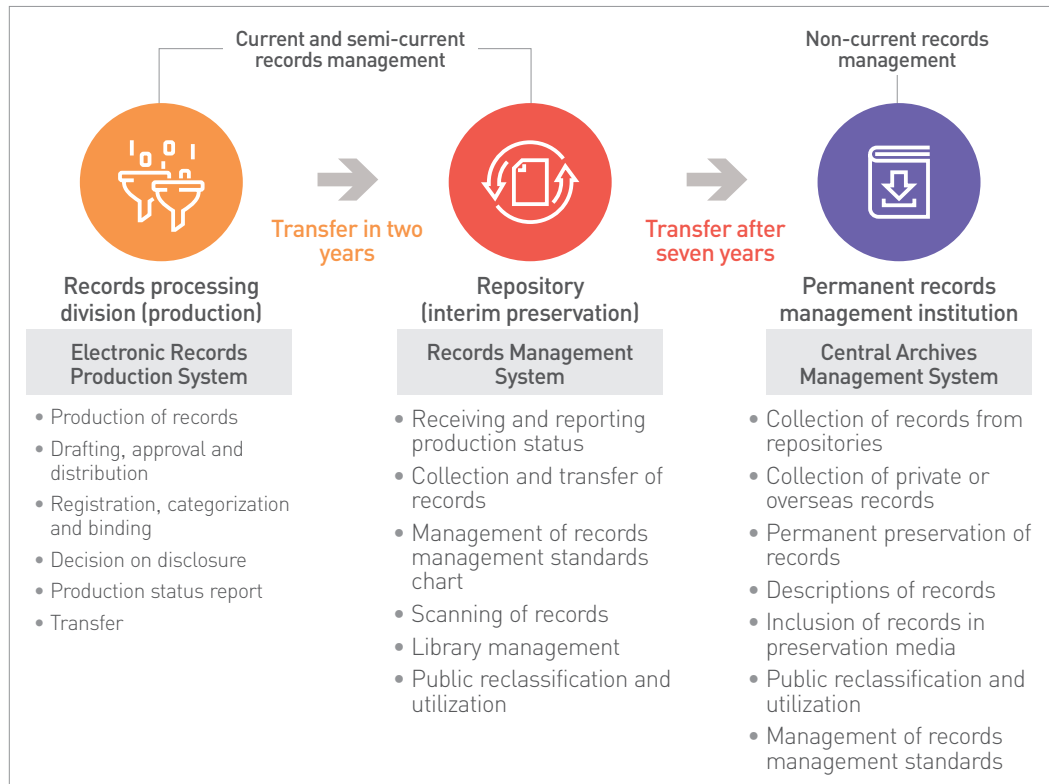
- Collection and systematic preservation and management of records worthy of more than 30 years of preservation
- Support for the realization of a knowledgeable information society through provision of its recorded information to the people
- Upgrading of public records management systems and procedures in line with changes in the digital environment

Records Management Process

In accordance with the “Public Records Management Act,” public records produced by public agencies are managed and transferred from a records processing division (records production

stage) to a records repository (records management stage), and then finally to the National Archives of Korea (permanent preservation stage). This three-stage records management system operates through the utilization, respectively, of the Electronic Records Production System (On-nara System), the Records Management System (RMS), and the Central Archives Management System (CAMS).

Three stages of public records management process in Korea



Based on the Electronic Records Production System (On-nara System), the records processing division* of each institution produces and manages records as the staff in charge perform their tasks. Two years after their production, records are transferred to a repository, in the interim preservation stage, through the Records Management System. The repository of each institution is an organization dedicated to the preservation and management in this interim stage of records produced by the record processing divisions. All tasks (records transfers, preservation and management) performed in the repositories are carried out through the Records Management System (RMS), and records with preservation values of more than 30 years are screened and transferred to the permanent records management institution (the National Archives of Korea).

The permanent records management institution preserves and manages records of evidential and preservation values, and provides the public with any of that information which is unclassified. In addition to public records, private and overseas records that are highly valuable for national preservation are collected and maintained.

*A division is the smallest agency unit.

Cooperation with International Organizations

The National Archives of Korea is a member of the International Council on Archives (ICA), and a founding member of the East Asian Regional Branch of the ICA (EASTICA).

It is in addition currently promoting international cooperation through MOUs with 11 countries*, which started with China in 2001, and it hosted the 18th International Council on Archives Congress** in 2016 at the COEX in Seoul.

*China, the United Kingdom, Australia, Switzerland, Algeria, Mozambique, Bulgaria, Iran, Indonesia, Uzbekistan and Kazakhstan.

**One of the world's three biggest cultural conferences organized by UNESCO

Future Directions for Records Management

To build a future-oriented system for the nation's major records, Korea is aiming to achieve:

- Cloud-based Transformation of Records Management Systems: Integrated records management governance of the Electronic Records Production System and Records Management System, based on ICT technology
- Arrangement of the Electronic Records Management System: Arrangement to facilitate management of various types of electronic records (data sets, video records, etc.) and prepare long-term preservation policies
- Restoration of Key Records: Restoration of damaged key records and records that are unrecognizable due to media transformation



Representative e-Government Services

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PART

03

24

Gov24

(www.gov.kr)

Sustainable Development Goals and Areas

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

10 REDUCED INEQUALITIES

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview of Gov24

Gov24 is an integrated service platform that provides guidance concerning civil services, policies and institutions, and enables applications for and issuances of major service documents of the different agencies at one website. In 2016 Gov24 integrated a governmental portal together with Minwon24, and this became the basis of an integrated service platform able to provide the people with the complete process of being informed of a service, applying for the service, and checking the status and the results of the application in one window, as well as a “Notice e” service that offers the public customized services through the gathering of beneficial public services scattered throughout different agencies. Prior to the existence of Gov24, people had to request services one by one through approximately 12,000 public institutional websites. However, Gov24 enables users to take care of all of their necessary government service needs at once, through integration or association with service portals such as “Bokjiro” and “Worknet.”



Key Functions of Gov24

Civil services: It provides services that can be applied for and the related documents issued in conjunction with each agency, and guidance on services of the central, public and local governments in Korea. Gov24 provides approximately 100,000 services (92,500 government services and 5,288 civil services), and approximately 3,200 service applications are available.

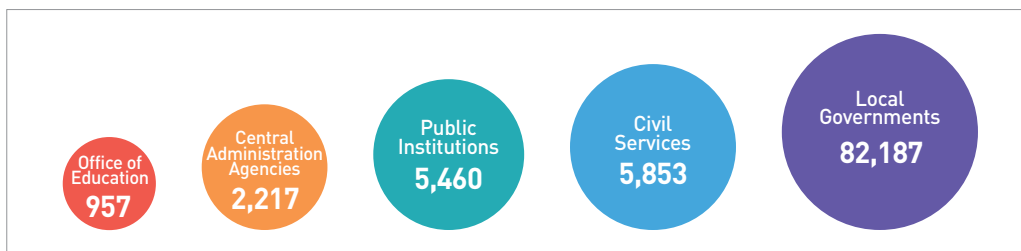
- Application/Inquiry/Issuance: Available related to government services and civil petitions.
- Life cycle/Bundle service: Provides information on services that people can receive, by age group (from infants to seniors) and by situation
- Personal life information: Enables people to check on life-related information, such as pensions, dormant deposits, etc., at one time.
- Categorized services: About 95,000 government services in 12 categories are provided.

- **Policies:** Major news is provided on government agencies through various forms including policy information, research reports, publications, policy data, and video materials
- **Institutions:** Organization charts and detailed information are provided on government agencies, central and local government websites, local government news, festivals, contests, etc.

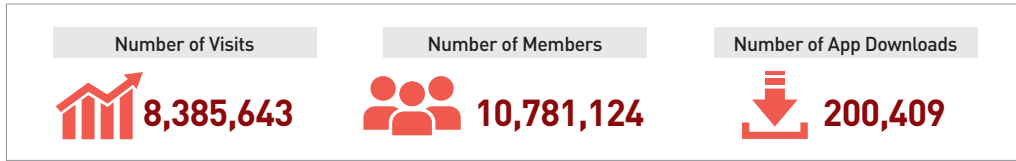
Data on Major Achievements of Gov24

As of November 2018 the number of users had increased by 143 times compared to that in 2017, the first year of the service, passing over 18.78 million, while the number of online applications had grown by about 113 times, from 1.44 million to over 1.62 billion. In addition, the average number of daily visitors had increased from about 30,000 in 2002 to more than 260,000 in 2016, while the number of visitors during the tax refund season has risen to 440,000 per day. In April 2019 the number of Gov24 visitors was 11,165,491, while the number of its users amounted to 11,110,157 and the number of app downloads was 182,699—all of which figures show the very active use of the website.

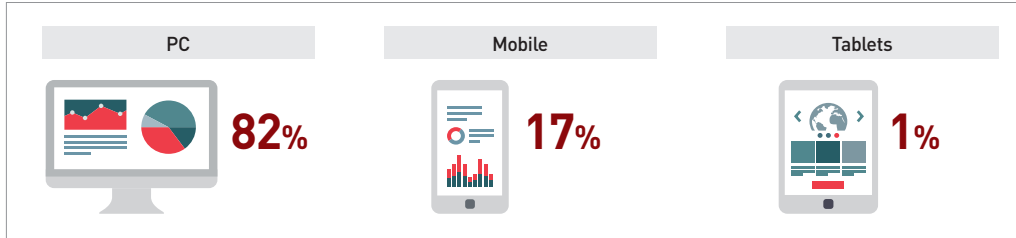
● Number of Services(96,651)



● Status of Use



● Statuses, by Device



Global Recognition

● Awards / Recognition

Gov24 has not only revitalized the online services of the government and public institutions and optimized administrative efficiency, but also resolved the problem of people's inconvenience in having to visit multiple public institutions or their websites to check for the information that they need.

“Gov24” (Minwon24 at the time) won 2nd place in the United Nations Public Service Awards in Tanzania on June 23, 2011, having received a particularly high evaluation for its abilities to provide packages of everyday civil services directly related to people's life cycle, involving matters such as home moving, employment, deaths and real estate transactions.

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Pan-Government Integrated Business Processing System (On-nara)

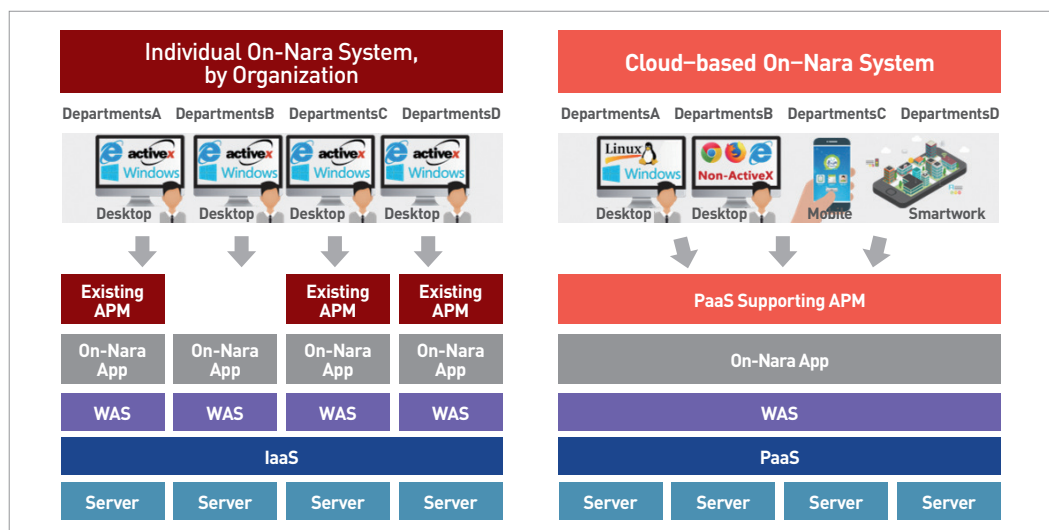
Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview of On-nara System

The On-nara Business Processing System was created for the purpose of developing a standardized government business processing system and spreading that system's use. Previously, individual ministries had had different, non-standardized systems for the carrying out of their tasks, production of documents and management by their agencies.



As a result there were limits on the systematic sharing of official, work-oriented documents following the pan-government integration. The On-nara System was developed to solve these problems and increase the efficiency of administrative work.

Major Functions of Cloud-based On-nara 2.0

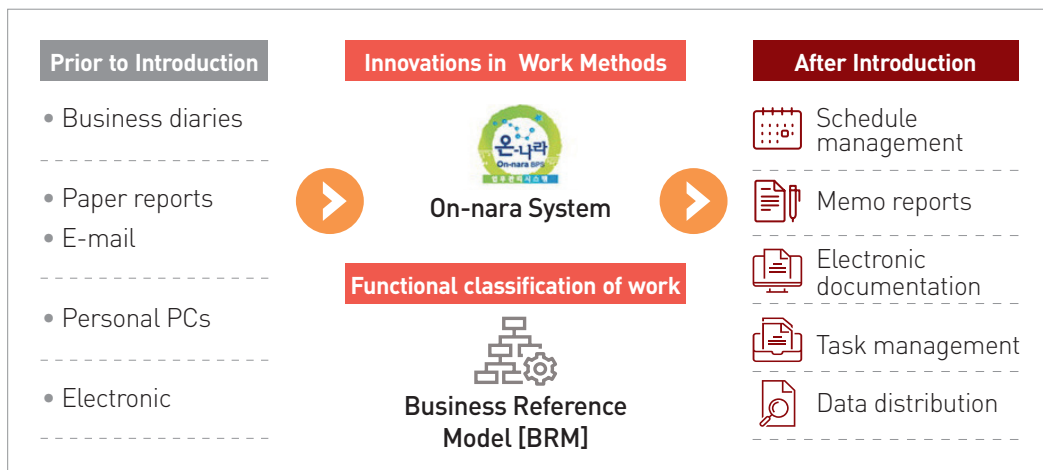
In 2014 the government launched a plan to develop a cloud-based On-nara Business Processing System, and in 2015 it completed that system's development. In 2016 the Ministry of the Interior and Safety distributed the cloud-based "On-nara Document 2.0."

The biggest feature of the "On-nara Document 2.0" system is that it operates within a single platform on the "Government Cloud (G-Cloud)," rather than on separate servers managed by the different individual institutions. As a result each agency can now search for documents from other agencies, attach large files, and have one or more public documents jointly drafted and signed by one or more agencies.

The main functions of the On-nara System are as follow:

- ① (Electronic documents) Documentation, reporting, approval and enforcement for decision-making and internal and external implementation
- ② (Memo reports) Sharing of information and collecting of opinions within agencies, without delays in the approval process
- ③ (Schedule management) Users pre-register their weekly schedules and record their performances
- ④ (Meeting management) Online meetings on the agendas or documentations of offline meetings
- ⑤ (Instruction management) Management of performances in implementation of presidential, prime ministerial, agency and department directives
- ⑥ (Transition) Electronic conduct of transition work due to personnel appointments or reorganizations
- ⑦ (Mobile On-nara) Approvals, memo reports and schedule management in mobile environments, at anytime and anywhere

Effects of On-nara System



The effects of the application of the On-nara System to government work can be summarized in five ways:

- 1 Reduction of business performance time: Reduced reporting times and average day processing times, through more rapid and convenient communication
- 2 Improvement in administrative efficiency: Improved administrative efficiency through the sharing of business processes and electronic handling of transfers of duties
- 3 Transparency: Increasing transparency and securing accountability of administration through the recording and sharing of all work-related information
- 4 Benefits of standardization: Systematic processing of work materials, by task, through the standardized work methods
- 5 Policy quality improvement: Policy quality enhancement through provision of feedback based on analysis of progress in major policies

Major Achievements

Due to the excellence in performance of the On-nara System, it was nominated as one of the Top 10 Systems of the Year in the World e-Democracy Forum in 2007 (France). As of 2018 there were 860,000 people from 288 agencies using the On-nara System. Members are using it as a window for decision-making and information sharing as well as the making of official reports, and produced 125 million documents using the On-nara System during 2017. As of 2018 the versions of On-nara System used, by agency category, are as follow:

Statutes of Agencies Utilizing On-nara System

Sort	Number of Agencies		
	Document1.0	Document2.0 (Cloud)	Subtotal
Central Administrative Agencies	21	27	48
Government Committees	2	19	21
Metropolitan. Provinces	16	-	16
Cities, Counties, Districts	202	1	203
Total	241	47	288

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e-Petition (e-People / National Petitions)

(<https://www1.president.go.kr/petitions>)
(www.epeople.go.kr)

**Sustainable Development
Goals and Areas**



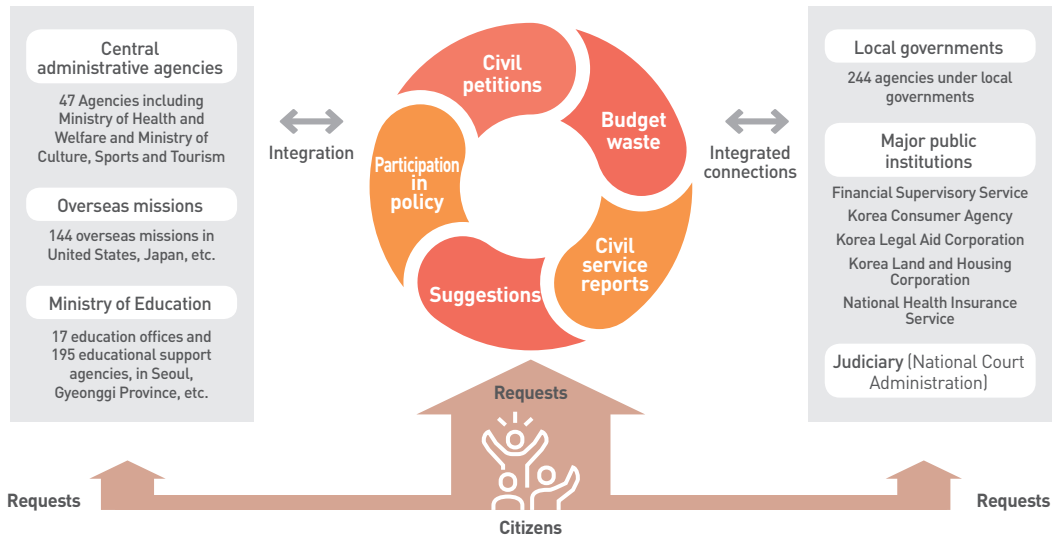
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

The e-Government of the Republic of Korea has established various channels for communication with the people, including the "National Petition" (e-petition) system, which aspires to direct communication between the people and the Blue House, and the "Drum of the People" (e-people) system, which is the oldest channel for communication with the government.

[e-people] Overview

e-People is the oldest e-Government service, through which people can communicate with the government on any inconveniences or problems that need to be fixed. It is available in 14 languages.*

* Korean, English, Chinese, Japanese, Vietnamese, Uzbek, Cambodian, Thai, Bengali, Sinhala, Mongolian, Indonesian, Russian, Burmese



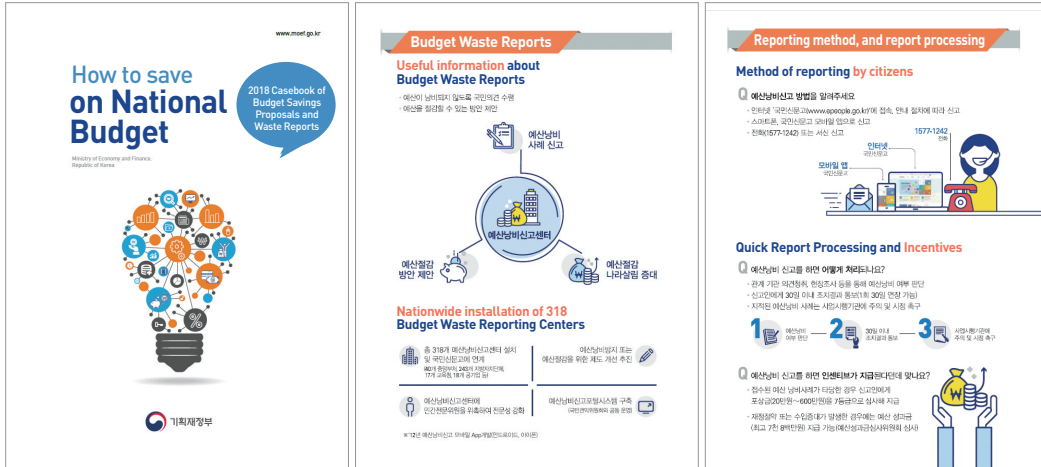
Major Functions

As the representative pan-government online communication channel through which one may, through the Internet, conveniently file a petition, propose a policy, participate, report on corruption or the public interest, or apply for an administrative hearing, it is connected with all administrative agencies (central and local governments, education offices, and overseas missions), the Judiciary, and major public institutions, and provides a service whereby people can be provided with all of the services that they need at a single point of contact.

Major Performances

- **"Budget incentive" system on budget-savings proposals or reporting of budget abuse**

As a function to prevent waste of the taxpayers' money, it enables anyone to submit evidence and demand corrections through a proposal to prevent waste of the nation's budget or a report on illegal expenditures of the nation's funds. It also pays incentives to contributors who have saved budget expenditures or increased state revenues. Exemplary cases have been published each year since 2011.



- Improving the integrity of public institutions in all areas, including education, industry, welfare, health, discharge and agriculture, through reporting of violations of Improper Solicitation and Graft Act or other corrupt practices

Exemplary cases of anti-corruption measures are announced each year, and in 2018 Busan was selected as the exemplary city by receiving an A Grade in the evaluation of its integrity and anti-corruption policies.

- Pursuing the public interest in public health and safety, environmental protection, consumer interest, and fair competition through public service reports

[National Petitions] Overview

e-Petition is a platform for participation of the people, where responsible government officials (the ministers of ministries, senior secretaries of the president, etc.) respond directly to the people's proposals for policies (200,000 or more recommendations are made every 30 days) under the philosophy of "When the people ask, the government answers."

Major Functions

- Ensuring the operation of direct democracy, in which people can freely propose policies and express opinions

Anyone can file a petition on their own social networking service account, without signing up with the government website.

● Ensuring the rights of the people to petition freely

- 17 categories: political reform, foreign affairs/unification/national defense, jobs, the future, growth engines, rural communities, health and welfare, childcare/education, safety/the environment, measures in response to low birth rate and population aging, administration, pets, transportation/architecture/land, economic democratization, human rights/gender equality, culture/art/sports/medical/media, etc.
- Major petition cases: There are no restrictions on proposals, such as requests for tougher punishments of crimes that become hot issues, proposals expressing opinions on policies for the shared economy such as carpooling, and petitions for enactments of special laws related to compensation for damages in disaster areas.

● Ensuring a place for public discussion

When a Korean citizen experiences something unfair and frustrating, or thinks that something is absolutely necessary for society, he or she may file an e-petition, and if the petition leads to formation of a social consensus it can be discussed publicly.

Major Performances

● Functions as a channel for direct communication with the people.

- Since its official launch on August 17, 2018, 434,000 petitions have been filed during about 20 months, and the Blue House has responded to 92 of them (as of April 2019).
- It has offered an enhanced communicative function, through the answering of petitions via video rather than with just written words.



We Answer the National Petitions



Responses to National Petitions

Two petitions calling for re-investigation of the death of the late Jang Ja-yeon and protection of the related witness

Two petitions concerning drug crimes against women and the links between the Burning Sun Club and the police

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e-Participation

(Gwanghwamoon 1st Street / National Design Group)

(<https://www.gwanghwamoon1st.go.kr>)

**Sustainable Development
Goals and Areas**

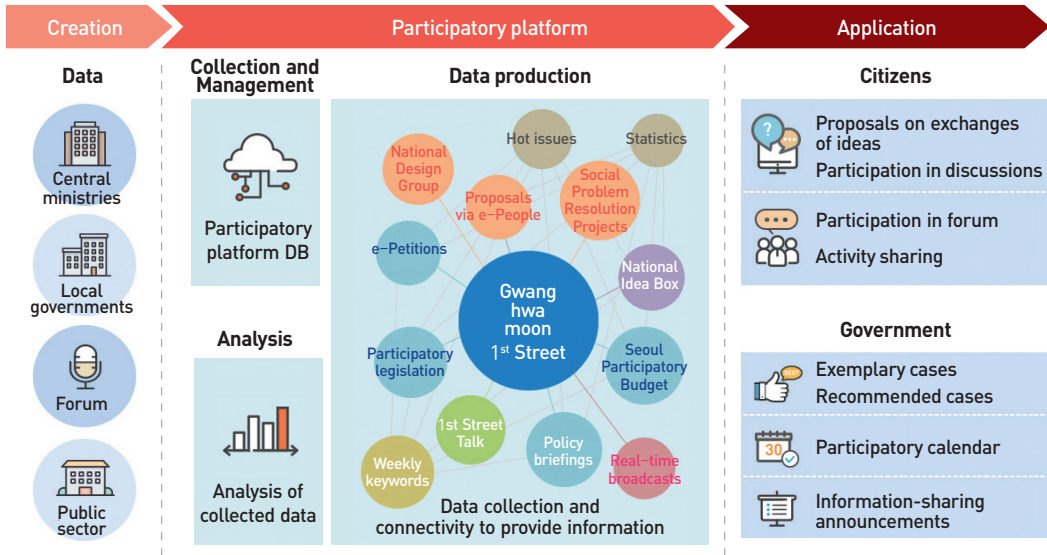


- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

The e-Government of Korea has established various channels for public participation and communication with the people. Representative channels include "Gwanghwamoon 1st Street" for the people's policy proposals, and the "National Design Group" which aims to facilitate the establishment of policies by the people.

[Gwanghwamoon 1st Street] Overview

Gwanghwamoon 1st Street is a platform that guides users to all websites of the ministries and municipalities, while providing a venue for online discussion between the people and the government, so that people can communicate on a daily basis and participate in the policy-making process.



Major Functions

- **A forum for public debate enabling expressions of opinions or suggestions about policies to the government, “Innovative Proposal Talk”**

A proposal receiving more than 60 likes (or 10 comments) within 60 days is discussed with the relevant agencies, and reviewed as a topic of the “Open Communication Forum.”

- **“Open Communication Forum”: A forum for public debates both online and offline**

A policy discussion topic is selected through a bottom-up approach by a planning group consisting of citizens, experts and government officials. Citizens and government officials participate in the “Gwanghwamoon 1st Street Open Communication Forum,” and discuss practical solutions to problems through collective intelligence. This is broadcast live, and those watching the broadcast discuss the topic online.

- **“Communication and Participation Channel”: An integrated notice board of public participation platforms**

The channel shows posts on the six different websites of e-Petition, e-People Public Proposal, Public Idea Box, the Participatory Legislation Center, Policy Briefing, and the Seoul Participatory Budget System, as well as introducing other participatory websites that ministries and municipalities operate.

- **“Activity Sharing”**: Introduces cases of excellence in participation by the people

It introduces exemplary cases of public participation such as the National Design Group, as well as social problem resolution projects, while also providing the schedules of various public participation events promoted by different ministries and municipalities.

Major Achievements

- Gwanghwamoon 1st Street has held a total of 10 forums and discovered 72 policy proposals, with 45 of these proposals having been implemented under the auspices of a total of 14 ministries (policy adoption rate: 62.5%).
- The results of each ministry’s proposal reviews are released online, enabling the public to realize the effects of the proposals.

[National Design Group]

Overview

This is a group of citizens that design policies and public services under the slogan of “The People Design the Policy.”

Its aim is to transform the method of planning government policies from its previous supplier-centric method to a demand-oriented method, through providing innovative examples of policies with the aspiration of transforming new as well as existing businesses for central, local and public agencies.



Major Functions

- **Implementation of demand-oriented policy through development and improvement of public services**

Government officials (policy makers) and the people (the policies' consumers) participate together with service designers, and design policy services throughout the entire process of policy making including the setting of agendas, selection of policies, implementation of those policies, and receiving feedback.

- **Presentation of policy model “of the people, by the people, and for the people” public services**

This was the first attempt to introduce design as a method of identifying the people’s needs and devise policies based on those needs, in contrast to past policies designed by public administration experts with their focuses on the service providers.

Major Achievements

“A total of 900 projects and 9,000 participants between 2014 and 2017”

- **Ability to find and resolve hidden problems**

The existing process of public policy design lacks strategies for finding the potential needs of consumers, and may thus be disadvantageous to the socially and physically vulnerable who do not or cannot actively exercise their rights to speak.

Service design is an alternative policy design that can overcome loopholes in the existing policy design process through the observance and identification of potential needs in the daily lives of consumers.

- **Expected budget reduction through perfection of policies**

In the past, if a policy failed then additional budgeting was needed to correct and supplement it. Service design, in contrast, can prevent such budget waste as it analyzes consumers from the initial stage of policy making and produces the final plan by creating a prototype based on the consumer analysis, testing and supplementation of the prototype.

- **Establishment of mutual understanding and trust between government officials and the general public**

By sharing their experiences while developing policies together, they come to understand each other’s positions, which leads naturally to higher public satisfaction with their policies and enhanced confidence in the government.

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Mobile e-Government (m-Voting, Emergency Ready App)

(<https://mvoting.seoul.go.kr>)

**Sustainable Development
Goals and Areas**



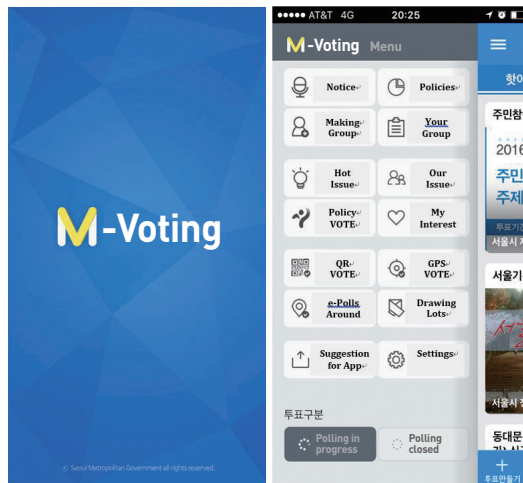
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

[m-Voting] Overview

In March 2014 the Seoul Metropolitan Government launched an "m-Voting" (mobile voting) system, as a communicative application for establishing policies with citizens through real-time voting.

m-Voting is a symbolic policy service that represents the e-Government of the Seoul Metropolitan Government, through which Seoul citizens can deliver their opinions directly in the policy-making process by voting.

Amid the current surge in users of smartphones and mobile devices, m-Voting, which can reduce the amounts of cost and time necessary for polling on policies through personal device application, and thus help to improve the policies' quality, functions as a channel that allows Seoul citizens to make simple suggestions and express opinions as well as participate directly in the city's policy decision-making. In addition, people can present their opinions through voting on matters that concern their daily lives, which can serve



as meaningful and principal grounds for Seoul City officials in their policy-making decisions. In particular, m-Voting offers the ability to designate specific districts and groups for the conduct of surveys, thus differentiating itself from other systems in the ways in which it can collect opinions from the people directly involved in the policies without wastes of time or money.

Major Functions

Voting open to everyone (G2C)

Regardless of their departments in the SMG (Seoul Metropolitan Government), SMG employees can ask for votes when opinions from Seoul citizens are needed. SMG employees can thus understand what the citizens' preferences are and how citizens' opinions differ depending on the mode of communication used (e.g. emergency message channels vs. traditional announcements, website announcements, social media postings).

Voting for specific targets (G2C)

Based on the existing Seoul database, m-Voting offers SMG employees the option of offering voting opportunities to certain distinct sets of citizens based on age, district, occupation or gender. Specific target voting is open only to specifically targeted regions or voters. After the SMG has drafted the specific policy being voted on, it makes the related data available to those targeted regions or voters affected by the policy.

Poll of the citizens (C2G)

Just as city officials use the m-Voting function to solicit citizens' opinions, Seoul citizens can also propose polls on certain policies and other issues of interest.

GPS location-based voting or QR (G2C)

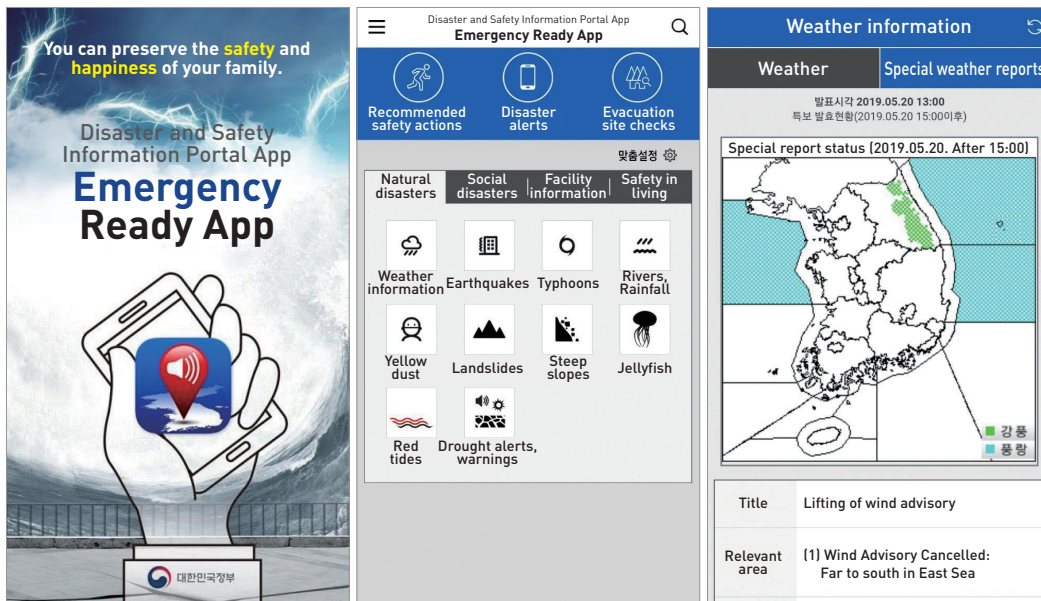
Most policies relate to unique contexts of locations such as traffic signs and city events. To find out about such kinds of policy problems, m-Voting can provide GPS-based voting (e.g. for citizens within a two-mile radius of a certain location).

Major Achievements

- As of May 2019, 6,481 ballots had been presented for m-Voting, 2,587 of them by the government, and 790,000 people had participated in the voting.
 - * The results of at least 652 of these votes have been reflected in the composition and implementation of policies.
- It encourages participatory democracy and deliberative democracy through people's cooperation in decision-making.
- It helps to reduce civic engagement costs, and to expand and provide more convenient channels for such engagement so as to increase citizens' participation in the SMG's policy-making process.
- It helps to realize the philosophies of the citizens from the perspective of the administrative managers, and can be used as a tool for civic cooperation and conflict settlement.

[Emergency Ready App] Overview

As the government's flagship disaster safety portal app, the Emergency Ready App provides various disaster safety information needed in events of disaster or in everyday life. It provides information such as news or reports of disasters, the locations of facilities including civil defense shelters and medical clinics, and information specific to the individual type of disaster—all in one



“app.” Recommended safety actions, by disaster, can be used anytime and anywhere even if internet access is cut off. The application’s main functions are available in English as well. Notably, the app for foreigners includes foreign embassy information, allowing visitors to check and search for their embassies’ locations and phone numbers.

Major Functions

- Emergency disaster message service to 3G phone users (approximately 1.6 million people) who cannot receive Cell Broadcasting Service
- Disaster news, weather information, and emergency reporting functions
- Variety of disaster safety information, including recommended safety actions and locations of civil defense shelters, hospitals, and pharmacies

Major Achievements

- It provides 125 types of disaster service information (disaster alerts & news [4], recommended safety actions [62], disaster safety information [53]).
- Operational performance: 2.96 million downloads of Emergency Ready App (as of May 2019)

Global Evaluations

● Awards / Recognition

In 2014 the “Emergency Ready App” was established as a public disaster information portal, integrating and connecting 11 agencies and 15 disaster safety-related apps so that various information services can be used in a single app. This application has been recognized for its achievements overseas, having won “The Best mGov Awards” event organized by the Prime Minister’s Office of the United Arab Emirates in 2015.

- Grand prize in “App Awards Korea 2017,” organized by Digital Chosun Ilbo (11.14.2017)
- ‘16 Public App Analysis Data: 11th in downloads among 1,235 apps operated by the government and public organizations
- First prize in “The Best mGov Awards,” held by United Arab Emirates (2.11.2015)
- Winner of “Best Public Mobile App Contest 2014,” organized by Ministry of Security and Public Administration (11.14.2014)

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HomeTax

(www.hometax.go.kr)

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

HomeTax is a comprehensive tax administration service platform that allows taxpayers to process their tax returns, tax payments, electronic tax bills and civil service certificates over the Internet without visiting the tax offices. The government established this service system for the public, in order to make possible the convenient and efficient handling through the Internet of all the tasks



www.nts.go.kr

of reporting notification, payment and filing civil documents concerning national taxes, which could previously only be done through visits to the tax offices or banks.

Major Functions



- **Inquiry/Issuance service** : Reports on and payments of taxes, submissions of tax data, management of electronic tax invoices, inquiry/issuance service for general inquiries
- **Civil certification service** : Civil service through which one can request issuance of a civil certificate through the Internet and output it from PC to printer
- **Application for/Submission of civil documents** : Service through which one can apply for or submit documents related to civil affairs via the Internet, organized by the National Tax Service
- **Reporting/Payment service** : Various tax returns can be filled out on a PC rather than with paper documents, and national taxes can be paid without visiting a bank or tax office.

Major Achievements

According to the "2008 e-Government Service Usage Results" released by the Ministry of the Interior and Safety, HomeTax had the highest usage rate of 85.2 percent among all e-Government services, due to its speed and convenience. It also had the top usage rate among mobile

e-Government services related to economic activities, at 76.1 percent, making it the most actively used economic service.

Global Evaluations (Awards / Recognition and Exports)

● Awards / Recognition

- World's first tax agency to receive ISO/IEC 20000 certification (2008)
- Best Practice in Electronic Tax Administration, awarded by OECD (2006)

● Exports

- Sri Lanka (2010), Mongolia (2011)
- 2012: 40 countries visited Korea for information on e-taxation (24 visits) - US, Thailand, 11 CIS countries including Uzbekistan, etc.
- 2013: 17 countries visited Korea for information on e-taxation (15 visits) - Vietnam, Ecuador, Russia, India, etc.
- 2014: 11 countries visited Korea for information on e-taxation (13 visits) - Germany, China, Saudi Arabia, etc.
- 2015: 9 countries visited Korea for information on e-taxation (12 visits) - Algeria, Ecuador, China, US, Uganda, etc.
- 2016: 5 countries visited Korea for information on e-taxation (5 visits) - Japan, China, Nigeria, Iran and Georgia

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dBrain

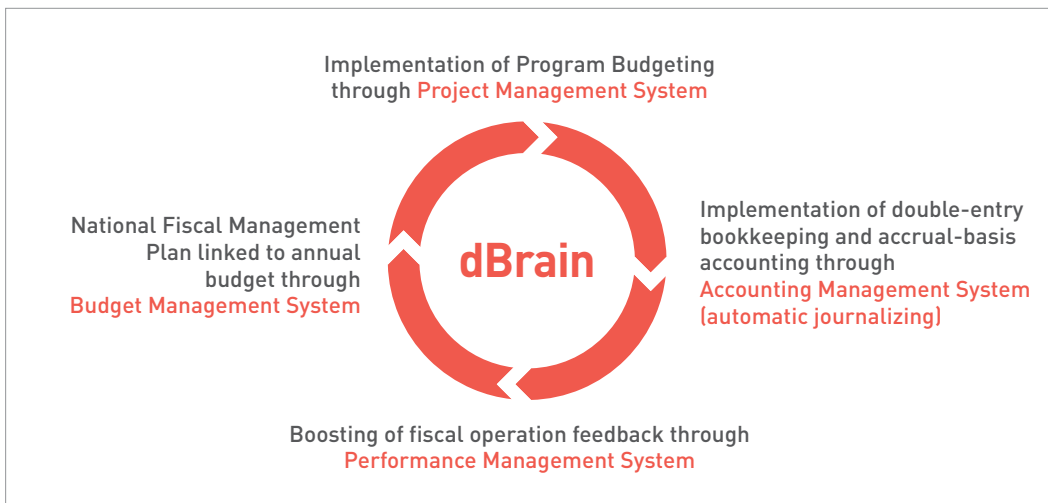
Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

The Digital Budget Accounting System of Korea (dBrain) is an integrated financial information system that performs the entire financial process online and generates useful information by linking all financial systems of various agencies. In its National Agenda Meeting of 2004, chaired by the President, Korea decided to construct the Digital Budget Accounting System, an integrated financial information system, to ensure that its budget accounting system could successfully take root along with the establishment of its medium- and long-term national fiscal management



plans promoted to reform the fiscal management framework that had been in place for more than 50 years. To ensure successful system deployment, a pan-government organization of all the related ministries was formed, and it then established a thorough master plan with BSP (Business Strategy Planning) services that had not been carried out in the previous system establishment projects.

From January 2007 dBrain was able to manage and analyze more detailed budgets and establish more reasonable policies, as a system that reflected the innovative performance of the Korean fiscal system in its program budget system and a double bookkeeping and accrual accounting system.

Major Functions

● Budget management system

Establishes national fiscal management plans, forms one-year budgets draws up and arranges annual expenditure allocation plans, makes budget changes, and manages the fiscal execution performance

● Business management system

Representative unit system of dBrain, a product of “integration and connection,” that identifies all information related to the life cycles of about 8,000 businesses categorized in accordance with the program budget

● Accounting management system

Accounts for transaction information generated in fiscal operation process in real time, and assists in preparation of annual reports through accounting books and records of revenues and expenditures

● Performance management system

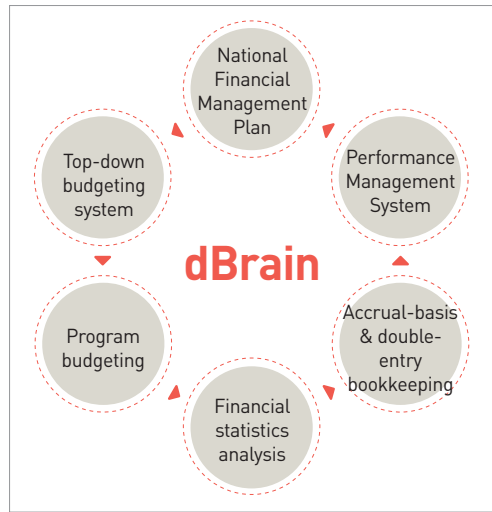
Improves work efficiency through preparation of performance plans and performance reports, self- and in-depth assessments of financial projects, online.

Major Achievements

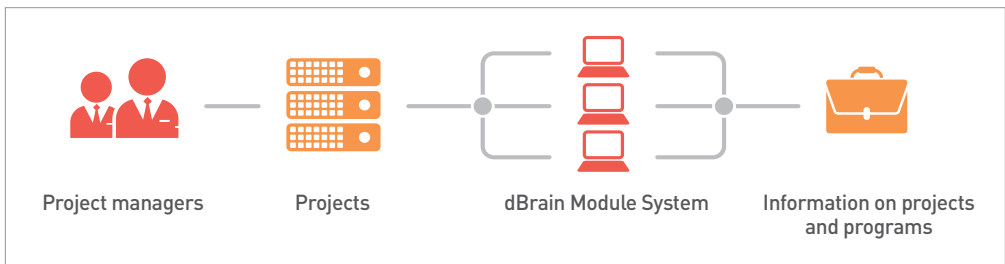
- Strategically allocates resources through establishment of performance-driven strategic fiscal operating system

- Also enhances risk management capacities during events of economic crisis, via real-time sharing of information on country's economy, funds spent, and assets and liabilities
- Online national taxes
 - Electronic Bill Presentation and Payment (EBPP) enables the country to check on payments in real-time when a project director pays taxes.
 - Through the Electronic Funds Transfer (EFT) system all expenses of the state, whether for purchasing items or for building roads, ports or buildings, are computerized online.

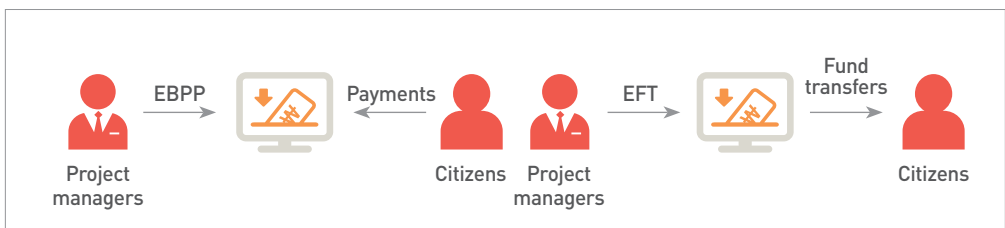
Main Features



* EBPP and EFT fundamentally block possible corruption among civil servants.



- It simplifies the work process, to enhance the accountability of civil servants and increase government reliability.
 - Each of 8,000 projects classified according to the program budget system is assigned to a project director, and all of the related financial information, such as the budget, the allocations of funds and progress of the work, as well as the reasons behind the project and past related results are recorded in real time. It can thus check all of the history of each project.
 - It is easier to discontinue ineffective projects and promote new, promising projects.
 - Citizens can check on 280 varieties of national financial information through the Internet.



Global Evaluations (Awards / Recognition and Exports)

● Awards / Recognition

As a system that has systematically implemented the Financial Management Information System (FMIS) recommended by the World Bank, dBrain has drawn considerable attention and responses from various countries planning innovations of their financial systems. Since 2009, when it began to become stable, civil servants from various countries around the world have been visiting Korea for tours of the system. Its visions have expanded as joint projects have been carried out with international financial organizations such as the WB, the IDB and the ADB, and it also received the UN Public Service Awards (UNPSA) grand prize in 2013.

● Exports (countries that have adopted the service)

The government supported the adoptions of dBrain by Iraq and Malaysia in 2019, by Brazil, Ecuador, Colombia, Costa Rica, Peru, Paraguay and Guatemala and 23 other countries in 2018, by Cambodia, Kazakhstan, Laos, Nepal, Sri Lanka and Vietnam and 23 other nations in 2017, by four countries along with Paraguay in 2016, by Mongolia, Russia, Turkey, Colombia and three other countries in 2015, and by six nations along with Honduras, Russia, Bangladesh and Madagascar in 2014. It supported the adoptions of dBrain by 10 countries in addition to Cambodia, Congo, Malaysia, Vietnam and Russia, in cooperation with the UN, the IDB and the WB in 2013, by the Seychelles, Turkey, Russia and Ecuador in cooperation with the ADB in 2012, by Bolivia, the United States, Kazakhstan and Ecuador in 2011, by Costa Rica, the Philippines and Indonesia in 2010, by Uzbekistan and Tunisia along with 14 African countries, the Republic of South Africa, eight countries in Southeast Africa, and 29 countries through the KAIST ITPP in 2009, and finally by the Philippines, Bangladesh, Cambodia and three additional countries in 2008:

Year	Country
2019	Iraq and Malaysia
2018	Brazil, Ecuador, Colombia, Costa Rica, Peru, Paraguay, Guatemala, and 23 more
2017	Cambodia, Kazakhstan, Laos, Nepal, Sri Lanka, Vietnam, and 23 more
2016	Paraguay, ADB (Philippines), IDB (Washington), and four more
2015	Mongolia, Russia, Turkey, Colombia, and three more
2014	Honduras, Russia, Bangladeshi, Madagascar, and six more
2013	Cambodia, Congo, Malaysia, Vietnam, Russia, UN, IDB, WB, and 10 more
2012	Republic of Seychelles, Malaysia, Turkey, Russia, Ecuador, and ADB
2011	Bolivia, US, Kazakhstan, and Ecuador
2010	Costa Rica, Philippines, and Indonesia
2009	Uzbekistan, Tunisia, Republic of South Africa and 22 other African nations,, along with 29 nations under KAIST ITPP
2008	Philippines, Bangladesh, Cambodia, and three more

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UNI-PASS

(<https://unipass.customs.go.kr>)

Sustainable Development Goals and Areas



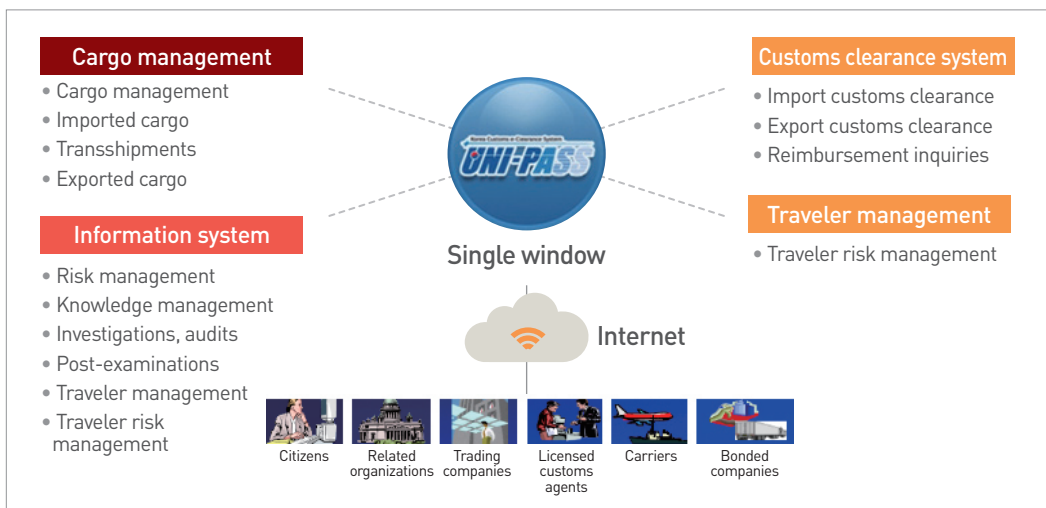
Social Sustainability

Economic Sustainability

Environmental Sustainability

Overview

As an electronic government system that enables individuals and businesses exporting or importing goods to electronically process all customs clearance procedures (such as customs declarations, tax payments, and applications to obtain details on customs clearance requirements), The UNI-PASS system has significantly contributed significantly to reducing the time spent on import and export reporting, and quarantine inspections, etc., as an electronic government system that enables individuals and businesses to electronically process all customs clearance procedures, such as customs declaration, tax payment, application for requirements, when exporting or importing goods.



Major Services

The UNI-PASS system provides services such as electronic declarations, electronic payments, information checks and verifications and issuances of personal customs clearance codes. There are two methods of use—"web screen input methods," which are used mostly by small businesses with small amounts of input data, and "one-stop transmission methods" suitable for large companies and customs companies that handle large volumes of data:

- **Electronic declarations:** export/import declarations, applications for refunds, etc., as well as results checking and printing of customs forms
- **Electronic payments:** tariff/tax payments after import declarations, and checking for defaults
- **Information checks:** checking of customs information, compliance with regulations, and statistical codes necessary for customs administration
- **Personal customs clearance codes:** issuing and checking personal customs clearance codes used in import declarations of personal items

Major Achievements

The UNI-PASS system has contributed greatly to shortening the times spent on import and export reporting and quarantine inspections. From 2009 the 100% electronic processing of customs clearance was enabled, which dramatically cut the times required for export customs clearance to 1.5 minutes, for import customs to 1.5 hours, and for refunds to 5.2 hours. As of October 2016 the direct effects of the reduced processing time and labor costs for import and export customs services through use of the electronic customs clearance system reached 700 billion won, and the rapid pace of processing of import and export customs cargos had resulted in an increase of 2 trillion won in profits for related organizations such as traders, customs agents and bonded transportation companies. Moreover, the effects of limiting the needs for port and airline expansions had reached 300 billion won, and as the amount of costs saved through use of the UNI-PASS system has been deployed in additional production activities an 800 billion won production inducement effect has been generated for related companies such as traders, resulting in 3.8 trillion won in savings in logistical costs every year.

Global Evaluations (Awards / Recognition and Exports)

The UNI-PASS system was selected as a model case by the UN Anti-Corruption Forum in 2001. Having completed the world's first 100% electronic customs clearance system, it was awarded the Intellectual Property Prize as the best service among 169 member countries of the World Customs Organization (WCO) in 2006, and was also recognized in the e-Asia Awards. This series of achievements also contributed to the World Bank's evaluation of Korea's international trade environment level as No. 1 in the world in 2010.

● Awards / Recognition

- Ranked no. 1 for nine consecutive years in customs in Airport Service Quality Evaluations organized by Airports Council International (2005~2013)
- Selected as exemplary case of "Doing Business" (2009~2012) (World Bank)
- Awarded Grand Prize in Innovation by WCO for Uni-Pass system established in Ecuador

● Exports

The UNI-PASS system has been exported to Kazakhstan (2005), Kyrgyzstan and Dominica (2008), Mongolia and Guatemala (2009), Ecuador (2010), Ecuador, Nepal and Tanzania (2011), Tanzania (2012), Uzbekistan (2014), Cameroon (2015), Ethiopia (2017), and Ghana and Algeria (2018), for a total of \$47.2 billion in sales (13 countries, 15 cases).

Name of Country	Year	Source of Business Funds
Kazakhstan	2005	Country concerned
Kirgizstan	2008	Country concerned
Dominica	2008	EDCF
Mongolia	2009	KOICA, ADB
Guatemala	2009	KOICA
Ecuador	2010 / 2011	Country concerned
Nepal	2011	KOICA
Tanzania	2011 / 2012	KOICA / ICF
Uzbekistan	2014	KOICA
Cameroon	2015	Country concerned
Ethiopia	2017	Country concerned
Ghana	2018	Country concerned
Algeria	2018	Country concerned
Total		

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Korea ON-line e-Procurement System (KONEPS)

(<http://www.g2b.go.kr>)

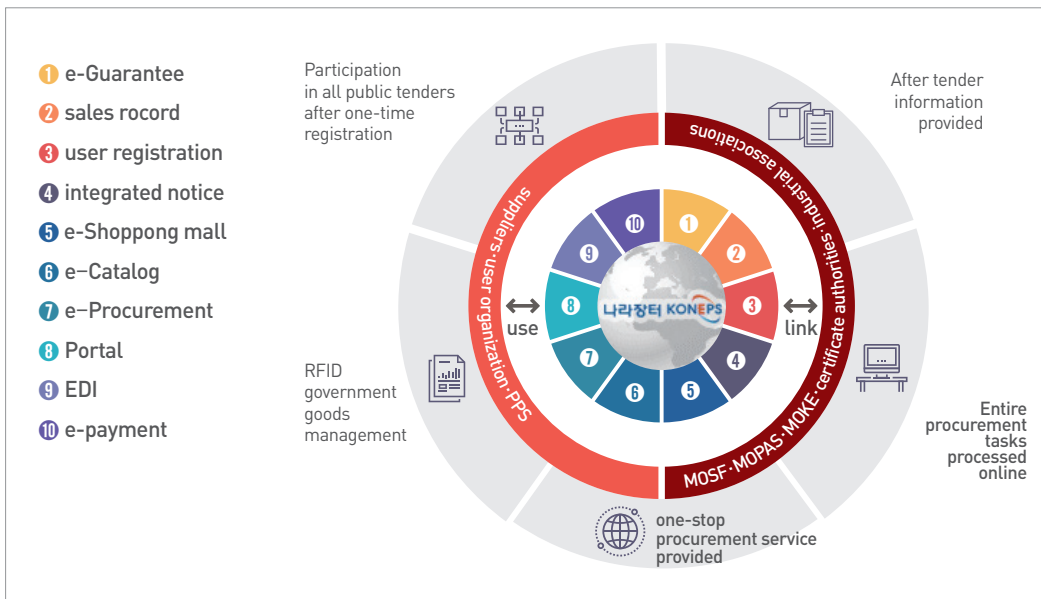
Sustainable Development Goals and Areas



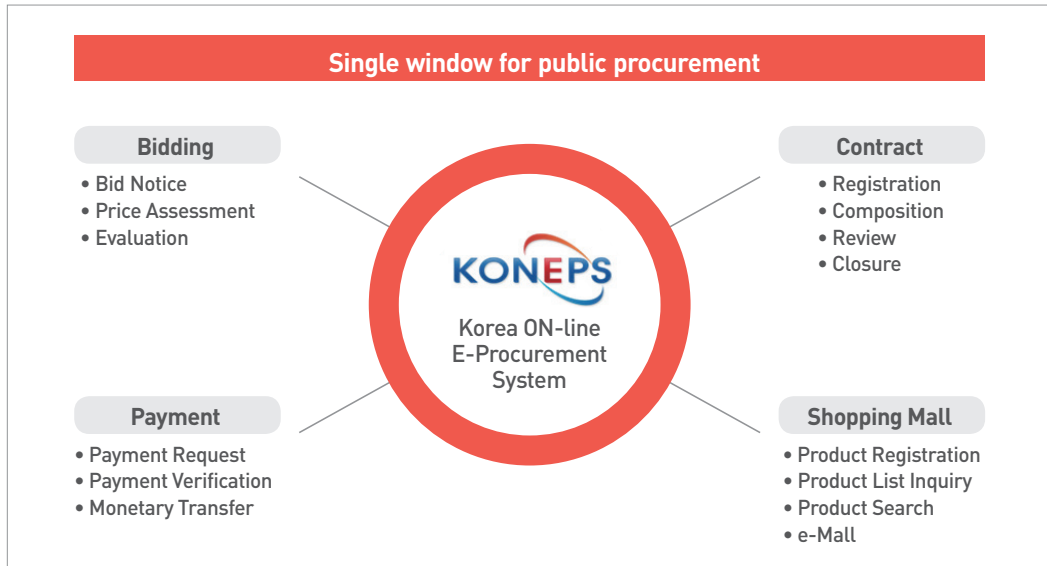
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

KONEPS is an advanced electronic procurement system that allows processing of the entire procurement operation online. It posts information on all calls for bids of all public institutions, and functions as a single window through which a user can participate in bidding for any institution based on a single registration. KONEPS is an electronic procurement service at the world's



highest level, and enables increased efficiency and transparency in public procurement by dramatically reducing the investments of time and costs of public institutions and private businesses through redesign of the previously existing complex procedures and paper-based procurement processes.



Major Functions

● Electronic bidding and contract settlement function

- Bid announcements, bid participation applications by vendors, bidding, bid selections, and examinations of qualifications to select winning bidders
- Drawing up of contracts and signing them via electronic signatures applying public certifications and the latest biometric fingerprint recognition technology, processing of various warranties, stamp payments, bond purchases, etc.

● Electronic Payment Function

- Entire process of inspecting products, services and facilities, billing and payment can be handled in conjunction with major financial information systems.

● Shopping mall

- In cases of commercial goods or services requiring frequent purchases, the vendor registers its products in the general shopping mall and the public institution searches there directly to purchase the desired products.

● Inventory list

- Public institutions and vendors can share the descriptions, specifications and quality information on an item or a service by registering and checking the information on 2.5 million items, using the UNSPSC classification system.

- **Connection and management of data with external agencies related to public procurement**

- Linkages with the data of 195 external organizations, including credit rating agencies and guarantee insurance companies, can reduce the burdens of company visits and facilitates the checking of information of public institutions that is not contained in documents.

Major Achievements

In 2018 72.2 percent of bidding transactions for public institutions, amounting to 89.2 billion won, were handled through KONEPS.

Financially, KONEPS has saved 800 million won per year and reduced the average time required for the work process from 30 hours to less than 30 minutes. In addition, through computerization of procurement process it has reduced the use of paper documents to one-eighth of its former level, thereby reducing the related carbon dioxide emissions by 65 thousand tons per year.

Global Evaluations (Awards / Recognition and Exports)

- **Awards / Recognition**

In 2004 KONEPS was named the 'Best Practice Model for Electronic Procurement' in the UN e-Government Assessment, while the OECD praised it by saying that "There is no room for further improvement." In 2005, moreover, the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) reflected the 'Nara Market Electronic Procurement Procedure' (KONEPS) as an international standard. The mobile e-Government was also established by opening of 'Smart Nara Marketplace,' a mobile version of KONEPS, through which users can search for information on calls for bidding and offer (speculative) prices to buy items at anytime and anywhere, in line with the expanded spread of smartphones. As a result, the OECD and ITU's M-Gov report in 2011 selected the 'Smart Nara Marketplace' as 'the world's fourth best mobile e-government practice.'

- **Exports (countries that have adopted the system)**

Korea has exported the KONEPS to Vietnam (2008), Costa Rica (2009), Mongolia (2010), Tunisia (2012), Cameroon (2013), Rwanda (2015), and Jordan (2015). It has also signed MOUs for cooperation on electronic procurement systems with 25 countries including the United States (2002), Canada (2003), Vietnam (2004), Georgia, Armenia, Mongolia and Ethiopia (2007), Costa Rica, Italy, Russia, Romania, Senegal and Tunisia (2008), Uzbekistan and Jamaica (2009), Morocco and Algeria (2010), Peru and Honduras (2011), Turkey, Russia and Indonesia (2013), Turkey and Jordan (2014), Rwanda and the Eurasian Economic Commission (2015), and Kazakhstan (2016).

33

PaaS-TA

(Cloud Platform)

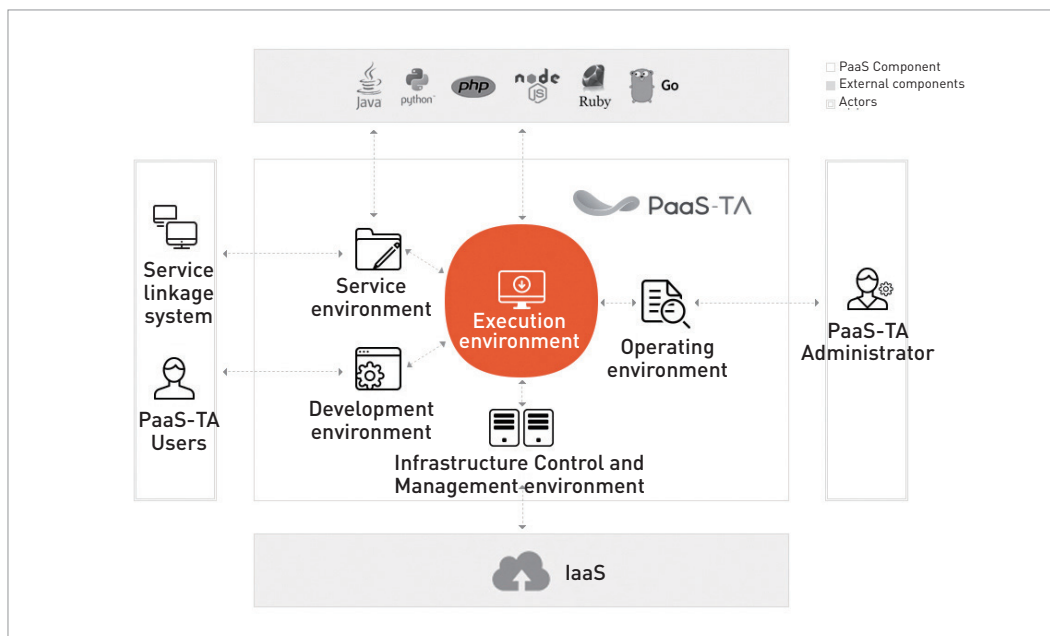
Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

PaaS-TA is an open cloud platform that was developed using globally acknowledged open source technology and can be used freely by anyone.



www.nts.go.kr

As Cloud computing has emerged as a paradigm in Information and Communications Technology, global companies such as Amazon, Google, IBM and Microsoft are making all-out efforts to create their own cloud ecosystems. Most South Korean companies are reluctant to invest in such platforms because they seem less likely to succeed, and most are still at the level of infrastructure services (IaaS).

Domestic cloud users have thus used foreign cloud platform services, or directly selected and installed platforms in the accessible domestic cloud infrastructure services.

In March 2014 the Ministry of Science and ICT and the Ministry of the Interior and Safety signed a memorandum of understanding (MOU) to standardize the development of open cloud computing technologies in Korea, to lead the application of the technologies in the public sector, and to support domestic companies in strengthening their technological competitiveness. Additionally, with the Korea Information Society Agency (NIA) as the main body the government promoted research on and development of open cloud platforms with some of the nation's leading small and medium-sized enterprises (Crossent, BD, Cloud4U, Hancm, and Software in Life).

In April 2016 the 1.0 version of the open cloud platform that the NIA had been developing was formally released, under the name of 'PaaS-TA.' PaaS-TA is a compound word of PaaS and TA, with PaaS standing for "Platform as a Service" and TA for "Thanks" in English (in Korean PaaS-Ta means "Ride on PaaS," because TA sounds like the Korean word for "ride"). A new version of the platform, PaaS-TA 4.0 (Rotelle), was released in December 2018.

Major Functions

PaaS-TA 4.0 is a convergence with Kubernetes-based CaaS (Container as a Service), and the plan is for it to continue to converge with high-tech technologies and make them public to help local companies secure globally competitive technological prowess and ecosystems.

- **As an open SW source code, PaaS-TA provides a development environment that anyone can use.**

- It provides a convenient and rich, open development environment for SW developers.

- * Eight types of cloud infrastructure (IaaS) and development languages are supported, with seven frameworks and four kinds of middleware.

- **It is equipped with the e-Government Standard Framework.**

- This enables e-Government services to be implemented and continuously enhanced on the platform.

- **This extends beyond the traditional PaaS services to offer a domain platform that provides industry-specific functionality**

- Through collaborations with various public and private sector organizations, the government seeks to expand its PaaS-TA-based domain platform to all industries including education, finance, city government and energy.

- **It converges with not only simple PaaS, but also a variety of new technologies such as IoT, Big Data and AI, and thereby improves itself.**
 - It drives innovation in each industry on a cloud platform basis, and creates synergies through industry convergences based on the interoperability of the individual respective platforms.

Effects of PaaS-TA

PaaS-TA adoption can lead to reduced IT costs and maximized development productivity.

- **Efficient utilization of HW resources**
 - IT costs can be reduced through maximizing the utilization of HW resources on a container basis.
- **Rapid delivery of SW resources**
 - The development and testing of applied SW can be accelerated to just minutes, thanks to automation of the standardized installations and configurations of the HW and SW.
- **Easy SW maintenance**
 - A small number of system operating personnel can operate the system in a reliable and stable manner while maintaining the same service levels.
- **Stable system operation**
 - It automatically ensures high availability at the HW and SW levels, without the need for separate solutions to ensure high availability.
- **Securing of cloud mobility**
 - Standardized management of applied SW through various IaaS support and containers

Strategy for creation of PaaS-TA Ecosystem

Beyond the research on, development and release of PaaS-TA, the National Information Society Agency (NIA) is pushing diverse strategies to spread the use of PaaS-TA in order to create and vitalize a PaaS-TA-based cloud platform ecosystem in South Korea. While the key to a platform ecosystem is the securing of abundant suppliers and users, there have been cases where existing platforms in Korea have lost their global competitiveness due to isolation. PaaS-TA utilizes Cloud Foundry (CF), developed and distributed by the global non-profit organization Cloud Foundry Foundation (CFF), as the basis for resolving this isolation risk and creating an ecosystem that keeps up with the global technology trends. This has enabled PaaS-TA to secure compatibility with various leading global platform services built on CF, such as those of IBM, GE, SAP and Huawei. In particular, NIA, the organizer of the PaaS-TA R&D, has participated as a Silver Member of CFF and is promoting various international cooperation efforts to lead CF development together with global companies.

In order to promote effective research and development that reflects the practical requirements of South Korea's private sector, PaaS-TA is pushing for cooperation in joint research with a variety of South Korean cloud companies. The NIA has signed letters of intent to conduct joint projects with 35 enterprises of varying sizes, such as Koscom, KT, NHN Entertainment, Tmax, and Innogrid, and has been working to reflect the consumers' opinions gathered from its regular meetings with these enterprises in the research and development of PaaS-TA. In addition, by disclosing all research and development results as open source (Apache License), just like CF, the company has been helping domestic companies to internalize their technological capacities in cloud platforms and lower their thresholds for entering the platform market by allowing anyone to freely utilize and develop PaaS-TA. The NIA is in addition striving to create a rich platform ecosystem by supporting various SWs and solutions held by small and medium-sized businesses in Korea in moving onto the cloud and cooperating with companies to enable them to be connected and compatible with PaaS-TA. As of December 2018 there were more than ten domestic products that had completed or were in the process of PaaS-TA interoperability testing, and cooperation with more companies is expected in the future.

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Smart City

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

The first, embryonic stage of Smart City was the emergence of "Digital City," which was launched in the mid-1990s in the US by America Online (AOL). In 1996 "Digital City" spread around the world, and established networks that connected entire cities to thus create virtual spaces for citizens in the forms of pilot projects led by telecommunications companies.

The second stage of growth was the urban informatization led by the Ministry of Land, Infrastructure and Transport and Korea Land and Housing Corporation (LH) in 2003, which promoted the technology-driven Ubiquitous City (U-City) project based on sensors and the Internet in Songdo, Incheon and new towns. The U-City pilot project was promoted actively by providing 15 local governments with 23.1 billion won in state funds between 2009 and 2013. However, when the project was transferred to the respective local governments after deployment, it suffered owing to difficulties in financing operations and to shortages of services that related to the residents. As a result of such problems the drive behind the project subsided, and some cases of project suspension appeared. However, it was subsequently transformed into a full-scale urban informatization that fused virtual and real spaces, and full-fledged technology-driven Smart Cities emerged.

In the third stage of diffusion and sophistication, from 2012, technology development in big data platforms and data analysis combined with the demands for urban development from developing countries led to a rapid spreading of Smart Cities around the world. In 2012 China officially began to push the deployment of Smart Cities, leading to a proliferation of Smart Cities in developing countries. The accelerated development of deep learning technology has improved the chances of success for Smart City. It is foreseen as the fastest growing field over the next 10 to 20 years, and South Korea expects to use it as a new growth engine.

Major Functions

Traffic	Culture	Urban infrastructures	Welfare
<ul style="list-style-type: none"> - Crackdowns on illegal parking - Smart Parking - Smart Crosswalks 	<ul style="list-style-type: none"> - IoT-based Preservation Services - Smart Public Libraries 	<ul style="list-style-type: none"> - IoT-based Smart Mosquito Controls - Smart Eco-Shelter Stations 	<ul style="list-style-type: none"> - Services for the underprivileged - Auditory IT services
Configuration	Administration	Disasters and Safety	
<ul style="list-style-type: none"> - Air pollution measurement system - Smart waste management systems. 	<ul style="list-style-type: none"> - The People's Voice (m-Voting) - Land surveys using drones 	<ul style="list-style-type: none"> - Intelligent cctv - Maritime safety services using drones - IoT-based disaster management 	

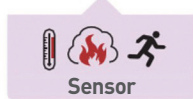
Major Achievements

● IoT-based cultural heritage preservation service (Seoul)

- (Detection) Accurate fire detection via heat, smoke and composite detection through intelligent fire detectors
- (Communication) Low-power, low-cost, high-reliability communication supports medium- to long-distance accommodation through LoRa communication
- (Management) Management of IoT systems and conduct of secondary strategies through real-time fire monitoring
- Supplementing for limitations of existing cultural asset management systems at low cost and with high efficiency



Cultural Heritage



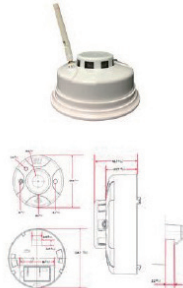
Sensor



IoT based System

Intelligent fire detectors

Accurate fire detection and sensor data transmission, through sensing of heat, smoke



LoRa communication

Medium- to long-range capacity support with low power usage, low cost and high reliability



구분	Wi-Fi	ZigBee	LoRa
형태	Star	Mesh, Star	Mesh, Star
전력	Low+high	매우 낮음	낮음
속도	11~100Mbps	250Kbps	300Kbps
범위	4~20m	10~300m	최대 21Km

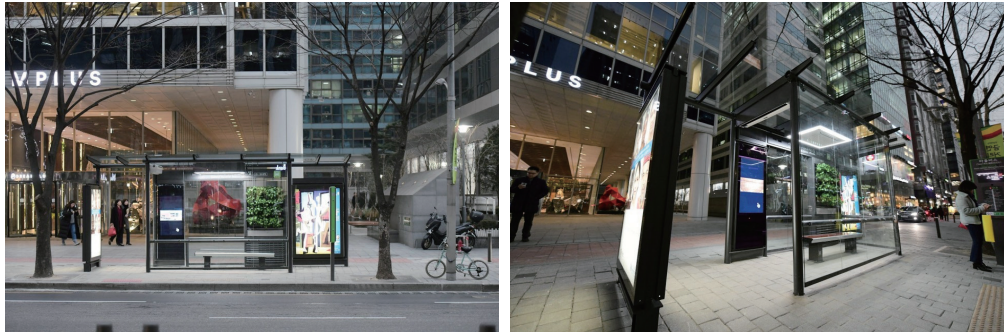
Administrational system

Real-time fire monitoring, user and alarm management, 2nd alert transmission system



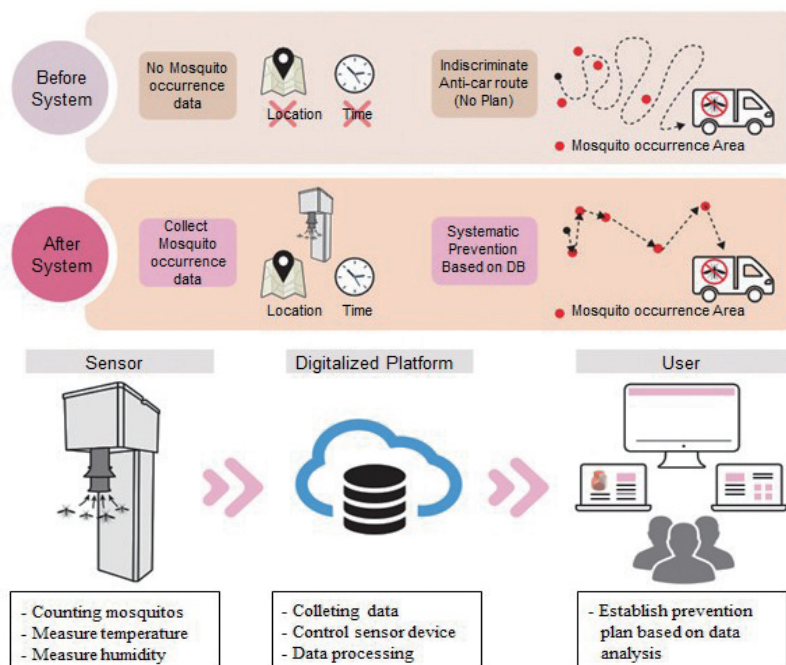
● Smart Eco-Shelter Station (world's first smart bus station)

- Reinforced glass and outer walls on three sides, with fine dust reduction filters
- Air curtain installed on side without reinforced glass, to prevent penetration by fine dust, smoke and other contaminants.
- Has air-purifying plants (vegetation) to keep air inside bus stop clean
- Comprehensive information guide system installed in kiosk format, with guidance on weather, peripheral maps, and information on major tourist attractions



● IoT-based mosquito control (Seoul, Ulsan, Gumi)

- Detection of mosquitoes via temperature and humidity data through sensors
- Accurate mosquito control based on analysis of frequency data
- Compared to 2008 the number of complaints about mosquitoes declined by 51.5 percent in 2009, and compared to 2009 they fell by 61.2 percent in 2010.



● Smart waste management system (Seoul)

- Automatic compression function through upper solar panels, which can reduce volume of waste in inner-city wastebaskets by up to 8 times
- Environmental officials receive load data from sensors inside trash containers, to predict locations where and times when collection required
- Effects of improved urban aesthetics, flexible workforce management, and reduced management costs

* 65% lower collection frequency than prior to installation

Korea Smart City Policy

● Directions of policy

Korea has drawn up seven major innovation changes for future policy, based on global trends and their implications as well as the evaluation and reflection of domestic Smart City projects.

- 1 (People-centered) Aspiration to future values that consider convenience of life, competitiveness of the city, safety and tolerance and cost efficiency, and are hospitable to the underprivileged
- 2 (Innovation growth engine) Application and demonstration of various new technologies in accordance with 4th Industrial Revolution
- 3 (Experience-based) Promotion of policies proposed from the service experience point of view, through improvements in efficiency by use of ICT for cities
- 4 (Customized) A city customized based on the space, the technology and the citizens concerned, seeking a differentiated approach that encompasses both new and existing cities
- 5 (Sustainable) Promoting the roles of platforms for cities, seeking improved sustainability improvements with the introduction of various technologies in the public and private sectors
- 6 (Open) Aimed toward achieving open cities with high engagement of the policy consumers (citizens' opinions reflected from beginning of urban planning, along with participation of local governments and private sector)
- 7 (Cooperation) Policies and projects of each ministry related to the city linked, with the city in the center

● Policy Development Process

Starting with the passage of the Act on the Construction of Ubiquitous Cities (2008), the government prepared the standard guidelines such as enforcement ordinances and the U-City establishment plans. It also prepared the bases for establishment of U-Cities, including the drawing up and approvals of Ubiquitous City establishment plans by local governments and the selection of a pilot city, through the first (2009~13) and the second (2014~18) U-City Establishment Plans. Through the first R&D project (2007~12) a total of 41 technology

developments, including integrated platforms linking various information systems within local governments, led development of the core technologies for comprehensively managing diverse events in cities that could occur simultaneously. U-services by local governments in areas such as disaster and crime prevention and transportation were also established and supported through the U-pilot projects (23.1 billion won for 14 local governments, from 2009 to 2013). The U-City Human Resources Development Course provided a total of 12.9 billion won between 2009 and 2014 for the education of 1,597 people in U-City graduate school and job seeker courses. In addition, the Ministry of the Interior and Safety is working on a project to establish an integrated CCTV control center, while the Ministry of Science and ICT is promoting a project to create a demonstration complex for global smart cities.

Connected Smart City in Korea

The Connected City project is promoting a data hub model to link the disconnected city data and integrate and manage them as big data. Starting from the stage of urban planning, the government aims to realize intelligent urban operations such as real-time detection, analysis and responses to various situations through intelligent sensors and IoT data collection. Through integration of and management of the linkages among urban infrastructure data, Korea is realizing “Smart Connected Towns.”

Korea has designed national pilot cities in which the new technologies can be tested regardless of existing regulations—in new towns, residential development zones and urban renewal New Deal areas. Representative areas are the Sejong 501 Living Area and the Eco-Delta City in Busan, where new technologies in Information Technology (IT) and big data analysis can be introduced to combine them with urban infrastructures, and the entire cities can function as testbeds of a kind.

Korea is in addition using unidentified data generated in the new industries (Smart City, self-driving cars, etc.) specified for development in 2018. The laws subject to revision concerning undistinguished data are the Act on the Protection, Use, etc. of Location Information and the Personal Information Protection Act. If revision of the laws allows the locations of things found through data separate from personal information to be utilized, then the use of data in new industries such as smart cities, the Internet of Things, self-driving cars, and drones can be unlimited.

Smart City Projects, by Government Department and Region

The Ministry of Land, Infrastructure and Transport is continuing to push projects to spread “unified platforms for urban operations” that are highly preferred by local governments and citizens, and to continuously develop new technologies and new services. It also plans to expand its achievements in ITS areas such as BIS and transportation cards, for use by other local governments.

The Ministry of Science and ICT will continue to develop and demonstrate ICT convergence city solutions through innovative technologies such as big data, AI and IoT. In 2019 it will promote pilot projects for the early commercialization of 5G, and apply them mainly to convergence services. Busan and Goyang will continue to identify and verify new services in public sectors such as transportation, environmental protection and safety, by disseminating results from its IoT demonstration projects to other local governments.

Industries are planning to expand the usage of Smart Energy Systems in cities by utilizing proven technologies such as Advanced Metering Infrastructure (Smart Meter), EMS (Energy Management System), and ESS (Energy Storage System). Beyond the initial stage of market formation, the government will push for the systems' diffusion through active private participation, and prepare a model showing their successful application through the creation of a smart energy city in Naju. Based on its e-Government and public data utilization results, the Ministry of Interior and Safety will expand the opening up of public data in the smart city sector and the distribution of excellent services. It will select and open 20 different areas as state-focused data, and plans by 2022 to support them with local government smart service diagnosis and consulting.

The Ministry of Environment is focusing on water resources and electric vehicles. It plans to create five water circulation leading cities (including Gwangju) in which LID (Low Impact Development) technology is applied, and to expand the Smart Water Supply and Water Supply Management businesses that utilize ICT throughout the country. In addition, based on its achievements in 125 local government areas in 2017, it will push ahead with building 350,000 electric vehicles and installing 10,000 chargers by 2022.

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Information Village (Invil)

(www.invil.org)

**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

The Invil Project has been carried out by the Ministry of the Interior and Safety and local governments, with the aims of narrowing the digital divides between cities and villages and promoting balanced development from the nationwide perspective, under the Act on the Narrowing of the Gap in Knowledge and Information of 2001. However, some local governments, in areas such as Gangwon Province (Hwangdun Village in Wonju) and North Gyeongsang Province (Dohongri in Seongju) have individually promoted the Invil Project since 2000.

In consideration of these cases, the Ministry of the Interior and Safety in March 2001 formed the Invil Project Planning Group, together with the Ministry for Food, Agriculture, Forestry and Fisheries, the Ministry of Information and Communication and other agencies, and established a system for cooperation. In March 2001 the Invil Project Planning Group established the basic plan for creation of the Invil, and developed a model fitting the demands of the respective areas for improvements in information services, in accordance with the individual characteristics of those areas. Based on this model, 25 villages nationwide were selected as pilot areas for the initial Invils, and projects have since expanded nationwide.

Based on its website (www.invil.org), as of December 2018 there were a total of 325 Invils registered across the country—44 in Gyeonggi Province, 57 in Gangwon Province, 18 in North Chungcheong Province, 29 in South Chungcheong Province, 33 in North Jeolla Province, 47 in Gwangju/South Jeolla Province, 48 in Daegu/North Gyeongsang Province, 33 in Busan/South Gyeongsang Province, and 16 on Jeju Island.

Major Goals

- **Creating information villages for the Internet era**

Can provide information services as a standard model for urban and rural areas, while differentiating this standard model from village to village to provide optimal services suited to the specific characteristics of the individual villages concerned

- **Generating income for residents and boosting local economies through development and distribution of contents centered on revenue generation**

Can secure competitiveness of local specialty products, and generate profits through sales of local specialty products and use of agriculture and fisheries information system for real-time access to information on crop cultivation, crop yields, prices, etc.

- **Securing opportunities for access to information in farming and fishing villages consisting of senior citizens**

Provides opportunities and encourages residents to use information systems by securing of Internet access

Effects of the System

- **Establishment of consumer-based regional development plans through gathering of residents' opinions**

Finds and reflects needs of residents when establishing development plans, in consultation with residents and experts

- **Synergy effects through linkages of projects with regional development support projects of Ministry of the Interior and Safety or other central government agencies**

e.g: Association with Ministry of the Interior and Safety projects such as the pilot model for responding to the low fertility rate, the youth participatory town enterprise, and the village community garden creation project; along with projects of the Ministry of Culture, Sports and Tourism such as its designation of cultural cities and expansion of cultural infrastructure; and projects of the Ministry for Food, Agriculture, Forestry and Fisheries such as the village development projects and the rural community companies

- **Helping companies to create shared value (CSV) activities, to be developed in less populated areas through public-private partnerships**

- **Efficient and systematic project execution through operation of integrated support project consulting groups**

Consulting group (consisting of experts on population reduction and social issues, civic groups, and experts with extensive knowledge and practical experience in urban planning and architecture) charged with finding ideas and consulting on integrated support projects

Major Invil Achievements: ICT Smart Town Project

The ICT-based Smart Town Project town is a project that uses ICT technology in areas such as welfare, transportation, environmental protection and safety, to discover Smart Town services and establish the related foundations.

A representative example is "Pyeongchang 5G Village" in Daegwallyeong, Pyeongchang County, Gangwon Province, of 2017.

This is a public-private partnership project that combines 12 next-generation technologies from KT to make a village into a tourist-promotion area through the establishment of a '5G Network Town' to dramatically improve the quality and convenience of residents' lives and increase the influx of visitors.

Smart Towns based on information and communications technology have been created to commercialize local food using local specialties, to improve living conditions by means such as crop theft prevention systems, and to provide U-care services for the elderly living alone.

In addition, the 'Regional Vitality Center' and 'Shinbaram Square' have had synergy effects with KT's 'Pyeongchang 5G Village,' and contributed greatly to improving the residential conditions of villagers and promoting tourism in the region in 2018.

12 KT Solutions List

5D network solutions	Solutions for tourism revitalization	Resident convenience solutions
5G AR Market	AR tourist information	Pest eradication solutions
MR Magic Gate	AR tourist information	Smart Cabinet (unmanned courier storage)
Tour information holograms	Photo zone (healing chairs and lamp posts)	Electric vehicles (operations linked with local ranches)
5G Network Experience Center	Olympic contents (videos / Olympic torch)	Video conferences (culture and education)

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Smart Work Center

Sustainable Development Goals and Areas



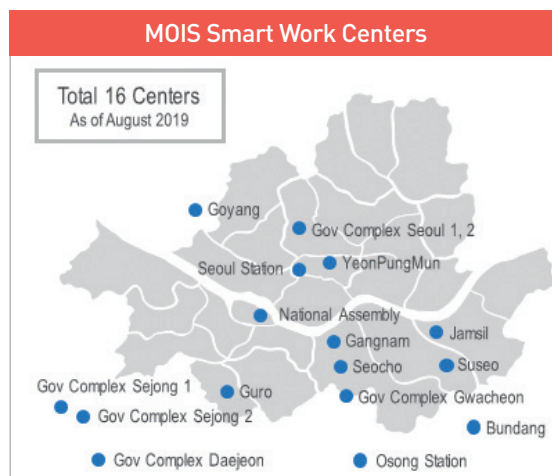
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

Smart Work, a flexible work style without restrictions on the time and location of the work, has been promoted in order to improve workers' quality of life for a balance between work and private life. Smart Work has also been established to improve the work environment and working style of the government, and fosters efficient work environments for central government ministries and public institutions that have been relocated to Innovation Cities.

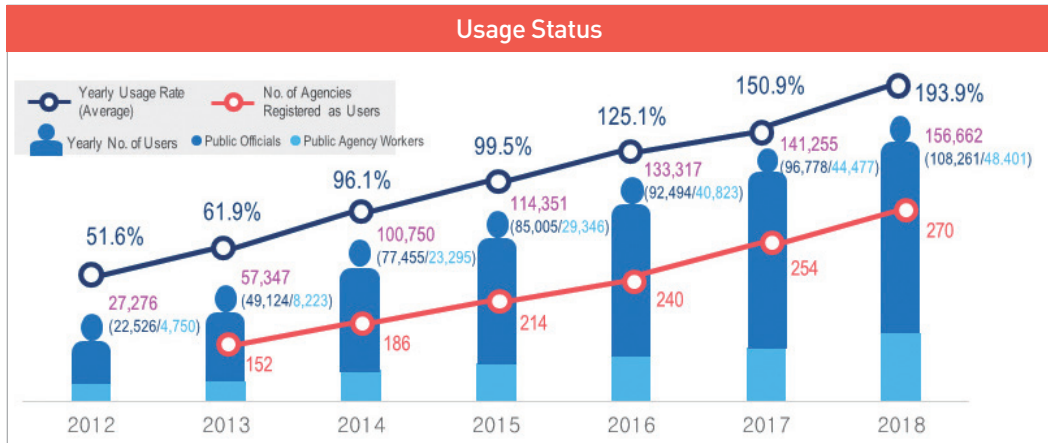
Current Situation of Smart Work Centers

As of 2019 the Smart Work Centers are under the jurisdiction of the Ministry of the Interior and Safety, and are located in 16 residential centers and business travel destinations near major transportation hubs. There are centers in central business districts including the Seoul Station area, Gangnam and the National Assembly Building, as well as the Sejong Government Complex.



Major Achievements (Smart Work Centers in data)

As of 2018 there were 270 institutions registered, while the annual usage rate had risen from 51.6 percent in 2012 to about 194 percent, and the number of active users of the system in public offices from 27,276 people in 2012 to around 157,000. The usage of Smart Work Centers has been steadily active since 2012, and the number of registered agencies is increasing day by day.



Plans for Future International Cooperation

- **Increases in organizations and individuals that use Smart Work Centers**

Increase in rate of utilization by government employees who have moved to Sejong City or work in other innovative cities

- **Establishment of new SWCs at major traffic hubs or critical business zones**

Construction of new centers in high-demand areas, in order to improve work continuity of workers on business trips

- **Formalization of Smart Work for innovation of working style in Korea**

Strengthening of government policies to support flexible working conditions during afternoons

- **Building of intelligent offices with new technologies such as Cloud and AI**

Future-oriented intelligent office implementation using new technologies such as Cloud, Artificial Intelligence, Chatbots and IoT

[Addendum] Ministry of the Interior and Safety Press Release (2018.12)**Smart Work Centers: 16 Locations**

Name of Center		Establishment Date	Location
Bundang		2010.11	KT Bundang branch office, 5th floor
Seocho		2011.09	Korean Tuberculosis Association Annex, 1st floor
Jamsil		2011.12	Jamsil 2-dong Post Office, 2nd floor
Guro-gu		2011.12	Korea Industrial Complex Corporation, 2nd floor
Sejong Building	1	2012.12	Ministry of Strategy and Finance building, 3rd floor
	2	2014.06	Ministry of Employment building, 4th floor
Gwacheon Government Complex		2013.04	Gwacheon Government Complex 5-dong, 6th floor
National Assembly		2013.04	Main building, 2nd floor
Seoul City Hall	1	2013.10	Seoul City Hall, 9th floor
	2	2015.01	Seoul City Hall, 10th floor
Seoul Station		2013.10	Korail Seoul branch, 8th floor
Goyang		2014.05	Goyang Regional Government Complex, 5th floor
Daejeon City Hall		2014.12	Daejeon City Hall 2-dong 3-story building
Gangnam		2016.01	Express Bus Terminal, 7th floor
Suseo		2017.09	KT Suseo Building, 3rd floor
Osong Station		2018.12	Osong Station Great Hall, 2nd floor

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Exemplary Cases of Open Data Utilization

(www.data.go.kr)

**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

As of 2018 Korea had opened up 28,000 items of public data, and in order to increase public data utilization is continuously striving to make publicly available more high-quality data through the standardization of public data (items, information, types, etc.) and expansion in the usage of open formats.





Korea is also implementing policies for the opening up and utilization of public data such as 1) the operation of public data utilization support centers, 2) investigations of the status of public data possession, 3) the establishment of a National Data Map, 4) the operation of a public data quality control system, 5) the operation of a Public Data Dispute Settlement Committee, 6) the operation and expansion of open square-D, and 7) the operation of an open data forum.

Major Functions of Open Data Portal



- It is a one-stop shop that provides publicly available data.
 - Provides data in various forms, such as file data, OPEN API, and visualized
 - Users can download, copy, use and distribute the open data for free.

* Available to anyone in accordance with the Public Data Act, with guaranteed free use including use for profit.

Major services using open data, and their results

Section	Name of app	App logo	Developer	Description	Open data (agency)	Number of downloads (Google Playstore rating)	Notes*
Weather forecasts	Mise Mise		Mise Mise	<ul style="list-style-type: none"> Real-time fine dust and ultrafine dust information at a glance! Forecasts for fine dust and ultrafine dust of today, tomorrow and the day after tomorrow ,at one glance! 	Air Pollution Information Service (Korea Environment Corporation)	1M+ (4.8 out of 5.0)	No. 1 App on May 11, 2017
Education	iam School		NHN Edu Corp.	<ul style="list-style-type: none"> Real-time provision of school notifications, home correspondence, school lunch news, and class notices Surveys and consent forms sent from schools 	NEIS – School lunch data (Korea Education and Research Information Service)	1M+ (4.2)	Ranked 1st among school notification apps
Food and health	Hwa hae		Bird View	<ul style="list-style-type: none"> Reviews, ingredients, rankings and shopping in one spot! Essential cosmetics app used by 7 million people in Korea 	Cosmetics materials and ingredients (Ministry of Food and Drug Safety)	1M+ (4.7)	No. 1 cosmetics app for six consecutive years
Health Care	goodoc		Goodoc	<ul style="list-style-type: none"> Find clinics operating at night or during weekends Pharmacy information for when you feel sick during weekends~ From all types of information on cosmetic surgery to actual counseling! Experts tell all about disease, beauty, child care, and sex! 	Location information for consigned hospitals (Korea Veterans Health Service) Searches for clinics and pharmacies (Health Insurance Review and Assessment Service)	1M+ (4.3)	Currently in top 50

Section	Name of app	App logo	Developer	Description	Open data (agency)	Number of downloads (Google Playstore rating)	Notes*
Land management	Zig bang		ZIG BANG	<ul style="list-style-type: none"> Information on apartments, studios, officetels, and urban housing, all at once 	10 open data services including Real Trading Price Index Service (Korea Appraisal Board), Detailed Data on Apartment Real Trading (Ministry of Land, Infrastructure and Transport), and Building Registry Service (Ministry of Land, Infrastructure and Transport)	10M+ (3.9)	Currently in top 50
Employment	Job Korea		Job Korea	<ul style="list-style-type: none"> Mobile app that provides job information customized for new or experienced workers by providing real-time job openings, interviews, and employment schedules 	Table of NCS Competency Units and Competency Uni Elements (897 jobs) (Human Resources Development Service of Korea) Employment and Labor White Paper (Ministry of Employment and Labor) Disability Employment Services (Ministry of Employment and Labor)	5M+ (4.3)	Currently in top 50
Culture and Tourism	Yeogi Eottae		WITH Innovation Corp.	<ul style="list-style-type: none"> Mobile app that enables making of reservations for hotels, pensions, etc., and information on activities at theme parks and water parks, and on indoor experiences 	Tourist Information Services in Korean and English, (Korea Tourism Organization)	10M+ (4.4)	Currently in top 50

Section	Name of app	App logo	Developer	Description	Open data (agency)	Number of downloads (Google Playstore rating)	Notes*
Social welfare	Pawin Hand		Pawin Hand	<ul style="list-style-type: none"> PawinHand is a warm service that connects people with abandoned animals in shelters across the country. Use PawinHand to adopt new pets or find your own lost pets 	<p>Companion animal registration agency inquiry service and animal protection management system</p> <p>Abandoned animal inquiry service (Ministry of Agriculture, Food and Rural Affairs, Animal and Plant Quarantine Agency)</p>	500K+ (4.8)	Currently in top 500
Traffic and Logistics	Smarter Subway		Team Doppel Ganger	<p>Easy search for subway stations and routes</p> <ul style="list-style-type: none"> Exact times of arrival of subway cars, station information Recommended optimal routes for users Express subway lines guide 	Seoul subway station information, subway line information, real-time arrival information, real-time subway location information (Seoul)	10M+ (4.3)	Currently in top 300

* App rankings cited from www.appannie.com

Other Results

- About 7.54 million cases of private use through Open Data Portal (2018.12)
* Increased by 542 times compared to 2013
- Establishment of public data release standards (accumulated): 11 types (2013) → 109 types (2017) → 120 types (2018, 11 more types than in previous year)
- Proportion of open format use: 6% (2013) → 78.8% (2017) → 81.9% (2018, +3.1% compared to previous year)
- Utilization of public data (accumulated): 3,923 cases (2013) → 3,871,984 cases (2017) → 7,549,179 cases (2018, +3.68 million compared to previous year)

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National Data Map (New Open Data Portal Service)

(www.data.go.kr)

**Sustainable Development
Goals and Areas**

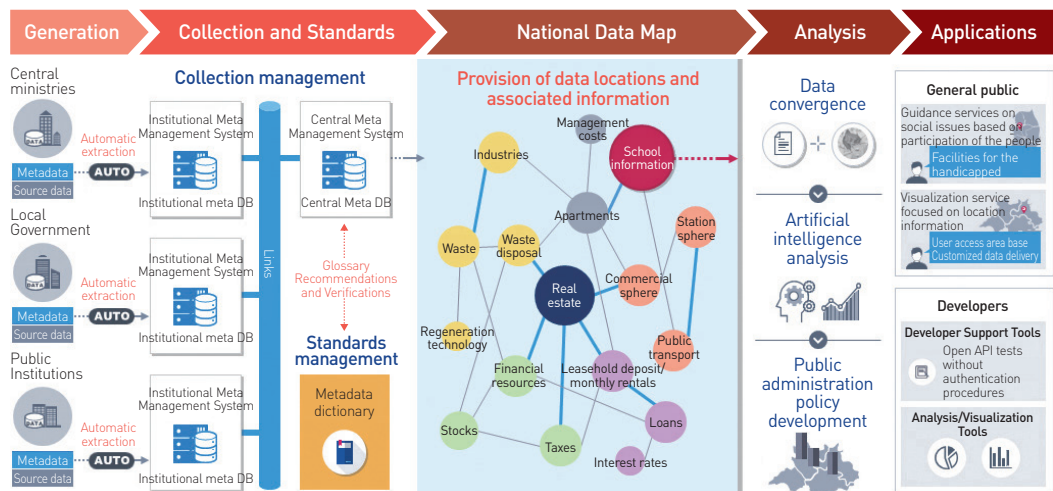


- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview

The Open Data Portal is an integrated channel that provides visualized open (or scheduled to be opened) data held by more than 700 central government, local and public institutions.

Through systematic management from generation to utilization, it provides not only the locations of the data but also the associations between data. The portal provides data in a variety of ways, including as file data, open APIs and visualizations, so that people can easily and conveniently use public data while also being able to find it quickly and accurately through easy and convenient searches.



The Data from each institution is automatically extracted and managed through the meta-management system, and a national data map established through the central meta-management system. Use of the data interconnected through the map by AI supports administrative policy, and the data in specific fields can also be used by the general public and developers.

New Services for Open Data Portal

● National Data Map

- Identifies source locations and statuses of data based on keywords entered by the people, and provides visualized data search results in map form based on associations of the data
- Government-owned metadata and open data provided by Open Data Portal supplied in the form of data maps

● Visualization based on location

- Data files with latitude and longitude coordinates among datasets in service in Open Data Portal
 - ※ Of the 78 location-based visualizations listed, 61 are standard data and the remaining 17 file data.
- View and visualize target lists of location information by user location or administrative region (city, county, and district)

● Public participation (social affairs) guidance

- Service that creates and shares maps by fusing social affairs and information of interest sought by the public with location information
- Supports three types of social affairs maps (using location data possessed by the people, using open data, and adding locations directly on the maps)

● R analytic environment for developers

- Service that provides results of correlation analysis, regression analysis and text-mining with R analysis, using open data and user-held files (CSV, TXT)

● Developer network

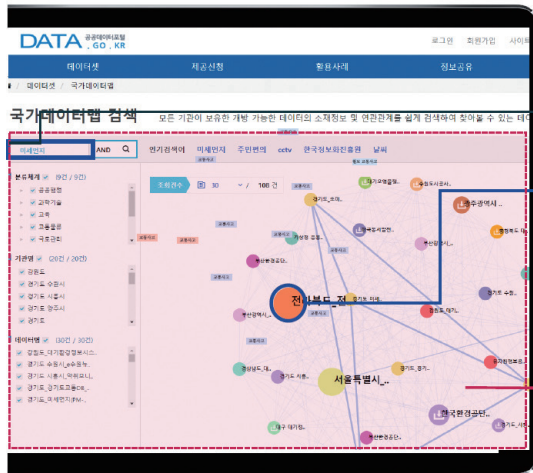
- Service that cumulatively manages questions/answers per OPEN API (added developer network API troubleshooting tab), and enables developers to easily share and utilize information through associated data searches

● OPEN API preview

- Service that allows users to check the search results of OPEN API provided by the portal, without the need to log in

Overview of National Data Map

Improved data search system and visualization of results



Open data integrated search possible

Provides all open data materials and classifications

Public Data Portal **1** List of open water surveys

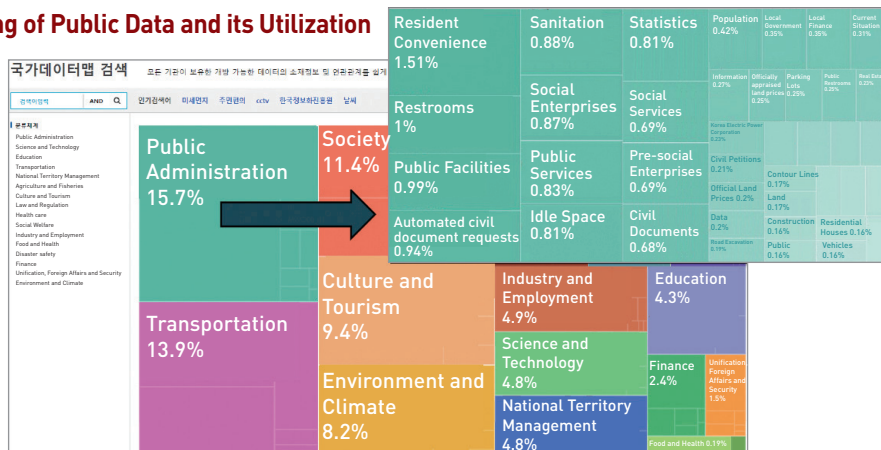
데이터형	주제서열정보	제공기관명	국도공공부
분류명	주기관명	비율부채유무	주상
키워드	주제, 행정, 주제, 아메드...	데이터포맷	XML, CSV
연관데이터형	공시제기, 주제기차...	다운로드	2017년 주제서열정보.xls

Inter-data associations and association lookup

Facilitates insight through data association

The National Data Map is a part of the Open Data Portal and a data relationship diagram through which users can easily search for and check on the locations and relationships among open data of all agencies. It is a search service that identifies the source locations and statuses of data based on keywords entered by the people, and provides the data in visual form expressed in graph form. It is currently in the first stage of pilot operation, and after service improvement official services are scheduled to be provided from 2020.

Opening of Public Data and its Utilization



Open data has 16 categories, which are visualized in accord with the proportions of the different categories, allowing users to comprehend the data at a glance.

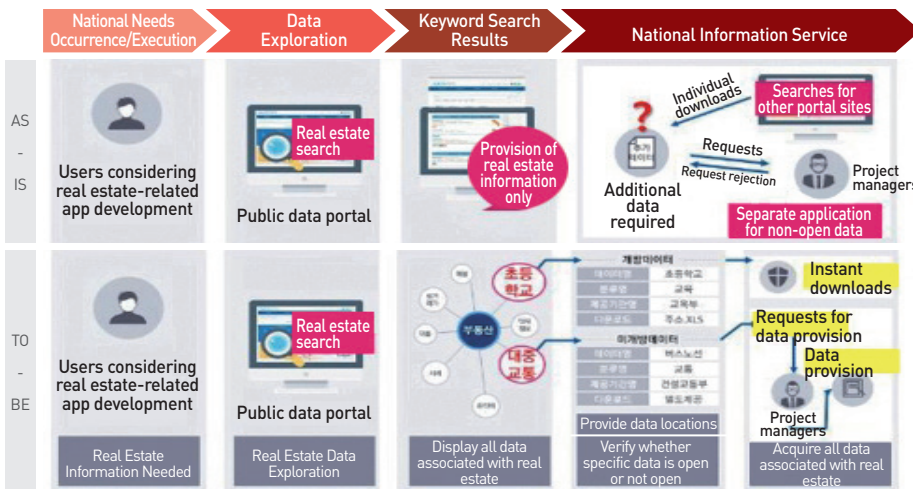
* Public Administration, Science and Technology, Education, Transportation, National Territory Management, Agriculture and Fisheries, Culture and Tourism, Law and Regulation, Health care, Social Welfare, Industry and Employment, Food and Health, Disaster safety, Finance, Unification, Foreign Affairs and Security, Environment and Climate

Major Functions of National Data Map

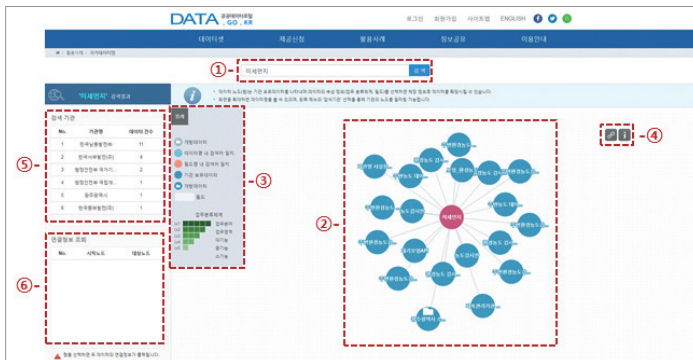
The National Data Map displays all data in accordance with the search terms used, enabling the identification of open data locations and categorizations. If the data is open it can be downloaded and used immediately, and if it is not open users can ask agency staff to provide it. In addition, as the world's first open data platform through which users can check on associated data through the relationships among data, it provides the following detailed services:

- **Search term auto-completion service:** Real-time search word recommendations offered based on search terms input by users, in accordance with the data field name
- **Data filter service:** Provides filtering by institution and by system
- **Association service:** Service showing the connections between two items of data
- **Detailed metadata service:** Detailed metadata on the selected data

MOIS Press Release



National Data Map UI



- ① Enter search term: Enter keyword to search for in National Data Map
- ② National Data Map: Displays National Data Map including search term entered by user
- ③ Legend: Displays legend of graph shown in National Data Map
- ④ Node information display icon: Icon for verifying related metadata or connections among data
- ⑤ Data-holding institution: Displays name of agency that provided data, including keywords entered by user
- ⑥ Connection: Displays two nodes to verify connections among data

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Hye-Ahn

(www.insight.go.kr)

9

INDUSTRY INNOVATION AND INFRASTRUCTURE

10

REDUCED INEQUALITIES

16

PEACE, JUSTICE AND STRONG INSTITUTIONS

Sustainable Development Goals and Areas

- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview



A big data platform, Hye-Ahn (which literally translates to “Wisdom to see through everything”) is a pan-government (central and local government) big data analysis system that links, collects, stores, processes, analyzes and visualizes public and private data and shares and utilizes its analyses. The National Information Resources Service (NIRS) under the Ministry of the Interior and Safety is contributing to the building of an efficient and effective government by revitalizing data-based, scientific administration through the establishment and operation of Hye-Ahn. Hye-Ahn is a website accessible only through an administrative network for Korean civil servants.

Major Functions

Based on big data, Hye-Ahn provides various services through its portal site that public officials can use in carrying out big data analysis work:

- **Analysis of issues**

Based on social data collected in real time, Hye-Ahn provides various visual analyses (social analysis, customized issue analysis, and local government issue analysis) to enable quick understanding of media trends and public opinions regarding various issues.

- **Analysis of themes**

Hye-Ahn implements an automated web service that analyzes the civil documents that are highly utilized and in demand by users, and the locations of the requests for them, and when uploaded the data can be visualized in a variety of forms.

- **Direct analysis**

It provides big data processing, analysis and visualization based on Hadoop 2.0, for users wanting deeper and more diverse analyses.

- **Big data platform sharing**

In order to prevent overlapping budget investments due to deployments of separate big data platforms, the Hye-Ahn platform is used jointly by ministries and local governments, and provides an environment for on-going analysis through regular data linkages between ministries, local governments and the Hye-Ahn platform.

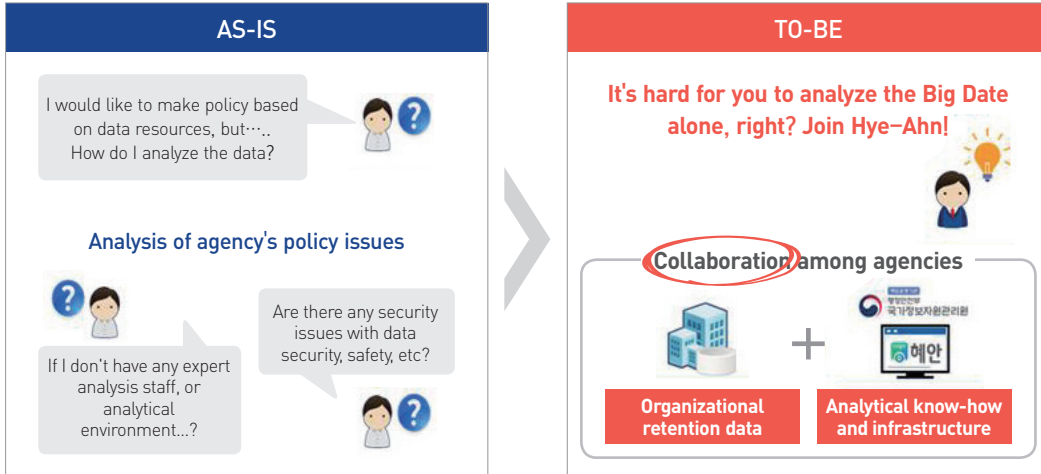
- **Analysis support**

Provides education services to enable government employees to enhance their big data analysis capacities, the sharing of exemplary cases of analysis, and a participatory communication service to suggest continuous improvements of the existing Hye-Ahn services.

Effects of the System

Hye-Ahn has acquired more than 100,000 users currently, through diverse ways of promotion along with ongoing efforts to improve its functions and quality, and is vitalizing pan-government data-based, scientific administration.

Experts in big data analysis have also worked with a number of agencies to find and implement high-impact analysis tasks to achieve results in various areas, including security, safety and environmental protection.



Major Achievements

Big Data Analytics Key Achievements

01. Analysis of National Police Agency's daily on-site records

Identification of similar events, and resolution of unsolved cases through analysis of on-site records

02. Emergency Delay Factor Analysis

Analysis of Impulse Delay Factors affecting ambulances, to derive optimal routes for securing of emergency response Golden Times

- > 소방차 및 구급차의 GPS 정보를 기반으로 커버리지 산출
- > 상술, 정세 구간 차단 및 긴급차량 최단거리 기반 선택 배정

03. Fine dust forecasting

Forecasts of fine dust using NASA satellite data and fine dust data of Incheon area

Hye-Ahn Subscriber Status

2015. 12		327명
2016. 12		2,020명
2017. 12		96,121명
2018. 12		102,436명

Hye-Ahn User Status

Average number of visitors per day 834명

Average number of visitors per month 18,991명

Analysis Report Registration Status

Number of central and local government analysis reports registered 2,316건

- **Analysis of on-site records of National Police Agency**

By analyzing on-site records, it can identify similar cases and help in solving unresolved cases.

- **Analysis of factors causing delays in emergency dispatches**

By analyzing factors that have caused emergency dispatch delays, it calculates the optimal dispatch course in order to secure the golden time for emergency response.

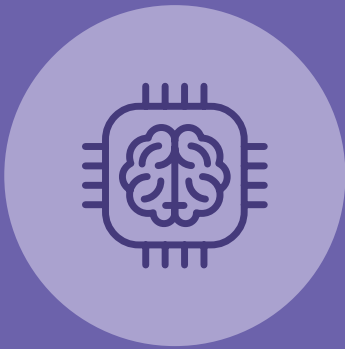
- **Fine dust forecasting**

Fine dust forecasts using NASA satellite data and fine dust data of Incheon area

- **2,316 analysis reports registered in central and local governments through Hye-Ahn**

- **102,436 users (as of December 2018)**

* Number of users 313 greater than in 2015



The Next generation of e-Government

How Digital Government Innovation Changes Our Lives	168
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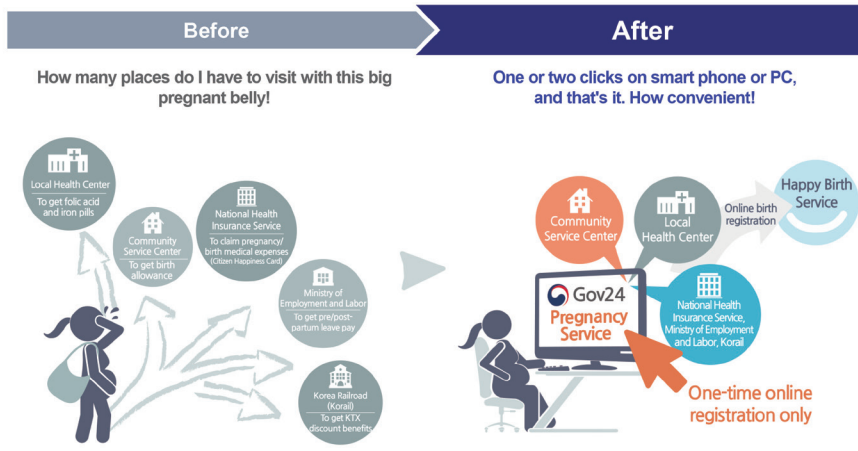
04

How Digital Government Innovation Changes Our Lives

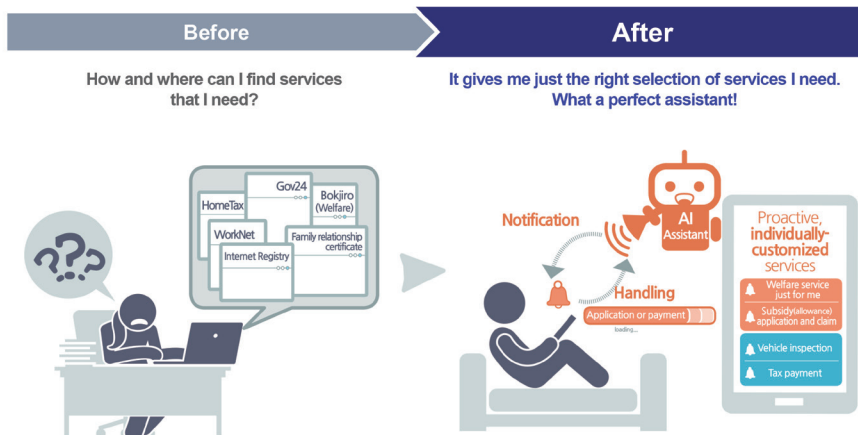
Service Sector

All citizens enjoy convenient outreach services!

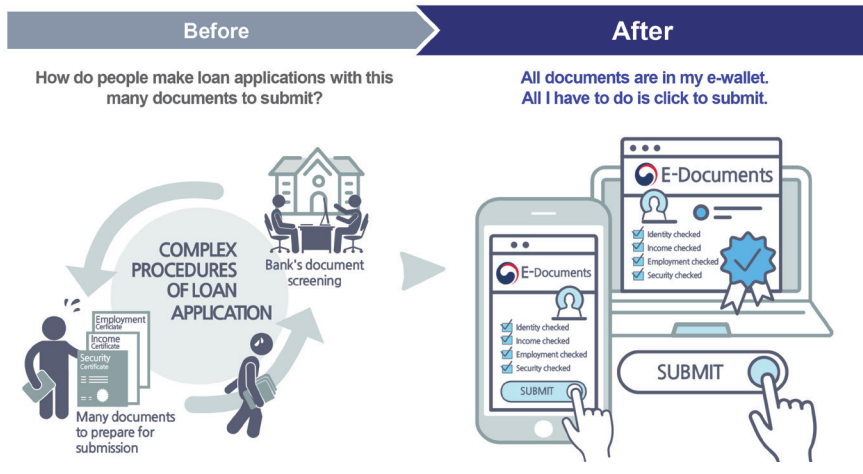
“One-stop life-cycle services that put users first”



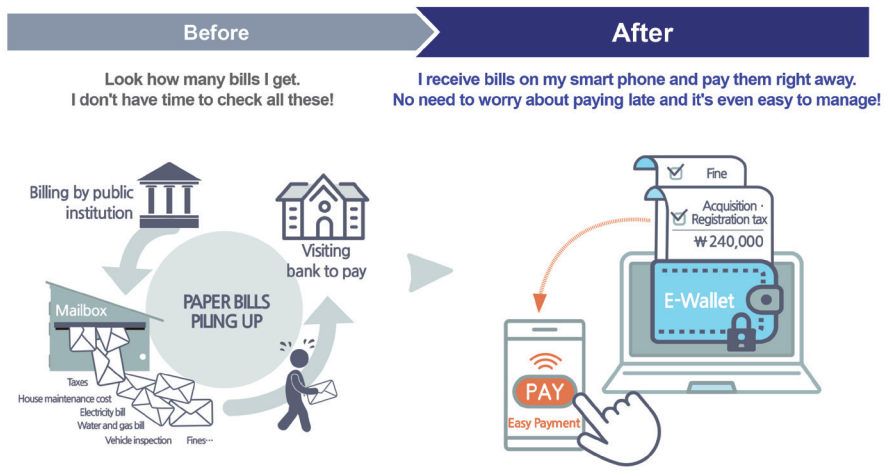
“Proactive, customized services curated by AI”



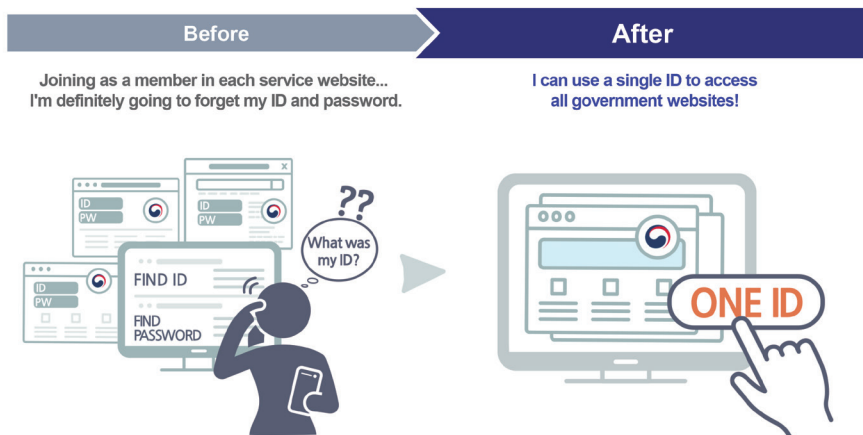
“Convenient loan application with e-certificates and no paper”



“Digital billing and convenient payment”



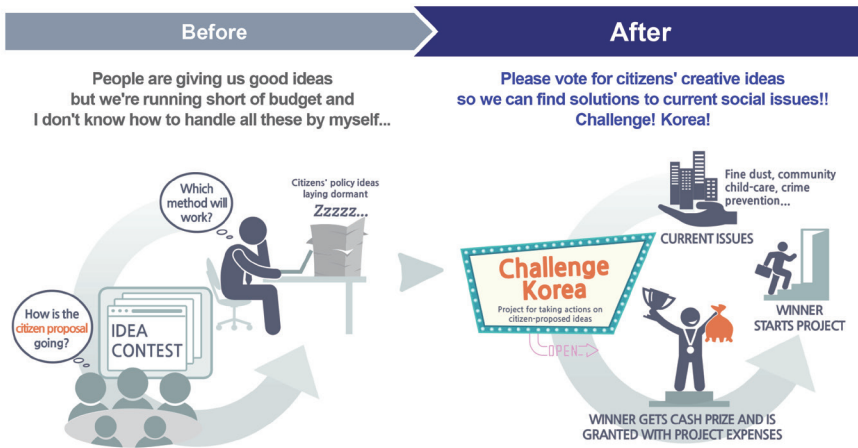
“Easy use of all public websites with one-time authentication”



Public Administration Sector

All public officials enhance their work efficiency in better environment!

“Solving social issues through direct citizen engagement”



“Improving public officials' work efficiency and innovating the way they work”



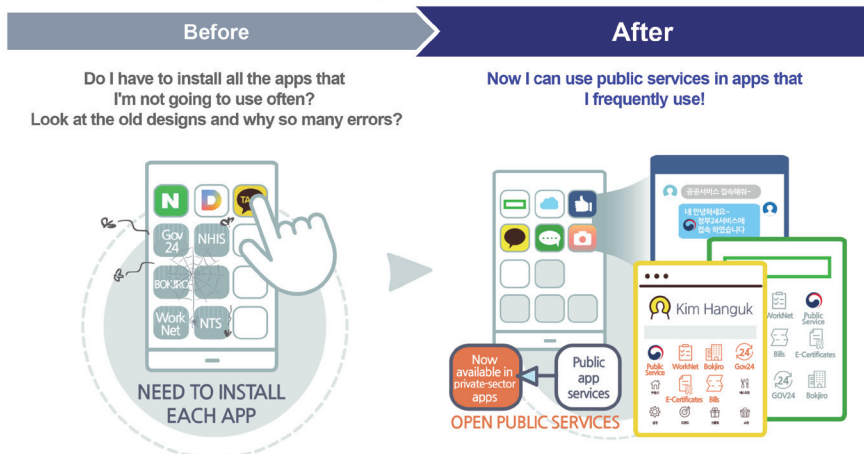
Industry

All businesspersons grow in the innovative ecosystem!

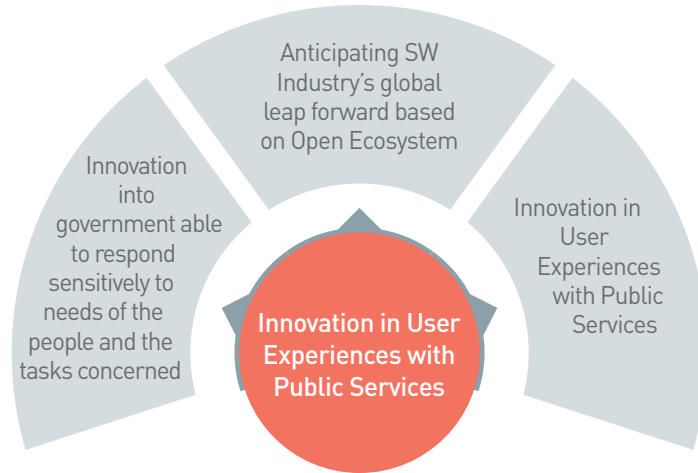
“ **Expanding usage-based cloud service** ”
 where you buy as much as you need at the time of your choice



“ **Public services also available in private-sector apps** ”
 thanks to public service release



Digital Government Innovation Expectations



WONDERFUL WORLD THROUGH DIGITAL

Korea will see first!

ALL CITIZENS
Enjoying convenient outreach services

- Reforming services for citizens into proactive, integrative services
Shifting focus from receiving applications to providing outreach services
- Facilitating MyData in the public sector
No more paper certificates
- Improving platforms for citizen engagement
Listen to the citizen voices!

ALL BUSINESSPERSONS
Growing in the innovative ecosystem

- Facilitating use of cloud and digital services
From contracted development to use
- Establishing open data and service ecosystems
Innovating together with the private sector!
- Establishing field-oriented smart working environment
No more 2 PCs per person in government offices

DIGITAL FOR EVERYONE

ALL PUBLIC OFFICIALS
Improving efficiency in better environment

The Government of the Republic of Korea

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The Intelligent Government Steering Plan

Sustainable Development
Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Intelligent Government = Government of the People

As part of the celebration surrounding the 50th anniversary of South Korea's first effort toward electronic government, the Ministry of the Interior and Safety (MOIS) has established and announced the Intelligent Government Steering Plan, envisioning the creation of a wiser, friendlier e-Government for all citizens.

The immense reservoirs of public administration data that the South Korean nation has acquired over the last five decades of e-Government endeavors offer an almost infinite potential for AI applications.

Through the convergence of AI, digital data and other advanced technologies, the Korean government aspires to enhance the rationality and efficiency of public administration and to provide services tailored and optimized to meet the diverse needs of its citizens.

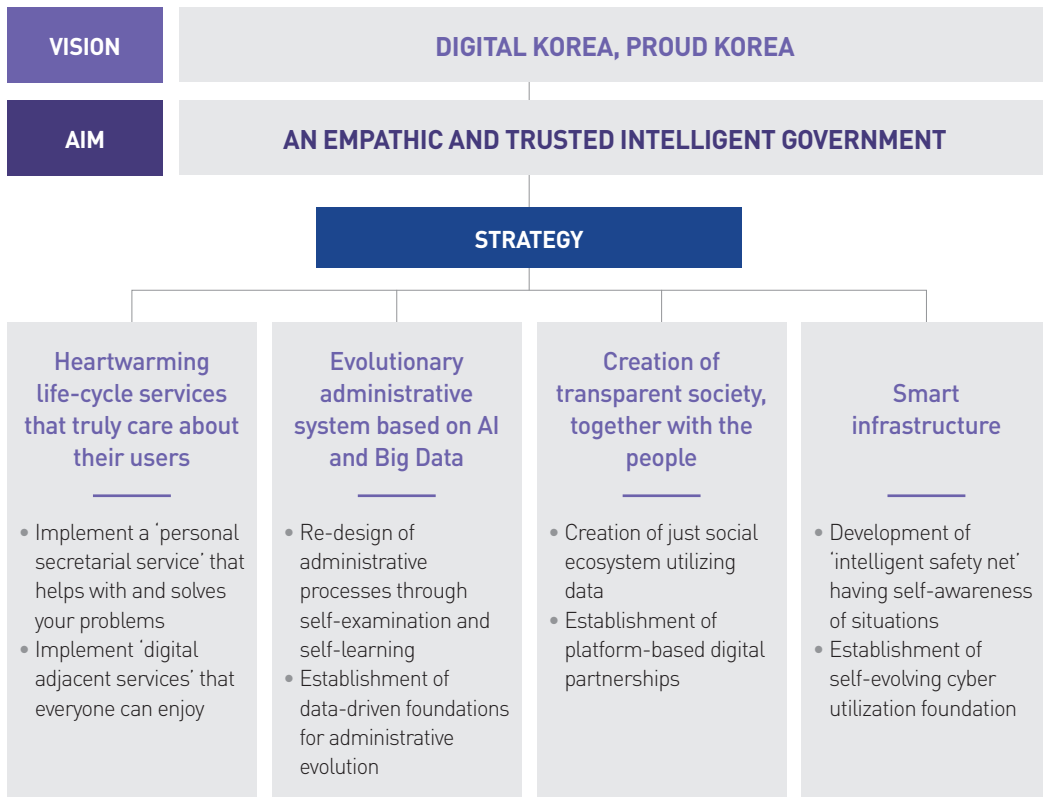
The Intelligent Government Steering Plan represents the MOIS's effort to achieve a more profound innovation and transformation of the governmental services in Korea.

Transition from e-Government to Intelligent Government

Comparison between e-Government and Intelligent Government

Areas	e-Government	Intelligent Government
Administrative work	Issues raised by people/public officials -> Improvement/Reformation	Automatic issue/problem detection -> Provides alternatives and solutions by itself -> Improvement/Reformation
Decision (Policy)-Making	Government-led policy management	Policymaking led by the people (public)
Field Administration	Focused on simple business management processes	Solves complicated and complex problems
Service Goals	Focused on quantity and efficiency	Joint production of qualitative and emotional services
Service Contents	Customized by stages of the life cycle	Daily life + Stages of the life cycle
Delivery Methods	Online + Mobile channels	Demand-based multiple online and offline channels

Implementation of Intelligent Government



Strategies for Promoting New International Cooperative Development Projects

● Support data-based New Southern / New Northern Policy

- Establish global data silk road (Northern) including North Korea, based on Korean network, and data linkages including to ASEAN+3 countries (Southern)

- * Encourage data distribution/utilization by promoting enhanced connectivity between countries' (knowledge) data/policy networks

- * Support enhancement of intellectual property rights and enhance policy capacities for addressing pending issues related to climate change, energy, food, etc.

● Support data consolidation of New North-South Era, and construction of its economic foundations

- Promote integrated digital archiving

- * Starting from non-political areas including history, culture, art, the environment and health/medical care, expand to industrial areas such as education, science-technology, energy, etc.

- Support construction of foundations for North Korea's Data Economy, through cooperation with multilateral development banks (MDBs)

- Establish data communication infrastructure and support attracting of investment by international organizations and banks to promote and solve priority tasks related for example to the people's basic livelihood

- Discover and promote bilateral and multilateral ODA projects in fields such as science and technology and ICT

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AI Hub

(http://aihub.or.kr)

Sustainable Development Goals and Areas

9 INDUSTRY INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Social Sustainability

Economic Sustainability

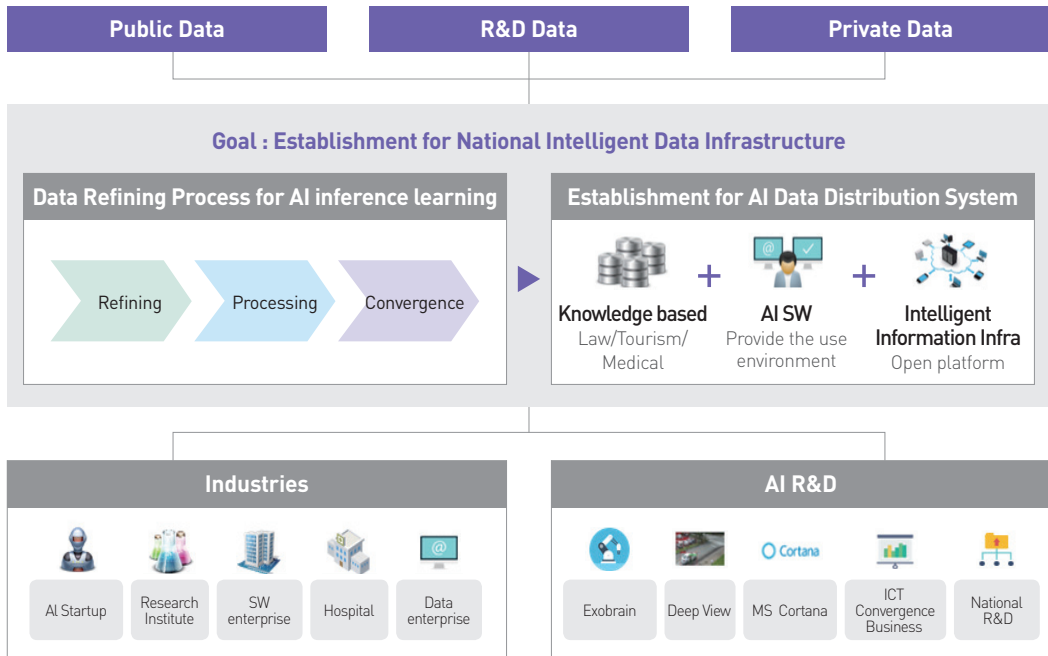
Environmental Sustainability

Summary of AI Hub Service

The AI Hub is an integrated platform that provides at one stop the resources necessary for developing AI R&D and application services. It provides AI data, AI software and AI computing power to artificial intelligence researchers and companies, and is also easily accessible by anyone wishing to obtain information.



Main Features



- **AI Data**

It is gradually expanding through the processing and opening up of data to be transformed which can be learned by the artificial intelligence services, from promising areas in industry, and subsequent application to laws, patents, images, general knowledge, and the healthcare, tourism and agriculture sectors.

- **AI Software**

It supports small and medium-size companies and venture businesses in developing AI prototypes, by unveiling original technologies such as visual and language intelligence through Open API developed through AI R&D projects.

- **AI Computing**

It provides high-performance cloud computing services based on GPU, for use in developing AI-based application services

Main Outcomes

The AI Hub has established and released AI learning data sets through the discovery of areas that have high urgency and are promising in the intelligence information industry.

Year	Areas	Main Contents
Released in 2018	Law	• Data set of legislation, provisions, precedents and legal terms regarding traffic accidents, noise complaint issues, and business permits
	Patents	• Data set of patent information regarding registered electric and electronic patents, screening information, and professional terminology about patents
	General Knowledge	• Data set of general knowledge and terminology highly used in the Korean Wikipedia
	Images	• Data set of Korean facial images and food images
Released in 2019	Healthcare	• Data set of retinal images related to major ophthalmic diseases
	Tourism	• Data set combining multi-lingual information (name, location, menu, tourism information, etc.) on the images of restaurants and facilities in tourist zones
	Agriculture	• Data set of major domestic crop infestations
	Patents	• Data set of patent applications, claims information of registered patents, and patent terminology in fields of electricity, electronics, mechanics and chemistry
	Law	• Data set of legal information on divorces, single-families, school violence, and severance pay (laws, precedents, cases, terms, etc.)
	Images	• Data set of Korean facial images and domestic vehicles (100 kinds)
	Korean voices	• Voice data set considering continuous diction, noise environment, etc., to improve Korean voice recognition performance
	Korean conversation	• Data set composed of standard conversation scenarios, to construct Korean language chatbots that can be applied in small and medium-sized business conversations
	Multimodal	• Multimodal image data set containing emotional indicators such as facial expressions of a character, voices (intonations), diction contents, etc. in a video
Machine reading	• Deep-learning-based machine reading (MRC) data set, in which AI deduces answers to queries through learning from text	

Expected Effects

The AI Hub is expected to contribute to the development and sales of AI technologies, to advancing and upgrading the performances of developed AI models, to attracting investment, and to patent applications, through the utilization of data disclosed by small and medium-sized venture companies and start-ups.

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Digital Social Innovation

Sustainable Development
Goals and Areas



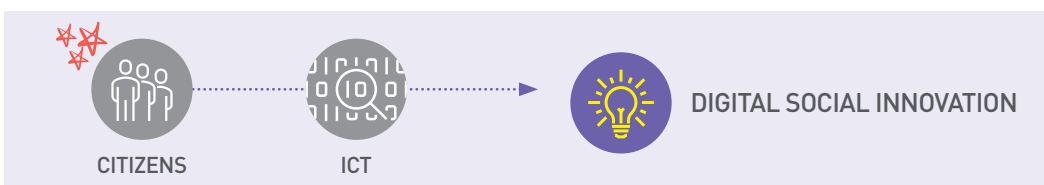
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview of Digital Social Innovation Project

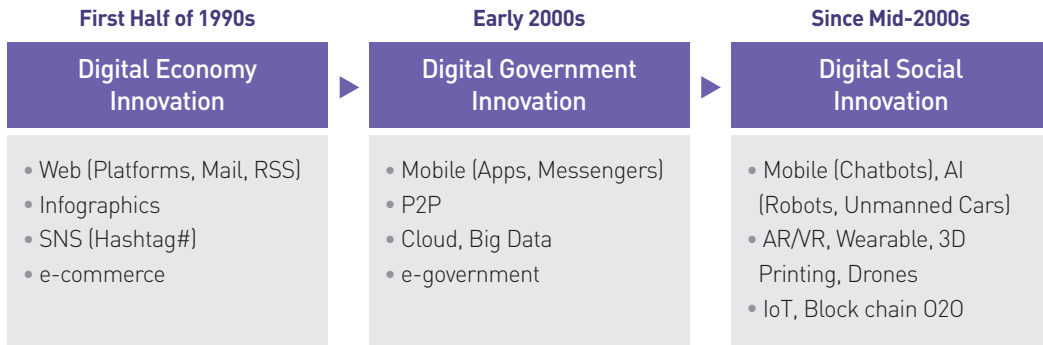
- Provider-centric → Citizen-centric, Top-down → Bottom-up

During the rapid development of intelligent information technologies, social complexity has led to increased conflicts over various issues, and in an environment of economic and cultural differences between regional communities various types of issues that are difficult to solve only through traditional methods or at the national level have continually arisen. Against this backdrop, attention has grown rapidly to voluntary participation by citizens and ways of action to solve these problems and realize social values through the utilization of digital technology.

In 2015 National Information Society Agency carried out a project called “Solving Problems through Citizen-led New Ideas (Methods) and Cooperation,” which was participated in jointly by the stakeholders (citizens, etc.), communities (cooperatives, social enterprises, etc.), the government and public institutions. It also promoted Digital Innovations through materials technologies (big data, Cloud computing, mobile devices, etc.) that can be utilized to solve social problems.



Digital Social Innovation Occurrence Process



Case Study of Digital Social Innovation in Korea

● Digital Social Innovation in Korea (ICT Good Imagination)

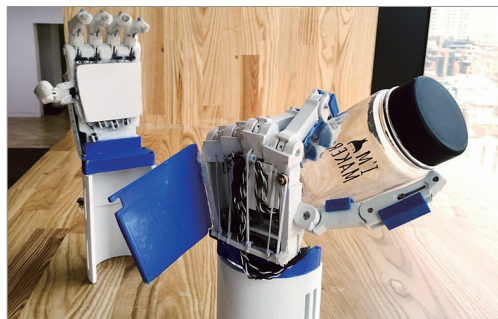
The ICT Good Imagination Project (I Create Town), which has evolved since 2015 into a policy model focused on resolving regional issues, has worked together with citizens, local government offices and the central government to resolve pending issues and increase social value. This leading and experimental “Good Imagination” model has been shared as an excellent example of “Digital Social Innovation (DSI)” by civic groups and local governments, and has contributed to a spread of social value model awareness that can grow with the citizens.

In particular, based on the ICT Good Imagination model, the Ministry of the Interior and Safety has promoted (since 2018) the “Compassion e Full” project for local governments nationwide, while also holding related conferences jointly with the Ministry of Science, Technology, Information and Communication and the Ministry of Information and Technology.

Chungju-si, Safe Boarding and Deboarding Service for Yellow Buses (2017)



MANDRO, 3D Printing Prosthetic Hand (2015)



The “Safe Boarding and Deboarding Service for Yellow Buses” is implemented by the Chungju City government. It is a system for the prevention of accidents in and out of the vehicles, and for the sharing of location information on school buses, especially for kindergartens. Its major functions include beacons (short-distance wireless communication devices), information on children’s entry to and exits from the buses through use of motion sensors, a real-time vehicle location reporting system, fore and rear sensors, and warning alerts of any children remaining in buses after the end of operations. Parents can check their children’s entry and exit information and vehicle location information through smartphone applications. In addition, the drivers and the teachers can be made aware of any hazardous situations through sensors attached to the buses, to thus prevent accidents. The implementation of this service started as a pilot operation in December 2017, and received a Minister’s Award in 2018.

“MANDRO” is a startup company that began commercializing affordable electronic prosthetic hands in the wake of a project through ICT Good Imagination to donate a number of electronic prosthetic hands for the disabled who had lost both hands in accidents. Under the principle that “no one should be unable to use electronic prosthetic hands due to lack of money,” the company is developing and selling prosthetic hands at the price of a smartphone, while developing many other products that can also help with various physical disabilities. It has manufactured and donated a number of prosthetic hands to the Middle East country of Jordan, for people who have suffered amputations as a result of the Syrian civil war, and is also working with international NGOs to supply electronic prosthetic hands to Tanzania.

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Next Generation e-Government Technology

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

South Korea's Ministry of the Interior and Safety has announced technology trends every year since 2015, to facilitate understanding of the rapidly changing technology and promote innovation in the new e-government services as well as existing services. In 2019 the Commission selected and announced 10 promising e-government technologies that implement intelligent government and create new values for the people.

The top 10 technologies that will lead the intelligent government in 2019 are classified into three service areas: "intelligent services that know and take care of things by themselves," "digital smart work environments," and "blind area-free mesh (dense/tight) security and infrastructures (foundations)."

Division	Technical Name	Main Contents
Intelligent Services	Emotional Artificial Intelligence	In addition to the basic context, artificial intelligence analyzes the context of the individual situation and accurately identifies the relationships to understand and sympathize with the people, to whom it then provides services so that they can feel a better quality of life.
	Unstructured Data Analysis	Collects and analyzes not only structured data, but also unstructured data (text, images, videos, etc.) generated in real-time through various devices and channels, and discovers hidden needs and niche demands, which it then meets

Division	Technical Name	Main Contents
Intelligent Services	Reactive Internet of Things	Beyond sensors collecting data, the reactive internet of things is a virtual place where various devices interact in real-time with each other to recognize, judge, learn and respond to situations.
	Artificial Intelligence Ethics	The government provides ethical rules and standards that must be followed while using artificial intelligence-based public services.
Smart Work Environments	Multi-Cloud	Linkages without barriers to public and private clouds, to reduce collaboration and connectivity burdens and provide an open work environment that responds flexibly to user demands
	Edge Computing	Edge is a computing technology through which small distributed servers handle data sharing in real-time, which can allow instant responses and communication between edge-connected users. ※ Because it utilizes the computing power of the device itself, it avoids overloads that can occur with central server utilization and is convenient for sensitive data processing, which also makes it a complement to clouds.
	Extended Reality	This is an innovative real-life technology that encompasses VR (Virtual Reality), Augmented Reality (AR), mixed-reality (MR), and holographic technologies, and thus enables greater hands-on collaboration in a way more immersive than when working through phone calls or mail.
Mesh Security Infrastructures	Blockchain Platforms	Through utilization of blockchain technology, data and information are managed securely and efficiently, while the foundations for support of e-government services through blockchain platforms can also be built.
	AI Automatic Security	A proactive security system that continuously applies effective security policies through the continuous collection, learning, and evaluation of new external threat information, and the detection and simulation of potential risks (variables)
	5G Infra	5G networks rapidly and uninterruptedly process massive amounts of data that are accumulated and required to implement intelligent government and help implement diverse realistic contents.

Key Technologies in Intelligent Services

'Emotional Artificial Intelligence,' 'Unstructured Data Analysis,' 'Reactive Internet of Things' and 'Artificial Intelligence Ethics' were selected as key technologies in the field of intelligent services. Emotional Artificial Intelligence can improve the service level of "Chatbot," a public civil petition application service that is expanding to use in other government services as well. Unstructured Data Analysis and the Reactive Internet of Things can contribute to the creation of environments

that are “already serviced” even if the public may not feel it, by identifying the people’s hidden needs. Discussion is also needed of the Artificial Intelligence Ethics Guidelines that should be followed when introducing artificial intelligence into public services where safety, reliability and accuracy are important.

Key Technologies for a Smart Work Environment

By removing time and space limitations, “Multi-Cloud,” “Edge Computing,” and “Extended Reality (XR)” have introduced smart work environments.

Multi-Cloud reduces the burdens of collaboration and connectivity and enables effective information infrastructure operations, while the service development period is also shortened. Edge Computing supports real-time work responses as a complement to Cloud. In Korea, all services of the central and local governments and public institutions are available in private clouds from 2019, while the government’s cloud computing will be upgraded (except for its security, investigation, trial, and individual sensitive information processing systems).

Extended Reality (XR) supports rapid and accurate decision-making by providing more immersive field-sensitive and immersive collaboration than occurs in traditional video conferencing, thus moving away from the way in which this has been traditionally handled (e.g. by telephone or e-mail, or through field visits).

Key Technologies for Tight Security and Infrastructure

It is also important to provide convenient and fast services to the public through blockchain platforms, artificial intelligence automatic security, and 5G infrastructure technologies, and to support them with tight security systems. Korea plans to build an electronic certificate platform (e-document wallet) to replace various documents required for civil petitions with electronic certificates by the end of 2019, and will apply blockchain technology to prevent forgeries of documents and verify their authenticity.

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e-Government Services Using Blockchain

**Sustainable Development
Goals and Areas**



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Cases of Domestic and International Blockchain Application, by Application Field

As concerns about security issues such as personal information safety have grown, the government has come to consider applying blockchain technology to public services. After reviewing its cost efficiency and reliability, the government has concluded that the application of blockchain technology in e-government services will secure the credibility of their prevention of information manipulation and hacking.

Korea is seeking to apply blockchain to the living economy, business and public administration sectors, with representative examples being a regional-based virtual currency (Nowon District), an electric energy transaction platform (the Korea Electrical Safety Corporation), actual loss health insurance automatic billing (Kyobo Insurance), authentication financial services (Kukmin Card), electric fire hazard ignition spot analysis (Korea Electric Power Corporation), online electronic voting (Korea Deposit Insurance Corporation), next-generation electronic document management (KT), Ddabok community electronic voting (Gyeonggi Province), and a medical information platform (MediBlock).

Examples of overseas applications include electronic citizenship (Estonia), a digital identity platform (MS), a post-coin transaction platform (USA), a welfare allowance payment system (UK), food safety net solutions (IBM), logistics transport tracking (Mersk), a news article platform (Civil), a blockchain electronic voting app (Russia), health data sharing and utilization (USA),

digital evidence preservation and utilization (UK), electronic document records management (Dubai), and a land registration transaction platform (Georgia).

Cases of Domestic and International Blockchain Application, by Application Field

Field	Detailed Field	Domestic	Overseas
Finance	Remittances / Transactions	-	• Post-coin Transaction Platform (USA)
	Payments	<ul style="list-style-type: none"> • Regional-based Virtual Currency (Nowon District) • Electric Energy Transaction Platform (Korea Electric Power Corporation) • Actual Loss Health Insurance Automatic Billing (Kyobo Insurance) 	• Welfare Allowance Payment System (UK)
Living Economy	Certifications	• Authentication Financial Service (Kukmin Card)	-
	Internet of Things	• Electric Fire Hazard Ignition Spot Analysis (Korea Electrical Safety Corporation)	<ul style="list-style-type: none"> • Food Safety Net Solutions (IBM) • Logistics Transport Tracking System (Mersk)
Business	Social Trade	-	• News Article Platform (Civil)
	Electronic Voting	<ul style="list-style-type: none"> • Ddabok Community Electronic Voting (Gyeonggi Province) • Online Electronic Voting System (Korea Deposit Insurance Corporation) 	• Blockchain Electronic Voting App (Russia)
Public Administration	Records Management	<ul style="list-style-type: none"> • Next-generation Electronic Document Management System (KT) • Medical Information Platform (MediBlock) 	<ul style="list-style-type: none"> • Health Data Sharing and Utilization (USA) • Digital Evidence Preservation and Utilization (UK) • Electronic Document Records Management System (Dubai)
	Digital Contracts	-	• Land Registration Transaction Platform (Georgia)
	Electronic Citizenship	-	<ul style="list-style-type: none"> • Electronic Citizenship (Estonia) • Digital Identity Platform (MS)

※ Source: D.gov 2018.1

Major Cases of Public Sector Blockchain Application in Korea [implementations in 3 of 5 cases still under consideration]

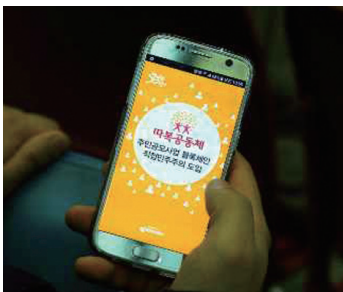
● “Ddabok Community”: Gyeonggi Province Electronic Voting System for Resident-led Policy Decisions

Blockchain-based electronic voting has been introduced in Gyeonggi Province to increase the rate of resident participation and facilitate policy decisions reflecting the opinions of the majority of the people.

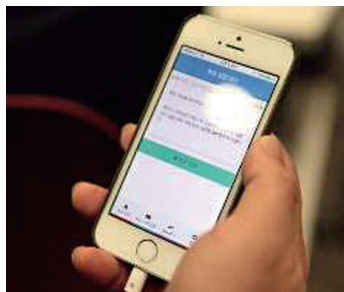
The “Ddabok Community” is an electronic voting system that enables residents to hear about community projects, and to immediately check the results after voting through blockchain-based Ddabok Community apps.

- On February 23, 2017 Gyeonggi Province screened the “Ddabok Community residents’ proposals” of 815 communities through blockchain-based electronic voting.
- After verifying the community number for voting, the resident acknowledges the QR code distributed to the Ddabok community app, views the community announcement video, and votes via the app.
- Continuous implementation will be decided on in reflection of technical limitations, the vitalization of use, etc.

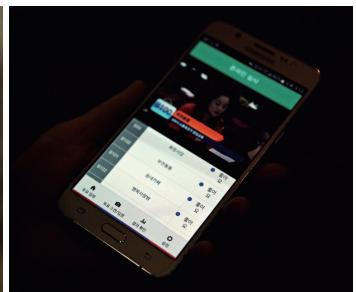
Ddabok Community App



Verify Ddabok Community Identification Number



Conduct review through watching Video



※ Source: Official blog of Gyeonggi Provincial Government

As blockchain technology is introduced in QR codes, the transparency, objectivity and reliability of voting are enhanced since it cannot be illegally manipulated before the screening process begins. In addition, rapid and accurate results are confirmed after voting, and all community members can contribute to the realization of direct democracy thanks to their easy participation in the policy decision-making process.

● “No-Won”: A Regional-Based Virtual Currency System in Nowon-gu, Seoul

The 'No-Won Platform' is designed to commercialize 'No-Won10,' a blockchain-based virtual currency that can be used by local currency merchants in Nowon-gu.

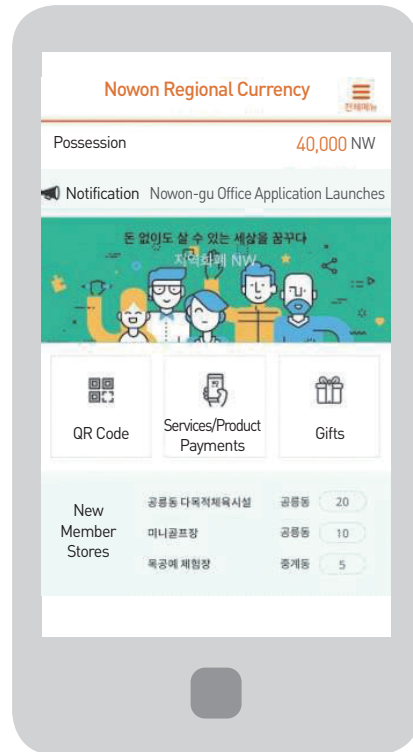
This application is designed to enhance ease of use through the utilization of a blockchain-based virtual currency as a local currency, and to promote local currency use. It has advantages compared to the existing local currencies, which are issued in the forms of banknotes or vouchers and can be used only in certain places such as traditional markets.

- Individuals and organizations provide local currency 'No-Won' to residents in return for their volunteering, or donating or circulating of resources within Nowon District.

※ For example, 1 hour of volunteer time is converted into 700 No-Won, with 'goods' such as hairdressing and repairing priced at 700 No-Won per hour, and donations and goods trading sales reimbursed at the rate of 10% of their actual values.

- The "No-Won" can be used at a total of 122 participating merchants (21 public, 101 private), as well as in user-to-user transactions (gifts), through the QR code on the "App" and the "Card."
- The Nowon District has been commercializing No-won to the Korean people since February 2018, and plans to form and operate a private-public council to consult on matters related to this local currency.

Experiments in blockchain local currencies are being carried on by "refunders." The "Shiru" in Siheung, Gyeonggi Province, developed by LG CNS, is already in operation, and release of the "All@North Jeolla Province" local currency in Jeonju, North Jeolla Province, which is being developed by Glossfer, is planned for the end of this year (2019.12). KT, which made Gimpo Pay, is promoting use with the Good Pay app of local gift certificates like the Onnuri gift certificate that are currently being utilized in the country.



● **KT Blockchain: KT's Next Generation Blockchain-based Electronic Document Management System**

KT developed a blockchain-based electronic document management system for storing and managing electronic documents of enterprises such as contracts and supporting data that require safe storage. It can also store electronic signatures and electronic document data indefinitely (2017.11).

*In early 2017 KT developed a blockchain-based electronic signature image management system for storing electronic signature images generated during card transactions (ESC; Electronic Data & Signature Capture), for application to BC Cards (2017.04).

The 'KT Blockchain' has the advantages of combining the functions of storage and management of the documents and of being able to store any data of an enterprise regardless of data capacity and format. The stored data are paralleled in real-time to enable high-speed encryption.

KT is seeking to expand the system into an IT infrastructure that encompasses not only public and corporate financial data but also non-financial data.

● **Korea Electric Power Corporation: Platform for Electrical Energy Transactions between Neighbors**

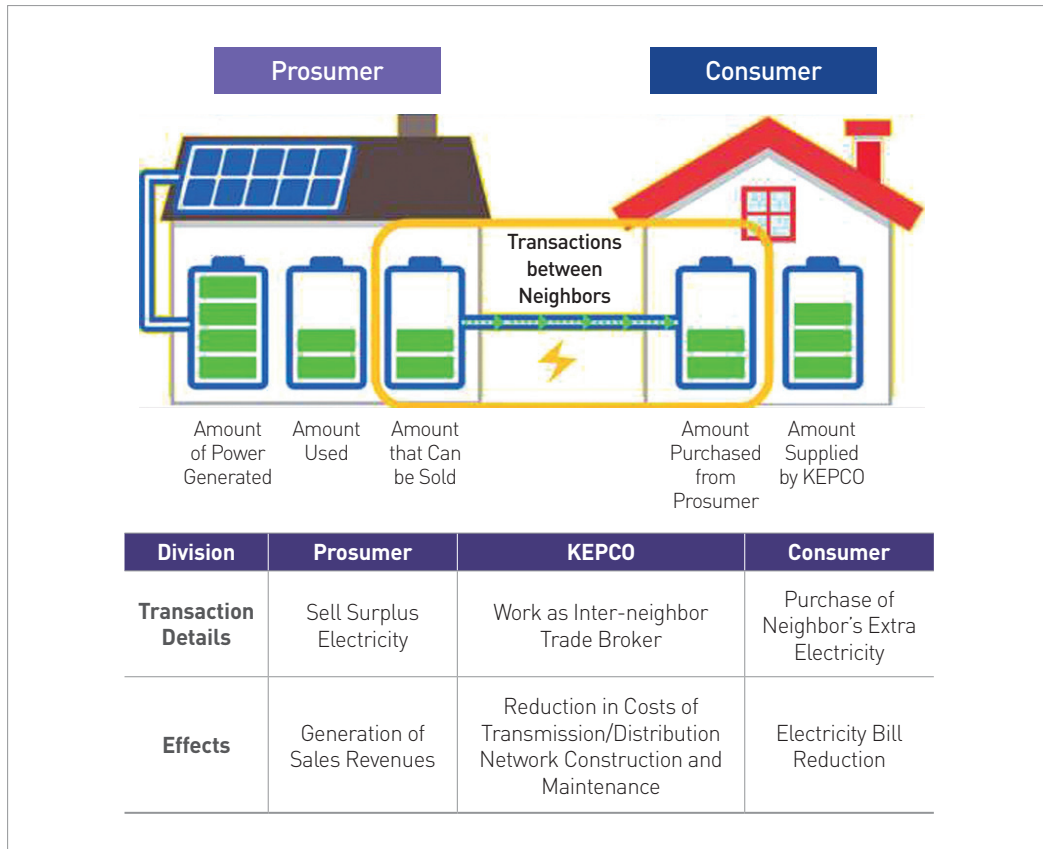
This power trading platform utilizing blockchain technology is implemented to stimulate electricity trading by allowing prosumers* to sell electricity to neighbors with heavy electricity bill burdens, with Korea Electric Power Corporation (KEPCO) working as the middleman between two.

*Prosumer: A person who produces electricity through solar panels installed on the roof of a house or store

Although rapid matching between suppliers and consumers and real-time trading has been difficult until now, this service provides power transaction services through the matching of optimal prosumers and consumers in real time.

- Power transactions are made based on 'energy points,' and the points held are usable when paying electricity bills and charging electric vehicles, while also being refundable as cash.
- KEPCO has provided pilot services to nine buildings in the Human Resources Development Institute and two apartment complexes in Seoul (2017.12), and plans to expand the number of demonstration projects in the future.

Diagram of Power Transactions among Users (Prosumer-Consumer) with Blockchain Technology



※ Source: Ministry of Science, Technology, Information and Communication Homepage

● **Korea Electrical Safety Corporation: Electric Fire Hazard Ignition Spot Analysis**

This pilot project was implemented by the Ministry of Science and ICT in November 2017, to spread the use of blockchain technology. It offers an analysis service which helps to clearly identify the responsibility for the cause of a fire in a conflict between a building owner who has property damage insurance, the insurance company concerned, and the tenants.

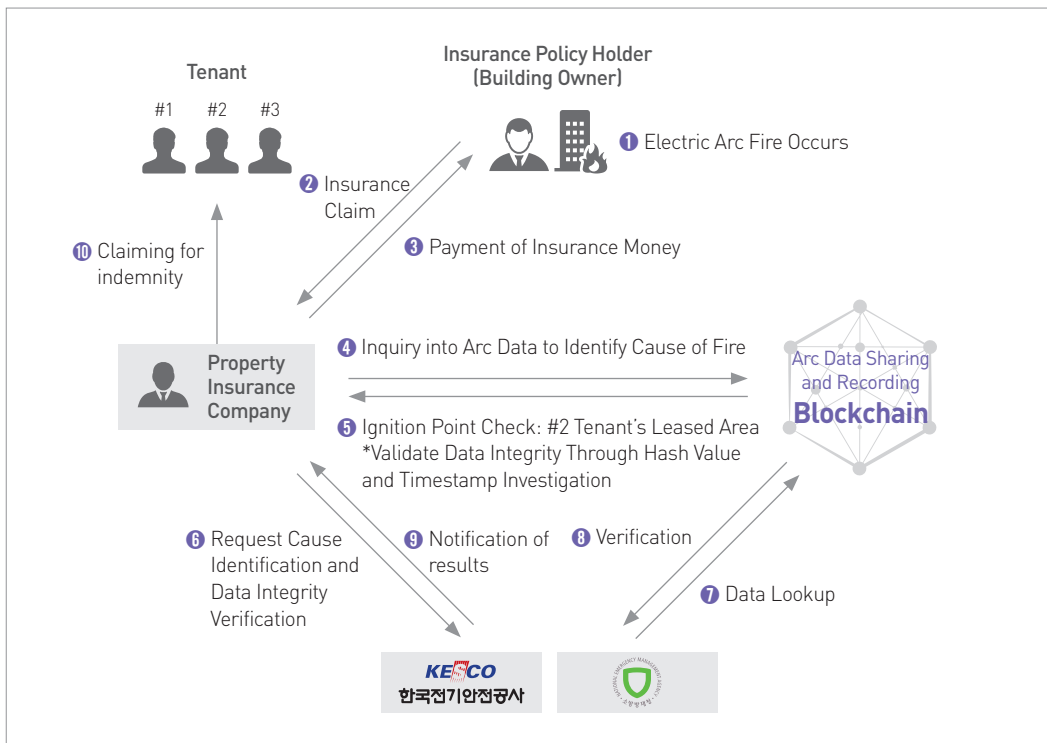
※ The Korea Electrical Safety Corporation, the National Emergency Management Agency, and one non-life insurance company participated in the blockchain network, and SK Telecom participated with them to form a consortium to carry out pilot projects in 10 places including buildings, traditional markets and temples, and at congratulatory events.

Based on blockchain, the service records and shares arc* data (arcs account for 80% of the causes of such fires' ignitions), to support utilization data with objective evidence of the causes of electric fires, and mitigates the limits on identifying the points of ignition of fires at the common facilities in majority use.

* Arc: A spark or spark that jumps off of a wire due to electrical discharge

- Internet of Things-based arcing sensors are installed on the electric switchboard of each floor of the building to collect the arcing information and record it in blockchain every five minutes. An expansion of this service nationwide is currently under review.
- Blockchain participants can jointly verify and store data, thereby improving the reliability of the data and helping to identify the cause of a fire
 - ※ It is expected that this project will be useful in other disaster/safety areas as well.

Schematic Design of Blockchain-based Electrical Fire Ignition Spot Analysis System



※ Source: Press release from Ministry of Science and ICT, "Electrical Fire Ignition Point, Blockchain Knows" (2017.11.4)



Global Cooperation

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PART

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International Evaluations of Korea's e-Government and Korea's Policy Efforts for SDGs

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

International Evaluations of Korea's e-Government

● UN e-Government Survey

Korea was ranked No. 1 in the UN e-Government Survey three times in a row—in 2010, 2012 and 2014. In 2018 it was recognized as implementing one of the world's top e-Governments by ranking third in online participation (No. 1 Denmark, No. 2 Finland), and third in e-Government development (No. 1 Denmark, No. 2 Australia). The UN e-Government Survey is a numerical evaluation of the extents of e-Government development, carried out by the UN DESA for 193 UN member countries. The purpose of the UN e-Government Survey is to support benchmarking and sharing of experiences and know-how among member countries through comparison and evaluation, to help in the building of successful e-Governments. The e-Government development index consists of three sub-indexes: the Online Service Index, the Information and Communication Infrastructure Index and the Human Capital Index, which are given weights of one-third each and then aggregated. Korea's online participation ranking rose sharply from fourth in 2016 to first in 2018 as the current administration's online participation policy, including "Gwanghwamun 1st Street" and "Cheong Wa Dae (Blue House) Petition," and its drive to improve the public's online services such as "Government 24" and "People's Opinion" have been appreciated internationally.

● OECD Open Useful Reusable: OUR Data Index

Korea was ranked No. 1 two consecutive times, in 2015 and 2017, in the OECD's Open Useful Reusable (OUR) Data Index. The OUR Data Index is measured every two years with evaluations in three areas: availability, accessibility and government support. Korea has received high marks in all three areas, especially in the government support category. In the field of availability it was highly recognized for having a stable institutional foundation, as seen for example in its Public Data Act and Public Data Strategy Committee, and for making widely available high-value public data in high demand. In the field of accessibility, Korea scored high based on the fact that it is opening up machine reading and free data for easy use in the private sector, through its public data portal (data.go.kr).

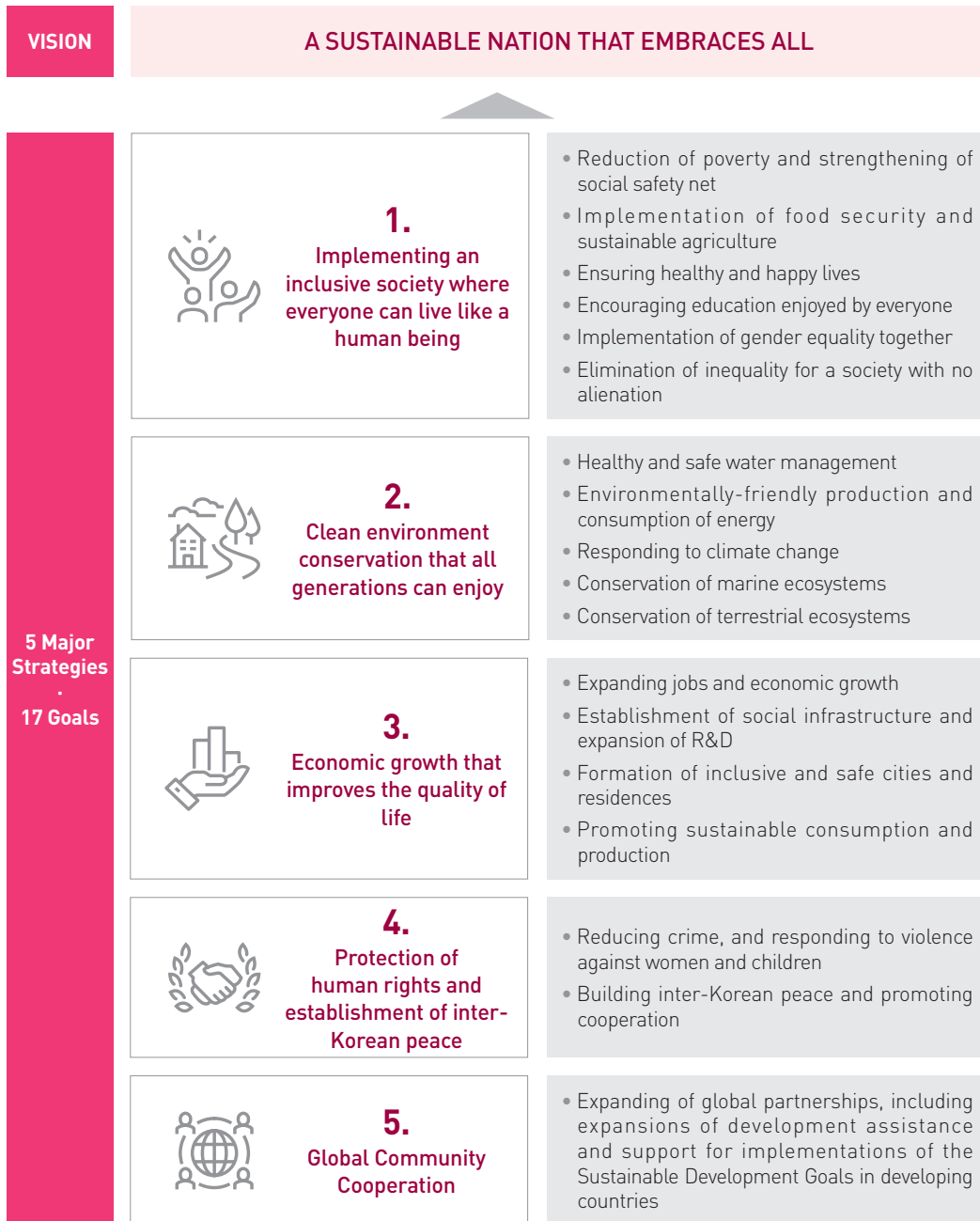
Korea's Policy Efforts for SDGs

The Sustainable Development Goals (SDGs) adopted by the 70th UN General Assembly in September 2015 consist of 17 goals, 169 detailed targets, and 232 indicators that should be achieved by 2030. Under the vision of "No one will be left behind," the aim is to improve the quality of life of all mankind.

In order to implement the international agreements related to sustainable development and promote the sustainable development of the nation, Korea has established the K-SDGs, Korean Sustainable Development Goals, and to promote social development is establishing and updating a basic plan for sustainable development every five years at the pan-governmental level.

The 3rd National Sustainable Development Plan (2018.12), announced recently in Korea, consists of five strategies, 17 goals and 122 detailed targets, covering all areas of state affairs including the economic, social and environmental areas, and peace and global cooperation. Especially, among the 122 detailed targets there are various efforts being made to build a digital social environment including the targets of expanding the digital access of the vulnerable groups to 97.4% by 2030 (from 91% as of 2017), improving the public information disclosure and response rates, acquiring independent international assessments on information disclosure, implementing comprehensive measures to prevent digital sex crimes to enhance the protection of digital human rights, and eliminating cyberbullying.

Vision Schematic Diagram



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Implementation System and Procedures for **ODA** (Official Development Assistance) and the **EDCF** (Economic Development Cooperation Fund)

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Objectives of ODA

The purpose of development assistance is to ensure that developing countries do not need development assistance; that is, development assistance is aimed at helping countries in their development as early as possible so that they no longer need to rely on other countries but can live on their own power. However, the purpose of development assistance should not be limited to economic growth, but rather to bringing about an overall improvement in the quality of life. Therefore, the OECD/DAC and other international development cooperation agencies have set the following multidimensional goals for the elimination of poverty that development ultimately seeks:

- ① **Economic Capabilities:** Ensure incomes to the extent that necessary consumption can be made and capital can be held
- ② **Human Capabilities:** Ensure health care services, nutrition, safe drinking water, education and a hygienic environment
- ③ **Political Capabilities:** Ensure conditions under which individuals can participate in the political and policy processes and influence decision-making amid recognition of their human rights
- ④ **Protective Capabilities:** Ensure conditions in which individuals can protect themselves from food scarcity, disease, disaster, crime, war, conflict, etc.

- 5 Socio-cultural Capabilities: Ensure conditions under which individuals can maintain their dignities as human beings and their social statuses as members of society are recognized

ODA Forms of Support

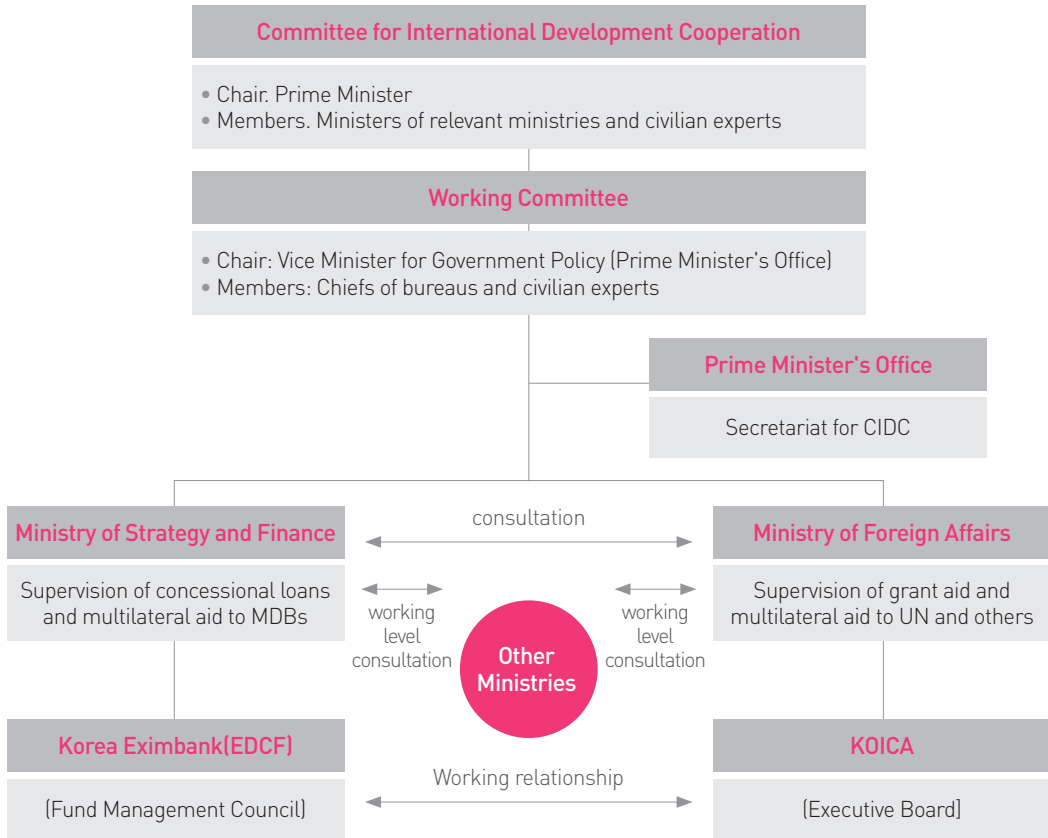
The ODA support is divided into bilateral aid, through which donor countries provide funds, supplies and technical cooperation to the recipient countries directly, and multilateral aid, through which funds are indirectly provided through the International Development Organizations. Bilateral aid can be classified as grant aids and loans, depending on whether or not there is any repayment obligation. Grants include budget support, project aid, technical cooperation, food aid, assistance to NGOs, humanitarian assistance, contributions to public-private partnerships, development awareness promotion, and the costs of aid administration.

Multilateral aid can be subcategorized as contributions (allotments) to the United Nations (UN) and other international organizations, and investments to international development banks such as the ADB.

ODA Support System in Korea

In Korea the Ministry of Foreign Affairs arranges the grant aids for ODA, and the Ministry of Strategy and Finance arranges the loans. Korea also operates the Committee for International Development Cooperation, headed by the prime minister and including as members government ministers, heads of related agencies and civilian personnel, which coordinates and deliberates and decides on major policies.

For grants, under supervision of the Ministry of Foreign Affairs the Korea International Cooperation Agency (KOICA) participates as the implementing agency for some government ministries and public institutions, and the Export-Import Bank of Korea uses the EDCF (Export Economic Cooperation Fund) under supervision of the Ministry of Information and Communication.



※ <http://oda.koica.go.kr/intro/OdaIntroduce5.do>

ODA, EDCF Selection Criteria

Prior to carrying out projects for which it provides either grant aid or aid that will later be repaid, the Korean government considers its medium-term strategy and National Cooperation Strategies (CPSs) for the partner countries concerned. For projects to be supported by grant aid, it consults with the governments of the partner countries to identify the desired projects. If the aid is to be repaid, Korea will support high-priority projects included in the development plans and development strategies of the partner countries. In the case of grant aid, the Ministry of Foreign Affairs organizes the projects, and in the case of cooperative aid that will be repaid the Ministry of Strategy and Finance selects the beneficiaries through KOICA and Korea Export-Import Bank.

What are the systems and procedures for grant aid projects?

In principle, grant aid projects' procedures include: "Consulting on project identification → Acceptance of official project concept paper → Preliminary investigation → Project review → Project approval and execution → Project assessment → Follow-up management." To describe each step in detail, the project identification is discussed with the partner recipient country through diplomatic channels, while KOICA receives a project concept paper (PCP) and letter of intent (LOI) from that country. The Ministry of Foreign Affairs will then send a team of investigators based on an official request of the partner country, conduct preliminary feasibility studies on support, and if the budget is finalized at the National Assembly push ahead with the project. In the case of grant aid, the government will undertake adjustment procedures in consideration of the existence of redundancies in terms of the area and contents of the project or its linkages with other projects, with such adjustments aimed at enhancing the effectiveness of the grant cooperation project.

As the project is completed, the performance, etc. are assessed, not only to measure the social and economic effects of the grant aid cooperation, but also so that the results can be reflected in performance of the next project. In some cases a project will be continuously managed after it has been completed, to ensure continuation of the aid effects.

What are the procedures and roles of the partner countries in order to obtain loans?

Loan projects are carried out in the order of "Development and preparation of project → Application for support → Determination of government support policies → Signing of subsidiary agreement → Project implementations → Conduct of completion and post-evaluation." A partner country wishing to receive support through the South Korean government's loan programs should submit a brief application, feasibility study and execution plan, after regular discussions including through diplomatic missions and summit meetings. The Minister of Strategy and Finance will accept applications and ask the Export-Import Bank of Korea to review them, and based on the results of review the Ministry of Strategy and Finance will decide on the support policy and notify the partner country. Subsequently, the government will conclude a donor agreement specifying the basic matters related to loan support to the partner country, and an enforcement agreement that specifies the uses of the funds and the conditions for support. A loan support contract specifying the specific conditions of support will take effect when it is

signed between the Export-Import Bank of Korea and the government of the partner country. Project implementation requires the government of the partner country to select consultants and sign contracts with them by reviewing in detail their performances in the business sector, the appropriateness of their task performance methods and plans, their workforces performing the tasks, and their financial soundness and technical conditions.

In general, for a loan cooperation project the status of implementation is regularly verified through submission of project progress reports from the partner country, from the initial funding expenditure stage to the completion stage, detailing the project implementation status, the execution plan and performance, the schedule for implementation, etc. After project completion, a completion report should be prepared and submitted to the Export-Import Bank of Korea by the government of the partner country, as stipulated in the contract, and the Export-Import Bank of Korea carries out a completion evaluation based on this. A post-assessment is also performed about two years after the completion assessment, to evaluate achievement of the project's purposes and the effects of the economic and social support. This is designed to identify problems in the project implementation process through evaluation, and to promote resource efficiency in the process of determining, screening and implementing new projects that are similar in the future. Based on the results of these evaluations, feedback plans are established and implementation statuses are checked.

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Global ICT Cooperation Activities in Korea

Sustainable Development Goals and Areas



Social Sustainability

Economic Sustainability

Environmental Sustainability

Overview of Korea's Global ICT Cooperation

South Korea's Ministry of the Interior and Safety and its Ministry of Science and ICT are conducting various projects through National Information Society Agency (NIA) to support resolution of the global divide in the e-Government and IT sectors.

NIA is a statutory body established under Article 10 of the Framework Act on Promotion of Informatization, to support the promotion of informatization and the development of relevant policies of state agencies and municipalities. As a key agency for the government-commissioned national informatization, NIA provides policies and technical expertise and leads global projects in the information and communications sector.

Strategic Objectives and Tasks of NIA

Under its motto of being "The World's Best ICT Agency," National Information Society Agency performs the following tasks:

Supporting policies for the 4th Industrial Revolution

Creating value based on data

Leading the 4th Industrial Revolution through ICT convergence

Supporting and expanding intelligence technology

- Expanding ICT global cooperation and performance
- Smart government integration
- Creating a human-centric digital culture
- Establishing a democratic and efficient internal management system

NIA's Global Businesses

NIA's global businesses include its ICT Cooperation Centers (ITCC), e-Government Cooperation Centers (eGCC), Information Access Centers (IAC), Electronic Government Consulting, Technical Support for International Organizations Cooperation (TA), Electronic Government Training Program (by invitation/local) and World Friends ICT Volunteer Group participation.

● ICT Cooperation Centers (ITCC)

- Since 2003, ITCCs have been established in nine countries: Mexico, Chile, Turkey, Bulgaria, Vietnam, Romania, Colombia, Brazil and Belarus (April 2019 basis)

● Electronic Government Cooperation Centers (eGCC)

- As a platform for promoting e-government tasks with partner countries, it has been the foundation for pushing ahead with desirable e-government projects in the field for three years
- Since 2010 eGCCs have been established in Bulgaria, Vietnam, Uzbekistan, Indonesia, Peru and Kenya
- The centers provide foundations for the partner countries to share and acquire experiences, know-how and skills learned by South Korea throughout its ICT and e-Government development.

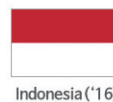
ICT Cooperation Center



e-Government Cooperation Center



- Expert Group Dispatch
- Consulting and Information Exchange
- Development and Implementation of the Joint Projects



● **Information Access Centers (IAC)**

- An IAC is a multifunctional facility that includes an ICT Training Lab, Internet Lounge, seminar room and administrative office, and aims to provide the local community with a wide range of opportunities to vitalize ICT and to foster an information society.
- As of 2018 there were 56 IAC centers established around the world.

Exemplary models (A High Technology Oriented Model)



● **Electronic Government Consulting**

- Based on Korea's e-Government knowledge and experience, it provides customized consulting to partner countries to establish informatization strategies and master plans or design-related systems.
- Since 2001 NIA has provided e-Government consulting services in more than 72 countries.

● **Technical Support (TA)**

- This involves a series of projects focused on national informatization through technical support programs (consultations, workshops, seminars, study tours) in cooperation with international organizations and multilateral development banks.
- Since 2011 NIA has implemented more than 40 technical support consulting projects through international organizations*

*APT, AfDB, IFAD, ASEAN, ITU, KOICA, WB, UNESCO, ADB, IDB, UNPOG

● **e-Government Training Programs (by invitation/local)**

- Shares cases of trial and error and success in Korea and how Korea overcame the related problems, to participants in e-Government capacity building programs

- In cases of invitational trainings government officials are invited to Korea, and in cases of trainings in the partner countries Korean e-Government experts are dispatched to them. In both cases, lectures are given by subject matter experts including government representatives, professors and experts from state agencies in charge of e-Government.

- **World Friends ICT Volunteer Group**

- World Friends Korea ICT Volunteers provide ICT curriculums and ICT-related volunteer activities to partner countries and organizations that can utilize ICT knowledge and technology.
- Over 7,000 people have participated as World Friend Korea ICT Volunteers since 2001. They have provided ICT education to a total of 376,537 officials of government ministries, public institutions and universities in 72 partner countries.

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e-Government Cooperation Center (eGCC)

Sustainable Development Goals and Areas

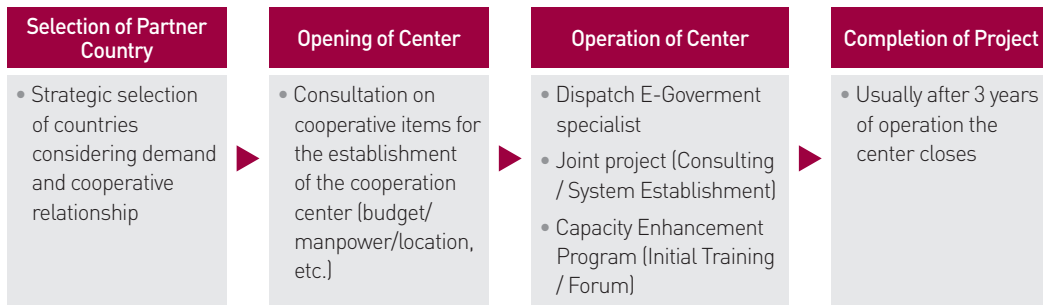


- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Overview of e-Government Cooperation Center (eGCC)

The eGCC (e-Government Cooperation Center) program was begun in 2003 to strengthen the international cooperation of the Korean e-Government. It is a project in which Korea's Ministry of the Interior and Safety (MOIS) and National Information Society Agency (NIA) carry out joint cooperation projects with the e-Government ministries of the partner countries. A cooperation center will basically operate for three years, to carry out consulting in areas in which the partner country needs it. The aim is to achieve mutual benefits through the development of e-Governments in the partner countries and securing opportunities for Korean e-Government overseas advancement in cooperation with domestic companies. The procedures for the opening of e-Government cooperation centers are as follow:

e-Government Cooperation Center Business Process



Key Functions

- **Main platform for promotion and implementation of e-Government joint cooperation projects**
An international platform for practical project promotion and policy derivation, in cooperation with the government departments of the partner countries.
- **Platform for promotion of joint cooperation projects with international organizations**
Increases feasibility of projects through their being done in collaboration with international organizations such as the IDB and CAF
- **International platform for deriving realistic business development directions through understanding of social environments of partner countries**
At the same time as carrying out the project tasks, the eGCC identifies realistic obstacles to improvements in a country, in order to establish a sustainable promotion system by resetting the areas and directions in which Korea can contribute to establishing the e-Government of the respective partner country.
- **Informatization policy consulting and IT technology and human resources contribution**
Contribute to narrowing of national digital divides by implementing of e-Government tasks meeting the needs of the partner countries
- **Creating an environment favorable to winning of international market orders through expansions of domestic companies' export bases in the partner countries**
Securing export opportunities for domestic BPR/ISP consulting firms and SW suppliers, to encourage domestic IT companies to advance into the international market

Performance and Expected Effects

- **Strengthening networks of policy and human cooperation between Korea and the partner countries, through consultations provided via joint projects on the linking of sustainable e-Government projects, invitation trainings, and forums.**
- Since eGCC's opening in 2003, it has been operating in three countries—Indonesia, Peru and Kenya—and provided a total of 67 projects, 76 consulting projects and 100 local workshops or seminars (as of 2019)

- ✓ Establishment of Master Plan for Local Information in Uzbekistan
- ✓ Establishment of Master Plan for Indonesia's e-Government roadmap
- ✓ Establishment of BPR/ISP for Peru's Public Information Sharing System
- ✓ Establishment of e-Government in Kenya

Operation History of eGCC

e-GCC	Project*	Consulting*	Workshop, Seminar, etc.*
Korea-Bulgaria('10)	10	5	12
Korea-Vietnam('11)	26	13	18
Korea-Uzbekistan('13)	14	27	32
Korea-Indonesia('16-'19)	9	13	17
Korea-Peru('17-'19)	4	10	17
Korea-Kenya('17-'19)	4	8	4
Total	67	76	100

*: Number of counts

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e-Government Training Program

Sustainable Development Goals and Areas


 Social Sustainability

 Economic Sustainability

 Environmental Sustainability

Overview of e-Government Training Program

Since 2008 the Ministry of the Interior and Safety (MOIS) and National Information Society Agency (NIA) have promoted a 'Korean e-Government Knowledge-sharing Program' every year. For that purpose, e-Government trainings of two types have been carried out—'local trainings' conducted in the partner countries, and 'invitation trainings' conducted in Korea.

During the sessions, experts share details with training participants on Korea's success story as well as its trials and errors and how it has overcome various problems. In the case of local trainings, participating countries can have opportunities to meet e-Government experts from various other countries taking part. The subjects of such training are selected in line with the subject areas requested by the partner countries, in reflection of their unique situations and problems.

Lectures are conducted by subject-specific experts, including government representatives, professors and officials from state agencies in charge of e-Government, in accordance with the subjects requested.

Types of e-Government Training

The types of training are categorized into (multilateral cooperation) e-Government ICT training, (bilateral cooperation) e-Government ICT training, the ITU CoE program, international organization cooperation training, and e-Government forums and seminars.

Trainings are mostly one-week programs, and consist of e-Government policy reviews, case studies, and expert-initiated lectures.

Contents of e-Government Training Program

Type	Contents
Lecture	<ul style="list-style-type: none"> • National Informatization Promotion Strategy • e-Government Policy and Best Practices • Digital Transformation in Government • Digital Leadership • e-Government Competency Framework and Capacity Building • e-Government Performance Management • e-Government Masterplan • e-Government Enterprise Architecture • Implementation and Management of e-Government • Information Culture Policy • Information Protection Policy • e-Government Legal and Regulatory Frameworks • e-Government Project Management • e-Government System Security (PKI) • e-Government Standard Framework
On-site Training	<ul style="list-style-type: none"> • National Information Resources Service • Public Procurement Service • Seoul Transport Operation & Information Service • Korea Customs Service • Korean Intellectual Property Office • National Archives of Korea • Seoul Emergency Operations Center • Korea Local Information Research & Development Institute • Korea Internet & Security Agency • Corporate Exhibition halls such as SAMSUNG SDS, LG CNS, etc. • Korea e-Government hall • Statics Korea
Others	<ul style="list-style-type: none"> • Meeting with public officials in charge • Business meeting with Korean ICT companies • Group discussion on e-Government with experts • Korean cultural experiences

※ Those interested in inquiring about or applying for training programs are asked to please contact asd@nia.or.kr.

Cooperative Partners

● International Organizations

- ITU: International Telecommunication Union
- WB: World Bank
- ADB: Asian Development Bank
- IDB: Inter-American Development Bank
- AfDB: African Development Bank
- WeGO: World Smart Sustainable Cities Organization
- UNPOG: United Nations Project Office on Governance
- UNDP: United Nations Development Program

● Domestic Agencies

- KOICA: Korea International Cooperation Agency
- SNU ITPP (International IT Policy Program): ITPP is a global scholarship program of Seoul National University (SNU) and platform to academically inspire specialists from around the world in the field of ICT.
- KAIST ITTP (Global Information & Telecommunication Technology Program): ITTP, sponsored by the Ministry of Science and ICT, offers a customized master's and doctoral degree program for government officials, employees of public institutions or senior-level researchers at national research centers working in the IT fields of emerging countries.
- OECD KPC (Korea Policy Centre)

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100 acknowledged worldwide e-Government systems of Korea

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
1	Citizen-Government Relations	The people's Online Petition & Discussion Portal(e-People)	E-People Division of Anti-Corruption & Civil Rights Commission	http://www.epeople.go.kr
2		Public Information Sharing System	Public Information Sharing Division of Ministry of the Interior and Safety	http://www.share.go.kr
3		Public Information Disclosure System	Information Disclosure Policy Division of Ministry of the Interior and Safety	http://www.open.go.kr
4		Online Civil Complaint Center (Eungdapso)	Citizen Service Division of Seoul Metropolitan Government	http://eungdapso.seoul.go.kr
5		Mobile Voting system (mVoting)	Information System Planning Division of Seoul Metropolitan Government	http://mVoting.seoul.go.kr
6		Mobile Civil Complaint Report System	Geospatial Information Division / Information System Planning Bureau of Seoul Metropolitan Government	http://smartreport.seoul.go.kr
7		One-Stop Civil Service Portal (Government 24)	Steering Group for Administration Service Intergration under Ministry of the Interior and Safety	http://www.gov.go.kr

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
8	Public Administration	Government Intergrated Data Center (GIDC)	National Information Resources Service	INTERNAL USE (Intergrated Data Center for Government)
9		Government Enterprise Architecture	Information Resources Policy Division of Ministry of the Interior and Safety	http://www.geap.go.kr
10		e-Government Standard Framework	Information Resources Policy Division of Ministry of the Interior and Safety	http://www.egovframe.go.kr
11		Adiministration Information System for Local Governments (Saeol)	Regional Information Division of Ministry of the Interior and Safety	INTERNAL USE
12		Resident Registration System	Ministry of the Interior and Safety	INTERNAL USE (Fundamental basis for all e-Government Services)
13		Government Public Key Infrastructure System	Information Infrastructure Protection Policy Division of Ministry of the Interior and Safety	http://www.gpki.go.kr
14		Enterprise Portal for Administrative Affairs (Hamoni)	Director for Information & Stastics of Ministry of the Interior and Safety	INTERNAL USE
15		On-nara Knowledge Management System	Collaboration Policy Division of Ministry of the Interior and Safety	INTERNAL USE
16		Electronic Human Resources Management System (e-Saram)	Director for ICT Management of Ministry of Personnel Management	INTERNAL USE
17		National Human Resource Database	Talent Information & Acquisition Bureau of Ministry of Personnel Management	http://www.hrdb.go.kr
18	Digital Mayor's Office	Data & Statistics Division/ Information System Planning Bureau of Seoul Metropolitan Government	INTERNAL USE	
19	Judicial Affairs / Public Order	Korea Information System of Criminal Justice Services [KICS]	Office of Criminal Justice Information System of Ministry of Justice	http://www.kics.go.kr
20		Constitutional e-Court System	Information Technology Division/ Information & Materials Bureau/ Department of Court Administration of Constitutional Court or Korea	http://ecourt.ccourt.go.kr

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
21	Judicial Affairs / Public Order	Automated Immigration Clearance System (SES)	IT Strategy and Management Division of Korea Immigration Service	http://www.ses.go.kr
22		Immigration Information System	IT Strategy and Management Division of Korea Immigration Service	Korea Visa Portal: http://www.visa.go.kr Hi Korea: http://www.hikorea.go.kr Soci-Net : http://www.socinet.go.kr
23		National Law Information System	Legislative Information Division of Ministry of Government Legislation	http://www.law.go.kr
24		Integrated Service for Emergency Hotlines	Crime Prevention Policy Division, Information and Communication Office of National Policy Agency	INTERNAL USE
25		National Forensic Information System (NFIS)	Research Planning and Coordination Division of National Forensic Service	INTERNAL USE
26		Probation Information System	Crime Prevention Informatization Center of Seoul Probation Office, Ministry of Justice	INTERNAL USE
27		Cyber Probation Office	Crime Prevention Informatization Center of Seoul Probation Office, Ministry of Justice	http://www.cpo.go.kr
28		Sex offender Alarm System	Children and Youth Protection from Sexual Crimes Division of Ministry of Gender Equality and Family	http://www.sexoffender.go.kr
29	Land / Transport / Ocean	Architencural Administration System (Sae-um-teo)	Green Architecture Division of Ministry of Land, Infrastructure and Transport	http://www.eais.go.kr
30		Korea Land Information System (KLIS)	National Spatial Data Infrastructure Center of Ministry of Land, Transport and Infrastructure	http://klis.seoul.go.kr/sis/main.do
31		National Real Estate Information System	National Spatial Data Infrastructure Center of Ministry of Land, Transport and Infrastructure	http://www.nsd.go.kr

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
32	Land / Transport / Ocean	Korea National Spatial Data Information Portal	National Spatial Data Infrastructure Center/ Director General for Spatial Information Policy/ Housing and Land Office of Ministry of Land, Transport and Infrastructure	http://www.nsd.go.kr https://map.vworld.kr
33		General Information Center on Maritime Safety and Security (GICOMS)	Maritime Safety Management Division of Ministry of Oceans and Fisheries	http://www.gicom.go.kr
34		Marine Environment Information System (MEIS)	Marine Environment Policy Division of Ministry of Oceans and Fisheries	http://www.meis.go.kr
35		Intelligent Transport System (ITS)	ITS and Road Safety Division of Ministry of Land, Infrastructure and Transport	http://www.its.go.kr
36		Transport Advice on Going Anywhere (TAGO)	New Transport Development Division of Ministry of Land, Infrastructure and Transport (operation commissioned to Korea Transportation Safety Authority)	http://www.tago.go.kr
37		Traffic Monitoring System (TMS)	Korea Institute of Civil Engineering and Building Technology	http://www.roadre.kr
38		Seoul Transport Operation Information Service (Seoul TOPIS)	Traffic Information Division, City Transportation Headquarter of Seoul Metropolitan Government	http://topis.seoul.go.kr
39		Passport Information Comprehensive Administration System (PICAS)	Passport Division of Ministry of Foreign Affairs	INTERNAL USE
40		Driver's License Information System	IT Operation Division of Road Traffic Authority	http://dls.koroad.or.kr
41		Finance / Statistics	Electronic National Tax System (HomeTax)	Information System Development Office, Information System Bureau of National Tax Service
42	Digital Budget and Accounting System (dBrain)		Supervised by Fiscal Information System Division/ Fiscal Innovation Bureau of Ministry of Strategy and Finance Operated by Korea Public Finance Information Service	INTERNAL USE

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
43	Finance / Statistics	Korean Statistical Information Service (KOSIS)	Deputy Director General for Statistical Service Policy of Statistics Korea	http://kosis.kr
44		Nara Statistics System	Survey System Management Division/ Deputy Director General for Statistical Service Policy of Statistics Korea	http://www.narastat.kr
45		National Property Inspection System	Government Property Planning Division of Public Procurement Service	http://npis.g2b.go.kr
46		Korea Property Information System (e-Narajaesan)	Supervised by Government Properties Policy Division/ Treasury Bureau of Ministry of Strategy and Finance Operated by Korea Public Finance Information Service	http://www.k-pis.go.kr
47		Local Governmental Financial Management System (e-Hojo)	Local Finance Cooperation Division of Ministry of the Interior and Safety	INTERNAL USE
48		Local Tax Affairs Information System of Seoul Metropolitan Government	Tax Collection Division/ Finance Bureau of Seoul Metropolitan Government	http://etax.seoul.go.kr
49		Deposit Insurance Payout System	Office of Information Technology of Korea Deposit Insurance Corporation	http://dinf.kidc.or.kr
50		Online Bidding System(Onbid)	Korea Asset Management Corporation	http://www.onbid.co.kr
51		Credit Recovery Information System (Oncredit)	Korea Asset Management Corporation	http://www.oncredit.or.kr
52		All Public Organization Information In-One (ALIO)	Public Institutions Management Information Division of Ministry of Strategy and Finance	http://www.alio.go.kr
53	Health / Welfare	Social Security Information System (SSIS)	Division of Welfare Information Planning of Ministry of Health and Welfare	INTERNAL USE
54		Welfare Information System (Bokjiro)	Division of Welfare Information Planning of Ministry of Health and Welfare	http://www.bokjiro.go.kr

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
55	Health / Welfare	Civil Petition System on Food and Drug	ICT Management and Statistics Office of Ministry of Food and Drug Safety	Imported Food : http://impfood.mfds.go.kr Drug/Cosmetics : http://ezdrug.mfds.go.kr Medical devices : http://emed.mfds.go.kr
56		Food Safety Information System	Integrated Food Information Service Division of Ministry of Food and Drug Safety	http://www.foodsafetykorea.go.kr
57		Electronic Medical Record(EMR) Systems of National Hostpitals	Division of Information Management of Ministry of Health and Welfare	INTERNAL USE
58		Medical Care Information System	Department of Insurance Benefits of National Health Insurance Service	INTERNAL USE
59		Funeral Service Information System (e-Haneul)	Division of Senior Support of Ministry of Health and Welfare	http://www.ehaneul.go.kr http://m.ehaneul.go.kr
60		National Pension Information System	Ministry of Health and Welfare	http://www.nps.or.kr
61	Education / Culture	National Education Information System (NEIS)	Educational Administration Financial Information Division of Korea Education and Research Information Service	http://www.neis.go.kr
62		Educational Information Sharing System(EDUNET · T-CLEAR)	Educational Information Division of Korea Education and Research Information Service	http://www.edunet.net
63		Online Schooling System (Online School)	Global and Future Education Research Division of Korea Educational Development Institute	http://onlineschool.or.kr
64		Government e-Learning Platform (Nara baeumteo)	Smart Learning Division of National Human Resources Development Institute	http://e-learning.nhi.go.kr
65		Digital Administration System on Cultural Heritage	Cultural Heritage Administration	INTERNAL USE

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
66	Education / Culture	Korean Library Information System (KOLIS)	Digital Library Planning Division of National Library of Korea	search : www.nl.go.kr
67		Central Archives Management System (CAMS)	Archival Information Infrastructure Division of National Archives of Korea under Ministry of the Interior and Safety	INTERNAL USE
68	Industry / Procurement / Employment	Electronic Customs Clearance System (UNI-PASS)	Information Planning Division of Korea Customs Service	https://unipass.customs.go.kr
69		Intellectual/Industrial Property Office Automation System(KIPOnet)	Information & Customer Policy Division/ Information & Customer Service Bureau of Korean Intellectual Property Office	http://www.patent.go.kr
70		Korea Intellectual Property Rights Information Service(KIPRIS)	Information Management Division of Korean Intellectual Property Office	http://www.kipris.or.kr
71		Government-for-Business (G4B) System	IT Strategy Planning Division of Ministry of Science and ICT	http://www.g4b.go.kr
72		Employment Information Platform (Work-Net)	Work-Net Team of Korea Employment Information Service	http://www.work.go.kr
73		SME Support Administration System	Policy Analysis Division of Ministry of SMEs and Startups	INTERNAL USE
74		Business Information System for SMEs (Bizinfo)	Policy Analysis Division of Ministry of SMEs and Startups	http://www.bizinfo.go.kr
75		Korea ON-line e-Procurement System (KONEPS)	E-Procurement Planning Division of Public Procurement Service	http://www.g2b.go.kr
76		Government e-Schooling Mall	E-Procurement Management Division of Public Procurement Service	http://shopping.g2b.go.kr
77		RFID-Based Public Goods Management System	Public Goods Management Division, International Procurement & Public Property Bureau of Public Procurement Service	http://rfid.g2b.go.kr

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
78	Industry / Procurement / Employment	Korea e-Catalog Information System	Public Goods Management Division, International Procurement & Public Property Bureau of Public Procurement Service	http://www.g2b.go.kr:8051
79		Procurement Procedure Management System	ICT Contract Division of Public Procurement Service	http://rfp.g2b.go.kr
80		Subcontracting Management System for Procurement	E-Procurement Management Division of Public Procurement Service	http://hado.g2b.go.kr
81	Safety / Environment	Korea 119 Multimedia Report Service	Firefighting Equipment and Aviation Division of National Fire Agency	http://www.119.go.kr or Multi Channel (Call, App, SMS)
82		Disaster Scene Image Transfer and Monitoring System	Firefighting Equipment and Aviation Division of National Fire Agency	Shared vision from Remote Cameras in Central Situation Center
83		Korea Safety Map	National Disaster Management Research Institute under Ministry of the Interior and Safety	http://www.safemap.go.kr
84		Safety Assessment System	National Disaster Management Research Institute under Ministry of the Interior and Safety	INTERNAL USE
85		Earthquake Early Warning System	Earthquake Information Technology Team, Earthquake and Volcano Center of Korea Meteorological Administration	INTERNAL USE
86		Forest Fire Command Control System	ICT Management and Statistics Division and Forest Fire Prevention and Control Division of Korea Forest Service	INTERNAL USE
87		Landslide Alarm System	Erosion Control Division, Forest Protection Bureau of Korea Forest Service	http://sansatai.forest.go.kr
88		Waste Treatment Management System(Allbaro)	Korea Environment Corporation	http://www.allbaro.or.kr

	Field	System (ENG)	Ministry in charge (ENG)	website (Access)
89	Safety / Environment	Forest Resources Management System	ICT Management and Statistics Division and Forest Resources Division of Korea Forest Service	INTERNAL USE
90		National Forest Management Information System	ICT Management and Statistics Division and National Forest Estate Management Division of Korea Forest Service	INTERNAL USE
91		Forest Engineering Management System	ICT Management and Statistics Division, Timber Industry Division and Erosion Control Division of Korea Forest Service	INTERNAL USE
92		Forest Projects Management System	ICT Management and Statistics Division of Korea Forest Service	http://fbiz.forest.go.kr
93		Forest Projects On-Site Support System	ICT Management and Statistics Division of Korea Forest Service	On-site Inspection with Mobile devices (Tablet, Smartphone)
94		Forest Diseases and Pests Management System	ICT Management and Statistics Division and Forest Health Protection Division of Korea Forest Service	INTERNAL USE
95		Roadside Tree Information System	ICT Management and Statistics Division and Urban Forest and Landscape Division of Korea Forest Service	INTERNAL USE
96	Communication / Infrastructure	Information Network Village (Invil)	Regional Informatization Division of Ministry of the Interior and Safety	http://www.invil.org (invil.com, tour.invil.com)
97		Open Data Portal	Public Data Policy Division of Ministry of the Interior and Safety	http://www.data.go.kr
98		Radio Wave Management and Control System	Radio Planning Division of Central Radio Management Service	On-site Inspection with Specialized Vehicle
99		Internet Post Office (e POST)	Korea Post	http://www.epost.go.kr
100		Postal Logistics Information System (PostNet)	Korea Post	Automated Postal Item processing center Delivery Status : www.epost.go.kr or SMS, App

Appendix

Worldwide export map of Korean e-Government system

Sustainable Development Goals and Areas



- Social Sustainability
- Economic Sustainability
- Environmental Sustainability



Korean E-government model in the World

System Construction 67 countries

E-Gov. Envoys 26 countries

MOU 47 countries

Capacity Building Programs in Korea 137 countries (4,545 trainees)



* Source: NIA (Oct 31, 2017)



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