Knowledge Sharing Program

2014 Modularization of Korea's Development Experience:

Localizing E-Government in Korea

2014

MINISTRY OF STRATEGY AND FINANCE

KDI SCHOOL
KDI School of Public Policy and Management

2014 Modularization of Korea's Development Experience:

Localizing E-Government in Korea

2014 Modularization of Korea's Development Experience

Localizing E-Government in Korea

Title	Localizing E-Government in Korea
Supervised by	Ministry of Strategy and Finance(MOSF), Republic of Korea
Prepared by	KDI School of Public Policy and Management
Author	Soonhee Kim, Professor, KDI School of Public Policy and Management Changyong Choi, Professor, KDI School of Public Policy and Management Jee Hee Yoon, Research Associate, KDI Center for International Development
Advisory	Hyun Joon Kim, Professor, Korea University Jeongwon Yoon, Executive Director, Global IT Cooperation Division, National Information Society Agency (NIA)
Research Management	KDI School of Public Policy and Management
Supported by	Ministry of Strategy and Finance (MOSF), Republic of Korea

Government Publications Registration Number 11-1051000-000586-01

ISBN 979-11-5545-134-2 94320

ISBN 979-11-5545-116-8 [SET 19]

Knowledge Sharing Program

Government Publications Registration Number
11-1051000-000586-01

Knowledge Sharing Program

2014 Modularization of Korea's Development Experience

Localizing E-Government in Korea

MINISTRY OF STRATEGY AND FINANCE

KDI SCHOOL
KDI School of Public Policy and Management

Preface

The study of Korea's economic and social transformation offers a unique window of opportunity to better understand the factors that drive development. Within about one generation, Korea transformed itself from an aid-recipient basket-case to a donor country with fast-paced, sustained economic growth. What makes Korea's experience even more remarkable is that the fruits of Korea's rapid growth were relatively widely shared.

In 2004, the Korean Ministry of Strategy and Finance (MOSF) and the Korea Development Institute (KDI) launched the Knowledge Sharing Program (KSP) to assist partner countries in the developing world by sharing Korea's development experience. To provide a rigorous foundation for the knowledge exchange engagements, the KDI School has accumulated case studies through the KSP Modularization Program since 2010. During the first four years, the Modularization Program has amassed 119 case studies, carefully documenting noteworthy innovations in policy and implementation in a wide range of areas including economic policy, admistration·ICT, agricultural policy, health and medicine, industrial development, human resources, land development, and environment.Individually, the case studies convey practical knowhow and insights in an easily accessible format; collectively, they illustrate how Korea was able to kick-start and sustain economic growth for shared prosperity.

Building on the success during the past four years, we are pleased to present an additional installment of 19 new case studies completed through the 2014 Modularization Program. As an economy develops, new challenges arise. Technological innovations create a wealth of new opportunities and risks. Environmental degradation and climate change pose serious threats to the global economy, especially to the citizens of the countries most vulnerable to the impacts of climate change. The new case studies continue the tradition in the Modularization Program by illustrating how different agents in the Korean society including the government, the corporations, and the civil society organizations, worked together to find creative solutions to challenges to shared prosperity. The efforts delineated include overcoming barriers between government agencies; taking advantage of new opportunities opened up through ICT; government investment in infrastructure; creative collaboration between the government and civil society; and painstaking efforts to optimize

management of public programs and their operation. A notable innovation this year is the development of two "teaching cases", optimized for interactive classroom use: Localizing E-Government in Korea and Korea's Volume-based Waste Fee System.

I would like to express my gratitude to all those involved in the project this year. First and foremost, I would like to thank the Ministry of Strategy and Finance for the continued support for the Modularization Program. Heartfelt appreciation is due to the contributing researchers and their institutions for their dedication in research, to the former public officials and senior practitioners for their keen insight and wisdom they so graciously shared as advisors and reviewers, and also to the KSP Executive Committee for their expert oversight over the program. Last but not least, I am thankful to each and every member of the Development Research Team for the sincere efforts to bring the research to successful fruition, and to Professor Taejong Kim for his stewardship.

As always, the views and opinions expressed by the authors in the body of work presented here do not necessarily represent those of the KDI School of Public Policy and Management.

December 2014

Joon-Kyung Kim

President

KDI School of Public Policy and Management

Contents

Localizing E-Government in Korea 8

A Venture toward Government-to-Citizen (G2C) 8

Looking For Collaboration in a Journey of E-Government 11

Five Pillars of Localizing E-Government 20

Discussion Questions 28

Figures and Tables 30

Recommended Readings 42

References 44

Contents | LIST OF FIGURES AND TABLES

Exhibit 1 Changes in Korea's E-Government and E-Participation Index ····30

Exhibit 2 Top 10 Countries in the UN E-Government Development Index (2014) ····30

Exhibit 3 Comparison of Top, Middle, and Bottom 5 countries in E-Government Development Index (2014) ····31

Exhibit 4 Development Stages of Korea's E-Government ····31

Exhibit 5 Major Plans during the Foundation Stage of E-Government (1987~1996) ····32

Exhibit 6 Major Plans and Projects during the Full Promotion Stage of E-government (1996~2002) ····33

Exhibit 7 Visions and Strategies of E-government during its Full Promotion Stage (1996~2002) ····34

Exhibit 8 Strategic Areas and Activities in the 1st E-Government Plan (2001~2002) ····35

Exhibit 9 Structure of Special E-Government Committee during the Full Promotion Stage (1996~2002) ····36

Exhibit 10 Population Changes in District A (1990~2005) ····36

Exhibit 11 Annual Budget of District A (1990~2005) ····37

Exhibit 12 Dynamics of Public Employees in District A (1990~2005) ····37

Exhibit 13 Annual Budget Spent on E-Government during the Full Promotion Stage (1996~2002) ····38

Exhibit 14 Budget Spending on 11 Main Projects on E-Government ····38

Exhibit 15 Top 10 Business Sectors in District A (2002) ····39

Exhibit 16 Number of Personal Computers (PCs) in District A's Office (1995~2005) ····40

Exhibit 17 District A's IT Department Structure ····40

Exhibit 18 Flow Chart of Administrative Information Sharing between Central and Local Government ····41

Exhibit 19 Changes to Administrative Processes after Implementing Administrative Information Sharing System (e.g. issuance of passports) ····41

Localizing E-Government in Korea

A Venture toward Government-to-Citizen (G2C)

Incurring the heaviest losses in its history of international conflicts, the Republic of Korea (hereinafter 'South Korea' or 'Korea) has since recovered from being one of the most war-torn nations to becoming the 12th largest economy in the world. State-led capital allocations, massive urbanizations, and the establishment of diverse industries have laid the foundations from which the country has cultivated global competitiveness in many sectors, ranging from automobiles to consumer electronics. Korea's success in e-government has been receiving a lot of attention from the international community due to its high ranking in the United Nations' E-Government Readiness Index, E-Government Participation Index, and E-Government Development Index in recent years (**Exhibit 1, 2, and 3**). Also, Korea ranked first in the United Nations E-Government Survey for three consecutive years for the government's effort to meet the needs of the service users and disclose public information to the users. Furthermore, in 2011, seven government projects in five government ministries and organizations received the United Nations Public Service Award. However, normally industrial and technological advancements do not always translate into transparency in governance and Korea was no exception of this phenomenon.

The case has been recreated based on a real story of a district in the Seoul Metropolitan City to demonstrate the process of localizing e-government. Furthermore, the case is a sequel of the "2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea (Young B. Lee)." Cases are developed solely as the basis for class discussion, and are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management. The authors would like to acknowledge JaeKwan Jang for his contribution to this case study.

A highly centralized political culture permeated the latter half of Korea's 1900s, confining much of the power of governance to the rigidity of a top-down political structure. Yet in 1988, the National Assembly broke the political tradition of centralized authority by passing the South Korean Self-Governance Act and encouraged local governance, grassroots democracy, and decentralization. It also required municipal legislations to be verified by the central government, straining top-to-down communication channels.[1] In 1991, elections for local legislative council seats and in 1995 elections for city mayors and provincial governors began.[2] The Self-Governance Act divided the South Korean government into three levels; the top includes the city of Seoul, six metropolitan governments, and nine provinces, and they all operate autonomously.[3] The second level of government is cities, districts (or 'gu' in Korean), and counties (or 'goon' in Korean) by population.[4] The third level is administrative units that are under the provision of the second level government.[5] Prior to 1995, mayors and other local officials were appointed by the central government and most of them were formerly bureaucrats or ex-central government officials.[6] Consequently, mayors did not manage their district based on the resident's interest, but their own interest. But after the election, mayors were free to promote citizen-centered local government culture and were allowed to implement local government reforms and innovations in the district.[7]

Amid the central government granting autonomy to local governments, the Korean government was concerned about how to provide better service to the public. In 1978, the government formulated the "Five-Year Plan for Computerization of Government" to fully execute its services to citizens through the Internet.[8] Accordingly, Korea's e-government development can be divided into four segments: initiation stage (1978~1986), foundation stage (1987~1996), full promotion stage (1996~2002), and advanced stage (2003~2012) (**Exhibit 4**).[9] In the initiation stage, the Korean government focused on improving the efficiency of government agencies through computerization, instead of establishing a Government-to-Government (G2G) network among ministries or providing direct online service to the public due to lack of network infrastructure (**Exhibit 5**).[10] Based on the computerization of administrative services in the initiation stage, the government built an administrative network between ministries and agencies that allowed them to freely share information and resources in the foundation stage.[11]

In the full promotion stage, physical infrastructure such as high-speed Internet and desktop computers were distributed to the public and accessibility of the public increased significantly. The G2G network and information sharing was systemized and as information on goods and services of individual government agencies were collected in one place, the online procurement service was established and furthered the realization of Government-

to-Business (G2B).[12] Before the early 2000s, a series of national technology plans such as the National Basic Information System (NBIS), Master Plan for Informatization Promotion (1996), and Cyber Korea 21 were developed by the central government. This significantly contributed to increasing the use of IT in Korean government departments (**Exhibit 6, 7 and 8**).[13] Consequently, the Korean government appointed the Chief Information Officer (CIO) and stimulated the expansion of IT usage across government departments.[14] Soon after, in the last stage of e-government development, the President initiated the Special Committee for E-Government to coordinate an inter-agency collaboration and information sharing (**Exhibit 9**).[15] Also, most of the physical infrastructure to provide online service was completed and many of the citizens own personal computers, laptops, or smart phones, making it feasible for them to readily access the necessary public information at any time from any place (Government-for-Citizens, G4C).[16] In essence, the Korean government's e-government initiative focused on increasing the level of transparency of government procurement practices and the level of citizens' engagement and participation in government service delivery. It also addressed corruption between business leaders and public officials by making the process more transparent, while facilitating citizens' access to government information.

Consequently, localization of e-government in District A began at the verge of the full promotion stage and it was the leadership of District A's Mayor that led to the widespread adoption of e-government and e-democracy in local governments. District A is one of the 25 districts in the Seoul Metropolitan Government where more than 540,000 citizens reside and is best known as the nation's financial and business capital (**Exhibit 10**).[17] The annual budget of District A is around $250 million and it has been growing gradually by 3 to 4 percent per year (**Exhibit 11**).[18] As of 2002, the District A office has a total of 1,387 employees, which includes professionals, seated positions, temporary workers, technicians, specialists, and general administrators (**Exhibit 12**).[19] Under the newly elected mayor's leadership, Mayor Lee Young Kwon, District A implemented 71 e-government applications since 1995 as part of its innovative Smart District – Cyber City Project.[20] When Mayor Lee initiated the e-government system, he came up with four main objectives: (1) citizen or client-centered service in local government; (2) e-government innovations through online services; (3) transparency in the local government; and (4) increase citizen's participation. District A developed a wide range of e-government services from Internet civil applications to various transactional services, such as user fee payment, traffic fine online searches and payment, and several electronic-participation applications.[21] Its citizen-centered implementation of e-government is well known to its residents, and their successful implementation led other districts in Korea to follow their steps.

This case study is focused on the period when Mayor Lee first initiated the e-government system in his district, around the year 2002, which is during the full promotion of e-government in Korea. At that time, Mayor Lee attempted to capitalize upon the nation's technological aptitude by combining public-sector innovations and technology to encourage active Government-to-Citizen (G2C) interactions. Despite the continuing technical and non-technical challenges it faced, implementation of the electronic government system has been met with relative success to serve as a model of emulation for interested international communities. The following section describes Mayor Lee's journey with e-governance and the various stakeholders involved in the implementation process.

Looking For Collaboration in a Journey of E-Government

It was 7:30 a.m. on the first Monday of August 2002, Mayor Lee Young Kwon of District A sat down at his desk and pondered the issues that were brought up in last week's staff meeting. Recent re-election into the municipal leadership has proved to be both challenging and dynamic for the youngest elected official of the district's history. As a victor of three, consecutive mayorships (1995, 1998, and 2002), Lee has become synonymous with forward-thinking visions and bipartisanism. Before becoming a Mayor, Lee had thirty years of experience as a human rights activist and worked at a non-profit that fought against government regulatory practices and political corruption. He also worked at a think tank where he promoted solutions to injustices in society. Mayor Lee was well known as a creative and challenging man in his field. Since the last term, Lee was determined to make his district administration more efficient and transparent; his district has been receiving negative reviews by local businesses, citizens and even its employees on the 'Effectiveness and Satisfaction Survey.' For the past nine years, Mayor Lee tried his best to bring effectiveness and efficiency into his district's administration system, yet it seems his effort was somewhat unproductive.

With the survey result, Mayor Lee pondered and researched with staff on ways to bring effective governance in his district and came to the conclusion that the district should implement an e-government system. In Korea, already 57% of the population had Internet access and almost 80% of government services were being provided online, yet, no other district or cities had tried this new system. Thus, he needed the support of the central and metropolitan government. Consequently, he decided to create a strategy called 'innovative and participatory governance,' through e-government, which would be defined by five main pillars: (1) accessibility; (2) capacity building; (3) participating citizenry; (4) consolidation

and (5) collaboration. While he was seeking advice from various stakeholders, Mayor Lee was appointed as a member to the President's Special Committee for E-Government, which was tasked to facilitate 'governance reform' in the future. The President, specifically nominated Lee because his vision connected with Mayor Lee's vision and he wanted to pilot the District A case study for a nationwide adaptation of e-government. In the last Committee's meeting, the Prime Minister asked Mayor Lee to present the master plan to the Committee in three weeks, and Lee agreed to do so with a heavy heart.

As soon as he received the assignment, Mayor Lee gathered his senior staffs and asked them to collect and analyze recent results on the 'Effectiveness and Satisfaction Survey' and conduct a survey on employees' perception towards his new initiative. A week later, results came back rather negative than positive. Lee, upset and disappointed, called potential stakeholders for an emergency meeting and asked them for advice and cooperation on the matter. With only one week left before the presentation, Mayor Lee carefully thought about what he would discuss with each stakeholders and the hardships he will face in implementing the e-government system. It was 9:00 a.m., and his tense, stressful, and hectic days just begun.

Day 1

9:00 a.m. Meeting 1: Director General Cho, Special Task Force on Administration Reform, Ministry of Government Administration and Home Affairs

The first meeting of the day was with Director General Cho at the Ministry of Government Administration and Home Affairs (MOGAHA), which supervises e-government policies and their implementation. MOGAHA coordinates between various government departments and is responsible for managing ICT infrastructure and providing any support required to undertake e-government projects. The Ministry centrally monitors activities of the government's IT system and operates two government data centers for efficiency and data security.

Despite the autonomous state of the local government, a hierarchical intergovernmental relationship between central and local government still existed, and the local government still needed institutional and legal approvals from upper level governments due to the Self-Governance Act. Thus, Mayor Lee visited Director General Cho to cordially ask whether

the central government could assist in changing the current laws that are uniformly applied to all levels of government. However, Cho informed Mayor Lee that the central government cannot change the law to fit the needs of one local district, and there needs to be a consensus with every district on changing the certain law. Mayor Lee, filled with disappointment, convinced Cho that his district will be only a pilot case and the central government does not need to change the whole system to try out a few cases. But Cho instisted, and as Mayor Lee and his senior staff left Cho's office, Cho shouted after them in a loud and sarcastic voice, "Why is a district government trying to start new programs by spending hundreds of dollars?" Mayor Lee was upset, yet he understood the gesture as a sign to work harder, rather than give up, so he and his staff headed to the next meeting at the National Assembly.

12:00 p.m. Meeting 2: Mr. Kim, Member of Security and Public Administration Committee, National Assembly

The second meeting was with Mr. Kim at the National Assembly. Kim won the seat at the National Assembly for three consecutive terms in District A, and before he became a member of the National Assembly, Kim worked as Mayor of District A. In his third term, due to his extensive experience as an administrator and manager, Kim was assigned to serve as a member of the Security and Public Administration Committee, a subsidiary committee in the National Assembly that oversees and rules on administration issues involving central and local government. Mayor Lee contacted Kim because they were from the same alma mater and Lee was well acquainted with Kim when he was working as a social activist.

When the President initiated the pilot case of District A's e-government system, the Ministry of Planning and Budget allotted $1 million to District A with significant freedom to distribute the budget according to the needs of implementation (refer to **Exhibit 13 and 14** for detailed information on Korea's national e-government budget). Yet, as Mayor Lee read his district's last few years' budget report, he realized that the tax payers' money was not being used in an effective manner for administrative processes and he wanted to suggest that an e-government system can eliminate unnecessary cost and that cost can be transferred to his new initiative. Lee's senior staffs calculated the cost of application development outsourcing and councluded that the district would need another $1 million in order to complete the pilot case study.

Mayor Lee presented the preliminary budget report prepared by his senior staffs to Kim, yet Kim expressed disapproval of Lee's proposal. Though Kim did not completely deny Lee's budgetary proposal, he articulated that District A will not be able to receive

an additional $1 million for the pilot case as there are three national priorities that need immediate attention, which are national defense, social welfare, and education.

First, the Ministry of National Defense recently filed a supplementary budget report to the Ministry of Strategy and Finance for $180 million to prepare for a possible attack from North Korea. For the past few months, North Korea threatened the South with its nuclear weapons test and army, thus the Ministry thought its army and defense strategies should be strengthened for the nation's security. Second, due to the upcoming Presidential Election, the ruling party decided to support the President's national agenda in increasing social welfare support for the aging population. In the last five years, the number of aging population rapidly increased and when the President ran for election, he promised to provide more financial support for that part of the society. The President benefited by advocating this policy, yet as soon as he took office, he realized that the country would be in great debt by increasing the cost for social welfare. Thus, the President put off the plan for a couple of years and the ruling party suggested that this year would be the best time to allocate budget for social welfare and allocated $950 million just for the first year. Lastly, as Korea's successful economic development is highly attributed to its people's desire and devotion to education, the public is constantly asking the government to increase spending in education, and especially in public education. Recently, Korea's public education faced a big challenge due to its quality control, and parents and students requested the Ministry of Education to strengthen and foster capacity of teachers and principals through intensive training and re-education, and the Ministry estimated that it would cost them about $50 million to develop training programs and re-educate them.

Acknowledging such circumstances, Mayor Lee could not push Congressman Kim any further to accept his proposal because he also realized the importance of national security, social welfare, and education. Congressman Kim seemed quite uncomfortable that he had to deny his colleague's proposal, but he also found that spending $2 million for an e-government initiative was too expensive for a pilot case. Though Mayor Lee's senior staffs tried to convince Kim, he didn't budge at all, and Lee and his staff decided to only use what was granted to them. On the way to the next meeting, Lee pondered what he could do with so little budget and time and how he could convince other business stakeholders to take on substantial cost in building the new system.

4:00 p.m. Meeting 3: Director Park, Special Task Force on Government Integrated Data Center, Ministry of Information and Communication

Mayor Lee arrived at the Ministry of Information and Communication (MOIC) where he met Director Park of the Special Task Force on Government Integrated Data Center for his last meeting of the day. When the President pushed for initiatives in e-government, he asked the MOGAHA and MOIC to create a Special Task Force and collaborate on delivering a fast, adequate, and informative electronic system. Thus, the former took charge of governance and administrative reform and the latter put its effort into infrastructure building and investment in IT. Yet, due to differences in priority, the two organizations had a difficult time in collaborating with one another. While MOGAHA argued that governance reform could be accomplished through different means other than technical infrastructure, MOIC wanted to focus on increasing its investment in IT infrastructure for profit, or a "new business model" for Korean economic development.

The Special Task Force was determined to increase the size of the data center by purchasing new servers and storage and invested $5 million into this new initiative. The Ministry also reported that they spent another $5 million in gathering citizens' personal data from various organizations and ministries and strengthened the security of the government data center. However, what Director Park undermined was that once data were collected and integrated, requested data needs to be disclosed to those who need them. The central government collected all the data, yet due to tight security in the data center, only central government officials can access the needed data with security clearance.

Mayor Lee showed uneasiness to the central government's strong ownership of data and asked Director Park if their data center is willing to share, not all, but some of their citizens' and businesses' information, which they need to initiate the e-government system. Director Park spoke uncomfortably that the central government was concerned about disclosing such information due to vulnerabilities to privacy, cyber terror, and digital vulnerabilities in an open data infrastructure. And they were also worried that easy access to government data can cause inaccuracy of data when it is released to the public. Consequently, Director Park argued that data will need to be stored in the central government's data center and will have to be dispatched based on the request from the public upon permission. Although his argument was somewhat convincing, Mayor Lee kept wondering what kind of IT infrastructure his district will need to have in order to transmit data freely between governments and to the public.

Day 2

10:00 a.m. Meeting 4: President Choi, Cloud-Computing Technologies, Inc.

The first meeting of Day 2 was with President Choi of Cloud-Computing Technologies Inc. (CCT Inc.), where Mayor Lee wanted to discuss a possible application development outsourcing and collaboration with local businesses. Established in 1995, CCT Inc. is a global technology enterprise with $13.6 billion revenue specializing in web-based software. CCT Inc. provides customizable solutions for businesses in all industries and sizes ranging from Fortune 500 companies to local businesses. CCT Inc.'s Korea office opened in 2002 but domestic disdain for international businesses stunted growth in this market. CCT Inc. was particularly interested in the Korean market for two reasons. First, almost a fifth of the 52 million people reside in Seoul, making it one of the most densely populated cities in the world. Second, the IT market in Korea has been tightly populated in hardware segmentation, but was reasonably less competitive in its software sector.

Despite the company's outstanding portfolio, Mayor Lee was distressed by several problems that could occur by working with private companies. First, he was deeply concerned with the differences in how the two organizations operate and how employees' in the two organizations will connect once the application development began. Often employees in IT companies are technology-centered; in other words, they well understand how the IT system operates and logistics involved in creating and systemizing the IT structure, yet they lack knowledge in administrative processes and decision making. Mayor Lee worried that his staffs and CCT Inc.'s technicians will have trouble communicating and meeting each other's expectations or outcomes.

Mayor Lee also feared that the contract with CCT Inc. or any other outsourced IT company may not last more than a year due to lack of budget. Perhaps for the initial application development, District A can contract out to the IT company, but if the pilot case is not successful as anticipated, then the company will lose its investment. The President of CCT Inc. also expressed the same concern, but Mayor Lee could not give him any assurance that the contract will last longer than a year. Lastly, Lee was concerned about which organization citizens of District A would contact when there are problems or suggestions in using the new system. If this administrative process is contracted out to CCT Inc. then citizens might not be satisfied with their service and the district could be liable for the problems that may arise. On the other hand, if the district is the contact point for such issues, then staffs may

not be able to fully answer questions related to the IT system and citizens will have to contact CCT Inc. again for a solution.

Throughout the meeting, Mayor Lee brought up such issues that might arise in working with an outsourced company while trying to convince President Lee to work with District A. Although, President Choi said she would keep an open mind, Mayor Lee knew CCT Inc. could make their next move to another district or even to the central government. Without any major progress, Mayor Lee and his senior staffs nervously left for the next meeting to convince the citizens' representative on the importance of implementing e-government and what it can bring to the district.

2:00 p.m. Meeting 5: Mrs. Hwang, Citizen's Representative of District A

The fifth meeting was with the Citizen's Representative of District A, Mrs. Hwang. Each district office elects a citizen's representative every four years and citizens who have resided the longest or made substantial contribution to the district are often elected to serve as a leader of the citizens. There is no qualification in becoming a representative, but one has to receive more than two thirds of the votes in the district and recognize that one's leadership is not to benefit their own community, but for the whole district. Many citizens take pride in becoming a Citizen's Representative because they are allowed to attend the district's financial and management hearings that are held every quarter at the City Hall. Most of the time, the Representative will attend the hearing and take notes on important matters related to the district and deliver them to members from individual communities and members will distribute important notices to citizens. If important issues arise, citizens come together as a community and they either ask for explanation from the Citizen's Representative or they come up with an alternative solution by themselves and deliver it to the Representative. Then the Citizen's Representative will bring those issues or concerns to the hearing for further considerations from the district.

Mrs. Hwang has been a Representative of District A for the past two years and she was a forerunner in bringing democracy into the district. When she heard that Mayor Lee was implementing an e-government system, she researched similar cases in advanced countries and drew up a plan on how citizens could benefit from this new system. The most important fact that Mrs. Hwang found was that an e-government system could increase democratization, accountability, and transparency of governments at the local level. She also found that Mayor Lee's new initiative could create transparency and a citizen-centered culture in the district, and increase citizens' participation in the district's decision making.

In discussion with Mayor Lee, Mrs. Hwang offered several suggestions to Lee on how to establish an e-participation system. Mayor Lee's vision was clear; he wanted to create an "e-democracy" application and improve citizens' participation in District A by developing a communication system between elected officials and citizens. In other words, Mayor Lee viewed the e-participation mechanisms as a tool to enhance communication between citizens and government and supplement the traditional approaches, such as face-to-face meetings, constituent mails and phone calls. Acknowledging this, Mrs. Hwang recommended that for better transparency of District A, it needs to publicly disclose the District's official documents and meetings online, so that citizens can instantly connect with the Mayor and public officials. Currently, only the Citizen's Representative can attend those meetings and obtain official documents and this created a lack of transparency and trust toward District A. In extreme cases, some of the citizens believed that Mrs. Hwang was not properly delivering the meeting results, and requested that meetings be publicly opened. Furthermore, Hwang suggested that a dialogue or web-board be created on the District's website where citizens can write petitions to the District when important issues regarding the District occur. Presently, citizens of District A have to use paper-signed petitions, which is time consuming to many members of an individual community since they have to visit each household for detailed explanations and signatures.

Having heard this, Mayor Lee and his staff felt overwhelmed because they were not sure if allowing citizens' to be involved in the district's decision making process is the right thing to do. In the past, Mayor Lee and his predecessors received warnings from the Seoul Metropolitan Government for not keeping a certain distance from his citizens. Accordingly, further discussions were needed on the boundaries of service that e-participation may address. Moreover, despite the proposed benefits of democratization, the movement for distribution has not been met without conflicts of interests in accountability and evaluative measures. Thus, Mayor Lee has to think about the optimal level that citizens' can participate in local governance through the e-participation system.

4:00 p.m. Meeting 6: Ms. Jung, Representative of District A's Employees and Several Staffs

Upon the last meeting, Mayor Lee and his senior staffs came back to the office to reflect and discuss the last two days of meetings. His staffs seemed discouraged and overwhelmed by all the proposals given in the meetings. Though Mayor Lee felt the same, as a leader of the district he refrained from showing his feelings and called the last meeting with his senior staffs, general managers, and staffs. He also invited Ms. Jung, who is the representative of

all employees in District A. Ms. Jung worked in the District about 20 years and received several government awards from the District and the Prime Minister's Office for her best service. Employees seemed to trust her and with a strong recommendation from senior staffs, Lee designated her as a liaison to the District's employees.

When Mayor Lee was chosen to serve at the Special Committee for E-Government and received the pilot assignment, he asked Ms. Jung to spread the word about his initiative and find out the employees' reactions to his change. Thus, for the past several weeks, Ms. Jung carefully listened to the voice of District A's employees. Knowing this, Ms. Jung prepared several points that needed serious consideration in Mayor Lee's new initiative from the employees' perspective.

With some discontent, Ms. Jung said employees of District A fear that the long-term establishment of e-government systems in technology will destroy jobs more than it will create them. Many employees were concerned that the e-government system will replace their jobs and their service would no longer be needed. And employees were also worried about changes in business processes, including low-risk and low-payoff efforts to automate and rationalize routine tasks to much more complex efforts to reengineer business processes. Mainly, employees were apprehensive about job security and their lack of capacity to work with new technology.

As soon as Ms. Jung finished speaking, one of the senior staff defended Mayor Lee by arguing that the new initiative will not replace current employees, but it will help employees' and District A's administrative effectiveness. Furthermore, in order to operate the new technology, current employees' input is critical as they have all the knowledge about the current business processes, which will be useful in establishing the new District A's management process through e-government system. However, in defense of his employees, the senior staff proposed that IT training programs targeted for managers and division directors be provided to enhance their lack of capacity in information and technology. He also argued that senior staffs and division directors will need IT operation and management training so that they can help managers with a smooth transition and effectively manage and collaborate with outsourced IT companies.

In his argument, one of the managers spoke with discomfort that senior staffs and division managers only see the bigger picture in Mayor Lee's vision. He agreed that improving managerial and IT capacity is important, but at the same time if its e-government system is contracted out to an outside IT vendor, they will need manuals and formal procedures on how to work with them and conduct IT projects. Also, though not often, staffs sometimes

move from division to division, so it is important for managers and divisions to secure their experiences in a form of writing so that other people who conduct similar IT projects can use their knowledge. Managers in IT teams were also concerned about how to effectively collaborate with outsourced IT vendors and internal and external experts who currently work there part-time.

Mayor Lee expressed gratitude to his employees for being honest and bringing up those concerns, and concluded the two long day journey. At the end of the meeting, Mayor Lee asked senior staffs to devise a new plan on how to implement e-government in District A from each stakeholder's point of view and why e-government will work in District A. Mayor Lee was uncertain about the direction of his new initiative and thought it was already too late to find alternative solutions for the district's administration reform. The Mayor wanted to try out a few things that he already had in his mind by focusing on the five main pillars of e-government and improve the system through trial and error. As Mayor Lee returned to his office, he looked out the window and thought he was being reckless for trying what other people would have not done before and worried that he could be lacking in leadership skill.

Five Pillars of Localizing E-Government

While there are numerous important factors in implementing e-government at the local level, the following sub-sections will describe the five main pillars of local e-government in relations to individual meetings in the previous section.

Accessibility. As noted in the first meeting, Mayor Lee had a difficult time negotiating with the government officials at MOGAHA in implementing the e-government system due to differences in the local and central government laws and system. While the Self-Governance Act granted local government with autonomy, it also required local government to acquire approval for the new initiatives from upper-level governments. When Mayor Lee initiated his e-government strategy, his ultimate goal was to provide integrated registrations and payment services online so that the citizens' and businesses' burden of having to go through several administrative procedures before the registration would be reduced. From the earlier Satisfaction Survey, Mayor Lee recognized the urgent need to develop a tax and parking fee payment system and online registration system for real-estate ownership.

Among them, Lee wanted to change the local tax reporting system by creating an advanced information transaction system. There are approximately 300,000 businesses registered in District A, and the current local tax law states that local businesses must submit tax reports via regular mail and/or by visiting local tax offices (see **Exhibit 15** for a list of the top ten

businesses in District A)[22]; however, Mayor Lee found this system to be inefficient and bureaucratic. When businesses file tax reports, they have to hand-write every form required by the National Tax Service (NTS) and gather necessary documents that goes along with the tax report by visiting several different government agencies. Thus, on average, it would take about two to three weeks for businesses to just collect and prepare to send in the documents to the NTS. Then, businesses will register the mail at the post office, pay for the postage, and it would take at least two to three days for the documents to be delivered. And since the NTS does not send receipts to individual businesses on the arrival of documents, businesses have to take more time to call and check whether the documents have arrived. This long and boring process has lasted for decades and many businesses criticized the current system. This resulted in Mayor Lee asking Director General Cho if the central government could assist in changing the current law.

Mayor Lee's vision for accessibility through e-government builds upon the previous interpretation of government accessibility from physical resources (e.g. civil infrastructure) to digital resources. The rationale seeks justification from the recent developments in Korea's e-government and increase in personal computers (see **Exhibit 16** for the number of personal computers distributed to public employees in District A). Successful transition into electronic accessibility, however, requires concurrent adoption and maintenance of new systems that would be significantly different from current operative measures.

One method of sustaining accessibility to e-democracy is the government's adoption of an interoperable IT user interface or 'front end.' Formats include the likes of software, applications, and online portals that are compatible to the diverse operation systems, which power modern electronic devices. The 'front end' must not only be easy to use for all ages, but also free, if it is to garner traction for continued citizen usage. Web accessibility of the elderly and handicapped are also critical as their numbers are rapidly growing and the Internet will eventually become part of their lifestyle.

The second method consists of upholding an IT infrastructure or 'back end' through which a series of database and middleware can power the 'front end.' In advanced forms, the 'back end' constitutes raw data provided by agencies, which provide input; in more simplistic forms, it can take the form of public records and statistics available for analysis.

Both methods for the development of accessibility require significant investments in all phases of adoption: user identification, application development, and integration. Visionaries for e-government must be able to identify clear users of interests who are committed to transformation. Developers must be certified through a rigorous due diligence process if

e-governance is to adopt quality products, services and protect private information when contracting with third-party developers. Long-term strategy on support and certification processes for e-governance accessibility was a priority for Mayor Lee's strategy.

Capacity Building. In the last meeting, Mayor Lee met with Ms. Jung, representative of District A's employees, and District A's employees, who feared that the long-term establishment of e-government systems in technology will destroy jobs more than it will create them. They were also concerned about changes in business process, including low-risk and low-payoff efforts to automate and rationalize routine tasks to much more complex efforts to reengineer business processes. Moreover, employees were worried about their lack of IT capacity and knowledge and afraid of the change.

A successful design, implementation, and management of an e-government system require competent and adequate IT human resources with both technological and managerial IT knowledge and skills. Without IT experts, it is difficult for the organization to resolve the unexpected and uncertain issues that may rise from the technology. E-government also requires IT experts to have managerial knowledge, such as understanding non-IT related functions, project management and leadership skills.

In the case of District A, Mayor Lee sought capacity building as an important factor in sustaining accessibility and maintenance of e-government. To achieve such measure, Mayor Lee wanted to establish a designated IT Committee and division to support the e-government effort. The IT Committee would be composed of the vice mayor and two CIOs who are from different departments. The IT Committee would provide general oversight of operations and their managers with duties to uphold ethical business and provide an advisory role on the course of direction in e-government services as a whole. User and citizen feedback would be key in providing committee members with accurate knowledge required to adjust operations as required.

Mayor Lee also planned to centralize the IT team into an IT department (see **Exhibit 17** for District A's IT department structure). Currently, the IT team is under the Budget Planning and Computerized Statistics department and it is composed of seven IT-related professionals, three generalists, and one temporary employee. Advantage of this decentralized approach is that it gave autonomy to departments over their computer services. However, many of the District's services were outsourced to private IT vendors and took control over applications and technology. Another disadvantage of this system to the District was that because of this autonomy, the District made duplicate investments.

Thus, an IT department is planned for coordination in technical training, acquisition, and maintenance of e-government related activities. Free workshops on technical familiarization for management remain key in gathering the support for organizational transformation. The District will need to compliment this effort by establishing an online procurement system through which the contracting processes for a third party, e-government product developers, will be transparent. Furthermore, Mayor Lee needs to develop a strategic plan to ensure that managers have a clear approach for managing the department.

On an operational level, it is the department's priority to foster technological competence for its workers. The Department needs to establish work routines where employees learn from outsourced IT vendors and share the knowledge with other employees in the department. Also, vice versa, outsourced IT vendors need to learn about the business processes and management system in District A, thus close collaboration and cooperation is a key. Moreover, inclusion of a new performance-based personnel management system is emphasized to reward employees who have established satisfactory records of e-government system training and usage.

Participating Citizenry. Citizen's participation is crucial in e-government as it can bring democracy, transparency, and interactive communications between citizens and government. As seen in Mayor Lee's meeting with Mrs. Hwang, citizens believe that e-government will have substantial impact on their part since they can have easier access to the information that they need and will increase their chance to participate in the district's management and governance. To accommodate the citizen's needs, Mayor Lee also proposed several measures in his e-government strategy.

The commitment of Mayor Lee's plan for a transparent, e-democracy is to generate a growing base of 'active users/citizens.' Incentives for participation will be offered at the District's Academy Hall where information, familiarization, and training workshops will be offered at no cost. Mayor Lee is particularly interested in providing training for the elderly and the disadvantaged, as the recent downturn in the economy has made it especially difficult for this group to engage in public affairs.

Participation is also encouraged through the online and virtual experience as provided in District A's website. More active citizens can interact with each other on the web-board to initiate petitions that are considered for serious legislative review and suggest options through online citizen surveys. Also, for better transparency of the government, Mayor Lee decided to broadcast senior meetings online and upload publications of official documents on the District's website and open them to the public. The latest strategy by Mayor Lee

seeks to bring citizens and public officials even closer by hosting regular Q&A sessions online. A representative program called "We Ask Our Mayor" combines the general online portal with popular social media to create room for direct interactions.

However, Mayor Lee still faces several concerns. One is that the e-participation system must accommodate continuing conflicts arising between district legislatures and the Mayor with regards to powers of governance. Also, the e-participation system must accommodate conflicts between the mayor and the bureaucracies in (1) differing accountability requirements of public officials and bureaucratic administrators; (2) potentially unbalanced distribution of workload unto relevant parties of operations; and (3) variations in evaluative methods and procedures performed. Moreover, the e-participation system should be standardized in District A's implementation and evaluation procedures across participating governments and platforms. How can Mayor Lee overcome the issues with bureaucracies while satisfying the needs of the citizens?

Consolidation. As indicated in meeting 3, Mayor Lee requested Director Park of the Special Task Force on Government Integrated Data Center to consolidate all the central government data and transmit them to his district. Exclusively, Mayor Lee wanted to build a parking and traffic violence fee payment system and vehicle ownership fee payment system. In order to do so, his district will need to have access to citizens' vehicle registration and personal information. However, due to restricted access to the system, Lee faced obstacles in building the e-government structure. Also, the people of District A have constantly complained about the hectic and bureaucratic process in paying for such fees, as they would have to directly visit relevant agencies that issued them the bill or their own district office to pay them in person (see **Exhibit 18 and 19** for detailed description on the effectiveness of data sharing in the government). They asked for an electronic billing and payment system, which would be more efficient, as they do not have to take time out of their busy schedule to pay for a bill that only costs between $50 and $100. However, Mayor Lee's request was rejected due to a data security and data ownership issue.

Mayor Lee's consolidation strategy for e-government outlines an integrated e-government system for all agencies cooperating with District A. He outlined three levels of consolidation, which are management, technology, and data.

Planned efforts for managerial consolidation run concurrently with efforts for capacity building. An overseeing IT division for all e-government users can reduce personnel costs, maintenance costs, and information aggregation costs.

Technological consolidation pertains to the coordination of e-government product development, issuance, and usage across the governing bodies. For product development and issuance, Mayor Lee will consider the options of coordinated contracting vs. independent contracting and outsourced product development vs. joint venture development.

Prospects for data consolidation by District A require the streamlining of public data into a shared database for all e-governing agencies to submit information. The use of the latest technology would allow for instantaneous inter consolidation between units or divisions in the district and intra consolidation between the Seoul Metropolitan Government and District A, central government and District A, and the Seoul Metropolitan Government and central government, and ultimately reduce the communication costs associated with coordination. Under the strict, privacy regulations and data usage management policies, senior management and employees are expected to take advantage of consolidated materials so as to better serve the public interest.

Collaboration. The last pillar of e-government emphasizes the collaborative efforts and feedback of all users to simplify the conflict resolution processes that occur between the central, municipal, and district governments. Thus, Mayor Lee has called for innovation for a communal effort in "foster[ing] division managers and bureau directors [to make] great efforts to promote […] the process of negotiations with national agencies or Seoul."

There are mainly three types of collaborations in e-government – intergovernmental, interagency, and inter-sectoral – which contributes to the effective operation of e-government.[23] Each type of collaboration also has three phases, which are resource allocation or initiation stage, application development, and application integration. At the initiation stage, government creates visions on what kind of traditional administrative services will be replaced by e-government services and which services will be made available online. In this stage, the local government must assess whether existing laws, regulations, and policies are feasible to what they are trying to implement, and what are potential problems and risks that the government may face in future development stages. At the application development stage, local governments began to develop and provide more complex and advanced e-services such as monetary transactions and information sharing. As important personal data are transacted during this stage, the local government is required to strengthen its security measures for possible data vulnerabilities. At the application integration stage, all of the applications developed are connected and provided as one service to all levels of government. Often there are applications previously developed by the different levels of government and often it creates dysfunctions in the information network. Thus, horizontal integration can be implemented to connect various applications across the

different levels of government and vertical integration can bind applications developed by local governments with the ones developed by the upper level governments.

Collaborative strategy could also be applied to District A's case. In terms of intergovernmental collaboration, Mayor Lee and his staffs had to understand different organizational cultures since its district, central government agencies, and the Seoul Metropolitan Government did not have a common vision for e-government development. Also, the interaction with central or upper level government was critical due to the existing hierarchical intergovernmental relationship. Furthermore, a lack of understanding on the cooperation and collaboration by the central government and variations in local government laws have caused conflicts with the central government in implementing the e-government system. In the application development and integration stage, District A negotiated with the central government and other participating agencies regarding privacy protection and security concerns, which were not addressed at the initiation stage, such as accessing the resident registration network or vehicle registration. The central government was concerned about disclosing such private information due to data vulnerabilities, and interagency collaboration was still needed for resolving privacy and security concerns for data and information sharing across different levels of governments. This issue was actually resolved by implementing firewalls and preventing hackers from accessing the information.

Interagency collaboration consists of collaboration with different agencies and departments within District A, outsourced IT vendors, and peer units within the district. In the initiation stage, District A deployed resources to appropriate program departments to provide e-government services and individual departments deployed a system at their own discretion. For instance, the Parking Department at the district relied on an external IT vendor for the provision of online parking services. In the application development stage, the district collaborated with outside IT vendors to develop the appropriate application. For example, to develop a parking application that allows parking ticket receivers to pay parking fees online, the district not only collaborated with the IT vendor, but also with banks and credit card companies to provide online payment services. In the application integration phase, interagency collaboration between peer units within the district was especially important. Thus, Mayor Lee established the Information Systems Plan (ISP) to coordinate and integrate e-application activities within peer departments and created a Special IT Project Committee where the vice mayor and division directors facilitated interagency coordination and collaboration among different divisions of local government.

Lastly, inter-sectoral collaboration in District A mainly focuses on its relationship with an outside IT vendor. During the first phase, the district kept collaborative relationships

with outside IT vendors. Although their relationship was based on a simple contract, District A focused on selecting vendors with a proven reputation in the market. In the application development phase, the district collaborated with outside IT vendors to develop e-applications and built a strategic relationship with them, and continuous communication between the vendor and the district allowed them to share necessary information and build a common understanding of the final product. In the integration phase, the district applied both a horizontal and vertical integration approach. Horizontal integration enabled the same vendors who initially designed applications to continuously work with District A and share information, and vertical integration allowed those vendors to cooperate with other local governments and agencies and share their experience from developing District A's applications.

In this case, the vice-mayor has already convened a Work Consultation Committee through which policy challenges will be addressed by the coordinated efforts of division managers and the District IT Division in bringing about transparent solutions for increased intergovernmental collaboration, interagency coordination, and partnership between the different levels of governments.

Considering Korea's development of local e-governance and the five main pillars, will the system of e-governance be able to maintain the objectives of operational sustainability and efficiency while upholding the visions for a more accessible democracy in the digital era?

Discussion Questions

There are fourteen main questions to think about from the case:

1. Identify stakeholders in the case and analyze each stakeholder's interests, resources, and other power resources.
2. How well have Mayor Lee's visions of e-government fared against the realities of operations?
3. Government contracting opportunities require significant investments in due diligence, financing, and management if they are to succeed in the long-term. How can Mayor Lee balance his vision to reduce the cost with realities of outsourcing?
4. What other strategies must Mayor Lee pursue to create and capture the benefits of e-governments during stages of stagnation?
5. How can Mayor Lee secure budget to realize his plan? What would be his best strategy to negotiate with the National Assembly for an e-government project in his district?
6. What is Mayor Lee's strategy to retain and retrain his employees during the period of transition from a traditional bureaucratic management system to a more innovative e-governance system, without sacrificing their loyalty and performance and job security?
7. If you were chief advisor to Mayor Lee, what is your advice to him in dealing with privacy, data sharing, and legal issues with the Ministry of Information and Communication and other agencies?
8. Mayor Lee is confident that an e-participation system can enhance democracy at the local level, yet citizens of District A are newly acquainted to the e-participation system. How can Mayor Lee address the gap between reality and expectations?
9. What are the advantages and disadvantages of one agency centralizing ownership, management, and sharing of data? And what are the advantages and disadvantages of multi-agencies taking charge of ownership, management, and data sharing?

10. How does Mayor Lee and his staffs deal with diverse demands and interests from the public more effectively and efficiently once an e-participation system is implemented?

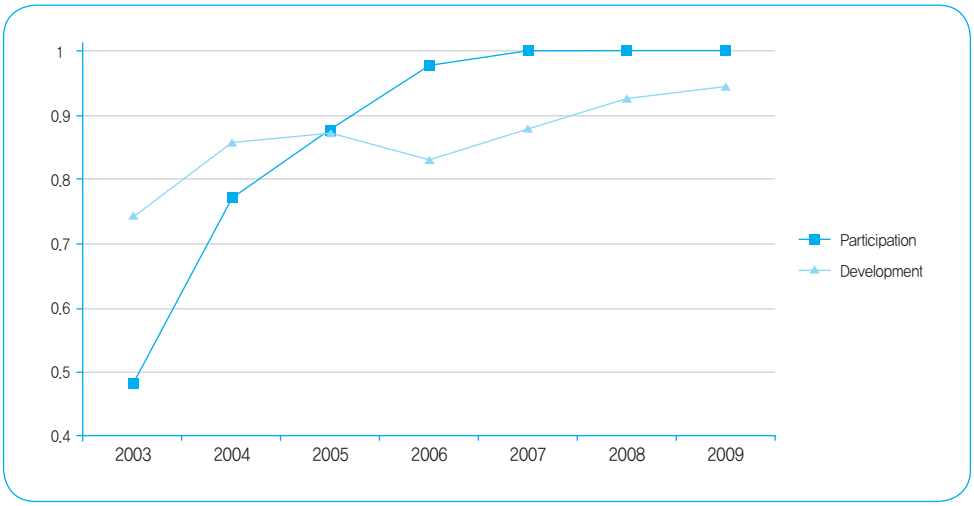
11. If you were head of personnel affairs at District A, how would you advise Mayor Lee to implement an evaluation system, reward and incentive system, and harmonious collaboration with outside IT vendors that have very different organizational goals and missions from the District A?

12. How well does the concept of e-government further democratization?

13. You are Vice Mayor of District A and Mayor Lee asked you to write a proposal on possible options concerning the management of outside IT vendors. You came up with two final options; (1) renewing the contract with the same vendor every year based on their previous years' performance; and (2) a multi-year contract with the same vendor to keep consistency in data management and application development. What are the pros and cons of the above two options?

14. Learning from the Korea and District A's lessons, how can you apply them to your own country's e-government system?

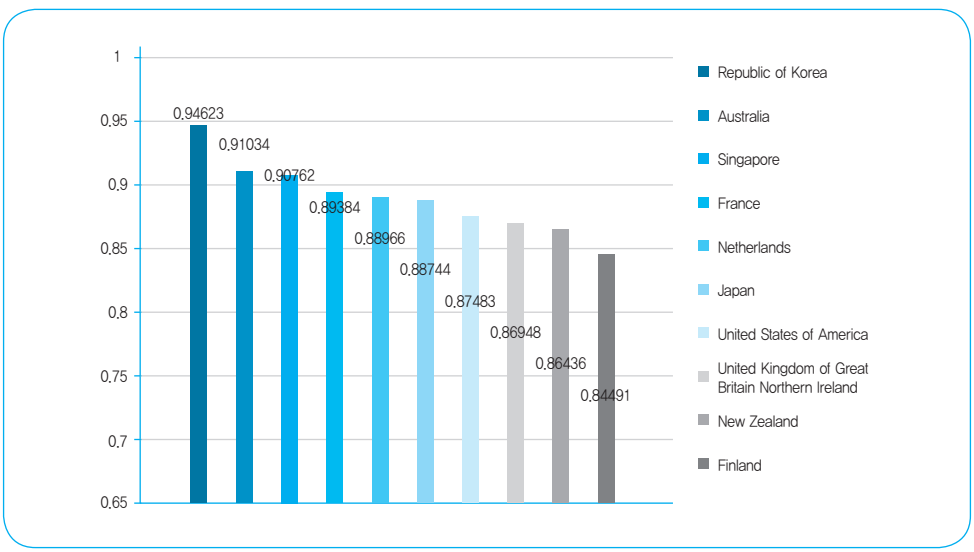
Exhibit 1 | Changes in Korea's E-Government and E-Participation Index



Note: 1.0 is full score.

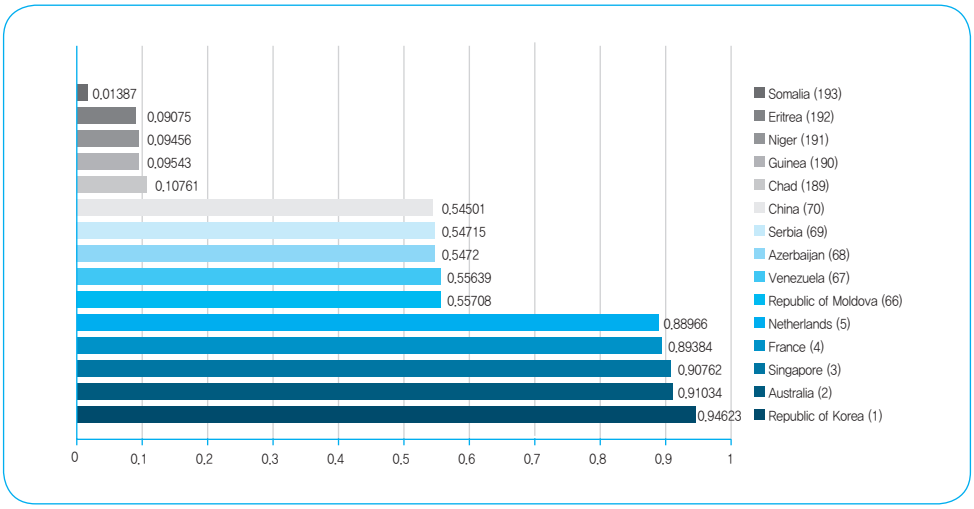
Source: United Nations Public Administration Country Studies Data Center, http://unpan3.un.org/egovkb/en-us/Data-Center, accessed November 12, 2014.

Exhibit 2 | Top 10 Countries in the UN E-Government Development Index (2014)



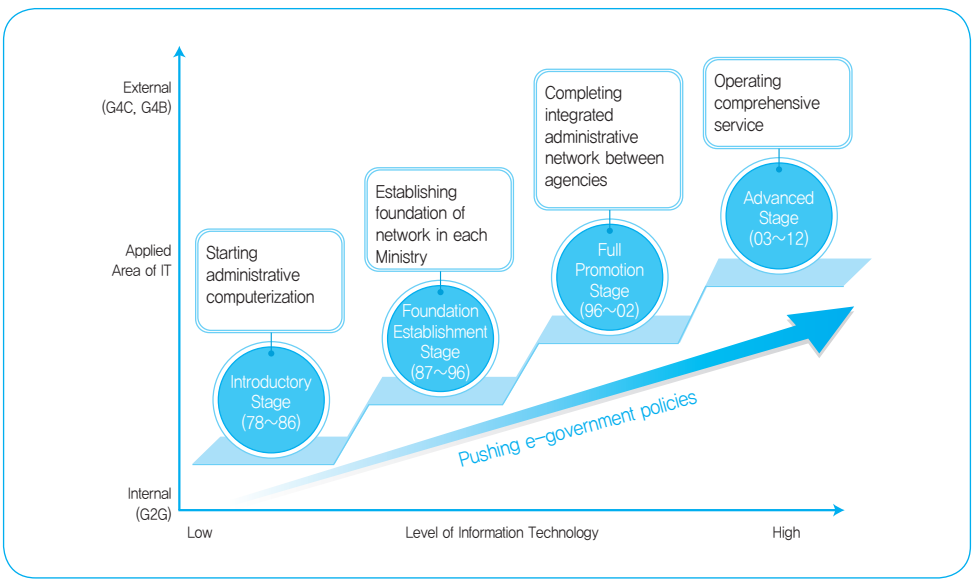
Source: United Nations Public Administration Country Studies Data Center, http://unpan3.un.org/egovkb/en-us/Data-Center, accessed November 12, 2014.

Exhibit 3 | Comparison of Top, Middle, and Bottom 5 countries in E-Government Development Index (2014)



Source: United Nations Public Administration Country Studies Data Center, http://unpan3.un.org/egovkb/en-us/Data-Center, accessed November 12, 2014.

Exhibit 4 | Development Stages of Korea's E-Government



Source: Adapted from Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), pp.26.

Exhibit 5 | Major Plans during the Foundation Stage of E-Government (1987~1996)

	1st National Basic Computing Network Project	2nd National Basic Computing Network Project
Objectives	- To build the information society to the level of a developed country by the early 2000s - To establish the national basic computing network by the middle of the 1990s - To achieve small and efficient government - To secure and maintain national competence through high productivity of enterprise	- Enlargement, supplement, development and stable operation of the national basic computing network
Major Sub-plans	- The Plan to Distribute Multi-functional Office Equipment (PC) (1986) - The 1st Administrative Computing Network Basic Plan (1987) - The 1st Education/Research Computing Network Basic Plan (1988) - The 1st Financial Computing Network Basic Plan (1988) - The 1st National Defense Computing Network Basic Plan (1988) - The 1st Research Computing Network Basic Plan (1988) - Comprehensive Countermeasures for Information Society (1990)	- The 2nd Administrative Computing Network Basic Plan (1992) - The 2nd Education/Research Computing Network Basic Plan (1992) - The 2nd Financial Computing Network Basic Plan (1992) - The 2nd National Defense Computing Network Basic Plan (1992)

Source: Adapted from Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), pp.46.

Exhibit 6 | Major Plans and Projects during the Full Promotion Stage of E-government (1996~2002)

	E-government as a Part of the Informatization Policy (1996~2000)		E-government as a tool of Administrative Reform (2001~2002)
Leading Organization	Ministry of Government Administration and Home Affairs (MOGAHA)	Ministry of Information and Communication (MIC)	E-government Special Committee
Legal Framework	Framework Act on Informatization Promotion (1995)		E-Government Act (2001)
Major Projects	- E-Government Vision and Strategy (1998) - Comprehensive E-Government Action Plan (1999)	- The 1st NIPMP (1996) [a] - The 2nd NIPMP (1999)	The 1st E-Government Plan (2001)

[a] NIPMP: National Informatization Promotion Master Plans

Source: Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), pp.66.

Exhibit 7 | Visions and Strategies of E-government during its Full Promotion Stage (1996~2002)

	1st Stage ('98~'99) : Preparation	2nd Stage ('00~'01) : Establishing Integrated Network	3rd Stage ('01~'02) : E-Government Operation
Administrative Service	- E-government demand survey - Establishment of administrative service system - Pilot service operation (Internet government policy forum open)	- Developing a delivery tools of public services - Opening administrative information to the public for transparency - One-Stop Service	- Digitalizing application and registration - EDI system operation between private and public sectors - Non-Stop Service
Administrative Task	- Analysis on the current state of paperless administration and its feasibility - Dematerialization of documents - Distribution of electronic document - Online connection of overlapped tasks among agencies	- Exchanging electronic documents between central and local governments - Business process reengineering (BPR) - Diffusing pilot cases of e-government	- Establishing the integrated administrative task system - Building up the supporting system for policy decision making
Administrative Information	- Surveying and classifying of co-used information - Connection with existing administrative database - Establishment of Administrative information service center	- Establishment of integrated database - Integrated management of information resource - Digitalization of information	- Building up pan governmental administrative information management system
Information Technology	- Resolving issues of Y2K (2000) - Diagnosing and redesigning the administrative information infrastructure - Intranet establishment in the central government - Standardization of electronic document	- Expansion of the administrative information network - Expansion of intranet at the local level - Using electronic signature	- Establishment of global information network

	1st Stage ('98~'99) : Preparation	2nd Stage ('00~'01) : Establishing Integrated Network	3rd Stage ('01~'02) : E-Government Operation
Organization/ Human Resource	- Increase information service skills of public servants - Structuring the task force and securing human resources - 1 PC per 1 public servant	- Distribution of personal e-mail addresses to public servants	- Distribution of e-card to public servants
Law/Institution	- Institutionalization of information sharing service - Restructuring document management system - Implementation of Chief Information Officer (CIO) - Adjusting information security-related laws	- Implementation of performance evaluation system - Modifying the law and institutions in preparation for One-Stop and Non-Stop service - Enactment of Information Resource Management Law	- Implementation of advanced system from developed countries

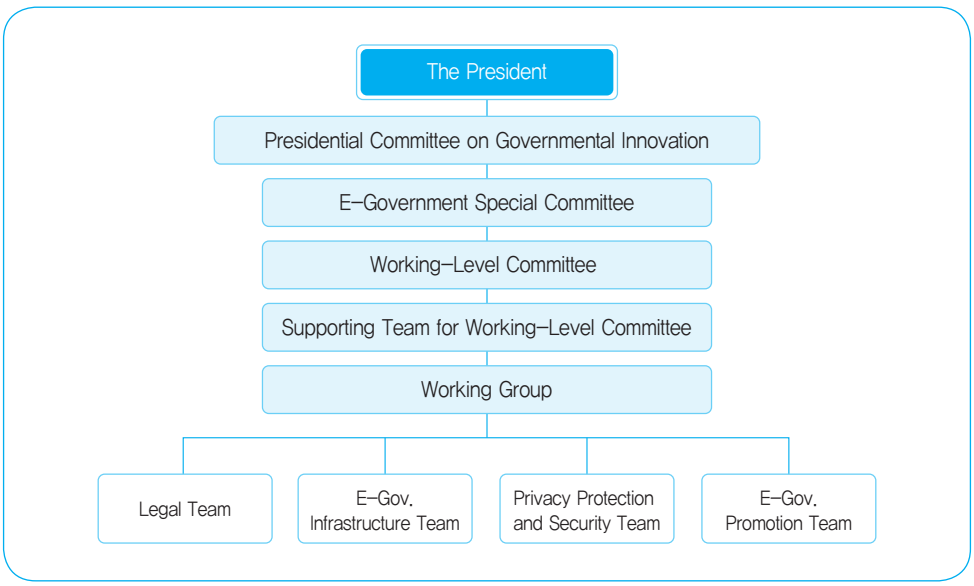
Source: Ministry of Government Administration and Home Affairs, "e-Government Vision and Strategy: the way toward the 21st century e-Government," 2008, pp.39.

Exhibit 8 | Strategic Areas and Activities in the 1st E-Government Plan (2001~2002)

Area	Activity
Service improvement for Citizen and Business	- Establishing a single window portal for civil petitions (G4C) - Connecting the four major social insurance information systems - Building up a comprehensive e-Procurement system (G2B) - Providing an integrated e-tax service (Home Tax Service, HTS)
Growing Administration Productivity (Back Office)	- Establishing a national finance information system - Informatization of administrative services in the local government - Building up a national educational administration information system (National Education Information System, NEIS) - Constructing e-approval and e-document delivery system
Infrastructure Establishment	- Establishing electronic seal and signature system - Setting a pan governmental integrated computing environment

Source: Adapted from Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), pp.73.

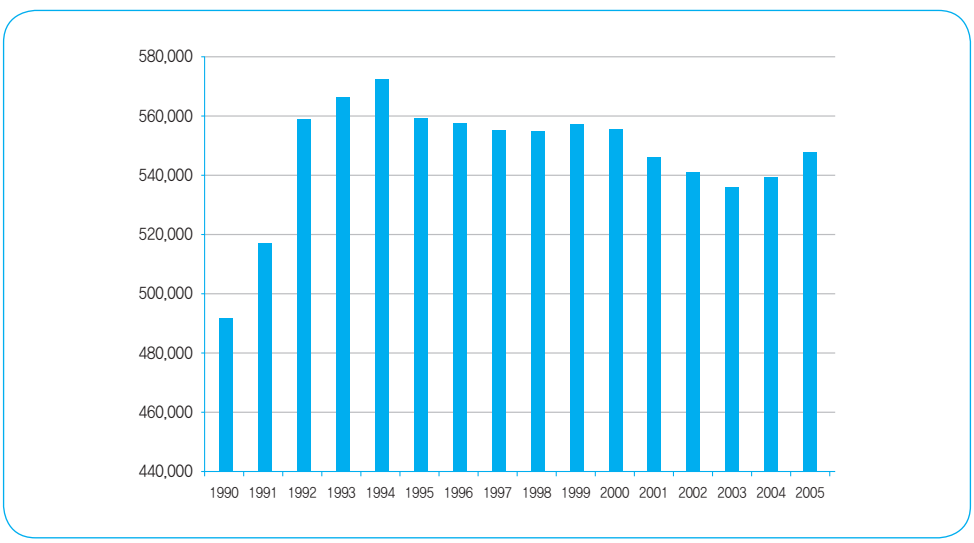
Exhibit 9 | Structure of Special E-Government Committee during the Full Promotion Stage (1996~2002)



Note: see Exhibit 6 and pg 8 for detailed information.

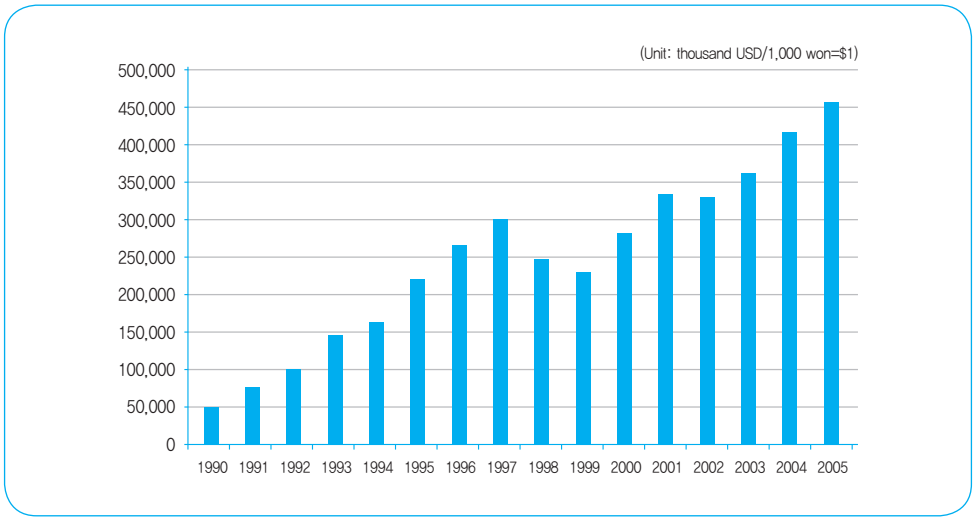
Source: E-Government Special Committee, *2003, White Paper of E-Government* (Seoul: I will), pp.59.

Exhibit 10 | Population Changes in District A (1990~2005)



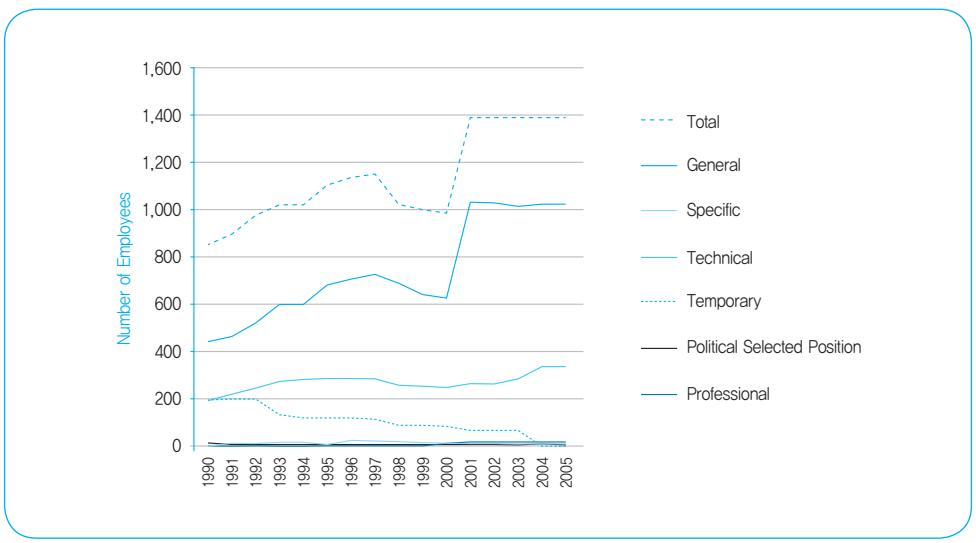
Source: Recreated by the authors.

Exhibit 11 | Annual Budget of District A (1990~2005)



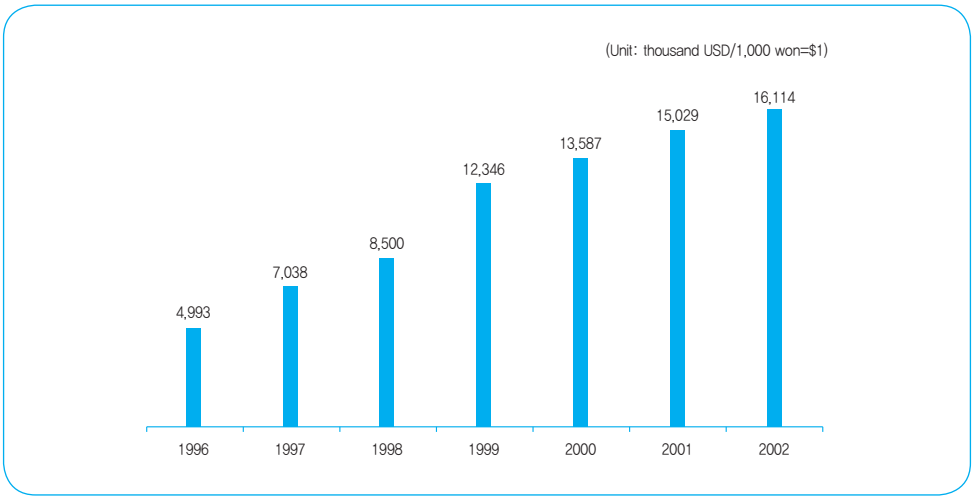
Source: Recreated by the authors.

Exhibit 12 | Dynamics of Public Employees in District A (1990~2005)



Source: Recreated by the authors.

Exhibit 13 | Annual Budget Spent on E-Government during the Full Promotion Stage (1996~2002)



Source: Ministry of Planning and Budget, recreated from its Summary of Budget for Fiscal Years 1996~2002.

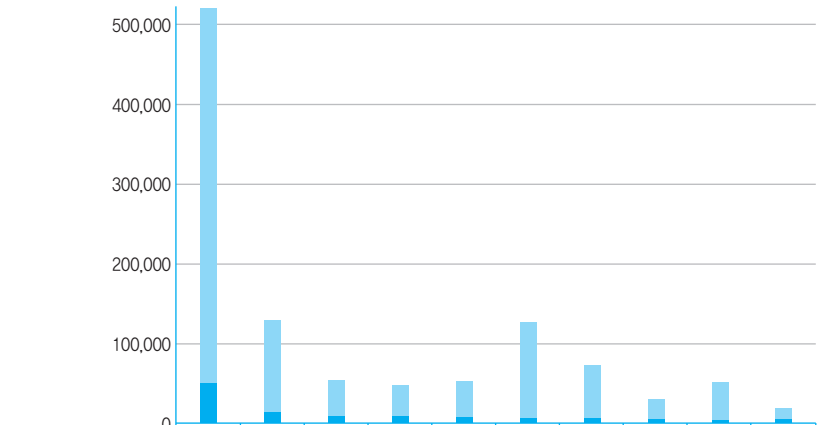
Exhibit 14 | Budget Spending on 11 Main Projects on E-Government

(Unit: thousand USD/1,000 won=$1)

Activity	Total	Before 1999	2000	2001	2002
Civil petitions (G4C)	295.9	-	9.9	158.3	127.7
Informatization of Local Administration	1,916.2	740.4	336.9	332.6	506.2
Linking four Main Social Insurance Information Systems	95.5	-	-	2.7	92.8
Personnel Policy Supporting System (PPSS)	150.0	-	-	10.5	139.5
E-approval and E-document Delivery System	172.8	12.2	49.6	50.0	61.0
E-Procurement System (G2B)	287.1	-	-	12.5	274.6
Home Tax Service (HTS)	192.9	12.7	6.9	41.3	132.0
National Financial Information System	246.5	44.5	-	40.0	162.0
National Education Information System (NEIS)	725.2	11.3	6.8	95.0	612.0
Government Seal and Signature System	570.0	40.0	130.0	135.0	265.0
Setting a pan Governmental Integrated Computing Environment	30.0	-	-	-	30.0
Total	4,682.1	861.1	540.1	878.0	2,402.8

Source: Ministry of Planning and Budget, recreated from its Summary of Budget for Fiscal Years 1996~2002.

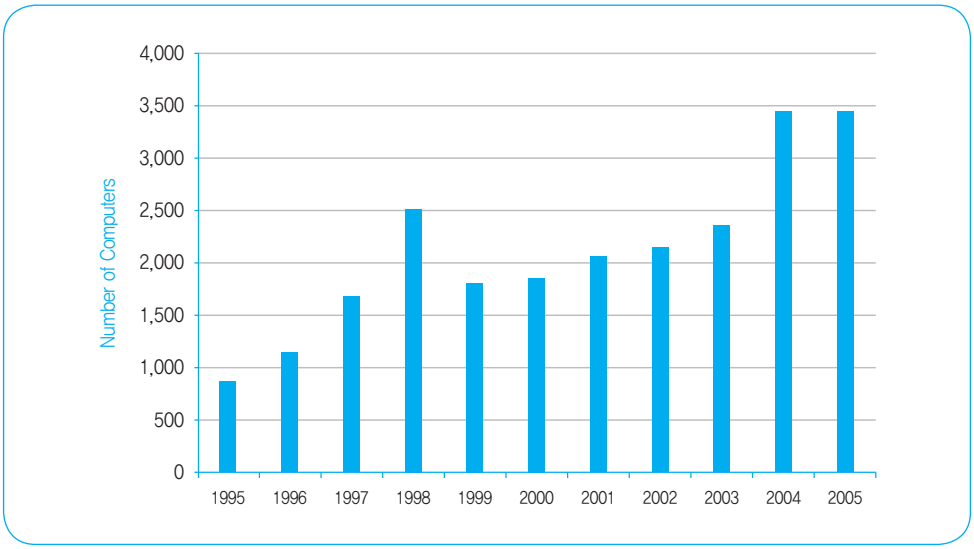
Exhibit 15 | Top 10 Business Sectors in District A (2002)



	Computer related	Wholesale and Retail business	Lodging and Restaurant	Restaurant	Retail business (excluding car Businesses)	Business Service	Wholesale and Product Brockerage	General Restaurants	Science and technology service	Other public, repair, and personal service
Number of Employees in the businesses	517,603	114,557	45,859	39,415	44,339	119,622	66,569	24,850	47,218	14,723
Number of Businesses	50,312	14,074	8,235	7,954	7,637	7,106	6,027	4,550	4,280	3,733

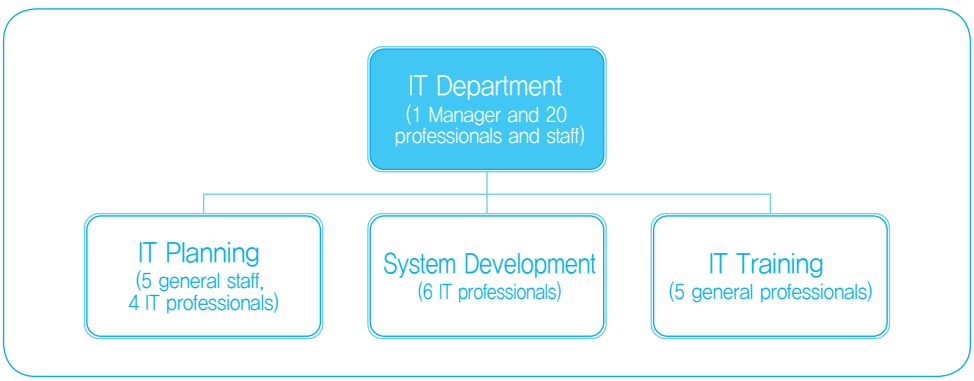
Source: Recreated by the authors.

Exhibit 16 | Number of Personal Computers (PCs) in District A's Office (1995~2005)



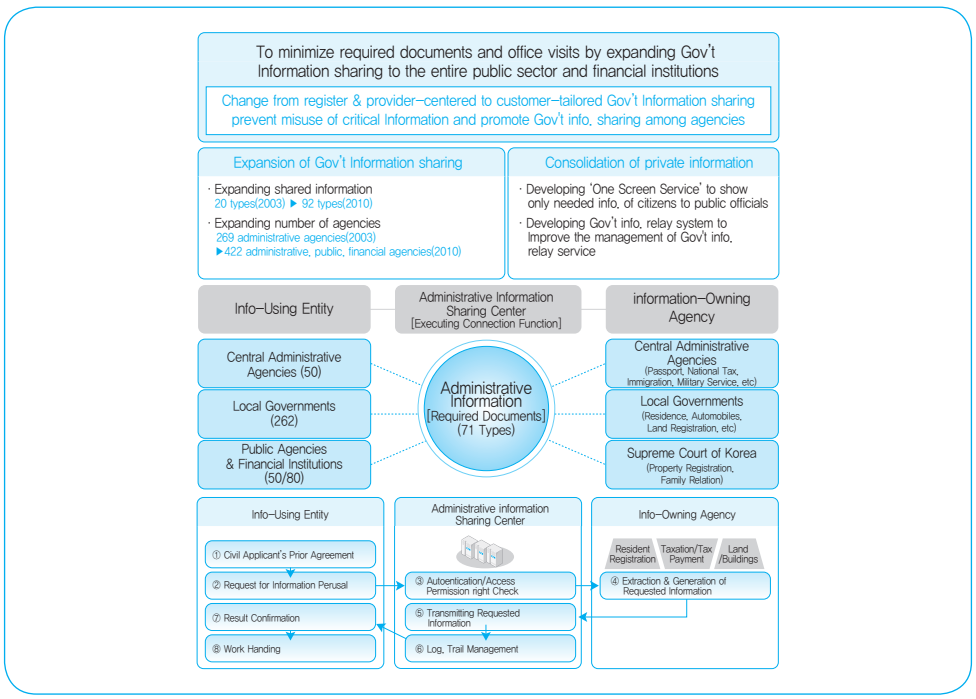
Source: Recreated by the authors.

Exhibit 17 | District A's IT Department Structure



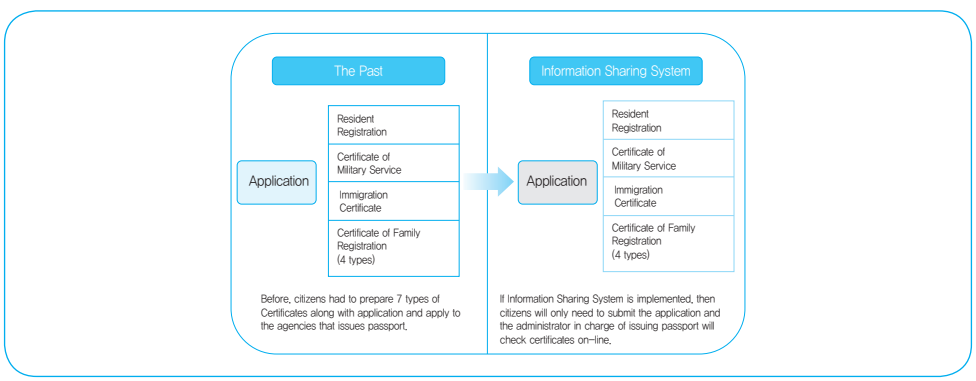
Source: Authors.

Exhibit 18 | Flow Chart of Administrative Information Sharing between Central and Local Government



Source: Adapted from Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), pp.108.

Exhibit 19 | Changes to Administrative Processes after Implementing Administrative Information Sharing System (e.g. issuance of passports)



Source: Adapted from Young B. Lee, 2011 *Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), pp.105 (in Korean version).

[E-government in Developed and Developing Countries]

Banerjee, Probir & Chau, Patrick Y. K. (2004). "An evaluative framework for analyzing e-government convergence capability in developing countries." In *Electronic Government, an International Journal*, v.1[1], pp.29~48, 10-5-2004, Inderscience Publishers.

Basu, Subhajit. (2004). "E-government and developing countries: an overview." In *International Review of Law, Computers and Technology*, 18[1], pp.109~132, Routledge.

Chen, Y.N.; Chen, H.M.; Huang, W.; Ching, R.K.H. (2006). "E-Government Strategies in Developed and Developing Countries. An Implementation Framework and Case Study." In *Journal of Global Information Management*, v.14, p.23~46.

Lee, Sang M.; Tan, Xin.; Trimi, Silvana. (2005). "Current practices of leading e-government countries." In *Communications of the ACM: The digital society*, v.48[10], pp.99~104.

[E-Government in General]

Bertot, J.C.; Jaeger, P. T.; and Grimes, Justin. (2010). "Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies." In *Government Information Quarterly*, 27[3], pp.264~271.

Davison, R.M.; Wagner, C.; and Ma, Louis C.K. (2005). "From government to e-government: a transition model." In *Information Technology & People*, 18[3], pp.280~299.

Evans, D. and Yen David C. (2006). "E-Government: Evolving relationship of citizens and government, domestic, and international development." In *Government Information Quarterly*, 23[2], pp.207~235.

Melitski, J.,; Holzer, M.; Kim, S.T.; Kim, C.G.; and Rho, Seung-Yong. (2005). "Digital Government Worldwide: A e-Government Assessment of Municipal Web Sites." In *International Journal of Electronic Government Research*, 1[1], pp.1~18.

International Telecommunication Union. (2009). "E-Government Implementation Toolkit: A Framework for e-Government Readiness and Action Priorities."

United Nations Department of Economic and Social Affairs. (2014). "United Nations E-Government Survey 2014: E-government for the future we want."

[E-Government in Korea]

Ahn, M.J. and Bretschneider, Stuart. (2011). "Politics of E-Government: E-Government and the Political Control of Bureaucracy." In *Public Administration Review*, 71[3], pp.414~424.

Cho, Y.H. and Choi, Byung-Dae. (2004). "E-Government to Combat Corruption: The Case of Seoul Metropolitan Government." In *International Journal of Public Administration*, 27[10], pp.719~735.

Im, J.H. and Seo, Jin-Wan. (2005). "E-government in South Korea: planning and implementation." In *Electronic Government: An International Journal*, 2[2], pp.188~204.

Lee, Young B. (2012). "2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea."

Kim, H.J.; Lee, J.H.; and Kim, Soonhee. (2008). "Making the Connection between Local Electronic-Government Development Stages and Collaboration Strategy: A Case Study of Gangnam District, Seoul, Korea." *In International Journal of Electronic Government Research*, 4[3], pp.36~56.

Kim, H.J.; Pan, G.; and Pan, Shan Ling. (2007). "Managing IT-enabled transformation in the public sector: A case study on e-government in South Korea." In *Government Information Quarterly*, 24[2], pp.338~352.

Kim, Soonhee. (2008). "Local Electronic Government Leadership and Innovation: South Korean Experience." In *The Asia Pacific Journal of Public Administration*, 30[2], pp.165~192.

Kim, S.C.; Kim, H.J.; and Lee, Heeijn. (2009). "An institutional analysis of an e-government system for anti-corruption: The case of OPEN." In *Government Information Quarterly*, 26[1], pp.42~50.

[E-Government Statistics and Useful Websites]

International Telecommunication Union.
http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

National Information Society Agency of Republic of Korea.
http://eng.nia.or.kr/english/eng_nia.asp

United Nations Public Administration Country Studies.
http://unpan3.un.org/egovkb/en-us/Data-Center

1. Michael O'Donnell and Mark Turner, *Leading the World: Public Sector and Reform and E-Government in Korea*, Economic Labor Relations Review (2013), 24:533, p.542.

2. Soonhee Kim, *Local Electronic Government Leadership and Innovation: South Korea Experience*, The Asia Pacific Journal of Public Administration (2008), 30(2):165, p.171.

3. Ibid.

4. Ibid.

5. Ibid., p.172

6. Ibid.

7. Ibid.

8. Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), p.25.

9. Ibid.

10. Ibid.

11. Ibid.

12. Ibid., p.26.

13. Michael O'Donnell and Mark Turner, *Leading the World: Public Sector and Reform and E-Government in Korea*, Economic Labor Relations Review (2013), 24:533, p.537~538

14. Ibid., p.538.

15. Ibid.

16. Young B. Lee, *2011 Modularization of Korea's Development Experience: The Introduction of e-Government in Korea* (Seoul: Ministry of Strategy and Finance, 2012), p.27.

17. Soonhee Kim, *Local Electronic Government Leadership and Innovation: South Korea Experience*, The Asia Pacific Journal of Public Administration (2008), 30(2):165, p.172.

18. Annual Report from Gangnam District's Website (www.gangnam.go.kr), in Korean, accessed on November 25, 2014.

19. Ibid.

20. Soonhee Kim, *Local Electronic Government Leadership and Innovation: South Korea Experience*, The Asia Pacific Journal of Public Administration (2008), 30(2):165, p.172.

21. Ibid.

22. Annual Report from Gangnam District's Website (www.gangnam.go.kr), in Korean, accessed on November 25, 2014.

23. Hyun Joon Kim, Jooho Lee, and Soonhee Kim, *Making the Connection between Local Electronic Government Development Stages and Collaboration Strategy: A Case Study of Gangnam District in Seoul, Korea* (Jul~Sep, 2008), 4(3): 36. Please refer to this article for more detailed information on the collaboration strategy in e-government.

www.ksp.go.kr

Ministry of Strategy and Finance, Republic of Korea

339-012, Sejong Government Complex, 477, Galmae-ro, Sejong Special Self-Governing City, Korea Tel. 82-44-215-2114 www.mosf.go.kr

KDI School of Public Policy and Management

339-007, 263 (Bangok-dong, Korea Development Institute), Namsejong-ro, Sejong-si, Korea Tel. 82-44-550-1114 www.kdischool.ac.kr

9 791155 451342 94320

ISBN 979-11-5545-134-2

Knowledge Sharing Program
Development Research and Learning Network

- 339-007, 263 (Bangok-dong, Korea Development Institute), Namsejong-ro, Sejong-si, Korea
- Tel. 82-44-550-1117
- www.kdischool.ac.kr