

CATCHING-UP AND LEADING IN E-GOVERNMENT: UNDERSTANDING KOREA'S EXPERIENCE FROM THE COMPLEX PRODUCT SYSTEMS PERSPECTIVE ¹

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—Abstract —

In 2010, Korean e-government's competitiveness finally took the first rank in the world and its leadership has been remained till today. Such Korea's success in e-government is dealt in the study. Before finding out how Korea did catch up with frontiers in e-government, the study tried to confirm that e-government has considerably different characteristics from mass-produced goods, and thus it belongs to complex product and system(CoPS). In the end, the study verifies that e-government is a CoPS and presents three major findings. Firstly, leveraging of policy will and institutions, in particular, presidential leadership and commitment played the most important role than other roles. Secondly, Korean chaebols significantly contributed to internalize complicated knowledge and skills. Lastly, essential prerequisite for successfully implementing e-government is building strong ICT infrastructure.

Key Words: e-government, complex product system, Korea, and catch-up

JEL Classification: L52, L88

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1. INTRODUCTION

In 2001, Korea began building e-government system in earnest. After 10 years since then, Korean e-government's competitiveness was finally ranked first in the world, according to UN's E-Government Readiness Index. Korea has also retained its No.1 world ranking since 2010. It is to say that Korea achieved a success in catching up with leaders (e.g. the U.S.A, the U.K. and Denmark, etc.) and now is in the lead. This phenomenon is worthy of being in international spotlights and being studied as much as Korean successful stories in semiconductor, mobile phone, digital TV, ship building, and steel industries.

Meanwhile, the study on e-government began at the beginning of the 2000s. The first study was on defining meaning of e-government (Kim, 1996; CITU, 2000; UN, 2002; OMB, 2002; OECD, 2003; Gronlund and Horan, 2005) and the study was largely led by international organizations. According to Lee et al. (2010), after almost finishing the research on e-government's definition, Korean researchers has studied on e-government in terms of six perspectives: i) e-government system perspective which focused on how to install and operate e-government system; ii) e-service perspective which studied on how to deliver e-government services to citizens and firms; iii) e-governance perspective which ranged over political, legal and social issues associated with e-government; iv) e-democracy perspective which dealt with politics form's change emerged from implementing e-government; v) e-security perspective which focused on information security and personal information protection issues; and vi) e-government research perspective which reviewed previous e-government literatures and suggested recommendations of future studies. Like this, most of studies have been based on two areas: administrative science and management information system. It is caused by e-government's definition that e-government is a public service for citizens or firms or governments by using ICTs.

In conclusion, we rarely found a research adopting a viewpoint of technological innovation. Furthermore, we cannot find any study to regard e-government as one of complex products and systems (CoPS) and to find out main reasons of successful Korean e-government based on CoPS perspective. According to Hobday(1998), CoPS should be separated from mass-produced commodity goods because its dynamics of innovation is different from that of mass production goods. We anticipate that e-government is one of CoPS because e-government considerably has CoPS's characteristics: i) project-based multi-firm alliances; ii) high degree of buyer involvement in innovation; iii) various actors; iv) high

complexity; v) emerging and unpredictable properties; vi) market institutionalized or politicized, and heavily regulated or controlled, differentiated from mass-produced commodity goods. Therefore, this study attempts to examine whether e-government is a CoPS or not and to investigate how Korea succeeded in catching up with leaders in e-government based on CoPS perspective.

In the next section, we show the main characteristics of CoPS as distinguished from those of mass-produced goods and then identify the most important capabilities required to succeed in CoPS: (i) networking capabilities among various actors; (ii) broad, deep, and integrated knowledge and skills; and (iii) leverage of policy will and institutions. These important capabilities are identified by reviewing the main characteristics of CoPS. Such a work has already been done in my recent paper (Park, forthcoming). Section 3 examines whether e-government is a CoPS or not in terms of main characteristics of CoPS. Section 4 explains development stages and performance of Korean e-government over 25 years. Section 5 describes how Korean e-government did catch up with leaders in terms of the three factors mentioned above. Finally, the findings are summarized and the contributions and limitations of the study are presented.

2. THEORITICAL BACKGROUNDS

2.1. What is CoPS?

The key concept of the idea is that the dynamics of innovation in products which can be so-called CoPS are likely to differ from mass produced commodity goods (Hobday, 1998). Innovation scholars have been able to tell the dynamics of innovation of CoPS from those of mass-produced goods since after emerging the concept. And it makes the contents of innovation studies much richer than before. The scholar who most well described such distinctions of innovation dynamics between CoPS and mass-produced is Hobday(1998). He showed the differences between CoPS and mass production industries based on six categories: product characteristics, production characteristics, innovation processes, competitive strategies and innovation coordination, industrial coordination and evolution, and market characteristics. Differences across the six categories can be summarized as follows.

- CoPS is designed by project-based multi-firm alliances, whereas mass-produced goods are made by a single firm as a mass producer.
- With many CoPS, there is a high degree of user involvement in innovation, whereas mass-produced goods rely mainly on supplier-driven innovation. The buyer-driven innovation of CoPS is due to the intrinsically strong

influence of buyers. This influence stems from the reverse sequence of CoPS production, which begins by obtaining the order from buyers and bilateral oligopolies. Both buyers and suppliers are a select few composed of large companies (Davies and Brady, 1998).

- CoPS sometimes engages more varied actors (such as small and medium sized enterprises and government agencies in addition to regulators, large suppliers, buyers, and multi-firms) in their projects than mass-produced goods.
- CoPS implies a large number of components, a high degree of customization of both system and components, a great quantity of possible design routes, an elaborate system architecture, and a variety of material and component inputs. In contrast, mass-produced goods have relatively few, mostly standardized components. Therefore, the degree of system complexity is higher in CoPS than in mass-produced goods.
- CoPS exhibits emergent and unpredictable properties when compared with mass-produced goods. The extent of feedback between one stage or generation and the next one indicates that small changes in one part of the system can lead to larger changes in other parts.
- The CoPS market is institutionalized or politicized, and heavily regulated or controlled, whereas the market of mass-produced goods is characterized by traded and minimal regulation. These are the characteristics of the CoPS market because most CoPS users belong to the public sector, such as electricity, telecommunication, public transportation, and so on (Choung and Hwang, 2007).

2.2. Major capabilities required for developing and producing in CoPS

In the previous section, we listed six points to summarize the distinctive characteristics of CoPS. Judging by these characteristics, manufacturers of CoPS need special capabilities different from those required for mass-produced goods. Therefore, latecomers wanting to succeed in CoPS will eventually need to acquire these special capabilities. In this section, we first convert six CoPS characteristics into the six capabilities required for developing and producing CoPS, and then collapse these capabilities into three based on their similarities. The process is shown in Table 1.

In this study, these three major required capabilities are very important because Korean e-government's success is analyzed in light of these three terms. The findings of the analysis are presented in Section 5. Before analyzing how to

succeed Korean e-government, we first confirm that e-government system is a CoPS in terms of its six characteristics in next section.

Table 1: Distinctive characteristics of CoPS and the three major required capabilities

Distinctive characteristics	Required capabilities of each characteristics	Major required capabilities
<ul style="list-style-type: none"> • Project-based multi-firm alliances. • High degree of buyer involvement in innovation. • Various actors : government agencies, regulators, and small-and medium-sized enterprises, as well as large suppliers and buyers. 	<ul style="list-style-type: none"> • Ability to integrate the capabilities of many firms harmoniously. • Ability to suppliers to collaborate closely with buyers. • Ability to various actors to collaborate closely and integrate their capacities harmoniously 	Networking their capabilities among various actors.
<ul style="list-style-type: none"> • High complexity : many components and design routes, high customization, and various materials and inputs. • Emerging and unpredictable properties : a small change in one part can lead to a large changes in another part. 	<ul style="list-style-type: none"> • Broad and deep knowledge and skills for understanding the many diverse elements comprising CoPS. • Integrated knowledge and skills for understanding the interaction among the elements of CoPS. 	Broad, deep, and integrated knowledge and skills.
<ul style="list-style-type: none"> • Market is institutionalized or politicized, and heavily regulated or controlled. 	<ul style="list-style-type: none"> • Leverage the capacity of institutions and policies to allocate the benefits to the actors in CoPS 	Leveraging of policy will and institutions.

Source: Park: forthcoming.

3. E-government is a CoPS

Project-based multi-firm alliances

‘E-government’ is defined as a better government which enables better policy outcomes, higher quality services, and greater engagement with citizens through using ICTs such as the internet and the web (OECD, 2004, p23). For this definition, a main agent of e-government becomes a government and thus the government must send an order of relevant projects to e-government to a variety of players such as consulting firms, network firms, applied software developers and service integration (SI) firms. In conclusion, for successful implementation of e-government, project-based multi-firm alliances lead by a government was necessary.

High degree of buyer involvement in innovation

E-government is categorized into three groups: G4C(Government for Citizen),

G2B(Government to Business), and G2G(Government to Government). As the last letter of three groups shows, the subjects served by e-government are different (citizen or firm or government). However, all the first letter of three groups is 'G (Government)'. It means that main agent providing e-government services is a government. In other words, a government is both of buyer and provider. For this reason, a government cannot help highly being involved in innovative activities for e-government implementation. Therefore, a government has to actively cooperate with seller (consulting, network, applied software development and SI firms) and establish legislations and institutions necessary for e-government by itself for being an innovative and excellent provider.

Various actors

In the section 4, we will explain how various actors are involved in Korean e-government plan in detail. Before that, we would like to briefly mention general actors participating in e-government plan in this part. First of all, there exists a principal agent of e-government, a government. Mostly a government forms an e-government implementation structure including a steering committee, an enforcement or exclusive organization, etc. Secondly, diverse firms are in charge of developing e-government systems such as consulting, network, applied software development and SI firms. Thirdly, there are user groups: citizens using public services, firms participating in public procurements, and ministries and public agencies. Fourthly, there are other organizations which cooperate in establishing institution, legislation, budget, and research required for successful implementation of e-government such as court, congress, public-funded research institutions, etc.

High complexity & emerging and unpredictable properties

As lots of technologies intermingle in CoPS, implementing e-government system also demands various technologies: network construction, IT consulting, system integration, software, as well as many kinds of hardware. Furthermore, e-government system is directly affected by development of IT technology. E-government system started for computerizing each ministry's job based on the web and then it upgraded to EA (Enterprise Architecture) which was able to integrate all ministry's jobs. Now, e-government accepts mobile technology and tries to implement mobile e-government services. And such a connection method change brings about another unpredictable change in various areas: network, consulting, system integration, software and hardware.

Market institutionalized or politicized, and heavily regulated or controlled

As we mentioned above, a government is both of a buyer and provider in e-government industry, that is to say a market creator. There are two types of markets emerged in e-government industry. One is formed in the process which the e-government system is physically developed and the market's size is completely relied on governmental political will. Another is created when e-government services are provided with users and the service market is also heavily controlled by regulations. The main reason why e-government markets are so tightly institutionalized and controlled is that e-government service is a public service. In addition, if the public service is the service integrated across all of public agencies, clear regulations based on political coordination and consent are strongly required. Because it is for clarifying a span of responsibility and authorization, information security, etc in process of providing e-government services.

4. Development Stages and Performance of Korean E-governement²

The time when Korea started discussing the e-government in earnest was in the mid of 1990s, at the same time as the US and Japan did. However, the first starting point of Korean e-government dated back to the National Basic Information System Plan established in the 1980s. From the 1980s to the present, Korean e-government development processes are classified into three stages.

The first stage (1987~1998) is a basic infrastructure preparation period for installing e-government system. In 1987, the Chun Doo-hwan(DH) Administration launched the National Basic Information System Plan. The plan had been divided into two periods and run. For the first period (1987~1991), the plan set up the databases and networks in 5 key areas: public administration, defence, national security, finance and education/research. It also installed six public administration systems related to resident registry, real estate, vehicle, customs, employee, and statistics. For the second period(1992~1996), it focused on complementing and improving the first plan, particularly, physically connecting among computer systems under each governmental agency. The Kim Young-sam (YS) Administration which was constituted in 1994, launched the Informatization Promotion Framework Plan and the Super-highway Information Network Plan. Under the first stage, most of resources input into building basic

² The contents of the Section 4 was created based on *E-Government White Paper* (Presidential Special Committee on E-Government, 2003), *2003-2007 E-Government Project White Paper*; (Ministry of Public Administration and Security, 2008), *2012 National Information White Paper*(Ministry of Public Administration and Security, 2012).

infrastructures (e.g. database, networks, computer systems, etc.) and intra-ministry plans were mainly designed.

The second stage (1998~2008) is an implementation period for providing full-scale e-government service with citizens. In 2001, the Kim Dae-joong(DJ) Administration selected the 11 target tasks for driving e-government plan and the tasks had the highest interrelationship among ministries. In 2003, Roh Moo-hyeun(MH) was elected as a new president and he established the E-Government Roadmap Plan including the 31 target tasks. The MH highly increased the number of tasks in order to implement and diffuse e-government in all of ministries. Under the second stage, Korean government gradually penetrated e-government into ministries. At first, the DJ focused on inter-ministry e-government plans and then the MH upgraded e-government plans up to the level of universal-ministry.

The third stage (2008~2012) is an integration period for completing seamless public administration services by harmonizing e-government projects with its relevant other projects. The new administration: the Lee Myung-bak(MB) Administration was launched in 2008 and the MB established the National Informatization Framework Plan in the following year. The plan was very comprehensive in that it contained four other works : infrastructure, promotion of ICT industry, informatization reverse effect, and legal system for as well as e-government works. Under the third stage, even if e-government promotion organization should share its power with other relevant organizations, Korean government still made efforts for advancing e-government services and harmonizing the e-government project with other projects under the same umbrella.

Korean e-government development process, as was reviewed above, is not a easy journey but a step by step journey which was passing through three stages, from sound infrastructure construction and then real action, and to reinforcement. Owing to that, Korean e-government now is on top of world. The UN has announced E-government index since 2002. The following table shows progressive performance in Korean e-government.

Table 2: Korean e-government's progressive performance based on UN's e-government index

Rank of Korean e-government (the number of countries surveyed)										Others	
'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	
15 (190)	13 (191)	5 (191)	5 (191)	-	-	6 (192)	-	1 (192)	-	1 (193)	Netherland 2 UK 3 Denmark 4 U.S.A. 5 Japan 18

Source: Ministry of Public Administration and Security: 2012: 74.

5. How did Korea catch-up and leapfrog leaders in e-government sector

5.1 How to network capabilities among actors

Speedy settlement of conflicts among ministries through a direct presidential report route

Since the DJ Administration, e-government plans had not been placed in intra-ministry level but they had been expanded to inter-ministry and even, universal-ministry level. Therefore, fast settlement capability of conflicts among ministries was very critical for successful e-government's implementation. If so, who was the best person to be able to calm all of discords among ministries? Korean government recognized that the only person who could do that was Korean president. Therefore, Korean government was operating a dual report system which had a direct presidential report route along with a regular report route (see figure 1).

Clear roles, proper empowerment, and close interactions among promotion organizations

As figure1 shows, many organizations were involved in the e-government promotion but they were sorted into three groups whose roles were clearly defined. First group consisted of presidential and special committees, and a working group and its main roles were planning, pre-examination, coordination and evaluation. This group played a role of making decisions on the high level issues of e-government. Second group consisted of the Ministry of Information and Communication (MIC), the Ministry of Planning and Budget(MoPB) and Ministry of Government Administration & Home Affairs(MoGAHA) and they supported the enforcement of e-government plans in their own areas: the MIC supported technology and funds, the MoPB supported budget planning and developing innovative plans and the MoGAHA supported administration executions. Lastly, third group was the National Computing Agency (NCA) which was designated as an exclusive organization on implementing e-government plans. The NCA managed all of events happened in the practice and became hands and foot of the committee and three enforcement ministries for supporting right decisions and actions. According to interview with director Choi³, the committee mostly included non-standing members and had only 5 standing members for working group. However, the NCA had about 150 persons who worked exclusively for e-

³ Director Choi was in charge of managing Working Group at Special Committee on E-Government during the Roh Moo-hyun Administration (2003~2007).

government plans and it could do lots of works. The main reason why the NCA did do that was its having proper empowerment. Due to close interactions among three groups, capabilities of all actors involved in the e-government plan also were up to the maximum level and it resulted in success of Korean e-government. Particularly, close interactions between the committee as a brain and the NCA as hands and foot were very important for successful implementation of e-government. And, we found that the director of the Committee's working group was the president of NCA during the DJ Administration (2001~2002) and the first chief of the Committee on E-Government also was the same person during the MH Administration (2003~2005). For this reason, the relationship between them must be close.

Appointment of a director of working group keeping neutral position and job security for long time

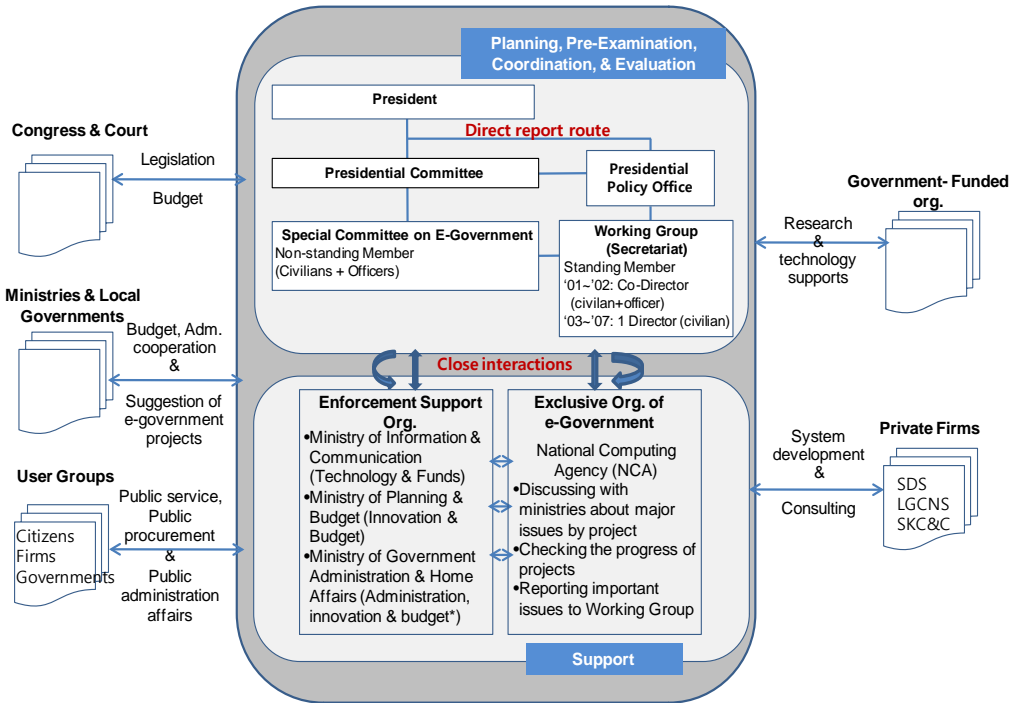
Role of working group in the e-government promotion structure was a bridge connecting between committees and supporting groups (three enforcement ministries and NCA). If the bridge had been weak or lost a balance, close interactions among groups wouldn't have been expected at all. Therefore, who was in charge of working group was very important. The MH Administration decided to appoint a civilian who hadn't belonged to any ministry to the director of working group and give him a long term in office (about 4 years) in order to protect the director's independence from outside interference.

5.2 How to acquire knowledge and skills

Arrangement of strong ICT infrastructure necessary for e-government's implementation over 10 years

The most fundamental component to implement e-government is Information and Communication Technology (ICT) infrastructure because e-government uses ICT as media, according to OECD's definition of e-government. For building strong ICT infrastructure, Korean government ran two big national plans: the National Basic Information System Plan (1987~1996) and the Super-highway Information Network Plan (1995~2000) over 10 years. For the National Basic Information System Plan(NBISP), the main purpose was constructing national networks in five areas: public administration, national defense, national security, finance and education/research. Total investments for building those five networks was 6,898 billion won for 10 years. Also, Korean government spent about 437 billion won for providing highly speedy broadband networks through ShINP from 1995 to 2000(NIPA, 2010). Owing to such efforts, Korea's level of ICT infrastructure

considerably increased by the time Korea kicked into high gear with e-government's implementation. Korea ranked 22nd on the level of ICT infrastructure in 1997, but its rank was on the 14th in 2001 and up to 3rd in 2005.



* Since 2004, backing jobs budget and innovation had been transferred from MoPB to MoGAHA

Figure 1: Networking capabilities among Actors (Focused on stage 2: Implementation period⁴)

Knowledge's internalization of three chaebols' SI subsidiaries first, Korean government's casting all e-government projects for them later: making a virtuous circle between firms and government

Besides ICT infrastructure, important knowledge and skill for implementing e-government are consulting, system integration (SI) and applied software development. The process of acquiring this knowledge shared with birth and growth of three Chaebols' SI subsidiaries: Samsung SDS, LG CNS and SKC&C. In the late 1980s and early 1990s, three major Chaebols, Samsung, LG, and SK realized a necessity for integrating all computer centers scattered across their

⁴ In the study, since authors regard the stage 2 as an active period of implementing e-government plans, networking capabilities were mainly investigated on the stage 2.

affiliated firms. Thus, Samsung first founded Samsung SDS in 1985 and then LG did LG CNS in 1987 and lastly, SK founded SK C&C in 1991. They casted all their IT consulting projects emerged from each conglomerate's affiliated firms for their new subsidiary. Under the complete support from the Group, three subsidiaries had gradually compiled their own references through performing internal contracts. They didn't have to worry about amounts of order but, they just focused on improving their knowledge and skills. In order to advance their abilities, they took two actions: i) alliances with advanced foreign firms ii) scout of human resources from global IT firms.

According to interviewees' statements⁵, LG founded STM (System Technology Management) as a joint venture with EDS(Electronic Data Systems), from the beginning. Owing to the alliance, LG CNS learned lots of knowledge: task related knowledge, quality control system, human resource system, and so on, from EDS until before they broke up in 2001. Besides EDS, LG CNS was in diverse types of alliances with SAP, Oracle, Siebel and CISCO. Samsung SDS also made various strategic alliances with global IT firms such as IBM, Microsoft, Computer Associates, HP, SGI, Capgemini, PRTM⁶ and so on since the late of 1980s. For scouting of manpower from global IT firms, all of three firms actively utilized the approach because consulting, SI and s/w development are services done by people. Scouting excellent manpower from global IT firms equals acquiring everything of global firms embeded to them.

Thanks to knowledge and skill internalization efforts of three firms, they were somewhat qualified as suppliers of Korean e-government implementation in terms of size of sales and employees. According to a interviewee's statement⁷, Korean government took consultancy from global IT firms at the preparation stage of e-government but it changed its suppliers or consulting sources into Korean firms when e-government plan started in earnest. Korean government casted all projects related e-government for three cheabols' subsidiaries. The main beneficiary was Samsung SDS and the next was LG CNS and third was SK C&C. Such a government reliability on three firms made them give many chances to improve

⁵ We interviewed with two consultants who worked at Samsung SDS for 2003~2006 and LG CNS for over 10 years, respectively.

⁶ PRTM is PwC's subsidiary.

⁷ Based on statements of an interview who participated in e-government projects while he was working at Samsung SDS(2003~2006).

their ability. The more improved their ability the better services were provided with Korean government. It made a virtuous circle between firms and government.

5.3 How to leverage policy will and institutions

Presidential leadership and Commitment

Although six Korean presidents came and went from the first stage to the third stage of Korean e-government development, they agreed on the importance of e-government. Therefore, they brought a committee on e-government under a prime minister or president and it enabled them to show strong leadership and make a commitment on driving the e-government project. Also, e-government plan was changed from a prime minister's agenda to a presidential agenda since the DJ Administration which began e-government plan in earnest. It meant that Korean presidents expressed their strong policy will which they would succeed in establishing an e-government system in Korea.

Security of the E-Government Budget

Basically, securing e-government budget is difficult because it takes long time to recover the investment on e-government plan and because the evaluation on its success or failure based on each ministry is difficult due to its implementation across linked ministries(Song, 2006, p51). In spite of such a difficulty, Korean government successfully secured the e-government budget owing to two strategies : 1) showing president's strong supports and 2) evolving the budget allocation methods.

As we mentioned above, the e-government plan was a presidential agenda since the DJ Administration. Appealing Korean president's strong will on the e-government plan made security of its budget easier than any other general government plans. Even after stabilizing e-government system(since 2008), its budget steadily were secured. Total funds spent for e-government plan from 2001 to 2012 reached 18,601 billion won.

Korean government evolved budget allocation methods according to the development stage of e-government(Song, 2010). At the very early stage of the e-government(1987~1992), for quick investments, the government used the method of 'Invest first, Settle later'. The method was that first set up and implemented the project plan and budget, and then the budget ministry approved and settled them later. However, it was criticized because of difficulty of budget controls. Since then till before the large expansion of e-government plan(1993~2003), Korean government changed its approach into using the 'Informatization Promotion Fund' which had already been created in order to invest in the research and development

of IT industry and promote its applications to society. Lastely, at the stage of e-government's diffusion across ministries and agencies(2004~now), the government chose the approach of 'E-government Budget' which was separated from the 'Informatization Promotion Fund'. Thus, it was able to be spent into only the e-government plan.

Arrangement of Support Policy and Legislation for E-Government

Since the middle of 1980's, Korean government actively arranged support policies and legal frameworks which were differently required according to each development stage of Korean e-government. At first, Korean government concentrated on the policies and legislations for building basic networks and computer, and increasing citizen's awerness of informatization. While e-government plan took a concrete shape, policies and legislations also became more focused on e-government. And then after stabilizing e-government system, Korean government added policies and legislations reflecting technology trend, such as smart technologies.

6. CONCLUSION

The study began with the question on whether e-government is a CoPS or not. Because we can explain Korean e-government's success by using a new approach, CoPS perspective which previous literatures have never adopted, if e-government is a CoPS. And another purpose of this study is confirming that for success, e-government also needs three factors: (i) networking capabilities among various actors; (ii) acquiring complicated knowledge and skills; and (iii) leveraging of institutions and policies, which was successfully established in Korean telecommunication system (Park, 2013).

The study verifies that e-government is a CoPS through checking e-government's traits, one by one, in terms of CoPS's main six characteristics. It also presents three major findings. Firstly, since e-government must be implemented across all ministries and agencies, leveraging of policy will and institutions, in particular, presidential leadership and commitment played the most important role than other roles. In other words, the higher president's interest in e-government, the easier all the problems, securing budget, arranging support policy and legal system, settlement conflicts among ministries, are solved. Secondly, Korean chaebols' roles were also very important. Three chaebols' SI subsidiaries, Samsung SDS, LG CNS, and SK C&C, internalized complicated knowledge and skills through performing internal contracts and taking two strategies: i) alliances with advanced foreign firms; ii) scout of human resources from global IT firms. Thirdly, Korean

government casted all projects to three chaebols' SI subsidiaries, when it judged that three firms internalized knowledge by themselves. Such this government's support enabled three firms to greatly improve their capabilities. Lastly, essential prerequisite for implementing e-government is building strong ICT infrastructure. Korea also spent over 10 years into only establishing ICT infrastructure, even if Korea's territory is relatively small and its population's condense is high. In order to remain the investment in ICT infrastructure for long time, the president's strong will of e-government should never be changed even if a new president is elected. It says that the study has three contributions: i) it attempts to examine how did Korean e-government succeed in catching up with frontiers by using a new approach, CoPS perspective; ii) it is the first trial to verify if e-government is a CoPS; iii) it confirms that three factors required for successful CoPS's development or implementation also played important roles in e-government sector.

Meanwhile, this study has limitation of the difficulty of generalization which is considered an inherent problem because this study is a case study of only one country, Korea, as well as only one CoPS e-government. If further studies can compile numerous comparison studies targeting many countries in the same sector we can establish a common pattern or different patterns, and get closer to solving the generalization problem.

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