

e-Government of Intelligent Information Society*

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Abstract. e-Government shows the evolutionary mechanism of coevolution in information technology and society. The key means to achieve this are intelligent information technologies that include AI, IoT, big data, and cloud computing. In other words, the new e-government is one in which intelligent customized services have evolved through disruptive innovation in terms of intelligent information technology and social coevolution. For a discussion on new e-government, this study analyzed the trends of major countries including the US, the UK, and Canada, along with the opinions of international organizations including the OECD and Gartner. It also analyzed the strategy of the e-Government 2020 basic plan and drew implications based on it. Local e-governments that conform to the new e-government direction are premised on the continuous creation of services that satisfy local residents. To this end, there is a need for changes in e-government governance, establishment of a shared information/service platform created by local residents, cloud-based integration/redesign of local government administrative systems, and advancement into the global local e-government market are required.

Keywords: e-Governance, Intelligent information society, Intelligent information technology.

1 Introduction

Today, as society becomes more interdependent and complex due to the Internet and globalization, uncertainty is very high and disruptive innovation is taking place with technological change that occurs at a faster rate than ever before. It is therefore important to quickly and appropriately predict social change, and to prepare for it wisely at the national level. Accordingly, informatization innovation strategies for governments based on ICT (information and communications technologies) have been actively pursued, with an evolution in goals and methods according to social demands.

The e-government of the Republic of Korea reached its 50th anniversary amid such changes, a period of five decades of achievements and changes where tremendous

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progress has been made. Since the first introduction of computers for administrative use by the Economic Planning Board in 1967, citizen complaint services and the like over 50 years have not only improved the quality of life of the people, but improved productivity and transparency of administrative affairs through the computerization of government affairs. Companies have also made great leaps forward in supporting corporate competitiveness in areas such as speeding up export customs and the introduction of electronic procurement through bringing corporate services online.

Specifically, South Korean e-government achieved a leap forward as an exporting country with an ICT-based administrative system. In the biannual e-government evaluation by UN DESA (United Nations Department of Economic and Social Affairs) conducted on 190 member countries, Korea has achieved first place three times since 2010 [4]¹. Its network readiness index, ICT development index, and public data utilization index in particular show a level surpassing that of advanced countries such as the United States. Korean e-government system is considered to have made a great contribution to the efficiency and democratization of the state administration [5,6].

Social change through the implementation of e-government is developing into a coevolutionary relationship that develops with mutual influence through the role of supply and demand. The view of society in the future presents new social needs, and these social needs are leading to new forms of governments. In addition, in the process of responding to the technological outlook and social demands necessary for the society of the future, promotion strategies for informatization policy and a system in which tasks are prepared and implemented are being naturally formed. A government-wide response to this could be a driving force to enhance national competitiveness and lead social development.

This study thus seeks to examine the mechanism and social/technological environmental changes following the evolution of e-government in Korea, and to suggest a new concept and direction for it.

2 e-Governance

E-government was introduced to improve the satisfaction of public administration services by using ICT technology to quickly and accurately carry out government administration and decrease government budgets, increase administrative efficiency, and provide high-quality public administration services to the public [8].

Since the latter half of the 1980s, the Korean government has established an e-government development strategy to provide the world's best e-government services. In order to realize a government that responds to the public's administrative needs and communicates with the public, the Basic Plan for Mobile e-Government for Realization of an Advanced Administrative Country was established in October 2010, and the Smart e-Government Promotion Plan was announced in March 2011 for next-generation e-government strategy [1,3].

The 2020 e-Government Basic Plan was established in an effort to respond to the rapidly changing e-government environment and to overcome challenges that include

¹ According to United Nations e-government evaluation results, Korean e-government ranking was first in 2010, 2012, and 2014, and third in 2016 and 2018 [4].

increasingly complex and difficult social issues, the development of intelligent information technology, the demands for reinforcement of integrated services tailored to the people, and the enhancement of the role of e-government leadership in the international community. Through the 2020 e-Government Basic Plan, a vision of “e-Government that brings joy to the people with new digital experiences” was established, from which three goals were set for its implementation: Citizen Experience, Intelligent Government, and a Digital New Deal, from which the ENJOY five-part implementation strategy was prepared^{2,3}.

In order to overcome these limitations, e-government must evolve into a new smart e-government. The OECD (2014) refers to e-government of the future as a digital government, explained as “government that uses digital technology as an integral part of its modernization strategy to help various stakeholders promote the production of data, content and services between and within the government⁴.” While e-government viewed the provision of services as the extent of its scope, digital government emphasizes that even when a service is provided, its scope then extends to receiving feedback on service results which is used to lead to improvement and change in an operation extending to the entire life cycle of the service. Digital government defines itself as a data-oriented government based on cloud, mobile, and social network technologies, with change management and governance described as larger challenges compared to the days of e-government [7]. A comparison between e-government and digital government is shown in Table 1.

The future e-government represented by digital government has values oriented on democracy and sustainability and focuses on digitization and openness, and can be said to be an e-government based on intelligent information technologies that include AI, IoT, big data, and cloud technologies. In addition, it is a government that provides intelligent personalized services in an evolving form through disruptive innovation in terms of technology and social coevolution, in a process of which it is a government that creates a sustainable environment in which an ecosystem is built in which governments, enterprises, non-profit organizations and individuals cooperate.

E-government policy of the past can be said to be focused on efficiency and transparency through the informatization of administrative affairs using items such as information systems and the Internet, as well as boosting online administrative services for the public. In the future, intelligent information technologies such as AI, mobile, IoT, big data and cloud must be utilized as core means to develop into an on-demand⁵ digital

² https://www.mois.go.kr/frt/bbs/type010/commonSelectBoardArticle.do?bbsId=BBSMSTR_0000000000008&nttId=48976

³ The five major strategies making up the ENJOY acronym for e-Government 2020 are: (1) Enhancement of the digital experience, (2) New building of an intelligent government, (3) Joining an e-government ecosystem, (4) Organizing trust infrastructure, and (5) saying Yes to a global e-government [3].

⁴ The concept of digital government advocates one that is distinct from existing e-government, which emphasized the efficiency of work within the government and the quality of public service.

⁵ The mobile trend keyword ‘on-demand’ refers to a way to provide necessary goods and services at any time according to consumer needs. Various on-demand services such as Uber, Airbnb and Kakao Taxi have already been provided in the private sector.

Category	e-Government	Digital Government
Oriented values	Efficiency, transparency	Democracy, sustainability
Focus	Automation, bringing online	Digitization (on/offline integration) openness
Infrastructure resources	Information resources (PC and Internet)	Intelligent information technology (AI SW +IoT, big data, cloud, etc.)
Approach	Gradual innovation from a technological deterministic perspective	Disruptive innovation from a technological and social co-evolutionary perspective
Services	Customer-centered (government-led)	Individualization, intellectualization
Promotional ecosystem (principal agent)	Government-led ecosystem (government as demand creators, enterprises as service providers, individuals as users)	Ecosystem of mutual cooperation between government, enterprises, nonprofit organizations and individuals

Table 1: e-Government vs. Digital Government Comparison [2].

government tailored to the people that responds immediately to their needs. In line with these changes, the government has set personalized policy promotion on the corporate and personal level as a national task, in which both central government administrative agencies and local governments strive to discover and provide personalized services for the people, consumers, and individuals. However, this has for the most part pertained to gathering citizen opinions, living guides, and tourist information services. The provision of truly customized administrative services requires efforts for an expansion of private and public cooperation in the social, economic, political and administrative fields through intelligent information technology in order to achieve governmental innovation and sustainable development.

3 Conclusion

Society is transforming into an intelligent information society through an innovative ICT-based convergence/complex revolution, where ICBMS⁶ technology is internalized within it and acts as a new growth engine that drives innovative changes between technology and the people that live in it. A new future-oriented e-government can only be built once the direction of e-government development has gone through a process in which technology, society, and the people develop together. The concept and characteristics of e-government that the government should pursue can be said to be the convergence of digital technologies based on cooperation between all actors involved including government, people, and enterprises, for a government that digitally provides the services that people want, without restrictions for time, location, and device. The government should thus build a future-oriented e-government using the new technology known as intelligent information technology.

⁶ An acronym derived from the terms IoT, Cloud, Big data, Mobile, and Security.

The future e-government model aims to realize sustainable development of society as a whole through a 100% digitization of government services, through which data-based administrative services, disruptive innovation strategies, and support for customer-based value creation can be achieved. In order to pursue this vision and strategy, the establishment of a cloud-based future administrative work environment and an integrated government service window is first needed.

In addition, in order to realize this, there is an urgent need for laws and regulations related to e-government, a reorganization of civic consciousness, culture and institutions that lag behind the times, and a strengthening of digital capabilities. In order to realize a future-oriented e-government, it is necessary to develop a new technology-based electronic public service with a greater scope by setting the foundation to provide life cycle and personalized services and redesigning e-government towards one centered on data. In future studies, surveys and in-depth interviews of policy actors and policy users should be conducted along with an in-depth study of the direction of e-government through analysis of overseas cases.

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