

Critical Review of Government3.0 in KOREA

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Abstract

E-Government is an administrative innovation that utilizes information technology and is the most powerful means to strengthen government competitiveness. At this moment, countries around the world are continuously improving government competitiveness by continuously implementing government innovation through the implementation of e-Government. Many scholars argue that e-Government should be changed in response to the Fourth Industrial Revolution.

Therefore, Korea adopted the government 3.0 instead of the e-Government and promoted the information policy. But the result was a failure. Korea was once a leading country in e-Government, but now it is falling due to government 3.0. The reason can be analyzed in various ways. First of all, over the past decade, Korea's e-Government has been neglected without obtaining the permanence of policy. And the Korea government pursued a new strategy under the name of disconnecting from the past and lost policy permanence.

Therefore, future information policy, especially e-Government policies, should be pursued from a politically neutral point of view. The lesson of government 3.0 failure in Korea is clear. Regardless of the government's replacement & regime change, the information policy should be pursued with consistency.

Keywords: Government3.0, e-Government, 4th Industrial Revolution, ICT Governance

1. Introduction

Since the first introduction of the term e-Government in the United States in 1993, many countries around the world have made great efforts to pursue administrative innovation using information technology. Korea has also developed various projects for the implementation of e-Government for the last 20 years. As a result, in the United Nations e-Government evaluation of 194 countries, Korea has achieved three successive top leader country in 2010, 2012 and 2014 [1] [2] [3].

E-Government is an administrative innovation that utilizes information technology and is the most powerful means to strengthen government competitiveness. Since then so far, countries around the world are continuously improving government competitiveness by continuously implementing government innovation through the implementation of e-Government [4]. However, over the past decade, Korea's e- Government has been neglected without obtaining the permanence of policy. As a result, current e-Government systems are likely to become obsolete in the absence of proper maintenance through the ongoing budget cuts of the past decade, which may serve as an obstacle to government innovation [5].

The Lee Myung-bak government(2008-2012) has been pushing for national informatization instead of e-

government, and Park Geun-hye government(2013-2017) has been pushing for government 3.0. The Lee Myung-bak government downgraded e-Government of government innovation using information technology to e-Government system construction project. In the early days of the government, Park Geun-hye claimed that e-Government is irrelevant to government 3.0, and now it is making e-Government a means to package the government's 3.0 achievements.

As a result of the abnormal ICT policies promoted by the Lee Myung-bak government and the Park Geun-hye government, e-Government became a "lost decade" in the field of government and the competitiveness of the government continued to decline. So now the next government should return to the fundamentals. This means that government innovation through information technology should be improved through e-Government. This paper is a record of how the e-Government policies of the Lee Myung-bak government and the Park Geun-hye government have been distorted by political rhetoric over the past decade.

2. Evolution to the Fourth Industrial Revolution

The Fourth Industrial Revolution means a change in the industrial environment where artificial intelligence maximizes automation and connectivity. It is the first concept mentioned at the World Economic Forum in Davos, Switzerland, on January 20, 2016. Though the keywords presented by scholars vary slightly, machine learning and the development of artificial intelligence are generally regarded as the main means.

The theme of the Davos Forum held in Switzerland in January 2016 was 'Mastering the Fourth Industrial Revolution'. The Fourth Industrial Revolution is an industrial revolution created by ICT convergence. In the era of the Fourth Industrial Revolution, new products using artificial intelligence robots, Internet (IoT), mobile, 3D printers, unmanned vehicles, nanotechnology and biotechnology have played a driving role in social development. These technological innovations can revolutionize the way people live, as well as the governance system of industry, society and government. With this fourth industrial revolution, we are entering a new world in which we have been living and changing the way we live. The scale, scope and complexity of these changes will be completely different from what humanity has experienced before [6].

The Fourth Industrial Revolution is currently in progress as of 2017, and the aftermath is already evident throughout society. Currently, the number of unemployed people in the world is estimated to be more than one billion. A lot of jobs have already disappeared and it will be more so in the future. Depending on the scholar, it is expected that 80 to 99 percent of the total job will usually disappear. This conclusion is so destructive that even the best intellects make it difficult to predict the future.

2.1. ICT, Technology Convergence, and Artificial Intelligence (AI)

2.1.1. The definitive edition of Technology Convergence: the Fourth Industrial Revolution

The Fourth Industrial Revolution is the definitive definition of 'technology convergence' in which the boundaries between the digital world, the biological realm, and the physical realm are utterly destroyed. Cyber-physical system (CPS) is at the core of this technology convergence that will lead to the fourth industrial revolution. Advances in artificial intelligence and big data analysis techniques are useful for scientists to extract and verify hypotheses from data, which can lead to industrial innovation through advances in science and its use.

Recently, ICT is converging with other fields based on development such as Big Data, Cloud Computing, Internet of Things, and AI [7]. Especially, technology convergence that breaks the boundaries between the digital world, the biological world and the physical realm is emerging in earnest. In other words, the products belonging to the physical system such as robots, medical devices, and industrial equipment and the Cyber System, which means the Internet virtual space, are connected by a single network to analyze and utilize the accumulated data, Automatic control becomes possible. It is again connected through the Internet, evolving through artificial intelligence and accelerating technology convergence.

If the Fourth Industrial Revolution is launched in earnest, radical changes are expected to take place in the existing industries. As we have seen in the first industrial revolution phase of mechanization, there has been a

great deal of industry-wide impact, and the digital convergence technology (IoT convergence network, cloud computing, AI, robots, drone, etc.) Bio technology, and nanotechnology are expected to have a major impact on society and industry in general, such as the profound change in the occupational structure itself.

2.1.2. Fundamental changes in the way the public/government sector operates

When the Fourth Industrial Revolution becomes more serious, it is expected that the fundamental changes in the way of operation of the public sector [8].

- ① Much of the administrative work related to monitoring and supervision is highly likely to be carried out using intelligent drone. With regard to surveillance and supervision, there is a growing possibility of being applied to a wide range of public administration fields such as police and environmental surveillance, agriculture, forestry, and maritime surveillance and supervision as well as public safety including firefighting and disaster prevention.
- ② Simplified administrative services that are repeatedly performed are highly likely to be performed by an intelligent robot equipped with an AI function and a chat-bot in the case of an information service. Most likely, it is increasingly possible to utilize the system in the fields of self-administration, civil affairs administration and counseling field, and simple administrative tasks with simple repetition according to regulations and procedures.
- ③ Information gathering and site responsiveness Administrative actions are increasingly being replaced by various automation systems and devices based on Internet (IoT). For example, there are various kinds of information Internet (IoT) such as intelligent CCTV and Internet (IoT) devices, nationwide information collection and utilization field, traffic information and traffic control field, new traffic control field by autonomous vehicle appearance,) Based automation systems and devices.
- ④ Even the administrative judgments that are perceived as human behaviors are becoming more likely to be replaced by AI judgments. Recently, US private legal services companies have adopted artificial intelligence as an official legal service, and the use of artificial intelligence (AI) in various specialized fields such as law, finance, and subsidy is expanding. However, due to the nature of the administrative act, the availability of AI to support managerial judgment is greatly increased, but the final judgment responsibility will depend on policy decisions.
- ⑤ In the fast-paced aging society, a considerable portion of health care services, which will greatly increase the proportion of government spending and service personnel, will be supported by biotechnology, as well as Internet (IoT), artificial intelligence (AI), robot (Chat-bot) and so on. Demand for health care services in countries such as Korea, where aging rapidly progresses, is likely to lead to a rapid depletion of national finances. The need to use new technology in health care services will be even greater in order to alleviate this fiscal pressure.

The advent of the 4th Industrial Revolution and Intelligence Information Society, unlike the 2nd and 3rd industrial revolutions which have mainly influenced the industrial and social sectors, has the effect of fundamentally changing the operating base and the way of operation of the government itself. As a result, the government operation model and the required architecture expected at the present stage of the fourth industrial revolution are requesting transformation at a level that is not a level complementary to the existing one but a new replacement level.

The fourth industrial revolution, which will be centered on the intelligent information industry, and the necessity of spreading the national culture that can adapt quickly to the new social paradigm, is raised. Existing practices and systems do not act as obstacles to the use of new technologies and new industries, and systematic policy research is needed to promote the activation of all the national industries.

2.2. Need for a comprehensive viewpoint response strategy

2.2.1. Need a macro-based strategy

The advent of the intelligent information society, which is under the fourth industrial revolution and artificial intelligence technology, is not limited to any one of technology, economy, administration, policy, legal system, society and culture. Therefore, in order to cope with the changes arising from the development of technology, it is necessary to seek a macro perspective in various fields such as technology, institution, and recognition. Technology convergence will lead to the disappearance of technology, real economy, and virtual reality barriers across all sectors, which will be interrelated, mutually influential, and closely related to each other [9].

At present, we need to understand the changes in the mechanism that drives the intelligence information society rather than the understanding of fragmentary phenomena. As the development of artificial intelligence and the spread of the use of drone, discussion of manpower reduction can be expected as well as automation of past work.

However, the problem that should be emphasized even more importantly is the recognition of the paradigm of change in society by the development of new technology related to the Fourth Industrial Revolution and ICT. For example, strengthening the use of drones in the infrastructure sector will lead to changes in the cost of use and supervision of government and publicly funded projects. In addition, changes in various tasks such as forest, animal husbandry, and aquaculture, which are important for field inspections in a wide area, are also expected.

2.2.2. Analysis of the response of the Korean government

The Korean government is preparing various policies focusing on the improvement of national competitiveness through the promotion of ICT industry [10]. For example, it plans to lead the emergence and growth of small and medium-sized venture companies specialized in unmanned mobile vehicles by creating an initial market based on demand of public institutions such as defense and weather prediction, environmental monitoring, security and traffic. The problem is that the Fourth Industrial Revolution and the new technology associated with it recognize the possibility that it can be used for public demand such as defense and weather prediction, environmental monitoring, security and traffic, it is an indifferent state.

In order to cope with the rapid social changes caused by the development of the 4th Industrial Revolution and the related new technologies, it is necessary to find a total innovation of national / government policy administration that operates the socio-economy together with countermeasures on the industrial side.

In the case of the public sector, unlike the private sector, it has various obstacles such as administrative procedures and administrative culture in the introduction and utilization of ICT. In addition, it should be possible to increase the degree of acceptance of the policy so that the intelligent information technology can be successfully introduced to the public sector through in-depth analysis of the inefficiency and delay of administration.

Although the social interest and academic researches on the 4th Industrial Revolution and the new technologies to be developed in this way are progressing partly in Korea, there is still a lack of comprehensive research on the changes of these new technologies on our economy and society. Furthermore, when ICT-based intelligent informatization is introduced, strategic research on the overall impact on national administration and government affairs is rarely performed domestically or internationally.

3. Government 3.0 Initiatives in Korea

3.1. Vision & Strategy

The Park, Geun-Hye Administration embraces Government 3.0 as a new paradigm [11]. The notion Government 3.0 goes beyond what the technological potentials of Web 3.0 promise, as shown in Figure 1. The Park administration envisioned Government 3.0 for the purpose of building a new age of hopes and

happiness for all Koreans. The Korean Government 3.0 drive seeks for two high level goals: providing services customized for and tailored to various needs and demands, and creating new jobs and rebooting development engines. For these two goals, the Korean Government presents three strategic directions: service-oriented government, transparent government, and better (and smarter) administration (in other words, competent government). All these efforts are supported by four core values such as openness, sharing, communication, and collaboration.

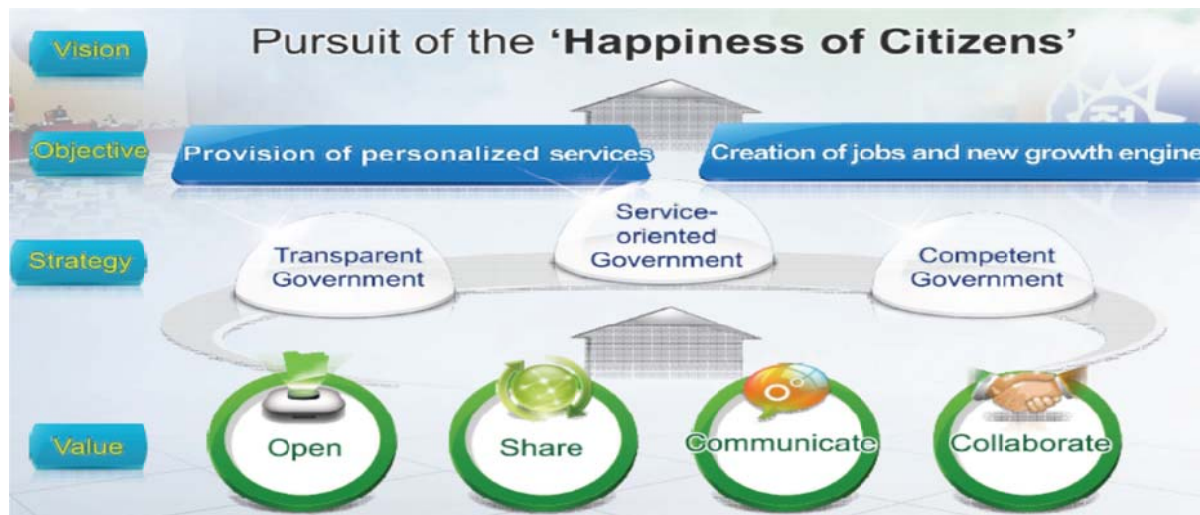


Figure 1. Vision & Strategy in Park, Geun-Hye Administration

Source: (MOI, 2013).

3.2. Government 3.0 Initiatives

Figure 2 describes the details of three categorized strategies for the Government 3.0 drive. First, Government 3.0 is a strategy for service-oriented government. NIA considers Government 3.0 as a pack of low-cost but high-quality services for customized citizen happiness. The Government 3.0 drive personalizes public services adjusting for individual needs, supports entrepreneurialism and businesses, enhances more efficient and effective access to public information and services, and customizes citizen services through using new technologies.



Figure 2. Strategies and Tasks in Park, Geun-Hye Administration

Source: (MOI, 2013).

For that, the Korean Government establishes consolidated systems to provide information and services integrating across public agencies, policy domains, and geographical jurisdictions. These systems enable services based on lifecycle, services adjusted for specified beneficiaries' needs, and one-stop welfare services. The needs that Government 3.0 considers also include those of businesses and entrepreneurs. Especially, small and mid-sized businesses gain help from integrated services for economies. Service-oriented government seeks for multi-channel and any-channel services. This means more access points for those with otherwise limited access to information and services. Adopting mobile services for public services and information is gaining a promising vehicle for a new generation.

Second, Government 3.0 pursues transparency of government. Open government in terms of data and information means the transition from supply-driven transparency (reactive, responsive disclosure of public information) to demand-driven transparency (proactive sharing). According to President Park (see the news section of <http://www.gov30.kr>), Government 3.0 is intended to "make information sharing more equitable and transparent between the central government, local governments, government agencies and the public." As well, information sharing can boost job creation and spur economic growth. Government-held data in such fields as weather, transportation and health care has considerable commercial value.

Last, better and smarter government specifies three directions: integrated (e.g., cross-boundary, cross-organizational, cross-agency, and cross-departmental) administration, cross-boundary information sharing and collaboration driven by digitization and informatization, and scientific (data-driven) administration.

4. Problem Analysis of Government 3.0

In 2013, the Park Geun-hye government set up a vision of national affairs, "the new era of national happiness and hope," and set up national goals and strategies in five areas as a means to achieve this. In addition, the Park Geun-hye government set up a trustworthy government as a way to innovate the government operating system to support the achievement of the five national goals. This is to achieve the 'Government 3.0 era' which implements the interactive government (2.0) beyond one direction (1.0) and provides personalized information and services based on this. It is also building a competent government leading the new future of opening, sharing, communicating and cooperating, such as strengthening cooperation with the private sector and building a cooperative system within the government.

In the early part of the regime, this government 3.0 was promoted as nothing to do with e-Government, and

it was paved with original policy of Park Geun-hye government. In this process, Government3.0 and e-Government were separated and, in the beginning, government3.0 policies lost the driving force due to lack of e-Government support.

The Government3.0 policy, pursued by the Park Geun-hye government, can be evaluated as a failed policy from the following three perspectives.

4.1. Unsustainable Policy

First of all, government 3.0 policy has the problem that it is not sustainable. The word sustainable began with the use of the term 'sustainable development' in 1972, the first report of the Roma Club, expressing strong concerns about the environment and development in the "limits of growth." Recently, the United Nations is implementing the Sustainable Development Goals (SDGs) from 2016 to 2030 as a follow-up agenda of the Millennium Development Goals (MDGs) set to be achieved from 2000 to 2015.

However, the ICT policy of our country is far from the consistent policy promotion and it repeats the plan of the gods. In 2008, the Lee Myung Bak administration abolished the e-Government policy of the participating government and brought out green growth as a national development strategy for new growth engines and job creation. And as part of this low-carbon green growth, we promoted green IT policy. In this process, national research institutes studying national informatization and e-Government have produced a sketch that reveals how much carbon dioxide (CO₂) is lost due to the effects of individual ICT policies.

This low-carbon green growth was ended in 2013 by the government of Park Geun-hye. Green IT policy is no longer discussed by any national research institutes. The important thing here is that green growth and green IT policy are not bad but discarded. In the five-year presidential election, a newly-launched government erased former government ICT policy and put out other ICT policies, creating a 'policy black hole' that starts from the origin every five years without any past achievements. This is the result of the Lee Myung-bak administration and the Park Geun-hye government. Thus, from the point of view of e-Government, it has become a "lost decade".

One thing is clear. No matter what political party is going to be in the next government, no matter who becomes the president, we will not pursue the policy of Government 3.0 or promote Government 4.0. This is unfortunate, considering the future of the state, apart from the problems of the regime. As such, Government 3.0 also has good words of openness, sharing and collaboration, but it has the problem that it is not sustainable because there is no policy permanence. Therefore, the current Government 3.0 should be stopped and the exit strategy should be sought back to the basic. This, in turn, means that Government 3.0 projects must go back under the umbrella of a macro e-Government policy.

4.2. Absence of Ideology and Confusion of Concepts

Government 3.0, in aggregate, is the provision of customized administrative services through government information, ie, data disclosure. Government 3.0 does not have a theoretical basis, so it claims to be a new paradigm despite nothing new. First, openness and sharing of information, which is considered to be an important foundation in Government 3.0, has been continuously promoted by the e-Government of Korea for the past 20 years. Currently, Park Geun-hye government is packing the government 3.0 and promoting that it is doing only what is not in any country in the world. However, these initiatives have been pursued for the last 10 years in the name of e-Government.

As the theoretical background and concept of Government 3.0 were not properly established, it was promoted as a pan - governmental government task, caused a lot of confusion in the administrative field. In other words, various opinions were expressed about the degree of openness, sharing, collaboration, and communication at the department.

Therefore, starting with the discourse of the new administrative paradigm called 'administrative innovation', the government3.0 started from the distance from the previous government's e-Government, but since it did not have a means of providing services. Therefore, Government3.0 can be regarded as an imperfect administrative ideology parasitic to e-Government.

4.3. Problems of Promotion Organization

If the government is really pursuing administrative reform and administrative innovation, it is self-evident that it can't succeed if it is pursued by the department of the ministry. In the situation where the dedicated organization for the promotion of the government 3.0 was not established, the Government 3.0 policy was confused. It is July 25, 2014 that the government 3.0 promotion committee was formed by the Park Geun-hye government. In other words, the Korea government has spent nearly one and a half years since the launch of the Park Geun-hye government to construct a proper promotion system. Therefore, it missed the so-called 'Golden Time' [12].

The Government 3.0 Promotion Committee, which belongs to the Prime Minister's Office, is the center for the government's 3.0 policy implementation in the Park Geun-hye administration. Recently, however, the major tasks of government 3.0 are mostly related to the advancement of existing e-Government projects. Nevertheless, when we look at the organization within the Ministry of Government Administration and Home Affairs, the creative government office and the e-Government are separated and operated.

The implementation of the Government 3.0 policy through these specialized committees is not a differentiating form from that of the past committees, and may therefore not fit the new way of running a new government. In the reality that the Ministry of the Interior is leading the evaluation of the policy without securing the budget authority, it is unreasonable that the Government 3.0 Promotion Committee exercises strong coordination with regard to policy. Therefore, it is not easy for the committee members to secure their control.

Now the world has changed rapidly by smart information technology and SNS. However, if we follow the way of the past 20 years, saying that we are promoting government 3.0, we will not get the trust of public officials and the public. Government officials on the frontline have a great deal of resentment against the professors who serve as members of various committees of the government. The reason is that countless ICT committees are created every five years, and the same professors in each regime are forced to create new policies and enforce them to the public officials. Many government officials also criticize professors for their focus on education and publicity under the name of "Change Management" in the absence of a government 3.0 system. Therefore, the government officials are feeling a lot of burden on the government's promotion of government 3.0, and they are calling for fatigue in finding out that they are evaluating the performance by the number of collaborations, the number of data releases, and the number of video conferences.

5. Policy Advice

In the past, the Lee Myung-bak government spent a considerable period of time in the early stages of its administration in response to US beef imports, mad cow disease, and candlelight demonstrations. In addition, it has unnecessarily divided the state in the process of publicizing the Grand Canal policy on the Korean peninsula. Furthermore, the president did not actively express his interest and intentions in national informatization, creating an environment in which e-Government can't have a strong momentum.

In recent years, the government has set a wrong policy direction for the government due to its focus on data release through Government 3.0. The President's commitment to Government 3.0 was very strong, but president did not give leadership through the transfer of power from the perspective of the driving system. Although the government has been able to promote administrative reforms using information technologies including the use of existing e-Government, including anti-corruption using ICT, the government has reduced its position by choosing government 3.0, which focuses on data openness.

5.1. To the Presidential Acquisitions Committee

The direction of future policy direction from the viewpoint of e-Government's leadership is clear to us. It sets the national agenda at the beginning of the presidential election by presenting a clear vision of

e-Government, including the entire information system. In the vision of the e-Government to be presented by the president, it is desirable to incorporate “the implementation of government trusted by administrative innovation utilizing information technology” in the basic direction of policy.

In other words, it is necessary to clarify that e-Government is a key means of enhancing participatory democracy and enhancing the transparency of the government, in addition to simply promoting the productivity and efficiency of the government and allowing the people to receive government services conveniently. Also, through e-Government, we must express our willingness to re-establish public confidence in the government by stifling corruption in the public sector.

In addition to presenting this vision, Presidential initiatives should include a list of strategically important core e-Government projects, specific performance goals, target years, and implementation principles. Finally, it is necessary to construct a strong promotion system and delegate all authority to implement the e-Government and continue to push for 5 years.

The important thing in this regard is that you should not be interested about naming as you seek new things. In other words, a number of names can be mentioned in the next government, such as platform government, digital government and data government in relation to information. But as soon as we obsess over this new government name, we will meet the same fate as Government 3.0.

So, as mentioned earlier, it is important to go back to the Basic. The next government should not only try to find new naming and means of informatization but only e-Government. In this process, we would like to perform the task of screening and reducing the presidential agenda through selection and concentration, without spoiling more than 100 national affairs.

5.2. Political Extermination: Securing Sustainability

The Korean government has repeatedly created and operated an ICT committee that operates only during the term of office under a five - year presidential system. Therefore, the most important aspect of establishing governance in relation to ICT in the future is securing sustainability. To do so, it is now necessary to change the political perception of e-Government. Because e-Government is a means, it can't be the goal of any president candidate camp. Therefore, no matter which party is in charge of progress and maintenance in the next government, the e-Government is only the first and only one in the Republic of Korea to be pursued.

What is important in this process is to secure the political neutrality of ICT-related policies. In the past, there was a time when Presidential attention and leadership were highlighted as important success factors in relation to national informatization and e-Government [13]. Of course, the interest of these presidents is still important, and national informatization and e-Government projects can be included in national affairs during the presidency and secure the driving force.

But now the opposite is happening. In other words, when the president pushes for a new national task to achieve his accomplishment by using ICT during his/her term, the opposition party is unable to obtain the cooperation of the National Assembly and the local government. Actually, the Park Geun-hye government was launched in February 2013, but the Ministry of Science & ICT Planning(MSIP) was newly established in April because the revision of the government organization law was delayed in the National Assembly. In addition, in the case of the government 3.0, which is pursued by the Park Geun-hye government, the performance is relatively low in regions where the head of the opposition party governor is in power. Therefore, in terms of sustainability, the Government 3.0 Committee, which will disappear from the next government, would be appropriate to be organized under the e-Government promotion committee.

5.3. Establishment of ICT governance for overall government transformation

The next government should establish a smart government operation innovation strategy that uses ICT as the main means of administrative innovation to innovate the state. In particular, despite the fact that various social network services (SNS) have developed in Korea, which is a powerful ICT country, it is suggested that communication and social integration are not smooth.

Therefore, the next government should set up a government department that can revolutionize the state by

using ICT convergence as a base [14]. The newly established ICT-based National Innovation Agency should improve the current situation in which the comprehensive future prediction function is weak and promote the government innovation strategy that utilizes ICT convergence as not the Presidential Agenda but the National Agenda.

The names of these departments should be (tentatively) set as the National Transformation Strategy Department and ensure the independence of the organization, expertise related to ICT convergence, and long term. For the sake of independence, it should be established as a presidential organization, but it should absorb and operate the ICT Strategy Committee and the E-Government Committee. In addition, it should be able to fully utilize experts in various ICT convergence fields for professionalism. Specifically, it should be able to utilize various ICT convergence organizations such as Korea IT Promotion Agency, Korea IT Industry Promotion Agency, Government Integrated Computing Center, and functions shall be newly established or transferred. Furthermore, for the long-term, legal and institutional arrangements should be made. Therefore, the organization can be maintained regardless of the regime change. To this end, not only the government organization law but also the relevant regulations of the e-Government law should be amended (tentatively) and the minister of the national transformation strategy department should be appointed as the national CIO and lead the CIO meeting of the central ministries and municipalities.

5.4. Lessons of Government 3.0 Failure

The lessons we can get from the failure of Government 3.0 are simple. If the next government really wants to pursue government innovation or administrative reform, it will be necessary to implement administrative innovation or e-Government using information technology [15] [16]. In this case, the e-Government should not be viewed as a technology-oriented view that simply builds and upgrades information systems, but should be recognized as a total government innovation utilizing information technology that supports the new government's national ideology in the smart information society.

As political terminology, digital government, cyber government, and platform government come to the forefront, it is said that political rhetoric is being promoted during the term of the regime, you may want to, but keep in mind that returning to the fundamentals is a shortcut to success.

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