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The Digitalized Citizens of the Republic of Korea as A Result of The Transition Toward Smart E-Governance

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Abstract

This paper will explain the transition from the electronic government into the smart e-governance in South Korea. According to MOSPA 2013a, there were seven stages for the transition from mid-1980 to 2011. However, this paper tries to add the eighth stage after the COVID-19 epidemic occurs in the world. How the South Korean government interacted with this crisis management from the electronic government scope. And how the Korean citizens proved that they became digitalized citizens. The human-computer interaction during the last decades resulted in digitalized citizens who can invent mobile applications to help the government track the Corona map for example. The more the usage of the internet and the digitalized electronic governmental services, the more the citizens became more aware of the measurement by the government. Electronic participation and e-democracy enable citizens to share their thoughts. According to the Myeong criteria smart e-governance produces or happens through the sharing of thoughts from the citizens. This study tried to examine the effect of the transition from e-government to e-governance on the Korean citizens who contributed to the transition toward smart e-governance during the COVID-19 time. As a result of the transition, the citizens got more familiar with the use of the internet as a daily life method of living style. The using of governmental websites is more and more than in any other nation in the world. As a result, the citizens became more knowledgeable and more educated about the internet and they began to participate in the sharing of knowledge and supporting activities during the COVID-19 as an innovation-based nation.

Keywords

E-Governance; Digitalized Citizens of the Republic of Korea; Characteristics of The Transition.

Introduction

This paper will explain the transition from the electronic government into the smart e-governance in South Korea. According to MOSPA 2013a, there were seven stages for the transition from mid-1980 to 2011. However, this paper tries to add the eighth stage after the COVID-19 epidemic occurs in the world. How the South Korean government interacted with this crisis management from the electronic government scope. And how the Korean citizens proved that they became digitalized citizens. The human-computer interaction during the last decades resulted in digitalized citizens who can invent mobile applications to help the government track the Corona map for example. The more the usage of the internet and the digitalized electronic governmental services, the more the citizens became more aware of the measurement by the government. Electronic participation and e-democracy enable citizens to share their thoughts. According to the Myeong criteria smart e-governance produces or happens through the sharing of thoughts from the citizens.

Digital Korean citizens

Characteristic	2015	2016	2017	2018	2019	2020	2021	2022
3-9 years	79.8%	82.9%	83.9%	87.8%	91.2%	91.2%	92%	91.7%
10-19 years	99.9%	100%	99.9%	99.9%	99.9%	100%	99.4%	99.5%
20-29 years	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.8%
30-39 years	99.8%	99.8%	99.9%	99.9%	100%	99.9%	99.9%	99.9%
40-49 years	98.8%	99.4%	99.7%	99.7%	99.8%	99.8%	99.8%	99.6%
50-59 years	89.3%	94.9%	98.7%	98.7%	99.3%	99.8%	99.2%	98.6%
60-69 years	59.6%	74.5%	82.5%	88.8%	89.1%	91.5%	94.5%	94%
70 years and older	17.9%	25.9%	31.8%	38.6%	38.9%	40.3%	49.7%	54.7%

Figure 1 Internet usage rate in South Korea from 2015 to 2022, by age group

The number of internet users in South Korea between 2015 and 2022 among the age group from 20 to 49 is the highest among the age groups according to Figure 1 by 99.9 percent. The all-age groups in Korea are using the Internet from 79.8 percent to 99.9 percent except for the age group above seventy years old 54.7 percent in 2022 comparing it with 2015 is higher than 35 percentage increased among the seventy years old group age.

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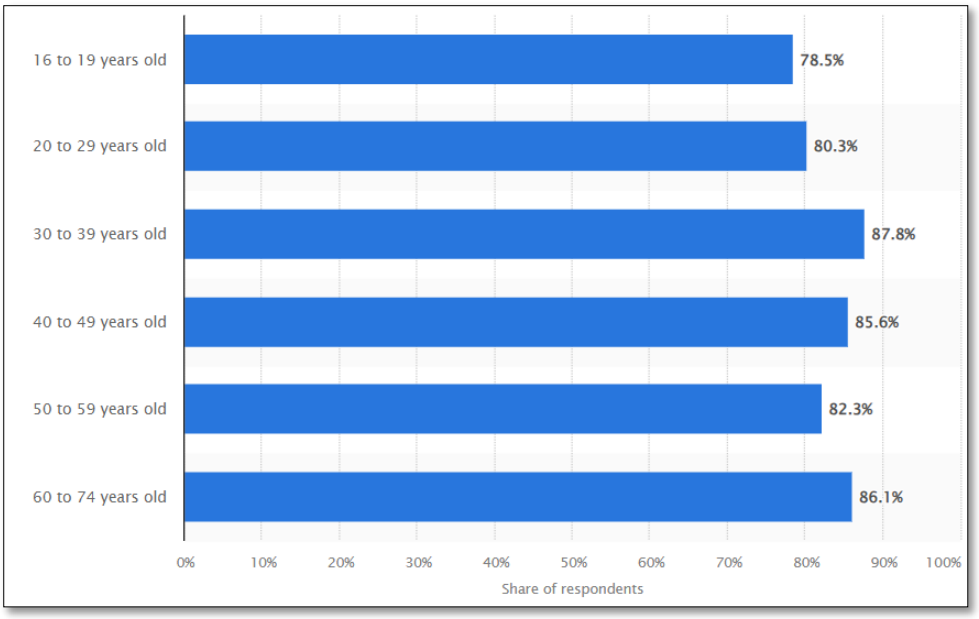


Figure 2 Usage rate of the South Korean government's website Gov. KR in 2020, by age group

According to a result of a survey of government portal users in South Korea in 2020, the age group from 30 to 39 are the most users of the websites of the government by 87.8 percent. While the age group from 16 to 19 years old using government websites by 78.5%, and the 20 to 29 years old group using it by 80.3. The 40 to 49 years old group used it 85.6%, while, the 50 to 59 years old using it 82.3%, the remarkable note is the 60 to 70 years old group used it 86.1% which means the older group over 60 years old are more convenient in using the online governmental services than visiting by themselves.

This study tries to examine the effect of the transition from e-government to e-governance on the Korean citizens who contributed to the transition toward smart e-governance during the COVID-19 time. As a result of the transition, the citizens got more familiar with the use of the internet as a daily life method of living style. The using of governmental websites is more and more than in any other nation in the

world. As a result, the citizens became more knowledgeable and more educated about the internet and they began to participate in the sharing of knowledge and supporting activities during the COVID-19 as an innovation-based nation. The private sector has a partnership with the government to cope the COVID-19 and beyond it for the new digital deal government.

The definition of smart e-governance

Myeong explained the definition of "smart", and the term "E-governance" in his paper titled "E-government to Smart E-governance: Korean Experience and Challenges". The "smart" term refers to self-monitoring through the usage of the I.C.T. While, "E-governance" refers to the network connectivity among the government actors and the citizens with the business actors. The administrative system is based on knowledge sharing through the I.C.T. (*E-government of Korea: Best practices*, 2013) There are different ways to define e-governance and e-participation. One of them according to William, and Charles, (2018) study titled "Smart governance: Opportunities for technologically-mediated citizen co-production", they defined that the governance of the smart city is a technological way to make the citizens participate electronically in local matters issues. Then, e-participation is the core value in this matter. Good governance is to make the behavior among the government officials and the citizens much easier and better in good communication. When the whole institution changes in the way they deal with technology and the citizens' lives (Webster & Leleux, 2018).

The stages toward the smart e-governance

Table 1 Development stages of E-government in South Korea

Stages	Major Actions
Inception (mid 1980s~mid 1990s)	Building five National Basic Information Systems (NBIS) Act on Computer Network Expansion and Usage Promotion (1987)
Foundation (mid 1990s~2000)	Building foundation for high-speed information and communications and promoting the Internet Enacting the Framework Act on Informatization Promotion (1995)
Launch (2001~2002)	Carrying out 11 major initiatives for e-government Enacting the Act on E-Government (2001)
Diffusion (2003~2007)	Carrying out 31 roadmap projects for E-government Laying the groundwork for linking and integrating multiple government departments and agencies
Convergence (2008~present)	Establishing Master Plan for National Informatization (2008) Carrying out tasks (12) for e-Government based on the principles of openness, sharing, and cooperation
Smart Government (2011~present)	Initiating the future e-Government blueprint, Smart Government (2011~2015)

According to MOSPA (*E-government of Korea: Best practices*, 2013), there are phases to the transition from electronic government to smart e-governance in South Korea from the mid-1980s to the present time. In above table 1 the stages of the transition into smart governance are seven stages. The Inception from the mid-1980s till 1990 was about the building of the National Information System (NBIS) according to the governmental act of 1987 to promote computer expansion and usage. Followed by the second phase from mid-1990 to 2000 was about the promotion of the building foundation for high-speed internet according to the 1995 Act of Informatization. The third stage of lunch was from 2001 and 2002 about the eleven major initiatives for the e-government according to the act of enacting the e-government. The fourth phase was the diffusion from 2023 till 2007 according to the 31 road map projects of the e-government that concern the linkage among the government departments. The fifth stage was the convergence according to the 12-master plan in the act for sharing and cooperation from 2008. The sixth phase was from 2011 to 2015 about the smart governance blueprint. The seventh stage is the maturity phase according to the MOSPA (*Government 3.0 Development Plan Report*, 2014) from 2013 to 2017 represents the spreading of innovation in the I.C.T sector, the data sharing for the creative economy, and the act for the use of public data in 2013. "Under ***'Government 3.0'***, the Korean government has emphasized the establishment of a *'Service-oriented*

Government, Capable Government, and Transparent Government' as the goals of ***digital governance***."(Kim & Choi, 2016) According to Jooho Lee (Lee, 2016) the "Government 3.0. The main strategic goals of Government 3.0 are to make the government more transparent, competent, and service-oriented by enhancing openness, collaboration, and two-way communication." (Lee, 2016) Through the big data and the one-stop petition system, acting the SNS communicates with the citizens.

Sunhyuk Kim' (2010) article titled "Collaborative Governance in South Korea: Citizen Participation in policy-making and Welfare Service Provision" explains how the South Korean state achieved participation or the participatory movement among its citizens. From the 1987 government of Roh Tae Woo to the five consecutive governments starting from the Roh' democratic government, the Kim Young Sam, Kim Dae Jung, Roh Moo Hyun, and Lee Myung Bak governments. They started the "Chamyu Jungboo Madang" that's means the people's participation space for governmental issues. During the Roh Tae Woo period, he began the three initiatives to ground the participation idea among the people as a main principle for the future democratic process. The three initiatives are direct democracy, local administration and governance, and online/offline citizen participation. The first one is through the referenda initiative recalls, the second through the spreading of the local district the autonomy and democratic principles, and the third is through the "Chamyu Jungboo Madang" that's means the people's participation space for governmental issues.

The characteristics of the transition into smart e-governance

Table 2 E-governance perspectives toward the smart E-governance (Myeong, 2019)

	(E-government)	(E-governance)	(Smart E-governance)
Goal of E-Gov.	Efficiency of System	Info. Sharing & Connectivity	Open Big Data Individual-oriented Service
E-Gov. Services	Internal & Info. Provide	Gov. Reform & Single Portal	Platform Based My Gov. Services
Ecology of ICT	Gov. Driven & Outsourcing	Gov. Driven & Outsourcing	Gov.-Private-Citizen Partnership, Deregulation
Role of CIO	System Management	BPR, Intergovernmental Project	Initiator of Reform Communicator
Decision Making Initiatives	Political Elites & Gov. CEO	Gov., Professional, Public Officials	Individuals, Citizen, NGOs
Demand & Method for Decision Making	Political Needs	Policy Needs	Participation & Communication based on Big Data
Role of Central Government	Initiator	Contractor	Mediator
Role of Local Government	Dependent upon Matching Funds System Building	Matching Funds Constructing Local Gov. Portals	Local/Community Demand-based Personalized Services
Role of Entrepreneur	System Provider	New Tech. & System Application Develop	Convergent Services Creating New Services
Role of Citizen	Info. Service User	Partly Participation	Active Participation & Voting
Decision Maker	Top Down Budget Allocation	Policy/Budget Control based on Performance Evaluation	Focusing on Problem Solving Data Analysis & Vision
Demands by Paradigm Shift	Gov./National Informatization	Gov. Reform Local Autonomy	Cooperative Partnership & E-Governance

According to Myeong (2019), the e-government to smart e-governance explains the Korean experience in the transition toward the next generation of government. The criteria depend on the values and the target of the e-government. The efficiency and the productivity, the transparency and the power. The type of industrial society is based on the e-government called the technocratic government known as type 1 where the government for the nation is not open for the civil society and the citizens. The second type is the industrial society based on e-government that will be called the information management-centered government. Both the first and second types are the product of the efficiency and productivity. The third type is monitoring the information government, while the fourth type four is the product of transparency. The fourth type is called the information society e-government where it is a transparent government. From the power perspective, the type fifth and sixth are called the Big Brother government, and the next generation of e-government represents the e-democratic government Myeong (2019).

According to Archana, (2019) the Characteristics of E-Governance are "Improving information delivery", "Citizen Participation in decision-making", and "Accountable and transparent generations". E-governance is "used for delivering government services with the use of information communication technology" Archana, (2019). These characteristics are in Table 2 of Myeong's study (2019). The transition from e-government to e-governance and then into smart e-governance from the ***goal of the government*** is the efficiency of the system, then the information sharing, and later the open big data and individual-oriented services. From the ***e-government services perspective***, the three stages are Internal and information provided, then the government reform and single portal implementation, at the smart e-governance stage it becomes the platform based on "my government" services. From the ecology of the I.C.T., the first stage is government-driven and outsourcing, the second stage of e-governance is government-driven and outsourcing, and the third stage the smart e-governance is the government private-citizen partnership and deregulation. The ***role of the CIO*** is the first stage for system management, the second stage is for intergovernmental projects, at the third stage of smart e-governance is the interior of the reform communicator. In the ***decision-making initiatives*** the first stage will be for the political needs the second stage for the policy needs, in the third stage will be for the participation and communication based on the big data. When it comes to the ***role of central government*** the first stage is for the initiator, the second stage as a contractor, and the third stage as a mediator. The ***role of local government*** in the first stage is dependent upon matching funds for system building, and in the second stage is for the matching funds for the construction of local government portals. The ***role of the entrepreneur*** in the first stage is system provider, in the second stage is for the new technology and system application development. The third stage is for the convergent services and creating new services. The ***role of citizens*** is changing from

e-governance to e-governance into smart e-governance as following the first stage the citizen is an information service user, in the second stage is a partly participator, in the third stage is an active participator and voter. For the ***decision-maker*** the first stage is the top-down budget allocation, the second stage is the policy and budget control based on performance evaluation, in the third stage focuses on problem-solving, data analysis, and vision. The ***demands by paradigm shifts*** in the first stage are for the government's national informatization, the second stage is for the government to reform local autonomy, in the third stage is a cooperative partnership and e-governance.

Stage eight of smart Governance

Meanwhile, this paper argues that the South Korean government and citizens already changed to smart e-governance. To be able to prove this argument many research papers and studies have been reviewed. As this paper suggests there is an eighth stage for the transition toward e-governance. That phase started with the COVID-19 pandemic measurement from the Korean government. ***One of the pieces of evidence*** that this paper argues for is the Sunhyuk Kim' (2010) article titled "Collaborative Governance in South Korea: Citizen Participation in policy-making and Welfare Service Provision" which explains how the South Korean state achieved participation or the participatory movement among its citizens.

"Where a national single window platform is typically implemented with a greater level of homogeneity, achieve digital resilience with inclusive innovation with a plurality of diverse platforms…South Korea's response to the COVID-19 pandemic has been considered by international authorities and media as one of the world's most effective….The Korean government comprehensively summarized how the country

has taken various digital interventions to "flatten the curve" of COVID-19, including the testing, tracing, and treating of COVID-19 cases. Lessons from the South Korea case provide important research and policy implications for digital resilience, including building the following competencies: innovative and agile development of digital applications, efficient data governance, citizens' active engagement, and public-private partnership. There were also citizen's alternative digital responses to data sharing. A couple of notable Geographic Information System (GIS)-based applications and websites aimed to help people access and share information. Among them, 'Corona Map' and 'Mask Map' attracted many users as supplementary sources for information. After the first outbreak in Korea, the KCDC published the trajectory history of patients on its website. After 10 days of the first case, one college student developed a 'Corona Map' which shows the travel routes of confirmed cases on a website map service that is accessible via mobile or web. It is based on open source called 'Open Street Map'" (Park et al., 2021)

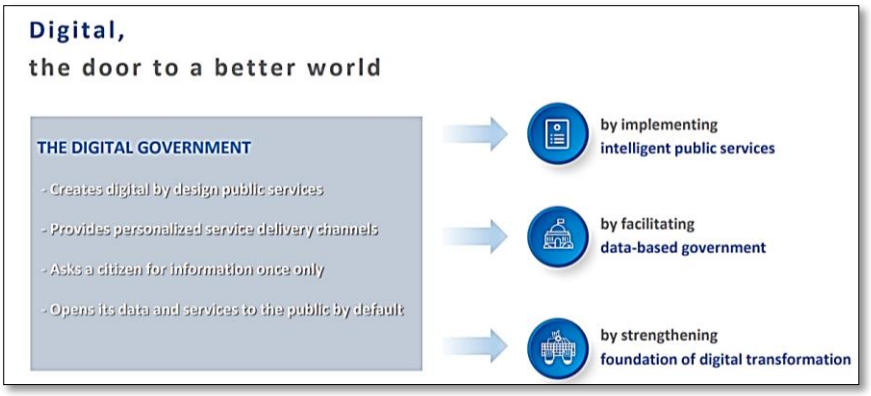
Another one of those studies is the study about the South Korean' government's action toward the COVID-19 epidemic titled "P., Kyung Ryul, S., Sundeep, B., Jorn, A., Pamod. (2021), Digital *Resilience for What? Case Study of South Korea"*. The result of the study is quite interesting and important in the sense of the transition from electronic government to smart e-governance as the (Myeong, 2019) study divided the transition from electronic government to e-governance to smart e-governance. In the above paragraph from this study about resilience in South Korea, they noticed the efficient management of the daily data, and the openness of the personal government as Myeong 2019 mentioned for the government goal. In addition, the innovation by the citizens-driven initiatives like the student who invited the application of the Corona map. The decision-making process focused on problem-solving as Myoung

2019 mentioned in table 2 below. Therefore, this paper claims the argument about the transition to smart e-governance in South Korea.

“Each ministry will create policies based on the direction of the digital bill of rights. Furthermore, a civil-private consultation body consisting of academia, industry, and consumer organizations will be established to actively promote social discussion. An "online public forum" will also be created by this August to enable citizens to freely discuss the digital order. In addition, the government will conduct annual surveys on the status of digital sophistication and use them as basic policy-decision-making data. Lastly, the government of South Korea plans to strengthen its role as a digital rule setter, leading global discussions on digital norms, as a digital model country.” (*South Korea Establishes a "New Digital Order" as a Digital Model Nation*, 2023)

The third piece of evidence about the transition to smart e-governance in South Korea is the “New Digital Order” initiative announced by President Yoon Suk-Yeol’ at New York and Harvard University, that new digital order “aims to create a basic direction for a digital bill of rights and to stimulate social discussion, as well as to actively lead global discussions on digital norms.” In the above paragraph the initiative about the digitalized age that the South Korean government tries to actualize for the sake of the new era of AI. According to the MSIT, the Korean initiative is a way to enter the new period of the new norm of the world that will depend more on artificial intelligence.

Figure 5 Digital Government Masterplan 2021-2025 (*Digital Government Masterplan 2021-2025*, 2021)



The fourth piece of evidence about the transition to e-governance is the Digital Government Masterplan 2021-2025. According to the master plan announced by the Ministry of Interior and Safety: the digital government master plan is to "create digital by design public services, provides personalized service delivery channels, asks a citizen for information once only, opens its data and services to the public by default." (*Digital Government Masterplan 2021-2025*, 2021) The methods to implement those initiatives are through actualizing the smart public service, through implementing data-based government service, and through establishing the digital transition. These three missions will produce smart e-governance; through "my data service", the "private & and public partnership", "international cooperation", and "cloud-based shared platforms and applications" (*Digital Government Masterplan 2021-2025*, 2021). ***The fifth piece of evidence*** about the transition toward smart e-governance is the conducting of the 2020 April 15th parliamentary elections even among the citizens in quarantine without spreading the virus because of the elections.(Klingebiel & Torres, 2020) Democratic values and the election through voting rights are one of the characteristics of smart e-governance. In the 4th Industrial Revolution, the Digital New Deal in South Korea was supported by the state and the private sector. "The New Deal plans to invest 160 trillion Won (i.e. USD 132.6 billion) through a combination of state and corporate investments to create 1,901,000 jobs by 2025, based on two

main policies: the Digital New Deal and the Green New Deal."(Klingebiel & Torres, 2020) This an evidence according to Table 2 the public-private partnership in smart e-governance.

Conclusion

This papertried to examine the effect of the transition from e-government to e-governance on the Korean citizens who contributed to the transition toward smart e-governance during the COVID-19 time. As a result of the transition, the citizens got more familiar with the use of the internet as a daily life method of living style. The using of governmental websites is more and more than in any other nation in the world. As a result, the citizens became more knowledgeable and more educated about the internet and they began to participate in the sharing of knowledge and supporting activities during the COVID-19 as an innovation-based nation. The private sector has a partnership with the government to cope the COVID-19 and beyond it for the new digital deal government. There are phases to the transition from electronic government to smart e-governance in South Korea from the mid-1980s to the present time. Therefore, first of all, this paper examines the phases of the transition from e-government to e-governance to smart e-governance in seven stages. The Inception from the mid-1980s till 1990 was about the building of the National Information System (NBIS) according to the governmental act of 1987 to promote computer expansion and usage. Followed by the second phase from mid-1990 to 2000 was about the promotion of the building foundation for high-speed internet according to the 1995 Act of Informatization. The third stage of lunch was from 2001 and 2002 about the eleven major initiatives for the e-government according to the act of enacting the e-government. The fourth phase was the diffusion from 2023 till 2007 according to the 31 road map projects of the e-government that concern the linkage among the government departments. The fifth stage was the convergence according to the 12-

master plan in the act for sharing and cooperation from 2008. The sixth phase was from 2011 to 2015 about the smart governance blueprint. The seventh stage is the maturity phase according to the MOSPA 2014 from 2013 to 2017 represents the spreading of innovation in the I.C.T sector, the data sharing for the creative economy, and the act for the use of public data in 2013. "Under 'Government 3.0', the Korean government has emphasized the establishment of a 'Service-oriented Government, Capable Government, and Transparent Government' as the goals of digital governance." According to Lee (2016) the "Government 3.0. The main strategic goals of Government 3.0 are to make the government more transparent, competent, and service-oriented by enhancing openness, collaboration, and two-way communication." Through the big data and the one-stop petition system, acting the SNS communicates with the citizens. According to Myeong (2019), the e-government to smart e-governance explains the Korean experience in the transition toward the next generation of government. The criteria depend on the values and the target of the e-government. The efficiency and the productivity, the transparency and the power. The type of industrial society is based on the e-government called the technocratic government known as type 1 where the government for the nation is not open for the civil society and the citizens. The second type is the industrial society based on e-government that will be called the information management-centered government. Both the first and second types are the product of the efficiency and productivity. The third type is monitoring the information government, while the fourth type four is the product of transparency. The fourth type is called the information society e-government where it is a transparent government. From the power perspective, the type fifth and sixth are called the Big Brother government, and the next generation of e-government represents the e-democratic government (Myeong, 2019).

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