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Article

The Political Economy of E-Government Innovation and Success in Korea

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Abstract: Over the past two decades, Korea has established and maintained itself as one of the world's leaders in e-government. This study explains why this has happened by using a political economy analysis. Qualitative case study methods have been utilized to enable sensemaking of Korea's successful e-government development trajectory. Five complementary factors have been identified to account for this success. They are the legacy of the developmental state in defining government's role in economic development; the impact of democratization on the nature of e-government services and provision; the shock impact of the Asian Financial Crisis that led to accelerated e-government development; the creation and maintenance of an effective policy process; an effective system of public administration. These factors have provided both the drivers and context for sustained successful e-government development. While the Korean experience supplies lessons for other countries' e-government development, the whole model is not replicable as it is based on the particularities of Korean development.

Keywords: e-government; Korea; political economy; ICT development; e-government policy; informatization



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1. Introduction

In the 1980s and 1990s, New Public Management (NPM) was hailed as a paradigm shift in public administration theory and practice, the successor to bureaucracy as the desired mode of public management [1,2]. It was held to be a radical innovation that would bring about major changes in the conduct of government affairs. However, at the same time, another innovation in public sector management was slowly emerging and without fanfare—e-government (electronic government). This application of information and communications technologies (ICTs) to the business of government has grown to be the most significant innovation in public administration over the past four decades. Its incremental advance was eventually heralded as the inevitable way of the future for conducting government business as reflected in Dunleavy et al.'s bold claim that “New Public Management is dead—long live digital era governance” [3]. The appeal of NPM had waned and, in some countries, failed to make much impression. However, e-government advanced everywhere across the globe in all countries, albeit at different rates and levels of development. Many institutions, researchers, and consultants have written about the rising importance of e-government in the conduct of public affairs and copious advice has been given as how to develop it [4–7].

Implemented well, e-government promises a range of benefits. It can increase efficiency within government, provide more accessible services to citizens and businesses, enable citizen access to information, save time and money in administration, and facilitate participation of citizens in governance. In short, e-government has the potential to add greatly to public value [5,8,9]. However, there are criticisms such as the use of e-

government for increased surveillance, intrusion of privacy, inequality of access, questions of information security, and whether it can be trusted [10,11].

Whatever the arguments over e-government, it continues to be used more and more across the globe. Innovation in e-government is a constant as governments make incremental changes in its deployment and extension into more areas and operations of governance. However, it is evident that success is unevenly distributed between countries with the rich Organization for Co-operation and Development (OECD) states generally having superior service compared to those in the developing world. One of the exemplars of OECD-country success is Korea. It has achieved and maintained a leading position in global e-government rankings. Incremental innovation has been evident and persistent since the country's government decided to embrace and pursue e-government in the 1990s. This paper seeks to understand what has made this possible. Thus, the questions guiding the research were "Why and how has South Korea been able to attain and maintain such global prominence in e-government?" Our contention is that the explanation lies in the political economy of South Korea. The application of ICTs to governance occurs in a context, and that context is what this article seeks to understand. It is widely acknowledged that the implementation of e-government is not simply a technical matter. Access to the requisite technology is certainly important but it is the drivers of innovation and governments' willingness and abilities to respond to them that are the principal reasons for success and failure. Through examination of the political economy of innovation in Korea, we can gain a deeper understanding of Korea's e-government success and determine how far the lessons of this country are more widely applicable [12–14].

2. E-Government Innovation and Success in South Korea

As a first step in this analysis, it is important to provide evidence of the success of e-government innovation in Korea. This can be gained from international comparative surveys, notably, the originally annual but later biennial global survey conducted by the United Nations since 2003 [15]. This survey is the most rigorous, comprehensive, and respected of its kind and allows comparisons between countries.

When the survey started in 2003, South Korea was already demonstrating its advanced status in the application of e-government solutions (see Table 1). It ranked thirteenth of 191 countries in its E-government Development Index (EGDI) and sixteenth in its E-participation score. EDGI is a composite index that incorporates various measures that show the willingness and capacity of a country's administrations to use ICTs to deliver public services. The nature and measurement of its component parts have been adjusted over the years to take account of developments in e-government. The E-participation index is a supplementary measure of citizens' online use of services incorporating scores for such things as consultation, information-sharing, and engagement.

Table 1. Korea: Rankings and Scores in the UN E-Government Survey 2003–2020.

Year	No. of Countries Surveyed	E-Government Development Index Ranking	E-Government Development Index Score	E-Participation Ranking	E-Participation Score
2003	191	13	0.74	16	0.48
2004	191	5	0.86	7	0.77
2005	191	5	0.87	5	0.87
2008	192	6	0.83	2	0.98
2010	192	1	0.88	1	1.00
2012	193	1	0.93	2	1.00
2014	193	1	0.95	2	1.00
2016	193	3	0.89	4	0.97
2018	193	3	0.90	2	1.00
2020	193	2	0.96	3	1.00

Source: UN E-Government Survey 2003, 2004, 2005, 2008, 2010, 2012, 2014, 2016, 2018, and 2020

In 2004, Korea's positions in the two indexes jumped to fifth and seventh and eventually reaching first place on both in 2010. Since then, Korea has maintained its position in the world's top four countries for e-government development and currently sits second and third among 193 countries in the 2020 report. Achieving and sustaining this level of attainment in e-government requires constant innovation as it is a moving field in which changes in technology, demand, and possibilities require experimentation, imagination, organization, and commitment to stay ahead.

3. Methodology

The article utilizes methods drawn from political economy to identify, elucidate, and analyze the reasons for Korea's consistent success in e-government innovation and performance. As the name suggests, political economy is fundamentally concerned with the interactions between political and economic processes, but the researcher may also need to step into cultural and social systems analysis in search of explanations [16]. Political economy studies seek to identify the interactions between structures, institutions, and actors to understand the course of events. There is, however, no single unified approach. Rather, political economy analysis can be likened to a family of approaches that incorporate both qualitative and quantitative methodologies [17–19]. They are, by definition, inter-disciplinary.

This article adopts the qualitative case study as its vehicle for examining and making sense of e-government in Korea [20,21]. It is an exploratory case study in that it seeks to provide in-depth analysis of the subject and can be the basis for theorizing or contribute to testing theory. This is achieved by focus on “sensemaking”, the process of interpreting situations [22,23]. People create “plausible explanations . . . that seem reasonable to them” [24]. The methodology was designed for application to organizational change but can be applied to other change situations such as the introduction and development of e-government in South Korea. It could even be argued that the institutional analysis that is characteristic of much political economy study such as this one is a clear example of the search for sensemaking as the organizations of government, business, and society are those involved in the e-government change process.

The data in this study are drawn from a range of published sources including government reports and statistics; reports and statistics from international organizations; academic research and commentary in books, journals, conference papers, and occasional papers; media reports. The first task was to identify the key decisions and events in the history of e-government in Korea so that the trajectory of innovation and success could be determined. This timeline assisted in the interrogation of the qualitative data drawn from the various sources listed above. Data collection and analysis were treated as simultaneous interrelated processes. Recurrent themes emerged as the authors proceeded with this mode of inquiry. By comparing findings relating to the questions of “why has the phenomenon developed like this?” and “how has it developed?”, the authors were able to identify five major drivers of e-government success in Korea. Each of the academics concerned has expertise on the topic, considerable experience in conducting qualitative research, and strong publication records. It is argued that these attributes enabled us to identify, classify, and interpret the available data to provide the “plausible explanations” required in sensemaking. It is clear that these explanations cannot be entirely objective. This is not feasible in qualitative research. However, the important thing is that the explanations are credible to the academics undertaking the process and to a wider audience of readers.

4. The Causes of Success

The beginnings of e-government in Korea can be traced back to 1987 with the five-year National Information Network Establishment (1987–1991) that aimed to digitize five priority areas of public sector management [25]. The main objective was to increase the internal efficiency of government although information gradually became accessible to citizens on the internet and some service activities made their first appearance. Other areas of public administration were added to the digitization initiative before the 1997

Asian Financial Crisis hit the Korean economy severely [26]. The way out of this crisis involved e-government policy being subsumed into broader economic reform that involved the ICT sector as the engine for post-Asian Financial Crisis growth [27]. E-government development was linked to promises and visions for more innovative and productive government characterized by transparency and trust. As the public service became more familiar with e-government applications in the early 2000s and citizens became more ready to make their voices heard, demands arose for more efficient, more convenient, and a faster speed of service delivery through e-government. Plans were unveiled to create a “world-class” e-government based on continuous innovation and investment [25]. With an advanced ICT infrastructure in place and the rapid increase in ownership of mobile phones using the wireless network, the pace of e-government development and scope increased. In recent years, the government has recognized the emergent technology trends of AI (artificial intelligence) and blockchain and has sought ways to incorporate these developments into e-government while the COVID-19 pandemic forced the government to respond to increased demand for non-face-to-face services and even innovate to provide world-leading high-tech e-government solutions to contact tracing [28]. The commitment to e-government was most evident in the 2017 announcement that the government aimed to have 80% of services digitized by 2025. Thus, the government once again ventured into advanced digital technologies to offer a portfolio of projects that will keep South Korea at the forefront of e-government [29].

4.1. The Legacy of the Developmental State

At the end of the Korean War in 1953, Korea lay in ruins and was seen as one of the least developed countries in the world. However, starting in the 1960s, Korea underwent a remarkable transformation based on high levels of sustained economic growth and, in 1995, was officially classified as a high-income country by the World Bank [30]. Welfare indicators also showed remarkable improvement as registered in its ranking as a country with “very high human development” [31]. The economic “miracle” was achieved through a particular policy mix that emphasized rapid economic growth through industrialization and innovation. Economic development was not left to the market [32]. There was strong state control of the process, resolute leadership, an élite bureaucracy, and a concern with performance legitimacy to justify authoritarian regimes [33]. These characteristics made Korea an exemplar of what became known as the “developmental state”.

While the forces of economic liberalization have weakened the original model of the developmental state, elements of it have been retained and are evident in contemporary policy-making. The new arrangements have seen the Korean government change its role in economic development from “commander-in-chief” to “senior partner” [34]. However, it still searches for and acts upon developmentalist opportunities [35,36]. One of those opportunities has been e-government. It has been perceived as part of a bigger picture from the start. It has been a component of the government’s vision and pursuit of ICT development as a key driver for post-AFC economic development. Effective e-government is seen as a major contributor to enhancing national competitiveness. It provides an environment that assists businesses and hence facilitates economic development. It also provides a lucrative export market from the sales of e-government systems and thus boosts both employment and national income (see Table 2). However, to remain competitive, e-government in South Korea must be innovative. It needs to be seen as a leader in the field. This requires government incentives, assistance, and direction. This is the legacy of the developmental state. It is still acting as the “senior partner” in e-government, seeking opportunities and finding ways of exploiting them. Such support for e-government and the ICT industry more broadly has enjoyed continuous government support whatever the regime.

Table 2. Exports of Korean e-government systems to foreign governments.

Year	2008	2012	2017	2020
Export revenue from e-government system sales to foreign governments	KRW 30.4 million	KRW 342.1 million	KRW 236.1 million	KRW 449.7 million
Number of e-government systems exported	Not Applicable	Not Applicable	180	324
Number of e-government systems exported	30	Not Applicable	72	79

Source: Ministry of Interior and Safety, 2012 and 2020.

4.2. Democratization

The first three decades of the developmental state in South Korea were under authoritarian regimes, but in the 1980s, citizens and civil society became increasingly vocal and assertive in their demands for political change, forcing the country to transition to democratic rule [37]. This can be viewed as a critical juncture in the development of e-government, which is an event or series of events that direct history along a particular but not necessarily predicted path [38]. The redirection of history for e-government was that it enabled citizen voices to be heard and put pressure on government to act on popular demands in the development of e-government. Previously, it had been the state that had decided on service delivery based on the politicians' and bureaucrats' perceptions. Now, citizens had political influence and elected governments needed to understand and respond positively to what the people wanted. Otherwise, the politicians risked being voted out of office at the earliest opportunity. Bureaucrats were also made more accountable for their actions or inaction.

For e-government, this meant that the state had to commit to its further development in line with popular demands. E-government needed to extend its scope to include more areas of government activity, provide more services, improve existing services, be sensitive to citizen needs, open up to participatory modes of operation, and respond in a timely manner to citizen demands. Greater government accountability and transparency were also integral parts of democratization that gave citizens greater influence over e-government development [39].

Evidence of the effect of democratization on e-government can be clearly seen on the Ministry of Interior and Safety website [40]. There is stress on innovation to better meet citizen needs, to provide seamless and secure services, to create human-friendly interfaces, to strengthen citizens' data sovereignty, and to build an inclusive digital ecosystem. Furthermore, e-government is specifically tasked with promoting innovation through collaboration with the private sector.

Academic opinion tends to support such claims. One evaluation argues persuasively that South Korea is "leading the world" in e-government innovation and services [41]. Another stresses the service orientation of government's innovations in e-government and the customization of services to meet the needs of different types of customers [42]. The empowerment of citizens is identified in a further analysis of e-government in two cities [43]. Citizens' political efficacy has been encouraged by government feedback and the system that enables it. While there are criticisms of some initiatives and institutional arrangements, the dominant picture is of democratization going hand-in-hand with e-government innovation.

4.3. The Asian Financial Crisis (AFC)

In 1997–1998, Korea was badly hit by the Asian Financial Crisis, exposing problems with the country's model of economic development. Other developmental states in East Asia fared much better. By contrast, in South Korea, the GDP growth rate tumbled to −5.1% in 1998, the stock market suffered large losses, the country's credit rating was downgraded from A1 to B2, the currency weakened, unemployment grew from 3% to 7%, and financial institutions revealed large portfolios of nonperforming loans [44]. These shocks to the system demanded a rapid and radical response. South Korea was anxious to escape from

the conditionalities that accompanied the economy's bailout by the International Monetary Fund at the earliest opportunity. The Kim Dae-jung government was thus desperate to find a new engine of growth to revive the economy and opted for the promotion of high value-adding technology and knowledge-based industries. As an important component of this, ICT was selected as a key strategic industry. The government's new economic vision and policies facilitated the significant advancement of the nation's ICT infrastructure. For instance, the Cyber-Korea 21 project was launched in 1999 and included initiatives such as offering personal computers to the public at low prices, developing high-speed internet infrastructure, and compulsory free computer education for students [41]. It also provided the clear objective to establish e-government for the purposes of improving the overall productivity and efficiency in various parts of the South Korean economy and society.

As the South Korean economy entered the 21st century, the government's explicit vision was one to transform that economy from a labor-intensive one to a capital-, technology-, and knowledge-based economy in which technological innovation and the rapid creation and transfer of knowledge would be crucial for maintaining competitiveness in global markets [45]. E-government was thus reformed to better respond to the new challenges. Thus, the government introduced one-stop-for-business (G4B) initiatives such as the Korea ON-line eProcurement System (KONEPS) as a single window public procurement service [46,47]. The Korea Customs Service launched the UNI-Pas system, which was a fully automated customs administration system utilizing the latest ICT technology to reduce time and costs in registration and quarantine processes for exports and imports.

4.4. Effective Policy Process

From the start of the developmental state in the 1960s, the Korean government has consistently demonstrated an effective policy process. Such a process should ideally be forward-looking; outward-looking; innovative, flexible, and creative; evidence-based; inclusive; joined-up; incorporate review; involve evaluation; learn lessons [48]. While Korean governments have not scored consistently highly on all these criteria, it has been apparent that many features of an effective policy process have been evident and have contributed to the country's economic success, for example, the move from import-substituting light industries in the 1960s to heavy and chemical industries in the 1970s and 1980s, and more recently into cultural industries [49,50]. Each of the criteria will be briefly discussed below to demonstrate how they relate to e-government development.

Policy in Korea has a history of being forward-looking, the first criterion of the ideal type of effective policy process [48]. Long-term goals have been typical, although there has always been space for adjustments to cope with change in the environment such as altered economic circumstances. The policy process has always been outward looking with constant environmental scanning to gain knowledge of what is happening elsewhere in the world, such as in technology development. Korea's policymakers have also been innovative, flexible, and creative. Indeed, the story of policy since the 1960s has been one of moving upward through different stages of innovation [51,52]. The country's industries moved from assembly skills for basic production in the 1960s through to original own-design manufacture in the 1980s, eventually moving up to frontier R&D involving advanced innovation in the 2000s. The concerted government push for ICT and e-government development has largely occurred in this last and most advanced stage of innovation.

Policy in Korea has generally been anchored in an evidence-based approach, although problems and new opportunities have sometimes emerged to cause re-thinking of particular policies. Inclusivity was not a feature of the policy process during the authoritarian years but has slowly made advances after democratization. E-government follows this trend with growing levels of public consultation for e-government initiatives. A defining feature of a joined-up policy process is that it looks beyond institutional boundaries to strategic objectives. Such objectives have been typical of the South Korean policy process and have involved cooperation between public and private sectors and the use of centralized authority to ensure that different government institutions make their required contribution

to the strategic objectives. Finally, review and evaluation have been prominent elements of the South Korean policy process. They have clearly been integral to the development of e-government as demonstrated by the succession of white papers and other government documents that have charted the path of e-government in the country.

The Establishment Phase for e-government in South Korea commenced with providing the legal basis through The Information Network Expansion and Promotion Act of 1986. This was followed by the first Comprehensive Plan for Information Network in 1987 that provided the strategy for improving service quality through national information networks [26]. The second Comprehensive Plan for Information Network was released in 1992 and aimed to improve efficiency and speed while prioritizing six ministries, especially those concerned with crucial aspects of economic development. The nature of the policy process was top-down.

The e-government Expansion Phase (1992–1996) was notable for the Promotion of Informatization Act of 1995, which led to the Plan for the Promotion of Informatization in 1996. The Ministry of Information and Communication, which was responsible for the policy, aimed to establish high-speed information networks to connect households, government agencies, educational and research institutes, private enterprises, and health services within Korea and overseas [26]. In the aftermath of the Asian Financial Crisis, the Kim Dae-jung administration designed A Comprehensive Plan for E-Government 1998. It prioritized the reform of public administration services to be more citizen-oriented including performance standards and provisions for transparency [53]. As this work proceeded and the extent of e-government rapidly expanded, there was a perceived need to revise its legal basis for e-government. Thus, The Promotion of Informatization for the Implementation of E-Government Act was passed in 2001, the world's first e-government-dedicated legislation [54,55]. It stipulated the operating principles for the implementation of e-government and the digitization of government services [55].

Table 3 sets out the development of major e-government policies in the Maturity Phase of e-government under successive presidencies from 2003 onward. This phase continued the consistent incremental extensions and improvements to Korea's e-government. The persistent theme has been to utilize an integrated approach to facilitate cooperation and information-sharing among government departments and with the public using increasingly advanced technologies to improve efficiency and supply more convenient services to the public. First, the Roh Moo-hyun government (2003–2007) crafted roadmaps for 31 e-government projects using four implementation strategies: integrating with public administration reforms; undertaking user-oriented projects; setting specific goals and evaluating achievements; integrating with the policy for the promotion of the ICT industry [25]. The Lee Myung-bak government (2008–2012) commenced with the National Informatization Plan containing 19 e-government projects [26]. It also drew up the Smart Government Development Plan to extend the existing PC-based e-government service platforms to mobile internet platforms. There were efforts to converge technologies for user convenience, encourage citizen participation, and embrace advanced technologies. The Park Geun-hye government (2013–2017) introduced Government 3.0 as its overarching strategy and sought improved efficiency through information-sharing and using a common platform among government agencies [56]. It comprised four strategies: creating efficient and capable government; creating a happy and safe society; providing customized services; improving the productivity of e-government [47]. The Moon Jae-in government (2017–2022) explicitly attempted to integrate e-government policy into the government's broad strategy of an ICT-led Fourth Industrial Revolution [57]. The government aimed for more innovative information infrastructure for e-government through advanced digital technologies [58]. This was evident in the six key areas of service delivery selected for digital enhancement under the vision, "Better World Open Digitally".

Table 3. E-government Policy During the Mature Phase of E-government Development in South Korea.

President	Roh Moo-hyun	Lee Myung-bak	Park Geun-hye	Moon Jae-in
Period	2003–2007	2008–2012	2013–2017	2017–2022
Main e-government strategy	E-government roadmaps	Smart Government Development Plan	Government 3.0	Digital Government Reform Plan
Objectives	Promoting public participation; Linking services of government departments	Creating “competent knowledge government”; Integrating the delivery of public services	Open government promoting information sharing	Developing artificial intelligence-centered government
Key e-government projects	Online participation; Establishing digital tax and national welfare systems	Promoting information integration and sharing for administrative services; Establishing e-government standard framework	Establishing the open original government document system; Creating an integrated administrative portal service system (Government 24)	Establishing customized virtual assistant for administrative services; Developing electronic certificate using blockchain technology; Expanding the use of cloud-based services

Source: Ministry of Interior and Safety, 2012 and 2020.

4.5. Effective Administration

A final political economy factor that explains Korean success in e-government is the capability of the public sector. E-government has been effectively implemented over the past three decades by government employees in a variety of government agencies. The public servants are educated and skilled and have utilized processes that have led to desired outcomes. The administrators have been involved in policy design as well as implementation and have thus been a major element in the effective policy process that has characterized e-government.

Korea’s contemporary bureaucracy was built under the authoritarian leadership of the developmental state and proved itself essential to the achievements of that model of economic development. It was a “bureaucracy-driven model” [59]. This post-Korean War administrative apparatus contained aspects of both Western public administration and Confucianism [60,61]. The latter led to an organizational culture that emphasized group over individual interests and gave strong support to the structures of hierarchy and centralization. The bureaucracy created under the developmental state was seen to be hard-working and disciplined, oriented to group solidarity with appointments based on merit, and promotion on a combination of both merit and seniority [62]. There was also an acceptance of bureaucratic discretion in relation to societal and other government actors [63]. However, the bureaucracy was not without problems. For example, corruption was much in evidence under the authoritarian developmental state, although it was never allowed to “overwhelm or take precedence over economic development” [59]. In addition, government administration was sometimes viewed as having typical bureaucratic dysfunctions such as too much red tape and lack of responsiveness and accountability to citizens. Despite these issues, the developmental Korean bureaucracy can be seen as change-oriented. Indeed, its major purpose in the authoritarian era was to transform the Korean economy from underdevelopment to high income. Thus, it became accustomed to planning and managing change in society and state. Even internally, there were reforms to modernize bureaucratic operations such as the simplification of processes and introduction of zero-based budgeting under President Chun [59]. According to Cho and Kim, it was an “entrepreneurial bureaucracy” [60]. This involved the political leadership, political appointments, and the career civil service working together as a team to bring about sustained economic development. The legacy of this entrepreneurial bureaucracy can be clearly seen in the development of e-government in Korea. The bureaucracy has consistently planned,

innovated, and implemented in e-government. It has maintained Korea as the leading global exemplar of e-government.

While the Korean bureaucracy was somewhat insulated from societal pressures during the authoritarian era, democratization in the late 1980s and 1990s changed this and necessitated major adjustments in its operation [59]. Government became more accountable to citizens as ideas of democracy and participation took root. The World Values Surveys between 1981 and 2001 tracked the move toward stronger self-expression among the population who gathered the confidence to increasingly place demands on government, a situation not experienced by the bureaucracy under authoritarian rule [64]. Furthermore, democratization provided the space for civil society to thrive. Citizens could and did organize to put pressure on government such as for the extension of the emergent welfare society. Such scrutiny of government action also helped to reduce the corruption that had become so entrenched in the Korean bureaucracy [65].

E-government first emerged in the final days of authoritarian rule and was initially state-driven. However, as democratic values became more embedded and citizens more confident to express themselves, e-government approaches had to be modified. It was now also democracy-driven. There was increasing attention in government to the views of citizens and state organizations were forced to respond in a timely manner to citizen demands and seek citizen views about e-government services. Bureaucrats no longer simply followed government instructions. They were now more accountable to citizens. What citizens wanted and expected became a major driving force for bureaucratic action on e-government [42].

For the visions and plans for e-government to be realized by the Korean bureaucracy, it was vital to have sufficient funds and to allocate them to good effect. Examination of the budget allocations for the development and implementation of e-government provides a picture of substantial financial commitment to R&D and projects to improve and extend services [66]. In the early years of informatization, the government's budget was primarily targeted at infrastructure [67]. The amounts were modest until massive increases in funding in 1995 (see Table 4). This financial boost reflected the increasing importance attaching to ICT and e-government developments, especially in terms of potential productivity gains in government and the private sector.

Table 4. The Government Budget for Informatization Projects 1990–1996.

Year		1990	1991	1992	1993	1994	1995	1996
Establishment of informatization infrastructure	Budget allocation (KRW billion)	10.2	13.6	14.5	5.1	7.8	100.0	147.0
	% of total budget for informatization-related projects	13.8	14.4	14.0	2.9	3.0	27.4	35.1

Source: National Computerization Agency; Gookga Jeongbohwa Baekseo (National Information White Paper). National Computerization Agency: Seoul, 1993–1997.

The steep increase in funding continued in 1997 but the Asian Financial Crisis led to a brief plunge in investment in 1998 as budget stringency was applied to all government organizations and activities (see Table 5). However, funding recovery was swift and there was a significant upward trend up to 2004. There were at least 20 e-government projects each year between 1998 and 2004 in this “expansion phase” of e-government. The scope of projects was extended beyond ICT infrastructure and computerization for internal efficiency to include more initiatives in service delivery, transparency, and technology development. In addition to the allocations listed in Table 5, there were other projects paid for from the government's Informatization Promotion Fund.

Table 5. The Government Budget for Informatization Projects 1997–2004.

Year		1997	1998	1999	2000	2001	2002	2003	2004
E-government projects and reforms for improving administrative efficiency	Budget allocation (KRW billion)	328.5	260.8	318.4	389.3	490.2	571.6	559.1	618.8
	% of total budget for informatization projects	51	36	37	32	33	35	34	37
Expansion of information communication infrastructure	Budget allocation (KRW billion)	22.5	167.8	175.1	262.5	321.7	402.8	401.8	416.0
	% of total budget for informatization related projects	4	23	20	22	21	25	25	25

Source: National Computerization Agency; Gookga Jeongbohwa Baekseo (National Information White Paper). National Computerization Agency: Seoul, 1998–2005.

Government funding for e-government projects was maintained at high levels in the 2000s as set out in Table 6. While amounts budgeted by different presidents have varied somewhat, the commitments have remained high, demonstrating continuity between administrations in support for e-government and ITC more generally as integral to the realization of Korea’s vision for the Fourth Industrial Revolution [68].

Table 6. The Government Budget for E-government Projects 2003–2022.

Administration	Roh Moo-hyun Government	Lee Myung-bak Government	Park Geun-hye Government	Moon Jae-in Government
Years	2003–2007	2008–2012	2013–2017	2017–2022
Number of e-government projects funded by government	183	188	165	65
Total budget for e-government projects	KRW 879 billion	KRW 674 billion	KRW 524 billion	KRW 281 billion
Average annual budget for e-government projects	KRW 176 billion	KRW 135 billion	KRW 105 billion	KRW 94 billion

Source: KIPF. 2020 Jaejeong Saeop Simcheun Pyeongka: Jeonja Jeongbu Saeop 2020 (Government-funded Project Assessment: E-Government Projects); Korea Institute of Public Finance: Seoul, 2020.

5. Discussion

The contention of this paper is that to understand how Korea achieved early success in e-government and maintained its standing, it is necessary to utilize a political economy analysis. Five critical factors have been identified and their importance for e-government explained. However, they are not independent of each other. They have worked together to strongly influence the history of e-government in Korea.

The first factor takes us back in time to the authoritarian developmental state that was created and maintained even before the concept and practices of e-government had been born. The developmental state left a legacy on which e-government visions and policy could draw. It implanted the idea into the Korean psyche that the state had a major role to play in economic development under capitalism. It was a far more interventionist role than Western capitalist countries had adopted. It was also highly successful. While the state could not maintain its role of “commander-in-chief” of economic development when neoliberal forces opened up the Korean economy in the 1990s and 2000s, some of the ideas and practices of the earlier decades were retained. Thus, it was perceived as legitimate and right that government could still play the role of “senior partner” in the development of the country’s ICT infrastructure, ICT services, and economic development. There were familiar

characteristics from the earlier developmental state that could be applied to e-government. Furthermore, the role was one endorsed by government, the private sector, and citizens. The legacy of the developmental state provided a solid foundation on which e-government could be built, giving Korea a flying start compared to many other Western capitalist countries and Third-World countries where developmentalism had not taken root.

The second factor that explains Korea's e-government success also draws on the developmental state. This is an effective policy process. Such a process has enabled Korean governments to create realistic long-term visions for ICT and e-government, identify and analyze policy options, and monitor and evaluate the results of implementation. It has also involved the promotion and search for innovations that can make useful contributions to e-government aims and targets. The external search and adoptions of public sector reform practices is long-established in Korea. It involves seeking foreign ideas and practices, often from Western public administration, transferring them and adapting them to suit Korean conditions [69]. It is a rational process that acknowledges that initiatives developed elsewhere will not fit in Korea unless they are modified to suit the country's particular institutional environment. The effectiveness of the policy process for e-government has been manifested in the country's persistently high rankings in the UN's e-government surveys. The process has been characterized by continuity with regular modifications as reactions to changing circumstances such as new technology or new customer demands. Governments of different political persuasions have maintained the overall commitment to an ICT-driven future economy in which e-government is an integral component. Different administrations have built on their predecessors' work, always in pursuit of keeping ahead of the field.

However, an effective policy process requires the skills and efforts of public servants to make the process work. It also needs administrative practices and structures that support staff in the pursuit of government goals. This is the third factor that explains Korean success in e-government—an effective administration. The contemporary administrative system took shape under the authoritarian developmental state and drew on Western and Confucian traditions. The latter have been particularly important in determining the character of the bureaucracy and how it works and are still significant. These include merit-based appointment, an ethic of hard work, discipline, the importance of hierarchy, and respect for educational achievement. This does not mean that the bureaucracy has been unwilling to change. Far from it, the bureaucracy has a history of being at the forefront of change since the developmental state. It was in fact constructed to make transformative change take place. The development of e-government should be seen as a continuation of this familiar change agent role. While there have been undoubted problems in bureaucratic practice over the years, such as corruption, the organizations of the state have fulfilled their assigned roles. There can be opposition to changes in internal structures and processes and to functional allocation as in all public services. In general, however, the Korean bureaucracy has been amenable to change. This has been of vital importance for the development of e-government as the bureaucracy is not only tasked with its implementation; it must also assist with policy design and evaluation, and internalize an orientation to innovation.

The fourth and fifth factors that have significantly contributed to Korea's e-government success can both be viewed as critical junctures, that is, events that have led to history taking a particular path and not necessarily a foreseen one. Critical junctures influence change. In the case of e-government in Korea, the two critical junctures were democratization that commenced in the late 1980s and the Asian Financial Crisis of 1997–1998. Democratization was a new driver for e-government. In the earliest years, government determined its development, but, with democratization, citizens developed a voice. It became necessary to respond to their demands for e-government services, transparency, and accountability. Government could no longer expect citizens to simply take what was given to them. Citizens now wanted a say in what services they wanted, the timeliness and quality of

those services, and the opportunity to participate. Democratization broadened the scope and character of e-government by making it more citizen-centric.

The Asian Financial Crisis was a brutal shock to the economy of Korea, a wake-up call that much was wrong with the prevailing model of development. It required immediate and radical action. This came in the form of large increases in investments in ICT development that also included e-government. To return the economy back on a growth track, it was the government that provided the stimulus and direction as had been the case in earlier developmental days. Large investments in e-government were an integral component of this recovery plan. For e-government, it was not so much a critical juncture that changed direction. Rather, it accelerated the development of a 21st century ICT-driven economy in which e-government played a key role.

6. Conclusions

Korea has been at the forefront of e-government development, consistently ranked by the UN as being in the top five countries in the world for 20 years. How has this been achieved? It has been shown that the answer lies in a political economy analysis that identifies a number of complementary drivers that collectively contributed to e-government success. At the core of the explanation is an effective state, a state with a policy process and organizations that have, over many years, have a strong record of proven production of the intended outputs and outcomes of policy. There have also been critical junctures, such as the Asian Financial Crisis and democratization, that have given extra impetus to e-government development. It has also been important for e-government development that it has been part of a broader vision of Korea's future resting on global leadership in ICT. While the private sector is responsible for most of the ICT development, the government has consistently provided direction and support for a phenomenon that originated under the developmental state but has continued into recent times. However, it is not a model of development that others can easily replicate. This is because it has arisen from the particular contextual factors and drivers of development found in the distinctive political economy of Korea. Other nations can learn from Korea about specific aspects and technologies of e-government, but they will not be able to reproduce the Korean model, as some of the contextual factors and drivers will not be present. However, other countries can examine Korean experience and select and modify aspects of Korean e-government development that fit with their own circumstances. It would be useful if other country's studies of e-government could adopt political economy approaches that might explain the differing levels of e-government development between nations and the particular trajectories of individual countries. From a number of such studies, we could begin to identify key drivers, important contextual factors, and necessary incentives for e-government development that could lead to models of wider applicability than those provided by single-country analysis.

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