E-government Challenges in Smart Societies: The Japanese Experience

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A. Introduction

One is hard-pressed to think of a society that combines technological development and tradition as effortlessly as Japan. With a stable democratic government with a strong economy and solid international relations, Japan is famous for being a safe country that cares for most of its citizens. Though conservative by most standards and not open to change lightly, it nevertheless provides an example of what a well-organized society can achieve.

The country has consistently scored top marks on the OECD fixed and wireless broadband reports.[1] Likewise, it ranks number two on wireless broadband and world robots distribution, number 15 in city management, and number four in e-participation on the International Institute for Management Development's 2021 Digital Competitiveness Ranking.[2] Japan also ranks 14th on the Asia Region UN's 2020 E-Government Survey, being praised for an "integrated approach facilitates the effective dissemination of public-private data and helps to ensure that all stakeholders maintain agreed-upon standards and adhere to compatibility requirements".[3]

With all this high praise and reputation for efficient and smart solutions, Japan has faced and continues to face multiple challenges regarding e-government services. These challenges range from societal, cultural, and institutional to even labor-market related, such as an aging population, lack of effective

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[1] *Organisation for Economic Co-Operation and Development*, Broadband Portal, available at https://www.oecd.org/digital/broadband/broadband-statistics/. The last access for all web addresses referenced in this chapter was on 27 October 2022.

[2] *International Institute for Management Development*, IMW World Digital Competitivenes Ranking, 2021, available at https://www.imd.org/globalassets/wcc/docs/release-2021/digital_2021.pdf.

[3] *United Nations*, E-Government Survey 2020 - Digital Government in the Decade of Action for Sustainable Development, 2020, p. 154.

communication amongst government agencies, low citizen engagement, and a shortage of IT professionals. Hence, while Japan is often thought of as an example of modernization, it also allows other countries to learn from its past and current setbacks.

The main goal of this chapter is to present, in a brief, simple and accessible manner, how the Japanese government approached the issue of modernizing its administrative services and what we can extrapolate from its successes and set-backs. To this end, we begin with a brief discussion on smart city initiatives focusing on e-government policies. Next, we examine various e-government plans in Japan, discussing some significant reforms. Finally, the last section expresses some comments on why these policies have failed and succeeded in some areas and what can be learned from the Japanese experience.

B. The smartness of a city

Smart cities present themselves as the next step of urban development. By combining the Internet of Things (IoT), Big Data, and Cloud Computing, among other technologies, smart cities aim to provide solutions to urban challenges and improve the lives of the citizens.[4] The origins of *smartness* within urban development can be traced back to the smart growth movement of the late 1990s[5].[6,7] Regardless, there is little consensus on what constitutes a smart city.[8] *Kitchin*

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[4]   Some authors argue that the imaginary of a city developed in sync with technological advances can be traced back to the 1600s. See: *Cugurullo*, in: Lindner/Meissner (eds.), The Routledge Companion to Urban Imaginaries, 2020, p. 113.

[5]   *Hollands*, City 2008, Vol. 12 (3), 303. However, *Hollands* contends that while the two terms overlap, particularly in relation to the use of information and communications technology, the smart growth agenda utilizes a wider approach.

[6]   Urban planners and geographers have been using quantitative and computational methods to design cities since the 1950s. *Shelton et al.*, CJRES 2015, Vol. 8 (1), 13 (14-15); *Jameson et al.*, Urban Geography 2019, Vol. 40 (10), 1467 (1468). Amsterdam had discussed using computer analysis for census purposes as early the 1960s.

[7]   Research on the necessary technologies for realizing smart cities can be traced back to the late 1980s and consumer-level products appearing by the early 1990s. For example, in 1992, IBM marketed a mobile system capable of combining cell phone functions and management of personal data, in other words, an early version of smartphones. *Rosati/Conti*, Procedia Social and Behavioral Sciences 2016, Vol. 223, 968, *Söderström et al.*, City 2014, Vol. 18 (3), 307 (310).

[8]   The use of the term "smart city" can be divided into two waves. The first wave occurred during the mid-1990s and was used by cities as a means of "self-congratulations" when they introduced functioning information and communications technology infrastructure, e-governance, or high-tech industries to foster economic growth. The second wave began during the late 2000s when IT sector companies, notably International Business Machines Corporation (IBM), began

explains that scholarly discussions can be divided into two camps. The first view defines smart cities based on how pervasive and ubiquitous computing and digitally instrumented devices are integrated into the urban environment. The second view adopts a broader definition and focuses on developing a knowledge economy within a region, i.e. the city's economy and governance are guided by innovation, creativity, and entrepreneurship.[9]

Regardless of the definition, smart cities initiatives share a series of commonalities. *Alexopoulos et al.* conducted a review of smart cities initiatives and literature. They found the following main categories of smart cities development: transportation, environment, tourism, health, waste management & water resources, energy-sustainable development, ICT infrastructure, economic development, security, and e-government.[10] Moreover, any combination of the above can make a city smart; there is no need for an initiative to focus on all areas.

The current model of smart city development revolves around the relationship between the universities, the private sector, municipalities, and citizens. While most projects are financed via public funding, the technologies required are usually developed in academia or the private sector. Citizens, however, are still the main object and pillar that support public initiatives for smart urbanism, which in turn fuel the need for research.

Even with the promise of a safe and sustainable environment that promotes economic growth within a knowledge-based society, smart cities have been criticized for multiple reasons. *Finch and Tene* point out that smart city technologies thrive on constant, omnipresent data flows captured by cameras and sensors throughout the urban landscape, thus raising serious questions about privacy and government accountability.[11] Moreover, there are also issues concerning collecting and storing data collected via ICT, particularly law enforcement at the national and international levels.[12]

The relation between private enterprise and governmental institutions in contracts concerning the design, construction, and administration of smart cities presents unique legal challenges. For one, the private sector is increasingly occupying roles that are traditionally reserved for public institutions, which puts them in a somewhat contradictory position to protect the public interest and their

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pushing for the use of their technologies in urban development. *Söderström et al.*, City 2014, Vol. 18 (3), 307 (310).

[9]   *Kitchin*, GeoJournal 2014, Vol. 79 (1), 1.

[10]   *Alexopoulos et al.*, in: Ben Dhaou et al. (eds.), ICEGOV 2019: Proceedings of the 12th International Conference on Theory and Practice of Electronic Governance, 2019, 281 (285).

[11]   *Finch/Tene*, Fordham Urb. L. J. 2014, Vol. 41 (5), 1581 (1609).

[12]   *Losavio et al.*, Security and Privacy 2018, Vol. 1 (3), 1.

investors.[13] In addition, while national and local governments play a pivotal role in any smart city, the complexity and scale of these projects require specialized knowledge in technology and law; hence, government lawyers might be called to fulfill roles for which they are not trained.[14] *Keymolen and Voorwinden* point out similar issues with contracts concerning smart cities, specifically that these contracts can be open-ended in character, without clear boundaries and agreements on the ownership of data, and are often non-transparent, not public, or incomprehensible.[15]

C. Smart government

One of the main focuses of smart cities projects is the administration of the city, specifically, the use of smart technologies to improve government services, usually under the name of digital government, e-government, e-governance, electronic government, smart government, or other similar. The term emerged in the late 1990s, but the use of computers in government can be traced back to the 1970s to refer to IT in government institutions and later evolved to include services provided to citizens.[16]

Eventually, the term e-government extended to cover government services and governance. *Nam* points out that in current literature, e-government refers to one of the following: service use, general information use, policy research, participation, and co-creation.[17] Moreover, e-government can also be classified based on the user.[18] Under this classification, the first type of e-government prioritizes interactions between government and citizens, encompassing most government services and facilitating the interaction between government and its citizens by providing government information and services regardless of time and place. The second type of e-government focuses on the contact between government and businesses, including many services offered under the first definition (free access to public data, etc.) and a more robust set of tools such as e-procurement and access to a governmental marketplace.

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[13]   *Rodriguez Samudio*, CES Derecho 2021, Vol. 12 (2), 3 (18).
[14]   *Jefferson-Jones*, U. Tol. L. Rev. 2019, Vol. 50 (3), 447. Discussing how government lawyers in smart cities must fulfill a role of "advisor-evaluator" of new technologies while defending the interests of their municipal clients.
[15]   *Keymolen/Voorwinden*, IRLCT 2020, Vol. 34 (3), 233 (247).
[16]   *Grönlund/Horan*, CAIS 2005, Vol. 15 (39), 713 (714).
[17]   *Nam,* GIQ 2014, Vol. 31 (2), 211 (212).
[18]   *Alshehri/Drew*, IADIS International Conference ICT, Society and Human Beings 2010, 35 (36).

The third type of e-government retakes the original meaning of the term and centers around the communication between government organizations, either at an interdepartmental level or between multiple agencies. The main goal of this type of e-government is to streamline cooperation and coordination and not necessarily to provide direct services to the citizens, even if they benefit in the long run. Finally, the fourth type of e-government emphasizes the relationship between government and public servants. Depending on the context, this might be included as part of the first or third type, as public servants also access government services as private individuals.

Perboli et al. explain that e-government projects use ICT to enhance the efficiency, effectiveness, transparency, and accountability of communications between government and public administration and citizens and businesses.[19] *Alexopoulos et al.* explain that e-government plans focus on e-voting, electronic consultation, electronic signature collection, and converting municipal services online. They also aim to develop applications for reporting problems, online monitoring of municipal meetings, geographic information system applications for building constructions, free access to open data, implementation of a framework for e-government services, evaluation of citizens' sentiment, and metrics to assess city and government performance.[20]

Nam also identifies five specific determinants that influence the use of e-government:[21] psychological predispositions, civic-mindedness, information channels, trust in government, and socio-demographic conditions. Psychological predispositions refer to the end-users' perceived usefulness of the ICT systems and applications. Civic mindedness explains how a particular population uses e-government services as an extension of civic and political involvement via traditional channels. Information channels center on how citizens learn about e-government services, i.e. via interpersonal channels or mass media. Trust in government describes the relationship between government and the use of e-government services by the public. A higher level of trust is associated with more use of e-government tools. Finally, socio-demographic conditions explain how racial, generational, geographical, and economic differences impact e-government services, with older, less educated, and less technically skilled individuals being the ones most reluctant to use them.

Regardless of the implicit benefits for citizens and society in general, the execution of e-government initiatives has always faced multiple challenges. At the European level, *Savoldelli et al.* have identified three periods of e-government

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[19] *Perboli et al.*, Tranportation Research Procedia 2014, Vol. 3, 470 (473).
[20] *Alexopoulos et al.* (Fn. 10), p. 287.
[21] *Nam* GIQ 2014, Vol. 31 (2), 211 (212-213).

initiatives and various barriers to adoption faced during each period.[22] During the first period (1994-2004), characterized by the optimistic views on the future performance of ICT, the main barriers were the lack of telecommunication infrastructures and communication capacity.

The second period covers from 2005 to 2009. While infrastructural and communication issues such as the lack of integration across government systems were still relevant, the resistance from civil servants, mainly due to the lack of ICT skill, also became an issue. Nevertheless, the most significant challenges were the lack of tools to evaluate e-government services and the difficulties in establishing a firm connection between ICT, benefits, and outcomes.

Lastly, the third period begins in 2010 and extends to 2013, during which the focus shifted to citizens and business empowerment, transparency, and open and collaborative government. During this stage, the main barriers to realizing e-government plans were political/institutional, lack of citizen participation in the policy-making process, and lack of measurement systems on governmental performance.

In addition to the above challenges, concerns regarding privacy, security, the digital divide, and the effect an interconnected government might have on the democratic process, all linked to the previously identified determinants. Furthermore, there are also cultural issues, though this depends on each country or local community's agreed customs and traditions.

Privacy issues are directly linked to trust in government, which then influences citizens' willingness to provide their data to public and private institutions performing a public service. As *van Zoonen* points out, people assess the purpose for which data is used and weigh the benefits received.[23] Most people will share their data when these benefits are of immediate personal relevance, such as medical services or a commercial gain. However, when these benefits are abstract, such as broader social goals, citizens are less likely to provide information.

By contrast, security issues describe a matter of public perception. Using the example of Amsterdam, *Jameson et al.* illustrate how citizens speak about the government as a "monolithic entity" while, in reality, it is composed of multiple departments, agencies, or municipalities, and the communication between them is not seamless.[24] Moreover, while government institutions promote smart government initiatives, the private sector is tasked with actually realizing them in most cases. This dynamic of the private and public sectors in public spaces, par-

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22   *Savoldelli et al.*, GIQ 2014, Vol. 31, s63 (s65-s67).
23   *van Zoonen*, GIQ 2016, Vol. 33 (3) 472 (474).
24   *Jameson et al.,* Urban Geography 2019, Vol. 40 (10), 1467 (1474).

ticularly those related to citizens' data, creates a series of issues regarding accountability and the role of private companies in government.[25]

D. Japanese E-government

Japan has a long-held reputation as a technological country that predates smart cities initiatives. As such, the country is no stranger to technology in administrative services. Interestingly, while the Japanese government has used IT to improve numerous services through the years, a review of the Japanese literature reveals a distinct lack of the term smart. Indeed, it is not until the early 2010s that we begin to see articles on *smartness*. Nevertheless, this is nothing more than a semantic argument. Not surprisingly, Japan has gone through many of the barriers described by *Salvodelli et al.* in roughly the same order. For example, in 1988, the government passed a law regulating personal data held by public institutions. Later, during the mid-90s, the Headquarters for the Promotion of Advanced Information and Telecommunications Society was established to design and adopt policies to digitize administrative procedures. For example, in 1994, the government presented the Plan for the Advancement of Digitalization of Government Information to create a network that allowed government agencies to exchange information and communication via email.[26]

However, the country does have specific challenges that set it apart from other digital government initiatives. Japanese administrative institutions have always been exceedingly efficient at the national and local levels. Public servant is a highly sought after, well-paid job with high barriers to entry; therefore, the public expects them to be efficient and hard-working individuals. In addition, the national and local governments had streamlined most processes to the point that citizens rarely meet with any delay or obstacle, even before introducing IT into their services. Hence, one of the principal benefits of e-government, improving services efficiency, is not necessarily the same in other countries.

The Japanese government has enacted various policies to facilitate the transition into a digital society with multiple degrees of success. The roll-out of these policies can be roughly divided into four periods, each with its own specific

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[25] See *Jameson et al.,* Urban Geography 2019, Vol. 40 (10), 1467 (1480); also *Rodriguez Samudio* CES Derecho 2021, Vol. 12 (2), 3.

[26] *Ministry of Internal Affairs and Communications*, Dejitaru Gabamento no Suishinto ni kansuru Chousa Kenkyu no Ukeoi Seika Hokokusho 2021, p. 15.

goal.[27] Early periods focused on one encompassing policy with clear-cut objectives that were achieved with relative ease. However, later periods saw the government revealing more policies in quick succession, which in some cases appear to go against previous goals.

And while these policies, in practice, the changes that led to new forms of e-government within Japan came not from government policy but from technological and societal changes to which the government responded. Hence, even within the various time frames set by the government, we find multiple policy changes that opposed previous goals.

I. The First Period (2000-2003): Infrastructure

The first period focused on building infrastructure and enacting the required legal framework to modernize the government and bring the country to the forefront of internet access. Thus, at the start of the new millennium, the government unveiled a comprehensive policy on digitalization,[28] beginning with the enactment of the IT Basic Law in the year 2000.

In 2001, the government introduced the e-Japan Strategy, a five-year plan to make the required changes to modernize Japan.[29] Under this policy, the government and private sector began an aggressive expansion campaign. As a result, by 2003, they had managed to provide high-speed internet to over 300,000 households and ultra-high-speed internet to over 100,000 homes nationwide at a monthly fee of under 10,000 yen. As a result, Internet users went from less than 20 million people (just over 9 % of the population) in 1997 to over 77 million (more than 60 % of the population).[30] By 2003, over 98 % of businesses had some form of internet.

One of the e-Japan Strategy goals was the establishment of a Digital Government (*denshi seifu*) both at the national and local levels. Under this new digital model, the government strived to digitize all white papers and legal documents, implement a system of online applications for administrative procedures, and promote digital mediums in administrative offices by 2003. As an early step of

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27   *Ministry of Internal Affairs and Communications*, Dejitaru de Sasaeru Kurashi to Keizai 2021, pp. 2-10.

28   *Masami*, Journal of information studies 2013, Vol. 85, 147 (155).

29   Under the e-Japan Strategy, the government strived to create a society in which all citizens were information literate, promoted economic revolution based on free competition, and actively contributed to the international community to create a knowledge-based at a global scale.

30   *Ministry of Internal Affairs and Communications*, Heisei 15 Nen Tsushin Riyo Doko Chosa no Seika 2004, p. 1.

this new policy, the government set up the "e-Gov" website in 2001, and by 2003 it had set up a system to receive online applications for over 95 % of administrative processes.[31] The government also began to offer information about various services providing access to government documents via the web, which has continued without significant hiccups throughout the years. However, it soon became apparent that while the physical infrastructure had been laid, the institutional foundations were not up to standard, as many administrative procedures were not compatible with a digital model. Hence, in September 2002, the government decided to revise the e-Japan Strategy to focus on the practical uses of ICT.

Japan had achieved most of its infrastructure-related goals well within the time frame set by the government. It also began the institutional changes required to provide citizens with digital access to various government services. Thus, the first period was a definite success of Japanese ingenuity and perseverance, catapulting the country into the forefront of digital enterprises ahead of its neighbors and some European counterparts. However, this success would prove challenging to maintain in the following years. Tradition, low citizen engagement, and, ironically, the bureaucracy would conspire to create two define types of e-government within Japan, with services aimed at business advancing at a more rapid pace than those aimed at private citizens.

II. The Second Period (2003-2013): Promotion and Expansion

The second period of e-government implementation focused on promoting ICT via multiple national policies. The first one was a follow-up to the e-Japan Strategy, the 2003s e-Japan Strategy II. Regarding e-government, this plan sought to create a society where citizens could access government information and express their opinions, mainly by providing government services 24-hours, 365-days a year by the end of 2005.[32]

The second policy, the New IT Revolution Strategy, was unveiled in 2006 and recognized that previous digital government goals were lagging. Specifically, this plan acknowledged that citizens and businesses were not using e-government services and that many administrative procedures were not adapted to an online environment. Thus, its primary goal was to achieve an e-government use of over

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[31] Even though there is no doubt that at one point in time, Japan established a system that allowed for online application of over 95 % of administrative services, there are conflicting reports on the exact date. *Ministry of Internal Affairs and Communications* (Fn. 26), p. 17, sets the date in 2003 while *Ministry of Internal Affairs and Communications* (Fn. 27), p. 114 has it in 2005.

[32] *Information Technology Strategy Headquarters*, e-Japan II Senryaku 2003, p. 23.

50 % by 2010. In addition, the government also aimed to create a small, cost-efficient government at the national and local levels. Then, in 2009, the government announced the i-Japan Strategy 2015, which aimed to integrate digital services into the citizens' daily lives as meaninglessly as water or air. Finally, in 2010, the New Strategy on Telecommunication Technologies shifted the focus from the government to a citizen-centric society.

In contrast to the infrastructure-focused first period, this period's goals did not entirely depend on government plans and instead hinged upon how well the government could promote its online platforms' benefits. The government first identified those administrative services most used by the citizens, actively promoting online applications by decreasing fees and even offering economic incentives. However, during this period, one of the most recurring challenges faced by the government became apparent: lack of citizen engagement. A seemingly trivial development, one which will be discussed later, contributed to this trend: the appearance of the smartphone in the late 2000s.

Some significant legal changes also took place during this period. The enactment of the Personal Data Protection Law and the Law on the Protection of Personal Information Held by Administrative Organs in 2003 might be the most significant. Both laws established the legal rights and obligations private individuals, businesses, and the government had regarding collecting, using, and transferring personal data. Likewise, the 2004 e-document Law allowed private citizens and enterprises to digitally store tax and financial information. Moreover, the electronic tax declaration service "e-Tax" was also rolled out the same year.[33]

Most successful online administrative services tend to companies and private citizens alike. Systems related to imports and exports illustrate this trend. As an island nation, Japan is highly dependent on maritime trade. Thus, services related to maritime industries such as permits related to crew members, imports, and exports had achieved digitalization by 2003. In addition, by 2010, the system expanded to include air transport and other tariff-associated services. Furthermore, real estate deed registration services are also provided online. Similarly, the one-stop vehicular-service counter allows online access to procedures regarding police, taxes, and other vehicle-related matters and is constantly increasing the number of covered services.

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[33] However, this system is also a great illustration of the government's philosophy regarding digital applications. The services are available 24 hours from Tuesday to Friday, and from 8:30 a.m. until midnight on Mondays, Saturdays, Sundays and holidays. *National Tax Agency*, e-tax Riyo Kanona Jikan, available at https://www.e-tax.nta.go.jp/info_center/index.htm.
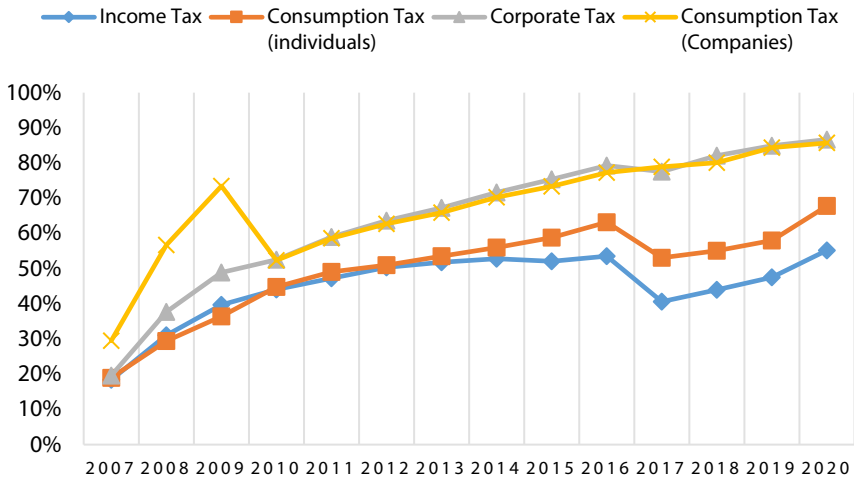
E-tax applications[34]

During this period, it became apparent that there was a lack of coordination between multiple government agencies. There was also a disconnect between national policies and the degree to which prefectural and local governments could implement the changes proposed by the government. Notably, the 2011 Tohoku earthquake and Tsunami revealed significant flaws in how the national government coordinated efforts with prefectural and municipal governments. Thus, the government proposed cooperating with prefectural and local governments by creating standards for various administrative services and relying on the private sector to implement the necessary institutional changes. However, it was not until the arrival of Big Data and Cloud Computing technologies during the early 2010s that the government could finally consolidate various services.

III. The third period (2013-2018): Big Data, Cloud Computing, and reducing costs

If the first period focused on physical infrastructure, the third centered around digital systems. The economic crisis of the late 2000s greatly influenced this

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[34]   Percentage of total tax returns based on the data of the *National Tax Agency* available at https://www.e-tax.nta.go.jp/. In 2020 the government changed the way in which it calculates the data, this resulted in a lower percentage for the years 2017 to 2020.

period; the government began to focus on IoT and personal data and paid close attention to digitalization's economic potential. It also marks a shift in how the government approaches digital government and citizens' data use.

The government also continued its trend of enacting multiples policies in quick succession. The most significant are the 2013s Declaration on Advanced IT Nation, followed three years later, in 2016, by the Basic Law on the Advancement of Public and Private Sector Data Utilization, and the Society 5.0 plan. Moreover, in 2017 the government revealed the Declaration to Be the World's Most Advanced IT Nation Basic Plan for the Advancement of Public and Private Sector Data Utilization. Later the same year, the government launched the Policy on Digital Government Advancement. Finally, in 2018, it presented the Plan to Accomplish the Digital Government Advancement.

Ambitious names aside, the government's goal during this period was to streamline information exchange amongst various national and local government agencies to make full use of citizens' data. In addition, the political landscape of this period also affected government policy concerning smart government. Specifically, Prime Minister *Shinzo Abe's* economic policies, colloquially known as *Abenomics,* placed great importance on supporting the private sector and reducing red tape. As a result, big data and cloud computing became centerpieces of the government strategy to reduce costs, provide businesses with the necessary tools to recover from the economic crisis, and find new uses for citizens' data to modernize administrative services. Specifically, policy shifted from simply making administrative services available online to using citizens' data more efficiently. Hence, cost-cutting measures translated into a reduction of online services, with the government aiming to reduce the number of administrative processes that could be accessed online from 96 % to 52 %.[35]

Thus began a rapid consolidation of government databases, which resulted in the creation of the Joint Government Platform in 2013. The government aimed to reduce online systems from 1500 in 2012 to a half by 2018. It also sought to move around 250 of those systems to the joint platform by 2018. However, by 2016, many of those systems contained large amounts of personal information. In addition, in many cases, the private sector provided the same services, which meant no plan to transfer over 60 % of them to the online platform.[36]

But what is perhaps the government's most ambitious policy concerning e-government, the My Number System, was only tangentially related to the

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[35]   *Ministry of Internal Affairs and Communications* (Fn. 26), p. 27.
[36]   *Board of Audit of Japan*, Seifu no Joho Shisutem wo Gouryu Shutekitosuru tameno Seifu Kyotsu Puratafo-mu no Seibi oyobi Unyo no Jokyo ni tsuite, available at https://report.jbaudit. go.jp/org/h28/ZUIJI2/2016-h28-Z2017-0.htm.

digitalization of government services. The My Number System is a personal identification system introduced in 2015. It provides Japanese citizens and long-term residents with a unique identification number linked to various government institutions.[37] The identification card includes the person's name, address, date of birth, gender, and an IC chip that can be checked against multiple government databases. Over the years, the government has increased the number of services linked to the My Number System from tax-related, social security, and welfare services. Moreover, there is also an online site that lists all the services connected to the My Number System.

The government has gone to great lengths to convince citizens to obtain and use their cards. However, attempts have met with a lukewarm response at best. Besides the natural reluctance one might expect from mass personal identification policies, there have been several issues with the government's approach. First, obtaining the My Number card is voluntary. Even though every citizen and long-time resident receives a letter with the personal number printed and instructions on receiving the card, there is no obligation. Second, citizens can continue to use government services without acquiring the card; at most, some services that use the identification number will only require a copy of the government notice and not the card itself. Third, initially, the government went to great lengths to communicate that the My Number card contained personal information and had to be closely guarded while at the same time trying to expand the number of services that use the cards. In other words, there have been mixed messages on whether the card should always be carried or left at home to use only for specific purposes.

IV. The fourth period (2018-present)

There is no simple way to describe the fourth period other than *change*. The first two years can be described as a continuation of the consolidation trend that

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[37] Mass identification efforts have been taking place in Japan after WWII. Unsurprisingly, the government studied the possibility of assigning personal numbers for tax purposes as early as the 1970s. In 1997, the Pension Number System was created, and soon after, in 1999, the Residential Basic Book Law was reformed to introduce the Resident Certificate Code, an eleven number identification code. While Nationals and long-time residents are part of the National Pension System, it is not a personal identification number. By contrast, even though the Resident Certificate Code is considered a type of identification, citizens must first obtain a copy of their resident registry at the municipal office before using it for administrative procedures. Furthermore, the resident registry only contains basic household information, which would make it inadequate for the government's goal regarding citizen data.

characterized the third period: the government trying to reduce red tape and find better uses of citizens' data to promote economic growth. During this period, the government began to promote its Society 5.0 policy, which was first announced in 2016.[38] In 2018, the government announced its plans to become the World's Most Advanced Digital Nation.

This period also saw some essential legislative and institutional changes. Specifically, the government passed various laws in 2021 to realize its plan as the World's Most Advanced IT Nation, of which the following are worthy of mention. The first is the Basic Law on the Formation of a Digital Society, which aims to improve Japan's competitiveness and solve its most critical social problems, e.g. declining birth rate and aging population. The second is establishing a Digital Agency to promote the measure for forming a Digital Society, particularly the management of the My Number card and information network systems. Lastly, the Law on the Arrangement of Related Laws for the Formation of a Digital Society amends several laws to reflect the government's plans better. Among these changes, the Personal Data Protection Law amendment to allow semi-anonymized and anonymized data and the abolition of the seal system are noteworthy.

Nevertheless, most of the changes that immediately affected how citizens access government services did not come from a political will; instead, they were a reaction to an emergency: the COVID-19 Pandemic. As with every other country, the pandemic greatly impacted the Japanese government's plan. For all the sophistication, technological development, and online services that the government had boasted through the years, it soon became apparent that tradition and bureaucracy were not prepared to deal with radical societal changes. Moreover, the lack of coordination between the national and prefectural governments from the second period became apparent during the pandemic's first month, forcing governors to adopt prefecture-level economic and sanitary measures.

Not surprisingly, the public outcry and health risk helped advance e-government implementation at a pace that everyday politics did not achieve for almost 20 years. However, the most damning indictment of the lack of coordination and ability to address emergencies can be found in the roll-out of the special economic measures to support businesses and citizens. Both national and prefectural

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[38]   According to official documents Society 5.0 "[A]chieves a high degree of convergence between cyberspace (virtual space) and physical space (real space). In the past information society (Society 4.0), people would access a cloud service (databases) in cyberspace via the internet and search for, retrieve, and analyze information or data. In Society 5.0, a huge amount of information from sensors in physical space is accumulated in cyberspace. In cyberspace, this big data is analyzed by artificial intelligence (AI), and the analysis results are fed back to humans in physical space in various forms." *Cabinet Office*, Society 5.0, available at https://www8.cao.go.jp/cstp/english/society5_0/index.html.
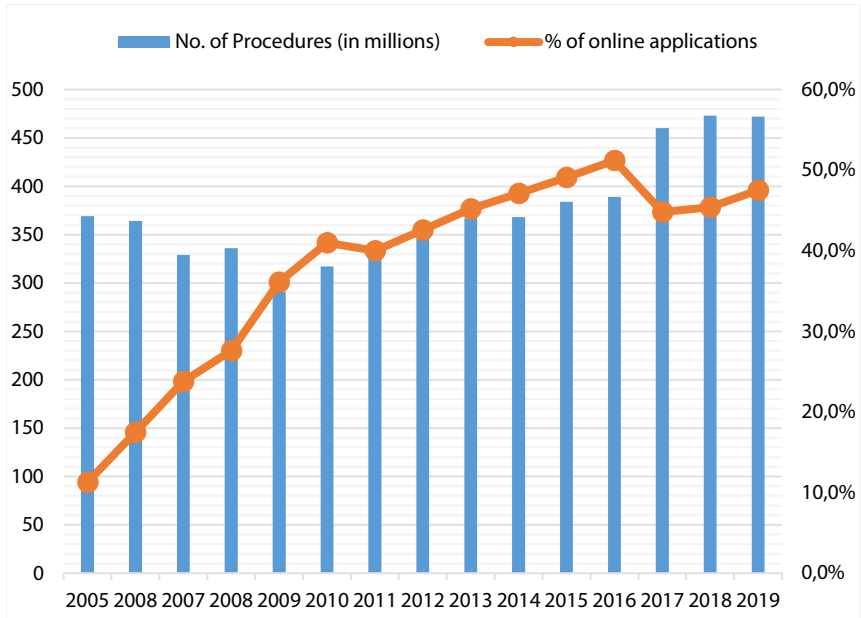
Online applications as a percentage of total applications[39]

governments offered monetary relief to those affected by the pandemic. However, in most cases, applying for this relief had to be done via regular mail, as the services did not support an online application. Furthermore, citizens had to use each system, national and prefectural, separately and include a copy of the My Number card or the notice, which further delayed applications.

E. The Japanese Experience

Japan has achieved some of its e-government goals. Citizens can readily access government information and essential administrative services online. However, in reality, these services are underutilized. An industry poll reveals that while 75 % of individuals would like to use online services, only 24 % had accessed any e-government application services.[40] The main reasons for not using

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[39] Data from the annual reports published by the *Ministry of Internal Affairs and Communications*, available at https://www.soumu.go.jp/menu_seisaku/hakusyo/index.html.

[40] *Trust Bank*, Torasutobanku, Gyosei Tetsuzuki no Dejitaru ka ni kansuru Anketo Kekka wo Happyo, Senkoku 1089mei ni Chosa, Yaku 7 Wari ga Gyosei Tetsuzuki ni Fubensa wo Kanjita Keiken Ari, Gyosei Tetsuzuki no Onrain Kanketsu Sa-bisu wo Yaku 8 Wari ga Riyoshitai, 2020, available

e-government applications were the limited number of services (33.2 %), the lack of knowledge that the services were offered online (28.7 %), and that the services were too complicated to use (22.6 %).

These results reveal some of the flaws with the government strategy. The top two reasons show that even though the government had digitalized most services by 2005, most citizens were unaware that they could access them online. Thus, it is evident that the government's efforts to promote the virtues of e-government are not reaching the citizens. The cost-cutting measures during the third period might have contributed to the image that there are few services available or the citizen's lack of knowledge. To be fair, the government adopted these measures after considering which services were being used the most. However, it is not clear whether the lack of use is the immediate reason, or it is a result of poor promotion. Hence, there is the possibility that these services would have been kept online if better promoted.

The third reason is not related to any campaigning efforts; instead, perhaps surprisingly, it has its genesis in a disconnect between government policy and how citizens access the internet. Most of the e-government systems were designed during the early to mid-2000s. Therefore, most of these services presuppose access from laptop or desktop computers. Moreover, many government pages only support older browsers. It is not uncommon to receive a message that more recent ones are not supported and might result in errors. However, the debut of smartphones in the late-2000s completely changed the way Japanese people access the internet. According to a 2021 report[41], over 89 % of polled individuals have smartphones. By contrast, only 48 % of respondents have laptops, and a lower percentage of people (26.5 %) use desktop computers.

The government is aware of this issue and is expanding the number of services accessed via smartphones beginning, unsurprisingly, with tax declaration. It also has announced that it is studying the possibility of creating a My Number card application for smartphones. Nevertheless, it is not clear how this would work in practice, as it continues its effort to consolidate various services into the My Number System.

In addition, critics point out that, while the national government pushed for further digitalization, the actual labor of implementing it falls upon prefectural and local governments. Furthermore, the adoption rate of the My Number

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at https://www.trustbank.co.jp/newsroom/newsrelease/press365/. While this poll is quoted in official reports, the total number of participants was rather low, only 1089 people.

[41]   *Ministry of Internal Affairs and Communications*, Reiwa 2 Nendo Uizu Korona ni okeru Dejitaru Katsuyo no Jitsumu to Riyosha Ishi no Henk ani kansuru Chosa Kenkyu no Ukeoi – Hokoku-sho – , 2021, p. 101.

System is still low, with no indication that it will increase in the near future.[42] Hence, local governments face the economic risk of preparing for a system that might be underused. A proposed solution to this issue is the standardization of the most common services, with a simple user interface that allows for a countrywide adoption.[43]

The solution to this issue might prove challenging, as Japan scores relatively low on digital literacy for all its technological and scientific achievements. Thus, while Japan ranks 14th out of 64th on E-government in the International Institute for Management Development's 2021 Digital Competitiveness Ranking, it places 62nd in the digital/technological skill department.[44] Moreover, the lack of specialized skills extends to professionals. An industry report reveals that in 2019, over 89 % of businesses considered a shortage of IT experienced employees.[45]

Therefore, the number of professionals who could help solve the issue is relatively low. Those with the required knowledge and skills are most likely to go to the private sector for better benefits, leading to the government contracting from the private sector to develop IT systems. While this is not necessarily a shortcoming, it might further contribute to fragmenting online services, as each company uses its vision of how to design them. Hence, every new policy brings forward a new type of online service that fails because it does not integrate with other systems. An example of this is the latest iteration of the Joint Government Platform, handed to Amazon's Webs Services in late 2020 and discontinued less than a year after in 2021 in favor of a government-run system.[46]

Societal factors also play a role. For example, Japan is an aging society; thus, many citizens are not digitally literate enough to utilize online government services. Also, even though it might seem a contradiction when talking about technological development, the truth is that Japan is a conservative society that is famous for being resistant to change. It is not uncommon for households to have a fax machine, and even official institutions still make important announcements, like the new Emperor's coronation, via fax.[47]

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[42] *Mori*, Jurist 2021, Vol. 1556, 44 (46).

[43] *Mori,* Jurist 2021, Vol. 1556, 44 (46).

[44] *International Institute for Management Development* (Fn. 2), p. 105.

[45] *Ministry of Internal Affairs and Communications* (Fn. 27), p. 25.

[46] *Nikkei Xtech*, Shodai no Seifu Kyotsu Kuraudo Dai 2 ki PF ha Haishi he, 2 Daime Gabakura he Daitogo suru Riyu, 2021, available at https://xtech.nikkei.com/atcl/nxt/column/18/01869/112400001/.

[47] *Denyer*, Japan wants to shred its paper habit. Could it finally leave the fax behind?, The Washington Post, 2020, available at https://www.washingtonpost.com/world/asia_pacific/japan-fax-paper-suga/2020/10/16/fc6fcdd8-06ef-11eb-8719-0df159d14794_story.html. In 2021 the government announced its plans to abolish the use of fax machines. However, there was fierce opposition by several government agencies and the government was forced to suspend the program.

So, what can the Japanese e-government experience teach us? For one, modernization for modernization's sake is not enough to convince citizens to use digital services, especially if analog services are efficient. Second, Japanese citizens do not differ from their counterparts in other countries: they are willing to provide their data and use online services if they perceive a concrete personal benefit, as posited by *van Zoonen*. There is enough evidence of this within official data. For example, a 2021 report on the use of the My Portal services reveals that an overwhelming number of applications had to do with services related to economic support for child-rearing families, followed by nursing or disaster relief.[48] Hence, any e-government initiative must communicate the immediate benefit presented in clear and straightforward terms.

The second lesson we can learn from the Japanese experience is the importance of understanding the technological priorities of a target population. The government has just recently begun to make its systems smartphone friendly. Currently, it is not clear if the Japanese private sector has the human resources required for the task. And, even if it does, tradition might once more prevent a full implementation at all government levels. The last lesson demonstrates the importance of effective communication between national and local governments, lest all efforts cause more confusion and chaos than any potential benefit. The Japanese bureaucratic system is efficient enough to endure and overcome these setbacks. However, other countries' systems might collapse or, at the very least, greatly inconvenience the general population. Therefore, any government trying to implement e-government strategies must ensure effective backup measures during the transition period and even after that.

The Guardian, Japanese fax fans rally to defence of much-maligned machine, 2021, available at https://www.theguardian.com/world/2021/jul/07/japanese-fax-fans-rally-to-defence-of-much-maligned-machine; *The Mainichi*, Japanese gov't requires ministries, agencies to eliminate faxes by end of June, available at https://mainichi.jp/english/articles/20210612/p2a/00m/0na/006000c.

48   *Ministry of Internal Affairs and Communications* (Fn. 26), p. 65.