Development of Japan's e-Government: My Government as a Step Towards a Ubiquitous G2C Networked Society

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Abstract
Since the early 2000s, the Japanese government has strived to escape various socio-economic problems, and also tried to use information technology (IT) to solve these problems. The major implementation of IT strategies designed to transform the country from a bureaucracy into an open e-government is scheduled to occur between 2016 and 2017. These were supposedly designed to build infrastructure to promote legislative and administrative efficiency. However, the most revolutionary aspect is the development of a citizen-centered system. E-government service is an international trend and symbolizes, to some extent, how democratic and open a country is. Japan's joining the trend signifies its intention to achieve true democracy—not merely a political slogan, and to invite the citizens to participate. This paper takes a critical social and policy approach to examine the last decade of Japan's IT strategies and also examine its newly launched e-government system. The paper argues that the government in creating the system has viewed citizens as passive recipients of e-government services. In order to truly transform the nation into an IT society, people need to become active participants to shape e-government. Some educational opportunities will be suggested to help move towards that goal.

Keywords: e-government, open government, Abenomics, Japan, IT strategies, IT society, efficacy, government services

Introduction

In the early 1980s, Japan was a rising economic superpower. Its economic miracle was inspiring or threatening to other developed economies. However, a decade later the Japanese miracle peaked and crashed, triggering twenty years of spiraling deflation. Japan went from being the No. 2 economy in the world to No. 3 and the nation lost hope and vision. Prime Minister Shinzo Abe was re-elected in 2012 and again two years later on the strength of promises to rebuild Japan's economy. This paper focuses on his most recent term and in particular how information technology played a central role in his political agenda to remake Japan under his Abenomics vision and how it is tied with the creation of e-government.

Following his September 2015 re-election, Abe announced the "Three Arrows of Abenomics 2.0" as his game plan. The goal of this economic strategy was to accelerate his first three arrows of Abenomics, but from different angles to help the nation escape years of economic deflation. He also claimed this would address the problems of Japan's low fertility rate and aging population. It aimed to increase Japan's GDP by about 20 percent to 600 trillion yen by 2021. He argued that in such a society, "each and every one of Japan's 100 million citizens can take on active roles" [1]. Some officials viewed this as a real challenge when the workforce is diminishing due to the graying of society [2]. Abenomics 2.0 envisions women and senior citizens as vital yet underutilized human resources, and demanded that various policies should be established to ease their way into the workplace. Those policies were designed to reduce the number of women leaving work to nurse children or provide eldercare by improving social security and other support. Japanese society previously expected that women would leave the productive labor force after marriage in order to raise their children and/or take care of parents and in-laws since Japan has fewer nursery schools or senior care homes per-capita than other developed countries. Abe believed that continuing women and seniors in the workforce would boost productivity and spending, which would jumpstart the economy. The Ministry of Health, Labour and Welfare reported that between 2011 and 2012, about 95,000 men and women left the workforce in order to take care of elderly relatives [3].

In 2013, the Abe Cabinet pronounced its *Declaration to be the World's Most Advanced IT Nation* as one means to carry out the growth strategy. It envisioned a Japan along the following lines:

1) A society that encourages the creation of new and innovative industries and services and the growth of all industries
2) The world's safest and most disaster-resilient society where people can live safely, with peace of mind, and comfort
3) One-stop public services that anyone can access and use at any time

To some extent, this was not new. Ever since 2001, earlier administrations had promoted their own IT vision. For example, the 2006 New IT Reform Strategy's slogan was "realizing ubiquitous and universal network society where everyone can enjoy the benefits of IT" [4]. These IT visions overall produced more failures than success. The most incisive criticism was that "many citizens have yet to experience the outcomes of that development" [5].

This paper will examine to what extent Japan has made progress to become the society depicted in the vision described in the 2013 IT Strategy; especially, focusing on the aspect of government public services. It argues that although the IT infrastructure and system itself have been moved closer towards a citizen-centered IT environment, the current scheme still sees citizens as passive recipients of e-services and does not incorporate them as active participants or agents to influence and shape the government and foster innovation. The paper also investigates current educational opportunities for women and senior citizens who want to gain or improve their IT skills for re-employment and for greater participation in e-government.

Literature Review

Many Japanese studies on the development of e-government highlight their interests on technical and administrative challenges to implement e-services. Those include studies addressing difficulty coding the variety of Kanji Chinese characters [6], cryptographic algorithms for user identification [7][8], and implementing new technologies to compensate users' lack of IT skills [9][10]. Others looked at soft resources, such as a customer relationship management system [11], development of human resources [12], record management [13], and technical, administrative factors to realize e-government [14]. The digital divide or user's IT skills have not been extensively discussed in terms of the advancement of e-services in Japanese literature. Although many 'how-we-do' reports exist, they are not necessarily related to e-government. They are mostly pilot or community projects to provide or support for senior citizens to acquire Internet skills and information literacy through volunteer organizations [15][16], universities [17], and public libraries [18]. Outside of Japan, the majority of e-government studies related to the digital divide have also been from the viewpoint of the technological, system improvement and adjustments [19][20], with the exception of Sipior and Burke's study that highlighted a community education opportunity to train socially-disadvantaged, IT illiterate people to become participants in e-government [21]. This paper suggests that parallel to the technological invention, an e-government service model should include some mechanism to raise citizens' IT skills and information literacy. As those previous studies illustrate, e-government planners, researchers usually focus primarily on technological questions, and to a lesser extent focus on HCI. However, policymakers also need to provide IT training at various levels, especially for those in the shadow of the digital divide. By doing this, as systems develop, users should still be able to take advantage of these expanding services. The author hopes this paper would encourage policymakers to make IT education an integral part of modeling e-government schemes.

The Development of e-Government in Japan

The development of e-government in Japan began with the *e-Japan Strategy* approved by the Yoshiro Mori Cabinet in 2001. The Strategy consists of four policy areas: establishing e-government, ultra high-speed network infrastructure, facilitating e-commerce, and nurturing high-quality human resources. The e-government plan was explained as "all the administrative procedures [would be] available via the Internet by 2003" [22]. Following the initial strategy, a series of white papers on IT, policies, and acts were established to transform the nation into one of the most advanced networked societies. The *e-Japan Strategy II* (2003) would allow the central and local

governments to build administrative portals to offer "one-stop/nonstop" services [23]. By 2010, the *New IT Reform Strategy* (2006) aimed 50% of applications to be processed online by both national and local governments. While those early initiatives produced significant progress on building IT infrastructures with some attention to usability, the 2008 IT Strategic Headquarters' review included the following criticisms:

- More than half of online services were not used in a given year. They need improvements to become easier and more accessible to the extent that users perceive the convenience.
- Only about 1.8% of citizens have a "basic resident registration card" which is necessary to use e-government services.
- The IT infrastructures between prefectural and city/district/town/village offices do not work well together, which limits potential cooperation between offices.
- Electronically submitted files are still printed on paper at government offices. Government workers need education and training on how to maximize e-services.

In short, IT should be harnessed to become a useful and convenient system for citizens [24]. Reflecting these criticisms, during 2009-2012 under a coalition government led by the Democratic Party of Japan (DPJ), the provision of e-government was revised. However, none of these schemes became fully implemented until the Liberal Democratic Party (LDP), which ruled Japan for most of the postwar era, regained control over the Diet in 2013. In the next section, we will examine an Abe Government's approach which made a major breakthrough to become an advanced IT nation.

Striving for a Citizen-Oriented System

The newly-elected Abe Cabinet passed bills to establish the "My Number System" and a "Government CIO," and issued the *Declaration to be the World's Most Advanced IT Nation*. It promised to take down vertical organizational barriers and implement IT measures to provide convenient e-government services, reform national and local governments' information systems, and reinforce IT governance [25]. The national government developed the shared government platform, Kasumigaseki Cloud to connect ministries and agencies to consolidate hardware to cut expenses and to share information and streamline functions [42]. The local government LAN (LGWAN: Local Government Wide Area Network) is also able to share information held by prefectures, cities, towns, and villages. The LGWAN-ASP (application service provider) further allows exchange of information and provides services between all local and national governments [26]. Cloud computing and other IT services are the underpinning of the Japanese e-government, which enable "youth, women, senior citizens, caregivers, and handicapped persons" work and make their work free from specific locations [27]. On the basis of the networked IT infrastructures, e-services were designed with the viewpoint of primarily citizen's convenience and government efficacy. Figure 1 illustrates this scheme.

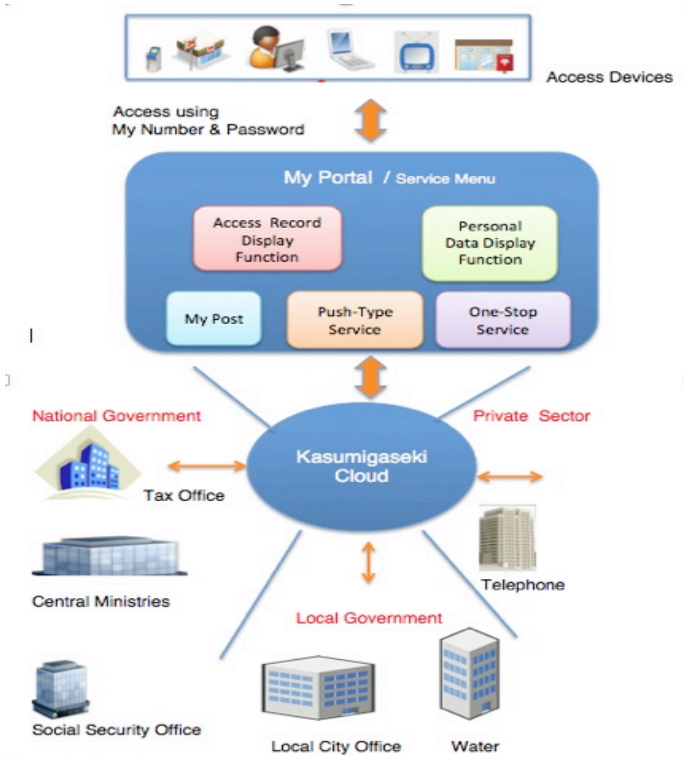

Figure 1. My Government Services [28]

Access Points

The plan called for citizens to be able to interact with government offices via various channels, such as cable television, PC, mobile phone, and in-person, in order to obtain necessary certificates and other documents from their homes, convenience stores, and other locations 24-hours a day.

My Number and My Portal

Following years of planning, the Japanese government has been implementing the "My Number" system during 2016 and 2017 as a key tool for administrative procedures related to social security, taxation, and disaster response. Somewhat like a social security number in the United States, a My Number is a twelve-digit reference assigned to an individual citizen in order to improve administrative efficiency, public convenience, and fair taxation and welfare [29]. Using My Number, citizens can check their own government information and oversee how these records are used by government agencies. "My Portal" is to facilitate such queries. More importantly, My Portal will allow individuals to submit forms and fees, which traditionally required obtaining multiple departments' records and documents. The following sections will explain various services as a part of My Portal, the My Government platform [30].

One-Stop Service

Historically, the Japanese government is infamous for being bureaucratic and unresponsive. Providing convenient services has never been its priority. Although it has been improving, recent financial constraints have created enormous challenges for

local governments and agencies to quickly respond to citizens' various needs. According to a government study, currently paperwork regarding a move requires seven visits and 13 documents in various offices, such as schools, police, local Department of Transportation, etc. Thus, we can see that this "One-Stop Service" idea as the conceptualization of e-government is quite revolutionary in Japan. If My Government is successful as a shared government platform, the plan is to open it to the private sector. For example, hospitals might be able to send bills to national health insurance system and also annotate users' private medical record. The goal is to eliminate redundant systems and integrate networks. In addition, all government information systems will be shifted to cloud computing, in turn drastically cutting costs [31]. The service is estimated to save approximately $1 billion/year for governments, private sector, and individuals combined [32].

My Post (e-PO Box)

This free and secure service will allow citizens to receive important documents and information sent from government agencies and eventually companies they chose over the Internet. The users of My Post are able to receive bills and statements via e-mail, pay them electronically, and archive records in their e-PO Box. The government envisioned that it, if successful, would eventually break down the boundaries between public and private sector information and help stimulate new businesses.

Push Service

Japanese local governments provide a wide range of information on various services through pamphlets, newsletters, mailings, and websites; however, there is no guarantee that the right information is received by the citizens needing it. A notification system or "Push Service" is developed to approach users from the government instead of waiting for citizens' applications or requests. The Push Service selects the target individuals and sends appropriate information directly to their My Portal. For example, a city office could send information on a vaccination to mothers who have children of a certain age using My Portal. At the same time, in My Post, the mothers could download a voucher from the city office to receive free vaccinations at a local clinic. Unlike a print approval form sent to their homes, a mother who is visiting her parents house could receive the notification by logging onto her My Portal and get her child vaccinated at the closest neighborhood clinic. The hope is that senders and receivers could select desired information levels and topics, rather than be bombarded with irrelevant information, i.e. information overload. By using an official system people can also have greater trust compared with public e-mail, which often contain scams targeting vulnerable citizens.

Convenience Stores

Although convenience stores came to Japan from America, they have greatly developed since and become integral parts of Japanese life in small towns and inner cities alike. Convenience stores already offers kiosks where people can wire money, reserve tickets, and pay utilities, but it was a major innovation to make them part of e-government. Its proliferation was especially attractive to the government, as it tried to save funds by merging smaller municipalities and closing government offices. The administrative kiosk in convenience stores is similar to an ATM machine. With

his/her My Number and password, users can request, receive, and pay at the kiosk [33]. It is an economically advanced system for all participants. For example, for citizens living in Ichikawa City in Chiba, they could save about $20 per transaction including transportation costs and time missing work, and will save about $3 million/year (based on processing 470,000 certificates). For the city office, the benefits include responding users' requests promptly, reduce expenses for labor, equipment, and office supplies. Even after subtracting expenses paid to participating convenience stores, the city office would save about $2.8 million/year.

Digital Divide and e-Government

Although the IT infrastructure and administrative systems have been greatly improved, in terms of becoming a citizen-centered system that could enhance quality of life, it can be noted that citizens are not yet adequately seen in the scheme as active users of IT in society. In the aforementioned 2013 IT Strategy, an IT society was envisioned as making people free from various disadvantages, such as homebound women with babies, people with disabilities, senior citizens and people living in remote areas by employing cloud computing and IT services. The government hoped that this would encourage greater social participation, flexible employment, such as telework by all citizens to help address the nation's problems: a low birth rate and the chronic shortage of labor. Besides the groups mentioned above, foreigners, immigrants, and unemployed youth (especially those in the so-called "lost generation") are also members of Japan's digital divide, who need special attention. No IT strategy or plan alone will be truly successful if people are unable to fully adopt the technologies. The following sections will examine the current status of IT readiness for seniors and women in Japan, as examples of groups not yet addressed by Japan's e-government model.

Senior Citizens and Women as Workforce

In 2014, fully one fourth of the Japanese population is age 65 or older, which marked the highest percentage in its history. Statistics show that the employment rate of these senior citizens (defined as people 65 or older) is equivalent to 10% of the national workforce and this percentage has been increasing each year for ten years. It is the highest rate among developed countries. Senior citizens as well as women have been perceived as a not-fully-tapped resource to solve various social problems. The government established legislation and other measures to encourage seniors to stay in or even return to the workforce. According to the 2006 *White Paper on National Life*, compared with the United States and European countries, Japanese men who are in their 60s show a much higher employment rate, so did Japanese women in their 60s. On the other hand, the same survey indicated that there were many seniors in their 60s who could not find a job even if they wished to work. Among the respondents, companies planning to hire people over 60 represented only 10.9% while those with no plans to hire in the age group was 36%. Over 30% of the latter companies, regardless of their size, claimed they had "no appropriate jobs for them." To the question "what do you think should have been done in order to become re-employed," participating senior citizens responded that they needed to obtain "professional knowledge and skills (51.2% for men, and 48.5% for women)," and "computer skills (41.9% for men, and 33.8% for women)" [34].

The same study also examined the circumstances surrounding employment of women after pregnancy and parenting. It found that women who had left the workforce for more than two years felt their abilities deteriorated in areas such as proposing projects, presentations, management, foreign languages, and computer skills. When the participating companies were asked why recruitment had not reached the quota they wanted to hire, 44% of the respondents gave "a lack of ability, experience, and qualifications" of candidates as their reasons. In order to support women's return to the workforce, the study suggested that during their leave period, women should receive various training at vocational-development schools administered by the national or local governments.

However, there are many factors preventing women to receive such education. The *White Paper on National Life* showed the graduates of vocational schools had a good employment rate (between 60% and 76%), and more than 60% of the students were women; however, in order to be admitted, candidates need to meet some conditions and pass an entrance examination. Therefore, many of them (35.7%) were young people under age 30. [35]. Further, those programs or schools may not be located in their community, so job seekers may need to spend hours commuting and face other expenses. If they are taking care of small children or family members, this may be impossible. It would be even harder for senior citizens to seek such training or education. Therefore, the majority of the disadvantaged population, women, seniors, immigrants, and people with disabilities need educational opportunities that are free of charge, conveniently located in their communities, and provide resources and training with comfort. Although none of the government studies and documents on Japan's IT development mentioned public libraries as a resource, many aspects of the institution meet these conditions. There are more than 3,200 public libraries in cities, towns and villages nationwide. In addition, the 2015 Ministry of Internal Affairs and Communications' report indicated that citizens' most used government online service was the public library (60.2% of all services offered) such as reserving books, followed by e-services at cultural and sports facilities (55.7%), such as making reservations. This demonstrates that public libraries are well used and are already becoming key parts of citizens' online life, which indicates great potential as an educational facility for community members to receive information literacy and training. Japanese librarians interested in developing IT labs and vocational IT classes might look at colleagues in the United States where public libraries have a long history of leading in this area as a learning center to counter the effects of the digital divide.

Conclusion

Much of this paper may be seen as a series of government white papers pointing to various digital government futures, but we should recognize that this is already becoming a reality. A 2015 government report on online use of administrative procedures revealed that 2,669 procedures are already available online. Although it might sound counter-intuitive, the government reduced to this number by 1,099 procedures from the previous year, after conducting a cost-benefit analysis, which found many online services were not utilized [36]. The report also showed a 1.3% increase of online processed administrative documents from 2013, which accounted for 45.4% of all procedures. For local governments, online processed cases rose to 47.1%, which marked a 1.9% increase from the previous year [37]. However, neither

national nor local government online usage rates met the goal set in the New IT Reform Strategy (2006), processing "at least 50% of applications and filings online by both national and local government by FY 2010" [38].

There are many possible reasons contributing to the shortcoming. One scholar, Nemoto criticizes that the government restrictions on businesses such as e-commerce, e-voting, e-books, and Internet distribution of broadcast TV. He argued that without a relaxation of those regulations, Japan will not be able to advance as an IT nation [39]. In his 2014 comparative study of e-government systems between Japan and Korea, Shimada pointed out a major factor why Korea was more successful in becoming an e-government. He found that Korea's success at becoming one of the most advanced networks was because the national government has a much stronger top-down control over local administrations. In contrast, Japanese e-government is more of a bottom-up operation, where the national government creates legislative regulations and guidelines for local governments to follow but does not enforce them [40]. This means that each municipality, prefecture, and national office may have greatly invested in their own software, which was created around their own needs rather than on developing systems that are interoperable and citizen-centered.

It is far too early to analyze the success of Japan's e-government initiatives, since 2016 is a transition year with the implementation happening just now. However, the digital divide certainly exists for people with certain socio-economic backgrounds. The digital divide can be addressed using multiple channels supported by advanced IT for delivering public services, which is the current approach of Japanese e-government scheme. The expensive IT infrastructure to be built received many criticisms especially in the early stage, but it meets the present nation's IT literacy level and needs. This approach echoes the description of custom-centered services that Helbig and Gil-García called for. They stressed that "policies aimed at reducing the digital divide, should consider the specific type of gap they are aiming to bridge and the multiple perspectives carried with them." [41]. However, only by providing education and access, can unemployed women, senior citizens, and the disadvantaged population be truly integrated into Abe's vision of Japan as a leading IT society with a highly functioning e-government system.

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