

Regarding Japan's Declaration to be the World's Most Advanced IT Nation

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1. Introduction

Japan is taking the opportunity for economic revival by adopting a new economic strategy (Abenomics) with positive future expectations together with investment for the 2020 Tokyo Olympics and Paralympics. However, with Japan's post-bubble economic model of mass production and price competition reaching its limits and amid growing calls for a reform of Japan's industrial structure, we are now facing many pressing issues such as preparing for the super-aging society that is arriving at an unprecedented speed, dealing with the reduced size of the workforce and increased social security claims resulting from this demographic shift, coping with large-scale natural disasters that are still giving cause for concern, updating our social infrastructure that was mostly developed during the bubble economy period, securing a stable and economical energy supply, and improving our food self-sufficiency. It could be argued that no other developed country is doing as much as we are to address such issues.

In June 2013, the government published a document called "Declaration to be the World's Most Advanced IT Nation" (abbreviated to "IT Declaration" below) with the aim of leveraging IT as an engine for economic growth and effectively resolving the abovementioned issues that Japan is facing. In the same month, a Chief Information Officer (CIO) was newly appointed by the cabinet to control the government's IT strategy, and after two years of effort, we have already seen effective results in some fields, and progress is being made in the development of new infrastructures for the utilization of IT in Japan.

This article presents a timeline of how the IT Declaration was established, the achievements that have been made so far, and the challenges that may appear in the future.

2. Japan's IT policy

Japan has designed and implemented its IT strategy with a view to establishing a national platform including legal systems and a communication infrastructure whereby information and knowledge can become a source of added value. Part of the national IT strategy was set out in "Basic Law on the Formation of an Advanced Information and Telecommunications Network Society" (called "IT Basic Law"), which was brought into effect about fifteen years ago in 2001. In view of the fact that the use of information and communication technology (ICT) can help people respond effectively to sudden large-scale changes in the socioeconomic structure on a global scale, this law established principles and frameworks for the rapid, focused promotion of

measures related to the formation of an advanced information and telecommunications network society. Also, the IT Strategy Headquarters which is headed by the prime minister was set up to promote the formation of an advanced information and telecommunications network society based on this law. Its vice directors are the IT policy minister, the chief cabinet secretary, and the minister for economy, trade and industry. It also includes various other government ministers and industry experts among its members. Since the IT Basic Law was brought into effect, the headquarters has acted in the capacity of a control tower, formulating IT strategies and promoting the focused and rapid deployment of resources for the formation of an advanced information and telecommunications network society.

Japan formulated a number of IT strategies during this period. For example, the "e-Japan" strategy that was designed in 2001 accelerated the provision of a broadband network infrastructure, resulting in Japan having some of the world's best broadband services in terms of speed and cost. The "i-Japan 2015" strategy of 2009 took a medium-and-long term view of where Japan should be heading in the future. Among its aims was the promotion of a "citizen's electronic post box," which evolved into The Social Security and Tax Number system.

However, there has been a poor level of public satisfaction with the use of IT in government services and in fields such as medicine and education. In addition, there are still problems remaining such as wasteful government investment in IT and reduced convenience. Furthermore, there are many other issues that have yet to be resolved, such as disparities in the use of information between different regions and different generations and issues related to security measures.

This has been attributed to various causes including inadequate business process reengineering (BPR) across organizations due to an improper grasp of user needs and insufficient cooperation between government ministries and other agencies, including overlapping investment in the IT promotion measures of different ministries. There is consequently a strong demand for these issues to be resolved.

3. Declaration to be the world's most advanced IT nation

In 2013, to reformulate the government's IT strategy in light of such issues, a law (Government CIO Act) involving amendments to parts of Japan's Cabinet Act and other legislation was announced and enacted. Under this new scheme, a member of the cabinet (Government CIO) would be given

cross-departmental authority to control the cabinet's ICT policy-making. The Government CIO would also be added to the IT Strategy Headquarters to take over some duties of the director (prime minister). This law made it possible for the Government CIO to coordinate the activities of each department at a high level, allowing Japan to reduce inefficiencies in the government's IT investment and establish a system that can effectively implement the above measures while making things more convenient for citizens.

Under this revised system, as mentioned above, IT is defined as the engine for economic growth and as one of the country's growth strategy, and the IT Declaration was created with the aim of building the world's most advanced IT society where everyone can feel the benefits of IT. This system has since been revised twice in order to keep up with changes such as the dramatic progress of IT technology.

The IT Declaration describes four pillars that the society should strive to attain: achieving future growth through the deeper utilization of IT, making use of IT in towns, individually, and in the workplace, allowing people to experience the safety,

security, and rich possibilities offered by IT, and using IT to provide one-stop access to public services.(Figure 1)

More specifically, the following implementations are aimed for the year 2020, when Tokyo will host the summer Olympics and Paralympics. These implementations, which are needed to make this society a reality, have also been summarized in the form of a road map that clarifies the actions to be taken by each government ministry/agency and the schedule for these actions. On the basis of this road map, the Government CIO will provide oversight for all of the government's IT policies across different government ministries and agencies while continuing to promote the PDCA cycle and remaining deeply involved in technical developments.

- Building new Big Data business models utilizing Big Data in the IoT era
- Building institutional frameworks to accelerate the utilization of IT in society as a whole
- Preparing an information-sharing platform to promote the utilization of IT by local governments
- Ensuring people can access suitable medical and nursing services if necessary

■ Figure 1: Overview of IT declaration

Overview of revisions to the Declaration to be the World's Most Advanced IT Nation (IT Declaration)

Basic principles

- ❑ **2013: Government CIO system established, work begins on the formation of horizontal ties, IT Declaration drawn up**
- ❑ **2014: IT Declaration revised**

⇒ **IT Declaration revised based on the rapid development of digital technology during this two-year period**

[Current Status] *Based on a three-pronged approach that combines a bold monetary policy with an agile fiscal policy and a long-term strategy to stimulate private investment, we are adopting a new economic strategy (Abenomics) to sow the seeds of recovery and raise people's future expectations by preparing for and investing in the 2020 Tokyo Olympics and Paralympics. On the other hand, there are issues that need to be addressed in preparation for the forthcoming super-aged society, including the diminishing workforce size, increased social welfare expenditure, natural disaster countermeasures and the increasing decrepitude of the social infrastructure.*

1. Information and communication technology (IT) as the cornerstone of Japan's revival plans

- Since IT plays a pivotal role in Japan's growth strategy, we will promote a vertical split of ministries and agencies centered around a Government CIO under the control of the minister responsible for IT policy, and the establishment of horizontal ties. In the past 2 years, steady progress has been made towards the completion of foundations by working to establish and promote an IT infrastructure.

Typical achievements made so far

- By promoting cloud services and the reorganization of government systems based on business process reengineering (BPR), we currently expect to achieve a reduction of approximately 20% (about ¥100 billion per year) in operating costs by 2021 (target: 30% reduction), and a reduction of approximately 63% in the number of government information systems by 2018 (target: 50% reduction)
- To achieve a smooth introduction of the Individual Number system, we are promoting initiatives that contribute to the use of this system, such as system reforms and the preparation of minor portal functions and requirements
- While protecting private data, submitting proposals for amendment of the personal data protection law to promote the use of personal data, etc.

2. Build an IT utilization model that can address a diverse global issues through the pursuit of "true wealth"

- As advances are made in IT, we are entering the era of the Internet of Things (IoT) and artificial intelligence (AI) due to the increased distribution of data.
- By maintaining security while using this sort of technology to construct completely new problem-solving IT usage models, we will achieve "true wealth" that people can feel.

3. The four pillars of problem-solving through the use of IT

- From the viewpoint that IT usage is characterized by deeper versatility and continuity through standardization (horizontal deployment), and by inducing innovation in diverse fields, we will clarify the sort of society and attitudes that we should be aiming for through the use of IT, and take measures necessary to achieve this.
 - (a) A society that grows toward the future through the deepening use of IT
 - (b) A society that achieves vibrancy through the stimulation of towns, people and workplaces
 - (c) A society where it is possible to experience safety, security and richness through the use of IT
 - (d) A society where one-stop public services are available

- Making Japan's roads environmentally friendly and the safest in the world by eliminating traffic accidents and congestion
- Making sure everyone has the information they need in the event of a natural disaster, wherever they are
- Facilitating efficient and safe energy management
- Making one-stop e-government services available on any terminal by making thorough use of cloud technology and The Social Security and Tax Number system

4. The latest concrete initiatives and achievements

Breaking silos among government ministries and agencies under the IT Declaration led to substantial progress in the implementation of the IT infrastructure including a reformed government information system, the launch of The Social Security and Tax Number system, and the revision of the Act on the Protection of Personal Information. Similar initiatives are being taken in other countries around the world, but Japan is making significant progress. According to the United Nations E-Government Survey of 2014, Japan jumped from 18th place to 6th place in two years, and in the World Economic Forum ICT ranking of 2015, Japan rose to 10th place from 16th place the previous year and 21st place the year before that.

Two recent examples of the efforts and achievements of Japan's IT policy are introduced below. The first is the promotion of reforms in governmental information systems. The second is the establishment of the Act on the Protection of Personal Information and amendment of the Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure.

■ Reforming the government information system

The government is currently working on improvements to the government information system based on the IT Declaration. This involves consolidating systems and migrating them to the cloud and promoting business process reengineering through the use of IT. The aims of this initiative are to halve the number of governmental information systems by 2018 (compared with the 2012 figure of approximately 1,450) and to achieve a 30% reduction in the annual operating costs of these systems by 2021 (compared with the 2013 figure of approximately ¥400 billion).

To halve the number of governmental systems, the plan is to integrate and consolidate them down to a total of 542 systems (a reduction of about 63% from the current number) by formulating a governmental IT system reform road map indicating the medium-to-long term reform process.

To achieve a 30% reduction in operating costs, a cost reduction plan was formulated to clarify the cost-saving measures and estimated savings in each ministry. In particular, for large-scale systems, the Government CIO has so far personally held over 380 interviews with various ministries and agencies. So far, the estimated savings are in excess of ¥100 billion. In particular, for

large-scale systems whose annual running cost exceeds ¥5 billion, the 30% reduction has almost been achieved.

The achievement of these efforts to reform information systems in the Japanese government will be applied to local governments in cooperation with the Ministry of Internal Affairs and Communications. More specifically, after analyzing a case study involving the prior introduction of a local government cloud service and providing the advice and information necessary for local governments on its introduction, the service was found to cause a 30% reduction in operating costs and support business process reengineering (BPR).

Thus, at the levels of national and regional government, steady progress in the reform of information systems is leading to greater spending efficiency and the creation of an environment where diverse high-quality public services can be offered to citizens of all levels.

■ Amendment of the Act on the Protection of Personal Information and the Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure

In September 2015, the government passed amendments to the Act on the Protection of Personal Information and the Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure.

With the impending arrival of the Big Data era in which vast amounts of personal data will be collected and analyzed, the vague definition of personal data has made it difficult to utilize information in some business fields. To break out of this situation and revitalize the economy, the Act on the Protection of Personal Information was improved so as to eliminate the gray zone by clarifying the definition of personal data and by stipulating that businesses are free to use anonymized data that has been processed to make it impossible to determine whose data it is. As for the Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure, although its use is currently restricted to three fields (social welfare, tax, and disaster countermeasures), it is expected that further improvements to efficiency and convenience will occur in the future. Amendments were made to expand the scope of application to fields such as the following.

- (a) Numbering of saving accounts
- (b) Work related to special medical examinations and health guidance
- (c) Sharing vaccination histories in work related to vaccination

On January 1 of this year, a personal information protection committee was established as a third party organization to provide consistent monitoring of how personal data is handled, after which the revised system was put into action.

5. Examples of future work

As described above, the IT Declaration was set forth in 2013. Although results have been achieved in some fields, we have just started building the world's most advanced IT nation, and there are still many issues to be addressed before the Japanese people can really feel that they are living in such a society. As an example of one of the main issues to be tackled in the future, we will introduce the state of considerations related to the use of IT including the promotion of a sharing economy.

Achieving a smooth flow of information through the use of IT is an effective way of resolving issues in a super-aging society and is one of the main pillars of Japan's growth strategy, which is also described in the Japan Regeneration Strategy and the IT Declaration.

In response to this, a study group was established under the IT Strategy Headquarters at the end of October last year to investigate the utilization of IT by institutions. After some lively discussions, it issued an interim report regarding the basic direction of institutional development aimed at utilizing IT to

smooth out the flow of information. In this report, as the basic direction for institutional development related to the utilization of IT, it was decided that ongoing efforts should be focused on promoting the planning of comprehensive plans for the effective and ongoing promotion of speedy measures to promote the flow of information, the use of IT to achieve a smooth flow of information, and the reformation of business models for this purpose.

6. Conclusion

IT is a versatile tool that is used in all sorts of fields. It is not only an engine for economic growth but also has the ability to solve the challenges faced by Japan. While IT evolves every day in accordance with Moore's Law, efforts to eliminate anxiety and risk while using IT to its greatest possible benefit are extremely important if Japan is to achieve the goal of creating an IT-enriched society where everyone can feel the benefits of IT, and to this end, the government will continue to make a concerted effort to promote the IT Declaration.

■ Figure 2: Issues regarding a new scheme

