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## **E-governance in Japan: Analysis of the Current Status of e-government and Local e-services**

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### **Abstract**

This paper gives an overview on e-government and local e-services in Japan, developed under the guidelines contained in the e-Japan Strategy (2000) and in the New IT Strategy (2006).

We present an analysis on the current state of e-government and the challenges the country faces in order to become a worldwide front-runner, as established by the New IT Strategy.

The conclusion of the paper is that continuous efforts are necessary in order to improve e-services in Japan. Among all, citizens need increased security in their transactions in order to overcome the detected lack of engagement in the usage of e-services.

**Keywords:** E-governance, e-government, e- services, e-Japan Strategy, Japanese New IT Reform Strategy.

### **1. Introduction**

E-government in Japan was developed initially under the guidelines given by the e-Japan Strategy (2000). From the beginning the idea of e-government as an enabler for the reform of the public administration was stated. This e-government environment included the transactions between governments (G2G), between the government and the citizens (G2C) and between the government and the businesses (G2B) in a national and in a local scope: “An electronic government is a means to comprehensively reform public administration. Under an electronic government, administrative transactions among government offices or between governments and citizens/businesses that have been conducted on a document and/or meeting basis will be made available online, and information will be shared and utilized instantly across various central and local government offices through information networks. This, however, does not mean just putting the existing public administrative services online. Rather, it requires carefully planned investment from medium- and long-term viewpoints and involves essential reform of administrative works, streamlining of redundant works and projects undertaken by different ministries and agencies, and revisions of relevant systems and laws. Namely, it is necessary to make public administration simpler and more efficient, and lessen the burdens on citizens and businesses.” [4]

The New IT Reform Strategy established a defined set of policies for improving e-government, in line with the goal of fully using the IT capabilities in order to provide better quality of life for the citizens, and based on the acquired experience in the implementation of e-government.

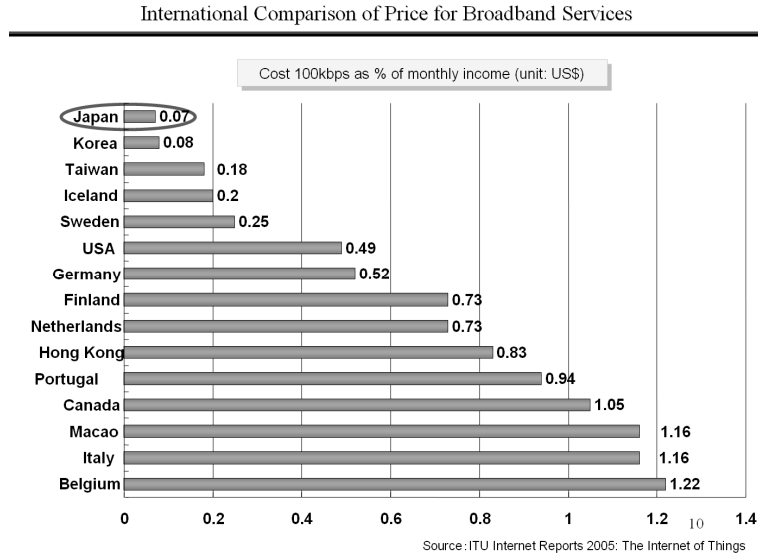
This research paper gives an overview on the local e-services and how they are understood by the New IT Reform Strategy, first comparing its goals for E-Government, with those that were established by the E-Japan Strategy. The experience in the development of E-Services at the local level will be used to present the challenges that Japan must face in the implementation process. The last part of this research paper will explain the mechanisms for monitoring E-Services.

### **2. The New IT Reform Strategy (2006-2010): Beyond the e-Japan Strategy**

The New IT Reform Strategy – Realizing Ubiquitous and Universal Network Society Where Everyone Can Enjoy the Benefits of IT – [5] was issued by the IT Strategic Headquarters in January 2006. It intends to continue with the efforts first established by the e-Japan Strategy (2001-2005) in order to transform Japan in the most advanced IT country in the world: “The goals of this strategy are the realization of the Ubiquitous Network Society that anyone can use at any time from anywhere for any purpose, and through such a society to maintain Japan’s status as a cutting-edge IT nation with the world’s most advanced infrastructure, markets, and technical environments to improve and reform lifestyles

from the perspective of the general public”. [5, p.18].

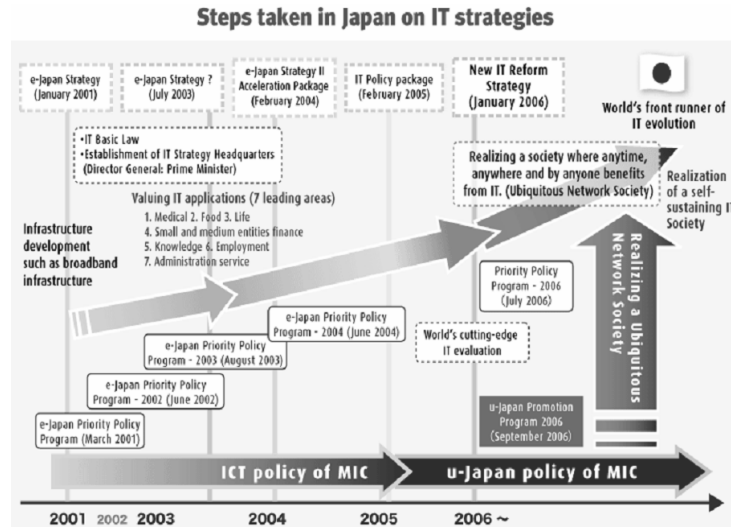
Almost eight years have passed since the e-Japan Strategy was issued. In this period of time, among other goals, Japan has considerably developed its broadband infrastructure, allowing users to have the fastest Internet connections worldwide at the cheapest rate (Figure 1).



**Figure 1. International Comparison of Price for Broadband Services. Elaborated by Professor Toshio Obi for the ‘Introduction to CIO’ lecture given on December 7, 2007 at the Graduate School of Global Information and Telecommunication Studies (GITS) – Waseda University.**

According to the government, “During the past five years since the e-Japan Strategy was first unveiled, Japan has become the world’s most advanced IT nation, and the remarkable results achieved have included, the development and utilization of one of the world’s most advanced broadband infrastructures; the world’s leading usage of sophisticated mobile phones; and the development of an environment for e-commerce and its expansion into one of the world’s largest e-commerce markets. In addition, during the process in which we were working toward the realization of these achievements, we have achieved extremely positive results in the development of a mechanism for the further expansion of IT utilization in our country, such as public-private partnership and the establishment of an assessment system concerning our IT strategy” [5, p.3]. This opinion needs to be contrasted with the critics to this program, which are presented in section 6 of this paper.

After focusing basically on the infrastructure deployment, the second stage of the Japanese IT strategy seeks to carry out the necessary reforms “...to continue economic prosperity and quality of life for the people...into the 21st century...”, [5, p.6] using the IT technologies: “The issue to which we next need to focus our attention in this new strategy is to work on carrying out the reforms utilizing information technologies as well as to work to develop the necessary infrastructure for these technologies”. [5, p.4] (Figure 2)



**Figure 2: Steps taken in Japan on IT strategies. From the lecture given on December 7, 2007 by Professor Toshio Obi for the ‘Introduction to CIO’ course at the Graduate School of Global Information and Telecommunication Studies (GITS) – Waseda University**

The priority IT policies in the New IT Reform Strategy have been divided into three categories (Appendix 1), each one with specific measures to be taken. Those related to e-government are included into the first policy: “Resolution by the use of IT of various problems confronting Japan through the pursuit of IT structural reform capabilities.”

When comparing the main target for the development of e-government in the e-Japan Strategy and in the New IT Reform, the former seek to “realize an electronic government, which handles electronic information in the same manner as paper-based information...and even expedite digitization of citizens and businesses widely. Public administration should be intensively reformed to digitize documents, promote paperless, and share and utilize information through information networks” [4], while the latter seeks to achieve “The world’s most convenient and efficient e-Government —Handling of 50% or more of all filings online and creating a small and efficient government— by year 2010. <The specific target is to “Create e-Government (on the national and local government levels) that provide a sense of convenience and enhanced services and process at least 50% of applications and filings online by both national and local government by FY 2010.”> [5, p.32]

### **3. E-services Implementation: The Role of the Chief Information Officer (CIO), the CIO Council and the Council of Assistant CIOs (Technical Advisers to CIO) in the Promotion of e-government**

E-services in Japan are implemented with the aim of integrating both the national and the local level, in order to provide a convenient e-government. After an analysis carried out by the Government following the guidelines of the National IT Headquarters, the involved ministries (national level) or municipalities (local level) start the implementation phase.

In order to carry out this process smoothly, the introduction of the Chief Information Officer role in the Japanese Government was mandated by the e-Japan Strategy. In 2002 the CIO Council was created in order to “realize E-Government”. According to Concon [2, p.30-33], every Ministry has a CIO, with the following responsibilities:

- (1) Chief Officer of e-government and enterprise architecture
- (2) Technical officer of e-procurement
- (3) Agency’s expert in IT security
- (4) Planner of IT budget

- (5) Communicator and in charge of public relations
- (6) Promoter of business process reengineering (BPR) and IT solution management
- (7) Chief Officer in formulating strategy
- (8) Chief Officer of performance assessment

This same author describes the CIO in the following terms: "...it was set up in 2002 under the ICT Strategy Headquarters. The council is identified as one of the enabling apparatus of the program, which will push forward various e-government measures in an integrated manner among ministries and agencies. All the important policies of e-Government initiatives in principle have to go through the Council. It is composed of all the Ministry CIOs. The Council is headed by the Assistant Chief Cabinet Secretary, and managed in cooperation with the Administrative Bureau of the Ministry of Internal Affairs and Communications (MIC). Under the CIO Council, a managing committee is formed of Division Directors representing respective Ministries. The formal chair is a Councilor of the Cabinet Secretariat, and the deputy chair is the Director of Administrative Information Systems Planning Division of Administrative Management Bureau, MIC. [2, p.31]



**Figure 3: Structure of the Ministerial CIO Council. Elaborated by Professor Toshio Obi**

The role of the private sector in the promotion of the utilization of IT in Japan is underscored by the appointment of Technical Advisers to CIO who compose the Council of Assistant CIOs.

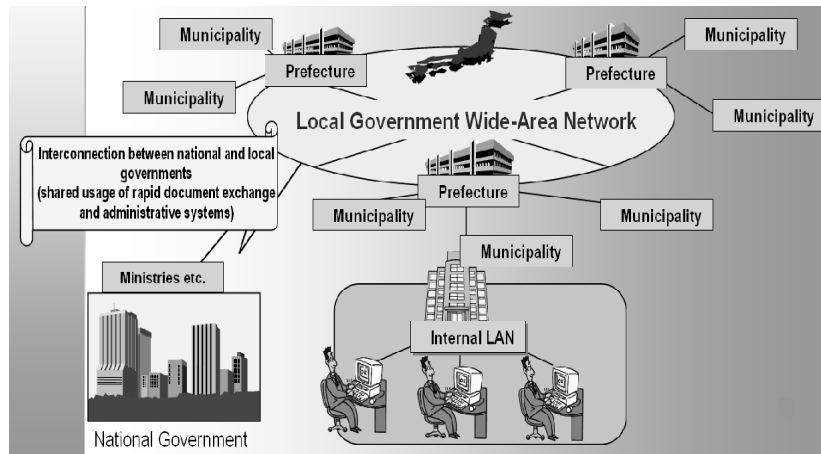
Experts from the private sectors were appointed by December 2003 in each Ministry and Agency. The missions of these appointees is to support their respective Ministry CIO in business analysis and formulating plans that will optimize existing programs, or what they call the Optimization Plan. They also hold inter-ministerial meeting to share the experiences of respective Ministries and discuss technical matters. As a group, they serve as the Assistant CIOs of the whole Government, not just of their respective Ministries. [2, p.32] (Figure 3)

“As such, the meetings of these Technical Advisers have become a clearance gateway as far as the technical aspects of e-Government initiatives in Japan are concerned. Various policy reviews and optimization plans go through peer review by the meeting of Assistant CIOs before going to a CIO council meeting for decision. At the top level, the ICT Headquarters, an expert member was also appointed in December 2003 too attend the meetings of CIO Council. He also serves as the chair of the meetings of Council of Assistant CIOs.” [2, p.33]

#### **4. Current Status of e-government (Local Level)**

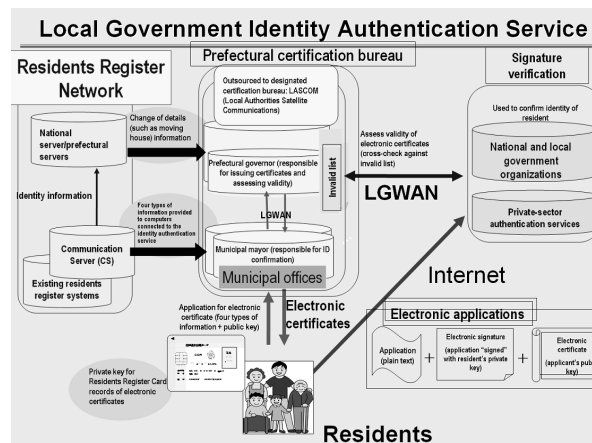
Further improvement of e-government according to the New IT Strategy is based on the following goals, which were already achieved [8, p.81]:

1. Set up of an in-house LAN and provision of one computer per person: In-house LAN has been set up in 2,437 organizations (98.9%). As of April 1, 2005, each organization has (d) 498.1 computers.
2. Set up a Local Government Wide Area Network (LGWAN): LGWAN is a dedicated network linking local governments together to enable safe and secure mail, document exchange and information sharing, as well as joint usage of a wide range of administrative systems. All local governments were connected by the end of Fiscal Year 2003: In Prefectures and designated major cities, operation started in October 2001, while all municipalities were connected by Fiscal Year 2003. As for the access to the Kasumigaseki WAN, the functionality for E-mail started in April 2002, while document exchange started in July 2002. (Figure 4)



**Figure 4: Local Government Wide Area Network (LGWAN). Elaborated by Professor Toshio Obi**

3. Set up a Resident Basic Register Network System: Introduced on August 5, 2005. The Residents Register Network serves as a nationwide personal identification system shared by all local government bodies. It links up details of the residents register, which are used for authentication of residential status in a range of administrative procedures and processes. Information stored on the Network includes, name, address, date of birth and gender, as well as the residents register code. The issuance of basic registry IC Cards started on August 25, 2003.
4. Start offering Public Authentication Services for Individuals (JPKI): Inaugurated in January 29, 2004. As of April 1, 2006 it (was) offered at 11 ministries and 47 prefecture governments. (Figure 5)



**Figure 5: Local Government Authentication Service. Elaborated by Professor Toshio Obi**

5. Start up electronic application: Introduced in 39 organizations out of a total of 47 prefecture governments. As of

August 20, 2005, forty five organizations... offer(ed) services by the end of Fiscal Year 2006.

6. Information security and protection of personal information: Guaranteed by laws for (the) protection of personal information and information security.

## **5. Tools for Monitoring E-Government Services**

Currently, CIO and technical advisers to CIO from the Japanese Government are using mainly Enterprise Resource Planning (ERP) and Enterprise Architecture as tools for monitoring e-government services and evaluating their productivity and efficiency.

In the case of Enterprise Architecture, this is a design method that aims to optimize operation throughout an entire organization. In EA, administrative operations and systems are divided into 4 strata: 1. Business Architecture; 2. Data Architecture; 3. Applications Architecture; and, 4. Technology Architecture. Joint use of information is promoted throughout the governmental office, eliminating vertically and compartmentalized bureaucracy. [8, p.83]

One of the policies of the New IT Reform Strategy is to "establish under the IT Strategic Headquarters an E-Government Evaluation Committee (tentative name) made up of external experts who are well acquainted with the use of IT for operational reform to conduct rigorous audits and evaluations including evaluations from the perspective of cost effectiveness with respect to the optimization of operations and information systems in each government ministry, provide the necessary support and make recommendations concerning information system planning, development, operation, and evaluation, and evaluate the status of PMO [ Program Management Office] activities in each ministry".

From the side of research institutions, Waseda University has been carrying out an assessment on e-government development status for many countries since year 2004. This survey is the first of its kind in Asia and evaluates the status of e-government by comparing its actual development worldwide with what can be considered an ideal e-government situation. Waseda University has also established a Global Education Network implementing a CIO program based on a Global Human Resource Development Plan. In doing so, Waseda University faces the need of developing CIO activities in e-government with the creation of a model of CIO with world class standard. The mechanism to establish a post-graduate level curriculum for CIO training is based on the collaboration among government, business and academia.

## **6. Challenges Faced by Japan in Implementing e-services**

The main challenge Japan has to face with respect to its e-services is the reduced citizen engagement and indifference towards them [6]. An analysis on the status of e-government made by the Ministry of Internal Affairs and Communications (MIC) found out that people and companies do not actively use the e-government. Additionally, the e-government service system was not deployed enough to connect the services to local governments, meaning that the user does not feel the convenience of e-government. Although the optimal use of work/system is tried, the system is not fully prepared. [8]

MIC conducted a survey in order to find the cause for the low level of usage of e-services. The Ministry found out that citizens are reluctant to use e-services mainly because user certification and preliminary registration of identification is required, also because users are afraid of leakage of their personal information. [8]

Another issue is the need of a citizen centric view when providing e-services: "As we look back, the e-Japan initiative has operated too much from the viewpoint of the supply-side, and therefore, it was not always in sync with the needs and requirements of the Japanese citizens" says Takuya Hirai, Japan's Parliamentary Secretary of the Cabinet Office. "Honestly speaking, it is very difficult to force people to use the Internet—and if we abolish the paper bases, it would force people. That means that what we have is a very steady and continuous stream of public relations and publicity in order to educate the people. I think that the way to have very convenient and easy-to-understand services for the citizen is by reducing the costs or fees they have to pay." [1, 7]

## **7. Conclusion**

Each country has a particular approach when establishing e-services inside an e-government program. The Japanese case shows how e-government can be successfully implemented with a clear strategy and goals, as well as assuring an

adequate leadership for the process. The problems that Japan faces, namely, the lack of usage of provided e-services, as well as the low citizen engagement will be gradually solved with the continuous commitment of the involved stakeholders, under the New IT Strategy.

## 8. Acknowledgments

This research paper is based on the Roundtable Discussion – Video Conference held on November 16th 2007 between Waseda University (Japan), Dresden University of Technology [Technische Universität Dresden] (Germany) and Saint-Petersburg State University (Russia). The authors would like to thank the additional comments and feedback given by Ms. Hai Nguyen and Ms. Diana Ishmatova (Graduate School of Global Information and Telecommunication Studies, GITS, Waseda University).

## 9. Appendices

### Appendix 1: Utilization of online services during 2006 (local level)

Services		Annual utilization (accumulated performance) (million)	Rate of utilization	No. of institutions conducting online services
1	Reservation of book lending in libraries	160.08	18.2%	575
2	Reservation of cultural/sports facilities	160.08	30.1%	465
3	Request of picking up large wastes	53.63	1.7%	94
4	Application of tap water	13.87	1.1%	308
5	Electronic filling of local taxes (eLTAX)	5.74	0.8%	63
6	Application of prequalification for participating in bidding	4.45	13.2%	245
7	Application for use of road	3.11	5.4%	85
8	Application for participation in lecture or other events	7.37	1.5%	169
9	Application for installation of water purifier	0.84	0.2%	62
10	Bidding	1.39	16.0%	234
11	Disposal and transportation history of industrial wastes	1.53	0.07%	28
12	Registration of pets	1.31	0.03%	496
13	Filing of address change of car owner	1.44	2.0%	29
14	Harbor related services	1.28	25.6%	51
15	Registration of test for recruiting employees	0.62	7.8%	174
16	Application for public opening of public letter	0.25	3.7%	265
17	Research and report on infectious disease	0.27	0.7%	18
18	Filing on food management	0.54	0.03%	24
19	Filing on disposal of specific chemical substances	0.12	8.6%	47
20	Application for names of sponsors	0.10	0.1%	49
21	Application for protection from organized crime	0.11	0.03%	8
Total		364.10	17.5%	

Note: The number of annual services performed is estimated through the sum of services by all local governments. The online utilization is calculated by subtracting the local services used from the national utilization number. Source: Domoyoshi Inoue. [3]

### Appendix 2: The IT New Reform Strategy Resolution by the use of IT of various problems confronting Japan through the pursuit of IT structural reform capabilities

1. Measures using IT intended to resolve issues confronting Japan in the twenty-first century in advance of other countries	- Structural reform of healthcare through IT - An environmentally-friendly society that utilizes IT
2. Measures designed to create a society in which people can live safely and securely	- A world-leading safe and secure society - The world's safest road traffic environment
3. Measures to promote effective and meaningful activities by government, business, and individuals.	- The world's most convenient and efficient e-Government



	<ul style="list-style-type: none"> <li>- Business competitiveness enhanced through the use of IT in management</li> <li>- Prosperous lifestyles throughout people's lifetimes</li> </ul>
<b>Development of the foundations for the support of IT structural reform capabilities and for the creation of the Ubiquitous Network Society</b>	
1. Measures for the creation of an IT society with no disparities in information levels and for the advancement of ubiquitous networks.	<ul style="list-style-type: none"> <li>- An IT society that adopts universal design</li> <li>- Development of infrastructure that can be used anytime, anywhere, for anything, and by anyone and that has no digital divide</li> </ul>
2. Measures intended to create environments that allow for the safe use of IT	<ul style="list-style-type: none"> <li>- The world's most secure IT society</li> </ul>
3. Measures to promote human resource development that will support the foundations of the IT society	<ul style="list-style-type: none"> <li>- Development of human resource bases with an eye towards the next generation</li> <li>- Development of high-level IT human resources that are competent anywhere in the world</li> </ul>
4. Measures for Japan to lead the world in the research and development that will support IT societies	<ul style="list-style-type: none"> <li>- Promotion of the research and development that will form the foundations for the next-generation IT society</li> </ul>
<b>International contributions through the transmission from Japan to the rest of the world of the results achieved through the pursuit of IT structural reform capabilities and the development of the infrastructure that will support those capabilities</b>	
1. Measures to enhance the presence of Japan in international competitive society	
2. Measures to make contributions to other Asian countries by providing problem-solving models	

Source: IT Strategic Headquarters. [5]

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