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GLOBAL E-GOVERNANCE SERIES



**E-Governance:
A Global Perspective
on a New Paradigm**

Edited by Toshio Obi

IOS
Press

E-GOVERNANCE

Global E-Governance Series

Volume 1

ISSN 1874-8511

E-Governance

A Global Perspective on a New Paradigm

Edited by

Toshio Obi

Professor, Waseda University, Japan

IOS
Press

Amsterdam • Berlin • Oxford • Tokyo • Washington, DC

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ISBN 978-1-58603-776-5

Library of Congress Control Number: 2007932997

Publisher

IOS Press

Nieuwe Hemweg 6B

1013 BG Amsterdam

Netherlands

fax: +31 20 687 0019

e-mail: order@iospress.nl

Distributor in the UK and Ireland

Gazelle Books Services Ltd.

White Cross Mills

Hightown

Lancaster LA1 4XS

United Kingdom

fax: +44 1524 63232

e-mail: sales@gazellebooks.co.uk

Distributor in the USA and Canada

IOS Press, Inc.

4502 Rachael Manor Drive

Fairfax, VA 22032

USA

fax: +1 703 323 3668

e-mail: iosbooks@iospress.com

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PRINTED IN THE NETHERLANDS

Preface

Professor Toshio Obi

Waseda University Institute of e-Government

Japan

It has been my honor and privilege to edit and be a part of this book. This has really been an intellectually stimulating experience and a wonderful opportunity to meet and share ideas with many distinguished speakers who actively took part and made presentations at the International Conference on Global e-Governance at Waseda University. It has been a revelation to uncover the wealth of innovations that are expected to meet the needs of various nations and overcome challenges faced.

My most sincere appreciation goes to the speakers from various governments, business entities and academia. In the spirit of cross-border knowledge sharing, they have unselfishly shared their wisdom and experience and contributed to the overall knowledge on e-Governance.

“e-Governance” is regarded as one of the most important subjects in the Information Society. Global e-governance for both public and private sectors is becoming extremely significant in an innovative and seamless world community.

Waseda University Institute of e-Government, founded in 2001, is a pioneer for capacity-building on CIO training and human resource development as well as international ranking on e-government activities. It has also played an important role of regional ICT cooperation in APEC region as APEC e-Government Research Center.

This book is divided into five (5) parts:

- The 1st chapter is entitled “Information/Ubiquitous Society” and offers understanding of what information society or ubiquitous society is all about. There have been many perspectives and many frameworks since these terms evolved and we at the Institute have reviewed these and explored what it meant to be on the global e-Governance.
- The 2nd chapter is entitled “e-Government”. In this chapter, individual papers presented dealt with different countries/areas in the world focusing on all of their visions, strategies and priority areas as well as on the key challenges and lessons of e-Government. The selection covered (Japan, China, Thailand, USA, Brazil, Indonesia, Russia and Taiwan) give a fair reflection of different e-Government scenarios.
- The 3rd chapter is entitled “e-Municipality” and focuses on several key areas – some services, infrastructures and practices. The presenters share their views on what is happening and the real situations at key areas of e-municipality solutions, services and current challenges.

- The 4th chapter is entitled “ICT and Applications”. In this chapter, we introduced and highlighted several applications in the field of ICT including broadband and disaster issues.
- The 5th and final chapter is entitled “The Role of CIO” where CIO (Chief Information Officer) is at present the most attractive post within organizations at the stage of Information Society. We are very fortunate to have invited such honorable speakers in this field.

The book contains the views of various speakers with a profound experience in global e-Governance and I have found that key objectives are common to all. Finally, the quality of this book was ensured by the exemplary editorial efforts of the brilliant researchers at Waseda University Institute of e-Government.

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Chapter 1

Information/Ubiquitous Society

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Global e-Governance

Yoshio UTSUMI

Secretary General

International Telecommunications Union (ITU)

ITU is the oldest international organization in the world. Going back 141 years to when, Napoleon Bonaparte and Queen Victoria signed a peace treaty in Germany. At about the same time, people began to use the telegraph, which spread widely all around the world. To internationalize the telegraph, a standard was established, and in order to do so, international agreements were required. In Germany, at that time there were 15 states. In order to deploy the communications system across borders they had to enter into 15 different agreements. In 1963, the issue of a multi-lateral agreement for telegraph was discussed in Paris. They reached agreement on the issues of how to share the telegraph fees. In order to implement that agreement a secretariat was set up that was the beginning of ITU. For that multilateral agreement a system of one vote for one country was introduced. Another issue which was discussed was the official language and the conference mechanism. So this international organization began.

ITU is the oldest international organization. According to one consulting company, there are 10 organizations which survived for many changes and many years. ITU was one of them and Oxford University was also one of the selected organizations. However, more promotion is needed for ITU to be well known worldwide. In fact, if someone looks for Yoshio Utsumi in Google, there will be hundreds of thousands of links, but if typed in Japanese the result will be “Director of the Postal Office- Ministry of Post and Telecommunications”

ITU is an organization for engineers. For the past 141 years the organization has made steady efforts on behalf of engineering and telecommunications. Although this is a great contribution, little has been done in the political field. That is why ITU recognized the need for political and promotional activities. IT dramatically changed our way of life, contributing to how we live together and to our vision of the future .

Two years ago, the World Information Society Summit was organized by ITU, after the Okinawa G7 Summit was held. Japan’s Prime Minister Yoshiro Mouri sent a strong message supporting Information Technology and its applications. Before the discussion on the economic forum, the United States President, Bill Clinton, took up the issue of digital divide.

The summit was organized in two phases in Geneva and Tunisia. Both summits were very successful. Some sessions of the summit were attended by Presidents and

Prime Ministers and before holding the summit, there were several preliminary and regional meetings organized. An example of this is that after the summit thousands of people were involved in drafting the agreement for the Geneva Declaration:

“We, the representatives of the people of the world, assembled in Geneva from 10-12 December 2003 for the first phase of the World Summit on the Information Society, declare our common desire and commitment to build a people-centered, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and people to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights”.

This declaration emphasized the importance of the Information Society in which individuals are able to use ICT. The objective is to achieve that in the year 2015 when national leaders, ministers, and head of the states will get together to reach the agreement.

To achieve that goal, an implementation plan has been developed at national level, regional level and international level. Based on the action outlined by the United Nations, ITU will be responsible for the infrastructure issue and UNESCO will be responsible for content. So responsibilities are divided among the UN organization agencies. The implementation involves certain groups and governments. A stakeholders' approach will encourage stakeholders to get together to achieve the goal and reach agreement.

Thousands of people were also involved in preliminary meetings in Tunisia, and in each of the regions which then prepared for the Summit.

Howeve, in Japan, the Japanese media did not cover the event. Even though the Secretary General of the ITU is Japanese, the Japanese media did not cover this progress.

Most Ministers from Asian countries attended the summit and since the conference many countries have adopted the commitment of the committee of the information society. e-Governance has been introduced in many countries in line with what was agreed upon at the summit.

In order for these conferences to proceed, for the past 7 years all efforts have been directed towards the realization of the conferences. They were a great success.

The IT Summit was organized by ITU alone rather than with the assistance from the UN assembly in Geneva because the mechanism has been presented and was agreed upon to be implemented in concrete terms and that was the challenge for everyone.

But most important of all is that by 2005, everyone and every citizen in the world should have some means of access to the Internet. The next step is to teach them to use the tools. That requires education and training.

It will definitely be successful but the real challenge will come later. All of us know how to use IT, but the majority will not use the tool in information technology to get the knowledge. It is same with the function of a library. A library in the town as in Japan, all people know how to go to the library, but people who go to the library for acquiring knowledge is not very large in number. If people could utilize IT to gain knowledge, it would be wonderful. And it can be done.

Take the case of The Czech Republic: 30 years ago it was very different. It was very difficult to get a hotel. Now, Internet connection is available in the car and there were computers that could be used to make reservations in a hotel in Prague. The country is now connected to GPS and navigation from the car is possible. Thirty years ago, it was very hard for anyone to organize a day. One could not figure out how to go from one place to another. But this last visit was easy, one can find a place in 15 minutes and find out the background of the places. The effectiveness and efficiency is so different from 30 years ago. One just has to wonder how many people utilize the merits of the technology, unless one has the will to use it.

People have the tool and they will be able to use it but the issue is to arouse the interest among them about IT. If people get interested to use IT they could do a lot of things. Probably professors in universities will lose their job in the future if people get more interested using the tool in ICT. Probably that is the task of education to solve it. The Information Society Summit unfortunately did not discuss such matters.

In the summit among other things that could not be solved was Internet governance. From the author's point of view, Internet is monopolized by the United States. Revenue from the Internet industry is basically from that country. If they want to stop Internet use for some countries, they just stop it. The question is how good this situation is. On the Internet Governance issue, the United States ought to resist and also Internet vendors resisted, because they wanted to retain the status quo and basically they got revenues from the current system.

Developing countries are showing interest in a common ground, this should be fairly utilized and should benefit all. And Internet Governance should be democratized. The suggestion to internationalize the Internet by the European countries could not reach an agreement among the participants. Discussion of this issue will be decided in the future.

It was a very interesting Summit, not only for the governments, but for several organizations and enterprises. All of these sectors were talking and agreed that by 2015 an information society should be established. The Action Plan as agreed from the Summit will be carried out by the UN agency but an actual implementation plan should come from respective national governments and by every one and by all players. To conclude, two issues: one, is Internet Governance which could not reach an agreement. But the challenge is the second issue, about how to create interest, how to educate people to utilize Internet.

Japan's Information Technology Strategy

Toshimitsu MOTEGI

Member of the House of Representatives

Former Minister for Information Technology

Japan

The Japanese IT Strategy (that started in January 2001) has been recently modified and it is at a new stage. In the last five years it has gone through three steps. The first one was in 2001: IT staggered behind in Japan compared to the world. There was a need to have proper infrastructure. From 2001 to 2002, the government successfully worked on the infrastructure. In 2003, the second step was the e-Strategy called e-Japan. The aim was to make good use of IT. Six major fields were selected in order to apply the IT strategy. In order to accelerate e-Japan a promotion package was established in 2005. After five years, new targets have been set: 1. how can IT be used for structural reforms? 2. How to be a frontrunner, to initiate the global IT revolution?

Five years after the implementation of the Japanese IT Strategy, examples of the results include:

Internet Infrastructure: Japan had a slow and expensive Internet infrastructure. From March 2001 and onwards, the usage fee has reduced to one-third of the original prices and from 850,000 users, Japan now has 23.7million users.

Applications and notifications: As of 2001, applications and notifications were not made online but now a lot of electronic applications are possible. Five years ago 5.8% of the electronic stock transactions, were made using the net. Now that percentage has risen to 32%. About individual transactions, more than 70% of them would be via the Internet.

On the other hand, there are still issues that need to be considered: When compared to countries such as the United States, Sweden, and Finland, there is still a need for e-government improvement. As for the enterprises, security has to be strengthened: Japanese companies' security is still lagging behind, when compared to the United States.

How can IT can change the way healthcare and education are provided? In terms of structural reforms there is a lot to be done: for instance, the degree of IT usage in the field of healthcare is close to zero, whereas in the United States, is more then 90%, and in the case of Korea and Taiwan, is close to 100%.

For problem solving of the social issues the main questions are: how can IT be used for structural reforms in the fields of healthcare and education? how much accessibility can we have through e-government and e-Municipality?, can we really see certain results? How much usage can we see for e-application and e-notification? Are the citizens really making use of IT? More study in that perspective is necessary.

About the profitability of the Japanese IT industry, although NEC, Fujitsu, and Hitachi, are representative Japanese companies in this field, compared to IBM, Microsoft and Oracle, they still have a low profitability level. Another issue here would be the need to strengthen the international competitiveness of Japanese companies. Japan needs to improve the profitability of IT and also improve international competitiveness and technologies, in an era where different information and systems will co-exist.

Networking and integration in order to create business models and a new order in the IT society is also needed. With new software and new networking, it would be necessary to evaluate what type of order is adequate to that kind of situation. A question that arises is the one on the issues that will be seen at an individual, a corporate, social level and global level. As in the past, there is a need to improve the business processes to reduce costs.

The usage of IT, to reform the management scheme, could be made part of every day life. This will allow for a better quality of life (QOL) and advancement of the management system. IT could be used for problem-solving at the individual and corporate level.

At the corporate level there are four stages of development. When information systems are implemented by any enterprise, this is first done at a department level, then company-wide, to include the suppliers and, eventually also the users. When thinking of these different levels, Japan is at stage number 2, as two-thirds of the companies are at this level, while American companies are further ahead: they are using IT on a corporate-wide basis and in some cases they would include other stakeholders.

The business system itself would encompass the IT system. So it is planned to bring up the Japanese enterprises to stages number 3 and 4. It would be necessary for the enterprises to think of what they need to do. Top management would need to consider this as a priority item. This is not only applicable to the information communication industry but to different fields such as distribution and food.

IT utilization has promising possibilities. Everyone would need to be concerned. A delay in IT introduction at the level of small and medium firms would mean lost opportunities. Individual enterprises would need to do a lot of effort and the government would need to support those efforts.

Last year, information infrastructure related to taxation schemes had been set. For such advanced investment, 10% deduction and taxation and special measures and incentives will be held. Reforms will also include small and medium enterprises. The government wants to promote the introduction of IT in companies. Together with the problem solving at the enterprise level, there will be issues that need to be worked on at the social level.

First, the medical field or healthcare: with the advancement in IT, healthcare is where IT is at the slowest implementation stage. Information would need to be used but that is not realized. Received information is processed in paper form, resulting in high costs. If the processing of receipts were done on an online basis, it would cost about

¥200 billion. The use of medical cards would be required in order to reduce overlapped efforts and costs, with the provision of a good diagnosis. The use of individual names could be disregarded but patients' data and clinical trial data can be accumulated. Certain diseases and problems which require knowledge from different fields can be put together for analysis purposes, in order to look for a promising medical treatment. In the healthcare world, increased usage of IT is possible.

In 2001, there were not many e-applications but in 2004, 96% were done electronically and although its usage is still at a low level (in the case of property registration and tax), the total usage accounts for two-thirds (2/3) of all the applications. In the case of property registrations, corporations and real estate, the percentage is still less than 1%. The utilization ratio for the tax area is still 0.26%. The target proposed by the government is to achieve 50% by 2010, being now less than 1%.

As for cross-ministerial systems, there will be a new organization: the Government Program Management Office (GPMO) that will be in charge of the improvements on the registry systems. For security measures, security centers were set up in April last year. The Chief Cabinet Secretary chairs the panel to address the issue on information policy-making. Under the new security center, the security panel, the primary stage of planning has been done to cover the airport and railways and nuclear power plants. The next step is to change the mindset of people about the security of personal information. The major contents of this plan will be fulfilled by 2008, when Japan will become an advanced country in terms of information security.

How to improve the international competitive strengths of IT? The profitability is still low for the Japanese IT businesses. About the open systems and the Internet, Japan is still slow in adopting them. While Western IT companies are focused on core competencies, Japanese companies are vertically integrated to address all the areas in IT.

In the field of Research and Development (R&D), Japanese companies are lagging behind Microsoft, SAP, Oracle, Intel and Google. Profitability is low; therefore Japanese companies cannot spend much money on their R&D activities for new technologies. How can we make a breakthrough? In this area of ICT, Japan is in a transitional stage; however the government has focused on two key areas:

Search engines: there has been dramatic increase of the information volume. However, there is a limit to the individual absorption level. Many people are using search engines through personal computers, where Google has an overwhelming market share. However, the neutrality or objectiveness of any search engine is still in question. From text information, to image, voice and then not only personal computers, the users will use mobile phones and digital TV. Changing the concept drastically is necessary in order to meet the new demands. By the end of Fiscal Year 2006, a consortium formed by the industry, academy and the government will launch a search engine project. A new guideline map will be set up to navigate through the great volume of existing information.

Security Platform: Each department has its own system so everyone is required to consolidate these systems and the running cost is expensive. Each system has a different Operative System (OS), different applications, with security policies that need to be improved. Using this security platform to be developed, old systems and different OS applications can be consolidated, resulting in a cost reduction, while achieving a high level of security.

For the new Information Age, there will be a new search engine system and a new security platform will be created, in order to be ready for the second stage of the IT revolution in Japan. Reflecting on what it has done and failed to do in the past many questions and issues arise, especially in the fields of healthcare, e-government, and Information Security. There are many challenges to be addressed and Japan cannot do this alone: Active collaboration between the ASEAN countries is needed.

Ubiquitous Society in Japan

Teruyasu MURAKAMI

Chief Corporate Councilor

Nomura Research Institute

Japan

There are three aspects to the ubiquitous network society:

- ICT Policy Development in Japan and the Ubiquitous Network
- International Sharing of the Ubiquitous
- The u-Japan Policy and the Solution Driven Approach to Establish the Ubiquitous Network Society

Results of a survey conducted by Prof. Sato of Keio University asking more than 30,000 Japanese: if they knew the meaning of the word “ubiquitous” showed that 24% knew about it.

The word ubiquitous has become very familiar among the Japanese. They know what the word ubiquitous or ubiquity means: being everywhere or in many places at the same time.

This word became famous even before the global proliferation of the Internet when Dr. Mark Weizer of Xerox used ubiquitous computing in 1998. Nomura Research Institute (NRI) started to use this word around 1999.

During the mid-internet era, NRI started to discuss issues on ubiquity but they thought that the ubiquity of Internet access was much more important than the ubiquity of computing capability so NRI decided to use the word for the ubiquitous network instead of ubiquitous computing.

In 1998, Dr. Weizer introduced ubiquitous computing and that was introduced to Japan in 1991 by translation but nothing happened since then for about a decade. It was only about the turn of the century when Japanese businesses started to take an interest in the ubiquitous paradigm particularly in the year 2000 when NRI started publishing about the ubiquitous network.

In the year 2001, Nikkei started holding conferences on ubiquitous society and in 2002 Dr. Sakamura of Tokyo University connected his word to ubiquitous paradigm and started to talk about this subject very eloquently after that.

In 2003, the Japanese Government revised the Second National e-Japan Strategy, mentioning the existence of the ubiquitous network as the key to becoming a world leader as a result of a proper national ICT infrastructure development initiative.

The e-Japan Strategy II defined the ubiquitous network as an ICT environment in which users can be connected everywhere, always and to whatever network.

In the year 2004, the first government agency to react to that e-Japan Strategy II was the Ministry of Internal Affairs and Communications (MIC) and they developed the u-Japan Policy package. This u-Japan Policy package evolved from the e-Japan strategy in 3 dimensions.

Developing the ubiquitous network infrastructure on top of the broadband infrastructure of the e-Japan strategy

Promotion of the ICT initiative to solve the social and economic problems that Japan will face instead of just promoting the penetration of IT within society

Establishing safe and secure ICT environment which suits the ubiquitous network environment.

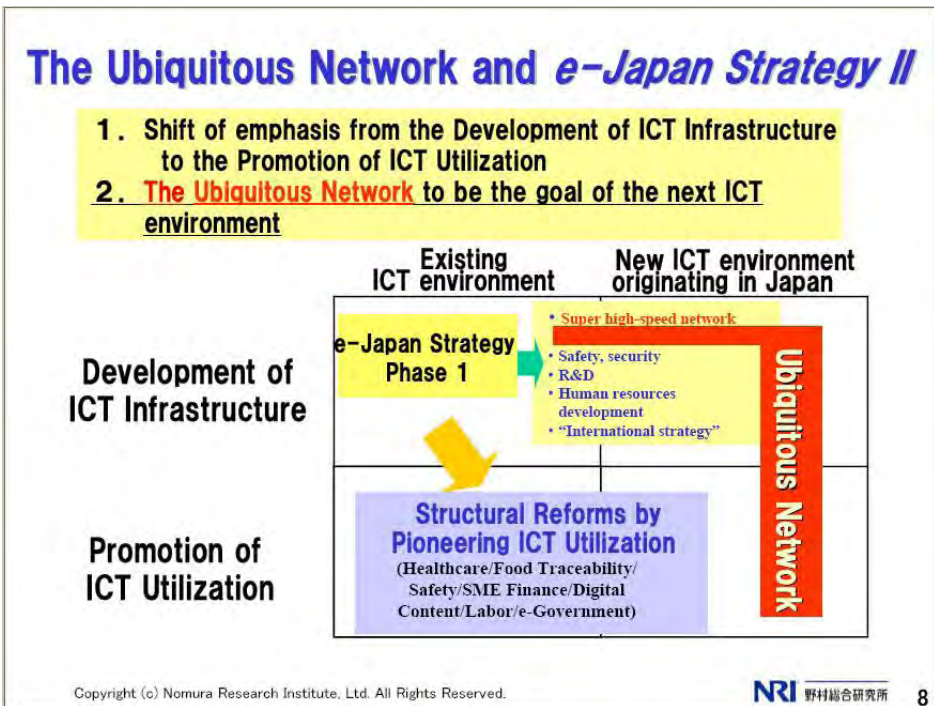


Figure 1. The Ubiquitous Network and e-Japan Strategy II

In 2005, MIC developed the Ubiquitous Network Society Strategy program (UNS), a long term R&D policy towards 2015. The program came from 3 strategic programs comprising universal communications and generation of networks. The “society and security” program came from 10 individual research programs in ubiquitous mobility and creating a new ICT paradigm and ubiquitous platform and secure networks and safety sensing. Ubiquitous space-time structure and ubiquitous universal time have already been planned as u-Korea. Creation and distribution of advanced content and super-communication and ultra-realistic communication has also been planned.

Also in 2005, not only MIC but also METI, the Ministry of Economy, Trade and Industry developed the vision for economy and industry. One of the parts of the plan is developing the ubiquitous IT utilization environment. In the same year, the Council for Science and Technology Policy of the Cabinet Office developed principles for science and technology basic plans for 5 years, starting in 2005, also realizing the ubiquitous network society, as one of the 12 objectives in the plan.

At the beginning of 2006, the Japanese government revised the national IT Strategy of e-Japan Strategy and named it as New IT Reform Strategy, reflecting the structure-reformed nature of the Koizumi government. Looking at this strategy from an ICT point of view, it can be defined as a broadband strategy and can be called a ubiquitous and universal IT strategy. It is not pursued only as ICT policy by MIC, but by many government agencies covering science and technology policies and national IT policies and even economic and industrial policies.

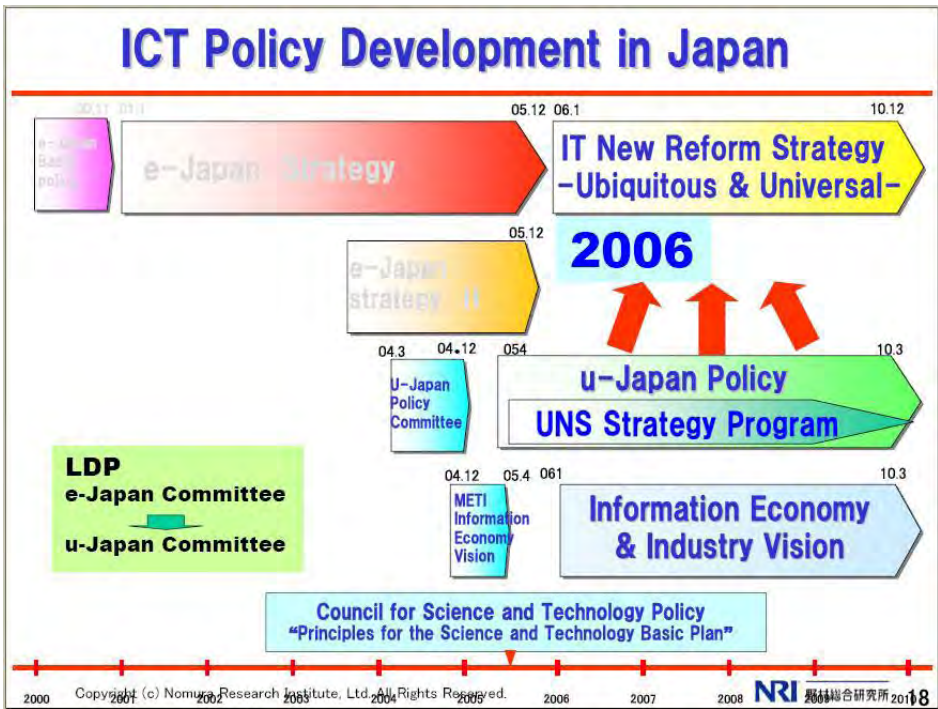


Figure 2. ICT Policy Development in Japan

In order to explain the international paradigm sharing, a brief explanation on Korea and China is going to be made. About u-Korea Strategy: in 2004, the Korean Government had already developed the IT 839 Strategy, comprising 20 technologies. In the same year, strategy was upgraded: 14 technologies out of 20 original IT 839 strategies were reused.

China is another country in the process of developing the ubiquitous paradigm. A big move has already been made for the development of the ubiquitous network. Almost all the efforts of the Japanese government to expose the ubiquitous network

paradigm outside Japan was concentrated on the activities in UN specially World Summit on Information Society (WSIS).

In May 2005, the Japanese Government held a WSIS thematic meeting called Tokyo Ubiquitous Network Conference in Shinjuku, aimed at the realization of the ubiquitous network society. The conference was very successful and was attended by more than 600 delegates from 85 countries. The success was followed by participating in the Tunis round of WSIS headed by Minister Takenaka and many Japanese companies. Ubiquitous network initiatives are now written in a UN document, the Tunis Commitment for 2008.

Japan is now not alone in pursuing an ubiquitous network paradigm. Korea, Taiwan and China in the future will soon join in this initiative, and the Government of Japan is very eager to share this paradigm with other countries. But for some reason, this is limited to “chopsticks culture” countries in Asia.

The solution-driven approach is explained by general use of u-Japan or ubiquitous net Japan. U-Japan here does not refer to any specific technologies like RFID or sensor networks. Rather it refers to a vision of Japanese society facing various economic and social problems society toward the year 2010, like population ageing and a decrease in the younger generation, unemployment, global and environmental problems, medical issues, and others.

These problems will be solved by the introduction of ubiquitous networks. Developing the u-Japan is a very long chain, a complicated process of inter-industry relationship that can be called “ubiquitous networking process”. This ubiquitous networking process always starts with the development of a ubiquitous network infrastructure including not only fixed broadband networks but wireless broadband and digital broadcasting networks and transport system networks like ETC, ITSA and of course real object networks of RFID and sensor networks and even a network robot.

Those 5 different types of networks should be developing in a very inter-connective and inter-operative manner.

When there is a network, there is a need for ubiquitous terminals or ubiquitous personal assistants with which users can connect to the ubiquitous networks from anyplace at anytime. And then when you have terminals and networks you can use the ubiquitous networks. But if you wish to make that a venue for business opportunities, you need ubiquitous platforms of authentication and account settlement, digital rights management, security and privacy and so forth.

If there are platforms, terminals and networks, you can do a lot of business, and contents industries will be the first to use that as well as the ubiquitous electronic industries.

Electronic ubiquitous industry is very important creating ubiquitous home appliances and ubiquitous automobiles, offices and ubiquitous housing which will alter whole industries not connected to the network. Those are all important but the most vital is the development of ubiquitous service solutions. For instance, safety and security solutions and health care and welfare and training and traffic safety and environmental management and so on and so forth which would solve the societal issues mentioned.

In the u-Japan policy 28 representative solutions were developed and visualized as much as possible. The third characteristic of the Japanese approach to the UNS is a solution driven approach. And, key to the development of the network, ubiquitous

personal assistants and platforms and ubiquitous electronics and so forth have been put into place. But the ultimate objective of the ubiquitous networking process is to develop the solution to solve the various problems Japanese society will be faced with toward 2010 and beyond.

A solution was introduced because in the last 1 or 2 years, there were lots of crimes involving elementary school children, one after another, and that became a serious problem in Japan. In December 2005 Koizumi government called an inter-ministerial special committee on protecting children from criminals.

One solution proposed by Matsushita Electric is to install numerous surveillance cameras throughout the country like in several European countries. And in Japan, a lot of efforts have been made to develop the solution to face not the society as a whole but individual elementary school children and how to protect them using ubiquitous network technologies.

In march 2005, MIC made a survey of the case for security and safety systems for children utilizing ubiquitous network technology and they found 84 cases of crime prevention information providing systems throughout the country, 52 cases of positional information systems for children all over Japan, 32 cases of school gate monitoring systems, 31 cases of emergency alarm systems and 24 cases of street corner watching systems for children. So altogether in a period of two months, they found 219 solutions which had been deployed throughout Japan. So the introduction, or rather the preliminary ubiquitous network society environment enabled the emergence of these multiple solutions throughout the country.

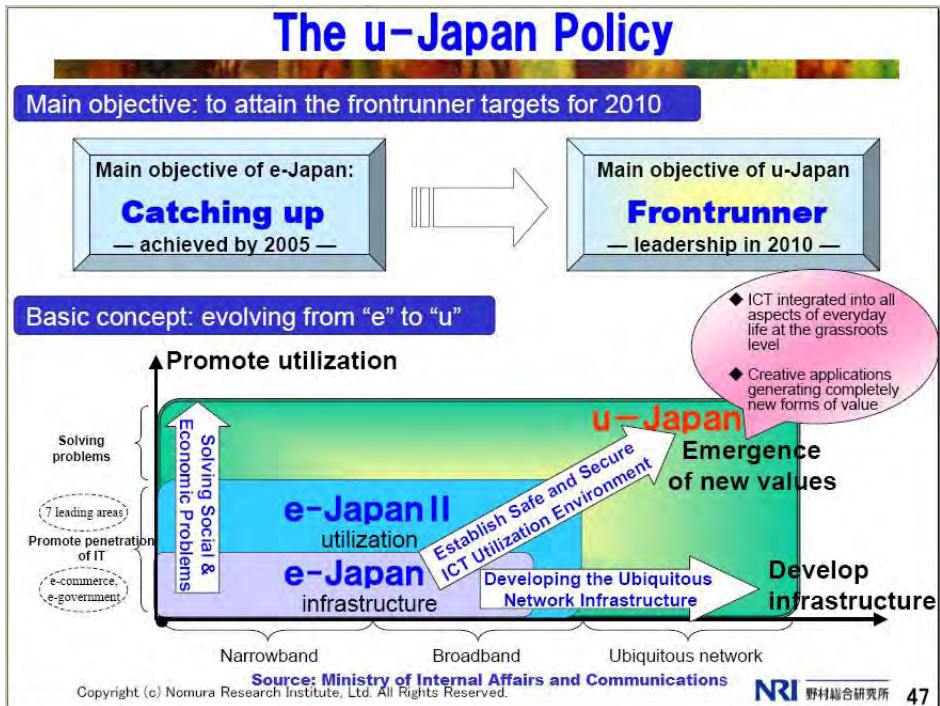


Figure 3. The u-Japan Policy

This is the process that u-Japan policy anticipates: many solutions will be developed and among them the most effective will be utilized throughout the country depending on the usefulness and input/output.

Ubiquitous Society Experiences in Korea

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This presentation is about the ubiquitous society in Korea, the existing standards for ICT, current national policies and the available services.

The following chart from the International Institute for Management Development (IMD) shows the level of information and communication and the position of Korea among the countries in the world.

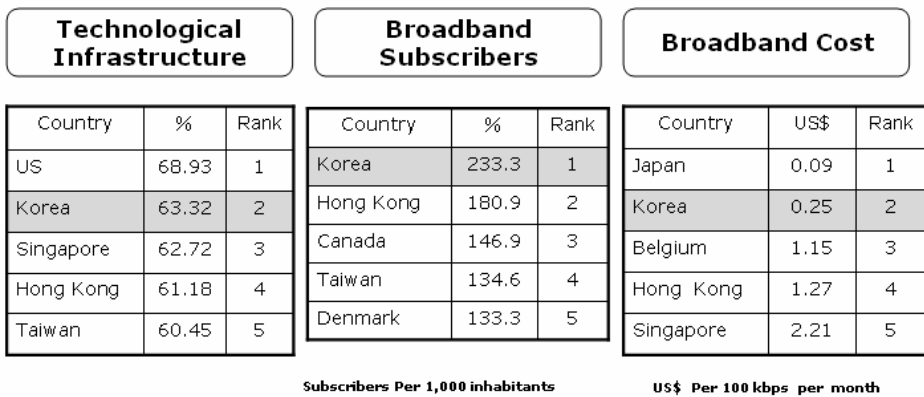


Figure 1 IT level in Korea

Source: International Institute for Management Development (IMD) – Switzerland.

For the information technology, this shows the competitive strength of Korea in 2005. Looking at technological infrastructure, broadband subscribers and broadband cost, Korea has achieved the second place, the first and second place respectively. That shows the penetration ratio per household and among OECD, Korea is certainly at the top level of them.

The following graphic from OECD shows the high-speed internet subscriber number per hundred inhabitants. While the first place is occupied by Iceland, the second one is Korea.

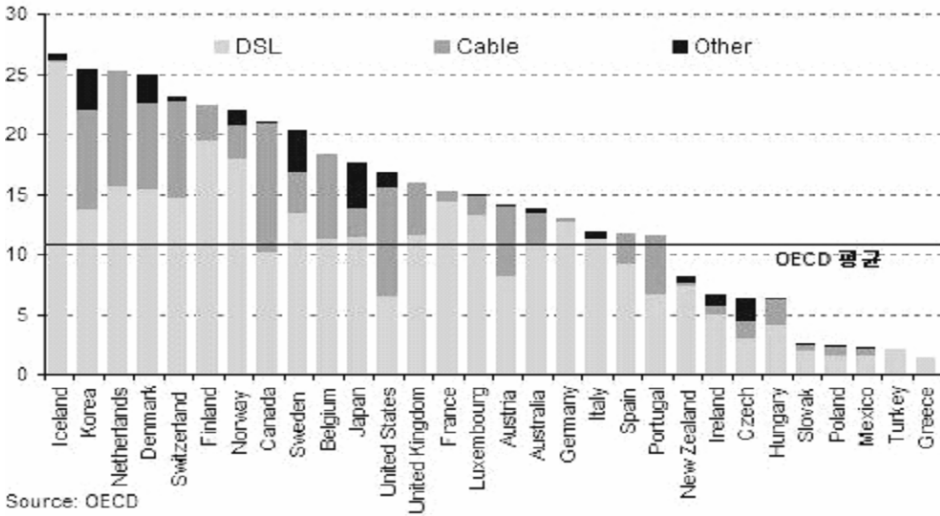


Figure 2 Broadband Penetration by technology

Korea now has the e-Korea and u-Korea programs but there have been 3 initiatives. The first was established in 1999, the Korea 21. Former president Kim Dae Jun launched this project when he assumed the presidency to make the Korean people the largest and most frequent users of personal computer in the world. In 2002 the program was completed in e-Korea region in 2007, and then ubiquitous Korea was established in the following year.

Based on the infrastructure, the services must become popular to a certain extent in order to achieve the u-society, without service infrastructure, everything will be wasted.

The dynamic u-Korea initiative seeks for Korea to become “The FIRST u-society on the BEST u-infrastructure. This u-society has the following characteristics: Friendly Government, Intelligent Land, Regenerative Economy, Safe and Secure Social Environment”, and Tailored u-life service.

In a similar sense, the four infrastructure factors which are the support for the society described in the previous paragraph are represented in the word “BEST”: Balanced Global Leadership, Ecological Industrial Infrastructure, Streamlining Social Infrastructure, and Transparent Technological Infrastructure.

About u-Korea (2006), there are unique profiles for this program (e.g. ubiquitous cities). In order to modernize old cities into ubiquitous cities, RFID tags and sensors will be installed in many cities and then there will be a city re-developing. That is part of the so-called u-Cities strategy.

About the IT 839 Strategy, it is based on 8 Services (HSDPAA/ W-CDMA, WiBro, Broadband Convergence Service, DMB/DTV System, u-Home Service, Telematics/Location-based service, RFID/USN application service, IT service) developed on 3 infrastructures (Broadband Convergence Network, u-Sensor Network, Soft infraware) to address the following 9 engines: Mobile Communication / Telematic Devices, Broadband / Home Network Devices, Digital TV Broadcasting, Next-generation computing/Peripherals, Intelligent Robot, RFID/USN devices, IT SoC/Convergence parts, embedded software, and Digital Content/Software solution.

What is sought is to develop the industries in these areas so that corporations in those areas will become more competitive in the global market.

U-City

Formed by local government initiatives and new city development initiatives. In Korea, there are 3 stages for this project: the planning stage, the model stage and implementation stage. Models have to be set up and then go on to the process of trial and errors.

An example is the island of Juju, a ubiquitous city based on tourism. Technologies are being used by the city in order to become the tourism u-City. Also, the city of Kuanju, is an example of a “culture ubiquitous city”.

U-Government

The Korean government can now be called a “ubiquitous government”, as services such as the t-government have been launched. This project consists of “television e-government”. Last year the pilot plan was completed and implementation started this year. Through this application, many government-related services are possible and available.

Another example of this ubiquity can be found in the “m-government”: users can use cell phones in order to make applications and receive e-documents.

On the e-government side, users access the governmental homepage to get certificates and other documents. Around spring last year, people could get government documents and certificates by downloading them and printing them out at their homes. For this purpose, there are also automatic vending machines for obtaining the certificates, not only in the government offices but also in convenience stores, such as Family Mart.

In September last year, the Parliament was digitized, in order to become a “Ubiquitous Parliament”, a totally paperless parliamentary government. The e-voting system is also possible, and can show those who oppose and who support a bill immediately.

Issues on Information Society in Finland

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What is e-government all about? It is about government for the Information Society, it is about utilizing new tools that an information society development brings forth and it aims to increase the efficiency of service provision and this is what Finland is aiming at.

The point is if e-government does not really transform the government and the governance process, what is it for? Finland has already computerized their administration since the late 50's, in the 60's especially, in Finnish public administration. But that has not really changed governance process but really only increased the data processing capability, which is an important part of the evolution of e-governance but it's just not enough.

Finland has to have some sort of e-transformation in governance and government in order to benefit from this. How to do it? There are several kinds of ideas, one way is to systematize the benefits they need to do something side by side which means they need to provide good services to see this in businesses and on the other hand they also have to pay attention to the demand side.

What kind of incentives can be provided for people to design websites that are really easy to use and so on? Finland has to pay attention to two signs. For instance e-readiness is a prerequisite for information society and e-government development. And that is at a good level but it is more difficult and more strategic to pay attention to interaction with citizens and user interface services that are really relevant for citizens.

If Finland thinks about the Finnish information society, what characterizes their society in this respect?

First, trust in public administration. Very typical of Finnish people: trust in the government. They do not have to think as a citizen of Finland, but the government has to do the right thing or do it in the right way. They take it for granted but it is efficient, it is reliable and it is transparent, because that is also one precondition for creating the government, virtually.

Another building block is Finnish people's trust in the technology, which is much more than other European people. There are even surveys among European countries

which showed that Finnish people trust in technological solutions. People do not have such suspicions about what the government does with information or even bank transactions. There are security problems but they can be resolved in most of the cases. That Finnish mentality provides a rather good base for e-government.

Another characteristic features flexibility of legislation. There are no unnecessary restrictions or rules that would prevent the development of e-government.

Another interesting feature of the Finnish system is its decentralized structure. There are a lot of state owned companies, government agencies, central agencies, regional government and local government, and IT is developed very independently at each level. This means that Finland also needs coordination and this has created problems.

There is also a lot of innovation and in the process there will be a lot of independent creative development processes within the ministry machinery in Finland.

Another thing which improves their chances to develop e-government is the openness, transparency and responsiveness of the government. The openness with information is one of the strengths of Finnish e-government. There are other areas which Finland is not good at as many others like USA or Singapore, but they have their own strengths and e-government is and must be designed for every country based on its own needs and conditions. The same thing goes with Japan and many other countries.

Finland started to institutionalize IT in public administration in the latter part of the 1950s. A lot of municipality development work started in the 60s. They set up computer lab centres in Helsinki and Tampere and the first national information system strategy was set up in 1994. It was after or around the publication of the Bangiman Report for the EU and slightly after the national information superhighway initiatives of USO.

Finland is very proud to have kind had a kind of information boom around that time, being a part of that trend. The country also started to design government policy in this area. For instance, the government published a policy paper in 1995. Since then the government had been very committed to information society development.

The next big step Finland considered at a strategic level was the next strategy. Why different and important, because the first strategy of 1994 was formed by the so called TIEKA group which had been formed by officials and was quite a closed circle. The next step which started in 1997 was more open. It was an open process to design national information strategy and it was published in 1998. In the latter half of the 90s there was a sort of information society enthusiasm in Finland. Countries differ in this respect. Maybe the same kind of enthusiasm is now being experience in modern developing countries. For instance, this was the time when the Finnish really tried to strive to pay attention to information society development and e-government was part of that. But after that enthusiasm came the reality check and to cut a long story short, the novelty had worn off around the turn of the century, and the IT boom did not continue anymore. Getting funding was not so easily anymore, and there were no new information society or e-government projects. And at the end of the century, it was different. What most were concerned with then was that they wanted to add value more clearly to what they had done before. Before that, in the time IS enthusiasm, they wanted to experiment with things. They were eager to find new kinds of projects dealing with new kinds of ideas. It was only in 2000 that the prospect slightly changed and become more demanding with the ecstatic value of e-government project.

The third stage of the IS strategy took place in 2004. Finland no longer has a special IS strategy, but the government has launched a policy program in separate fields and one of them was information society. And again e-government was one part of that government program, information society program in 2004. That is roughly the strategic level approach to this thing. And what Finland created was a kind of vision that they have to be and have to become a forerunner in the construction of an information society based on humane and sustainable development. That was what Finland designed in 1998 in their most important national strategy. The idea was to develop the most important application areas like learning, web condition entrepreneurship, trade transaction, health care, entertainment and social interaction.

Utilizing open interface is a platform to be used with the different kinds of devices, with user interfaces, with active frame places, being active at home, at work and in public space. These meant that, at the time, the Finnish information society idea came very close to the so-called ubiquitous society. Finland did not use that term at that time and were not so advanced in this area as Japan or South Korea. But still the elements are there, though the terminology is slightly different.

If Finland is compared with other countries, in most of the rankings, it is somewhere between six and ten. This means that Finland is not at the very top of e-government ranking, but rather Finland is top of the transparency ranking, environmental ranking, competitiveness ranking, but unluckily e-government is not the one. It means that Finnish information society development has sometime been ranked as the most advanced in the world.

Somehow Finland has not been able to utilize that infrastructure to realize e-government as well as possible. So in that field Finland still have quite a lot to do and this is related to the demand side of the process rather than the supply side.

In order to measure Finland's present development level, most global rankings are unreliable. For instance, the World Market Research Centre conducted the Commissioned Global E-Government ranking survey in 2001 and Finland was around number ten. Sweden was 93rd among countries such as Bahrain, Argentina and others. If Sweden is number 93 in the world there must something wrong with the criteria of that e-government benchmarking studies. Measuring certain features of websites will show what e-government should be about.

Another important ranking was the United Nation ranking called "E-Benchmarking E-Government Global Perspective 2002", but again that ranking sort of highlighted the infrastructure aspect rather than the practice of e-government.

That is the problem Finland usually has in all these rankings. Finland is one of the leaders or achievers; but what they usually see in the rankings are the most advanced countries including USA, Canada and Singapore. The group formed by Scandinavian countries follows UK and New Zealand.

The ranking conducted by Accenture, shows e-government materials model combined in a global ranking of e-government. In this ranking Canada, Singapore and the United States are followed by Denmark, Australia and Finland, while Japan's service availability category is next to Finland.

Japan is characterized by strong infrastructure and may have the same challenge to improve in the demand side of e-government performance. Finland has had an interesting process project in this area in the mid 90's, initiatives in which the country had tried to improve the functioning of the public administration system and

management, especially to improve interactions like the TYVI project, meant to consolidate interaction between authorities and companies or businesses. JULHA is a directory of quantitative information; VETURI focuses on the development of state local administration with some pilots. JUNA was a coordinating project in the year 2000. In general the Finnish government has been very active in using the opportunities of ICT.

A study on e-government in Finland was published in 2003 and it provided descriptions of e-government in central administration, not including local governments. The study mentioned that Finland has a good vision for public administration, but has probably not marketed it well enough. That is one challenge that Finland has.

Another challenge is to learn users' preferences. Cross-agency collaboration is another important feature and there is more coordination because Finland has a decentralized system and they need better coordination of e-government development.

What has been highlighted in reports are the good points, as Finland has a high level of trust and openness in government which provided good conditions for developing e-government. But one critical aspect is that back-office changes have been very slow, and back-office changes are part of the whole idea of e-government but it helped Finland to reorganize their processes. The key strategic issue is that information society level development is not mature enough; Finland cannot actually restructure their back-office processes because they cannot utilize all those options in interactive processes if the stakeholders are not at the same level. This is kind of a tricky issue related to development. Also demand collaboration and re-engineering are things Finland needs to pay attention to.

Finland's local government is very diverse, there are advanced local governments, like the one of the capital city of Helsinki which has a kind of metropolitan model; a partnership model based development in Espoo really had a collaborative process with enterprise consultancies when they developed their electronic services.

The developments of Tampere and Holulu was a very advanced event in U-government development. There are also middle sized e-cities and small advanced towns, while some hardly have websites at all. Basically all of Finland's local authorities have websites, but many are still static in nature.

Finland also had this enthusiasm during the latter half of the 90s, where they created infrastructure and web presence, drafted national strategies and accounted new challenges in the year 2000. Finland now requires added values, cost effectiveness, interactivity, and citizen centeredness and reengineering. Finland's model is decentralized and has its strengths and problems as well.

Major challenges include critical mass and e-readiness. Finland already has critical logic stance, critical logical means and enough users of e-government services. The country must also add value to e-government solutions. Citizen centeredness and multi-channel solutions are other tasks the country has to focus on in order to have a ubiquitous government.

Digital Local Agenda: A Strategy for the Development of the Information Society

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The Digital Local Agenda is a Local e-Strategy for the Development of the Information Society in a city or region, which would be defined as “a common strategy for the development of the Information Society, a project shared with citizens that responds to their needs and hopes, which bears in mind the socio-economic, cultural and institutional specifics of each city or region and contributes to the reinforcement of policies and actions aimed at achieving sustainable development (economic growth, culture and identity, social cohesion, environment) and which will benefit greater development for the cities or regions' citizens, especially for the most disadvantaged groups.”

Therefore, the design and development of the Digital Local Agenda will be similar to any Sector Strategic plan, coordinated with and integrated into the Local Strategic Plan of a city or region.

During the World Summit of Local Authorities on the Information Society, held at Bilbao, in November of 2005, the organizations representing Local Authorities committed themselves to prompt the full access to the Information Society in their cities and regions, through the implementation of the Digital Local Agenda. The Declaration and Action Plan that showcases this movement was handed out to UN Secretary General Kofi Annan and officially attached to the Tunis Declaration.

At the Bilbao Summit, Local Authorities committed themselves to work for full access to the Information Society in their cities and regions, by implementing Digital Local Agendas.

To implement in our cities and regions an e-local agenda (Digital Local Agenda), designed to promote the Information Society, taking into account in particular the socio-economic and cultural environment, and based on the broad participation of citizens and social actors, with the ultimate objective of fostering sustainable development (Bilbao Declaration, Commitments, item 22).

Who is the “target audience” of DLA? Local authorities with a commitment to the future of the cities and regions. A future in terms of sustainable development. Thus, within the sustainable development strategy, each city and region should commit itself to creating and undertaking their own e-Local Agenda, a local e-strategy for the development of the Information Society.

And who supports the DLA? Some are local governments or organizations such as United Cities and Local Governments (UCLG) and all its sections (CEMR, UCLG-ASPAC, FLACMA, UCLG-MEWA, UCLG Africa, UCLG North America, UCLG Euroasia, Metropolis); and some are international societies like International Association of Francophone Mayors, Arab Towns Organization (ATO), European Committee of the Regions (CoR), The Congress of Local and Regional Authorities of Europe (CLRAE), The Conference of European Regional Legislative Assemblies (CALRE), The Spanish Federation of Municipalities and Provinces (FEMP), The Association of Basque Municipalities (EUDEL), Euro cities, ELANET, CITYNET, The Union of Latin American Capital Cities (UCCI), The Standing Committee Euro-Mediterranean Partnership of the Local and Regional Authorities (COPPEM), The Network of Local Authorities for the Information Society - IT4ALL. This network which comprises over 18,000 Local Authorities of the world serves as catalyser of the Initiative and provides support tools, training materials, links to experts, good practices, recommendations and others. Global Cities Dialogue, The European Regional Information Society Association (eris@), Telecities, SIDAR Foundation Universal Access, The Wireless Internet Institute (W2i), United Nations Institute for Training and Research (UNITAR).

The goals of these organizations are quite simple. The goal of the Deployment Plan is that a significant number of local and regional authorities worldwide develop and implement their Digital Local Agenda (as they are doing with the Local Agenda 21). We are talking not only e-health, e-government, e-business but everything related to information society. Anything that ICT can apply at the local level to make governance better.

As to the requirements, it is obvious that in order to develop and implement a DLA, it is necessary to have political will and leadership and supporting tools and resources, both economic and technical.

Regarding the stages, the first stage is “awareness and dissemination”. Raise awareness among Local Authorities of the advantages of designing and implementing a DLA on their own. Through the participation in different dissemination activities, the aims are:

Getting the authorities’ political commitment by signing the Bilbao Declaration.

Creating a group of leading cities that can be held up as an example and take part in dissemination meetings (Good Practices).

These tasks will be completed through the collaboration with FLACMA and the OEA.

The second is also important that is “Sharing-up: Content Platform Development”. Help less experienced local authorities to devise their own DLA with collaborative tools:

A good practice database that can be used by local authorities interested in implementing DLAs based on specific projects.

A list of suggestions for policy design aimed at boosting a specific Knowledge Area.

A selection of indicators to assess local authorities' development in each Knowledge Area.

A set of diagnostics for each knowledge area, taking into account each community's specific features, according to geographical surveys.

The third is "Training for Action". This stage is aimed at preparing materials to train those authorities interested in designing DLA-boosting policies and to be used in seminars:

Preparing training materials.

Organising courses in devising Digital Local Agendas; planning the boost to the IS at the local level.

Advising on DLA or specific project development.

Creating lighthouse(s) for innovation and development that will serve as a knowledge and training node for a Region.

Fourthly, "Action: DLA Methodology". This stage is aimed at designing a methodology for Local Authorities to implement DLAs. A proposed methodology has to be worked on and will have to be discussed and adapted to the particularities of each city / region.

Fifthly, "Follow-Up". The evolution of the DLA programme can be gauged on a regular basis by establishing and assessing a series of indicators such as:

The number of cities that have developed their DLAs

The number of shared suggestions and good practices

The number of self-evaluations made

The number of courses organised and/ or taken

Finally, "Flagship Projects". This stage is aimed at promoting DLA-implementation flagship projects:

The experience shows that a real example is a powerful driving force: a positive experience can have a higher impact than a lecture

Projects must be undertaken in cities that are really involved, such as those signing the Bilbao Declaration

Good projects result in international recognition and produce content that can be transferred to platforms

Now that this has started in November 2005, there are still very important challenges in almost all of them. There's a need to involve the private sector. There is a reason why it didn't start with the private sector, because there is a need for the country's involvement as well as the United Nations. However, only some of the agencies have actively joined so far and there is still a need to find a guarantor for financial support.

E-Government and E-Governance: Towards a Clarification in the Usage of Both Concepts*

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Introduction

“15. Recognizing the principles of universal and non-discriminatory access to ICTs for all nations, the need to take into account the level of social and economic development of each country, and respecting the development-oriented aspects of the Information Society, we underscore that ICTs are effective tools to promote peace, security and stability, to enhance E-democracy, social cohesion, good governance and the rule of law, at national, regional and international levels.”

TUNIS COMMITMENT. World Summit on the Information Society.

The usage of the “e –” prefix (which is an abbreviation for “electronic”) has become a common practice nowadays. Wherever it appears it gives the idea of a particular field related with the usage of Information and Communication Technologies (ICT).

Following the intensive usage of ICT in the private sector in order to improve the efficiency of businesses and to generate savings, countries worldwide are also taking into account these benefits in order to implement their Information Society programs. E-Government is one of the issues increasingly included. At the same time, terms such

as “E-Governance” and “E-Democracy” have appeared, in order to define how the State uses ICT for carrying out its duties.

The purpose of this chapter is to compare and analyze the main existing definitions given to the concepts of “E-Government” and “E-Governance”, in order to have a better understanding of both concepts, given the fact that they are usually used as synonyms.

In the first part of this paper the main definitions of these two concepts given by international organizations such as United Nations, International Telecommunications Union, the World Bank, are going to be presented, along with the definitions given by Chile, the European Union, Japan and the United States. The second part of the paper analyzes their similarities and differences, while intending to relate these two concepts.

E-Government and E-Governance

E-Government

The United Nations defines “E-Government” as “...the use of all ICTs by government to provide information and services to citizens. It is a broader concept than in cases where it refers to only G-2-G networking.” Similarly, the World Bank defines it as “... the use by government agencies of information technologies (...) that have the ability to transform relations with citizens, businesses, and other arms of government.(...) Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-government aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent, and inexpensive.”

The International Telecommunications Union (ITU) as promoter of a project called “The Global E-Government Project” tries to “assist and increase government efficiency in developing countries by providing Internet-based services and applications to citizens. This will be fulfilled by enabling cost-efficient and secure communication and exchange of information for the inter-governmental agencies using ICTs (e.g. secure e-mails, e-transactions, videoconference, visa and passport web-based applications forms etc). Information and communications technologies through e-government services could play an important role in extending government services to citizens in other urban areas where the physical administrative infrastructure does not exist.”

When referring to definitions given by countries, the following can be found: “E-Gov does not mean putting scores of government forms on the Internet. It is about using technology to its fullest to provide services and information that is centered around citizen groups.” (United States); “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. (...) Such an electronic government will enable everyone to utilize all services provided by

central and local governments without constraints of time and location, realize more comfortable and convenient life for everyone, and revitalize business activities.” (Japan)

“E-Government is defined as the usage of ICT in order to improve the services and information given to citizens, to boost the efficiency and effectiveness of public management and to significantly increase transparency in the public sector, and citizen’s participation.” (Chile)

“the use of information and communication technologies in public administrations - combined with organisational change and new skills - to improve public services and democratic processes and to strengthen support to public policies.” “is a way for public administrations to become: more open and transparent, and to reinforce democratic participation; more service-oriented, providing personalised and inclusive services to each citizen; productive, delivering maximum value for taxpayers’ money.” (European Union)

E-Governance

UNESCO defines E-Governance as “...the public sector’s use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective.” Similarly, the Council of Europe defines it as “the use of information technology to raise the quality of the services governments deliver to citizens and businesses. It is hoped that it will also reinforce the connection between public officials and communities thereby leading to a stronger, more accountable and inclusive democracy”

While defining governance as “the societal synthesis of politics, policies, and programs”. Riley attempts to get the result of adding ICT to the previous definition, in order to obtain outcomes such as Electronic Engagement, Electronic Consultation, Electronic Controllorship and Networked Societal Guidance.

Relationship between the concepts

The idea that will lead this section is that E-Government and E-Governance are not meant to be used as synonyms. The concept of E-Governance is a broader one, and the result of an evolution of the way the State interacts with its citizens, “a broader topic that deals with the whole spectrum of the relationship and networks within government regarding the usage and application of ICT (...)”

The listed definitions contain mainly what can be called an “optimistic” point of view about ICT used for the purpose of government. As stated previously by Orihuela and Obi, “it is important to make clear from the beginning that ICT are tools: They can be used to support any political system. This fact will ensure us not to forget that the focus must be stressed on democracy and its development rather than the technology used. In the end, technology will constantly change, but the political system (democracy, in this case) is what must be improved thru the usage of ICT”.

From the listed definitions on E-Government and E-Governance, the first impression should be that they have the same meaning or are interchangeable. However,

the term e-government refers to the usage of ICT as tools that will allow the State to communicate with its citizens, and the State agencies between them. The term E-Governance refers to ICT used in order to boost the active participation of the citizens in the political procedures of their country, giving a channel to “hear their voice” in a dynamic process of continuous feedback. Given this difference, it can be said that the concept of E-Governance is closely related to the concept of E-Democracy, which considers the usage of ICT for ensuring the participation of the relevant actors in the political life and processes of a country.

Conclusion

The analysis of the selected definitions of E-Government and E-Governance has shown that they should be used for different purposes: E-Government is a tool to be used by the State to give better services to their citizens. This should encourage the citizens to actively engage themselves in the political processes of their country, which is the main goal to be achieved by E-Governance.

Notes

*Based on the paper originally presented at the 2006 Global CIO Conference, held at George Mason University (Washington) on September 25-27 2006. The authors would like to thank the additional research and comments made by Joe Chang, Bobby Macabeo, Jayne Abrenica-Monteza and Rahim Suaidi, members of the Obi Research Office at the Graduate School of Global Information and Telecommunication Studies (GITS), Waseda University.

References

COUNCIL OF EUROPE

<http://www.coe.int/t/e/integrated%5Fprojects/democracy/02%5Factivities/01%5Fe%2Dgovernance/>

DEVELOPMENT GATEWAY

[http://topics.developmentgateway.org/egovment/rc/ItemDetail.do~1065714?intcmp=3007&itemId=1065714](http://topics.developmentgateway.org/egovment/rc/ItemDetail.do~1065714?intcmp=3007&itemId=1065714&itemId=1065714)

EGOV. The Official Web Site of the President’s E-Government Initiative

<http://www.whitehouse.gov/OMB/egov/g-1-background.html>

EUROPEAN UNION

http://europa.eu.int/information_society/soccul/egov/index_en.htm

FINGER, Matthias and Gaelle PECOUD. From e-Government to e-Governance? Towards a model of e-Governance

<http://ejeg.com/volume-1/volume1-issue-1/issue1-art1-finger-pecoud.pdf>

INTERNATIONAL TELECOMMUNICATIONS UNION The Global E-Government Project.

<http://www.itu.int/ITU-D/e-strategy/e-applications/E-government/index.html>

JAPANESE IT REFORM STRATEGY (2006)

<http://www.kantei.go.jp/foreign/policy/it/ITstrategy2006.pdf>

MODERNIZACIÓN CL. <http://www.modernizacion.cl/1350/article-37800.html>

ORIHUELA, Luis and Toshio OBI. E-democracy: ICT for a better relation between the State and their citizens. Presented at the Waseda International Conference (June 26-29, 2006)

RILEY, Thomas. E-Government vs. E-Governance: Examining the differences in a Changing Public Sector Climate. International Tracking Survey Report '03 Number 4

http://www.rileyis.com/publications/research_papers/tracking03/IntlTrackRptMay03no4.pdf#search=%22e%20governance%22

THE WORLD BANK <http://www.worldbank.org/>

TUNIS COMMITMENT. World Summit on the Information Society.

<http://www.itu.int/wsis/docs2/tunis/off/7.pdf>

UNESCO

http://portal.unesco.org/ci/en/ev.php-URL_ID=3038&URL_DO=DO_TOPIC&URL_SECTION=201.html

UNITED NATIONS. Global Government Readiness Report 2004. Towards Access for Opportunity.

<http://unpan1.un.org/intradoc/groups/public/documents/un/unpan019207.pdf>

Chapter 2

e-Government

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e-Government and e-Leadership

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The first part of this presentation will start with the framework for e-Development, in which e-government is a component. It can also be called Information Society. e-Government cannot work by itself unless there are appropriate human resources, adequate connectivity and information infrastructure, as well as local capability to adapt software and information technology to local conditions, the IT industry capability promoted as a sector.

The same can be said about e-Business and E-Society. All the varieties of applications or the fusion of IT in the economy depend on appropriate human resources as well as the use of these for supporting e-government and e-Society and information infrastructure and having connectivity throughout the economy or society. That is affordable to the country and to people at all levels and also having local technological capability, particularly to adapt IT services and IT software to local applications and local conditions.

What brings it together is a national vision or a sector vision reaching national consensus. This is not always easy in many countries, particularly when it is either a democratic or a fractured type of coalition. Establishing a vision, enabling policies and coordinating institutions imply some kind of leadership or coordination mechanism.

We often operate in one of these components, but do not look at interdependencies and synergies between them and how to face that over time. For example, in the World Bank and some other organizations, the emphasis may have been put on information infrastructure but, very little on applications or diffusion of IT. In some other cases, some countries have piloted e-government applications but they were not thinking on the delivery mechanisms, whether they are tele centers or having a competitive telecom infrastructure that will allow connectivity at lower levels, for delivery services. They might be lacking on the human resources side: without developing adequate human resources many e-government applications may not be able to change the way the government does business or, for that matter, the way business can translate IT investment into a real difference in performance.

Why do we need this broader framework or approach – what I call “Holistic e-Development Approach”? When looked at broadly, you can integrate more meaningfully investment and actions in IT into the national development strategy, or the national competitive strategy or, for that matter, the information society strategy: it provides a better fit into where to prioritize among the various elements of e-Development.

It can also relate many other actors and particularly the ministries, so this is not a national ICT strategy that belongs to the Ministry of ICT or a single agency: it becomes multi stakeholder approach led, in a way that ministries like Planning, Economy and Finance tend to identify with, because it is about development outcomes, about competitiveness; it is not just about promoting the telecom sector or the ICT industry sector, it is really a broader enabler.

The other advantage is that this framework allows thinking beyond sectors, not dealing only with one element of the puzzle, but dealing with it interdependently and holistically. It allows thinking beyond investment in IT per-se, but about investment in various complementary areas (human resources, development content, adaptive capabilities).

This framework is also needed when dealing with a single pilot or activity, as many of the donors or aid agencies has tended to focus mostly on single pilots or single components, without looking at these interdependencies.

Another reason is that it forces you to focus on sequencing: will you put much more emphasis on connectivity or infrastructure first, or would you also stimulate demand for applications and so on, would you put much more emphasis on human resources, both IT resources as well as IT literacy, to build the demand, or will you put emphasis on other elements of e-Development. This way, it forces us to make choices and to develop phases and sequences, to have synergies among the various elements of E-Development or Information Society strategies.

It also helps when dealing with countries with a very high level of inequality, when demand mobilizing is needed, as well as education for the rural population in the use of IT, to bridge the digital divide. That cannot be done only by having telecommunications infrastructure or by developing e-government applications. Working on a variety of complementary investments or programs is needed, all the way from digital literacy to developing low cost access to IT tools, to develop appropriate content for the rural or poor population.

By presenting this broader picture it will also be possible to bring public-private non-government organizations partnerships, to clarify the role of the various stakeholders for e-Development.

How have aid agencies like United Nations, the World Bank, and the regional development banks actually faced these issues? From a personal point of view and perspective, the World Bank and other aid agencies are facing common problems in trying to assist in the area of e-Development and specifically in the area of e-government.

Firstly, they often focus (particularly bilateral aid, including the Japanese bilateral aid as well) on pilots. Unfortunately, they often do not address the critical success factors for scaling up and for sustainability. For example, they help developing pilots for telecom centers, but often this does not address the very high cost of access to Internet or reforming the telecommunications monopolies on infrastructure or

developing relevant content or e-government services that can be delivered through these tele centers, that end up not being sustainable.

Pilots and their components, often financed by multilateral aid agencies like the World Bank or the Asian Development Bank do not address the systemic factors that will help lead to the sustainability or the use of these applications.

The other area of practice or intervention has tended to be telecommunications infrastructure. The telecommunications infrastructure is an isolated sector, dominated originally by monopolies but now, more lending is given to support privatization and to build the telecom regulatory agency capability and others.

The World Bank and a number of other international organizations, certainly ITU and others have done a relatively good job. If these aid agencies on the policy components were to be graded, a grade C would be appropriate, where A is the highest and F is the failing grade, just to illustrate the point. On telecommunications, aid agencies would get maybe A or B, but on pilots and components, C or even D.

On the promotion of the ICT industry, there is a big dilemma because in many international agencies they were cut in the issue of industrial policy and whether industrial policy is a good thing or a bad thing and Northeast Asia industrial policy has done a relatively good job both in Japan and Korea and many other countries. Governments who have taken a very proactive role in promoting the ICT industry were a relative success. This is not always the case in the software industry, which has been more problematic.

Unfortunately this is an area where, again, the aid agencies have not done much, partly because of the ideological view, that perhaps the government should stay out of the picture and leave that purely to the private sector, not recognizing that the partnership between government and the private sector is often crucial for R&D, for developing the early capabilities in these industries, for developing some specialized infrastructure and for inducing investment in these areas.

Another area where the aid agencies work is public sector management and human resources development or educational development; unfortunately, these areas tend to be tradition-bound and practitioners in this area tend not to be very much aware of the potential of IT to transform their sectors and to, in a sense, be able to enhance productivity and the delivery of services.

Again, there is a disconnection between the practitioners in these sectors - the knowledge people, education specialists and health specialists and public sector management specialists and between ICT specialists who may know about the potential of IT but are not party to the team that is lending or assisting the developing countries in these areas.

Unfortunately, this area of IT as an enabler of development has been seen more as sector-side and various sectoral parts of the World Bank and other aid agencies have been disconnected or suffered from this. In a sense, our assistance has ended up murdering and reinforcing this view: The ministry of ICT has a different outlook from the other ministries and fights for their own budget, and it is being seen sometimes more as a zero-sum than as an enabler to the overall development strategy of the countries.

The third topic is the area of how we can improve this performance, how we can put the e-Development together. This requires leadership that is able to develop the

various components of e-Development as well as develop the synergies between the various elements of e-Development.

Often national consensus is lacking in countries about how ICT will enable development strategy or competitive strategy. Again, there is a need for e-leaders who are able to communicate effectively to the policy makers on how ICT can be an enabler in their sector.

Leadership is not just about individuals, it is also about coalitions that include public and private sector, civil society, academia and others, even mass media. It is also about institutions like national ICT agencies, CIO councils and a variety of mechanisms for coordinating the delivery and the articulation of ICT in the country.

Governments play an important role both as providers of content and information and as enablers for the information industry, telecommunication industry and leaders particularly of e-government, as the users in a number of critical applications for the countries.

CIO or e-leaders can play different roles depending on the functions that government plays as providers, as enablers and as the leaders. And ultimately one would need an institutional framework that would help the management of overall e-development as mentioned earlier. The institutional framework varies per country depending on the history of various institutions in the country, regulatory agencies whether they are centralized or decentralized, the country and what role it plays in the national ICT agencies or the ministry of ICT vis-à-vis, the ministry of economy or the ministry of finance or various sectoral ministries.

There is no one-size fits all and there is a need to learn and do a lot of research about these various institutions and their forms, but there are a lot of best practices evolving in this area.

What are the kinds of competency an e-leader needs? There are many, typically we focus on things like project management skills, IT skills and knowledge of IT trends, but there are many other competencies much more important that e-leaders and CIOs whether national, regional or sectoral should have, but often lack.

One is to be able to bridge the gap between the CEO or the ministers or the secretaries of state and the IT people, IT personnel and the technology people. This divide needs to be bridged and so they need to be skilled in strategic communication. To be able to envision where the enterprise sector would be if enabled by IT and in what way it can be transformed, and be able to convey this convincing vision to their top management team and not be seen as a narrow specialist on the side.

They also need to be able to tap the synergies between the various elements of e-Development. They need to be able to partner with the private sector and civil society to co-deliver and co-create the various information services and public services.

They need to be integrators, they need to be able to relate across sectors and across the ministries, and they need to be innovators to innovate all processes of the delivery of services. It is really not about just engineering the IT side of it. It is about changing the way business is done. It also needs to be concerned with the inclusion of the various potential stakeholders, the potential users, and not take the demand side for granted.

This leadership capacity needs to be nurtured at different levels and in fact this capacity can be very important at the lower level not just at national level; at the municipality level, at the agency level, at the ministry level. We need to develop the approaches to build the national capacity, from creating a community of practice to

actually getting to the universities to reorientate their programs towards the public sector CIO and e-leaders, because often most of the programs for CIO training and education have tended to be more focused on the private sector. In professional associations there are many ways of nurturing the capacities that need to be learnt.

Also, it is important for these e-leaders to not just to develop blueprint plans or national or sectoral plans. They have to be skilled at issues like measuring e-readiness, managing progress, evaluating the factors for investment, building partnerships for the delivery and governing by things like standards and architecture, to develop IT governance not just to deliver services themselves but enable others to deliver the services.

Mastering these two things are important because we are in a field that is changing very fast and no IT plan remains relevant for too long and needs to be adapted over time. In fact, there is a need a bridge the new chief e-development officers that is the new CEO type but this CEO would be focusing on enabling the overall development or overall sector strategy or business strategy with IT.

We are facing a relative growth crisis because of a lot of anticipation and the expectation that information technology will transform the way we do business. It can reform the way governments do business, but there is a huge gap between that vision and implementation. Just to give a few indicators: almost two-thirds of e-government projects failed to meet the expectations set for the projects.

Another measure is the investment or expenditure on IT worldwide. For next year, it is roughly projected as about 3 trillion US dollars, out of which about 500 million to 1 trillion is to be spent in emerging economies. That is very significant and unfortunately the supply of CIOs is lagging far behind. Another statistic is the fact that CIO tenure in the public sector in the US is less than 2 years and they tend to burn out, being replaced quite often.

Lastly, the growing mismatch between the supply of CIOs and e-leaders and the huge investments that are being made in this area is alarming and needs to be addressed by initiatives like the International Academy for CIO, an international center for e-leadership developed by the author, and many others. They are just small initiatives within a broader issue to be addressed: the mismatch between developing human resources and ICT.

The Japanese New IT Reform Strategy

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On January 19, 2006 the IT Strategic Headquarters established the New IT Reform Strategy; compiling the priority plans for it. Policies will be implemented based on this priority action plan.

IT can go beyond time and distance and can overcome geographical and time restrictions. It can be a great lever to reform socioeconomic structures. This structure reform power is intended to be used in order to promote the administrative reforms in Japan; as well as an active society, with the participation of the elders and children.

The IT basic frame was set in 2001 so that by the year 2005 Japan would become the world's most advanced IT country. In the e-Japan Strategy the focus was put on the infrastructure development of broadband and, through 5 years' effort for the broadband infrastructure, Japan now has the fastest and cheapest broadband access, leading the world in that sense. Among other measures, the New IT Reform Strategy projects the leverage and use of IT capabilities by July 2007.

The promotion system

The Prime Minister is the head of the IT Strategic Headquarters, formed also by other State Ministers and experts from the industry and academia. There have been three steps (initiatives) for IT and for IT policies, and the government made an effort to strongly promote the initiatives. This is a top-down approach with a strong leadership from the Prime Minister. The Minister for ICT is also in charge of the Science and Technology issues. There is also a General Council for Science and Technology, also headed by the Prime Minister, to coordinate all the sciences and technical related projects.

Japan wants to fully utilize the reforming power of IT to enjoy the full capabilities of it and get its benefits, not only for the country but a goal to be achieved throughout the world, so that anyone, anytime, anywhere in the world can use and enjoy the benefits of IT.

About the promotion methodology, an important point is the assessment evaluation. Milestones are set up as well as the targets for each phase. After the assessment, the shortfalls are quickly found out; in a PDCA (Plan Do Check Action) cycle achieve approach.

The common problems that the Japanese society faces are intended to be solved using the power of the IT reforms: ageing population, declining birthrate, environmental issues, safety issues, medical reforms, traffic safety, E- administration and IT, improvement of the businesses through the usage of IT. These are domestic issues, but Asia can really go beyond the borders by using IT if there is cooperation to solve those problems together. In order to do so, to build a safe IT society, without digital divide, infrastructure is needed.

Japan also wants to actively make recommendations to the world (e.g. the high speed communication system in Asia, disaster reduction policies). IT is not a domestic issue but a regional or global issue and Japan would like to focus on this region and Asia to work together to promote the IT policies and IT reforms: Asia should become the hub for dispatching information. That should be the shared aim among Asian countries: to become the hub for information and the centre of an information economy, to enable the further development of economy and the development of society in Asia as a whole.

The role of CIO

The role of CIO is going to be even more critical for the future: it is necessary to have the cooperation to foster CIO, world-class CIO, and to promote it as a best practice, and to have collaboration for that target among all Asian countries.

IT for medical care

Japan has achieved longevity for its citizens, but it has to evaluate how to provide good healthcare and preventive medicine. The medical system should be utilizing IT. This is a national strategy taken by the major countries.

There is not yet sufficient coordination of medical information among clinics and hospitals. If there is an electronic medical record, then the redundancy of medical tests and examinations can be reduced. If a person is in the Philippines, or Indonesia, or Malaysia or other countries, and then goes to one of the clinics in those countries, if there is an electronic medical record, then appropriate treatment could be provided. It is very important to coordinate and cooperate with Asian countries to have a common base for the medical information exchange.

Intelligent Transportation System

The priority for Japan is to have a safe and secure society. Through the Intelligent Transportation System (ITS) Japan aims to have the safest traffic system. The usage of ITS can reduce the accident rate. Asia can also get the benefits of this system: it could

be installed in cars in the region, (e.g. if a car rental company installs standardized components in their cars, then any person can drive safely).

e-Passport

Information security is a challenge that transcends national boundaries. All nations should be united in cooperation to ensure security over the Internet. In order to contribute to security and efficiency, e-passport efforts have already started. Japan is providing the test center here for any other nation to utilize this system. The country would like to promote the use of e-passport and to facilitate the transit of people and citizens throughout Asia.

Disaster Prevention

Satellites can be used for disaster prevention, sharing information and systems. Japan would like to have a centre for such emergencies and natural disasters, as part of a project to build a prosperous, safe and secure Asia.

R&D and Capacity Building for ICT / CIO Development in Thailand

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Thailand ICT Outlook: Policy Status and Development

At the start of the 21st century Thailand has developed the first ICT policy framework 2001-2010 which has been approved by the government in early 2003. This national ICT policy framework identifies goals and strategies and linkages between strategies of development of the country. In addition, it also recommends guidelines for policy implementation as the key to success .

The IT 2010 address 3 major principles, which are:

- Building up the human capital
- Promoting innovation
- Investing in information infrastructure and promoting the information industry.

Together with these principles, ICT utilization is categorized into 5 flagships comprising:

- e-Government
- e-Commerce
- e-Industry
- e-Education
- e-Society



Figure 1. Flagships and Infrastructures in IT 2010

By strategically linking IT 2010 with the Ninth National Economic and Social Development Plan 2002-2006, Thailand has developed the ICT Master Plan which provides guidelines to the country for reaping the benefits of ICT in order to strengthen the nation's competitiveness as well as to enhance the quality of life of the citizens. The ICT Master Plan, starting from 2002 to 2006, underlies seven key strategies which can be described as follows:

1. The development of the ICT industry into regional leader
2. The utilization of ICT to enhance the quality of life and society
3. The reform and enhancement of the capacity of ICT Research and Development.
4. The reinforcement of Social Capacity for future competition
5. The development of entrepreneurs' capacity for expansion of international markets
6. The utilization of ICT for SME, which comprises around 90% of the industrial sector of Thailand
7. The utilization of ICT in government administration and services.

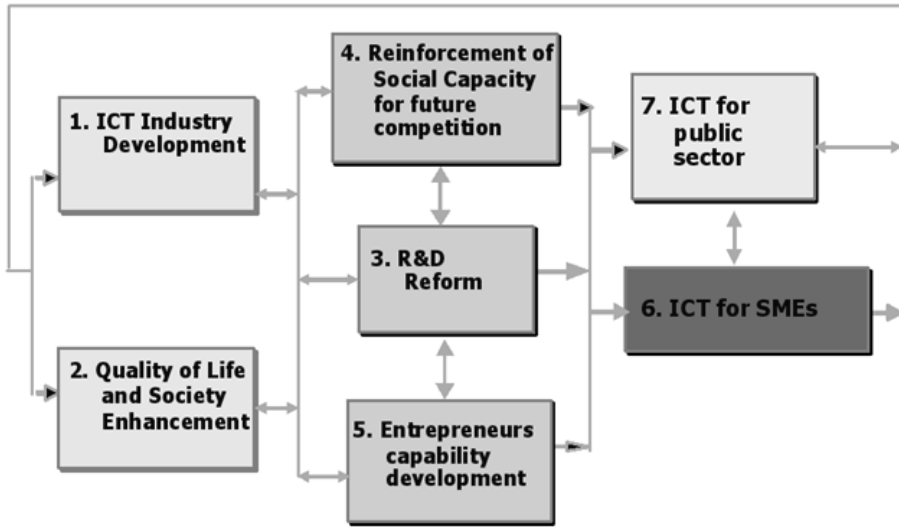


Figure 2. ICT Master Plan 2002 – 2006. Strategies and Activities

With regard to ICT policy, there are five levels of classification in policy hierarchy: First, the supra-ministerial; second, the regulators; ministerial administration, operating agencies, and the private sector. The top is the national ICT committee, chaired by the Prime Minister, responsible for the national ICT policy. After the reform of the governmental agencies in 2002, the ministry of ICT is now responsible as a Secretariat.

At Ministerial level, the Ministry of Science and Technology works closely with the Ministry of ICT for Research and Development, and promoting ICT utilization. At the operational level, the prime operating agencies of the Ministry of Science and Technology are the National Electronic and Computer Technology Centre (NECTEC), the Software Park (SWP), that work together on electronic computer software and IT matters, and the Geo-Informatics and Space Technology Development Agency (GISTDA), which is working on space technology and geo informatics.

Thailand ICT Figures and Facts

Thailand's population at the present time is around 60 million. However, the Internet users number around 7 million people (2005 survey): approximately 11.7 per one hundred inhabitants. The number is relatively low compared to the mobile phones subscribers' rate: around 50 per one hundred inhabitants.

Another example is computer use. In the case of municipal areas this is about 30.7% or 30.7 per hundred inhabitants, but in the rural areas, the number is much lower: it comes down to around 8.2 per one hundred inhabitants.

ADSL or broadband users now account for 43% of all users.

Table 1. Internet user profile in Thailand

Internet international bandwidth	9,120 Gbps (June 2006)
IP Network size	12,147 class C (June 2006), ranked 11th in APAC
Population of Thailand	63 million
Fixed line subscribers	11.7 per 100 inhabitants (2005)
Mobile phone subscribers	50 per 100 inhabitants (2005)
Computer Users (municipal)	30.7 per 100 inhabitants
Computer Users (rural)	8.2 per 100 inhabitants
Internet Users	7 million (2005)
ADSL users (broadband)	43% of all users

Source: "Internet user profile in Thailand" report, NECTEC <http://www.nectec.or.th/internet/>

Regarding the related statistics on its domestic IT market, Thailand has been hiking up to around 18% in the year 2004. Total domestic ICT market in Thailand is now around 11 billion US dollars but it is divided into 3.3 billion US dollars in the IT market, and 7.7 billion US dollars in the telecom market.

On the side of the legal framework, an e-Transaction Act has already been enacted in April 2002. Another four are to come: the Computer Crime Bill, the National Information Infrastructure Bill, the Data Protection Bill and Electronic Funds Transfer Bill.

Research and Development on electronics, computing, telecommunications and information

The Research and Development of electronics, computing, telecommunications and information is the main mission of NECTEC and the Ministry of Science and Technology.

Electronics

Focused on electronics and photonics, the scope of the Research and Development work includes the RFID chips, readers and embedded software for applications in logistics (e-PORT, ITS, EPC), food traceability, farming (pig and cow), inventory and manufacturing; automation, robotics, photonics, and the Micro Electro-Mechanical Systems (MEMS)

Computing

This group focuses on high performance computing applications, informatics, and computer science. The areas of current interest are digital archive, knowledge management tools, bio-informatics, grid computing, computational nanotechnology.

Telecommunications

This group targets the future telecommunication platforms in which Thailand can lead and be more independent. The work covers wire-line and wireless communication, 3G mobile phones and quantum cryptography. One of the latest outcomes is the Emergency and Education Communication Vehicle (EECV).

Information

The group focuses on 3 areas, which are human-computer interaction, open source software, and information management. The outstanding outcomes of this group are the promotion of open source software and the development of Linux Thai language extension, and the Center for Assistive Technology (ASTEC), that serves people with disabilities and the elderly, through Research and Development technology transfer and appropriate use of IT solutions to enable them to live more comfortably and independently.

Capacity building for ICT and CIO

NECTEC has taken the major roles for the set up of a training center located in Bangkok, designed to function as a Center for Human Resource Development and dissemination in the Electronics, Computing, Information and Telecommunication areas.

The training center accommodates more than two hundred attendees in 5 modern well equipped classrooms. It provides regular professional training open to the public; the center also supports major professional certification examinations (Microsoft, Oracle, Cisco, CISSP certifications). The center also holds a good collection of on-line courseware and E-Learning materials. Some of the outstanding functions and achievements of the NECTEC Training Center includes being the official center for conducting government CIO training programs, and being in charge of the international cooperation projects for CIO and ICT Capacity Building Program.

ICT Collaboration Program

As regards international collaboration, currently the Ministry of Science and Technology by NECTEC is in the networking ring of international organizations, such as Asia Pacific Telecommunity (APT), Asia Pacific Network (APNIC), Forum for Incident Response and Security Team (FIRST), Asia Pacific Grid (APGRID). Thailand is an active participant in the Asia Broadband Program, APEC Telecommunication and Information (APECTEL) Working Group, ASEAN, TELMIN, ASEAN TELSON, UNCTAD, UNESCO, ASEAN SchoolNet Project, the ITU, and the World Summit for Information Society.

The initiative established for a Government CIO Training Model and Network for e-government has been a joint effort between Thailand and Indonesia, cosponsored by Japan, Philippines, Vietnam and Malaysia. The project was successfully completed in

December 2005. The Government CIO Training Model has been concluded with a standard set and tailor-made set for GCIO Training Course curricula for the APEC region. To this end, member economies, including Thailand, Indonesia, Japan, Philippines, Vietnam and Malaysia, together with the United States will cosponsor an e-project proposal to seek funding from APECTEL with the object of deploying the GCIO Training Model throughout the APEC region, during the year 2007.

There is a need to strengthen the existing collaboration for concrete and long-term development. The project development of model Government CIO Councils is the continuation of the Project “Establishment of Government CIO Training Model” and “Network for E-Government Development”. Participating economies include Indonesia, Japan, the Philippines, Malaysia, Thailand, the United States and Vietnam. All of these economies agree and realize that the Government CIO institutionalization is an important component in promoting and enhancing e-government development in APEC member economies.

The project’s goal is the establishment of an adaptive model on Government CIO institutionalization for E-government development. The project was approved by the Budget and Management Committee (BMC) for APEC funding in December 2005. Under the project implementation plan, Japan and the United States will organize two workshops in June and September 2006. The project is expected to conclude by the end of this year, with the outcome of an APEC standard model for organizing CIO Councils as ICT policy body and ICT development innovation.

The next important international arena for ICT and CIO development is the young and so-called International Academy of CIO. Presently, at least three chapters, including Japan, Thailand and Indonesia have been already inaugurated. More members are to be launched within this year to cover every corner of the world, which will finally be formed as a solid federation of the IAC.

In Thailand, this body was formed on March 31st this year by founders comprised of local CIO and executives from the government, business and academic domain. The prime objective is to collaborate among local members as well as the organized chapters on Research and Development and capacity building for CIO and the ICT development. Major joint activities and projects include: organizing CIO workshops, promoting academic researches and surveys, exchanging experience and knowledge, and offering opportunities to young and top scholarly researchers actively engaged in the field of CIO.

For promoting the joint IT program among government CIO, the establishment of a GCIO institution or body is needed. This institution can facilitate or act as a focus for partnership between the IT professionals across government agencies. It is charged with creating and delivering a government wide CIO agenda to support the transformation of government and to build IT capacity.

Future collaboration

Regional collaboration in the following areas has to be explored: joint Research and Development for ICT and CIO, joint certificate or joint degree program on ICT and CIO, joint ICT pilot project prototype on open standard platform, collaboration on

project implementation, exchange and sharing of knowledge, know-how and experiences.

ICT Policy in Indonesia

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ICT policy and cooperation in Asia

ICT policy and cooperation in Asia is a key element in the effort to improve the efficacy of government operation through the use of information and technology. The impact of IT on government operation is clearly understood, as stated by the World Summit on Information Society (WSIS).

The WSIS Plan of Action calls for governments to implement e-government strategies focusing on applications, promoting transparency in public administration and democratic processes, improving efficiency and strengthening relations with the citizens.

The action plan reflects a broad realization that e-government is part of reforming the relationship between the government and the citizens, and at the same time, transforming internal government operation itself. We hope the outcome of this conference will reflect the spirit of the WSIS as well as the APEC Declaration that enable the global community to affect transition from the digital divide existing among countries to digital opportunities for all.

Many studies have indicated that prerequisites of E- Government implementation are, among others, the following:

Access:

This includes telecommunications infrastructure availability and reliability: Internet access, telecommunications access and services in which government systems and people are connected to each other. In a broader sense, it also includes the necessary regulatory regime for those purposes.

Basic skills:

This includes the basic skills needed by government officers to run the systems and the basic skills necessary for people to use the e-government services effectively.

Basic literacy, which is still a problem in some countries, is included here. How can, for instance, people can exploit the benefits of e-government services if they still cannot use computers? Therefore, E-government has to be considered not only in a narrow sense, but also in a broader perspective.

Based on the Global Report 2005 issued by the United Nations, the Asian countries are notable even in this prerequisite. More attention should be paid to cooperation on the prerequisite issues, in addition to the e-government system itself.

Information technology is changing government interaction with its citizens and among the agencies. In an e-government context, this evolution of IT necessities requires the government to be prepared to deal not only with technical issues but with business processes, organizational structure and others. Unfortunately, such government efforts to cope with e-government readiness in a narrow sense are not sufficient unless all the necessary prerequisites are addressed.

The current cooperation initiatives must be appreciated. For instance, the establishment of the CIO Training Model and the establishment of the GCIO Council which is a joint effort by Indonesia and Thailand, cosponsored by Japan, the Philippines, Vietnam and Malaysia. This project seeks to deploy GCIO throughout the APEC region, during the year 2007. Also, the program on the establishment of an adaptive model on Government CIO Council that will be organized by Japan and the United States this year. Also, the establishment of the International Academy of CIO or IAC, with activities including organizing CIO workshops, promoting academic researches and surveys, exchanging experiences and offering opportunities to young and top scholar researchers actively engaged in the field of CIO.

However, these efforts are not enough, as this cooperation does not address the real problems for the progress of e-government implementation. e-Government has to be turned into real action, with more and harder work..

In the first place, e-government indexes for planning purposes have to be modified, paying more attention to identifying the prerequisite gap to be addressed. For this purpose, the prerequisites and the e-government specific indicators must be separated and more objective indicators must be used, instead of perception build or biased evaluation criteria.

Such indicators have to be used for planning and cooperation projects; fundamentally, cooperation to address the progressive e-government implementation while discussing specific e-government achievement issues. This should be considered as a part of economic investment opportunities. There are some opportunities to implement such cooperation among others: infrastructure development, particularly to increase telephony density rate, to widen the backbone network to reduce internal access costs and so on.

Basic education is the second issue: to improve access to education for remote and poor people, so that they can have connection to e-government services without any discrimination. Putting e-government cooperation within the context, economic growth must be promoted, in order for the countries to attain sustainable growth and equitable development and improving economic and social wealth.

It is necessary to improve infrastructure and technology development to address the digital divide, domestically, as well as internationally, while reducing the economic disparities among countries, in order to address the technical prerequisites of e-government as mentioned earlier.

In the case of Indonesia, a backbone network will be developed across the country, connecting 440 cities, in all 33 provinces of Indonesia. It consists of about 35,000 kilometers of submarine fiber optic cables and 21,000 kilometers of ground fiber optic cables.

Indonesia also seeks to promote Asian regional interests in international and global forums, not to be merely target markets for every model and technology associated with the implementation of e-government, which may not necessarily be suitable for the region.

e-Government has evolved and developed significantly in recent years. Some of the recent characteristics of E-government include:

1. Increasing expenditure on IT does not mean more efficiency. Effectiveness and transparency of E-government processes is very important. Related to this, the term of "IT paradox" means ongoing increase in IT spending without necessarily obtaining the expected outcome.
2. There is a trend for the development of e-government systems to happen somewhere else. The technical expertise to combine systems into an integrated process may not necessarily have been designed and implemented based on the same process.

The integration of the existing independent systems within the government requires not only the best technology, but most importantly, highly committed leadership. Establishing an empowered Chief Information Officer is, therefore, both important and challenging, first and foremost due to the inevitability of bureaucratic policy but also in the light of the limited knowledge and understanding of IT generally available in governments throughout our developing world.

Philippines ICT Policy Roadmap

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This presentation is about the guiding principles of the draft ICT Roadmap for the years 2007-2010, which is now being finalized. The draft Roadmap is now being shared with the stakeholders in the Philippines, so that the result is a document that will embody all of the aspirations of all of the stakeholders. And with the consultations held in the past two months, it has been possible to determine the following reasons or rationale for why the review of the strategical map should be done.

1. Review / establish policy directions, as the lead agency for ICT development in the country;
2. Present the Philippine government's ICT-related strategies and programs to the citizenry;
3. Create wider awareness of ICT and its benefits to society;
4. Catalyze more ICT-related investment opportunities;
5. Lay out sustainable strategies for ICT-enabled economic development;
6. Recast, refine (or redefine) our short and medium term objectives;
7. Identify the key initiatives that will rally all stakeholders towards achieving our common objectives;
8. Provide the private sector with a reliable frame of reference to strengthen their strategies / action plans;
9. Increase coordination among stakeholders in implementing ICT programs and achieving desired outcomes.

The second part of the presentation is focused on the seven guiding principles which the government has developed to guide the building of the Roadmap.

The first guiding principle is that CICT is committed to realize the goal of "... *a people-centered, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, thereby enabling individuals and communities alike to achieve their full potential in the promotion of sustainable economic development and an improvement in the quality of their lives.*"

All Filipino citizens should have access to basic government services, information, and quality education through the use of appropriate and affordable ICT technologies. It should be the government's primary concern to ensure that appropriate connectivity is available in every local government unit and public school.

The second guiding principle is the belief that the Government's primary role in ICT development is to provide an enabling policy, legal and regulatory environment. An enabling environment for ICT development requires good governance at all levels, and a supportive, transparent and pro-competitive policy and regulatory framework.

Moreover, government must act as a catalyst and its involvement should be predictable, developmental, transparent and efficient. Regulation, where necessary, should promote a level playing field and should not hinder companies from competing in free and fair markets.

The government should play the role of the "enabler" because market forces alone cannot guarantee the full development of an inclusive information society. Having previously liberalized the ICT industry, which resulted in lower barriers to entry, numerous players singly or in partnerships, can roll-out the nation's ICT infrastructure. The government cannot play this role due to the limitations of our country's financial condition.

The third guiding principle is a "Multi Stakeholder Approach" to ICT for Development. The private sector, civil society, civic organizations, international organizations and other partners have an important role to play, as well as a responsibility to fulfill in the development of the Philippine Information Society.

To ensure the success and sustainability of ICT initiatives, stakeholders' participation should be from end to end, from conceptualization, planning, and implementation. The primary role of the private sector is to provide investments, capital and other resources. Initiatives and projects to develop the ICT sector will have a better chance of success and sustainability if these are market-led, rather than government-led.

Concerned Local Government Units, schools and other community based organizations/groups, must be directly consulted and their specific requirement/s determined. Furthermore, they should have active involvement in the day-to-day operations of ICT facilities within their respective area of jurisdiction.

The fourth guiding principle is the consideration of ICT as a tool for Sustainable Development. The national objective is not only to develop the ICT sector of the national economy but to ensure the propagation and widespread use of ICT in all aspects of the Filipinos' life. Plans and programs to use ICT for developmental purposes should have the following attributes:

- **Accessibility.** Online access to services must be extended to all citizens and must cater to the needs of different stakeholders.
- **Availability.** ICT services to all citizens anytime. It should be available 24x7x365, at home, at the office, in schools, in libraries and other convenient public locations.
- **Security and Accountability.** Standards should be set for resolving security, privacy, non-repudiation and authentication issues to engender trust in the use of ICT services.
- **Interoperability.** Online services should be able to link seamlessly to existing back-end systems and across different agencies and platforms.

- Sustainability. It should eventually be transaction-based, cost-effective, revenue generating and self-financing.

The fifth guiding principle is the promotion of the development of digital contents that are relevant and meaningful to Filipinos. The goal is to make available online the Philippines' stock of content and provide all citizens with easy access to the information that is important to their lives.

Digital content is broadly defined as encompassing educational materials, national heritage collections, government information, research databases, literature, history and entertainment and resources in the various Philippine languages – particularly the 8 major Philippine languages.

The sixth guiding principle is the endeavor to create a safe, trustworthy online environment for all Filipinos, taking preventive measures to guard against abusive uses of ICT, such as illegal and other acts like all forms of child abuse, including pedophilia and child pornography, and trafficking in, and exploitation of, human beings. While taking all appropriate security and preventive measures, the respect of the right to privacy, freedom of thought, conscience and expression of individuals shall be ensured.

The seventh and last guiding principle is the transformation of the CICT into a strong organization to facilitate ICT development and ICT for development in the country. A “lean and mean” structure, as well as an efficient and effective organization must be built out of the various units that now comprise CICT.

The current rationalization program of government, not only in form, but more importantly in substance will be implemented. CICT staff shall undergo retooling and retraining so that the organization has the necessary skills to properly conduct researches, to formulate policy, to plan programs, and to manage projects effectively through PMO. It is envisioned that majority of future CICT projects would be outsourced to the private sector.

As a result of the guiding principles, the strategic programs for ICT development in the Philippines (2007 – 2010) include:

Ensure Universal Access to ICT

To ensure universal access to ICT, the government shall implement the following:

Community e-Center Program – to include projects such as **Internet in Schools (iSchools)**, **eCare Centers** which are specially designed to provide access and training programs for Persons with Disabilities (PWD), **eLGU CeC** that enable local government units to deliver services more efficiently, while providing their respective constituents with access to the Internet and other ICT, and **Regional ICT Centers** to spur regional development through the use of ICT in education, commerce and governance and spearhead the building of local e-marketplaces or a one-stop-shops for e-commerce, e-learning and e-government services.

Low Cost Computing – through the **PC ng Bayan** initiative, launched by CICT in 2005, low cost computers are to be made available to the population. Free and Open Source software will also be provided as an alternative to pirated commercial software.

National Broadband Plan – The Government will ensure that adequate bandwidth to support widespread and intensive ICT use is available throughout the country.

Last Mile Initiative – The Government will take all steps necessary to ensure that all citizens have access to ICT goods and services, and will, principally through Community e-Centers, provide the last mile bridge to these unserved areas. It should be emphasized, nonetheless, that government is fully prepared to yield the delivery of access to ICT once the private sector is ready to expand into these areas.

Develop human capital for sustainable human development

Programs to develop human capital in the country include the following:

ICT Competency and Standards Development - The CICT, with concerned government and private sector stakeholders, as well as internationally recognized bodies, shall develop and formulate ICT competency standards, to be used and applied in education and training, and help to professionalize ICT human resource in government and private sector. Among the projects the following are included:

National ICT Competency Standards – This would indicate and rank (vendor-neutral) ICT-related knowledge and skills that an individual must possess at a recognized level of competence in specific ICT fields/areas

An *ICT Competency Assurance Body* – This would serve as the implementing body on accreditation, certification, and coordination with concerned stakeholders.

ICT for Education (ICT4E) - This Program aims to support the efforts of the Education sector in primarily incorporating the use of ICT in education. Among the projects include:

- ICT in Education Master Plan for all levels
- Content and applications development through the Open Content in Education Initiative (OCEI)
- iSchool WebBoard, which will enable teachers to build and share online self-learning materials
- PhEdNet, which is a “walled garden” that hosts educational, learning, and teaching materials and applications for use by Filipino students, their teachers and parents.
- eSkwela, which establishes Community E-Learning Centers for the out-of-school youth (OSY), providing them with ICT-enhanced alternative education opportunities.
- eQuality, Program for tertiary education through partnerships with state universities and colleges to improve the quality of IT education and the use of ICT in education in the country
- Digital Media Arts Program which will build digital media skills for government using Open Source technologies
- ICT Skills Strategic Plan which will develop an inter-agency approach to identifying strategic, policy, and program/project recommendations to address the ICT skills demand - supply gap.

Use ICT to promote efficiency and transparency in government

In the area of e-governance, we aim to use ICT to promote efficiency and transparency in government and as such will implement the following programs:

E-Government Fund – It will continue to finance priority, mission-critical, inter-agency government frontline ICT projects, as well as review its rules to ensure that it is used towards more strategic projects.

Developing Common Applications for NGA – This includes Financial Information and Management System and E-Procurement.

Government Communication Network - CICT will lead the development of an IP-based, nationwide communications network that would connect all government agencies.

CIO Council – the CIO Council, composed of Chief Information Officers (CIO) appointed for every agency of government, will work together to maximize the use and effectivity of government's ICT resources, and ensure better information on, and monitoring of the use of ICT to implement government's programs and priorities.

Enhanced ICT Training for Government - The CICT will design continuing initiatives to support the development of an ICT-enabled civil service.

Revision of the Government Information Systems Plan (or GISP) - The update of the GISP, which serves as the master plan that harnesses the potentials of ICT for good governance, and promotes transparency and accountability in government operations and transactions, will be undertaken.

Strategic Business Development to enhance competitiveness in the global ICT market

Critical programs and projects designed to facilitate and sustain the growth of the ICT industry will be implemented, and these include:

Workforce Mobilization Program - The CICT, with concerned government agencies and other private training institutions, will seek to ensure a suitable match between available jobs and quality workers through the Workforce Mobilization Program. Key areas of interest include English competency, industry certification and career advocacy.

Philippine Cyber Services Corridor – The Philippine Cyber Services Corridor, an ICT belt stretching over 600 miles from Baguio City to Zamboanga designed to provide a variety of cyber services at par with global standards and served by a \$10B high-bandwidth fiber backbone and digital network, will support government's priorities for job creation, expansion of the middle class, and regional development.

Philippine Cyber Services Branding – the Philippine position in the global ICT market will be strengthened and solidified into a Philippine brand that evokes quality, innovation and world-class sophistication. Such effort will be carried out in partnership with private-sector association efforts to promote the Philippines as a whole.

Strengthening SME through ICT Enablement – in order to generate demand for ICT products and services, the CICT will foster the widespread use and application of emerging ICT among small to medium enterprises (SME).

Pursue legal and policy agenda for the Philippine ICT sector

The Government recognizes the need for an enabling legal, policy and institutional environment to develop, promote and advance ICT as a prerequisite for the continued growth of the Philippine economy, the competitiveness of local industries and firms, and the achievement of national development goals. Priority legislation includes the following:

Department for Information and Communications Technology- The creation of a DICT will ensure effective coordination and implementation of the national ICT agenda. Its creation is broadly supported by the private sector, which is keen to work closely with government to encourage ICT-related business and investment, enhance the skills of the country's workforce, pursue meaningful legal and regulatory reform, continue to enhance the nation's information infrastructure, and promote e-governance.

NTC Reorganization Bill – the NTC must be transformed into a politically independent, fiscally autonomous regulatory body. NTC's role and mandate, particularly in an era of fast changing and converging technologies and services, needs to be clarified. Equally important, it must be given the powers and resources necessary to effectively regulate the whole ICT sector in a manner that promotes free and fair competition in the sector.

Convergence Bill/Revisiting RA 7925 - A review of the Public Telecommunications Policy Act or RA 7925 needs to be revisited to include new laws and rules that are more in tune with the realities of convergence, new technological developments, new ways of doing business, and the effects of these on universal access goals.

E-Government Bill - a comprehensive e-government bill will outline how the government would manage, procure and use information technologies to more efficiently deliver services. As well, the e-government Fund needs to be institutionalized to help meet the requirements of major government ICT projects. Some of the key policy issues that such a law will address include data sharing among government agencies, interoperability of government systems, and data privacy in government.

Privacy and Data Protection Act – there is an increasing need to ensure a trustworthy legal environment that ensures privacy of data and other information.

Freedom of Information Law – a Freedom of Information Law will provide clear guidelines on: (1) public access to government data; (2) sharing and exchange of information among government agencies; and (3) the use of information obtained under such a law by the recipient government agency or private sector.

Cyber Crime Bill – A Cyber Crime and Cyber Fraud Prevention law would provide the legal basis for enforcing security measures and protecting the interest of the general public interest.

The guiding principles will allow crafting the Enterprise Architecture of the Government's ICT. For the Philippines, IT Governance consists of four processes: Strategic Planning, Enterprise Architecture, Business Case Discipline and Portfolio Management.

E-Government in Brazil

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The Brazilian initiative in e-government has recently attracted growing international interest. Brazil figures among the leaders in providing e-government services even though in some indicators such as public access to the internet, there is a need for improvement. Taking this fact into consideration, the emphasis of this presentation will be put on the Brazilian government's goal of transforming e-government as a tool to strengthen social cohesion.

Following, some rough figures that could help us to understand the challenges faced by Brazil, which also has to deal with the issue of social cohesion. It is a country with a population around 105 million people and extended to around 8 million square kilometers. It's a huge country with a contribution to GDP per capita of US\$4,323 that made it part of the middle income of developing countries group. Total export and import comes to around US\$200 billions.

Brazil is also an important industrial base. It has recently achieved self-sufficiency in oil, a production of 1.8 billion barrels per day. Twenty two percent of the country is arable land. At the present, it is the fourth largest steel producer in the world and has the fifth largest chemical industry, and last but not least there are 18 billion internet users in Brazil. According to an interesting study made by the OECD in 2001, an economic survey of the Brazilian economy, the main finding of the study was that Brazil was an example of an opportunity brought about by globalization and the need to build social consensus and political effort to achieve a new development trajectory, just like Russia, India and China.

There is a need to bridge the divide and to reduce digital inequalities. One point to bear in mind when talking about BRICs, this magic acronym, is that the Goldman Sachs report was based on an assumption of economic growth with political and social stability, so from the present perspective, to fight against poverty and digital exclusion are part and parcel of the growth strategy and government accountability to society as the e-government. All resources must be allocated with more transparency and efficiency.

The Brazilian goal is to make a successful transition from e-government to e-democracy. It is absolutely essential that this context of digital inclusion be adopted. In Brazil, there is an effective and efficient strategic communication and consensus

formation strategy. E-government effort is believed to expose the citizen to transparency, participation, social control and accountability.

Digital exclusion in Brazil ranges from 59% to 97 %. In terms of social economic profile, there is a group referred to as class A. They are the population with an average income of 20 times the minimum salary. This group of people comprise 5% of the population and they represent 42% of the internet users in Brazil. Class B, the so-called middle class that consists of the 5 million with minimum range salaries, accounts for 20% of the population. They comprise most of the users with 49% of internet users in Brazil. That represents 19% of the whole population. And then classes C, D and E represent 72% of the population and 9% of users. They cannot be excluded as they are part and parcel of the whole thing.

There are promising developments going on in Brazil that might change this picture. A key factor in a successful e-government project is to develop a vision and to transform it into state policy. One example is, recently the Brazilian government announced that it will merge all actions and programs of digital inclusion being implemented in Brazil into a single program called the Brazilian digital inclusion program. There will be a single coordinator under the guidance of the office of the President of the Republic, called "Casa Brazil" and the objective of the program is to increase the number of users of computers that have access to the Internet.

Another key factor is to make the process of vision building as participatory as possible. Bringing contributions from the private sector and NGO and incorporating them in the decision making process. In our experience, identifying such stories should be demonstrating to society the gains that can be achieved by e-government projects. In Brazil, the most important success story is e- elections., There has been electronic voting in Brazil since 1988 and it is used by more than 100 million people in 27 Brazilian states. The accounting process is very fast, less than 22 hours to account for a huge country with low population density. And one of the main factors in building this sector is the leadership of the supreme electoral court that gives guidance and a very credible technological option for making electronic voting a success in Brazil.

About the government financial administration tax declaration, 98% of annual income tax declarations in Brazil are sent via the Internet. It covers 22 million tax payers. The Brazilian tax administration issues more than 60 types of documents online.

The next success story is e-procurement at federal and state level. It has achieved savings of 30% on the purchase of government goods and services. Brazil had been enjoying faster processes with quality social control. The e-procurement program of the Brazilian government is the first that is recognized by the World Bank and Inter American Development Bank. Brazil is very proud to take part in the spread of this concept that has proved to be a very effective way of allocating resources.

There is also the Brazilian payment system, perhaps one of the only positive legacies of the high inflation years in Brazil. It is a system that is very fast at checking and clearing checks and has one of highest level of Internet usage in the banking system.

As for the "Computer for All Program", the industrial policy in action is so rapid, particularly involving the efforts of many government agencies and the private sector in Brazil. Sales of personal computers are booming in Brazil, in 2005 sales reached 5.5

million units of PCs, an increase of 34% from 2004. In 2006, expected sales figures will reach 6.6 million units, a further increase of approximately 25% from 2004.

The objective of this program is to promote digital inclusion by facilitating computer purchases through a reduction in price. In Brazil, the average computer cost around 2000 real in January last year. The cost now is 1,300 real, a substantial reduction in the price.

Three factors are behind the performance; the depreciation of the Brazilian currency, the real, from 3 per dollar in January last year to 2.28 real per dollar at present. This depreciation of the real was due to international liquidity but also to macro economy adjustment and stability that caused the currency to appreciate at that moment. The second factor was the reduction of 9 points from 25% of federal taxes. The use of this rebate brought down the cost of computers to below 2000 real. The third element in making this happen is the intensive participation of the public finance institutions in offering credit for computer buying.

At present, computers can be bought in stores for less than 30 dollars in Brazil. The result of this scenario has been greater competition among computer manufacturers in Brazil to get a piece of the pie. The latest figures, as of today: there are 43 manufacturers that have become eligible to take part in the program. All manufacturers in Brazil have reported a 200% increase in computer sales this year. In 2004 a 40% increase was reported. Originally the program was to be based on open software to reduce the cost of the computer. Microsoft has responded to that with a cheaper version of its operating program in order to continue to build the computer sales explosion in Brazil.

e-Government in China

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The information industry experience has been very fast during the last 10 years in China. Not only the infrastructure but also researches, manufacturers and societal information, human relations are not only reaching the normal level but also a more advanced level should have been reached in recent years.

The national guideline for media and the long term plan for science and technology development for the next 15 years have been released just recently by the Higher State of the Council. This work plan makes a blue print for China's future and during the last 15 years a lot has been done on other concerns such as education and information deployment.

The infrastructures currently available for the information industries are fiber network and satellite network not only serving education but also industry for the first phase of information transfer for all of China. Recently a direct fiber optic link was completed reaching from Beijing to Europe.

By the end of 2005, fixed phone lines already reached over 308 million and wireless phones over 451 million. According to reports, China has the largest wireless phone user community in the world. Internet service subscribers already reached 128 million in China in recent years, including industrial users and also academic users. Recent index also comes over 2.5 million. This is the development trend of Internet penetration rate starting from 1996 through to this year.

e-Governance was also quite intensively implemented during 2006. There are new opportunities and also new challenges not only for the users but also for the government structure. There are over 15 major national projects in China and the word "golden" has been coined.

For example, golden education and national education network have reached all Chinese provinces, over a thousand universities have been connected and after their graduation all those young workers went into all sectors of society to the government, to organizations, to industry to use information systems.

Information systems have also been deployed for customs control, taxation, economic auditing, agriculture, network monitoring and environmental protection.

Many national projects have been established during the last few years and major provincial and ministerial projects have also been established within the system.

The web portal www.job.cn has been custom-tailored and integrated to be a total solution provider to the citizens. The objective of e-Governance will focus on the establishment of more efficient operation of the government and for transparency of the operation and property and responsibility of the government. Thus, this will promote development in the social economy. All information is being digitalized in information technology research and the network infrastructure has been built and is serving the users - the citizens, government bodies, process organization and overseas investors.

There were eight major tasks deployed by the government: network platform have built a lot of projects on these. With several networks that are interconnected together and several platforms have been established with information resources being digitalized but still have a long way to go with a lot of information still being recorded using paper, not computers. Habits must change in head and security infrastructure, construction, standardization, the trainings.

The policy regulation which is emerging should be addressed and also operational maintenance and renovation has made cooperation a major task for implementing e-Governance

Standardization is also quite important: government put a lot of effort into dealing with it. They will set up the general structures and make applications supporting the infrastructure, Internet security, management, personal training covering all the fields of e-Governance.

The Internet at the Chinese municipal government in Beijing is called the Beijing Municipal Internet Network. It deals with the government internet operation. The case study of the Department of Commerce will allow people to do business on the website, on the network - making all the processes by using online networks. As for Beijing case study, there is one district called Taoyang, located in the western part of Beijing where there are a lot of embassies, a lot of important international organizations, very famous company headquarters are located in that region.

Languages provided are Chinese, English and Korean, so by just clicking all the links surfers can view all government procedures. For example, there are recommendations for governmental regulation, all the facilitation of investments, productions and contributions have links on their website.

Another case study will show the route time to monitor the performance of the citizen traffic information delivery in the Beijing area. There is a site showing revenue comparison between coastal land area and western part of China. Normally in China, coastal areas are more developed but inland areas are less developed, so the revenue for information industry is quite different and investment is also quite different.

There is an imbalance in the situation in China, a need to put in more effort and for more budget to be allocated to the western part and to the inland part and allow all provinces to develop in a more balanced way.

For a worldwide comparison, United Nations had delivered annually the Report of e-Government Readiness Index and E-Participation Index. China is in 57th and 50th place respectively. In the South Eastern area of Asia, China is in 7th position so a lot of work has to be done.

Compared to the year 2000, there has been little progress. In the future, it will be necessary to increase investment in the infrastructure, development, construction and

also on standardization and research into the key technologies, training and education. Sharing of international experience and collaboration are also needed.

e-Government Experiences in Finland

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Finland was an early starter in e-government and was talking about it as early as the 1990s. e-Government came to Finland in the context of general public administration reforms which we have executed. Finland wants to have responsibility, accountability and flexibility at the administrative agency level to decrease oversight. e-Government has become a useful tool in making progress in these areas. Some of the objectives have been too much that the government wished to use e-government in order to strengthen competitiveness, enhance modernization of the administration and increase its efficiency.

There has generally been a significant advancement of information society in Finland and this certainly has been a catalyst for e-governance development. The government has reported a lot in promoting information knowledge society where the information society has been one of the most important things in that context. ICT in general is reviving and have made their economy more effective and today Finland feels that the Finnish information society is supported widely by the general public and there is quite a lot of trust in that.

What are the other basic tenets of Finland's e-government? What have they been stressing? They have been stressing very much that the information provided must be, relevant and of good quality. That is much more than important than the quantity. It is more about how much information is available and the relevance of that information. Finland has been thinking that e-government will increase transparency with regard to what the government is doing and what their administration is doing.

The second key element is e-Engagement aimed at strengthening general participation in politics and more generally in public or common issues concerning all citizens. Finland has been trying to improve access to information for citizens, to encourage e-government and strong participation in policy-making, in giving messages, giving advice and giving comments to the political decision-makers.

Thirdly, the national government web portals are also key elements and have been a very important medium for the promotion of e-government in Finland.

Looking at how the increase in R&D expenditure has been thriving, the progress on the Finnish information society can be seen as one of the top in terms of R&D investment and certainly with a very strong ICT. This has also boosted the

development of the information society and contributed significantly in the public investment in R&D.

As regards the ICT role improving labor productivity, Finland is not among the best but ICT has been playing a key role in improving their labor activities. Finland is one of the forerunners in e-governance and according to Euro stat, the public information services for the citizens is the most widely-used, and the second most widely-used for companies, after Sweden. International consultancy company Accenture recently came out with their study and ranked Finland as one among seven challengers to Canada and the US, who are the leaders in this issue. Accenture has picked up a number of strengths for Finland and mentioned e-Election, e-Education, the citizen access channel to public information and opportunities for citizens to give their views on the preparation of laws and the transparency of the processes. Population registry was also one of the strengths together with consumer affairs and environmental issues.

So these are the top and Finland is among the challengers for some other countries. Some statistics and facts show how Finnish people are using e-government services. An impressive 73 percent of Finns have tried e-government and simultaneously 92 percent of frequent internet users have used e-government.

In spite of this, only 43 percent of the citizens prefer e-government over other channels. People who visit government websites are looking for information and some are sending forms to government offices. In Finland, the government collects taxes from the citizens, now taxes can be paid online. This shows that there are already advanced government offices that can receive payment online.

This explains how the popularity of e-government is varying in each age group. The bigger challenge now is for the government to reach all age groups.

One of the key issues in the promotion of e-government is trust and this is still a challenge for Finland but Finland has made good progress on this. They have to be aware of that, particularly in internet banking which has been advancing in Finland very rapidly. This is a promising sign and people are aware of that.

So what are the next steps for Finnish e-government development? Finland has done well but there still are challenges and the next phases will be much more complex and demanding where cross-agency collaboration is needed. Cross-agency collaboration is generally a big issue but there are now links between different ministries and agencies, only these really are not satisfactory. Security issues are certainly in the forefront and e-identification is making a lot of progress but still much more should be done. Finland has a very clear system plan for the information society and the Prime Minister is leading the work. This is how we organized the work, new strategies will be used and old strategies will have to be continuously renewed. Finland has several issues and really big challenges from an e-government point of view. One is the ageing population's increasing demands for social and health services and regional equality. Finland is particularly stressing competitiveness. Finland thinks that e-government can be a very useful tool in increasing the competitiveness of Finland and particularly of major enterprises. These enterprises can cut their costs when the government provides them with good services and the first Information Society Program is due to be amended next year.

There will be a new Information Society Program and very much the same objectives will be reflected in the new one, these are some of the promising areas

where progress can be made in a short time, significantly: telecom infrastructure, digital TV, citizen information society, security in information society. These are very important to improve to ensure that in future all citizens will be able to use e-government. The people have internet skills so they also have the skills to use e-government, e-government offers citizens' applications in e-Education and e-voting.

Some sectors are clearly more promising in the short run, and this will be very much reflective of the program which is now under way. Some accomplishments will be reached later and others are already available.

Still, a few examples of e-government projects are already under way in Finland, particularly the National EPR archive and a new national organization for e-health. The national system is under way to compile the patient's health record in one place, which means rationalization, quality and better service now that it has been implemented in Finland regionally and independently. Different regions have to work independently and make a lot of savings to achieve this national system.

Strategies will also be needed in the future but they have to be cooperated with. The national information society strategy has to be in good compliance with the new strategy, which is being undertaken by the Ministry of Transport and Communications. It is also important to mention how Finland's Ministries and Industry, together with the Ministry of Education, are approaching e-government from the point of view of digitalization of business and education.

Implementation of Electronic Government Concept in Russia: Current Stage and Prospects for the Future

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An explosion of ICT utilization in public life and government, in particular, appears to be one of the most clear global trends within the last decade. Nowadays, the electronic government (e-government) concept is the factor dominating the character of reforming the governments all over the world, although “numerous significant foundational issues about electronic government (e-government) remain nearly or completely unexplored” [Jaeger, pp. 702-703]. The latter is especially important for implementation of the e-government concept, it determines the variety of governmental policies regarding relevant technological, organizational, economic and regulatory issues, ensuring consistency with country’s legislation and the rights of users. There are many other challenges to be dealt with while implementing e-government as far as particular stage of development is reached (see [Borins, pp.200-201], [Clark, pp. 380-382], [Jaeger and Thompson, pp.390-392]).

The United Nations Public Administration Network (UNPAN) defines e-government as: «...utilizing the Internet and the World Wide Web for delivering government information and services to citizens...». Information technology allows governments to service citizens in a more timely, effective, and cost-efficient way. However, e-government does not have to be simply the application of new technologies within the existing framework of interaction between the Government and Society at large. To make it work efficiently a wide scale re-engineering of the governments and administrative procedures need to be done. Thus, creating e-government implies not only building up and maintaining a robust technical infrastructure providing access to the Internet, but requires the government to elaborate effective e-government services, maintaining a citizen focus, protecting personal privacy. Besides drastic changes on the

supply side (government), it is not less important to assure a qualified demand, i.e. to raise the customers with qualifications required and steady habit to exploit ICT in everyday life. That is especially true for the countries in transition. Typically they face the absence of sound technological infrastructure and experience the shortage of resources required to create up-to-date technological facilities. Besides that, the state authorities in these countries confronting the complexity of developing e-government is complicated by numerous problems of dealing with ongoing reforms in social and economic life. Russia is the typical case.

It is quite natural that Russia with its big territory and still underdeveloped telecommunication sector (in some of developed economies the telecom sector accounts for 30% of GDP, while in Russia its share in GDP achieves only 5,2%) has a rather low level of Internet penetration. Although in the last decade the country experienced rapid computerization and high growth rates in the telecom sector (about 20% annually), the number of regular Internet users constitutes only 15,5% of the country's population. Besides that the country is non-homogeneous according to the level of ICT utilization. High level of "digital inequality" of the regions is a specific feature of Russia in regard to the development of e-government. That is clearly seen from the diagrams 1 and 2 below. The diagrams demonstrate the number of regular Internet users in 7 federal regions and Moscow. North-Western and Central federal regions (with Moscow and St. Petersburg staying far from the rest of the country) are recognized as "active" users of computers and Internet technologies. St. Petersburg (the second largest Russian city in terms of population) is included in North-Western region and holds the second place

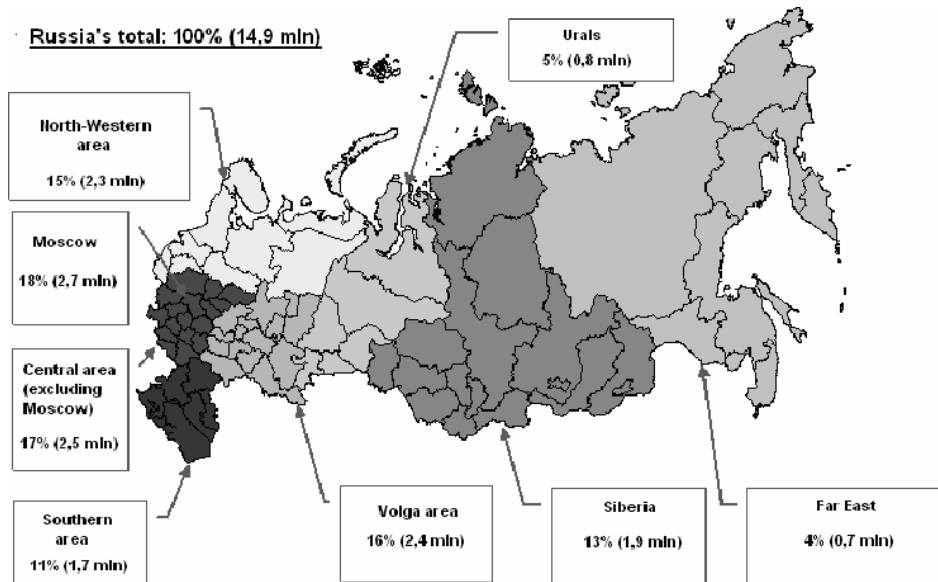


Figure 1. Distribution of the Internet Users over Russia's regions

on the extent of Internet penetration: in 2004 32 % of the city's adult population had access to the network, and the share of active users (those using Internet resources on a daily basis) exceeded 9 % of adult population" [Golubeva and Merkurjeva].

Other regions are considered as "passive" users. However, within these regions the picture is not uniform either: typically in the "university" cities of the region i.e. those where top ranked federal Universities are located (Novosibirsk, Ekaterinburg, Tomsk, Krasnoyarsk, Krasnodar, Vladivostok and some others), the Internet penetration level is much higher than in the rest of respective territory. Small cities and towns as well as rural areas find themselves in a disadvantageous position mostly for two main reasons. First, computer equipment (as well as Internet access) still remains rather expensive for the average household. Second, most of the provincial areas are confronted with the absence of reliable and cheap connection to the World Wide Web via existing telecommunication networks. However, there are numerous exceptions to that. For instance, in the town of Zelenograd (located in Central region, not far from Moscow) 75% of apartments have an Internet connection. The administration of Zelenograd has successfully implemented the project "Electronic county", which brought it to the forefront position in the country's e-government development. Nevertheless, such situation is exceptional: even in Moscow – one of the leaders in ICT in the country – Internet access for the ordinary people remains a serious problem.

As it was found by the State Council (advisory body to the President and Government) the main source of "digital inequality" is economic development of the respective territories. The Subjects of Federation with higher level of economic welfare can afford to finance ICT development, while those with less economic well being fully rely on funds from the Federal budget. The Federal development program "Electronic Russia 2002-2010" appears to be the main source for ICT development in these regions. Therefore, the State Council recommended that the Government

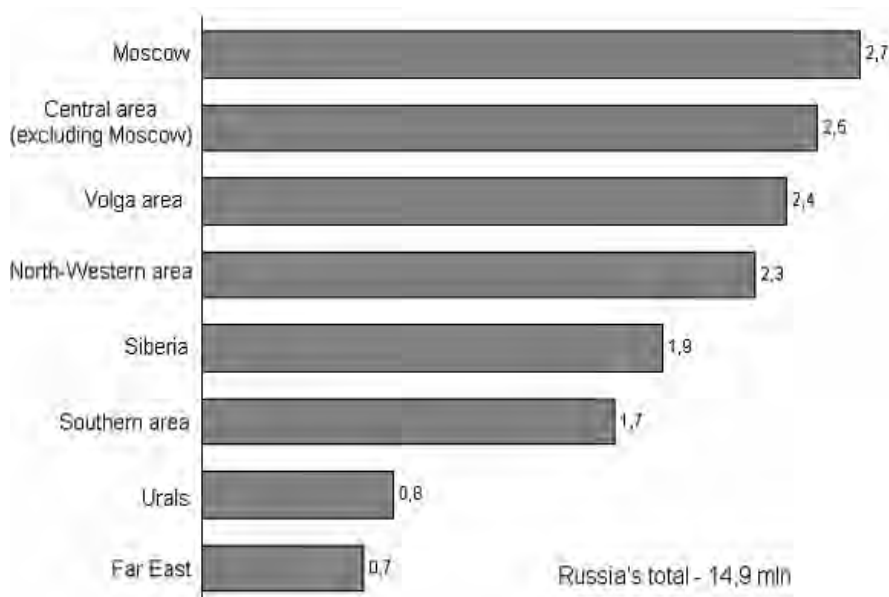


Figure 2. Number of Internet Users in Russia's regions.

concentrate its efforts on breaking subjects' "digital inequality" and making internet access available to the majority of the population [Digital Russia].

Easy and reliable Internet access is a clear prerequisite for creating an e-government in the country. Building up a sound technological capacity and infrastructure providing population with access to the Internet is one of the main challenges for the Russian Government. To achieve this goal the Government creates centers for public access to the Internet at schools and libraries. Project "CyberPost" plays an essential role in this. Its main idea is to use the facilities of the national post for creating centers of public Internet access. Currently, "Russian Post" has 40 thousand offices throughout the country. Project "CyberPost" was launched within the federal program "Electronic Russia (2002 - 2010)". This project aimed at establishing public Internet access centers at all post offices in the country, especially those in provincial areas. They plan to achieve this by the year 2010. Today, there are already 2000 centers of that kind and according to official statistics 300 000 persons are using their services. In the year 2004, 8 million people visited these centers [Zhurava].

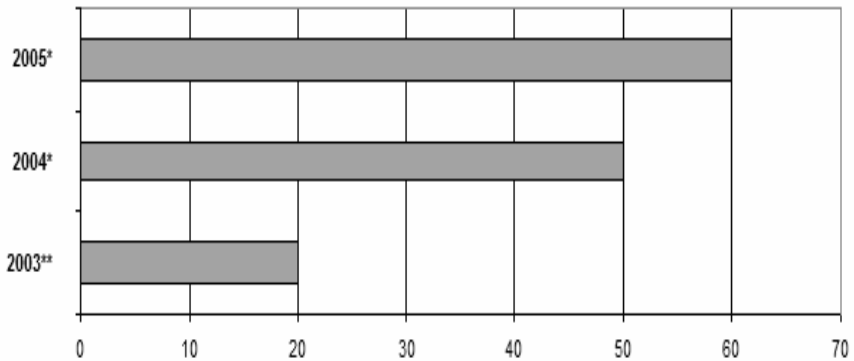


Figure 3. Governmental IT Expenditures (billions of roubles)

Source: *Ministry of Economic Development and Trade, ** CNews Analytics

Recent years demonstrated rapid and steady growth of Governmental IT-expenditure, a substantial increase in funds spent by the Government for ICT in 2005 results from the postponed demand caused by administrative reform undertaken during 2003-2004.

The mainstream of current IT-modernization in the Government pursues the goal of building up e-government. The first stage of establishing e-government is focused on the creation in Russia of a single information space for Government and its agencies. Therefore, most of large scale projects are carried out by the federal ministries (Ministry of Foreign Affairs, Ministry of Internal Affairs, Ministry of Defense, Ministry of Finance, Ministry of Economic Development and Trade, Ministry of Information and Communications, Ministry of Industry and Energy, Ministry of Transportation, Ministry of Agriculture and some others). The Governments of the Subjects of Federation also continued to increase their expenditure on IT-modernization. The Moscow Government with its project "Electronic Moscow" (the

budget of the project in 2004 – 2 billion roubles (approximately US\$69 million), and in 2005 – 3 billion roubles (approximately US\$106 million)) is the leader among them. Thus, there is no big surprise that the funds received by Federal Agencies' for introducing ICT constitute more than 80% of the total IT-expenditures of the Federal Government.

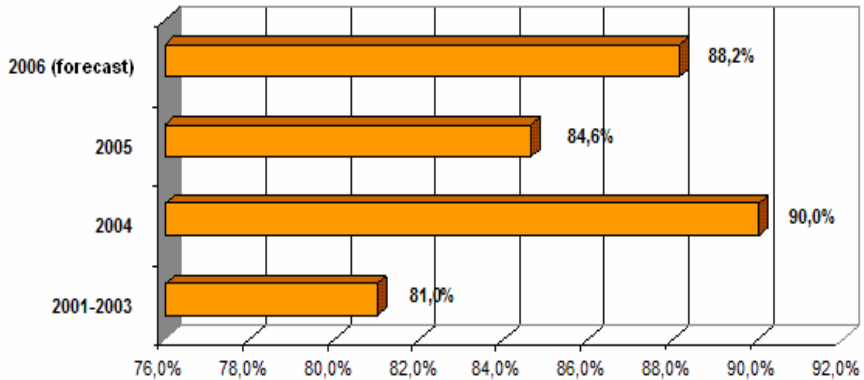


Figure 4. The share of 10 Federal Agencies in total IT expenditures of the Federal Government in 2001-2006

Source: CNews Analytics

Implementation of the large scale ministerial IT-projects suffers certain shortcomings, thus, substantially decreasing the efficiency of the projects both from an economic point of view and in regard to building up e-government. The experts agree that because of poor coordination of the projects there exists partial duplication in the projects carried out by different agencies, many of them are founded on a rather controversial legal basis. Regional projects of the federal ministries and agencies are of special concern. According to the experts some of information systems developed at regional level are not compatible with each other and, moreover, there are cases when they are directly contradictory [IT in the Government Agencies of Russia].

Some hardships of building e-government in Russia are attributed to organizational matters. Particularly, developing e-government and administrative reform are carried out separately in Russia, while in developed countries e-government development is settled as a component of governmental reform. Parallel implementation of e-government concepts and the running of administrative reform without close coordination leads to weak connection of the e-government undertaking with the goals of administrative and political reforms. Moreover, the activities within the federal program “Electronic Russia” are managed more or less independently by six federal agencies. Under such an organizational framework weak coordination is inevitable and, hence, building up of a single information system will be most likely be substituted by the creating of autonomous, to a certain extent, ministerial subsystems [Bazarov].

E-Government involves the use of information and communication technologies to provide government information and services, most prominently through the around the clock availability of the World Wide Web. This, however, requires a wide range of

institutional changes corresponding to the new nature of interactions between government agencies and between the government and its clients, i.e. citizens, business and non-profits. Rather than simply assuming that e-government implementation mostly depends on the availability of the relevant technologies, we must look to the effects that introducing these technological innovations will have on the stakeholders (governments, government employees, citizens, business, nonprofit and public organizations). It is worth mentioning that development of ICT itself does not guarantee success in building up the e-government.

The annual IT projects competition (organized and sponsored by the Federal Government) between the subjects of the Russian Federation in the year 2005 collected applications from only 47 (of 88) regions. The Federal Government considers e-government as an instrument for improving the quality of governance in the country at all levels of authority: federal, regional and municipal. Thus, the main goal for last year's competition was to encourage the regional authorities to introduce ICT in order to improve governance in regard to its transparency, accountability and responsiveness. That is why Federal authorities addressed regional governments with the question of relationship between ICT development and governance quality. Finally, the projects of only 22 regions were prized in different nominations. However, as Mr. Sharonov, the Deputy Minister of Economic Development and Trade, has mentioned, there were no essential achievements in improving the quality of governance with the help of ICT, neither at regional nor municipal level, even in the regions with an advanced level of ICT development.

Creating e-government in Russia meets with the citizen's resistance, which can be explained by different factors. First, and probably most important is the "digital inequality" of the regions mentioned above. It implies that a big share of the country's population is unfamiliar with computers as such, so they can not appreciate the value of using IT in everyday life. The latter in its turn is explained by the high (in regard to average income) price of computer equipment combined with expensive access to the Internet. Ultimately, this group of the population is not positive about spending the resources of the federal budget for things they cannot and will not be able to utilize.

the second reason for the cold reception of the e-government concept can be attributed to specific features of the national character and mentality. Being rather conservative, Russians typically have a negative attitude to innovations and are passive in the political process. These features are combined with mistrust of the Government. Therefore, it is clear that the e-government initiative launched by the Federal Government (i.e. "from above") appears suspicious to many people and its timing seems to them inappropriate. Thus, they are not ready to support respective activities and do not agree to the related budget expenditures.

The third reason for the negative reaction of the population to e-government comes from the content of the present stage of its development in Russia. Current efforts of the Government are mostly focused on an informational presence on the Web, i.e. the governmental sites mostly provide citizens with information the authorities want to share with the public. At the same time there are few services provided to the people via Internet by governmental agencies, and this makes citizens rather skeptical about e-government, since they do not get tangible results from IT projects within the Government.

Another stakeholder in e-government showing resistance to its implementation is the government and its employees. There are many reasons for their negative attitude to this innovation, so I will mention only some of them. First, there is an absence of a clear vision as to how and where ICT can be embedded into administrative process. That is clearly proved by the way the Federal Program “Electronic Russia” is being carried out. Second is the staff, who typically lack the qualifications and skills required for effective use of ICT. Third is the extra work usually related to introducing ICT into regular operation of the governmental department (in most cases the employees are not compensated for these additional efforts). Fourth, introducing e-government undermines the agency’s monopoly over information. Thus, increased transparency and accountability of the agency may destroy the source of benefits generated by corrupt activities.

Let’s finalize this report with key challenges to e-government implementation in Russia. In my view they can be formulated as follows:

- To make people used to ICT, which assumes the tasks of:
 - o building up the required infrastructure and technical capacity;
 - o providing public access to the Internet;
 - o educating people to use ICT in everyday life;
 - o Involving citizens in the political process and make them active in e-government.
- To make an institutional environment favorable for E-government, which implies:
 - o elaboration of state policy in ICT area;
 - o clear formulation of the principles for e-government implementation;
 - o public discussion and elaboration of the standards of interaction between governmental information systems;
 - o adjustment of legislation to new realities of communication between governmental agencies and the society at large.
- To elaborate national e-government implementation strategy, which implies:
 - o developing clear vision of interrelation between e-government, on one hand, and administrative, political, social and economic reforms, on the other;
 - o improving Government agencies’ understanding of the target market segments, their size and expectations;
 - o coordinating local, regional, and national e-government initiatives;
 - o change from the currently used agency-focused approach to e-government development to user-focused approach.

References

- Bazarov, R. The Responsibilities of the State Power. CIO, #5, May 16 2006.
- Borins, S. On the frontiers of electronic governance: A report on the United States and Canada. *International Review of Administrative Sciences*, 68 (2002), pp. 199-211.
- Clark, E. Managing the transformation to e-government: An Australian perspective. *Thunderbird International Business Review*, 45(4), (2003) . pp. 377-397.
- Digital Russia. Russia’s Newspaper, #34, February 17, 2006.

Golubeva, Anastasya.A. and Irina S.Merkuryeva. Demand for On-line Government Services: Case Studies from St.Petersburg. *Journal of Information Polity* (forthcoming in 2006).

IT in the Government Agencies of Russia: Review of 2006.
<http://www.cnews.ru/reviews/free/gov2006/>

Jaeger, Paul T. and Kim M. Thompson. E-government around the world: Lessons, challenges, and future directions. *Government Information Quarterly*, 20 (2003), pp. 389–394

Jaeger, Paul T. Deliberative democracy and the conceptual foundations of electronic government. *Government Information Quarterly*, 22 (2005), pp. 702–719

Zhurava, A. Old post office with new amendment. *Trud*, #184, October 4, 2005.

How has Taiwan Achieved the World's Highest e-Government Standard?

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According to a global e-government survey applied by Brown University in the United States, Taiwan has been ranked first three times in last five years. Taiwan maintained the top 5 rank of e-government development. Also according to WEF, Taiwan has a good rank in government readiness and is 4th in government usage in the Global Information Technology Report recently published. Taiwan maintained the top 10 rank in the development of e-government.

How Taiwan achieved those so called highest standard actually started in 1997. Taiwan initiated the first e-government project. The country had to connect every government agency together. They have a government service network and Internet backbone. They also had to solve the access problem for public servants or general public by having e-mail usage in government, and Internet connection in every village.

Besides those access channels, Taiwan had some major applications for people and government employees' use and has various sharing applications like official document exchange and publications. For the citizen's services, Taiwan has e-taxation and e-motor vehicle.

In 1997, Taiwan realized that to move ahead from information interaction to the transaction stage of e-government, they must have a very secure environment and launched an Information Security Project and e-Authentication Project at the same time. That was the way to ensure that citizens would have confidence in using government services. They have also integrated a smart IC card project and a national insurance health IC card to serve this purpose. This is the blueprint for Taiwan which started in 1997.

More than 10 years have passed and Taiwan certainly added more projects to e-government and are very lucky to have those achievements, however, Taiwan's experience may not be suitable for other nations, because every nation has its own environment.

Following the roadmap for e-government, Taiwan has developed some key e-government initiatives, such as setting up a government portal site, and developing some critical on-line services like official document electronic interchange (G2G), e-procurement (G2B), e-taxation, e-job, e-village, and e-motor vehicle (G2C). Based on the foundation laid by key e-government initiatives, Taiwan has been moving forward to allow citizens and businesses to receive government services through non-traditional electronic means and to complete government application/transaction on an anywhere, anytime basis.

What are the critical success factors for the e-government program in Taiwan? The first one is government investment in infrastructure such as GSN GCA, many basic applications. The second is CSF which is Citizen-centric application development; it ought to provide applications that closely match the citizen's need. That's the centric idea for application development. The third one is very close to the topic "Active involvement of IT industry". And the fourth one, the various IT outsourcing models that Taiwan has to pilot contractor. The last two factors focus on the private-public partnership.

The second question is how to seek funding for the e-government program of Taiwan. Taiwan's government budget is an essential part and emphasized the cost saving of these developments in order to persuade the legislative body and people. Taiwan has to use the private-public partnership idea, either for government budget or PPP, and it is all done by outsourcing.

What are the various outsourcing models used by Taiwan? Basically, there are four kinds of PPP model. Application service provider is the traditional one for the government to allocate the budget and then seek private contractors to do the system development which is then announced to the public. However, there are three innovative ways to outsource: Sharing-in-saving, operation outsourcing, and self-funded with cost recovery. Taiwan also set the hybrid of those four.

For example, online income tax filing - the Ministry of Finance allocated a tight budget for outsourcing; the private contractor developed the application starting from the workstation, the digital certification and other applications. In 1998, there was only 0.2% of income tax filing was online, but figures released last month show, the population using the online income tax filing has reached 45%. Within the 45%, 15.58% of them used electronic certificates. Taiwan is leading the world in that area, the so-called traditional outsourcing model.

The second model is called the share-in-saving. In this model, it is a G2G case, Electronic Official Document Exchange among government agencies. People have received and sent official documents through the Internet with digital certification. In the past, each government agency had to mail those official documents through the postal services, they had to allocate a budget for stamps or next day delivery. But if private contractors can establish work stations, they can collect a transmission fee from each government agency, and each government agency pays the private contractor using their fees for stamps, with no extra cost to the government agency. At the same time, the government can involve local industry to develop the application for government. There is an estimated cost of about NTDS\$14 per page or 20 cents and it's quite cheap in this way with at least 100,000 pages per day is transmitted. That's how the private contractor can survive. They invest first and collect the transmission fee later on.

The third one is called operation outsourcing. Taiwan's e-procurement is based on operation outsourcing, and the Public Construction Commission allocates part of the budget to build the website and then outsources the maintenance and operation to a contractor. How can a private contractor survive from the contract? They have a membership system; they provide membership for private companies to sign in. The incentive for those private companies is the membership, because they want to do the business with government. They have to sign in to become a member, at extra cost. In the past, they had to buy the government procurement gazette from PCC, now they just need to request it online with a membership fee.

The fourth one is self-funded with cost recovery. This is also well known on wireless Taipei as everybody might know. Actually, the government allocates no budget for the project, only licenses private contractors to build the wide area wireless system, so Taipei has become the first city to have wide wi-fi access. But how does the contractor profit from the project? From the subscriber. The user can subscribe to wi-fi on a daily or monthly basis, and they can access the wireless network. Once more and more people are involved in the project, the contractor will be glad to invest more.

The last question is "what are the challenges Taiwan has to face for e-government development?" The first is still wireless broadband applications, since Taiwan is an island country, a lot of people live in urban areas, which are good for wireless. Starting from Taipei, we will face more challenges to seek the funding. That is the first challenge. The second one is called the innovative one-stop services: Taiwan had set up a lot of websites, but from the citizen's point of view, they want to submit one application in one website. And then the collaborating agencies send their application from website to website. Essentially from one agency to another, so there should be one innovative way to provide the one-stop service. The third one is digital opportunity for all. Taiwan has a very high PC penetration rate but Taiwan still has a low usage in rural areas. The fourth thing is network security to ensure everyone who uses the service will be confident they can trust the system. The last one is related to E-Democracy, a future topic like E-Voting. PPP is very important in the future, and not only Taiwan but also other countries have to pay more attention to it.

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Chapter 3

e-Municipality

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Strategy for Local e-Government in Japan

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Currently, in order to submit documents it is necessary to mail them or to go to administrative offices. The Ministry of Internal Affairs and Communications (MIC) is aiming at a situation where people can carry out administrative services through the Internet, 24 hours a day.

MIC has two major Internet Networks: A network that connects administrative offices (Kasumigaseki WAN), and a network that connects regional organizations (Local Government Wide Area Network, LGWAN).

The progress in local e-government implementation in Japan has 6 points:

1. **Set up an in-house LAN and provide 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 498.1 computers.
2. **Set up a Local Government Wide Area Network (LGWAN):** All local governments were connected by the end of Fiscal Year 2003.
3. **Set up a Resident Basic Register Network System:** Introduced on August 5, 2005. The issuing of basic resident registry IC cards started on August 25, 2005.
4. **Start offering Public Authentication Services for Individuals (JPKI):** Inaugurated in January 29, 2004. As of April 1, 2006 it is offered at 11 ministries and 47 prefectural governments.
5. **Start up electronic application:** Introduced in 39 organizations out of a total of 47 prefectural governments. As of August 20, 2005, forty five organizations will offer services by the end of Fiscal Year 2006.
6. **Information security and protection of personal information:** Guaranteed by laws for protection of personal information and information security.

In April 1, 2005, 78.7% of prefectures and even 20.4 % of municipalities had already introduced Electronic Application.

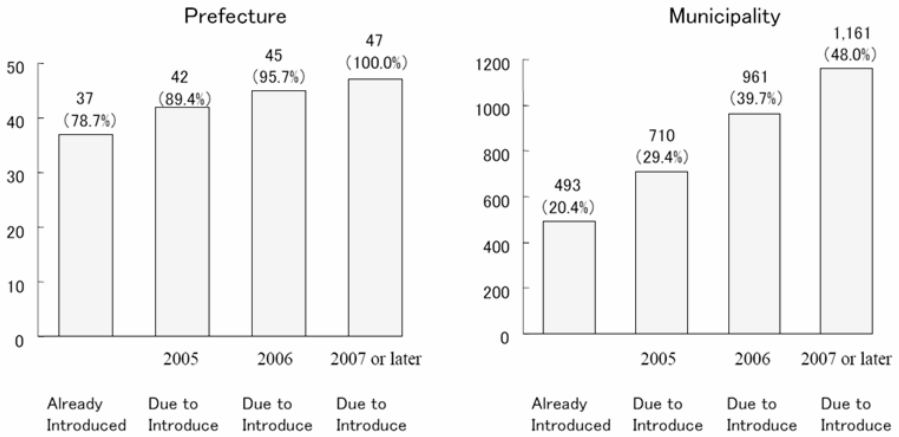


Figure 1. Introduction Schedule of Electronic Application

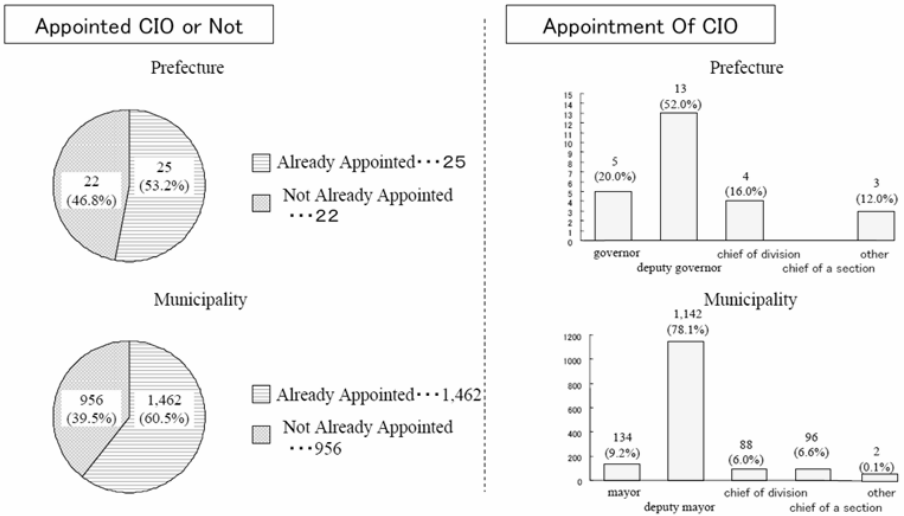


Figure 2. Appointment of Chief Information Officer (CIO)

As of April 1st 2005, CIOs had been appointed in 53.2% of the prefectures, 69% of municipalities. Many government appoint the deputy governor or deputy mayor as CIOs. They are all being trained.

The following table shows the utilization of Electronic Application procedures. For 21 available procedures, the total rate is 11.3% - which is considered as very low. The rates for the second procedure (reserving cultural and sports facilities: 24.2%), and the fifth (harbor-related procedures: 26.0%), are considered as high. The rate for the third place (e-application, tax payment: 0.1%) is very low.

Table 1. Utilization of Electronic Application procedures, 2006

Procedures	Rate of utilization	Number of municipalities
Reserving books in libraries	11.1%	373
Reserving cultural and sport facilities	24.2%	339
E-application, tax payment	0.1%	59
Competitive tender bid	5.7%	104
Harbor-related procedures	26.0%	33
Officer examination application	4.4%	82
⋮		
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Total (21 main procedures)	11.3%	

In promoting e-local government, MIC has 3 supporting key policies: joint outsourcing, enterprise architecture and standardization of data.

Joint outsourcing: A number of local governments jointly commission the operation of their information systems to the private sector. It has 3 objectives:

1. To improve the quality of services for residents.
2. To reduce costs and reform procedures at local government bodies
3. To create new demand for IT-related grassroots industries

MIC conducted a nationwide survey of local government costs for adoption and operation of information systems. The result for almost all of the systems, anticipates a cost saving of more than 60%. In particular, there appear to be remarkable cost reductions in small municipalities.

Enterprise Architecture (EA): 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
4. Technology architecture

In the context of local government, the ideal model of services and the systems are laid out. Joint use of information is promoted throughout the governmental office, eliminating vertically and compartmentalized bureaucracy. EA has many benefits, however, only some local governments are inclined to try it out.

From the year 2006, MIC is working on the construction of a survey/inquiry system for local authorities using the Kasumigaseki WAN and the Local Government Wide Area Network (LGWAN). This survey/enquiry system aims to provide a service to prepare, inspect, review, tabulate and analyze the survey/inquiry work for national and local civil servants.

One more major subject to be considered is the good usage of information and communication technologies (ICT) by local governments, to change local communities. Keyword is to use ICT as a communication tool to promote residents' participation. Those social network services in local communities ought to use an e-public questionnaire system. The background of promotion of residents' participation is:

- Necessity of reflecting opinion to the local public administration
- Necessity of sustaining local communities by various actors other than the local government

Local governments hold a huge amount of important personal information about residents and in order to ensure the trust and safety of residents as the e-local government initiative progresses, local governments must reinforce measures to prevent information leaks and to enhance the level of security.

Standardization of Data: MIC constructs a basic residential registry network system which notarizes resident relationships serving as the foundation for various administrative activities and constructs a system for providing standardized individual certification nationwide (jointly with local public organizations) using four information items and the resident's certificate code.

The basic resident registry card contains a photo that can also be used and saved in a convenient IC card for all kinds of services unique to the municipality. Despite all of this, the issuance of cards has accounted for only a little over 910, 000.

In order to make it possible for administrative procedures such as applications and registrations to be conducted online over the Internet from residents to the administration, organizations office or the private sector, a personal certification service featuring electronic certification and an electronic signature to serve as a means of personal ID that will take the place of signatures and seals on paper documents must be made available at a low cost.

A resident who wants to obtain an electronic certificate brings the basic resident registration card to the local municipal counter, uses a device installed at the counter to create a pair of encryption keys to be used with the signature. Signature and keys are stored on that card. Municipalities send the information of change of matters recorded in resident's certificate to the basic residential registry networks and then to the JPFI. There are many procedures for governmental ministries but not so many procedures for local authorities. MIC also promotes local authorities to take up more procedures adapted to the JPFI.

The e-Government Movement of the Local Chinese Governments: Serving the Public while Enhancing Governmental Capabilities

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The development course of Chinese e-government can be divided into 3 periods: the first one is before 1993, where the focus was put into office automation, to build a crosswise internal work network. The second period is from 1993 to 2000. In this period some huge projects (Golden Bridge, Golden Customs and Golden Card in March 1993, and the Government Online Project, in January 1999) were carried out. Finally, the third stage began after October 2000. In this period, the government and government officials recognized the importance and function of e-government.

The importance and functions of e-government in China has a new different meaning: today, Chinese local governments at different levels have registered remarkable achievements in the e-government movement. They also find e-government crucial and valuable, as a tool for governmental economy management, which also helps local governments to reach their residents more easily, making their administrative work more transparent and efficient. This has become a challenge for the Chinese government: to push e-government forward, to make it better.

The main orientations of the Chinese Government for their e-government activities are serving the public and enhancing governmental capabilities. In order to achieve the first goal, governmental portals and websites have been constructed and utilized, as an important channel to serve the public. By the end of 2005, the number of domain names registered under the domain "www.gov.cn" had reached 23,752 (an increase of 45.5% compared to 2004); the number of government portals had reached 11,995 (an

increase of 16.9% compared to 2004). 81.1% of governments at or above county level have launched a government portal (an increase of 7.6% from the previous year). In particular, 96.1% of the ministries and commissions, 90.3% of the governments at provincial level, 94.9% of the governments at prefecture level, and 77.7% of the governments at county level have launched a governmental portal or website, as an important way to enhance government transparency, putting a focus on administrative efficiency and service quality.

As an example, the Tianjin Governmental Examination and Approval Service Website has pooled 615 items of governmental examination and approval and other governmental services handled by 68 municipal departments into one website. This same website has uploaded the guidelines for handling all of the items and having also had the forms to be downloaded by the applicants. Finally, it keeps the applicants informed of the progress, status and result of their applications. Other Chinese cities offer a similar service.

With the progress in the development of e-government in China, certain beneficial applications for the underprivileged, the vulnerable groups, have begun to appear. For example, the City of Dujiangyan, in the Sichuan Province uses ICT to build an information terminal in the village hospital, centralizing the management of medical treatment and charges. As a matter of fact, health management in rural China is a challenge for the government, as there are many issues to resolve. In this case, the use of ICT for medical provision and healthcare is helpful for the rural residents. Other examples are the “One Home/One PC” Project in Shadong area and the “Million Families Being Online” Project in Shanghai.

In order to serve the public, e-government is continuously improving, allowing “sunlit” transparency, convenience and high efficiency. The following table shows an example in the case of the Land and Real Estate Bureau of the Shijingshan District, in Beijing:

Table 1 Indicators improved in the Land and Real Estate Bureau of the Shijingshan District, Beijing

Items of governmental examination and approval	From 460 to 141, (69% reduction)
Number of forms for the governmental staff to fill out	From 56 to 26, (54% reduction)
Number of documents for the applicants to submit	From 266 to 122, (55% reduction)
Total number of working days spent on such items	From 607 to 290, (52% reduction)

As it has been shown, more local governments are trying to enhance their capability of governance and control through ICT. The Chinese government has realized it has to unite e-government with the local economic development. That is why more e-government applications are being developed and deployed, bringing out remarkable economic results and social benefits. An example in this topic is the fact

that 97% of agriculture departments at the municipal level and 80% at the county level have established agriculture informatization teams in 2005.

Another example is the case of Beijing City Administration. In this case the government is currently using Geographic Information Systems (GIS) and wireless communication technology for the city administration, so they can monitor social security and urban environment, as well as the migrating population on a real-time basis. The same technology has also been applied to the management of traffic control.

The utilization of ICT to handle emergency and crisis is a trend in the Chinese e-government movement: to build an Information-based Crisis Management System, largely targeted at natural disasters, that can also be targeted at a wide array of social incidents.

Finally, a problem that may arise is related to the possible threats to the rights of citizens, by affecting their privacy: in the mass process of developing and exploiting information resources, due attention has yet to be given to the protection and safeguard of personal privacy and information. If no forward-looking efforts were made to protect information resources and personal privacy, human rights in China would be threatened by the advent and development of IT.

City Development Strategies in the City of San Fernando

Mary Jane ORTEGA

Mayor, City of San Fernando, La Union
Philippines

From countries that have a per capita income of about \$40,000 per year to Estonia that has a per capita income of \$70,000 per year, the question is: "Should we have a budget for information, for ICT?" In the Philippines the per capita income is \$1,100. This is, therefore one of the problems for the digital divide.

The City of San Fernando in the Philippines is 270 kilometers from Manila. This presentation will be about the City Development Strategies Executive Association of the Philippines, portal of the league of cities of the Philippines and at the same time about the ICT program in the City of San Fernando, a small city of 115,000 people, with transitions of about 50,000 - 70,000. Two thirds of the population lives in one third of the area, and one third of the population spread over the mountains, valleys and hills of what can be called the rural area.

Mayor Ortega was elected in 1998 and this was when San Fernando became a city. At that time there were only 15 computers, which could be called "Jurassic". The city was introduced to the city development strategies which was organized by the World Bank and funded by the government of Japan, and because of this San Fernando learned to come up with strategies. It was then that Mayor Ortega met Mr. Toru Hashimoto who was then in charge of the CDS. Mayor Ortega attended the urban week of the World Bank and San Fernando was also the first city in an Asian conference in Tokyo. Mayor Ortega was exposed to the need of what at that time was called IT and so for communication purposes they distributed 59 hand held radios to the village chiefs.

In the meantime, Mayor Ortega became Secretary General of the League of Cities of the Philippines and right now they have 117 cities. It was at this point that they were encouraged to put up a portal and they needed the CDSEE.org, they had a knowledge manager, and were encouraged to post their questions.

An example was when Mayor Ortega was coming up with a clean air initiative. She proposed to phase-out 2-stroke engines for the 3 wheel tricycles, shifting to 4-stroke engines because the 2-stroke engines generated total suspended particles, a

very deadly pollutant. The manufacturers came to Mayor Ortega and said that the claims were not true.

Mayor Ortega posted this question in the CDSEE.org. The experts, the knowledge managers, sent it out to ADB and also to the WBI and with the answers she was able to tell the manufacturers: "If you want to disprove it look at this and come back to me once you can answer". They never did and so she was able to come back and complete the clean air program regarding the tricycles.

Mayor Ortega also set up the www.sanfernandocity.gov.ph, and distributed cell phones to the 59 village chiefs. This was part of the city's disaster preparedness, but it was also part of their interactive program and then they learned, being a member of the city net, about the smart cities: how you can now access and learn more about environmental initiatives through the Smart Cities.

In 2002, the city decided to upgrade the literacy of their village chiefs and distributed 59 computers. Most importantly, they needed to be trained, as nobody knew how to handle computers and the secretaries and the village chiefs went through a training program.

As a result, a better guide or a village development strategy where all the different statistics were put together on a disc was developed. This disc was given to each village, each village chief, so that they knew the different statistics that they had: how many urban poor they had, how many households did not have sanitation, how many of them were informal settlers and this helped the city to plan its strategy in achieving the NBG goal, on poverty alleviation, environment and health.

At this time the President of the Philippine's Long Distance Company came over and visited the city and Mayor Ortega told him about their computer program and he said: "I like your program" and donated 1 million pesos to the city of San Fernando.

In 2003, San Fernando had a "sister city" in Ansan, South Korea. They have one of the biggest factories and so for the first shipment they sent San Fernando one hundred second-hand computers for the upgrading of their city hall "Jurassic" computers.

In 2004, San Fernando set up an e-library of 10 computers where students could get free access to Internet for one hour, paying 30,000 pesos a month for Internet connection for their LAN, and within 3 years the donation from PLDT had been paid back and now they are paying them city hall money for the connection.

San Fernando received another 80 computers from Ansan but this time their non-government organizations came to them and said: "We do not have any computers, help us be computerized". This was the Red Cross, the Girl Scouts, and the Coast Guard Auxiliary. And so, San Fernando even reached out to NGOs and also gave them to public elementary schools.

There was one businessman in Las Vegas who bought a "bahay kubo" - this is a small hut made of bamboo from the Philippines and because of that he thought that he would donate 200,000 pesos for computers for an elementary school and he also paid for the training. He had a video camera for video conferencing and he said: "I want these Grade Six children to interact with the children of Las Vegas", and he sent another to a public school in Africa.

Mayor Ortega had a chance to go to Las Vegas and thank him and she asked him: "Why did you give us this particular program?", and he said: "I look on communication technology as a bridge to peace. If children learn to communicate with children of other

cultures at an early age, they will be more broad-minded. This is my small contribution to worldwide global peace”.

In 2005, San Fernando received another 100 second-hand computers for the government and schools and they were funded. Everybody was excited because it was paid for but Ansan now came up with one requirement, they said: “You have to give us certification that you have bought the license from Microsoft because when we received them, they had Korean software and we paid 3000 pesos for the transportation, but to pay for the license it would be 25,000 pesos”.

This was a big problem for San Fernando because if the city bought this software license for schools then it would deplete the budget for their poverty alleviation program.

In fact, if there is one reason why ICT has not advanced in the Philippines, among local government officials, is because it has the lowest priority in their budgeting. If local government units could get together, they could probably get better pricing for the software. It is not enough to just have a problem, what it has to be done is go out and look and see what the problem is, how the problem could be solved.

One other thing that was mentioned is that, although people in the Philippines are not using computers, because of the budget constraints, they are one of the biggest users of cell phones. They are very good at “texting” right hand, left hand and so the city has made use of this, posting a facility called “TXT CMAYOR”, meaning to text the mayor.

Recently San Fernando had a very good PPP, the Public Private Partnership, where Ayala Foundation through their Giles Foundation raised funds of 500,000 pesos and they said: “We want to connect your high schools to the Internet but you have to give a counter part”. The province gave 500,000 so it was already on a 1 on 1 but the city was able to talk to their congressmen, obtaining a million, and with 2 million San Fernando could connect many high schools but there was a problem.

San Fernando had the money, but the other high schools could not be connected because of lack of infrastructure and so the city could only connect 8 high schools. This is where they are now looking into other possibilities, not to rely on only one server. The city hopes to connect all their high schools, coming up with their elementary schools being introduced to the computers by PPP partnership, to move on together.

Thanks to the World Bank and the government of Japan, San Fernando realized the need of ICT: They were the ones who helped the city with the design. Because of this, In 2000 San Fernando set up an ICT department that takes care of updating the items in the city portal.

San Fernando City has already reached the interactive stage. The mayor gets several emails, more from outsiders who have passed through the city, giving compliments on their Clean and Green Program.

Mayor Ortega hopes that with this kind of interaction San Fernando City can move towards that transformation that they ultimately hope to have. They have posted their bid documents on a design-build-operate for a landfill so this is on a transaction, but they have not fully utilized this for the different transactions. San Fernando hopes that with e-governance they will have transparent governance, one that is participatory and one that is in tune with modern times.

Digital Governance in Municipalities Worldwide 2005: An Assessment of Municipal Web Sites Throughout the World

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This paper contains the results of the e-municipality Project which was made possible through the collaboration between the Global E-Policy, e-Government Institute, of Sungkyunkwan University and the E-Governance Institute at Rutgers, The State University of New Jersey, cosponsored by the United Nations and the American Society for Public Administration.

The project consisted of the development of an e-governance Performance Index, and assessment of one hundred cities' websites in the same number of countries. This research replicates a survey completed in 2003 – Digital Governance in Municipalities Worldwide. Therefore, it was possible to have a comparison between the results obtained in 2003 and 2005, by longitudinal perspectives.

First, the users' view point and international standards were emphasized by combining the perspectives together, harmonizing them. For the evaluation process, a performance index was developed. It consisted of five categories: Security & Privacy, Usability, Content, Service and Citizen Participation. The results were analyzed and a conclusion was obtained.

In terms of methodology, the official websites 100 cities' in 100 countries were selected. The on-line population was greater than 160,000 persons, adding Hong Kong SAR and Macao SAR. The cities' official websites were assessed by two native speakers and a third time evaluation was done when significant variation was found. The period of evaluation was from August to November 2005.

The Rutgers-SKKU E-Governance Performance Index consisted of 5 categories (Security & Privacy, Usability, Content, Service and Citizen Participation) and 98 Key Concepts.

An example of these key-concepts in terms of Security & Privacy: privacy policy, data management, and usage of cookies; for Usability: user-friendly design, branding, and targeted audience links. For Contents: access to current accurate information, and public documents. For Service: transactional services involving purchase or register, interaction between citizens, and businesses and government. For Citizen Participation: Online civic engagement, internet based performance measurement, and citizen based performance measurement. The results of the evaluation are listed in the following table:

Table 1. Overall Results of the Evaluation

	Total Score	Security / Privacy	Usability	Content	Service	Citizen Participation
2005	33.11	4.17	12.42	7.63	5.32	3.57

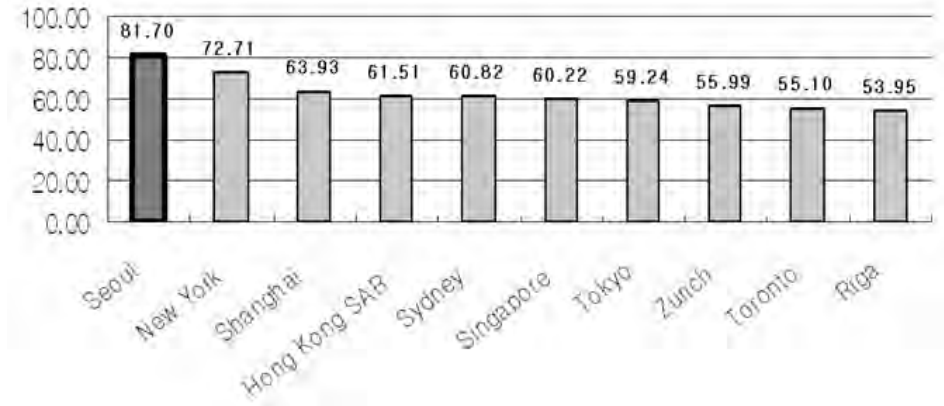


Figure 1. Top Ten Cities in E-Government. Total Score (2005)

Security & Privacy

The average score in privacy and security is 4.17, an increase from a score of 2.53 in 2003. Many cities still have not properly understood the importance of a privacy and security policy. Overall, cities in Oceania and Europe are likely to pay more attention to privacy and security matters on their websites.

Usability

The average score in usability is 12.42, an increase from a score of 11.45 in 2003. Cities in OECD countries scored an average of 14.30, while cities in non-member countries scored only 11.32 in this category. With regard to “Targeted audience links: Are targeted audience links available on the homepage? (e.g. general citizens, youths) 57% of municipal websites are divided into more than three categories, which is preferable.

Content

The average score in content is 7.63, an increase from a score of 6.43 in 2003.

Overall, cities in Oceania scored 9.58, while cities in South America scored only 4.86 in this category. More than 30% of cities evaluated in all continents, except South America, have websites with mechanisms in the area of emergency management or alert mechanisms (severe weather, etc.). With respect to the use of wireless technology, 29% of cities in Europe and 25% in Asia and Africa have websites using wireless technology, such as messages to a mobile phone, PDA (Personal Digital Assistant) or a Palm Pilot to update applications, events etc. Furthermore, with respect to the question “Does the site offer access in more than one language?,” 53 cities of those evaluated have a website that offers access in more than one language, while only 28 cities have no such access.

Service Delivery

The average score in this category is 5.32, an increase from a score of 4.82 in 2003. Overall, cities in Oceania scored 7.54, while cities in Africa scored only 2.88 in this category. Cities in OECD countries scored an average of 7.50, while cities in non-member countries scored only 4.03 in this category. With regard to searchable databases, over 60% of cities in Europe and North America have websites offering a searchable database, while only 33% of cities evaluated in South America have sites offering that capacity. With regard to searchable databases, about 90% of cities in OECD countries have websites offering a searchable database, and about 43% in non-OECD countries have sites offering that capacity.

Citizen Participation

The average score in this category is 3.57, an increase from a score of 3.26 in 2003. Overall, cities in Europe ranked the highest among the continents with a score of 4.39, while cities in South America scored only 0.69 in this category.

“Does the website allow users to provide comments or feedback to individual departments/agencies through online forms?,” 31% of municipalities provide a mechanism allowing comments or feedback through online forms.

In comparative terms, Usability (12.42) is the most developed factor in each country, while Participation (3.57) is the lowest. This fact implies that Citizen Participation, meaning E-Democracy, is very weak in E-Municipalities. Another weakness is Security & Privacy.

When comparing the E-Government Development Trend 2003 and 2005, big differences can be found in Privacy & Security (improvement) and nearly no difference in Citizen Participation and in Service.

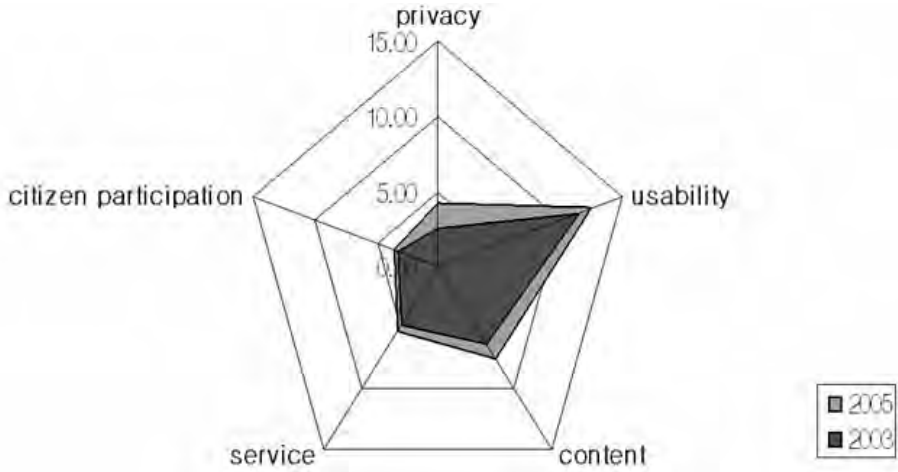


Figure 2. E-Government Development Trend 2003 and 2005

In terms of average score by continents, Oceania is the highest, next is Europe and third is Asia. The next continents are North America, Africa and South America.

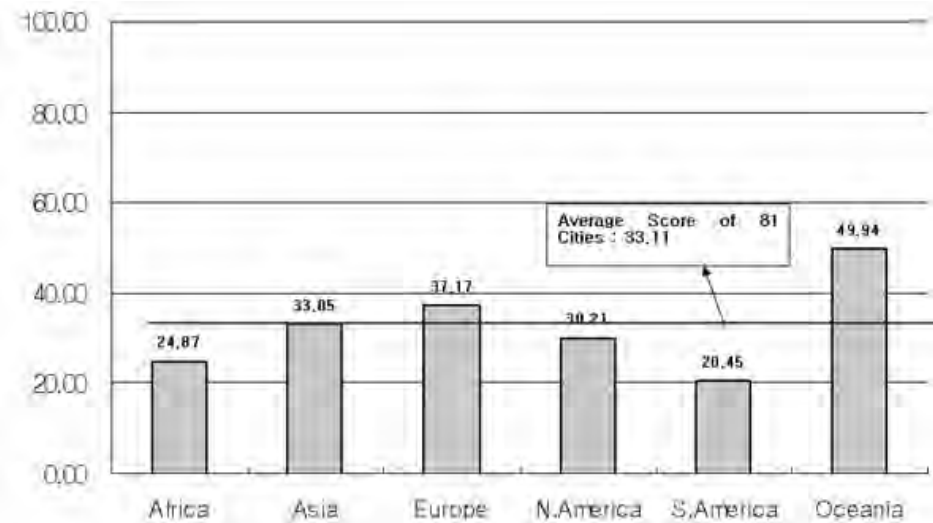


Figure 3: Average Score by Continent

About the digital divide among the countries, the following graphic shows the average score of cities of OECD (44.35) and Non-OECD cities (26.50).

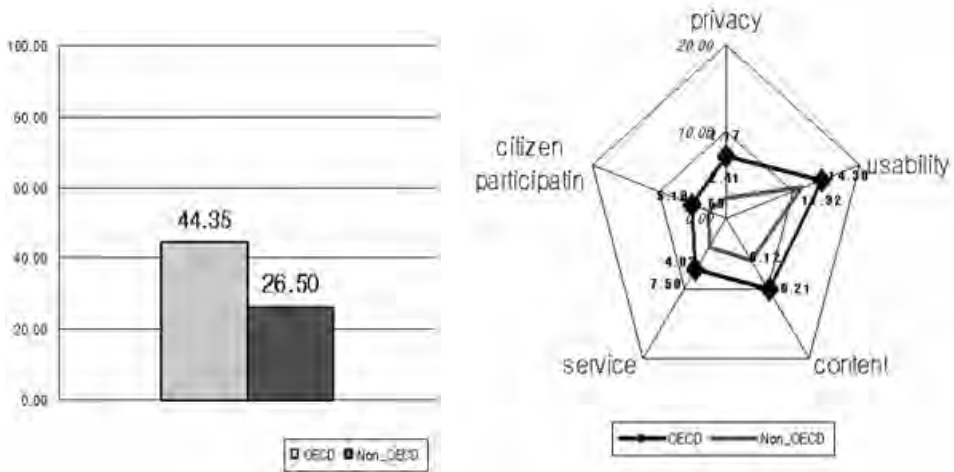


Figure 4. Average Score in OECD Member Countries and non-OECD Member Countries

The digital divide widens between OECD and non-OECD countries, especially in the categories of Privacy & Security, Content, and Service.

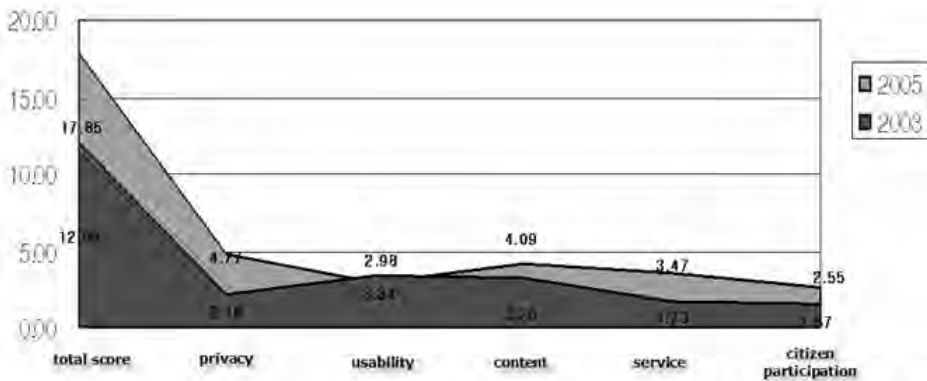


Figure 5. Digital Divide between OECD Member Countries and non-OECD Member Countries

According to the previous graphic, it can be seen that the digital divide, when comparing years 2003 and 2005 is widening.

The best practice is Seoul City, which holds the first place in three categories: Security & Privacy (provides information about privacy and security statements, has a secure server, and automatic operation of security software), in terms of Service (it has various citizen-oriented contents, a total reservation system – municipal facilities and

higher utilization of mobile service – SMS), and Citizen Participation (availability of Online Feedback/Comment, Online Forum, e-meeting, online surveys and polls, and asynchronous video of public events). Seoul was assessed very high in terms based on a well developed website in all categories, various services and contents and various ways to participate.

These results show improved E-governance in all categories, especially high in Security & Privacy. However, more efforts are needed to improve Citizen Participation. Secondly, the growing digital divide between OECD Member and Non-Member Countries, and between the top 20 cities and the low 20 cities, especially in Security & Privacy. Third, the widened gap among continents and cities: cities in Oceania and Europe have well-developed E-Government, while there is a widened gap among the cities in Asia, and a widened gap among the cities in Europe.

Finally, this evaluation suggests the guidelines and strategies for e-governance, diagnoses the Global Digital Divide and suggests the way to overcome it, and helps cities and countries of less developed e-governance to have a chance to improve the level of their e-governance by sharing best practices.

Optimal Strategy for e-Government at City Level

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Estonia

The paper focuses on Estonia, and particularly the experience of the city of Tartu.(100,000 inhabitants). The following charts show some facts about the country and ICT statistics.

Table 1: Estonia Facts

Population	1,344,000
Area	45 000 km ²
Division	227 municipalities (among them 39 cities)
Population in the cities	943 000 (70% of population is urban)
GDP per capita	7080 USD (2004, WB)
Usage of Internet	52 %
Households having a computer	42 % (82% connected to internet)
Public employees with a computerized workplace that can access to the Internet	99 %
Governmental agencies with web page	100%
Internet-banking clients	More than 800,000 (59% of population)
Tax declarations filled online (2006)	80%
Mobile suscriptions	Over 1,400,000

About the E-Governance Academy, it is a non-profit, non-governmental organization founded for the creation and transfer of knowledge especially for transition countries (Caucasus, Central Asia, Moldova, Ukraine, the Balkans).

The Academy trains and advises leaders and stakeholders in using ICT to increase government efficiency, and to improve democratic processes with the aim of building open information societies.

What is the citizen-centric optimal e-government? There is a need to remember one thing in building up e-government for citizen, it is not for officials but it is for citizens and businesses. Of course it should be for officials as well but it is very important to remember that building a portal is not for officials, it should be useable, easy to access for citizens and businesses. Also very important is to set up the portal model that will meet citizens' technical possibilities. If there is hi-speed Internet in the cities, there is no need to have it in countryside where maybe dial-up Internet is more common.

It is very nice and easy to set up the portal with a lot of flash and colorful solution but if a person needs to access simple data and it takes 5 minutes to access to the portal, it is not useful for citizens with low speed Internet access. It is also very important for the people to have multiple choices of channels. Of course the computer is the first one, but also kiosks for Internet tools, solutions with TV set up boxes, and also mobile phones, which are becoming more common. In Japan and South Korea, they know more about these issues, compared to Europe: how to use mobile phones for public services.

However, there is still a need to keep front offices alive in the cities. Otherwise, there will be some people excluded from the services: It is easier to think that everybody is using Internet but there are still a lot of people who do not use it and who do not want to use it at all. Of course, the cities can provide computer services through the front office of the city hall.

An important issue is to provide a wider variety of services. The first service should be information, of course. Clear and updated information is the source core and basis for city services provided through Internet.

Another very important element is advisory: how to do things, how to behave, where to get services, what kind of services are available. All of these are very important information.

The growing trend is on-line consultancy. People can ask questions and can get relevant answers and this is online, it means the channel is an online channel. It may take time to get a relevant answer but if it is published on the websites it will help other people as well because the questions are mainly the same for many people.

Application forms' service, which is more or less easy and transactions with municipalities, technically they are quite complicated but is a growing trend, in order to save a lot of time and money, both on the office side as well as on the citizen side.

City modeling is a very new service: it comes from gaming, actually. It is well-developed in Southern Europe. In Italy, they are doing nice things on this topic. An example is a game that children play: The SIMS, and all of the city-building games. Actually, these are very useful tools in city planning process, if the same kind of games are provided, people can plan, for example, the port of a city, a new port for the city,

how they would like to see it in the future: where there should be houses, shops, parks, parking or pedestrian areas.

Also within the city planning processes, we are modelling a quite interesting usage for people: if you get new planning for a city and it is in public discussion, people can access inside the new areas, although it is just a model, so that they can imagine what it will really look like. This is because ordinary city planning in two-dimensions (2D), on paper is really hard not only for citizen but for city politicians as well. City modelling is a growing issue and it is really valuable to use it in the city portal as well

Entertainment is important. If you are thinking about the younger generation, they are very much focused on entertainment. We can address a lot of issues about the city in an entertainment form especially for the younger generation: how to collect and select the garbage, what is democracy, it could be introduced in different multimedia. Using different multimedia will make it very attractive and entertaining for citizens.

Democratic participation is of course a very important issue. In the near future, we will be able to provide the citizens with individual services. Today, we are receiving such offers from the bank, because they know our background, what have been our loans, our mortgages, and they provide us with new services and give us new offers. We can also provide services to the citizens, as well. The question is what citizens often do not know, what kind of services are available and what kind of services they can use, because you can have a wide variety of services, but when you get to a new situation, you do not know exactly what kind of services are available. For example, if you have a new-born baby in your family, you do not know exactly what kind of social assistance you can have or how to go about getting a place in the kindergarten.

Such services are very valuable when we can provide them because it means we can predict the needs of citizens. If there is a new baby in the family, after a year you can apply for a place in the kindergarten, and maybe after six years you will apply for a place in the school. Maybe it is much easier to send the information to the parents, telling them that as there is a new baby in the family, probably they will soon need a place in the kindergarten, not just by waiting in an office but assuming they will soon need a place, and finding out there is one available. There is a need to be more service orientated in the cities. The databases and relevant data that we already have, give us the opportunity to provide such services, about age, location and special needs. For example, when applying for public transportation, we will already know the people with disabilities in the city at specific addresses, people who cannot move, who use wheelchairs so that we can plan new buses with low entrance or non-step entrance. We can already plan new buses to go around the routes where these people live.

What are the success factors for municipal portals? First is usability, it should be easy to use, otherwise you will get lost, and people do not like it when it is boring, when one cannot find anything. There should be search engines, advising. It should be divided into sections. Usability is the most important thing.

Also, fresh information is important. A month ago, the Academy made a study of the Estonian municipal web pages and found out that about 30% of municipal web pages are absolutely out of date. There were very old information, set up two years ago, when the website was built and have had no updates. It is very important to understand why information should be updated. This is not an issue of the "ICT guys", but a question for the whole organization, to provide new information in the website.

It is very valuable to have integrated information about the community. When someone goes to a city web site, it is important not only to have information about the city administration, but about the city, the businesses, social affairs. It should be the first gate to hold information about the city. If the information is limited only to the city activities or the administrative activities, it may fail because people usually do not have time to search in different portals: we need to have a first gate to the information in the city.

Successful portals have an intuitive approach: when building a portal there has to be an idea of the information people are searching for. The usage of search tools can predict what is going to be the next question from the citizen, what they will ask from the webpage.

Services offered and giving attention to the different social groups are crucial issues. There are different kinds of Internet users: from 12 to 80 years old. All the information cannot be provided to them in the same way. If we want to encourage the usage of city services, we need to think about different ways to provide information. Usually the younger generation have different communication channels, such as Skype or MSN Messenger.

What are the successful factors for optimal municipal e-government? The crucial factor is leadership in the city, a motivated organization, cooperation between the State and municipal agencies, cooperation with the business community, cooperation with ICT companies and political support.

Finally, e-government is only one of the priorities of the city; there are other priorities as well: road building, new schools, stadiums, concert halls. As a result there will always be a competition for the budget. In this case, the politicians who take the decisions on the budget should be given a very clear agenda on the topic. The economic benefits of e-government are often not on the government side, but in the government side. The winners will be the citizens, especially those living in rural areas. Of course, all the benefits should be visible and measurable.

Open City Portals

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UK

This paper is focused on how to create city portals. This is not because the importance of global connectivity or other broad aspects of the ICT is neglected, but developing experiences of ICT in Sri Lanka and Kyrgyzstan found that there was no local content in these countries. Even if community tele-centers are created or Internet connections are made available, people have no incentive to spend money to use the Internet because no content is available.

To start with the level of development of e-government; there are 5 levels. Level 1 has no government initiatives. People have to search for information and visit the city offices to get it. In Level 2, some city departments of the agencies have started to publish websites but in an uncoordinated way. Level 3 implies a citizen-centric integrated portal. That means that the portal contains all the integrated service information and some interactive elements; people can ask questions and also download some forms. Level 4 is the transaction phase. People can do online transactions. For example, people can apply for procurement online at this stage. Level 5 is the ultimate goal of the government, and mainly involves restructuring administrative processes so that the city processes become more favorable to the citizen's service.

The following graphic shows some of the countries which EBRD is dealing with, mainly Eastern European countries, and also which level these countries have reached.

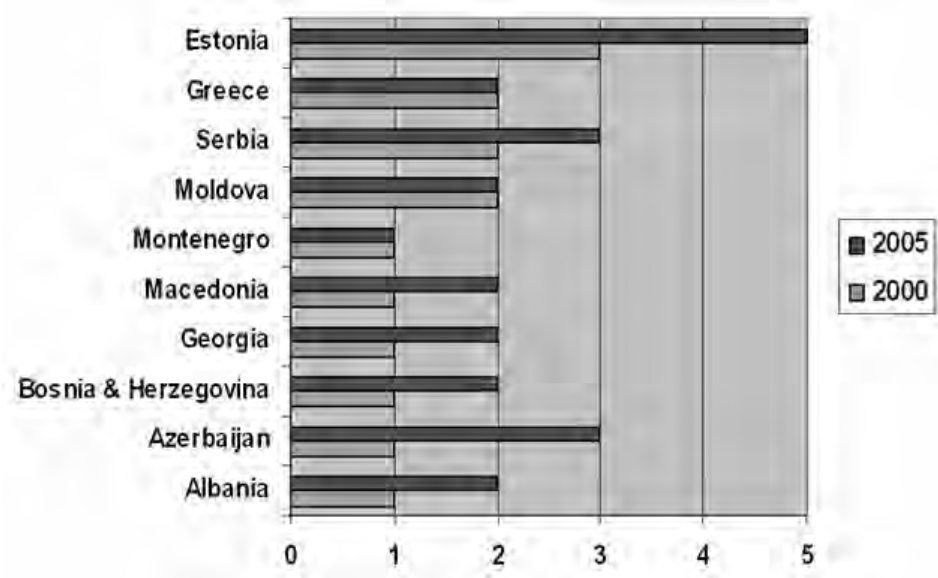


Figure 1. Current Stages of E-Government

The graph shows the very wide variety of the countries. Estonia is at level 5 so they have almost achieved all the e-government goals. Serbia and Azerbaijan are at level 3, and they have an integrated city portal. Other countries are mostly still at level 2: they publish some websites but in an uncoordinated way.

During the Bilbao Summit, which was held in 2005 in the city of the same name, a survey of 52 cities was made, asking the participants which level they considered their city had attained. This was because the participants to the Bilbao Summit were more or less advanced than other cities.

There was no Level 1 city; at least every city had some initiatives. Eleven cities are still at the stage of uncoordinated publishing of information. This includes mostly developing countries, but Gothenburg (Sweden), one of the most advanced ICT cities, is still at the uncoordinated level.

Level 3 is the citizen-centric portal level. Here seven cities, including Bilbao (Spain), Karachi (Pakistan), Montevideo (Uruguay), and Bunkyo (Japan) were found.

Level 4 allows some transactions through the online network. Here 27 cities, mostly in industrialized countries were found: Cork (Ireland), Cologne (Germany), Singapore, and Tartu (Estonia).

Level 5 is the Process re-engineering level. Here there were 5 cities: Sunnyvale (California's Silicon Valley), Issy-les-Moulineax (France), and Madrid (Spain). They have reached a level of some kind of administrative restructuring through e-government. This is a very small sample but it gives an idea of the current status.

Why is progress so slow at a municipal level? In a survey conducted in Japan asking Japanese Municipalities what was the major impediment for e-government in the cities, the largest impediments were insufficient budget (73%), lack of

organizational support (60%), inadequate technical skills (46%), and insufficient ICT infrastructure (43%).

These are the 4 major impediments faced by almost every municipality. This presentation mostly addresses what most of the municipalities should do faced with such strong constraints.

An Open City Portal is an open source platform for city portals, to cope with the difficulties faced by most of the municipalities. It was proposed and developed by the so-called Light Houses taskforce to support the World Summit for Cities and Local Governments for Information Society to discuss how to create an open city portal to address these issues.

This Open City Portal has 2 major functions: one is a citizen-centric information portal which provides city-specific information more efficiently to the citizens; the other is a global knowledge sharing function for sharing best practices among the cities.

What is a city-specific information portal function? There are 4 characteristics:

- **Citizen-centric Information Portal:** all the cities' services are classified according to the needs of citizens, not by organization basis.
- **Interactive function:** citizens can ask questions and express their opinions and also download some information.
- **Integrated:** All the levels of government information which are part of the same category should be published on the same page; ie. what the national governments, prefecture governments and city governments are doing in the same area of activity.
- **E-Inclusion:** the civil society, NGOs, voluntary citizen's groups and private institutions can submit content to this portal.

The front page of the city portal divides all ranges of the city's services into 9 chapters, and each chapter is sub-divided into various categories. The chapters are: Regional Development - one of the most important functions of the city, Citizens' Life, Life Events, Education, Health, Business and Work, Municipal Infrastructure, Social Inclusion and Information Society. The cities can decide on the categories' structure and customize them according to their priorities.

What are global knowledge functions? This is the second important function of an Open City Portal. This will use the same category structure but contains more global best practice so that each city can contribute to the knowledge, or international organizations can provide more global knowledge to this portal.

Why should we use the open city portal? First of all, because it has a low cost: there is almost no budget required to host this, except for some dedication of city worker's time, and this is fully free of charge, because this does not address the most expensive part of the function, namely the online transactions, but only the information dissemination and interaction in the website.

The second merit is that no technical skills are required: all the content can be published through the website so there is no need of technical skills or specific talents to alter the content.

The third reason is ease of content development: the content will be created and updated by regular front line staff who are dealing with the citizens on a daily basis.

An Open City Portal can achieve the following goals of e-government: citizen-centric information dissemination, saving time for the delivery of services, interaction with citizens, inclusion of citizens in the content development and policy making, re-engineering of the administrative processes. All of these can be done without expensive online transaction functions.

How is an Open City Portal managed? The municipality itself is the owner of the portal and a municipality can customize the portal with their own brand, outsourcing web management to eliminate the need for an in-house technician to manage the portal. They can define the category of the city structure according to the priority of the services, defining the editorial policies and also prioritizing content development strategies. This is open content, so if someone contributes to the global portal portion, this information will automatically be shared by all other cities so that they can learn from each other's experiences.

What are the initial steps to create an open city portal? It is easy but some kind of political will to host this portal is still needed. For the first step, the leadership of the city or municipality should make a decision and announce this vision to make a citizens' portal. The second step is to create a task force within the government to develop an open city portal. The third step is to categorize all the city services into a clearly understandable category structure. The fourth is to set priorities for content development, and the last one is the training of government employees to create content.

How to create the content internally? The first step is to create guidelines and to ask all the departments within the city government to contribute content. The most important content for each category are the frequently asked questions. The names of departments and the telephone numbers and e mail addresses of the people in charge of any program should be published to clarify responsibility for each program. Publication should include application forms and guidelines, important documents such as ordinances and policy budgets, so that people can download them.

For external partners like schools and libraries; all the hospitals or doctors or schools, libraries and museums are asked to contribute details of their location or their policies. Also all hotels, restaurants, places of historical interest, manufacturers of unique products within the locality should contribute content and all NGOs and the civil society are requested to contribute their programs so that each city can advertise its uniqueness as regards tourism or the unique products they are producing.

A portal such as the one described here is only from level 2 to level 3, but such an open city portal can eventually be expanded to include some transaction functions like e-procurement or e-applications. For example, the Global Development Gateway is creating free software for e-procurement, which can be combined with the city portals. The Asian Development Institute is also creating an e-commerce supplier for local governments on an open software basis, so these components can gradually be added to increase the transactions.

Chapter 4

ICT and Applications

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New Generation Networks in Broadband/Ubiquitous Society

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Three keywords can define the present status of information and communications: The first is “Broadband”; the second is “Ubiquitous”; and the third is “New Generation Networks” (NGN). When looking at these three points from the service point of view, the information and telecommunications were originally voice based, and changed to video: The new trend is shifting from voice to video or graphics. From the infrastructure point of view, access to different media has been diversified and networks also changed in the Internet protocol with the migration processes.

There are two streams actually taking place. Globally speaking, the situation differs from one country to another, depending on the density of population and diversity of the land, attitude toward network, the best methodology, so the optimal methodology might differ for each case. Looking at the broadband aspect, optical fiber is still a minority in the global arena: Japan is leading followed by the United States, the rest of world have not yet launched completely optical fiber access and are still using the existing coaxial cable based lines. The mainstream broadband access in the world is the Asymmetric Digital Subscriber Line (ADSL), and the modem attached to the cable.

■ In the U.S, Optical Fiber Access has just been launched by Verizon and AT&T. It is still at a planning stage in Europe. In contrast, Fiber to the Home (FTTH) is penetrating in Japan rapidly.

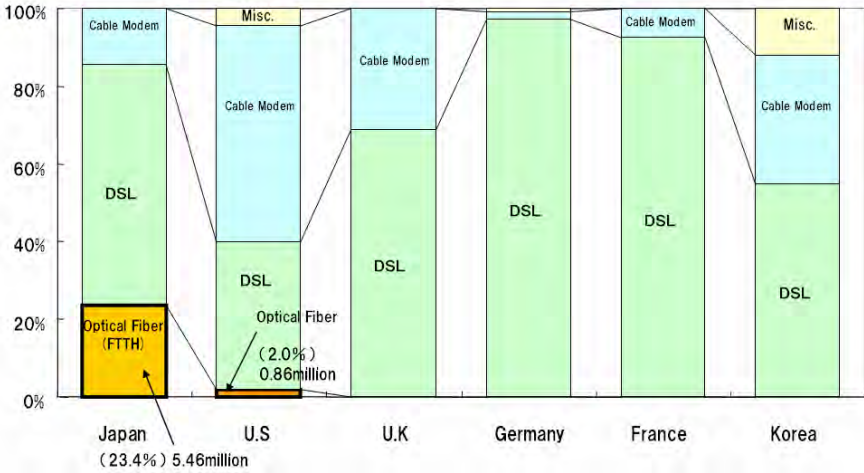


Figure 1. Shares of Different Types of Broadband Access in Japan, US, Europe and Korea.

Second, as for the networks for each country (Table 1), there is a whole Internet protocol based on end-to-end structure shifted from the legacy to this new network. In the United States, it used to be AT&T at first. There were some plans for parts to integrate with smaller providers and AT&T. This is the time of deployment for optical items. Also, Verizon is promoting a broadband super high speed service; an optic fiber based called FiOS. The US federal government is planning to have a migration of the network infrastructure of all the departments of the government by 2008 to the NGN (Internet Protocol) IP network (IPv6).

Korea is currently working in a Broadband Convergence Network (BCN) as a national strategy. Korea Telecom is trying to build the structure of their optical network based on Wireless Broadband (WiBro) or the Worldwide Interoperability for Microwave Access (WiMAX). The basic schedule for NTT is about the same framework.

Table 1. Plans of carriers in other nations for NGN/optical access networks

	Carriers	Projects	Next Generation Network Plan	Plan to deploy Optical Access NW
Korea	Korea Telecom	BCN	IP-based transit networks during 2006-2007	1.75mil. 100Mbps optical lines by 2009
			IP-based local networks during 2008-2010	Promote WiBro as a national policy
UK	British Telecom	21CN	Start to Migrate to IP-based networks around '06 Migrate half of subscribers by '08, complete by '10	(Started trial around Nov. 2004)
U.S	Verizon	FiOS	<i>Unobserved</i>	Fiber to the Premises (FTTP) to 6mi 1 . by '06
	AT&T	Project Lightspeed	<i>Unobserved</i>	FTTP etc. to 18 million by June 2008
	Fed. Gov.		Migrate all Federal department NW to IPv6 by '08	<i>Unobserved</i>
Germany	Deutsche Telekom		IP-based telephone network by 2012	Fiber to the Curb (FTTC) to 2.9 million households in 50 cities by end of 2007
France	France Telecom		<i>Unobserved</i>	(Start FTTH trial by summer of 2006)

Deutsche Telekom plans to have a wholly IP-based telephony network by 2012, while British Telecom's is not an optical but a metro based called "21st Century Network Project", to be completed by 2010. There is no major difference between both technologies, apart from the timeframe in which British Telecom will migrate to the new network system.

Ubiquity is another trend of wireless technology. Second generation technology for mobile telephones continues shifting to the Third Generation (3G) mobile technology. There are already a hundred million subscribers using 3G services. NTT DoCoMo is now shifting from 2G MOVA network to 3G (FOMA). This summer the High-Speed Downlink Pocket Access (HSDPA), a 3.5G technology is going to be launched.

As for the trend in deregulation and regulation, in most countries except for the United States, the main carriers were owned by national governments, and then privatization progressed, but there are still elements that resemble national corporations. These main carriers have dominated the service providing. Therefore other carriers have to go through the same pipes to each household. The government has to open the market to other carriers with public way access facilities. Unbundling obligations have already taken place in the United States and Germany.

Heavy investment in facilities is important and desirable to create a proper development environment among the private sector. By 2010, through the usage of optical access, four IP Next Generation Networks will be deployed. Currently, there are 60 million users; the idea is to have at least half of them, 30 millions users, to be able to use such a NGN by 2010.

In the case of Japan, the deployment of infrastructure will be important for the economy of the country, as well as for the industry and social structure, and it will support government's national growth. There is a need to invest two trillion yens annually, until year 2010 to realize this: that is not something to be done alone. There is a need to work with vendors, domestic and overseas, and service providers to gather information, to have an alliance between suppliers and service providers who will be interested in using the technology and the need to look for opportunities with other carriers as well.

What are the expectations of NGN and IT technology using NGN? The Japanese New IT Strategy issued by the IT Strategy Headquarters considers the coordinated usage of NGN to create a new business model that will enhance productivity.

To move on; some applications that NTT is currently working on are explained. A system for medical care, which includes pharmaceutical diagnosis so remote universities will be inter-related and jointly they will be able to identify for instance, the existence of cancer cells. Through the medium of broadband, such a system can be used, for example, between US and Japan.

About digital cinema, different technologies are included. Films are being switched to digital signals that will be kept in servers and then theaters will get the information for reproduction. This way, the world of cinemas, the world of movies and distribution can be totally changed. For a household who would like to have its own cinema, it will have to get the digital signal from a server.

The next issue is related to ICT. In the US, network neutrality had happened, the local neutrality of network usage. Law discrimination is on the network for the content of all the services. These cover investment, security on broadband services, they will be used differently by each user. A question that arises is how to differentiate them and maintain the neutrality at the same time.

For network service providers, it is necessary to look at good cost-sharing. There are a lot of debates in this area in the United States. Korea said if there is a danger they will not to get a return on the investment, the country will not invest in the infrastructure. The different providers and vendors will need to understand what has been done. Everyone should think of a new business model. Fusion between information, telecommunication and broadcasting is often mentioned but cooperation would be required.

Another problem to be tackled is the one related to security and secure usage of the network. There is a lot of talk about cyber-terrorism, which might have similar effects

to physical disasters., Thirty per cent of researches are still more focused on physical disasters than on cyber-terrorism.

Twenty years ago, each country had its own network and home gateway. The gateways used to have different systems, but now it is a seamless global network. An example is YouTube. With YouTube, the user can store in its server global or worldwide collections of 10-minute length home videos which can be accessed by the global village. YouTube gets its revenue from advertisers. But producers are also customers; they create the video and send it to the server. And consumers create consumers. That's done seamlessly. Of course the networks on both sides have to have compatible security, reliability and connectivity otherwise it will lose its profitability.

Finally, how NTT is going to produce profit for its investors might be a problem, but the chance for business also lies in that opportunity, and in the belief that NTT might be suffering a bit for a short time, but when there is a whole new area to open, for sure new sources of income will be found.

UNESCO and International Strategy for Disaster Reduction

Koichiro MATSUURA

Director General

United Nations Educational, Scientific and Cultural Organization (UNESCO)

In its 2005 World Report, “Towards Knowledge Society” UNESCO highlights the fundamental role that higher education can play in building and strengthening a Knowledge Society. Our knowledge is produced, shared, applied, and changing rapidly, largely thanks to globalization and the digital revolution. New conditions for education are emerging that seem less constrained by time and space. New opportunities are also being created for international cooperation and exchange.

Such cooperation can serve not only to strengthen academic solidarity, but also to help through knowledge and resources, and thereby support a more effective response to the many challenges of globalization. This is exemplified in a work of the UNESCO network at Waseda University, which forms part of the UNESCO program for inter-university cooperation. These networks are focused on building knowledge and experience in the fields of distance learning and disaster reduction.

The decision of this conference to address the topic of e-Disaster Education is of special interest to UNESCO. Natural disasters appear to be increasing in terms of frequency, complexity and destructive capacity. However, it is important to recognize that natural phenomena do not automatically have to cause disasters and nor do we need to limit our actions to post disaster response.

Disaster reduction is both possible and feasible if the sciences and technologies related to natural hazards are properly applied. Good governance and education are key elements in building a culture of disaster prevention. Indeed, the need to educate for risk prevention and disaster reduction is becoming increasingly imperative. Disaster education figures, prominently in the Hyogo Framework for Action adopted by the 2005 Conference on Disaster Reduction held in Kobe, Japan.

Enhancing education for disaster reduction will be central in the implementation of the UN Decade of Education for Sustainable Development 2005-2014. Furthermore, UNESCO is working in close relation with the International Strategy for Disaster Reduction (ISDR) to develop a global alliance aimed at integrating disaster risk reduction into educational programs and related curricula. Within this framework on

June 15th 2006, UNESCO and ISDR jointly launched the World Campaign on Education for Disaster Reduction 2006-2007.

Living with Risk: Mainstreaming Reduction of Disaster Risk and Vulnerability in Development

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Introduction

Every year more than 200 million people are affected by droughts, floods, cyclones, earthquakes, wildfires and other hazards. Increased population densities, environmental degradation and global warming make the impacts of natural hazards worse.

The past few years have reminded us that natural hazards can affect anyone, anywhere. From the Indian Ocean, tsunami; to the South Asia, earthquake; from the devastation caused by hurricanes and cyclones in the United States, the Caribbean and the Pacific to heavy flooding across Europe and Asia, and the landslides in the Philippines -- hundreds of thousands of people have lost their lives and millions of their livelihoods to disasters caused by natural hazards. The number of environmental refugees and displaced persons is growing at an unprecedented pace.

1. The Dimensions of Disaster

In September 1999, United Nations Secretary-General Kofi Annan presented his annual report "Preventing War and Disaster: A Growing Global Challenge." In this report he called attention to the fact that security is not only under predictable, growing threat because of war and violence but the year 1998 was also the worst on record for water-related natural disasters. Floods and storms killed tens of thousands of people worldwide and displaced many more. Including the victims of earthquakes, some 50,000 lives were lost in 1998 as a consequence of natural disasters. During the

1990s – the hottest decade on record – the world experienced more than three times as many great natural disasters as in the 1960s. In a recent study by the WHO on the relation between health and weather, it was estimated that in the year 2000 as many as 150,000 people were killed by global warming and related natural disasters.

Environmental risks have increasingly become the principal source of human insecurity. Of course human communities will always face natural hazards such as floods, droughts, storms, volcanic eruptions or earthquakes. The sobering reality is, however, that today’s disasters, too often, are man-made and that human action or inaction exacerbates virtually all of them. The term “natural disaster” has become, increasingly, an anachronistic misnomer. In reality, human behavior transforms natural hazards into what should really be called un-natural disasters (Kofi Annan 1999, p.1).

2. The Hyogo Framework for Action

While many know the human misery and crippling economic losses resulting from disasters, only too few realize that this devastation can be prevented through disaster risk reduction initiatives.

Governments around the world have committed to taking action to reduce disaster risk and have adopted a guideline to reduce vulnerabilities to natural hazards, called the Hyogo Framework for Action (HFA). This HFA assists the efforts of nations and communities to become more resilient to, and cope better with, the (natural) hazards that threaten their development gains.

Table 1 Hyogo Framework of Action: Key Points

<i>Integrate disaster risk reduction into policies, plans and programmes of sustainable development and poverty reduction</i>
<i>Member States, Regional organizations, United Nations system, financial institutions and NGOs to engage fully in supporting and implementing the International Strategy for Disaster Reduction, and cooperate to advance integrated approaches to building disaster resilient nations and communities</i>
<i>Focus on National Implementation, through bi-lateral, regional and international cooperation.</i>
<p>Building the resilience of nations and communities to disasters, through three strategic goals:</p> <ol style="list-style-type: none"> 1. The integration of disaster risk reduction into sustainable development policies and planning. 2. The development and strengthening of institutions, mechanisms and capacities to build resilience to hazards. 3. The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.

Collaboration is at the heart of the HFA: disasters can affect everyone, and are therefore everybody’s business. Disaster risk reduction should be part of every day decision-making: how people farm, where and how people build their homes and health centers, how people educate children and professionals, and how people plan cities. Each decision can make us either more vulnerable or more resilient. In the words of

UN Secretary-General Kofi Annan: “We cannot stop natural calamities, but we can and must better quip individuals and communities to withstand them.”

The Priorities for Action are outlined in the HFA to guide states, organizations and other actors at all levels in designing their approach to disaster risk and vulnerability reduction.

Table 2. Hyogo Framework of Action: Priorities for Action

1.	Governance: <i>ensure that disaster risk reduction is a national and local priority with strong institutional basis for implementation</i>
2.	Risk identification: <i>identify, assess and monitor disaster risks and enhance early warning</i>
3.	Knowledge: <i>use knowledge , innovation and education to build a culture of safety and resilience at all levels</i>
4.	Reducing the underlying risk factors
5.	Strengthen disaster preparedness for effective response

3. The International Strategy for Disaster Reduction

In order to guarantee appropriate coordination in the implementation of the HFA the “International Strategy for Disaster Reduction (ISDR)” was established.

The ISDR aims at building disaster resilient communities by promoting increased awareness of the importance of disaster reduction as an integral component of sustainable development, with the goal of reducing human, social, economic and environmental losses due to natural hazards and related technological and environmental disasters.

Table 3 Characteristics of the ISDR

Initiated and supported by UN General Assembly
Interagency Task Force, major UN agencies and civil society; wide networks
Sustained activity on early warning
Secretariat presence in Americas, Africa and Asia
Advocacy, policy development, information, coordination

4. Early Warning Systems

The Indian Ocean tsunami brought to light the urgent need for systematic development and use of early warning systems, next to the need for a highly improved information on “what to do” in case of emergencies.

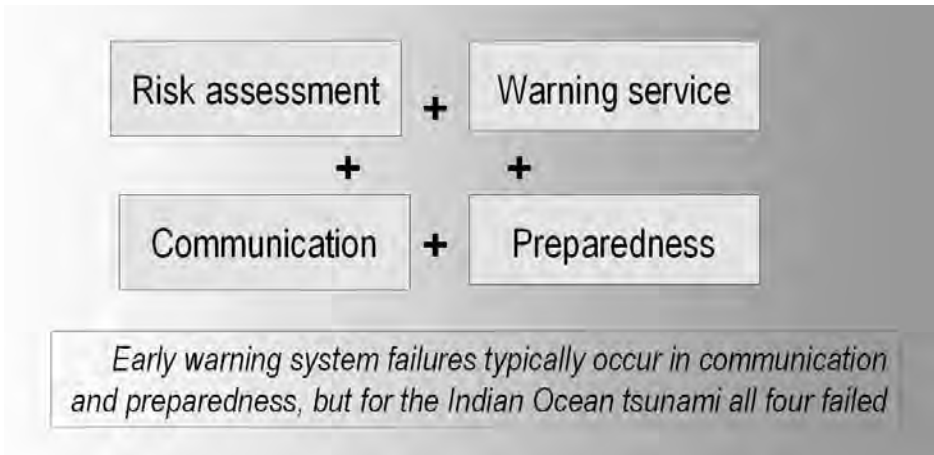


Figure 1. Elements of an Effective Warning System

5. Managing Extreme Hazards

Managing Disaster Risk is now accepted as a priority for sustainable development. As a member of the Steering committee of the International Strategy for Disaster Reduction, United Nations University (UNU) has been playing a leading role in the development and implementation of regional and global programs on disaster reduction with a number of Japanese and international institutes through UNU institute on Environment and Human Security and the HQ program on Natural Disaster Risk Assessment.

On global initiatives UNU has been a strong partner in the development and launching of ‘International Flood Initiative’ (IFI) together with International Center for Water Hazard Risk Management (ICHARM) of the Public Works Research Institute, Tsukuba, Japan, UNESCO and World Meteorological Organization (WMO), in 2005. Currently UNU and ICHARM have strong collaboration in promoting and implementing the International Flood Initiative. Similarly, UNU is a major partner in the development of ‘International Program of Landslides (IPL)’ with the International Consortium of Landslides (ICL) located at Kyoto University. The action plan for IPL was formulated at a round table meeting hosted at UNU in January 2006.

There are two major programs that are undertaken within the ESD Natural Disaster Risk Assessment Program.

Catastrophic disasters are causing increased damage world wide. A string of recent disasters, the 2004 Tsunami, Earthquakes in Pakistan and Indonesia, hurricane Katrina, are some of the very vivid recent experiences. An estimate by the Munich Re shows that 20 major disasters in the 1950s caused damages estimated at US\$ 38 billion, whereas in the 1990s the number of recorded major disasters increased to 82 with an associated increase of losses to US\$ 535 billion. The events have increased four fold whereas the losses have increased by 14 times!

What are the causes?

The major cause is the increase of exposure: Remember the large debris flows in 1999, in Venezuela, which was the biggest natural disaster in that country. A string of coastal cities off the capital of Caracas, which also served as holiday resorts to the capital, were wiped out by debris flows caused by intense downpour. It was recognized that all those cities were built on previous debris flow deposits. There were no cities when those plains were formed, and there had been no debris flows during the last 50 years when these cities developed. This demonstrates the need to understand the risks associated with rapid urban development in the face of a catastrophic event.

One of UNU's responses has been the program on catastrophic flood risk assessment. Throughout history, we have had to confront floods, simply because floods made the plains on which we live and provided fertile soil for agriculture. With the progress of humanity, many methods have been developed to contain floods and reduce damage. These approaches have recognized both the benefits and dangers floods bring. During the last few decades, rapid population growth, industrialization and urbanization have created new demands in flood management practice. Draining storm water as quickly as possible and providing protection to urban areas have become the main targets of flood control. With the increase of population and wealth we have continuously increased the design targets and constructed flood control systems that could withstand ever higher flood magnitudes. As a result, flood frequencies reduced, attracting more people and investment in flood plains. Now we are faced with the dilemma; where it has become extremely difficult to increase design standards any more, whereas an event beyond the design levels would bring huge losses. The threat of increases in rainfall intensities and magnitudes that could be brought about by climatic change amplify the problems.

While a catastrophic flood is by definition a low frequency event at a particular location, we hear quite regularly of their occurrences in a global or regional context. It is logical therefore, to look into the needs and mitigation measures required to reduce the impact of catastrophic floods in a regional context.

With our partners, UNU organized a regional workshop in 2003 to develop a program that focuses on the worst possible flood scenario in major cities in Asia to identify risks and formulate response strategies. The program was developed with specialist representatives of 15 Asia Pacific countries in 2003.

The goal of the project is to carry out prior risk assessment (catastrophic flood scenario) and develop a Basic framework for response (action plan). This plan then needs to be incorporated into the urban development and planning process.

One of the case studies under the program was carried out in Viet Nam to assess risks from a catastrophic flood in Hanoi City with the Flood, Stormwater and Dyke Management Department, Institute of Hydrology and Meteorology, Asian Institute of Technology and Kyoto University. The dykes of Hanoi are being upgraded to withstand the flow corresponding to 1 in 500 year magnitude. However, there are many vulnerable groups including people who live within the dyke.

Four different scenarios have been identified that could cause a flood in the city. There is a numerical simulation of flood flows. If the flood control dam upstream has a failure with one of the sub-catchments receiving the heaviest rainfall possible, the flows within the city are expected to rise to more than 2m in some places. A field

survey has been carried out with these results to ask residents about their perception of a flood in the city and to understand the preparedness. Many of them have not thought of the possibility of a major flood in the city.

Estimation of potential loss is another important component of the program. Estimating potential flood losses are important for cost benefit analysis for flood control works, risk sharing and insurance. There is a need to think of financial mechanisms to support recovery and reconstruction in the aftermath of a catastrophic flood event. It would be a heavy burden for most of the countries, especially developing countries to finance such recovery from their own resources. For this, it is necessary to initiate global and regional support networks to spread the financial risks. The ability to estimate expected losses is one of the most important requirements to move in this direction. Not only we need such methodologies, but to be effective, they should be regionally consistent. This is also one of the objectives of the program.

An equally important consideration is the need to address the important issue of urban development. As we all know, more than half of the world population now lives in urban areas. This proportion is only going to increase, at a significantly faster rate in the developing countries. How do we guide this urbanization process to make it sustainable? Needless to say, ensuring human security should be one of the priority areas of this process. We should design our urban systems in such ways that we will reduce vulnerability of communities to disasters.

Transportation systems, underground spaces, all increase the vulnerability through the convergence of urban communities to areas susceptible to hazards. To understand urban vulnerabilities, we have to look at the dynamic behavioral patterns of the urban communities and incorporate appropriate flood reduction measures in urban planning. Consideration for catastrophic events should be a built in component of such design. For existing facilities warning and evacuation are key elements to reduce losses.

Another good example is the flood experienced in Fukuoka city in 1999. People did not know at all how to respond to this phenomenon. This event showed how water could overflow from the rivers and rush to the railway stations, which were located at the lowest point. Some important considerations required to reduce risks are the measures for the spreading of water throughout the underground space, making underground infrastructure that is safe for flooding and having the required facilities to guide evacuation in public places.

Risk is about how hazards combine with vulnerability to cause harm. But then there is another question. What hazards are we talking about? Is it floods? Or is it earthquake, or is it the fires? If we think about the people in the cities and their security, we need to think of not only one of these hazards, but all of them, as well as their possible simultaneous occurrence. When we combine all types of risks, we will begin to see and appreciate reduction of vulnerability as a key measure to be used to improve human security in urban areas.

Vulnerability is not limited to the context of physical hazard and the exposure. The human element is the most significant component of the consequences of a hazard. This consists of social conditions as well as behavior patterns that could either increase or decrease the vulnerability. Therefore, to really understand and tackle the problem of ensuring human security, there is a need to focus not only on the physical aspects of risk, but also on vulnerability of people that is a manifestation of social and behavioral conditions. This focus on people will change the way to assess safety, bringing about a

more realistic form of risk assessment. In turn, that would lead to a more careful analysis of mitigation strategies and permit a holistic approach towards risk reduction and encourage incorporating them in the planning and development processes.

Role of University on e-Governance

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Kofi A. Annan, Secretary General of the UN once said that "Good governance is perhaps the single most important factor in eradicating poverty and promoting development."

Good governance for all sectors or in the institutes these days requires electronically managed devices, called e-governance, in order to effectively accomplish the tasks.

The purpose of having such goals is obvious; it is to enhance good governance through the practice of e-governance. By definition, "good governance may generally be characterized by effective participation, transparency and accountability." These days, as we all know, the use of Internet has also provided opportunities for better and faster communication between governments and citizens in many countries; thus contributing to the achievement of good governance goals. The use of information technology can increase the broad involvement of citizens in the process of governance at all levels by providing the possibility of online discussion groups and by enhancing the rapid development and effectiveness of pressure groups. The advantages we may expect are government's ability to provide better services in a shorter time, making governance more efficient and more effective, the transaction costs can be lowered and government services can become more accessible.

With developing efficient, reflective, sustainable governance mechanisms and corresponding tools to master and steer their underlying dynamics in both public and private organizations, ICT has become a necessity and it has also already been recognized that technologies (ICTs) are one of the main driving forces of the economy, society, and culture in increasingly pervasive and complex ways.

Then, how should we begin the implementation?

To describe it in brief, the implementation can be focused on both national level and local government., Local governments especially are closest to citizens and constitute for many the representation of the government. The relationship of citizens and local authorities tends to be one based on proximity, as the same interests are at

stake for both parties. And those are clearly entwined issues of concern such as public services, urban development, education, public transport, environmental concerns and local politics. It is at the local level that the impact of ICTs on the relationship between governments and citizens can be most effective.

Anyhow, ICT is just a tool but the core value is the integrity and ethics of the government.

What is the role of Universities?

Universities are considered as the instrument that can support the activities of e-governance in many ways. e-Governance Institutes can be created in universities as non-governmental, non-profit organizations, founded for the creation and transfer of knowledge concerning e-governance, e-democracy and the development of civil society. The institutes will also explore how the Internet and other information technologies (IT) have and will continue to impact on the productivity and performance of the public sector and how e-government fosters new and deeper citizen involvement within the governing process. The institutes will respond to train and advise present and future leaders and stakeholders in using information and communication technology (ICT), to increase government efficiency and to improve democratic processes with the aim of building open information societies. The concept can be implemented through:

- Education and training
- Research
- Consultancy
- Networking
- Developing CIO
- Information Dissemination
- Publications

Education and training can help to raise awareness concerning its possibilities and to demonstrate the importance of having a solid national policy and strategy in the development towards an information society. Future leaders also need to be trained to be able to use ICT efficiently.

Consultancy

The institute can provide solid and honest advice. It relies on a network of specialists, all of whom have a longstanding experience in their field of expertise. As such, the institute is well placed to offer consultancy services on e-governance issues. The institute will bring together the knowledge and experience necessary to help policy makers to make informed choices. Through consultancy and on-site training, the institute facilitates defining the policy on how to maintain a balance between globalized and localized economies to create sufficiency and a sustainable economy.

As an independent organization an institute can further help to translate these choices into realistic and manageable technical needs, avoiding costly and inefficient

discrepancies between what is really needed, and what is, in the end, actually developed.

Training followed by consultancy has proven to be an effective practice. In many cases the institute is faced with concrete demands for know-how in building particular programs, projects or strategic papers. Thus, it needs to provide the social awareness to make sure that ICT will be used in the right way to promote peace and welfare.

Research

To continue to create knowledge, the institution has to initiate, facilitate and conduct research in areas where practical know-how is lacking or is still embryonic. In line with the institute's objective to bridge the gap between theory and practicality, the research should be policy-oriented and comparative, rather than academic or technological. Since ICT can become one of the driving forces of an economy, there are a lot of possibilities to do research in new areas.

Networking

The university can work as a node in a wider network of institutions working on issues concerning e-government. We welcome partnerships as a way of ensuring delivery of high-quality products and services. Moreover, the institute has to actively seek opportunities to participate in projects, enhancing knowledge and offering new opportunities to disseminate information to others. Networking among universities, governments and industries should be one of the important agendas in the future. The university should also realize its own governance to better serve knowledge economy for the benefit of society and development.

If the university is to play the role of an instrument to solve the problem of the digital divide well, I hope it can also be of help in reducing the knowledge gap and economy gap.

Role of University Network

IAUP and APDMEN will promote the ability for a university to adopt its own governance and services in order to better serve in the area of e-governance while maintaining the university's status as an independent institute at the same time. This will help to lessen the digital divide especially among developing countries in order to achieve peace and welfare through education.

Conclusion

As the information age matures, governments are turning to computer networks to design and deliver services and more broadly to govern. Governments are becoming e-governments. As governments use information technologies more pervasively,

leaders are becoming less comfortable in simply delegating technology-related issues to technology managers. Instead, they are seeking to become more fully and successfully engaged in providing effective leadership.

Universities can support these e-governance activities in a collaborative effort between public and private sector institutions to inform and strengthen the leadership and cross-boundary relationships needed for 21st century government and governance while still maintaining independence as institutes rather than becoming just instruments in the knowledge economy. They will be the places that offer a variety of roles for private and public institutions to interact, contribute, and benefit from this groundbreaking initiative.

References

e-Governance Academy (www.ega.ee)

IBM Institute for Electronic Government (www-1.ibm.com/industries/government/ieg/)

UNESCO e-Governance Capacity Building (www.unesco.org/webworld/e-governance)

e-Projects in Finland

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Head

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What projects are going on in Finland? In the area of e-infrastructure and e-platform, there is a project called TIME which is a common national public IT domain infrastructure project for portability and interconnectivity. People who are studying this field, people who are developing these services in any given country, some formal decentralization, localization, regional projects probably have the tendency to have this question, but come to the realization that in the future interconnectivity and portability are the key issues that Finland has to address. And that is why the Finnish government has reorganized this process under the Ministry of Finance and hired a national CIO and appointed task forces for its use, so that there will be one common platform that can be utilized in several public sector applications.

From the national level, there is an extension to municipality level. There is also a discussion about developing this interoperability of information management in public administration at municipality level. The goal is to create electronic process description and describe a best practice that can be commonly used at municipality level.

Another project is called VETUNA. This is a joint platform project for strong national identification based on PKI – public key infrastructure. At the moment Finland has sixty municipalities and all national central offices participating in this project, developing this PKI together for Finland.

The project itself is being implemented in public and private partnership manner, especially involving small and medium enterprises, who will be the service providers for this project. From the IT point of view Finland has one major advantage, every Finnish person has a social security number as common identification for each person in the country. This has been widely used and the PKI will be realized through social security numbers and a citizen identification card that can be provided from several service providers, usually controlled by the population registration centre. The goal is to use this new system as a solution for banking, mobile payment systems and all electronic transactions within the public sector.

There are a few more in this field. People are used to and quite interested in learning about digital television advancement in their respective countries. In Finland it is a national priority to transfer to digital TV. By August 2008 the analogue signal will be have been cut off and after that Finland will be fully digitalized. Mobile digital

TV has also taken off and the Finnish government has already granted four licenses to four different broadcasting organizations or mobile operators that are interested in this business.

The project for the National Archive for Health Information is in its early stages but a new national authority has already been established to oversee this rather major project in our country. The goal is to have one common archive for all medical information and imaging related to patients.

Finland is also trying to build infrastructure but the key is awareness and the Prime Minister's Office has taken a key role in pushing for best practice development. That is why there are bi-annual awards from the Prime Minister's Office to the best practices to increase awareness and promote diffusion and also encourage all kinds of innovative new practices. They have several projects and this is only one representation of several on going parallel projects now in Finland but it is also always important to remember the statistics, that in Finland today the national PKI system is already used over 500 times a year for actual identification and to transfer forms electronically to particular offices in government.

The second area is related to the citizens' role and citizen participation (e-engagement) and e-access. Since 2005 Finland has been running a program and project called Finland in the Net, which is aimed at bridging the digital divide inside the country. Naturally different age groups or different demographic groups have different ability in connecting to the e-society and our government decided to start a training program, where 1,500 librarians in public libraries were trained to become Internet teachers and email teachers. 280 local municipalities participated to this project. The goal was to provide Internet literacy and access to every citizen. This was highly appreciated and statistics support the fact that this has been very successful in their country.

In Finland there is commonly free access to the Internet for all students, available at every level referred to. Finland has a University Network (FinNET) which is open for use to all tertiary level students and even elementary schools; they are all equipped with PCs and connected to the Internet. On top of this, there are several citizen portals: Finnish information society program portal Suamo.fi portal for public access, citizen health portal and entrepreneur. There is also a citizen's health portal site which today is still mostly focused for professional use, for citizen use, but these are also intended to be for, and are widely used by, the general public.

The third area is the project in e-skill and e-education. The teachers IT Literacy Education program by the Ministry of Education has been running for a few years now and annually there are over 4,000 elementary and tertiary level teachers participating in this program which has an annual budget of 2.9 million Euro have been dedicated to this important matter. Also, there is a Finnish e-learning center annual competition for best practices in e-education, and last year OPIT services were selected as the most advanced and most promising Internet environment and learning environment for elementary school students. 3000 teachers and 30,000 students create content together in teaching environments. At municipality level policy is supporting IT in every class and every classroom and for this, OPIT services are being created. Then there are several other training programs for public officials, public service employees and several other means of accessing Q&As in education and information. Briefly looking at the OPIT learning environment for schools, by logging on through the website,

anybody can become a user. First, students pay and start using this program right away.

In Finland there is an online tax form. The Finnish Tax Administration Internet services are very well developed and this year (2006) all Finnish citizens received e-tax forms which were pre-filled for them and sent them back to the authority. This is possible in Finland because the information exchange law allows authorities to acquire information directly from banks, insurance institutions and others.

Finland also has a “take your site” website (In Finnish “Ota kan ta”). It is a feedback channel for citizens to give any kind of comment to government about the level of services, what has been going on in municipalities and what has been going on in local government.

The employment opportunities portal has been available for rather a long time, very recently it was also extended to the EU level, meaning that the Ministry of Labor is now connected to the EU level and the database opens position to all those looking for new jobs. And even the Ministry of Foreign Affairs is in the forefront, providing travel notice services through mobile means and updating travel advice for those going abroad.

Towards e-health, and e-procurement, system Hilmah has been used for quite some time as well as an e-bidding system for all public procurement, to maintain transparency and giving access and the possibility for all service providers to participate.

KELA, the insurance institution have electronic social insurance services, forms on the net can be filled up and all necessary social insurance matters can be taken care of through the net.

The JUPA project is actually a group of projects one of which is addressing the exchange of information from day care to elderly care. Meaning that there will be an electronic customer folder for information sharing that will follow a person all through their life.

Some statistics: 100 percent coverage electronically based on record system. All hospital districts are using them. The Finnish Doctor’s Association has compiled evidence based on medical guidelines, for clinicians, nurses, patients and so on. E-prescription is not used yet but national Policy will be formulated in 2006, and the first service description will be available quite soon.

Lastly, projects on e-commerce and e-content are more on the business side. In Finland there is a platform called DIMES, which is an ICT solution state bed for joint project infrastructure and services. It is available for private sector as well as in public partnership collaboration and there are major corporate companies that are also active on the international scene like Nokia, Elisa, TietoEnator, VTT, HP, and Fujitsu.

Fujitsu is the Japanese partner in this event. And this is a mechanism to try and bridge the gap between ideas and commercialization. Finland also has the SILE project which involved a lot of consultants in a training program for Finnish companies. Yearly there are about 120 companies participating in developing their business skills. And they made sure the network’s content that was developed in Finland is widely available and also commercially viable. TIEKE collaborated in the introduction of electronic invoice systems to all industries, creating company interfaces for cross system communications, the banking sector probably being in the forefront in this area.

Then DIGIROAD project (ITS) is an intelligent transportation system field, mostly run by the Ministry for Transportation and Telecommunications in Finland including normal ITS areas.

There is also the e-Finland.com service, a kind of web service where an e-commerce services centre is providing information best practices in e-commerce, which is widely used and widely available. Users are content providers and the centre classifies actual information. The centre is not so much developing these best practices as making and keeping records. Some statistics show how Finnish companies have adopted e-commerce Internet and this is a glimpse into Finnish Information Society development and the e-governance projects that are ongoing in the country.

Thailand e-Filing Strategy

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The Revenue Department in Thailand has 956 offices, computer networks and 23,000 employees are able to access all the databases in real time. They use the intranet for internal communication operation and management. They also enter all the information and the entire task for the year into the system to serve all offices and they can access all. Responsibility for collecting tax, is nationwide in their country. They collect the income tax, value-added tax and other consumption taxes and cover the national area, that's why they need ICT to help them do all of those things.

Thailand's tax collection has had a nominal GDP growth in the past 7 years and they can see the contribution of ICT as a tool to collect tax

Thailand's ICT development started in 1970 where they used ICT for batch processing. By 1990, Thailand had developed IT for online transactions, online access was present but Thailand was still doing batch processing. In 2000, Thailand began to use the web-based technology it has used up to now. They provided a number of e-services in their website such as tax information and revenue call; the revenue call is provided free on the Internet for both our officers and the tax payer or even anyone who wants to see. Thailand also provides downloading of applications, an online calculation system as well as e-filing and payment on the website.

Thailand's e-filing payment can be accessed by anybody, anytime and anywhere in the world. And this is the reason why Thailand's e-filing is very successful with an increased utilization rate of 1% to 72.3%.

Thailand also have their own PKI for the performance and this is conducted by a university which used about 800 samples, to assess satisfaction to evaluate how the revenue department provides e-services.

They have an e-tax info system and everyone can be a member, and can be provided with any information for free, not only information on taxes.

Thailand still wanted to provide people with more tax forms. They have an e-filing and payment system on the Internet; it is a complete life cycle of electronic services starting from tax return filing, tax payment, and tax data processing where everybody can pay at the bank or by another system.

The services mentioned started in April 2001 and a pilot service is value-added tax in a single form. Taxes can be paid with an e-payment system in commercial banks which Thailand launched 5 years before. At present, Thailand has improved their system; everybody can now pay various taxes in one platform, all together.

The citizens can now pay with e-payment, ATM, Tele-Banking, m-banking, Internet Banking as well as counter services such as convenience stores. People can also pay in post offices as well as the banks.

Thailand's objectives are:

- To strengthen the efficiency of the tax collection system.
- To increase options for tax filing and payment.
- To raise the quality and accuracy of information.
- To support e-government policy.
- To provide a better service by reducing work procedures.
- To decrease costs to both taxpayers and the Revenue Department.

And the benefits for the tax payers are:

- Cost and time savings.
- Savings in document storage due to e-document.
- Being able to file tax returns everyday during office hours and after office hours (4.30 – 10.00 pm).
- Taxpayer data can be checked by computer programs.
- Tax refund is quicker. If you pay the tax with an e-payment system, you can get the refund within 15 days.

The benefits for the revenue are:

- Savings in time and cost to receive tax returns, to record data, and to examine output.
- Better response to the needs of the public by providing services that are convenient, rapid, and economical.
- Conforms to e-government policy.
- Reduces work procedures.
- Creates a good image for the Revenue Department.

For the systems to work, the user only has to register, and the department can provide the agreement of e-filing and give the citizens their user ID and password. With their ID and password, people can use the services for e-filing and payment; contact a bank to apply for tax payment service by using a bank's electronic system, obtain a user ID and a password from the bank, file tax return in the month that e-filing rights are notified, inform the Revenue Department by e-mail in any month that the citizen is not able to file tax return by the Internet.

Their most successful accomplishment is that they have trained RD staff to understand e-filing and Payment objectives, benefits, and procedures so that they can explain and help taxpayers to use this service. Thailand has published e-filing and Payment using such a strategic presenter as the Prime Minister and broadcast through various mass media such as television, radio, and newspapers. Thailand also established a campaign to promote e-filing and Payment such as quicker filing - quicker refund, not needing to supplement documents and 24 hour service.

Thailand's next step is to establish a standard for the government for using and developing a system toward e-business, e-government and e-commerce, encouraging

IT learning organizations to move towards the knowledge society and finally, improving e-services for Thailand citizens.

e-Government Infrastructure: Smart Cards can Provide the Last Mile

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The private-public partnership is the key to success for e-government initiatives. PPP happens due to the ICT industry's fast movement: the private sector gains a lot of favor from government and finds they have to work together.

How have e-government projects related themselves to smart cards in order to be delivered cost-effectively? Why are smart cards ideal to reach every user or citizen or e-government? What kind of public-private partnerships have worked or what have been the issues in smart card projects? Can smart card projects really deliver?

Governments manage huge budgets. The challenge is to deliver cost-effective e-government project. Many times, especially in small communities, people have asked whether e-government is necessary. That's the first question, especially in the rural community. The answer is obviously "yes", however people may not like it.

One of the key issues is to communicate that e-government is another step in the revolution of organization. IT is not something totally new, there have been other tools. IT just happens to be an extremely powerful tool. If we communicate that IT and e-government using IT is just one more step, and not something completely different, it helps a lot in getting into a project.

The reason why this cannot be avoided is competition: governments do allow competition, cities compete with each other, and countries compete with each other. And if there is no agreement on the government infrastructure to do the e-government, then government efficiency will be affected.

What is going to be done is a big debate of democracy. It is an opportunity, but it has to be handled one to one, at an individual level to discuss what can be done to make the citizens' life better and to improve the service delivery of the government. It is also a fantastic opportunity to integrate and motivate the workforce. And this is something which is under emphasis as a priority in e-government.

It is true that the telecom industry already has its network around the country, it is the most expensive but the network is the last mile from the switching stations to people's homes. It is expensive if the user has selected a network that is useless. The

same happens with e-government: a lot of backbones can be put in place, a lot of websites, lots of access points in the city. But, how can you know if the transaction at the other end is being done by the right citizen?

The last mile from the webpage at service point to the citizens is critical for mass back up of e-government services. Everyone has seen time and time again and talked about the acceptability for usage, actual usage, not just the website. It may be easy to use but the citizen must be confident that the transaction is secure and also confident of privacy. Both of these are challenges of the last mile of e-government. What people believe and the citizens will see is smart cards playing a key role.

The first thing smart cards have to do is to provide assurance of identity. That is because it is not a piece of paper; it is not a duplicate document: It is effectively a small computer but designed specifically for high security. Unlike a PC, unlike a mainframe and so on, smart cards are designed to be secure and hacker-resistant.

The second element is that, because of their design, there is no need to be connected to the head office to do a transaction. With a smart card, people can do secure, reliable, high value transactions completely offline. That is a very powerful way to reach the remote community. There is something which has not been used yet to the best practice, because offline and secure transaction affects not just the rich but the cost infrastructure.

Government projects need to last a very long time. When people talk about a long time in the IT industry, it actually means how to manage the difficult situation of balancing and implementing the technology today, when after ten years, the technology might be obsolete. The smart card is designed to allow the citizens to change the scheme they use even though the card is with the citizen. The government can issue smart cards without worrying that someday the system or application has to be changed. New systems can be reloaded or new functions added to the smart card anytime. By having offline and secure transactions, costs will come down.

There have been a lot of big smart card projects run as private-public partnerships, but there was a very limited strategic issue in project implementation. Very often a government loves to have a single vendor for the whole project, because it means that government officials only have one man to catch, and do not need to do the project management, but only outsource everything.

The smart card industry does not work like that, because it is not in the main stream of IT industry: It is a niche and specialized industry. Most large system integrators and solution providers do not know the issues of smart card implementation, and government officials need to do more on planning the role and decision-making. Smart cards are not mass procurement items.

The Defense Department of the United States is a closed project in which all participants work for the government. Even for this project, it took 2 years to plan and prepare before launching. So that is what they really are concerned about.

France's Health Scheme is an excellent example which is saving over one billion Euros per day by using smart cards. Belgian ID is more of an infrastructure project, which allows citizens to use their ID card not only for government, but also for private to private transactions. And in some countries, the driving license and e-passport are certainly big projects that have to be done now.

ICT Incubators, the Georgian Experience

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This presentation consists of some key facts about Georgia, about the ICT industry and how it is developing in Georgia, incubators in general, and particularly an initiative, which is an ICT incubator, the country is working on now.

Georgia is a small country between Russia and Turkey with a population of 4.4 million. Over a million people left after the collapse of the Soviet Union to go abroad to work. Around 40% is rural population.

During the last 25 years, the country has made many more reforms than during the previous 15 years. The country ratings are improving in many directions, mostly from an investment point of view, from a reform point of view and there is also a key strategy to attract private organizations in fields where they can perform better than the government.

Key reforms include the following: About the Tax Code, Georgia now has 7 taxes where before there were 19; the rates of these seven have been decreased; the Customs Code is under process, currently under discussion in the Parliament; Labor Code is also in process, and the country is also trying to create a Labor Code for entrepreneurs. Huge results in the Licensing System can be seen: from around 1000 licenses now there are only 144 left.

This has all been done in one year. It took one year for the preparation process and those are the results. The following figure shows some general statistics for Georgia, including GDP, budget and investment. As can be seen, GDP and investments are going up.

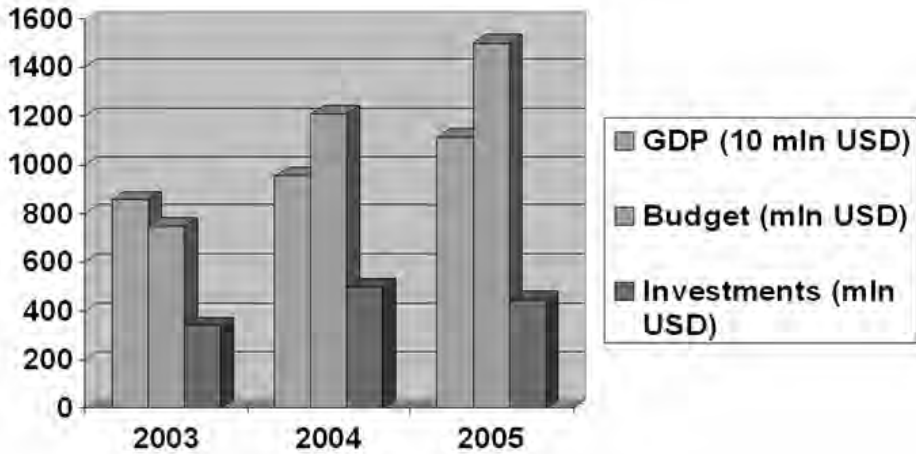


Figure 1. Overall Georgia Trends

There was a little jump in investments in 2004 because of investments in pipelines. The same thing happens with the Georgian telecom industry.

	2000	2001	2002	2003	2004	2005
Telecom Income Million USD	107	130	162	221	326	399
Growth Rate		21%	25%	36%	48%	22%
Share in GDP	3.5%	4.0%	4.6%	5.4%	6.3%	6.2%

Figure 2. Georgian Telecom Industry Incomes

Telecoms, are growing as in other parts of the world. The figure shows the share growing by 25% during the last 6 years and also the share of GDP, which is also increasing. The GDP's portion of the telecom is also getting bigger.

These results come from mobile operators as well as fixed lines operators. Georgia just completed the privatization of the state owned fixed line operator, which owned more that 70% of the fixed lines in the country.

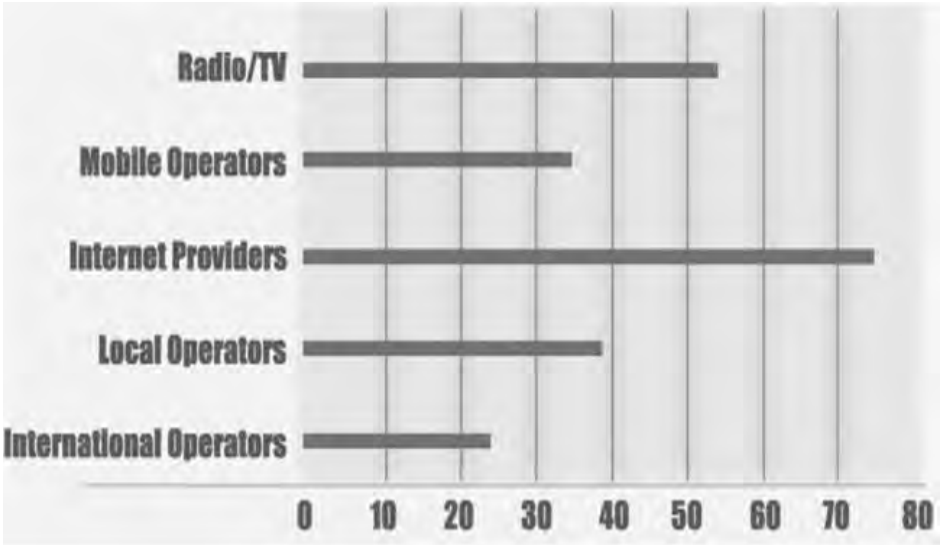


Figure 3. Revenue Growth Rate in Different Market Segments

As can be seen, there is a growing sector of Internet providers' incomes, taking into account that rates and prices for Internet access are decreasing, while the income is growing.

There is still a lot to do, as can be seen from the penetration rate, which is quite low. Georgia is running some projects which have been giving quite good results, mostly in Internet penetration, and of course in telephone and mobile penetration, the government just gave it fully to the private sector to put money and to make business in this field.

		(per 100 inh.)
Telephone penetration :	12.3 %	(544.000 lines in operation)
Mobile penetration:	26.0%	(1174.000 mobile subscribers)
PC's:	4.4 %	(193.300 PCs)
Internet users:	4.0%	(178.000 estimated users)

Figure 4. Basic telecom fact sheet in Georgia

For the Internet, the government is working on a project which should introduce use of the Internet to all Georgians during the next two years together with equipment; personal computers and so on.

The Ministry of Economic Development was formed in 2005 after a decision of the country's top management, based on 8 previously existing agencies, and is now trying to decrease the level of participation of the government in the business field. The ICT Incubator relevant functions are carried out by the following agencies: the

Communication and IT Department, the Centre of Privatized Enterprises (CERMA), which includes the Technology Business Incubator (TBI), the Georgian National Investment Agency, and the Enterprises Management Agency. All together, these agencies can create an attractive environment for any incubator.

The Technology Business Incubator (TBI) of CERMA has a very simple structure. Its mission is to assist groups of Georgian engineers and scientists who form start-up companies to commercialize their applied research results. TBI provides the following services to its clients: Business strategy and planning, marketing assistance, fundraising, technology assistance, accounting services, management and staff training, consulting and mentoring, affordable research, office and production infrastructure. TBI is supported, among others by the World Bank and the EBRD's BAS project.

There are also other business incubators operating in Georgia, working in small business development, service and agribusiness, supported by UNDP, the Canadian fund.

Some challenges, which may be the same for other countries: Poor feasibility, market study and business planning, too high expectations from innovators or stakeholders: they want to see results in the very short term; insufficient resources, because banks prefer to give loans to businesses that are less risky, which are more profitable; and an undeveloped stakeholder network (society, government).

Other challenges for ICT incubators include: Low payment capacity of start ups and small businesses; very low priority for consulting services in SME and an even lower wish to pay for such services; low awareness within Georgian ICT enterprises of international software development standards; non-existent contacts and image in international software, hi-tech development industry; high risks for technology transfer and innovation due to lack of basic technology assessment and transfer mechanisms; and lack of financial resource access, especially for technology start ups.

About new initiatives, as was mentioned the Ministry is working in the field of incubators, supported by institutions like EBRD. By putting this ICT and hi-tech incubator together, in two or three years, the government will have a good base for creating a Techno Park, which will work closely with the Georgian Technical University, the biggest and best technical center not only in the country, but in the area.

The strategic goal is to concentrate efforts in the ICT and Hi-tech fields of Georgia. This should be one of the challenges for the country, but at the same time it could be one of the best decisions for the government as well as the private sector.

Key stakeholders and partners include the European Bank for Reconstruction and Development, infoDev Incubator Initiative, Eurasia Foundation, and GTZ. The next group are key players like the Georgian Technical University, the Ministry of Economic Development of Georgia, the Ministry of Education of Georgia, and Tbilisi City Hall. There is also a very close collaboration with private organizations, especially those working in the telecommunications field, as well as in IT solutions, together with some private funds that require good results.

From a feasibility study, the following are the opportunities identified after the last assessment: Growing and improving IT infrastructure; improving awareness of intellectual property rights and its enforcing mechanisms; easily available and relatively cheap skilled technical human resources; increasing awareness of the importance of information and knowledge for success among entrepreneurs; and a dynamically developing banking sector. All of these factors provide quite a good

environment for ICT incubators, but again, there are some challenges. These include: lack of seed fund formation and management experience, difficulty identifying financial partners for creating the seed fund, creating a good management team for the fund; efficiently combining operations with the business incubator and unavailability of venture capital for startup companies, especially for knowledge-based enterprises.

Broadband for Local and Regional Governments

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This presentation is about a very recent trend, focusing on Europe where some interesting developments can be found. This presentation is about the road to x, municipal based, with municipal participation; public sector participation in Europe and other factors that make a network.

What are people trying to do here? The idea of “true broadband” is that we start to create social and economic infrastructure that would change both the services the people get from the public sector and from the private sector. We try to change the way people communicate with each other, and increasingly will begin to change the shape of the city. The city was built on a model where everybody had to come into a central point to exchange information directly with each other, and to trade. It is based on the model of the marketplace or the coffee house.

What this communications revolution is bringing about is an opportunity, among other things, for a decentralization of the city, and this is becoming critically important, apart from anything else, because many of the most developed cities can no longer manage the transport demands which are placed on a centralized large metropolitan model.

What we are effectively looking for here is a common interest between public and private, where some of the new services are going to be provided by the private sector over this new infrastructure. The private sector will help, if possible, to fund part or the entire infrastructure, so that the government itself can begin to deliver its services over the same infrastructure, and in a different way. The first thing to say is that there should be no hesitation on the part of the public sector, both in understanding the critical importance in making this infrastructure happen, because it does not happen without the participation, in virtually every place we look at. Secondly, there should not be hesitation in the public sector in understanding there are private sector services, coming

into being now, which can fund very large parts, if not all of this infrastructure, if the model is set up in the right way.

What is the current situation with the highest level of broadband? Very rapid growth: 20 to 25 percent, but still quite small penetration. In Europe there are 646,570 subscribers to Fiber To The Home (FTTH), with a strong concentration in four countries: Sweden, Italy, Denmark and the Netherlands.

The process seen in the last three or four years in the most advanced countries, and increasingly more generally, is firstly focusing on getting backbones into place, secondly starting to invest more in access, and then thirdly looking at content and services. To some extent, this is a misguided approach, because to get the business model right for these investments and to get the private sector investment in, you need first to examine what contents and services are going to be available, and what kind of demand there is going to be for them, before starting to make the long term investment which is required, particularly at the backbone level, where we are talking of 20-30 years (large cycles) on passive infrastructure.

We will look at three particular areas that people are using to justify what can be very large investments in these areas. The first is in the area of fairness and reduction of digital divide, reaching at the poverty in a new way, reaching at an increasing number of elders in a new way, and building more closely linked communities.

The case study, which will be particularly focused in this area, is firstly Stockholm which was probably one of the two or three pioneers in the world, in deploying fiber all around the city, amongst many other purposes, to provide 100 Mb access into every classroom in the city, so the teachers would have access to very rich real-time multimedia applications. They also took a large group of community leaders and teachers to build new contents for the schools, much of it based around understanding better for children why the city was making the decisions, making them participate in the community decision making.

The City of Manchester, in particular East Manchester, in the UK is a very poor area. It was in the forefront of the Industrial Revolution but it was somehow left behind by the information revolution. They set up a wireless based city community, under community run going into every single poor house in the east of the city, in order to have the people involved largely in the creation of micro businesses and exchange of ideas about job opportunities.

The second area of rationale is around the area of transformation of the city's delivery of services itself and the efficiency of the delivery of services by the government. The case studies include the Arras Centre Hospitalier in France, a full broadband based community connection of a central hospital to all of the primary health care providers, intended to provide health consultancy and advice right out into the community.

The City of Westminster is a completely different project, based on the monitoring of traffic, noise and parking, using a large number of wirelessly connected cams all around the center of London, in order to manage the public and private assets that made Westminster into a successful tourist destination. The project is specifically targeted at improving a successful economic area.

Provincia di Brescia in Italy, on the other hand, is a project that was focused on making all the workers of the city mobile, so that they could get out of the community and stay connected over wireless broadband, to the regional departments, to get them

back to the community. It has also provided synchronous and asynchronous video access to the deliverance of the city council.

Generalitat de Catalunya is a project that looks into the areas which have already been mentioned, particularly education, but also as a completely integrated citizen portal, at a town, city, region and national level. There was a negotiation with the government of Madrid to integrate the information that was required, particularly in the areas of tax and social security, into a unified package that could be presented at different government levels at Catalunya.

The third area of rationale is to boost the economy. The case study includes the new city of Almere on a green field site to the north of Amsterdam. This city was successful in obtaining investment from small and some large companies, based on pervasive fiber access, synchronous high definition television into every home in the city.

The City of Oulu in Finland was a public-private partnership, to build a complete fiber and wireless city. They successfully host around 150 businesses there, beginning with Nokia and other interesting businesses looking at digital innovation and particularly wireless digital innovation and wireless applications. They created about six thousand new jobs.

About implementation strategies and how to structure the relation between public and private in these areas, the first thing is that there is absolutely no common recipe, which works in each environment. It depends on things like housing density, the state of the present incumbent and challenging service providers, as well as the unique economic prospects open to the government or region. A detailed analysis is required to find out what kind of partnership works in each one of these areas.

The main elements for getting one of these projects right is to address each one of these three areas: the basic infrastructure (dark fiber), the network and access to services and contents. There are basically five models seen to be used globally, and each of them have their strengths and weaknesses.

In the first one, the Equal Access Model, basically, the public sector or municipality takes responsibility for the physical infrastructure. In fact, in all of the models, except for the last one, the public sector takes responsibility for the physical infrastructure, to one degree or the other. There is a good reason for that: 70-80% of the cost of infrastructure is civil works and digging holes in the ground, and the municipality is generally in charge of doing that, so there is an important amount of synergy in being able to do it. This model allows the government to make sure that there is competition at the service and content level.

In the Community Owned Model, the municipality takes responsibility for all three areas (physical infrastructure, network and access, services and content). From the given examples, 3 or 4 cities in Europe have done this. It has the benefit of being able to focus entirely on delivering the services which people need; it has a considerable draw back.

Under the third model, the municipality or region provides both the infrastructure and the network and then allows competition in the provision of services.

In the fourth model, currently disappearing, the government provides the physical infrastructure and then allows one service provider to come and have a monopoly over the provision of services and content, in return for investing in the network.

The last one, which will probably be the shape of the future, is the Public Sector Orchestrated Open Access, where the public sector provides nothing, seeking operators that already has some fiber infrastructure or have an interest in investing in it, and then orchestrates them into one single metropolitan wide fiber backbone, then goes out to look for one single network provider, allowing competition between service and contents providers. This is the model used in Amsterdam. They are doing that for two reasons, one, because it is a very cheap approach, and two, because they plan to create an infrastructure, an economic infrastructure that will encourage the kind of businesses they would like to see settle down around Amsterdam.

Finally, Amsterdam has a major traffic problem. What they have started to look at now is what to do with the transport network and the transport and traffic management integrated systems, together with their information systems. The idea is to use pervasive road charging to disincentivise a certain number of road trips per week, because people will have fiber-based infrastructure. They can do synchronous high-definition video conferencing from their homes.

Chapter 5

The Role of Chief Information Officer (CIO) and Its Relationship with e-Governance

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CIO in Japan

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CIO stands for “Chief Information Officer”. Given the tasks a CIO has to deal with, the letter “I” has three different meanings: interaction, innovation and information, which is the main topic of this presentation.

In the United States, almost 100% of companies have CIO positions but in Japan just 15% of large companies have them, with an average of 6, and only 14% of Japanese companies have a specialized CIO.

The importance of IT will grow moreover and complicate the circumstances of corporate management of IT, especially given the speed of change.. This will also be essential, not only for the improvement of productivity but also in readiness for the Japan’s Act. In Japan, a CIO should be more focused in the company and in the society and there have been discussions about CIO to focus on that matter but it has been decreasing for the last 10 or 15 years because of the so called bubble economy at that time.

Japan’s Society of Chief Information Officers was established in December 2004. The main purpose of the Japanese Society for CIO is the improvement of CIO, mutual brainstorming concerning CIO and proposals for the government and society including development of human resources. There are lots of issues for CIOs such as business environment, security and corporate social responsibility. Japan is trying to make CEO understand the importance of CIO throughout seminars for the purpose of information sharing and mutual brainstorming.

The 5th CIO Salon was held and attended by over 60 companies and the focus is on the positions of CIO, Vice-President of IT, and Director of IT Division for companies such as Cisco and Japan Airlines. The main activities of the CIO Salon include speeches and discussions about current CIO issues. The theme of the 5th CIO salon - “IT Secured Standard” - was very relevant and important worldwide to implementation by companies.

The mission for this year is to foster the CIO and improve the opportunity of participation for small and medium sized companies and development for local society. CIO reports were also published once in two or three salons. The business functions

of CIO in the last years were data protection and privacy, which is a top priority for Japanese companies but only the fifth for global companies. And also, the need to respond rapidly to changes in the market place is Japanese companies' second priority but not even in the top 10 for global companies. The statistics show a big difference, but in terms of the technology, it's not so big between Japanese companies and global companies.

There are four levels in the relationship between the CEO and the CIO. The lowest level is unreliable administrator, then come partner and reliable partner and these are different in Japan and other countries like the US, Europe and ASEAN.

The most important point is to define the expected role of CIO and fix the internal career path looking ahead 5 or 10 years from now. At the same time, it is also important to utilize the external fostering programs such as Thailand and ASEAN. Japan's Society of CIOs is now planning, in conjunction with Waseda University, the role of CIO depending on the mutual maturity of a company. Maturity is reached when the company has become established, also considering the size of its capital, whether it is listed or not, the number of employees, the monthly sales and corporate characters. All of these indicators are analyzed by Japan Society of CIO.

In the future, the Society is going to work on the foreign subjects using trend examples in the United States, the European Union and the ASEAN. The expectations for CIOs in past years have been cost reduction but this is now shifting to a contribution to sales. The circumstance in Japan are far behind, and the society must think about the readiness of Japan, how to rate CIOs, promoting their career path and strengthening the partnership with the universities and laboratories. The Society has expanded their activities and they will start with CIO committee in Sapporo with the support of the local city government.

CIO in Thailand

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This presentation will be about some experiences of GCIO development in Thailand and the joint work in which Thailand has been involved with APEC economy members, and the International Academy of CIO extended not only to APEC member economies but also include other countries outside APEC.

The ICT Policy Framework of Thailand's Ministry of Science and Technology (IT 2010) is spelled out into 5 Es: e-industry and e-commerce for the economy, e-society and e-education for the society and e-government to balance the economy and the society. None of these 5 Es could be accomplished without Science and Technology, R&D, Knowledge. Thailand also needs IT literacy, IT human resource development and good telecom infrastructure.

Now, on the subject of e-government, to implement e-government, Thailand needs government CIO to transform national ICT strategy to ministerial and department of implementation. Also, Thailand needs to establish an ICT committee at the level of ministry and department needs to do some implementation on the back-office software, with common back-office ware in each ministry and department. Most important is the capacity for building on training: Forum and workshops, and the need to establish CIO associations and CIO reunion and annual meetings to exchange views and experiences.

The role of the GCIO for e-government shows that a CIO needs to be the host or owner of the project at department level or ministerial level. CIO has to be accountable to government policy. CIO has to look into the vision and mission of his department or his office in conjunction with government policy. And the CIO does not have to do everything, CIO can outsource and can contract out and very importantly reduce the size of the organization using IT or more or less using IT to increase the productivity of the unit. And also, each agency under the CIO must have the same sense of hosting and ownership,

Thailand also needs to have common back office software to set-up common data exchange. For example, the GDX system as the exchange center is linked to the various departments like the Department of Business Development and Revenue

Development of Bangkok Metropolitan Authority. The Thai government encourages them to use an open standard so that in the long term they will not be hooked up with the binary format. Thailand also set up a committee that will campaign for the open standard starting with the e-government and then later on the private sector.

Thailand's CIO16 consists of CIOs from various important agencies like PTT, the Petroleum Authority of Thailand. This used to be a state enterprise but now is listed in the stock market and All Thailand Post. These agencies are asked to help the Ministry of Science and Technology in setting up what are called the mini-monitoring stations, to detect information about rainfall, wind speed and direction, and humidity and report back to the center in Bangkok to be able to react properly in case of national disasters, just like Japan's policy on Risk Management on National Disaster..

Thailand have organized a special 30-hour compulsory training program for CIO capacity building since 1998 and they have had 18 CIO intensive training courses. More than 600 CIOs have completed the course and 280 CIOs are playing their role right now. CIOs also have hands-on experience of practical IT application. There have also been site visits to various IT organizations including overseas trips to Japan and the UK. Workshops and group discussions on current ICT issues were also encouraged. Aside from training, forum, workshops and short discussions were also done face to face or by video conference.

In 2004, Waseda, NECTEC and the Ministry of Science and Technology organized a CIO Forum. And in the year 2005 and 2006, a CIO workshop was also organized under the theme of APEC e-university program using the JICA Network. CIO newsletters were also produced to let the CIO know what's going on. CIO website was also developed and CIO database was kept to inform CIOs about the training courses, all activities on network security, copyright software and other current issues that they should be interested in.

The e-Government Ranking Survey, conducted by Waseda University includes network preparedness, which requires interface functioning, application management optimization, homepage and CIO among 32 economies. It listed the top ten among the 32 economies and among the top ten e-governments, Thailand is not in this list but is ranked third in CIO Ranking of this 2006 world e-government ranking. Thailand is now extending their work into the corporate sphere, with APEC economy members and APEC GCIO. They have received support from the APEC Telecom Group and they have already done the Government CIO training model.

Thailand coordinated with various sectors to come up with GCIO training model which can be used by every APEC economy member. At present, Thailand is working together with APEC economy members to develop the APEC GCIO Council Model and expects to finish it by the end of 2006.

The IT 2010 Policy Framework and National ICT Master Plan are the basis of Thailand's e-government development and to make e-government effective, they have to develop government CIO. Work is now going on to cover an APEC Training Model and an APEC GCIO Council Model which are extended to the International Academy of CIO.

CIO in the United States

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United States

The United States have been building up CIOs through the means of developing composites of what leading CIOs might be today in municipal government, state government, in all government, as well as the private sector. At the high level, all the challenges of CIOs today have to do with vision and communicating how IT contributes to strategy. Ultimately, there are CIOs who are about leadership and managing people and as an example of some of the challenges the CIO might face here is a short story of a CIO out west in the United States.

An example of the challenges CIOs had in managing their groups can be illustrated in the following story. Three of the members of their group were on a trip through the Rocky Mountains. They were going downhill in a car, and the car's brakes fail. Luckily the one who was driving, who was a software engineer, was able to get the car to the side of the road. The team members in the car were a software engineer, a hardware engineer and a project manager. They got out of the car, and the hardware engineer got down to look at the car and he said "What we can do is take a piece of duct tape, tape up the brakes and drive to the next town." This seemed a really good solution to him. The project manager said, "Oh no. We can't do that. We have to develop a vision and try to do a re-cost analysis of what went wrong, then decide personal assignments, and then we can proceed from there." And then the software engineer said, "No, no. That's not the path either. Why don't we just push the car back up to the top of the hill and let it roll down and see if it happens again."

So one of the challenges of CIOs is managing people, both within their group and managing other teams. In the United States, there are three main drivers that have really affected the role of CIO and how they go about managing IT over the last five years. The first one was September 11, which is an event which has highlighted security throughout the country, especially ICT security, much greater focus on that. The second is the Internet downturn, which followed closely on the Y2K. Prior to Y2K, there was extensive investment in ICT in many companies and government organizations. With the downturn, at the same time, right after the great investment, comes a much greater cost consciousness on the part of many companies and

organizations, and most IT budgets have been relatively flat both in the government and private sector. So this challenge will be more demanding than the last. The last one is the Sarbane-Oxley Act or SOX. All United States companies have to certify the processes through which they develop financial information. This puts a great burden upon the CIOs and right after the SOX was passed there were a number of cases where the CIOs' reporting responsibility was shifted to the CFO who ultimately has the financial responsibility. That trend is now reversed but what it's like is the great emphasis on process management on the part of CIOs and responsibility for process management across the floor of organizations.

Those three have really changed the role of CIO in the United States. Some of the major challenges are the ability to communicate the value of IT across the organization and also to the customers and shareholders. Having IT governance on the board of directors and also on the advisory council responsible for cost control, security and data integrity, how organizations or companies move into e-commerce or in e-government. Also, the enterprise architecture, building an IT workforce to face the challenge worldwide. And lastly, how and when to implement new technologies and what new technologies to implement. These challenges actually lead to the characteristics and qualifications demanded of CIOs today, the leadership which is taught in many programs, the ability to communicate value, program and project management and ultimately, building teams.

The four composites for CIOs are what a leading CIO would look like in a municipal government, one in the state government, one in a federal government and then one in private sector. Municipal governments have the greatest contact with the citizens as well as many of the transactions. The leading CIOs though, in municipal government, are responsible for those things and many of them are taking on greater responsibilities and are now responsible for all information within municipal government. Municipal information and its communication to the citizens. The citizenry is the responsibility of the CIO. Responsibility for cable television which is a local responsibility in the United States. All the licensing of local television and public access for public television. Local public health and local public health records that are provided through the municipal government. Local inoculations for public health officer, which are really expensive, is also the role of the local CIO. And it is also quite transaction oriented, transaction oriented for local licenses, transaction oriented for questions, whether it be to a website or an automatic call attendant, municipal governments have good financial resources but not great. They don't have infinite resources as regards personnel or to the degree that they can totally automate questions and answers that are successful.

The state government is a little bit different. The state government has a lot of transactions and information but the state government also has a lot of responsibility for healthcare throughout the state. They also, for the most part, have the responsibility for transportation throughout the state. They have to be able to provide a different set of services than municipal governments. For example, state governments license physicians and healthcare providers and one of their really neat set of efforts throughout the country are electronic comparisons of healthcare providers as far as standard healthcare that anybody might get from a physician or from a hospital where different types of information can be found. In the United States there are daycare providers for children when both parents work, and the states will find that sort

of information informational and of great benefit. The better CIOs in the states are also leading transformational efforts to connect and transform state IT government and connect it better to local governments.

The US federal government is much less transaction-based as far as e-government is concerned and better than municipal government or state governments. The better CIOs in federal government are greatly focused on transforming federal government to provide government services through enterprise architecture and better security. Secondly, they will provide information quickly and accurately through portals. This is the result of different efforts, very leadership-based, managing very broad industry and organizations and a great, great focus on building and communicating effectively the value of IT to the citizens and to the government organizations including the executive branch.

Lastly, the private sector and the challenge of communicating effectively what IT would be able to provide. An example of a real leading CIO in the United States is Karol Wilson of Marriott, his successes and Marriott's successes is making Marriott an environment which is a great place for IT workers to work. This helps them attract staff, really fostering growth in IT workers, and the education of IT workers. At the same time using IT provides brighter experience across the Marriott properties of which there are about two thousand in the United States. Marriott's have many property managers to provide services for the property owners. It's really good, better returns and better profits on the properties. And last, they're providing tools, so that the employees at the different Marriott locations can help the customers or provide better customer service. This is really a big responsibility involving leadership in the workforce.

Last point, one of the great challenges in the United States like many other countries, is being able to provide better, more cost effective healthcare,. Healthcare costs are rising quite rapidly in the United States. Also the medical standards are quite high, and could be higher, great effort is being provided. Electronic medical records, also for the emergency rooms. When a patient comes into the emergency room, the emergency room physician can pull out their inoculation records, their discharge records as well as patient's history. There are a lot of challenges in the role of CIO in the hospitals and these are all important to the evolution of healthcare in the United States. One of the examples last year in the United States where CIOs played a great role was after hurricane Katrina; there were losses of electronic medical records and inoculation and pharmacy records for many, many patients. They weren't able to replicate the records immediately in many cases down in Mississippi and New Orleans,. But the CIO from the Veteran's Administration has great electronic medical records and was able to come down and able to help the local and state governments recreate records for patient care where many of the citizens were homeless. All these efforts are good benchmarks for CIOs in the United States. They are showing the way in which CIOs could really be the leaders and the effective use of ICT throughout the government and economies.

CIO in Europe

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What does a Chief Information Officer need to know today, starting with the assumption that a CIO is a person who probably has some engineering background or technology background; has probably done something else in terms of education – maybe some MBA or some more general education; has a certain amount of years of professional experience in an organization so over time has become a generalist; an inter-disciplinary person and a practitioner who does concrete things but nevertheless needs to think about what he or she does. This is an assumption on developing a Masters in Electronic Governance. CIOs are the high level key people who want to come back and at some point want to think about e-governance. What those people need to know can be enumerated in four points.

They need to know how the state, how the government is transforming. It is general knowledge that everyone is increasingly aware that the state is not the only unit where decisions are taken. There are multi-level governments - local government, regional, super national government. This is a phenomenon that has been well described.

A CIO needs to know that there is now this multi-actor system. There is no longer just the government; there is the private sector, the third sector. There is a need to collaborate with all kinds of sectors. This is called the evolution from government to governance. Increasingly, governments have to arrange to work with other actors to get things done. Not only CIOs in the public sector but even in the private sector need to know about this evolution because they will increasingly work with government. One has to ask how the future of government will be and the general agreement as of this day is that governments will evolve into a regulatory function whereby the service delivery function will be taken on by other kind of actors – the private sector, the third sector. The CIO needs to know how industry is transforming. In parallel to government, industry is transforming substantially.

The focus will just be on the industries that are particularly relevant in the sector, the infrastructures – post, telecom, energy, transport, health, and education – the society's infrastructure. It can be extended but these are the ones directly involved

and affected. The phenomenon here is the fragmentation of these industries, of unbundling of competition in industries which were previously not competitive. There is also the phenomenon of public-private partnerships. These industries draw on private expertise, draw on private financing, collaboration with the government. There is also a phenomenon within these industries of restructuring. There have been a lot of international mergers happening recently. There are huge concentration processes going on globally in each of these industries. The challenge then is a challenge of governance of these infrastructures. There is a need to make these infrastructures work but the infrastructures now are competitive and fragmented and this is another governance challenge.

The third area that a CIO needs to be particularly knowledgeable about is the area of organizational change, organizational development. All CIOs will work in organizations – private organizations, public or third sector organizations. The phenomenon that has been observed in the last 23 years is the phenomenon of boundary blurring. People do not know where the organization stops anymore and where the environment starts. There is the phenomenon of movement from shareholder to stakeholder. There is an increasing stakeholder approach in all kinds of organizations.

And the big phenomenon is the change, learning, adaptation and creativity of the organization – as everyone knows, it is corporate governance. But increasingly, corporate governance is a much broader concept and a CIO needs to know how such governance evolves and works. And probably what the CIO knows is about the changing ICTs. There are substantial transformations over time. Information technology has become increasingly interactive, reciprocal. They become increasingly creative and the ubiquitousness of the whole phenomenon has substantial consequences. And as the Secretary General of ITU has reminded us that there is a problem of governance, the governance of the Internet, the governance of the ICTs, of these kinds of evolution.

These are four areas that a CIO, in his or her evolving role, needs to be knowledgeable about. All these things are dynamic and not a static picture. The dynamism is in part driven by the ICTs. The ICTs are particularly pervasive drivers of changes at every level of society and every level of organization. The fundamental transformations described before, the underlying transformations are there but the ICTs generally exacerbate or exhilarate this transformation, creating additional problems, but are also the tools for solving these problems. The ICTs are instruments for governance. The transformation raises challenges for governance but the ICTs can be instruments for governing these challenges. A CIO today needs to understand the picture of which he or she is part. They do not have to do everything alone but need to understand the complexity of the situation and make active use of the ICTs for these governance purposes including for the governance of the ICTs.

In connection with the Masters in Electronic Governance which is being offered at the Swiss Federal Institute of Technology; it is a joint venture with other universities. Among the other universities is Waseda and it is a global thing and an elite one too. The kind of knowledge being described here should be distilled and adapted to the different levels and to the different people working in this area. As for being the representative for a European chapter for the International Academy of CIO, while these things apply everywhere, one particular thing that made it different from the rest

of the world is that there is the European Commission. The European Commission is an active player in the role of the ICTs – like the Lisbon Summit, the Strategies of e-Europe, the billions of Euros that are spent in research money in the 5th, 6th and 7th Framework Programme.

On top of the role to foster chapters in the different European countries, the European Chapter has the particular role to link up to the European Commission and sensitize the commission to the education for this kind of function which is currently totally lacking in their program. Their program is still very much of a hardware program, connection program, basic infrastructure program and not very much oriented towards education on what one can actually do and what one should responsibly do with the ICTs. As Switzerland is in proximity with the ITU and other international organizations who deal with ICT, it may be a good opportunity to use the European Chapter to link up with these organizations.

Education for ICT Manpower

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Japan is trying to become an advanced IT nation deploying infrastructure and focusing on how to utilize IT to strengthen industry competition and improve the quality of life. In order to do that, infrastructure must be improved for the utilization of IT: although this is important, the main point is how to utilize IT in order to foster competent people, who can actually create additional value.

IT infrastructure is actually the core of the industry and is supporting national competition. First of all; the software system as a whole, financing, manufacturing, distribution, medical care, education and administration as well as security were all playing roles in business activities and social activities. IT is now serving as the nerve system for the whole of society and the software industry has grown to the tens of trillions and the size of the market has increased to 300,000 employees and made great contributions to our economy.

Automobiles, computers, mobile phones and whole appliances and machineries require software systems to become competent products. Fast appliance functions actually depended on hardware in the past. Now it is software which serves to realize efficiency, and the saving of energy to contribute added value to activity, and the system, including cooperating, actually accounts for 50 trillion yens of market value and for 10% of GDP.

Business activities and administrative activities have also improved the innovation of economy: improved productivity to create a new added value. IT has been very widely used, how IT should be the core for the management strategy and probably introducing the system is a very important key for administration and business.

There is also the impact created by the problem of software systems, for example in the Tokyo Stock Exchange there are problems due to the systems, there might be a reason for the financial markets to go down, paralyzing economic activities. This biased influence of impact has actually produced cases several times. Some of the software problems and bugs are in automobiles. This will eventually lead to a big recall of the automobiles built.

And in this field, there is a need to really strengthen this area in international market competition so that it will not lessen the competing power of the nation and industry. However, the competitors, those who have capable people, the ones developing software systems, and also lead the evolution of industry and business and such advanced quality people are lacking in quantity and in quality.

At the moment, in software development, the quality of competency of people is declining and has become a very critical issue. And lacking such people is also a very difficult issue. University graduate schools and corporations who are supposed to foster and train those people are lagging behind in comparison to Asian nations and other industrial nations. The universities' education is focused around academic research and education systems, even the engineering department who are supposed to foster the engineers are not giving the lead to stepping up engineering education that is actually needed in real society. And also the popularity among students of the IT department is declining, and some departments have a shortage of newcomers to the department.

In industrial corporations, On-the-Job-Training (OJT) concerning IT technology are outside and inside, they try to train the engineers and also to employ non-Japanese and also to send some engineers outside of Japan because of the expectation of cost reduction and the know-how. China, India and the other Asian nations have also tried to attract foreign engineers from abroad. It is certainly very effective in the short term without spending much on education. However, if there is dependence on such short term solutions then that will not give the incremental number of competent people who are prepared to compete and be powerful in the future.

Looking at universities in countries like America, they are trying to train competent students from educational and research point of views, too. And in IT technology education, they have academic and industry collaboration, and the government is also supporting actual projects to give practical training, including internship training.

In China, India and Korea and other Asian countries, the governments actually have a very clear vision for fostering advanced competent engineers and people to bolster the national strength, and also expand the market and supply competent engineers abroad.

The Nippon Keidanren Survey, in order to try to grasp the status of the Korean method for training capable people - human resources dispatched a delegation of observers last October to see ICUs, for example in Korea. The ICU in Korea is trying to become the top 5, world globally top 5 IT universities, that was established in 1997 with the cooperation of the government, IT industry and public research institutions. So this collaboration of academia and industry, academia and government were actually investigated, including budget, infrastructure and human resources. They have a very high standard of education program and many of the participants in the delegation were amazed and shocked at the high level of ICU education. Also China and India are actually producing a very high level of human resource in the tens of thousands. They have a very competitive model for competent people. Korea is involved in quality expansion, which actually gives us a very informative model which includes ICU.

Such international competition for fostering competent people has now been taken up by Asian, European and western countries, and Japan is now lagging behind where there should have been a sense of urgency for Japan.

Responsibilities do not only belong to one agency, but to industry, academia and government. Because in government, there is no clear vision of the national strategy and it does not have the policies to strongly lead as a nation in this area.

In industry, software industries were considered very difficult as a working environment. There was also no improvement in the labor industry and industry agreement and reform has not advanced. And in industry, the hardware Japan had been providing in the past was very competitive. However on the software side Japan is lagging behind western countries and still has the shortage of competent people it has had for a long time. As for IT user companies, they order systems. They look to their customers and procedures. And there are people who cannot grasp the requirements of their own companies to dispatch the requirement to developing companies. Therefore the IT utilization is not visibly realized to innovate the management and business itself.

In universities, there is a lack of understanding of the necessity of fostering competent students who can really meet the needs of society. In the information technology area there is university education on the one side and needs on the other side. There is a huge gap in universities of advanced technology. On the company side, they have to start educating even the graduate employees. Skills have to be taught to the graduates if they want to employ such newcomers from the universities.

The survey conducted by Nippon Keidanren found that of those new graduates in the field of software development and utilization, only 10% were able to act as an immediate force after joining the company.

And another area of concern is that the level of students who graduated from information engineering departments who should have ample software knowledge and skills did not show much difference from the graduates of other departments. Even when comparing which graduate schools they come from does not make any difference. And recently, in an IT training conducted for new graduates, it was found that close to 20 percent of new graduates were so-called dropouts who are not accommodated to the type of work required by the company. A lot of international competitiveness with regard to IT to strengthen advanced information and communication resources at the graduate and postgraduate level should be improved.

So competition with the world will not be possible without having a higher standard of resources.

It was in June last year that Nippon Keidanren put together a proposal on the strengthening of the development of information and communication resources between public and private academy. We will need to do something about the problems that are prevalent in the world of ICT in resources. Development of resources is needed and the enhancement of practical IT education at universities and graduate schools. Also there is a need to have a thorough reform of education system and a restructuring at the university as well. It may be that there is no collaboration and cooperation between the universities and the industries, as well. So industry will need to be concrete in the type of resources that they need and show the type of knowledge and skills necessary.

So Keidanren continued to study the situation after they presented their proposal last June and held conferences between the private sectors and academia in December last year together with the Information Secretariat and Information Processing Society. Ideas have been proposed to the universities as well as to the government regarding the type of people that the industry needs, people who have basic applied education and

who are capable of becoming leaders in the future, who also have human skills and good communication skills.

In the future, the government expects them to be an equal player in the industry and that they will be able to lead in the industry and the IT field as well. The government of Japan will be looking for people who can be in the enterprise; who can become project managers; can be expert in information security and software, CIO and also people who can work on Business Process Engineering as well as development requirements from user companies.

So in order to realize these, a university and graduate school level of practical education, together with high level of expertise and skills in IT related fields would be necessary. And it is expected to go further to become the type of resources needed. The company will provide in-house education and practical experience. The industry, requires around 1,500 graduates or so at the top level but unfortunately people of such caliber are seldom seen.

So to develop those people, it is necessary to have a proper system for universities and graduate schools and in order to do that it is necessary to have good collaboration between different institutions so that there can be a practical education in line with the needs of enterprise producing high caliber human resources from academic education. It is necessary to set a model such as seen in China and Korea as a national strategy positioning the development of resources to advance ICT.

So in this regard the Japanese Keidanren proposal headlines with other efforts, i.e. the "Government New IT Reform Strategy", including the development of advanced ICT personnel. The objective will be to develop an advanced IT resource, and to realize this, a collaboration involving public and private sector and academia, to be able to develop advanced IT personnel. And up to 2007 there will be a human development program development and so will be the establishment of institutions using such plans of IT resources.

So in the future, we need to have processes to implement the strategy, through national lectures trying to promote collaboration but it was not at the fulfilled level. There is a need to have bold reform, which we have not had in the past.

Keidanren, in their proposal of June last year, have talked about this establishment of graduate schools which will be looked on as advanced practical IT education.

The three parties will need to provide funds, infrastructure, resources and know-how to have this top resource developed. The universities will be providing faculties and facilities and a practical curriculum in cooperation with the world level practical education. These will be provided to start the organic decision-making process to be opened. And companies will also will provide internship and materials and will be respecting people and hiring good students to be active in cooperating with these efforts. And the government will not be just looking at this horizontal perspective, but the necessary e-budget preparation will be required. And a strict third party evaluation will be made of the results of this education. The university will teach the curriculum the organizations require.

To make this concept a reality, Keidanren has looked for and recruited universities who planned to have such institutions and has received applications from ten universities. Interviews were conducted to discover the type of resources needed to be developed together with the curriculum of education, and a rigorous assessment has been made.

And this April, the industry has decided on candidates like Tsukuba University and Kyushu University, two schools which will be the candidates for priority effort. Ritsumeikan University and Tokai University, totaling 7 schools will be partially assisting in this effort.

At the core, Tsukuba University and Kyushu University will be looking at the curriculum, education methods and organization. The organization needs to be set by industry and it will be determined as to how to provide cooperation in terms of provision of scholarship, material and dispatch of people and acceptance of internship as well.

Before the necessity of advanced IT resources and development was recognized very widely but unfortunately there has been no full cooperation, so there is not much advancement. The efforts of Nippon Keidanren have plunged a scalpel into an existing university education to try to seek a bold reform. And it will be a great burden to companies as well. It was true that there are some negative comments about the proposal but wide support has also been received from universities, administration, politics and enterprises, because it is recognized that there is a danger of losing competitiveness and something has to be done. So several universities are selected and they have proposals. They will be reviewing the education in the past so they can come up with the new type of education necessary. The industry will work together with these entities to provide the necessary back up.

The development of advanced ICT resources will be crucial in supporting the infrastructure, and thinking of strengthened national competitiveness there is a need to really understand that this is really the last chance we have to alter this situation. This may be the best practice yet that we can enjoy as cooperation among different entities. Understanding this kind of effort and cooperation from the different entities is needed to make this a success.

Japanese e-Government Toward Ubiquitous Society in Japan

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Introduction

The status of e-government engaged by countries around the world does not go unnoticed. Almost yearly, governments are monitored and ranked on how far they have taken up the challenge of e-government: from diffusing the number of PCs, launching of one-stop-shop portals, to changing the management and structure of government such as the designation of CIOs.

1. New IT Reform Strategy

Japan has been consistent in formulating national ICT plans that allow the realization of e-Government. These included the [Basic ICT Strategy] in 2000, [e-Japan Strategy] and [e-Japan Priority Policy Program] in 2001, and [e-Japan Program] in 2002, which all addressed top priority issues, such as:

- Ensuring security and reliability of advanced information & telecom networks
- Digitalization of administration and application of IT in public sector areas
- Facilitation of e-commerce
- Promotion of education and development of human resources
- Formation of the world's most advanced information & telecom networks.

The second stage, [e-Japan Strategy II] which took off in 2003, addressed another challenge for e-Government. That is, to usher Japan into the era of a ubiquitous society by facilitating the deployment of a broadband network nationwide as a backbone network of fiber optics. Core technologies that support a ubiquitous society will be

developed for different layers such as applications, networks, platforms & devices and will expand promising industries.

The greatest challenge for e-Government in Japan has been the response of the end-users. The Government is committed to enabling every Japanese citizen to take advantage of services online. Thus, the second strategy focused on addressing this problem by reviewing the content and application design of many government portals, especially various online services, to both business and citizens, and to intensively promote the e-Government scheme. In conclusion, Japan has already taken up the challenge of creating a ubiquitous network society by launching the U-Japan strategy, and is prepared to overcome various issues including technological innovation, applications and security.

The E-Japan Strategy proposes that Japan takes revolutionary yet realistic actions to create a "knowledge-based society" in which all citizens can actively tap information technology and fully enjoy its benefits. Ubiquitous Society stands for an ideal society where connection and communication is possible at anytime and anywhere (regardless of geographic situation), by anyone (including the very young and old, disabled, illiterate) and anything (machine to people, and machine to machine).

A number of experts have pointed out the difficulty of accomplishing the indicators within 5 years. These are:

- 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 FY2010.
- To have government ministries procure information systems and develop evaluation structures, have their IT Strategic Headquarters create systems for evaluating information systems throughout government, and optimize operations and information systems throughout government to achieve efficient e-Government. Also, the development of similar systems at the local government level will also be promoted.
- To ensure the reliability and security of national and local government information systems and raise security levels while keeping in mind the enhancement of convenience to users, thereby nurturing and promoting the widespread adoption of cutting-edge technologies through the expansion of e-Government.

The main framework of the new Strategy includes measures using IT that are intended to resolve issues confronting Japan in the twenty-first century in advance of other countries and the Strategy contains the following agendas:

- Structural reform of healthcare through IT
- An environmentally-friendly society that utilizes IT
- 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
- Measures to promote effective and meaningful activities by government, business, and individuals.
- The world's most convenient and efficient e-Government
- Business competitiveness enhanced through the use of IT in management

- Prosperous lifestyles throughout people's lifetimes

In early FY 2006, an e-Government Evaluation Committee was established under the IT Strategic Headquarters. The Committee was made up of external experts who are well acquainted with the use of IT for operational reform and the Committee's objective is 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. The necessary support and recommendations concerning information system planning, development, operation, and evaluation are provided. Comprehensive reviews of operations and systems are promoted including internal management procedures by adopting optimization plans by FY 2007 for independent administrative agencies in accordance with government arrangements in order to increase the efficiency and streamline the operations and information systems of such agencies.

2. Human Resource Development for CIO

Waseda University in Japan offered the first master degree for CIO in 2004. This was in response to a clamor from CIOs both from the private and public sector for a formal education for CIO. This move by Waseda University was largely supported and endorsed by the government, as expressed by the Ministry of Internal Affairs and Communications.

Waseda University, under Global Information and Telecommunication Studies, has been working to finalize the core competencies for CIOs both for the public and private sectors. 70 core competencies have been identified, which also include the skills identified by US, and the following areas:

- Role and responsibilities of CIO
- Knowledge management principles and practices
- Laws and regulations
- Strategic business issues and changes in e-Government, e-Business, e-Commerce
- Information delivery technology (Internet, intranet, kiosks, etc)
- Enterprise architecture functions and governance
- Fundamental principles and best practices in information assurance
- System life cycle management
- Risk management models and methods
- Techniques and models of process management and control

3. Rationale for the creation of CIO

The function of CIO developed at different times in the US and Japan, and under varied circumstances. The rationale for the creation of CIO in these countries was characterized by the scenarios prior to its creation or introduction.

Japan, like the US, had been witnessing the emerging roles of CIO in both the private and public sectors. It first became popular in the private sector at the beginning of the 1990s. Since then, it has been essential for companies to create ICT strategy on cost, security and management system. However, there is a general lack of understanding of the role and responsibilities of the CIO.

4. Policy Mechanism for e-government

Japan set up GCIO within the government architecture, by creating policies addressing the need for such a position. These policies were implemented by legal mandate that assigned GCIO in the entire bureaucracies of these three countries. The

legal mandate that set up GCIO were of different nature and form, and went through a different process.

The leadership of CIO is underscored, not only in the technology aspect, but in the creation of policies, management of people, IT budget and planning and the promotion of business process reengineering (BPR). The role of CIO as a chief officer is solidified by the position or authority it assumes, as the second or third highest official in the agency in all three countries.

As a leader, the CIO assumes the responsibilities in the organization to chair the ICT committee; define organizational vision, mission, policy and ICT standards; formulate the organizational ICT master plan; approve and allocate the budget for ICT projects; serves as chief officer of e-government and enterprise architecture(EA), among other areas that require final and executive decisions.

As a member of the management team, the CIO is involved in the implementation, monitoring and tracking of a sound and integrated IT architecture; evaluation of the organization's information system; promotion of effective and efficient design and operation of all major information resources management processes, including improvements to work processes; and serves as the agency's expert in IT – systems applications, EA, and security.

Between these two responsibilities, as a chief officer (leader), and member of the top level management (management), the CIO is expected to serve as the chief communicator and advocate of ICT in the organization. CIOs provide advice and other assistance to the head of the agency and other senior management personnel to ensure that IT is acquired and information resources are managed in a manner that implements the overarching vision and goal of the organization; promote business process reengineering and other IT solution management; and is in charge of ensuring that the public is informed of the changes in the government brought about by IT application in the services.

5. Institutionalization of CIO

Japan institutionalized CIOs by creating councils aimed at supporting the CIOs in all agencies of respective governments. The US CIO Council was established to serve as the principal interagency forum for improving practices in the design, modernization, use, sharing, and performance of Federal Government agency information resources. The Council was codified in the e-Government Act of 2002. In the same year, The Japan CIO Council was set up under the ICT Strategy Headquarters, to serve as one of the enabling apparatus of the e-government program to push forward various measures in an integrated manner among ministries and agencies.

Different offices have created their own legacy systems and projects, and the problem has arisen of how to make them “communicate”, for the benefit of the entire national government. In common with the US, Japan is in a dire state as regards the necessity to train and provide the necessary skills and competencies to all the designated CIOs. The issue is complicated by the present set up, in which the officials tasked as CIO, who are usually the Director-General of Secretariat of respective Ministries or its equivalent, in charge of budgeting, staffing, organization, and policy coordination of the Ministry, stay in office for only two years (Obi, 2006).

Currently, the technical advisers who are hired from the private sector (and who are called assistant CIOs), are the ones who practically assume the roles and responsibilities of the designated GCIOs. Likewise, CIOs are faced with the

challenge of promoting e-government to the public, with the hope of improving the public's utilization of government online services.

The development of CIO in the USA and Japan have followed a similar path, from the creation of policies to implementing mechanisms and institutionalization of CIO communities. However, the existing challenges faced by CIOs in the two countries, provide enough reasons to keep them looking back and assessing the policies that initiated the position in the first place.

Conclusion

In Japan it is rare to find a revolving door activity between the two sectors. Based on our research, 10 critical factors to upgrade e-government have been identified and explained. These factors are :[leadership] [e-Governance / regulation] [contents / applications],[solution / system] [national / global network] [technology] [security / privacy] [core competence] [human resource development] [e-democracy].Also there are new functions and responsibilities of CIO in innovative fields .Without a balanced approach to the above issues, it is concluded that the goal of sustainable development of e-government cannot be easily achieved. In our opinion, early deployment and expansion of online services such as GtoB and GtoC on e-tax and other applications depend on user friendly and demand pull-oriented capabilities under the condition of reducing the digital divide among citizens by improvement of IT literacy.

Finally, this study shows that there has been an influence and impact to some degree by the US CIO model on Japanese CIO activity, introducing the case of new business models such as EA, SCM, and SC. But, it should be noted that in evaluating the differences in both government and corporate cultures between Japan and the USA, it is too early to say that the current framework will be the key for the possibility of transferring the concept of the American type CIO model to Japan and other Asian countries as a new global standard.

Appendix

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ANNOUNCEMENT

The 2007 Waseda University e-Government Ranking Released

The Waseda University Institute of e-Government has released the results of its recently concluded *2007 Waseda University e-Government Ranking*. In order to distinguish it from previous rankings, the keyword for this year is “New Role of CIO and Online Services Applications”.

Director of the Institute, Professor Obi, noted that even though the digital divide in the world still remains, the gap between developed countries and some developing countries is closing. More and more developing countries are able to apply ICT in terms of e-government initiatives based upon the best practice and lessons learned from the developed countries.

A total of 32 countries were surveyed for this project. The top ten in the ranking are: (1) U.S.A., (2) Singapore, (3) Canada, (4) Japan and Korea, (6) Australia, (7) Finland, (8) Taiwan, (9) U.K., and (10) Sweden. Sectors taken in e-government included *network preparedness, required interface-functioning applications, management optimization, homepage situation, introduction of CIO, and the promotion of e-government*.

Compared with other similar researches and rankings, the Waseda University e-Government Ranking contains more relatively comprehensive indicators for benchmarking in order to obtain a more accurate and precise outcome for the latest development of E-Government in the world. Meanwhile, not only did it check websites and ICT deployment in governments, but also the relationship between governments and their stakeholders. From the Asian point of view, the Waseda University E-Government Ranking attempts to provide a different perspective from the studies of other organizations in the world. This contribution will definitely be beneficial for governments, international organizations, business groups, and academic professional institutions around the world.

The Waseda University Institute of e-Government is also in charge of the Asia Pacific Economic Cooperation (APEC) E-Government Research Center. In coordination with APEC, the Institute has been researching the e-governments of the member economies since 2004 as one of the strategic evaluations on “e-APEC”.

As a related activity, Waseda University organized the International Conference on Global E-Governance last June in Tokyo with about 300 experts from many countries

and international organizations such as ITU, UNESCO and APEC, to evaluate E-Government activities.

In addition, researchers have visited 25 countries to evaluate the targeted activities.

In the future, the Institute will be continuously dedicated to observing and evaluating the development of e-government in the world. By releasing the index annually, the Waseda e-Government Ranking expects to serve as a tool for promoting the development of the information society, decreasing the digital divide as well as achieving the ultimate goal of e-Democracy.

Main Trends of e-Governments in the World

Network Preparedness

As the foundations to support the implementation of e-government, some of the statistical data shown such as internet users, broadband users, cellular phone users, pc users and security system factors were used to show that the gap between the developed countries and developing countries have decreased. Concerning the infrastructure of information technology, developed countries such as the United States, Canada, Finland, Korea, Singapore, Japan and Taiwan are at an advanced level with their network infrastructure. The newest technology and the statistics of users in terms of preparedness are spread across the whole of each of the countries mentioned above with an almost similar percentage in all items used in the evaluation, while developing countries have increased the number of cell phone users. As for security systems, it is regarded as one of the top priority issues to implement E-Government in developed countries/economies.

Required Interface-Functioning Applications

For the required Interface functioning applications - online applications, e-tender system, e-tax system, e-voting system, and e-payment system were examined. As a result, each country introduces a variety of online applications with an aggressive approach as interactively as they can, while other countries that do not have such systems yet will introduce it in the near future as described in their e-government plans. In terms of e-voting, most countries have not shown any application, possibly because elections occur only once every 4–5 years. As for e-procurement (tender), most of the governments have much improved the systems' effectiveness.

Management Optimization

Many government organizations make a great effort with their e-government implementations getting caught up with how to manage their day by day operation and at the same time improve their internal processes. To systematically and effectively implement the practical purposes of e-government to the whole bureaucracy, it is necessary for government services to be available for all stakeholders and to deliver immediate and continuous gains. For the past few years, evidence of optimized management and implementation of E-Government initiatives has been observed mostly from countries like Singapore, the United States, France, Japan and Korea as they

continue to climb up the rankings with more electronic transactions and processes now made available for the citizens.

Homepage

This year homepages were again analyzed as one of the indicators in this ranking. This indicator enables not only for dissemination of information about the government's policies but also as a tool for online-based applications, while encouraging public participation. Government portals should act as catalysts to create demand for e-government applications. A sharp trend for every government is the growing popularity and sophistication of their homepages and websites.

In order to promote e-services to the people, quality and appropriateness of the website features are crucial. This includes reliability of systems, availability of e-services, updated information, cross functional inter-agencies and interactiveness. We used five sub-indicators in assessing the homepage situations. These are updating frequency, public disclosure, link navigation system and multi-language correspondence. On the multi-language correspondence, not all countries translate their homepage from their national language to other main languages as identified by United Nations such as Spanish, Chinese, Arabic, Russian, and French. In certain countries where the native language is English such as the United Kingdom and United States or where English has been spoken widely such as Singapore and the Philippines tend to apply only this language in their government's websites. It is necessary to have at least two languages available on the websites.

Introduction of CIO

Chief information officers (CIOs) play an important role in the success of e-government since the designation of CIOs in the government is seen as a very vital strategy to bridge the gap between management and technology. The same position with the same capacity can be named differently. However, the title CIO is becoming very important since there is growing international collaboration to support CIO human resource development. In this area, the evaluated indicators were: the introduction of CIOs, Human Resource Development for CIOs, Supporting Body for CIO and Role and Function of CIOs.

Promotion of e-Government

For the measurement of the Promotion of E-Government the following indicators were used: a) Prioritization of e-Government Planning and Strategies; b) Promotional Activities on e-Government; c) Legal Framework and; d) the Evaluation System. Promotion of e-Government is one area that is useful in measuring e-government presence in a country or state. It looked into strategies involved in prioritizing e-government as part of a country's national strategy; activities pertaining to the promotion of E-Government; passage of bills or amendments of laws providing legal mandates and, the country's assessment efforts. Results of this research showed that the majority of the countries include E-Government at the core of their national strategy. However, some have yet to create a legal framework for E-Government.

Table 1. 3rd Waseda University World ranking on E-Government 2007

Rank	Country	Deviated Score
1	U.S.A.	67.18
2	Singapore	66.60
3	Canada	62.59
4	Japan	61.44
4	Korea	61.44
6	Australia	60.86
7	Finland	59.72
8	Taiwan	58.00
9	U.K.	56.85
10	Sweden	55.70
11	Germany	55.13
12	France	54.55
12	Hong Kong	54.55
14	Italy	53.98
15	Malaysia	53.41
15	New Zealand	53.41
17	Thailand	49.96

18	Netherlands	49.39
18	Norway	49.39
20	Belgium	45.95
21	Spain	45.37
22	Chile	43.65
23	Philippines	43.08
24	Mexico	42.51
25	Brazil	41.93
26	China	40.78
27	Brunei	40.21
28	South Africa	37.84
29	Peru	34.47
29	Indonesia	34.47
31	Vietnam	33.33
32	Russia	32.75

Table 2. Dimensions and Indicators

Sectors	Items
1. Network Preparedness	1-1 Internet users 1-2 Broadband users 1-3 Digital mobile users 1-4 PC users 1-5 Security system
2. Required Interface-Functioning Applications	2-1 Online applications 2-2 e-tender system 2-3 e-tax system 2-4 e-voting system 2-5 e-payment system
3. Management Optimization	3-1 System optimization 3-2 Integrated network system 3-3 Administrative and budgetary systems 3-4 Public management reform by ICT
4. Homepage/Portal Situation	4-1 Updated Frequency 4-2 Public disclosure 4-3 Link navigation system 4-4 Multi-language correspondence
5. Introduction of CIO	5-1 Introduction of CIO 5-2 HRD for CIO 5-3 Supporting body for CIO 5-4 Role and function of CIO
6. Promotion of e-Government	6-1 Priority of e-gov planning & strategy 6-2 Promotion activities 6-3 legal framework 6-4 evaluation system

Table 3. Top 10 Ranking for Each Sector

Network Preparedness		Introduction of CIO		Homepage	
1	Singapore	1	United States	1	Singapore
1	Netherlands	2	Singapore	1	Finland
3	United States	2	Canada	3	Japan
3	Sweden	4	Japan	4	United States
5	Japan	4	Korea	4	Canada
5	Finland	4	Taiwan	6	Italy
5	New Zealand	7	Australia	6	Taiwan
5	Korea	7	Malaysia	6	Sweden
5	Hong Kong	9	United Kingdom	9	France
5	United Kingdom	10	Thailand	9	New Zealand
5	Australia			9	Hong Kong
				9	Germany
				9	Australia

Management Optimization		Interface Functions and Applications		Promotion of E-Government	
1	Singapore	1	Canada	1	United States
2	United States	2	Singapore	2	Finland
2	France	2	United States	2	Korea
2	Japan	2	Australia	2	Australia
2	Korea	5	Korea	5	Japan
2	Sweden	5	Malaysia	5	Singapore
7	Malaysia	5	United Kingdom	5	Canada
8	Germany	5	Italy	5	France
8	Hong Kong	9	Germany	9	Germany
8	Taiwan	9	Taiwan	9	New Zealand
8	Thailand			9	Taiwan
				9	United Kingdom
				9	Italy

Table 4. Comparison on the 1st, 2nd and 3rd Ranking results

2007		2006		2005	
1	United States	1	United States	1	United States
2	Singapore	2	Canada	2	Canada
3	Canada	3	Singapore	3	Singapore
4	Japan	4	Japan	4	Finland
4	Korea	5	Korea	5	Sweden
6	Australia	6	Germany	6	Australia
7	Finland	7	Taiwan	7	Japan
8	Taiwan	8	Australia	8	Hong Kong
9	United Kingdom	9	United Kingdom	9	Malaysia
10	Sweden	10	Finland	10	United Kingdom

Waseda Statement on the International Conference on e-Governance

The 5th International Conference on ICT and Higher Education was held in Waseda University during June 26–29, 2006, and attended by participants from 32 countries as well as 11 international organizations. We, all participants, would like to thank all the parties involved in organizing this conference, in particular Waseda University and IAC.

We acknowledge that the conference has successfully made a huge synergy among academia, international organization and government, for the achievement of an information society through training, education and information exchange in ICT. We appreciate the great efforts from all the presenters in terms of experience, knowledge and know-how regarding the trends, progress and challenges of ICT, as well as the role of the university in education, especially in the following areas:

1. Role of ICT in BRICs.
2. Ubiquitous Society In Japan and Korea.
3. Public and private sector partnership for ICT.
4. The ICT policy and the model of cooperation in Asia.
5. The strategies for e-government, mobile government and e-municipality to reach the citizen-centric e-democracy.
6. Global e-governance.
7. The HRD for CIO and the education for ICT manpower, especially the role of university and the future perspective.
8. Contribution of CIO to investment/expenditure in IT.
9. The development of CIO in Japan, ASEAN, US and Europe.
10. The e-disaster mechanism on disaster reduction through international cooperation on preparedness and e-activities initiatives.

In line with the instruction committed by ITU in their declaration in Tunis 2005 to build a people-centered, inclusive and development-oriented information society, a commitment has been recognized which includes the betterment of partnership among stakeholders as well as the unmatched role of the university in education. Moreover, disaster mitigation can significantly support efforts to bring about sustainable development and help in poverty reduction, the leveraging ICT capabilities and potential through promoting and reinforcing cooperation at each level.

To sum up, we consider the tremendous advantage that e-government/e-municipality strategies, education in CIO and ICT, positive partnership with the private sector, and e-disaster initiatives could lend to good governance and active civic engagement, therefore, we would like to endorse the following actions and agenda:

1. Welcome any consultations among member countries with dialogue partners and encourage continued collaboration on areas of e-government, GCIO and other mutual interest.

2. Encourage partnership and interactive collaboration among academic institutions, government and industry in supporting HRD requirements in the area of ICT and establishing a CIO University and CIO Training Centre.
3. Support and further strengthen and institutionalize the cooperation and partnership between CIO in public and private sectors.
4. Notes that a primary aim of the Ubiquitous Society must be to facilitate full utilization of Information and Communication Technology (ICT) at all levels in society and hence enable the sharing of social and economic benefits by all, by means of ubiquitous access to information networks, while preserving diversity and cultural heritage.
5. Members of the conference urge that several workshops, dialogues and seminars should be conducted for the benefit member countries to share experiences and expertise in the related field. These include:
 - a) CIO seminars and forums encouraging and promoting implementation of GCIO and CIO in private sector to match the SOX Act demands;
 - b) Workshop of best practices to provide a cost-effective alternative computer software development to support the implementations of e-government/e-municipality;
 - c) Workshop to raise awareness and knowledge as well as optimising opportunities for ICT usage without gender bias;
6. It is noted that concerted cooperation should be made to materialize world-wide single city portals with a relevant data bank.
7. The conference strongly encourages the current regional cooperation to set up a Tsunami Early Warning System. The system shall have the following key features:
 - a) Using ICT and effective telecommunications devices in issuance of information, advisory, notice, early warning and warning on the occurrence of earthquake and tsunami that threaten the security and safety of the people; and
 - b) The system shall also acquire in the most effective and efficient way, real-time earthquake and tsunami information released by international centers such as PTWC, JMA, the Indian Ocean Tsunami Warning System to be coordinated by the Intergovernmental Oceanic Commission of UNESCO and sub-regional/national centers in the ASEAN and Indian Ocean region that forms part of the multi-nodal system proposed for the Indian Ocean Tsunami Early Warning System.
8. The delegates agreed to adopt all efforts and recommendations which have been proposed or implemented by International Telecommunication Union (ITU), ASEAN and APEC to promote reforms in ICT Policy to reduce digital divide within countries/economies.

Based on significant benefits derived from the conference, we strongly recommend APEC and Waseda University to:

1. Continue to hold similar international conferences in the future for the benefit of all member countries.
2. Assist member countries to develop and implement e-government strategies and GCIO initiatives.
3. Collaborate with other relevant International and regional Organizations in ensuring that the member countries are provided with the resources required to bridge the Digital Divide.

Waseda University Research Institute of e-Government

With the Japanese Government's announcement and release of the e-Japan Strategy in 2001, the country began its efforts to become the most advanced IT nation in the world. This first strategy plan was complemented by the "e-Japan 2002 Program"

Established in December 2002, this aimed to contribute solutions for the issues arising concerning e-government implementation, the Institute is also actively engaged in the formulation of proper policies for the improvement of e-government, both at a local and national level.

The Institute is also involved in international research to meet the necessity of global cooperation in the field of e-government and ICT. The growing research network of the Institute includes academic institutions in Asia, Europe and America, as well as governmental agencies in the Asian region.

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