

**AFTER THE INTRODUCTION OF THE GOVERNMENT PORTAL SERVICE:  
EVOLUTION INTO THE M-GOVERNMENT INITIATIVES**

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**Abstract**

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*Taking the G4C project, this paper presents the Korea's electronic government initiative focusing on the service and information delivery through the Internet portal site. At the beginning, we briefly describe the current status of Internet infrastructure and its use, followed by our vision of electronic government. Then we give some details on the G4C project.*

*As mobile technologies have matured with the advent of third generation (3G) networks, several ways are being emerged in which we can utilize the capabilities of mobile technology in e-government initiatives. In this context, this paper introduces the recent developments of m-government issues in Korea, through specific wireless application cases, and examines the m-government potential, explaining future plans and challenges in the Korean e-government strategies.*

**Introduction**

During the past 15 years, the Korean government has been among the most aggressive in terms of information technology (IT) use and production. The IT efforts in Korea have their policy origin in the national computer projects of the late 80's. They focused on government computerization, i. e., deployment of high-speed networks, and construction of various databases such as residents, lands, vehicles, and so on. Their objectives are to create a smaller

and more efficient government, improving daily life of citizens, and laying the foundations for the development of IT industries (Jeong & King, 1997).

Since the mid 90's, the focus of the electronic government had been in constructing an advanced information infrastructure put forth with the trend of building information superhighways in advanced countries. In the meantime, the explosion of Internet use has changed the focus somewhat from infrastructure to contents and applications.

Internet becomes so widely accepted for citizens' daily life that we could not manage even a single day in work and at home without the Internet access. As the Internet technology creates an online experience and environment we could not even imagine several years ago, we have been enforced to provide Internet applications in government service delivery to citizens. Our attention on the Internet applications also comes from the belief that they provide powerful tools for transparent administration, thus reducing the area of potential corruptions.

Representing the electronic government initiatives is the G4C (government for citizens) project where we create Internet applications in the most interactive areas between government and citizens. They include the registration of citizenship, ownership of lands and vehicles, business activities and tax services. Taking the G4C project, this paper presents the Korea's electronic government initiative focusing on the service and information delivery through the Internet portal site. At the beginning, we briefly describe the current status of Internet infrastructure and its use, followed by our vision of electronic government. Then we give some details on the G4C project.

Now that several months have passed since the G4C services initiated, we discuss on how actively citizens use the system in their daily interaction with the government. This issue is important in justifying the investment we made on the project and in developing the future direction of e-government initiatives.

As mobile technologies have matured with the advent of third generation (3G) networks, several ways are being emerged in which we can utilize the capabilities of mobile technology in e-government initiatives. In this context, this paper introduces the recent developments of m-government issues in Korea, through specific wireless application cases, and examines the m-government potential, explaining future plans and challenges in the Korean e-government strategies.

### **Internet Growth and Vision for Electronic Government**

The level of Internet use in Korea ranks among the top worldwide. The number of people using the Internet reached to 25 million, approximately 52% of total population, as of the end of 2002(MIC, 2003). More than two-thirds of the households(10 million) are subscribing to the high-speed Internet services, enabling them to send email, buy an airplane ticket, and enjoy audio and video files.

An article in the NY Times(Belson, 2003) describes the Internet use in Korea as ‘offering a glimpse of what wired societies are supposed to look like, where fast Internet connections vastly increase access to information, help lift productivity and create new markets.

According to most indicators, the use of Internet and the development of e-commerce in Korea are above the level that should be reached given the level of development in other areas. This indicates the potential demand has grown up enough for electronic delivery of government services and information.

As people become aware of the power of the Internet and experience good service in the private sector, they will become less tolerant of poor service in the public sector. If people can buy an airplane ticket over the Internet, they will want to get the citizenship certificate issued the same way. In addition, citizens will want to know why they have to stand in a line for a service when people in the neighboring town, region, or country carry out transactions online and without delay.

Our vision of electronic government is to shape the framework of IT that will be a key factor in successful transition to a clear, transparent, and efficient government. While, since the late 80’s, IT has been realized as an effective tool to innovate governmental processes to improve productivity, it is recently that the Korean government takes a driver’s seat to mobilize resources into the direction that citizens be able to appreciate the payoffs from the IT applications.

Operating an individually equipped PC, every civil servant in the local as well as central government communicates each other to produce common interests, get access to databases managed by other agencies and conduct the electronic document interchange, thus reducing paperworks to complete their businesses. Individual PCs are connected to the high-speed administrations network covering from the central government complex to the lowest level local offices numbering around 3,500.

Citizens and firms get access to the government through the single window(government portal), representing the various government service functions and sources of information. The government portal had been restructured in such a way that people can enjoy many of the government services electronically. For example, they are able to request verification documents over the Internet. In some cases, they do not have to submit documents previously required for government services, since government agencies are allowed to use relevant information online through the information sharing system.

A report of address change is enough to make changes on registers in different departments such as vehicle management, local tax administrations, and so on. There is also a plan to complement the system so that we can inform the designated office online of our address change. We will also be able to notify birth of children, the status of marriage, and register new cars. Firms can file their applications on licenses and patents for their market and R&D activities and fill out tax form online.

As discussed in Reinermann (2001), we need to pay attention to life-event portals which focus on certain life situations like birth, marriage, retirement, building a house, starting-up a business, and so on. Previously web applications used to be simple collections of links to related web sites. For example, government portals were designed and organized based on the structure of governmental bodies, not on the stream of life-cycle events from the point of users' conveniences.

Through the system of information sharing, governmental databases can become interactive and interface with each other. Information and services can be aggregated and presented to citizens as life events. An integrated government portal is supposed to be a key instrument in providing better and more customer-directed government services and information.

Life-event portal is supposed to offer direct access to forms and applications, relevant laws and regulations, government programs, and persons in charge. Its purpose is to overcome the complexity of the delivery process of government services, transforming the function of government web sites from simple presentation of information to applications of delivering services and integrated government information.

This transformation will move citizens into a position of being active players with government services provided when, where, and how people want them. Thus they will be able to personalize their access to government.

### **The G4C Project: Service Delivery via Life-event Portal**

The G4C Project aims to establish an electronic channel for government services to the public along with the system for sharing information among agencies.

Since the completion of the project, October 2002, a number of government services and information have been delivered very conveniently to those who have access to the Internet facility and administrative efficiency and productivity have been improved as well.

Previously people were dissatisfied with the way government services and information are delivered, because it took long hours due to the complicated procedures. In the meantime, it was often necessary to submit various verification documents, requiring service applicants to visit several agencies to obtain them.

The size and complexity of government forms a major barrier for anyone trying to access government services and information. One of the most compelling argument for electronic government is to provide seamless service, arranged not from a bureaucratic viewpoint but by subject or life event.

On the other hand, there was no single window in place where people can get comprehensive information on the procedures and criteria of civil service applications. As a result, the inconvenience has been increasing. Also, lack of infrastructure for information sharing among governmental bodies and related laws and regulations had led to the waste of resources and, thus, low efficiency in the administration.

There are more than 50 ministries and agencies in the central government, each of which has its own web site with a URL that's impossible to remember or even guess. Despite one happens to get the right URL, it's another to figure out which official in which department at which level is responsible for which program. A number of agencies may be involved in providing a service, each requiring the completion of different forms.

The G4C Project was commenced to resolve such problems involved in handling government services for citizens. The project has been based on streamlining the administrative procedures and, thus, the government easily adapt to keep pace with the transformation to the IT applications.

In addition, by easily interacting with government and accessing public information, official documents and administrative proceedings, citizens are better informed and more willing to

participate in the government process, leading to digital communities and more participative models of governance, where citizens are able to be more involved in related decision making process.

The basic idea of the G4C project is to share information verifying the applicant's eligibility among government agencies, thus reducing the number of documents submitted and trips to government offices.

On the other hand, the project is to establish a government portal site that makes electronic transactions of civil services available to a larger extent and provides citizens with public information. Thus they become capable of interacting with governments at home.

The other objective of the G4C is to put the Online Procedures Enhancement system (referred to as OPEN system) for civil applications. This system plays a significant role in the electronic government initiatives from the standpoint of transparent procedures, and thus reducing corruption and irregularities. Initially developed by the Seoul Metropolitan Government as one of the anti-corruption programs, the OPEN system makes public the whole process of civil affairs administration from acceptance to the final processes by stages on the Internet (Ahn, 2002).

The date and time is input and made public when each application is processed. This being the case, no official can delay or unduly interfere in any case, let alone make any improper decision. Since the system allows universal access on the Internet, applicants do not have to take the burden of contacting officials or to offer bribes just to complete their businesses.

This is the way the system significantly reduces the probability of any corruption and irregularities. Any citizen can access the OPEN system and see the contents of civil applications. The system also enhances the effectiveness of internal monitoring and the online inspection by the audit department.

#### **After the Introduction of the G4C**

##### ***Marketing the Government Portal Services***

Physical and institutional infrastructure has been appropriately prepared in Korea to proceed to the electronic government initiatives, in particular, the G4C project, delivering services and information through the Internet portal site.

What remains is to make the best of strategies and policy issues facing the G4C project so

that we realize its vision and goals into our daily life. Although the G4C services have been made available, the adoption of those services by citizens and businesses remains to be another issue. Citizens are unlikely to use the services electronically provided unless they see real benefits from doing so.

The potential to use the system to improve public services by delivering them in new ways has largely yet to be realized. For example, very few of the G4C services which most citizens routinely use can be fully accessed online. In case for the issuance of verification documents, its application is processed electronically over the Internet, while it has to be received in the post or picked up at the nearest local office.

In order to encourage citizens to access services on the Internet, we should develop realistic strategies to make online services complete. We need to concentrate our efforts on identifying and making fully available online those services which citizens are most likely to find useful. Some people remain suspicious of the G4C services either because they are unfamiliar with them or they have concerns about how governmental agencies might use information contained in the system. To overcome these concerns and ensure that people are aware of the benefits from accessing services online, we need to communicate with the public so that they know what is available and have realistic expectations. Sometimes we need to employ marketing strategies which are clearly targeted at the key users of a particular service.

### ***Evolution into the m-Government Initiatives***

Mobile government is defined to be an advanced form of electronic government that provides services to citizens through the use of wireless Internet via convenient devices like cellular phones and PDAs, and that provides mobility for its employees to increase citizens' convenience and employees' efficiency. The concept of m-government is deeply related to the multi-channel strategy of e-government services.

As mobile technologies have matured with the advent of third generation (3G) networks, the Korean government has taken steps to utilize the expanded capabilities of mobile technologies that contribute to e-government initiatives. However, the construction of a mobile government is still in its very early stage, the government has been exploring ways to utilize mobile technologies and, thereby, to enhance the delivery of e-government to its employees and to citizens.

### **Background**

The Korean government recently completed eleven e-government projects, the representative

one of which is the G4C project as introduced in the previous section. However, the existing e-government, based on wired Internet, offers only limited accessibility and applicability of services. Considering the widespread use and personal nature of mobile technologies, the expansion of e-government into the wireless and mobile environment is quickly becoming an essential alternative, in order to surmount the boundaries of wired services.

The circulation rates of mobile devices in Korea, such as mobile handsets, PDAs (Personal Digital Assistants) and mobile services, are significant and surpass the rate of wired telephone subscriptions, indicating the favorable circumstances for m-government. Currently, Korea has more than 32 million mobile phone users employing a variety of voice and multimedia services. The subscriber base for mobile Internet services has already reached 29 million. Taking full advantages of these solid mobile infrastructure and e-government services, Korea plans to expand its electronic infrastructure into a mobile network in 2003, a step that will improve the quality of services for the public.

### **Strategies and Cases of m-Government Implementation in Korea**

The realization of a multi-channel environment that can provide services regardless of media is the future of e-government. As citizen demand increases for a more flexible access to the government services, and as mobile technologies mature, m-government becomes a very attractive objective of e-government, because of its ability to provide on-time and customized services. In particular, m-government is considered an appropriate choice for the establishment of CRM (Customer Relationship Management) in the public sector.

The Korean government, including the central and local governments, has taken a leading role in expanding e-government initiatives into m-government. Public agencies primarily send administrative and policy status information and other notifications through mobile messaging, such as SMS (Short Message Service). Some agencies have their own mobile page, similar to a Web page, used exclusively for mobile terminals. A common gateway and platform are in the process of being mapped out for the mobile government.

To leverage the mobile technology for e-government, various wireless applications can be found at the central, local, and city levels in Korea. The National Police Agency (NPA), Annyang's parking lot management, Uijeongbu's and Kunsan's tax management systems, and the PDA-based inspection system at the National Fisheries Product Inspection Service (NFPIS) are among the various services that use some form of wireless application.

The NPA's M-police Project assists police officers in the capture of suspects and the finding of missing cars. Police officers obtain detailed information on missing vehicles, driver's

licenses, vehicle histories, and pictures of suspects from the retrieval server, using mobile devices. The retrieval server is connected to the WAP (Wireless Application Protocol) of one of the mobile carriers through a dedicated line, and end-to-end security is provided through data encryption between the retrieval server and handsets.

Annyang City's M-Parking Lot Management System allows parking inspectors to control the depository for towed vehicles, using PDAs and a small printer. They are able to print the receipt and collect parking lot information on the spot, increasing their efficiency in management activities.

The m-local tax Management Systems in Uijeongbu and Kunsan have conveniently provided officers with access to information on car taxes. They log onto the database server of local taxes, using PDAs to obtain the data of delinquent car taxes and immediately transmit this information into the local tax database. In January of 2003, NFPIS introduced the PDA-based inspection systems for fisheries and built integrated database for facilitating real-time data transfer.

With these PDA-based and mobile phone-based wireless applications, government agencies have simplified the processes of government activities and greatly increased productivity and effectiveness. This performance of m-government in Korea indicates there is a high potential for deploying mobile technology for the purpose of improving public sector services.

### **Concluding Remarks**

As Internet technology, wired and wireless, creates an online experience and environment which we could not even imagine just several years ago, and our Internet infrastructure and its use has grown up enough for electronic delivery of government information and services, we are in a position to encourage Internet applications into the administrative processes. The reaction of citizens and businesses to online public services is almost always positive, simply because they don't like making a trip down to a stuffy government offices and do so only out of necessity.

At the heart of our approach in the electronic government initiatives are government portal site and information sharing within and across the governmental agencies, leading to easy access to government information and electronic service delivery for conveniences of citizens. In order to improve the e-government conveniences for citizens furthermore, we bring our interests into the potential applications of the mobile technologies.

Much of technical possibilities of m-government can become a reality with maturing technology, increased security, and increased bandwidth. The Korean government has a plan for mobile government in place. In the later part of 2003, it will target two or three government agencies that have more mobile administrative processes than other agencies. For example, the Ministry of Health and Welfare is going to introduce PDA-based applications into the management of social welfare programs such as “basic livelihood protection program”. They will be established as a reference model for mobile government service architecture.

It also has a plan for building a common platform for m-government services. Currently, the sundry mobile Internet protocols and platforms of mobile carriers make it difficult for the governments at all levels to develop an m-government, due to fragile security and the high cost of communications fees. A common platform will solve the problems of the current m-government and provide everyone with high quality mobile services in a safe environment and at a very low cost.

In order to successfully carry out its major projects and provide convenient and efficient services to the citizen, certain challenges for m-government initiatives must be tackled and overcome. First, it is necessary to determine the requirements and difficulties involved in utilizing mobile technology within the context of a multi-channel strategy. To this end, the key question for the government is not whether mobile technology should be adopted, but whether mobile access is needed for the targeted segment.

Second, it is important to resolve the obstacles to providing the central and local governments with wired/wireless integration. Third, as in e-government initiatives, m-government security measures must be strengthened from the network to applications. Finally, mobile government services must be compatible with the mobile network and terminal environment by providing compatible standards.

It cannot be put in emphasis too much that we are in a very early stage in the application of mobile technology to improve the quality of government services, thus we have to very carefully take a look at the target applications to expand them across the government agencies. In the meantime, both the government and citizens need to be pushed to embrace policies and initiatives that will allow the Internet and electronic government services, either wired or wireless, to grow and flourish, bringing numerous economic and social benefits to people everywhere.

(Note: The major part of this paper concerning the mobile government is adapted from the NCA report, titled "M-government in Korea".)

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