

Emerging Internet Technology & Service toward Korean Government 3.0

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Abstract

Recently a new government has announced an action plan known as the government 3.0, which aims to provide customized services for individual people, generate more jobs and support creative economy. Leading on from previous similar initiatives, the new scheme seeks to focus on open, share, communicate, and collaborate. In promoting Government 3.0, the crucial factor might be how to align the core services and policies of Government 3.0 with corresponding technologies. The paper describes the concepts and features of Government 3.0, identifies emerging Internet-based technologies and services toward the initiative, and finally provides improvement plans for Government 3.0. As a result, 10 issues to be brought together include: Smart Phone Applications and Service, Mobile Internet Computing and Application, Wireless and Sensor Network, Security & Privacy in Internet, Energy-efficient Computing & Smart Grid, Multimedia & Image Processing, Data Mining and Big Data, Software Engineering, Internet Business related Policy, and Management of Internet Application.

Keywords: Government 3.0, e-Government, Social Media, Big Data, Emerging Technology, Internet Applications, ICT Policy

1. Introduction

Korea is widely recognized as a global leader in e-government. In 2010, it ranked at the top for the second time in a row of the e-government index drawn up by the United Nations Public Administration Network. Moreover, top rank was imposed on Korean mobile e-Government in 2011. As the demand of new policy guideline is rapidly growing, Korean government has endeavored to seek an upgrade from government 2.0 that is characterized by bilateral interaction between people and government and from government 1.0 that is based on the one-way delivery of services to people.

In response to such the paradigm shift, a presidential nominee proposed a smart, next-generation e-government capable of providing people with services tailored to their demands during the election campaign in late 2012. After winning the presidential election, new government has come up with an action plan to bring to fruition, government 3.0. Leading on from previous similar initiatives, the new scheme seeks to focus on open, share, communicate, and collaborate.



Fig. 1. Strategy for Government 3.0

The Ministry of Security and Public Administration indicates that government 3.0 is a new paradigm for government operation to promote active sharing of public information and removal of barriers existing among government ministries for better collaboration. As illustrated in **Fig. 1**, a new government aims to provide people with customized services, generate more jobs, and support creative economy [1].

The new government pointed out that information sharing would also increase job creation opportunity and incite the potential economic growth. It is assumed that government-held data in such fields as weather, transportation and health care has considerable commercial value. The National Information Society Agency projected that making government data available to the public would add 150,000 new jobs to the economy and generate economic effects amounting to 24 trillion won [2]. In addition, the Small and Medium Business Administration anticipated that it would help entrepreneurs start up a new business taking advantage of the newly disclosed government data. [3].

In promoting Government 3.0, the crucial factor might be how to align the core concepts of Government 3.0 with corresponding technologies, applications, and policies. The paper aims to describe the concepts and features of Government 3.0, to map emerging Internet-based technologies and services, and to finally provide improvement plans for Government 3.0.

2. Key Points of Korean Government 3.0

Government 3.0 can be seen as a new paradigm for government operation to promote active sharing of public information and removal of barriers existing among government ministries for better collaboration. To provide customized services for people, to generate more jobs, and to support creative economy, the new government emphasizes three distinct points: transparent, competent, and service-oriented government, as shown in Fig. 2.

The first key point is producing a transparent government that works towards mutual understanding. According to *the Korea blog* written by Anna Darnley, the government seeks to improve the availability of detailed information of the government's activities and policies and to work more extensively with members of the public through increased opportunities for cooperation. The availability of information on projects promoted by the central and local governments will make it easy for people to track how taxpayers' money is spent. This will exert pressure on government officials to minimize budget waste.

Secondly the new government aims to create a competent and successful administration. The government pursues the collaboration through eliminating barriers between government ministries in order to bring results by changing its working structure from organization-base to task-base. Reportedly, the government has been willing to bring out a mighty drive towards improving government efficiency.

The final crucial point of Government 3.0 is establishing a service-oriented government which focuses on serving the people. The core values regarding this point include the provision of customized services, helping small and medium-sized businesses, face-to-face contact with people in need, and creating smart government with the use of IT. To do so, the government focused on the importance of ensuring every person was able to receive the help and support that they needed from the government systems particularly specifying the help available to small and medium sized businesses in times of difficulty and to helping unemployed members of the society find work.

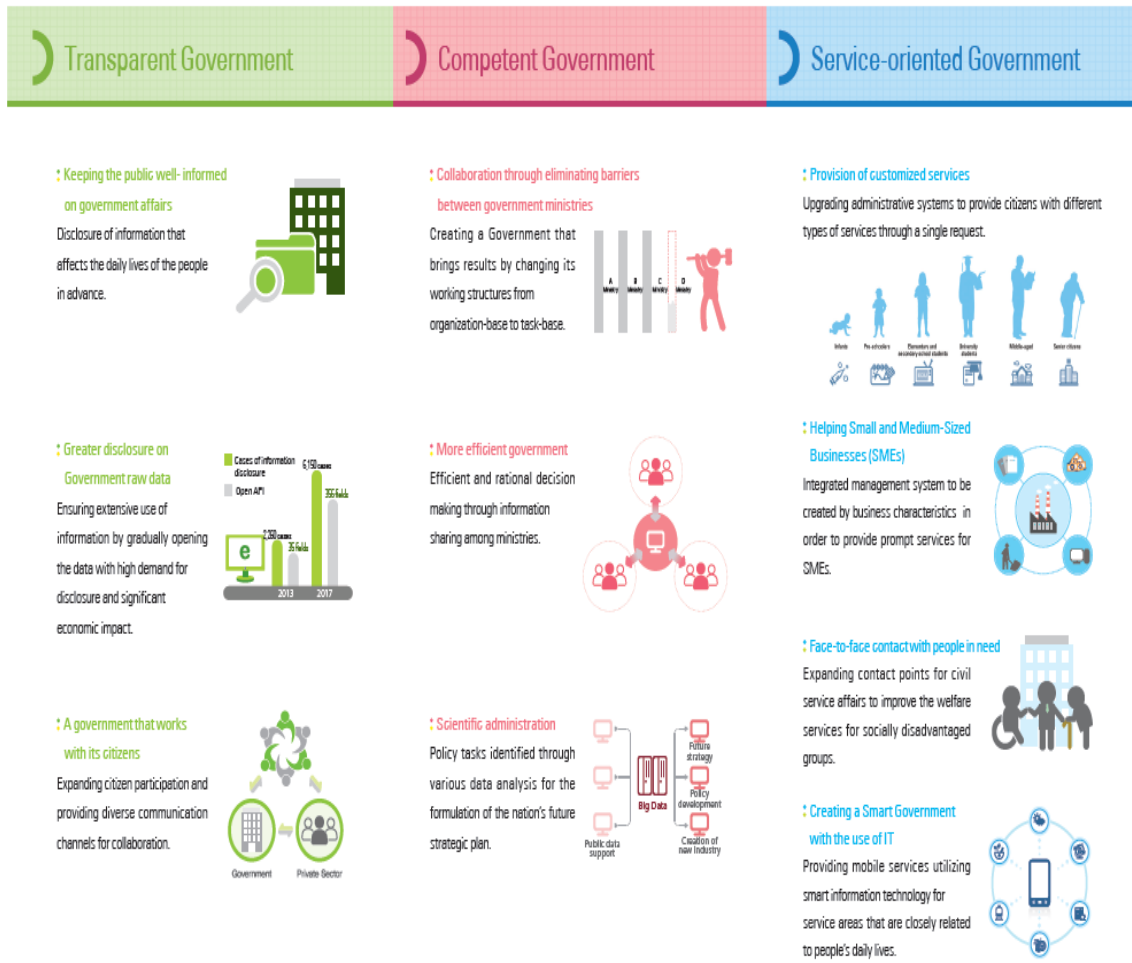


Fig. 2. Three Key Points of Korean Government 3.0

3. Internet Service & Technology toward Paradigm Shift

Currently we live in an era of unprecedented technological innovation with ingenious new advances for achieving clean energy, eradicating disease and providing greater wellness, more equitably and effectively delivering education, and improving the quality of human existence and expression. At the same time, we are experiencing clear deficits within centralized institutions of government and civil society: deficits of agility, innovation and capacity. With Korea being the technologically advanced country, it is time to identify key technologies and services toward Government 3.0.

This research depicted the evolutions of e-Government based on the paradigm shift from industrial society to information and smart society. Then main features of three types of e-Government were addressed, and emerging technologies, services, and policies were identified, as described in **Table 1**.

Table 1. Identification of Emerging Internet Technology & Service

| Type of e-Government | Industrial Society | Information Society | Smart Society |
|-------------------------|---|--|--|
| Main Features | - Government 1.0 - World Wide Web - Government-Centric | - Government 2.0 - Web 2.0 - Citizen-Centric | - Government 3.0 - Real-World Web - Individual-Centric |
| Accessibility | First-Stop-Shop (Simple Portal) | One-Stop-Shop (Service Convergence) | My gov. (Customized Portal) |
| Service / Policy | - One-way Information Providing - Limited Sharing of Information - Supply-Oriented Service - Digital Service | - Two-way Information Providing - Extended Sharing of Information - Mobile Service - Service for Value Creation | - Information Collaboration - Real-Time Sharing of Information - Seamless Service - Intelligent Service - ICT Policy |
| Technology | - | - Software Engineering - Energy-efficient Computing & Smart Grid - Internet Application | - Wireless and Sensor Network - Big Data - Mobile Computing - Cloud Computing |

According to the Garter definition, the focus of almost all e-Government efforts today is laid on socializing data and cooperating some of the processes such as government cloud computing initiatives. To understand the deeper implications on participation and service delivery, the study extracted the core technologies to provide the various services and policies for Government 3.0, as follows.

- Track 1: Smart Phone Applications and Service
- Track 2: Mobile Internet Computing and Application
- Track 3: Wireless and Sensor Network
- Track 4: Security & Privacy in Internet
- Track 5: Green (Energy-efficient) Computing & Smart Grid
- Track 6: Multimedia/Image Processing/HCI/Intelligent Systems
- Track 7: Database/Data Mining/Big Data/Mobile Object Database
- Track 8: Software Engineering & Architecture
- Track 9: Internet Business related Policy, Communication and Services
- Track 10: Management of Internet Application /E-Business/E-Commerce

4. Improvement Plans

So far, the paper described the concepts and features of Government 3.0, to map emerging Internet-based technologies, as enablers of the various services and policies for Government 3.0. This section is allocated to several improvement plans for Government 3.0

First of all, creative and feasible researches on the issues for Government 3.0 should be persistently conducted and shared. As part of an ongoing effort, many outstanding studies were presented in *Asia-Pacific International Conference 2013*, as listed in [Table 2](#).

Table 2. Studies for Emerging Technology & Service

| Technology (Service) | Outstanding Studies |
|-----------------------------------|--|
| ICT Policy | The Survival of Paid Broadcasting Channels in Korea, 1993-2010 |
| Big Data | Business Intelligence and Marketing Insights in an Era of Big Data: The Q-sorting Approach |
| | Inter-category Map: Building Cognition Network of General Customers through Big Data Mining |
| Wireless and Sensor Network | An Improved Joint Detection of Frame, Integer Frequency Offset, and Spectral Inversion for Digital Radio Mondiale Plus |
| | A Minimum Energy Consuming Mobile Device Relay Scheme for Reliable QoS Support |
| Security for S/W & Information | Development of Indicators for Information Security Level Assessment of VoIP Service Providers |
| | Integrating Software Security into Agile-Scrum Method |
| Green Computing | A Wind Turbine Fault Detection Approach Based on Cluster Analysis and Frequent Pattern Mining |
| Internet Application | A Design of Architecture for Federating between NRNs and Determination Optimal Path |
| | Modeling, Discovering, and Visualizing Workflow Performer-Role Affiliation Networking Knowledge |
| Intelligent System | Intelligent u-Learning and Research Environment for Computational Science on Mobile Device |
| | A Design of Matching Engine for a Practical Query-by-Singing /Humming System with Polyphonic Recordings |

Another crucial factor that *The Korea Herald* pointed out in promoting Government 3.0 is how to overcome public officials' resistance to information disclosure. As all of us admitted, the public owned organizations have tendency to keep the sensitive data they held out of harm's way. Due to the security concern, they tend to categorize even publicly available information as unsuitable for disclosure. Finally, the most critical thing is to ensure the accuracy and reliability of the information disclosed, because it is rather not providing at all than providing inaccurate information.

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