Korea ICT/e-Gov History, Best Practices and Lessons
(Georgian IT Innovations Conference)

2011.11.18
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National IT Industry Promotion Agency (NIPA), Korea
Agenda

1. Korea ICT History & Achievements
2. e-Gov Best Practices in Public Services
   - G2C; Work-Net, Government Portal, Smart Card, ITS
   - G2B; Procurement, Budgeting, Customs, Tax, Patent
   - G2G; Groupware, Petition, NCIA, INVIL, etc
3. Lessons Learned (CSF)
   - Leadership, Policy, Legal Framework, Institution, Funding, Human Capacity
   - Suggestion
4. Next Stage in e-Government
1. Korea ICT History & Achievements
Korea in the Chi-Ru-Ja Triangle: a shrimp among whales?
Korea Economy History with ICT Policy

Transformation of the Korean Economy (1945~2006) Growth Trend

Per Capita (US$) GNI

20000

15000

10000

5000

0


- Liberation from Japanese Colonial Rule
- End of the Korean War
- OECD Member (1995)
- Broadband IT Korea 2007 (2004–07)
- 2nd Basic Plan, Cyber Korea 21 (1999–2002)
- Financial Crisis (1998)
- 6 Five-Year Economic Development Plans
- 100 (1964)
- 1,000 (1977)
- 7,355
- 11,499
- 12,197
- 14,260
- 18,372
ICT Policies
(Informatization + Industrialization)

• 1978-1987 National Administration DB
• 1987-1996 National Backbone Network
• 1996-2000 National Informatization (Integration)
• 1999-2002 Cyber Korea 21
• 2002-2006 e-Korea
• 2003-2007 Broadband IT Korea
• 2006-2007 u-Korea
• 2008-2011 New National Informatization (IT Convergence, Green IT, Smart Work)
ICT Policy History (1)

- 1978–1982 1st Phase Master Plan for Computerization of Public Administration
- 1983–1987 2nd Phase Master Plan for Computerization of Public Administration
- 1984 Launch of mobile service
- 1996–2000 1st Phase Master Plan for Informatization Promotion
- Diffusion and Expansion of National Backbone Network
- Act on Network Expansion and Usage Promotion (Article 4)
ICT Policy History (2)
Cyber Korea 21 Policy (Ex.)

Construction of a Creative Knowledge-based Nation

- Increasing the share of GDP of the knowledge-based industries to that of the OECD countries by 2002.
- Becoming one of the top ten advanced knowledge-based information societies in the world by the year 2002

- Establishing the Information Infrastructure
- Improving National Productivity
- Creating New Business & Facilitating IT Industry
e-Korea Industry Policy (Ex.)

IT Industry Value Chain/ Governmental & Corporate Roles

**Introducing New Services**
- License Carriers
- Determine Service Methods
- Spectrum Allocation
- Legal F/W Overhaul
- Pilot Project
- Maintain Competition

**Building Infrastructure**
- Policy · Strategy
- Standardization
- Broadband
- Initial Market Creation
- Financial Support

**Devices/Parts**
- Standardization Support
- Technical Support
- Public Pilot Project
- Prevent Piracy
- Build Demonstration Room

**Contents/SW (IT839 Service, Infra, Engine)**
- Support Overseas Entry
- License Carriers
- Determine Service Methods
- Spectrum Allocation
- Legal F/W Overhaul
- Pilot Project
- Maintain Competition

**Industrialization**
- Support Overseas Entry
- Reinvestment
- Job Creation
- Industry-wide Synergy Effect
- Strengthen Exports
- Marketing

**Government**
- Build Production Base
- Solution Project
- Application SW
- Embedded SW

**Company**
- Package SW
- Build Demonstration Room
- Prevent Piracy
- Build Production Base
- Solution Project
- Application SW
- Embedded SW

**Preparation for Service Launching**
- Invest in Technical Dev
- Commercialization
- Build Production Base
- Solution Project
- Application SW
- Embedded SW

**Basis for the Industry**
- R&D Process Innovation
- H/R Nurturing
- Favorable Business Environment
- Attract R&D Center
- Nurture SMEs

NIPC - National IT Industry Promotion Agency
ICT Development Index (2010) progress in all Economies

IDI Top Ten (2008 rank)

1. Korea (Rep.) (1)
2. Sweden (2)
3. Iceland (7)
4. Denmark (3)
5. Finland (12)
6. Hong Kong (China) (6)
7. Luxembourg (4)
8. Switzerland (9)
9. Netherlands (5)
10. United Kingdom (10)

Key Findings

- Most countries increased their IDI scores (2008-10)
- European countries dominate the top IDI rankings
- Income plays a key role, but policies matter (e.g., R.O. Korea)
- Information Society is maturing: e.g., USE sub-index grows more than ACCESS sub-index

Source: ITU
## Major Successes in e-Gov.

<table>
<thead>
<tr>
<th>Country</th>
<th>E-Government Rank</th>
<th>E-Government Index (Avg)</th>
<th>Human Capital Index</th>
<th>Web Service Index</th>
<th>Infrastructure Index</th>
<th>E-Participation Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Republic of Korea</td>
<td>1</td>
<td>0.8785</td>
<td>0.9929</td>
<td>1</td>
<td>0.639</td>
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<tr>
<td>Australia</td>
<td>8</td>
<td>0.7863</td>
<td>0.9933</td>
<td>0.7651</td>
<td>0.601</td>
<td>0.9143</td>
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<tr>
<td>Singapore</td>
<td>11</td>
<td>0.7476</td>
<td>0.9203</td>
<td>0.6857</td>
<td>0.6386</td>
<td>0.6857</td>
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<tr>
<td>Japan</td>
<td>17</td>
<td>0.7152</td>
<td>0.9496</td>
<td>0.673</td>
<td>0.5241</td>
<td>0.7571</td>
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<tr>
<td>Malaysia</td>
<td>32</td>
<td>0.6101</td>
<td>0.8542</td>
<td>0.6317</td>
<td>0.3437</td>
<td>0.6571</td>
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<tr>
<td>Mongolia</td>
<td>53</td>
<td>0.5243</td>
<td>0.9127</td>
<td>0.5556</td>
<td>0.1036</td>
<td>0.4286</td>
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<tr>
<td>China</td>
<td>72</td>
<td>0.47</td>
<td>0.8535</td>
<td>0.3683</td>
<td>0.1912</td>
<td>0.3714</td>
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<tr>
<td>Viet Nam</td>
<td>90</td>
<td>0.4454</td>
<td>0.8097</td>
<td>0.3048</td>
<td>0.226</td>
<td>0.0857</td>
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<tr>
<td>Indonesia</td>
<td>109</td>
<td>0.4026</td>
<td>0.854</td>
<td>0.2444</td>
<td>0.1142</td>
<td>0.1286</td>
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<tr>
<td>India</td>
<td>119</td>
<td>0.3567</td>
<td>0.6432</td>
<td>0.3683</td>
<td>0.0583</td>
<td>0.2</td>
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<tr>
<td>Nepal</td>
<td>153</td>
<td>0.2568</td>
<td>0.582</td>
<td>0.1683</td>
<td>0.0226</td>
<td>0.0571</td>
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</tbody>
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2. e-Gov Best Practices in Public Services
e-Gov Best Practices in Public Services

• G2C (Gov to Citizen) : People Service
  – Work-Net
  – Land Management Services
  – Portal
  – Online Petition
  – IEMS (Integrated Emergency Mgmt System)
  – Smart Card for Public Transportation, Intelligent Transportation System
  – Information Network Village

• G2B (Gov to Business) : Transparency & Efficiency
  – Procurement
  – Budgeting
  – Customs
  – Tax
  – Patent

• G2G (Gov to Gov) : Innovation
  – BPS/EDMS (Groupware)
  – Government Data Data Center (NCIA)
Work-Net in Ministry of Employment & Labor, Korea
World-job in Ministry of Employment & Labor, Korea

<table>
<thead>
<tr>
<th>JOB SEEKER</th>
</tr>
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<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>America</td>
</tr>
<tr>
<td>Middle East</td>
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<tr>
<td>Asia</td>
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<td>Africa</td>
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<td>Europe</td>
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<td>Iraq</td>
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<td>Australia</td>
</tr>
<tr>
<td>Canada</td>
</tr>
<tr>
<td>Russia</td>
</tr>
<tr>
<td>United States of America</td>
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</tbody>
</table>
Mobile-job in Ministry of Employment & Labor, Korea
Land Management Service

- Land Transaction
- Foreigner Land Transaction
- Development Allotment
- Real Estate Agent Mgmt.
- Land Price Mgmt.
- Use District Mgmt.
- House Price Appraisal
Internet Civil Services (Portal)

- Up to 3,020 types of civil services are available online without visiting administrative offices.
- Online issuance of 1,208 types of civil documents are provided, allowing citizens to print necessary official documents at home.
- [www.minwon.go.kr](http://www.minwon.go.kr)
“e-People” is Korea’s single online portal unifying complaints/proposals/policy discussions handled by all central government agencies, municipalities, public organizations and Korean diplomatic missions.
IEMS - Integrated Emergency Management System

Emergency Report Mgmt. Solution

119 Phone Call
Internet
SMS Call
Wireless Paging Call
One Click

Command & Control Solution

Whole Vehicle Location
Intensive Pursuit
Pursuit Traces
Vehicle's traces
Route

Support Information Solution

Building & Facilities Information System
Drawing Information System
Remote Information System
Training On Board System
Map Editing System

Command & Control Center

National IT Industry Promotion Agency
Smart Card for Public Transportation

KSCC Fare Settlement Center

Bus Collection System

Subway Collection System

Boarding a BUS
- Line Number
- Stop Location
- Boarding Time
- Type of Riders

Getting off the BUS
- Stop Location
- Time
- Distance Traveled
- Tentative Fares

Transfer to Subway
- Station Location
- Time

Finishing the Trip
- Station Location
- Time
- Total Distance Traveled
- Final Fare
Intelligent Transportation System (ITS) for Efficient Public Transportation

Traffic Data Collection
- Environmental Monitoring
- Traffic Data Collection
- Traffic Control Center
- Traffic Security

Traffic Management System
- Basic Traffic Information
- Emergency Traffic Information
- Pedestrian Safety Support

Traffic Control Center
- Transport Management System
- Information Collection System
- External Connection System
- Data Processing System

Traffic Security
- Police
- Fire Department
- Video Monitoring System
- Broadcasting System
- System Management
- Traffic Analysis System
- Integrated Operations Management
- Emergency Operations Management
- Comprehensive Operations Management

Traffic Information and Connection
- Telephone
- Web

Traffic Information Management System
- Information Display System
- Routing Guidance
- Basic Traffic Information
- Pedestrian Safety Support

Traffic Data Collection
- Weather Station
- CCTV
- Signal Control System
- User and Institution
Information Network Village (INVIL)

- INVIL is a project to establish self-sustainable village communities capable of continued growth by providing ICT resources and capability, and consequently increasing the income of residents through e-commerce in farming, fishing, and mountain regions usually excluded from information networks.
- 363 villages have been established and operated since 2001.
Electronic Procurement

All stages of procurement, such as bidding, awarding contracts, contracting, delivery, and payment, are handled online, and procurement progress can be monitored in real-time.
Electronic Customs Clearance Service

Export/import reports to the customs office and applications for inspection and quarantine to applicable entities are integrated to provide online one-stop services.
Electronic Tax Service

It provides services for imposing, collecting, deducting, and exempting of internal taxes online, as well as inquiring various tax related information.
Online Patent Service

- All administrative procedures for IP rights including filing an application and requesting for an examination or a trial are made available online 24/7.
- Certificate issuance, progress check, and fee payment are also available online.
A new business process management system that has increased the efficiency and transparency of administration by handling, recording and managing online all the business procedures of the government through standardization.
Back-up systems of the major infrastructure, state-of-the-art security facilities, and top-notch human resources ensure uninterrupted availability of e-Government services 24/7.
3. Lessons Learned (CSF)
Lessons Learned (CSF)

1. National Leadership & Commitment
2. Policy & Legal Framework (R&D & Industry Cluster)
3. Institutional Arrangement
4. IT Promotion Fund
5. Human Capacity Building
1. Leadership & Commitment

“For the second nation-building, we will focus on establishing a knowledge-based economy where information and leading technology play a central role.”

Address by President Kim Dae-jung commemorating the 50th Anniversary of the Republic of Korea
August 15, 1998

“I will promote the continued expansion of the infrastructure for a knowledge and information society and cultivate new industries.”

Inaugural Address by President Roh Moo-Hyun
February 25, 2003

“Our main task is to overcome the point at issue, our economic crisis. However, we also have to prepare for our future. Therefore, our full-scale promotion of informatization is valuable as a new growth engine for the future of Korea.”

Address by President Lee Myung-Bak
‘Visionary Announcement for IT’
December 3, 2008
2. Policy & Legal Framework

- Aggressive policies like Cyber 21, e-Korea, Broadband Korea, u-Korea

- A total of 187 ICT related laws had been enacted or updated based on the results of the analysis of 7 rounds during ’95-’03 in Korea.

  - 86 laws, including the Basic Act on Informatization Promotion, were enacted or revised for informatization promotion in the public sector

  - 101 laws, including Electronic Signature Act and Online Digital Contents Industry Promotion Act, were enacted or revised for the development of the IT industry and informatization of the private sector (ICT, SW, Contents, Games, etc.)

3. Institutional Arrangements

- Policy by Ministry and Execution by Agencies

- MoIC from 1994-2007 during heavy ICT sector development

- Convergence activities to Other Ministry since 2008
  - National Informatization to MoPAS (e-Gov) by NIA
  - ICT Industry Promotion to MKE by NIPA (Previously KIPA, IITA, KIEC)
  - Broadcasting/Telecom Convergence, Mobile Services and Regulation to KCC by KISA, KORPA, KISDI
  - Contents (DB, Gaming SW ) to MoCT by KOCCA
4. Funding

- Government Annual Budget
- ICT Promotion Fund based on ICT Promotion Law (9B$ used) since 1993 by IT Promotion Law. Used for Major Infra projects
  - Key projects: KII Project and 11 e-Government projects
  - R&D ; IT839 Products and Services, Standard
  - ICT workforce Education and Training
- Public-Private Partnership
  - Co-investment: KII Backbone and Subscriber’s network
  - BTL (Build, Transfer, and Lease): Army Broadband Network, NEMA Digital TRS Network
  - Share-in-Revenue: Electronic Payment Systems for on-line civil services (Supreme Court, G4C, etc.)
5. Human Capacity Building

- Mass digital literacy campaigns sponsored by Korean government
  - Target groups: the elderly, the disabled, farmers, government officials, the military, housewives, low-income groups and prison inmates, etc. (25 Millions, 50%)

- Partnership with private computer academies, colleges, welfare organizations, etc. (Grant, matching fund, etc.)

- IT Professional trainings for overseas markets (subsidies to professionals and training institutes)

- Boosting up ICT demand by training programs
Suggestions

- Strong leadership with action oriented mind
- Streamlined policy and legal framework
- Pursuit of Innovation
- End user centric priorities
- Cooperation among organization and agencies
4. Next Stage in Korea e-Government
New National ICT Vision and Goals

Advanced Knowledge Information Society

Based on Creativity and Trust

- Smart Government
- Prosperity through Digitalization
- Trusted Information Society

Creative Soft-power

Cutting-edge Infrastructure for Digital Convergence
Strategy

Supply-driven
Focus on ICT Utilization

Fragmented
Seamless and Converged

Encouraging take-up
Privacy & Security

Government-led
Partnership/Collaboration

Creativity • Trust
Provide integrated and citizen-centered government services that create substantial values for citizens and businesses.

※ “islands of automation”
⇒ “Whole-of-Government Approach”

- Integrate government services across ministries and agencies in a more user-oriented way.
- Promote shared investments and process integration to leverage common components
- Establish a government-wide EA and information resources sharing system

<table>
<thead>
<tr>
<th>E-Government Utilization Rate</th>
<th>2007</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>41%</td>
<td></td>
<td>60%</td>
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<table>
<thead>
<tr>
<th>E-Government Development Index</th>
<th>2008</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th</td>
<td>1st</td>
<td></td>
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</table>
Implementation Framework

Virtuous circle of ICT, policies, services, and industry from the viewpoint of the entire nation
### Milestones

<table>
<thead>
<tr>
<th>Framework Plan</th>
<th>Legal System</th>
<th>Implementation Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Infrastructure</td>
<td>Law Amendment</td>
<td>Establishment of Informatization Strategic Committee</td>
</tr>
<tr>
<td>Government-wide EA</td>
<td>Ordinance Amendment</td>
<td></td>
</tr>
<tr>
<td>Information Resource Integration</td>
<td>Improving relevant systems</td>
<td></td>
</tr>
</tbody>
</table>

**2008**
- Planning
- Framework Plan
- Knowledge Infrastructure
- Government-wide EA
- Information Resource Integration

**2009**
- Detailed Project Planning and Implementation
- Pilot Project
- EA Establishment
- Integrating websites, computing equipment, and services

**2010**
- Mid-term Evaluation
- Diffusion
- EA Application
- Revision/Improvement

**2011**
- Revision/Improvement

**2012**

- Improvement

**2008-2012 Milestones**

- Government-wide EA
- Information Resource Integration
- Knowledge Infrastructure
- Legislation
- Ordinance Amendment
- Establishment of Informatization Strategic Committee
- Revision/Improvement
- Diffusion
- Project Planning
- Mid-term Evaluation
- Detailed Project Planning and Implementation
- Pilot Project
- Framework Plan
- Legal System
- Integration
- Website, computing equipment, and services
Questions & Discussions

Thank you