Korea ICT Industry Promotion Policy & Actions

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Agenda

• ICT Promotion Policies & Action (From Cyber-K21 to K-ICT)

• Critical Success Factor
  – Leadership,
  – Policy & Legal Framework
  – Institution
  – Funding
  – HRD

• Summary
3+1 Initiatives in National ICT Development

- E-Government
- IT Industry Promotion
- IT Society Expansion

Seamless Eco-Cycle

Infrastructure (Network, HRD, Standard)
3+1 Initiatives in National ICT Development

• E-Government
  – Government efficiency, transparency, competitiveness, serviceability
  – Creating national economy development opportunity
  – Human resource development

• IT Industry Promotion
  – Government Initiation, Private Sector Implementation
  – Research, Market development
  – Contribute to National economy, employment, international trade

• IT Society Expansion
  – Narrowing digital gap by education, ICT opportunity
  – Migration to high value society in capitalism
  – International Competitiveness

• Infrastructure
  – Network (Broadband, Telecom, Area Network)
  – Human Resource Development by Gov, Academy, Private Sector
  – Standards in Business Process, Skills, Methodology, Guideline, etc.
ICT Policies
(e-Government + ICT Industrialization)

1. 1978-1987 National Administration DB
2. 1987-1996 National Backbone Network
5. 2002-2006 e-Korea, 31 e-Government Roadmap
6. 2003-2007 Broadband IT Korea (Revised e-Korea)
7. 2006-2007 u-Korea
8. 2008-2012 New National Informatization & Integration (IT Convergence, Green IT, Smart Work)
1. Cyber Korea 21 Policy

• Emergence of a Knowledge-Based Society
  – Information and knowledge is the prime source of added value

• Korea’s Vision for a Knowledge-Based Information Society
  – Cyber Korea 21 is the Korean Government’s blueprint for building an Information Society by 2002
Vision and Objective

Construction of a Creative Knowledge-based Nation

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

Establishing the Information Infrastructure
Improving National Productivity
Creating New Business & Facilitating IT Industry
The New Business Policy of the 21st Century in the Information and Communication

Facilitating the S/W Industry

Fostering the IT Parts & Components Industry

Fostering IT Human Resources
Additional Initiatives of Cyber Korea 21

- Five Year Master Plan for Technological Development of Information & Communication
- Supporting New Start-up Venture Business
- Vitalizing E-commerce
- Promoting Digital Broadcasting
2. e-Korea, Broadband Korea Policy

I. Strategy for the New Growth
II. Implementation Actions
9 New Growth Engine Sectors in IT

Maintain Competitiveness

Areas with big ripple effects and continuous competitive edge that can be acquired by securing source technology

N/G mobile Communication
Digital TV (DTV) Home Network

Provide the Basis for High-added Values

Areas that can be the basis for high-added values of the IT industry

IT SoC Digital Contents Embedded S/W

Preoccupy New Markets

Areas that lead IT evolution to preoccupy the new markets

Intelligence Robot
N/G PC Telematics

N/G: Next Generation,
SoC: System on Chip
Strategy for the New Growth of Broadband IT

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
- Preparation for Service Launching

Building Infrastructure
- Policy · Strategy
- Lead Standardization
- Fundamental Tech.
- Initial Market Creation
- Financial Support
- Invest in Technical Development
- Trial Commercialization

Devices/Parts (9 IT Growth Engines)
- Standardization Support
- Technical Support
- Public Pilot Project
- Build Production Base
- Strengthen Cost Competitiveness
- Expand Local & Foreign Market

Contents/SW
- Prevent Piracy
- Build Demonstration Room
- Package SW
- Solution Project
- Application SW
- Embedded SW

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

Government

Company

Basis for the Industry

R&D Process Innovation
H/R Nurturing
Favorable Business Environment
Attract R&D Center
Nurture SMEs
### Implementation Plans for 9 Engine Sectors in 2004 (1)

<table>
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<tr>
<th>Goals</th>
<th>Policy</th>
<th>R &amp; D</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3GHz Portable Internet Prototype development</td>
<td>• Set up a portable Internet standard &amp; decide a licensing policy</td>
<td>[76.6B won]</td>
</tr>
<tr>
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<td>• Support overseas certification test for mobile handsets</td>
<td>• Develop 30Mbps portable Internet tech.</td>
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<td></td>
<td>• Secure IPR for 4G mobile communications at the speed of 100Mbps</td>
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<tr>
<td>Terrestrial DMB Transceiver system/Handset development</td>
<td>• End the DTV standard controversy</td>
<td>[25.1B won]</td>
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<td>• Open DTV broadcast stations in large cities</td>
<td>• Develop terrestrial DMB handset SoC</td>
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<tr>
<td></td>
<td>• Revise the Broadcasting Act &amp; license DMB broadcasters</td>
<td>• Secure a DTV indoor reception rate to 99%</td>
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<td></td>
<td></td>
<td>• Develop a 400Mbps downstream cable modem</td>
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<td>Wired &amp; wireless convergence Home server development</td>
<td>• Implement a pilot project</td>
<td>[27.5B won]</td>
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<td>• Open an exhibition hall( Feb. )</td>
<td>• Develop 54Mbps wireless home N/W tech.</td>
</tr>
<tr>
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<td>• Encourage home N/W standardization efforts</td>
<td>• Develop FTTH home G/W tech.</td>
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<tr>
<td></td>
<td>• Actively use open S/W</td>
<td>• Develop N/G server for home network</td>
</tr>
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</table>

N/G Mobile Communications

DTV

Home N/W
Implementation Plans for 9 Engine Sectors (2)

**Goals**

- Multimedia chipset localization for cell phones
- 1st introduction of a wristwatch-type PC
- Embedded in 100 products

**Policy**

- Maximize the reuse by building SoC IP DB
- Foster SoC masters & doctors, and build a collaboration system btw. SMEs
- Support the joint reuse of SoC development tools
- Hold wearable PC Int’l fashion shows
- Draft a body area N/W standard
- Nurture talents in the fields of textile engineering and medicine etc.
- Produce 3,000 embedded SW experts
- Invite public contribution of embedded S/W
- Apply it to the digitalization projects on transportation & prevention of disasters

**R & D**

- [25.1B won]
  - Develop cell phone camera chips, graphic chips, screen driver chips
  - Develop semiconductor device for optical communication
- [19.2B won]
  - Develop micro PC system prototype
  - Develop 3D smart input device
  - Develop virtual reality technologies of the 5 senses
- [9.6B won]
  - Develop telematics, robots, home server OS, embedded S/W standard platform
  - Develop embedded S/W dev. tools

**IT SoC**

- Internet telephone制度整立方안마련
- Internet품질기준설정 및착신번호부여

**N/G PC**

- Embedded in
- 100 products

**Embedded S/W**

- Multimedia chipset localization for cell phones
- 1st introduction of a wristwatch-type PC
- Embedded in 100 products

**National IT Industry Promotion Agency**
Implementation Plans for 9 Engine Sectors in 2004 (3)

**Digital Contents**
- Goals: Trial services based on a multi platform for PC, TV & console
- Policy:
  - Support pilot contents production
  - Build a global test-bed
  - Establish an Int’l mobile 3D contents standard
  - Apply open S/W to e-government
- R & D:
  - [28.1B won]
  - Develop game engine technologies
  - Develop a technology to protect contents dissemination
  - Conduct int’l joint research in digital contents with Germany & Australia

**Telematics**
- Goals: Services through an Integrated transport Information center
- Policy:
  - Conduct a telematics pilot project
  - Build a test-bed for product development
  - Build a telematics information center
- R & D:
  - [14.9B won]
  - Develop test-bed standard interface & operational system
  - Develop a 155Mbps multimedia service technology for fast moving vehicle

**Intelligent Robots**
- Goals: Humanoid which recognizes & shakes hands with its owner
- Policy:
  - Outline a robot-N/W linking standard
  - Hold a N/W–based A.I. robot contest
  - Open up a course for a robotics specialized graduate school
- R & D:
  - [20B won]
  - Secure 95% of facial recognition rate
  - Develop an 1.5km/h walking tech.
  - Develop real time N/W & S/W for intelligent robots
Building Broadband Convergence Network (BcN)

Telecom N/W
Wired/Wireless Telephone

Broadcasting N/W
Terrestrial/Satellite/CATV

Internet N/W
xDSL/FTTH/HFC

BcN
Realize the speed of 50~100Mbps by 2010 (QoS/Stronger Security & IPv6 Support)

Digital Home
- e-learning
- VOD
- Home appliances control
- Prevention of crimes & disasters

E-government
- Public services (G4C)
- Corporate support (G4B)
- Government innovation (G2G)
- Public participation (C2G)

e-Business
- Electronic transaction
- e-payment
- e-CRM
- e-SCM

Embark on the 1st stage in 2004 (160B won)

Core technology develop
- Optical transmission • Exchange
  Fiber loop equipment

Pilot service delivery
- Advanced R&D N/W deployment
  Operation
- BcN technical test • verification

Local loop upgrade
- Conducting FTTH pilot projects
- Enacting the certification system for a special grade building
Strategic IT Industrial Clusters

- **Digital Media City**
  - Busan
  - Chuncheon

- **Songdo Inpia**
  - SW, Service, Mechatronics

- **New material, Sophisticated Electronics**
  - Daedeok Techno Valley
  - Incheon

- **Digital contents, Media & Entertainment**
  - Daegu
  - Jeonju
  - Seoul
  - Daejeon
High-Tech IT Complex (DMC, Seoul)

- Develop the nation into an IT hub of N.E. Asia integrating Korean & foreign R&D centers and firms
- Size: 34710 m² in Sangam-dong DMC
  - Government : 19173 m²
  - Private Sector : 15537 m²
- Composition
  - IT R&D Center/Joint Production Center
  - IT Biz Center/IT Theme Park
- Budget: $307M
- Period : 2004 ~ 2007
K-ICT Policy Goal & Strategy

Realizing Creative Economy
Led by ICT & ST Merge

Growth 8%, Production $220 B & Export $210 B
through innovative new industries and stronger major industries

* Value added criteria

ICT Goal (2020)

Strategy

Improvement of Fundamentals
Expansion of ICT Convergence
Reinforcement of Global Cooperation
Fosterage of 9 Strategic Industries
K-ICT Actions

1. Improvement of Fundamentals
   - Accelerating tech. innovation
   - Nurturing creative HR
   - Globalizing start-ups & ventures

2. Expansion of ICT Convergence
   - Realizing convergence in 6 areas
   - Improving regulations
   - Expanding public demand

3. Reinforcement of Global Cooperation
   - Committing customized globalization
   - Reinforcing global leadership

4. Fosterage of 9 Strategic Industries
   
   Contents
   - Digital Contents
   - Dig Data
   
   Service
   - 5G
   - UHD
   
   Device
   - Smart Device

   Infrastructure
   - Software
   - IoT
   - Cloud
   - Information Security

National IT Industry Promotion Agency
K–ICT HRD Policy

TOPCIT (Test of Practical Competency in ICT)

**Background**
Industry and University need objective ICT competency Test

**Feature**
TOPCIT is a performance-evaluation-centered test and measures 6 essential competencies
* SW, DB, Network/Security, IT Biz, IT Communication, PM

**Usage**
(for Student) Suggest success vision and Promote self-directed learning by providing educational contents

(for University) Develop Industry-Academic Cooperation Program and change curriculums to industry-oriented

(for Industry) Employ excellent new engineers and be able to objectively measure competency of engineers in company
Critical Success Factor

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

“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
"Economic revitalization is going to be propelled by a creative economy and economic democratization. At the very heart of a creative economy lie science technology and the IT industry." (President Park Geun-hye)
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

- MIC from 1994-2007 during heavy ICT sector development
- Convergence activities to Other Ministry since 2008
  - e-Government to MoGAHA; Implementation by NIA
  - ICT Industry Policy to MKE; Action by NIPA (2008)
  - ICT Industry Policy to MSIP; Action by NIPA (2013)
  - Broadcasting/Telecom Convergence Regulation Policy to KCC, Action by KISA, KISDI
  - Contents Policy (DB, Game, Animation) to MoCT, Action by KOCCA

MoGAHA; Ministry of General Administration & Home Affairs
MKE; Ministry of Knowledge Economy
MSIP; Ministry of Science, IT & Future Planning
KCC; Korea Communications Commission
MOCT; Ministry of Culture & Tourism
4. Funding

1. Government Annual Budget
2. 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
3. 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

- TOPCIT (Test of Practical Competency in ICT)
## National Initiative for IT Training by Ministries

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<th>Ministry</th>
<th>Subject for education</th>
<th>Education personnel</th>
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<td>70,800</td>
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<td>Ministry of Labor</td>
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<td>20,690</td>
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<td>Laborers</td>
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<td>700,000</td>
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<td>Local residents</td>
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<td>Military service men</td>
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<td>Delinquent juveniles</td>
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<td>Ministry of Education</td>
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<td>2,863,860</td>
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<td>(Students of low income family)</td>
<td>(500,000)</td>
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<td></td>
<td>Government employees</td>
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Summary

- Strong push forward policy & action led by Government
- Integrated effort from government, private and academy
- Economic contribution through technology development, job creation, consumption increase led by private sector
- HRD & Capacity building opportunity in Academy sector
- Global presence & partnership opportunities
Questions & Discussions

Thank you