Bridging the standardization gap in Korea
- Case Study: Strategy and Systems -

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1. Identifying the Standardization Gap (1/3)

- The topic “Bridging the standardization gap between developed and developing countries” was introduced to ITU’s work through Resolution 123 at the Marrakesh Plenipotentiary Conference, 2002.

- “Standardization Gap” might be defined as **Shortages in human resources** leading to disparities in the ability of developing countries, to access, implement, contribute to and influence international ICT standards (Source: ITU/UNCTAD World Information Society Report 2007: Beyond WSIS).

- Resolution 123 was revised at the Antalya PP-06, and now incorporates, by reference, WTSA-04 Resolutions 44, 17 (“Standardization in relation to the interests of developing countries”) and 54 (“Creation of regional groups”) as well as WTDC-06 Resolution 47 (“Enhancement of knowledge and effective application of ITU Recommendations in developing countries”).

**Impacts**

The significance of the standardization gap is that it contributes to the **persistence of the wider digital divide** in ICTs. That is because one of the underlying causes of the digital divide is unequal access to technology and the ability to use that technology.
1. Identifying the Standardization Gap (2/3)

- Gaps which need support from standards are in most of areas
- The Value of Global Standards are continuously decreased, while de-facto standards are continuously developed in various areas

Details impacted by Standardization Gaps

- Among Industries
- Among Communities
- Btw. Providers and Consumers

Wide scope of Standardization Gaps

- Global Gap
- Digital Divide
- Divide Market
- Field Gap

Developed Countries

Practical Market/Usage

Challenging scope for the Global Standard Organizations like ITU, ISO/IEC etc.
1. Identifying the Standardization Gap (3/3)

Basic Problems of Standardization Gaps

- Standardization gaps could not limited only for ‘Gaps between developed and developing countries’
- ‘Gap’ means between A and B, so it is important to identify A and B clearly and precisely
- Standardization Gap should apply between ‘Requirements’ and ‘Available Standards’
- Requirements should be different according to the each national status, and ‘Standards’ are normally available through ITU and other SDOs
- Many of developing countries, industries and other communities do not have enough capabilities to involve/participate in ‘Standard Development Process’ and this will result ‘Standardization Gaps’
- Following the technology development, ‘Requirements’ are sectionalized according to the interests and yield various de-facto standards which will lead divergence of ‘Standardization Gaps’
- The value of global standards are continuously decreased resulting from the competition and convergences, therefore gaps between ‘Global Standards’ and ‘Real Products’ are being increased and diverged
2. Koreans Efforts to shorten the Gap (1/5)

- After the ‘Korean War’, government initiated national development strategy with clear long term plan (every 5 years until 1986)
- Government leaded and promoted national activity with clear vision and detailed plans
- All relevant communities set up ‘Requirements’ and ‘Identity requested technology’
- After the certain stage, government encourage driving forces which generated by the market
- Now Korea has the balanced situation among Users, Providers and Governors

Based on these achievements, Korea now actively involve into the global standard activities
2. Koreans Efforts to shorten the Gap (2/5)

Government Initiation and its Achievements

<table>
<thead>
<tr>
<th>Year</th>
<th>Getting Start</th>
<th>Infrastructure</th>
<th>Supply-Demand Positive Feedback</th>
<th>Convergence</th>
</tr>
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<tr>
<td>1960</td>
<td>Equipments-oriented</td>
<td>Network Infra-oriented</td>
<td>IT 839 Strategy</td>
<td>Convergence of Technology and Industry</td>
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<td>1986</td>
<td>5-year Science and Technology Plan</td>
<td>Basic Plan for IT Promotion</td>
<td>Cyber Korea 21(1999)</td>
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<td>2004</td>
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<td>2008</td>
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<tr>
<td>Future</td>
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</tbody>
</table>

- **Semiconductor**
  - 3rd Rank in World Market Share (11.0%)
  - Export 39.3B US$ ('07)

- **Cellular**
  - 2nd Rank in World Market Share (24.8%)
  - Export 18.6B US$ ('07)

- **Display**
  - 1st Rank in World Market Share (38.4%)
  - Export 21.8B US$ ('07)

- **Broadband Internet**
  - Subscriber: 14.7M households
  - Penetration rate: more than 90%

- **Mobile Comm**
  - Subscriber: 43.49M
  - Penetration rate: 93.2%
2. Koreans Efforts to shorten the Gap (3/5)

- Korean government shows another flag named ‘New IT’ with following themes:
  - Convergence IT
  - Problem Solver IT
  - Advancing IT

- ‘New IT’ should have an important role as a growth engine for the future Korea
  - Industrial Technology Roadmap has been developed by the involvements from Industry, Academia and Research Institutions
  - 14 R&D Areas of ICT are identified to strengthen the competitiveness of the Korean industry
  - 36 Key technologies are selected for standardization roadmap which is being prepared
2. Koreans Efforts to shorten the Gap (4/5)

Continue through the Government Policy

New IT Strategy

New IT

- Convergence IT
- Problem Solver IT
- Advancing IT

Product-IT Convergence
Process-IT Convergence
Service-IT Convergence

Green IT
LED
Health/Bio + IT
Life + IT

Semiconductor/Display
Network/Mobile Communication
IT SoC & SW

IT839
- 8 services
- 3 Infrastructure
- 9 New Growth Engine

- WiBro
- DMB
- Home Net.
- Telematics
- RFID App.
- W-CDMA
- DTV
- VoIP
- BCN
- USN
- IPv6

2004

u-IT839
- 8 services
- 3 Infrastructure
- 9 New Growth Engine

- HSDPA/W-CDMA
- WiBro
- BCS
- DMB/DTV
- u-Home
- Telematics/LBS
- RFID/USN
- IT Service
- BCN
- USN
- Soft Infraware

2006

2008

Cyber Korea 21 (1999)
u-Korea (2006)
## 2. Koreans Efforts to shorten the Gap (5/5)

### 14 areas

- Mobile communication
- BcN
- Knowledge/information security
- RFID/USN
- u-Computing
- Robotics
- Convergence of IT and Construction
- Convergence of IT and Environment
- Convergence of IT and Traffic
- Convergence of IT and Parts
- Convergence of IT and Shipbuilding
- Convergence of IT and Broadcasting
- Convergence of IT and Contents/SW
- Convergence of IT and Medical Care

### 36 key technologies

- 4G, Gigabit WLAN, WPAN/WBAN, Next-generation wired/wireless integration
disaster communication, VLC, Wired/wireless integration
- MoIP, IPv6 Multi-Networking, Future Internet, LAN/MAN, Next-generation Identification system, IPTV
- Password/Authentication/Authority Management, ID Management /Personal Information Protection, Network/system security, Application Security/Assessment Authentication, Bio Recognition
- Next-generation RFID, USN
- Next-generation server computing, Next-generation personal computing
- u-robot (URC)
- u-Home/u-Building
- u-Environment
- Tele-convergence
- Nano SoC
- e-Navigation
- 3D TV, Next Generation DMB, UDTV
- Next-generation DRM, 3D, Next-generation Web, SOC, Mobile S/W platform
- u-Health
Korea ICT Standardization System

Governments shares the areas:
- ITU : Korea Communications Commission/ Radio Research Agency
  - Korea Communications Standards Commission : Mandatory Technical Requirement and establishment of National ICT standards
  - Korea ITU Committee
- ISO/IEC : Ministry of Knowledge Economics/Korean Agency for Technology and Standards

TTA (Telecommunications Technology Associations) manages standardization activities by technical experts and contributions
- Standardization Assembly which composed of 7 Technical Committees is the highest decision making committee to approve technical standards,
- Under 7 Technical Committees, there are 58 Project Groups and 59 Working Groups/Special Groups
3. ICT Standardization System in Korea (2/5)

Vision: Global Standardization Leadership

ICT Standards Development
- Strategic Planning: Standardization Roadmap
  - Identification of key technologies
- Development of Standards
  - Global Standards
  - Public Standards
- Collaboration with SDOs & Forum
  - ITU, GSC, ETSI, ASTAP, etc
  - Standardization Forum
- CJK Standards Meeting
  - 4G, NGN, N-ID, etc

ICT Standardization Activities
- Standardization Workshop
  - 38 ICT Strategy Forums
- Organize Expert Pool
  - About ICT Global 300 Experts
- Educate Standardization Experts
  - TTA, ETRI, KATS etc
- Testing & Certification Services
- Interoperability Test
- Advancing Standardization Infrastructure
- Deployment Results
  Through Standardization Portal & Publication,
Various Training

4 Major Strategies
3. ICT Standardization System in Korea (3/5)

**Standards development**
- Korea Communications Commission
- Radio Research Agency
- ICT Standardization Strategy Forum
- Telecommunications Technology Association
- TTA Standardization Committee
- Manufacturers
- Telecommunications Service Providers
- Research Institutions
- Academia, etc.

**International cooperation and responding**
- APT
- ITU
- Fora/Consortiums
- GSC/CJK/3GPPs

**Government sector**
- Notification of National standards review results
- Request for National standards review

**Private sector**
- Commissioning of national standards development rights
- Operation

**Participation**
- National standards Proposal
- Forum standards proposal
- Standards draft Proposal
- Standards draft establishment
- TTA standards establishment
- Collaboration with standardization organizations
- Participation
- APT common Proposal
- Reflection of national position / Participation
- APT Proposal
- Contribution

**Fora/Consortiums**
- GSC/CJK/3GPPs
- Standards draft Contribution

**Manufacturers**
- Telecommunications Service Providers
- Research Institutions
- Academia, etc.
3. ICT Standardization System in Korea (4/5)

**Standardization Assembly**

- **Technical Committees (TC)**
  - Telecommunication (TC2)
  - Radio Communications (TC3)
  - IT Application (TC4)
  - Information Security (TC5)
  - Infra S/W (TC6)
  - IMT(4G) (TC7)
  - Broadcasting (TC8)

**58 Project Groups (PG)**

- Optical Transmission, Optical Internet, Network Management, NGN, Active Internet, Signaling, VoIP, Charging & Interconnection, IPv6, Internet Address Resource(IAR), LAN, Digital Home, QoS, Grounding, Outside Plant, Ethernet, IPTV
- WPAN, LBS, Measurement, Telematics/ITS, RFID/USN, PPDR, WBAN
- IMT-Advanced, IMT WiBro, Mobile platform and service, Next-generation mobile communication, CR, WLAN, VHO, IT technology evaluation
- DMB, Digital TV, Digital cable, Data Broadcasting, Satellite Broadcasting

**59 Working Groups / Special Groups (WG)**

- NGN evolution, CDMA6, WiBro6, Mobile IPTV, Power induction, IPTV security, etc. (20 WGs)
- ZigBee/WPAN, Radio determination, RFID wireless connection, etc. (13 WGs)
- Visible light communication services, 5 areas including grid accounting
- Forensics, DRM interworking, etc. (4 WGs)
- Mobile web / Ubiquitous web applications
- OMA, Mobile standard platform, External interface for terminal, etc.(10 WGs)
- 5 areas including Satellite DMB TTI, Interactive data service, CAS, etc.
3. ICT Standardization System in Korea (5/5)

ICT Standardization Strategy Forum

38 Fora

- IPv6 Forum Korea
- Voice over IP Forum
- URI Forum
- Korea Wireless Internet Standardization Forum
- Future of Numbering Standardization Forum
- Integrated Forum on Electronic Commerce (ECIF)
- Korea Biometrics Forum
- System on Chips Forum (SoC)
- Next Generation PC Standardization Forum
- Intelligent Robotics Forum
- U-Health Forum
- Senior Friendly IT Standard Forum
- Broad-band Convergence Network Forum
- Grid Forum Korea
- Korea Ethernet Forum
- USN Forum
- Mobile RFID Forum
- Next Generation Mobile Communication Forum (NGMCF)
- Spectrum Engineering Forum
- LBS Standardization Forum
- WPAN Standardization Forum
- RFID Diffusion Technology Forum
- Femtocell Forum
- Pico Cast Forum
- Advanced Digital Broadcasting Standardization Forum
- Korea Digital Cable Forum
- MPEG Forum
- IPTV Forum Korea
- Digital Contents Forum
- Digital Rights Management Forum
- Mobile Convergence Solution Forum
- OMG S/W Technical Standardization Forum
- Web Korea Forum
- Information and Telecommunication
- Accessibility Promotion Standard Forum
- Mobile Web 2.0 Forum
- Mobile Advertising Technology Forum
4. Bridging the Standardization Gap: Step wise approach (1/2)

Stage 1
Survey

Stage 2
Key Technologies

Stage 3
Strategy

Stage 4
Implementation

Stage 5
Utilization

Technical Analysis and Planning
Survey hot Topics in SDOs Analysis of Promising Tech. National Policy

Survey for Standardization items Candidates for Work item and its necessity & expected results/effects

Preparation of Key technologies

Selection of Key Technologies
Key Technologies + Expert Review + Training Plans with develop guidebooks

Preparation for building Strategy
Analysis of Key tech. Identification of Work items Set up Strategies

Preparation for shorten Standardization Gaps

Training and Workshop for ICT experts

Impacts into the each nation

Guideline for National Standards Development (Government)
Reflection of National Work Programs (Public Sector)
Sharing Information with Industry, Academia, and Research Institutions
4. Bridging the Standardization Gap: Korea involvement (2/2)

- Korea has joined ITU initiative for bridging the standardization gap activities
  - Korea has contributed to “Bridging Standardization Gap Fund” together with Nokia Siemens, MS, Cisco and others
  - Korea has also proposed to develop the methodology to measure standardization gap to ITU and the study is going on with ITU
    - CA between ITU and Korea in October 2008
    - Development of Measurement Model for Standardization Capability is expected in early 2009
    - ITU Workshop for Measurement of Standardization Gap will be held in the middle of 2009

- Korea has also participated in the regional activities for bridging the standardization gap in Asia-Pacific region
  - Advisory Program for Standardization in Developing Countries
  - In 2008, TTA of Korea and National Telecommunications Commission of Thailand work together to bridge the standardization gap
5. Conclusions

- Standardization Gap covers not only for ‘Developing/Developed’ but also between industries/communities taking into account ‘The value of Global Standards’
- Identify the ‘Requirements’ and ‘Requested Technology’ which need support of standards is the most important factor to solve the standardization gaps
- Education for standardization experts and technical workshops in developing countries supported by developed community are effective in strengthening the standardization capabilities
- ITU should have more efforts to provide an unique working platform for developing ‘Global Standards’
- ITU and Regional SDOs in developed regions should have more efforts to strengthen other Regional SDOs in developing regions
- ITU should continue to develop collaborations with other SDOs including fora and consortia
Thank you for you attention

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