Global Standards Symposium - Johannesburg, South Africa

Bridging the standardization gap in Korea

- Case Study : Strategy and Systems -

2008. 10. 20.

Mun-Kee CHOI, Ph.D.

President

ETRI 한국전자통신연구원
Electronics and Telecommunications
Research Institute

Table of Contents

1. Identifying the Standardization Gaps

2. Koreans efforts to shorten the gap

3. ICT Standardization System in Korea

4. Bridging the Standardization Gaps

5. Conclusions

1. Identifying the Standardization Gap (1/3)

Understanding S-Gap in ITU

- 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

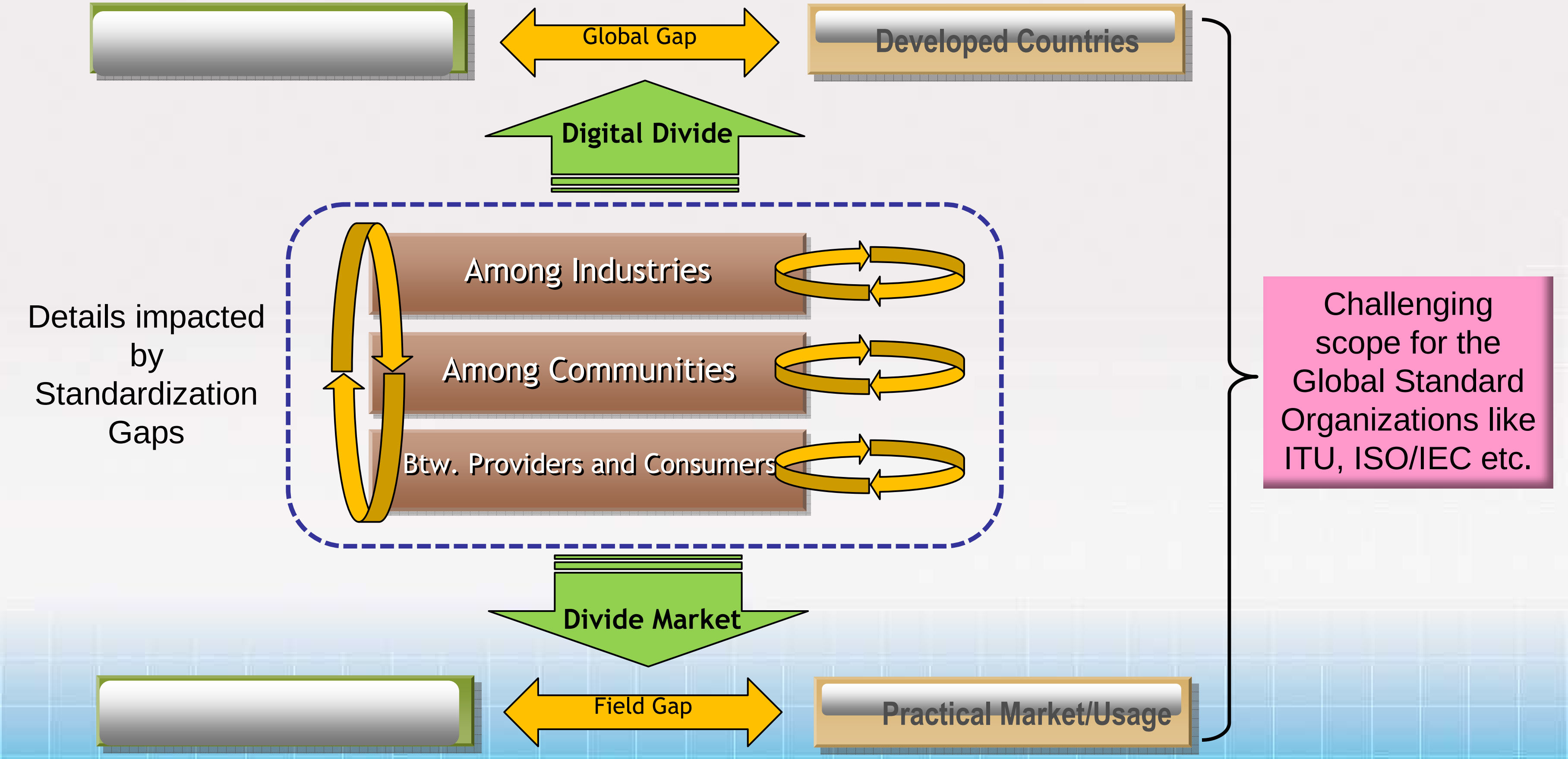
The significance of the standardization gap is that it contributes to the persistence of the wider digital divide in ICTs. That is because one of the underlying causes of the digital divide is unequal access to technology and the ability to use that technology.

1. Identifying the Standardization Gap (2/3)

Wide scope of Standardization Gaps

❑ 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



Global Gap

Developed Countries

Digital Divide

Details impacted by Standardization Gaps

Among Industries

Among Communities

Btw. Providers and Consumers

Divide Market

Field Gap

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)

Government initiate and Market driven

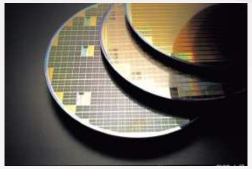
- After the ‘Korean War’, government initiated national development strategy with clear long term plan (every 5 years until 1986)
- Government leaded and promoted national activity with clear vision and detailed plans
- All relevant communities set up ‘Requirements’ and ‘Identity requested technology’
- 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

1960 – 1986	1987 – 2003	2004 – 2007	2008 – Future
Getting Start	Infrastructure	Supply-Demand Positive Feedback	Convergence
Equipments-oriented	Network Infra-oriented	Service-Infra-Equipments	Convergence of Technology and Industry
▪ 5-year Science and Technology Plan ▪ Plan for Semiconductor Industry Promotion ▪ Basic Plan for National Administration information Service	▪ Basic Plan for IT Promotion ▪ Cyber Korea 21(1999) ▪ e-Korea Vision 2006(2002) ▪ Broadband IT Korea ▪ Vision 2007(2003)	▪ IT 839 Strategy ▪ u-Korea Plan : National strategy for Ubiquitous Society	?



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%

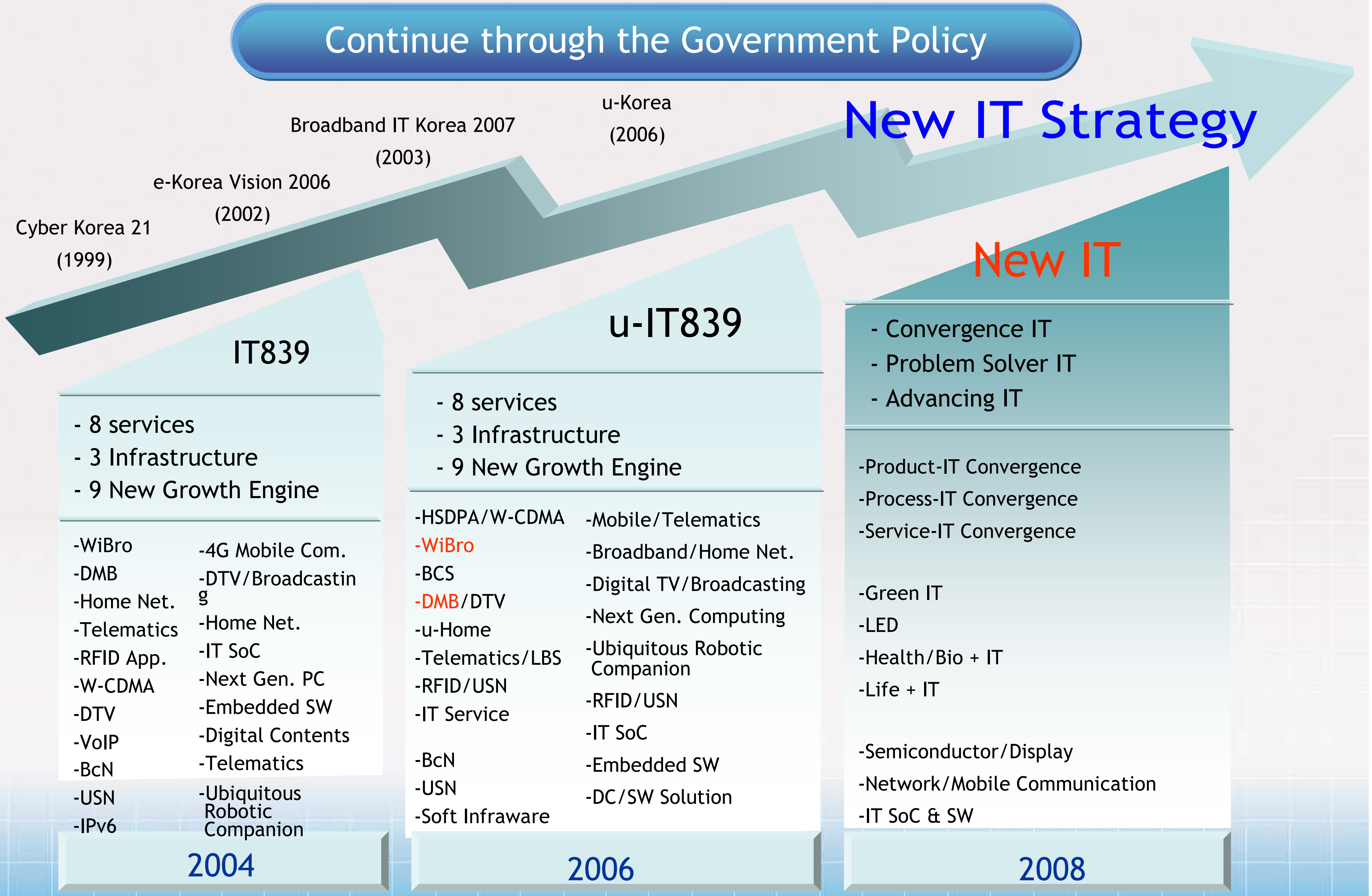
Mobile Comm

- 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

Cyber Korea 21
(1999)

e-Korea Vision 2006
(2002)

Broadband IT Korea 2007
(2003)

u-Korea
(2006)

New IT Strategy

IT839

- 8 services
- 3 Infrastructure
- 9 New Growth Engine

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

-4G Mobile Com.
-DTV/Broadcasting
-Home Net.
-IT SoC
-Next Gen. PC
-Embedded SW
-Digital Contents
-Telematics
-Ubiquitous Robotic Companion

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

-Mobile/Telematics
-Broadband/Home Net.
-Digital TV/Broadcasting
-Next Gen. Computing
-Ubiquitous Robotic Companion
-RFID/USN
-IT SoC
-Embedded SW
-DC/SW Solution

2006

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

2008

2. Koreans Efforts to shorten the Gap (5/5)

14 areas	36 key technologies
Mobile communication	4G, Gigabit WLAN, WPAN/WBAN, Next-generation wired/wireless integration disaster communication, VLC, Wired/wireless integration
BcN	MoIP, IPv6 Multi-Networking, Future Internet, LAN/MAN, Next-generation identification system, IPTV
Knowledge/information security	Password/Authentication/Authority Management, ID Management /Personal Information Protection, Network/system security, Application Security/ Assessment Authentication, Bio Recognition
RFID/USN	Next-generation RFID, USN
u-Computing	Next-generation server computing, Next-generation personal computing
Robotics	u-robot (URC)
Convergence of IT and Construction	u-Home/u-Building
Convergence of IT and Environment	u-Environment
Convergence of IT and Traffic	Tele-convergence
Convergence of IT and Parts	Nano SoC
Convergence of IT and Shipbuilding	e-Navigation
Convergence of IT and Broadcasting	3D TV, Next Generation DMB, UDTV
Convergence of IT and Contents/SW	Next-generation DRM, 3D, Next-generation Web, SOC, Mobile S/W platform
Convergence of IT and Medical Care	u-Health

3. ICT Standardization System in Korea (1/5)

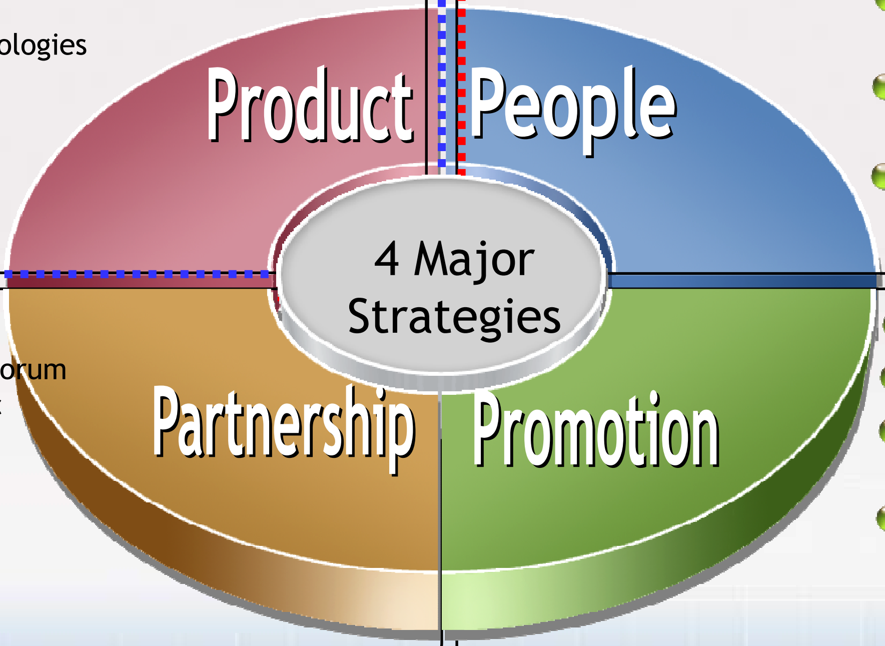
❑ Korea ICT Standardization System

- 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

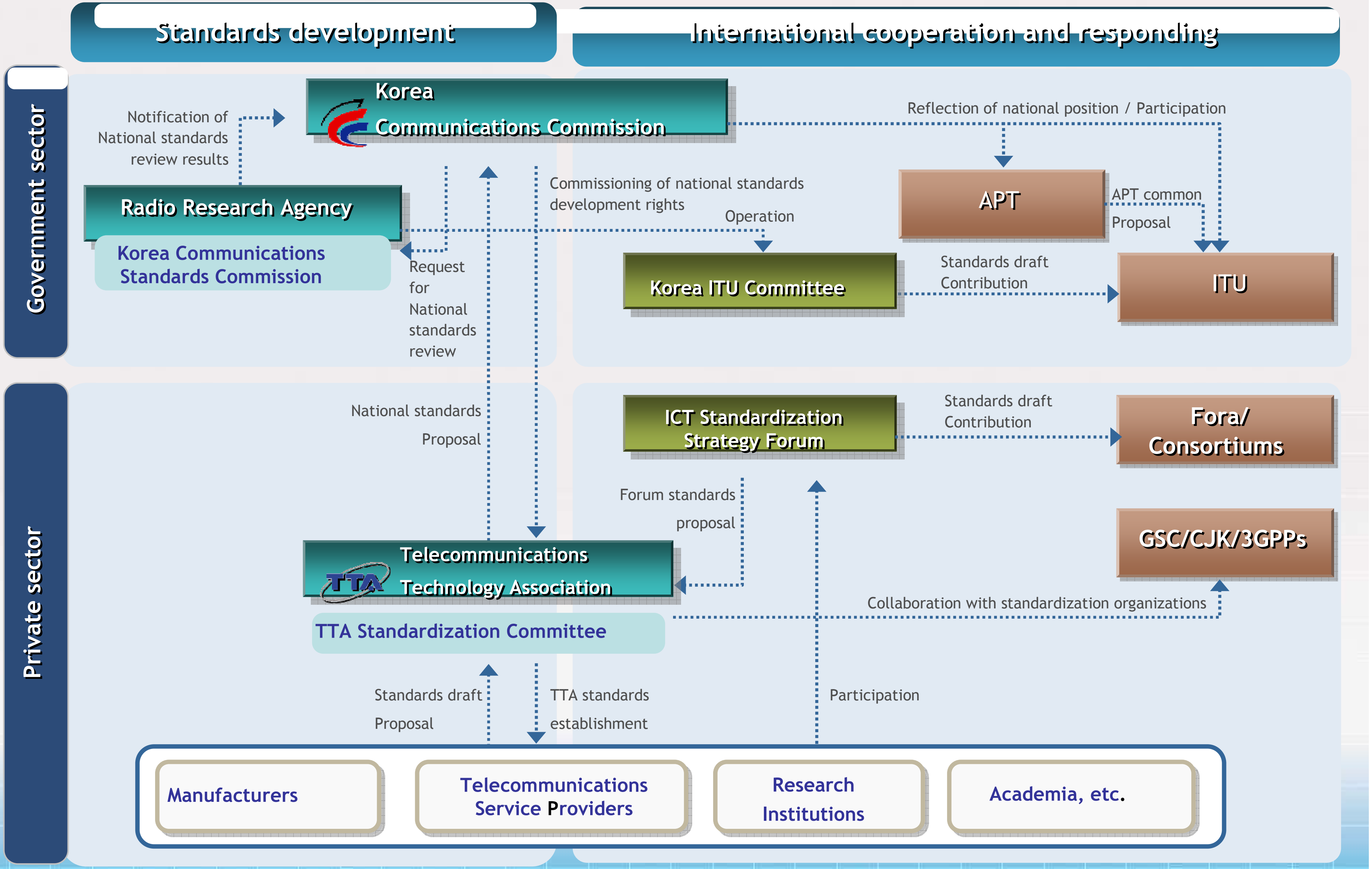
ICT Standardization Activities

- Standardization Workshop
  - 38 ICT Strategy Forums
- Organize Expert Pool
  - About ICT Global 300 Experts
- Educate Standardization Experts
  - TTA, ETRI, KATS etc

- Collaboration with SDOs & Forum
  - ITU, GSC, ETSI, ASTAP, etc
  - Standardization Forum
- CJK Standards Meeting
  - 4G, NGN, N-ID, etc

- Testing & Certification Services
- Interoperability Test
- Advancing Standardization Infrastructure
- Deployment Results Through Standardization Potal & Publication, Various Training

3. ICT Standardization System in Korea (3/5)


Standards development
International cooperation and responding
Government sector
Private sector
Korea Communications Commission
Notification of National standards review results
Radio Research Agency
Korea Communications Standards Commission
Request for National standards review
Commissioning of national standards development rights
Operation
Reflection of national position / Participation
APT
APT common Proposal
Korea ITU Committee
Standards draft Contribution
ITU
National standards Proposal
ICT Standardization Strategy Forum
Standards draft Contribution
Fora/ Consortiums
Forum standards proposal
GSC/CJK/3GPPs
Telecommunications Technology Association
TTA Standardization Committee
Collaboration with standardization organizations
Standards draft Proposal
TTA standards establishment
Participation
Manufacturers
Telecommunications Service Providers
Research Institutions
Academia, etc.

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

Standardization Assembly

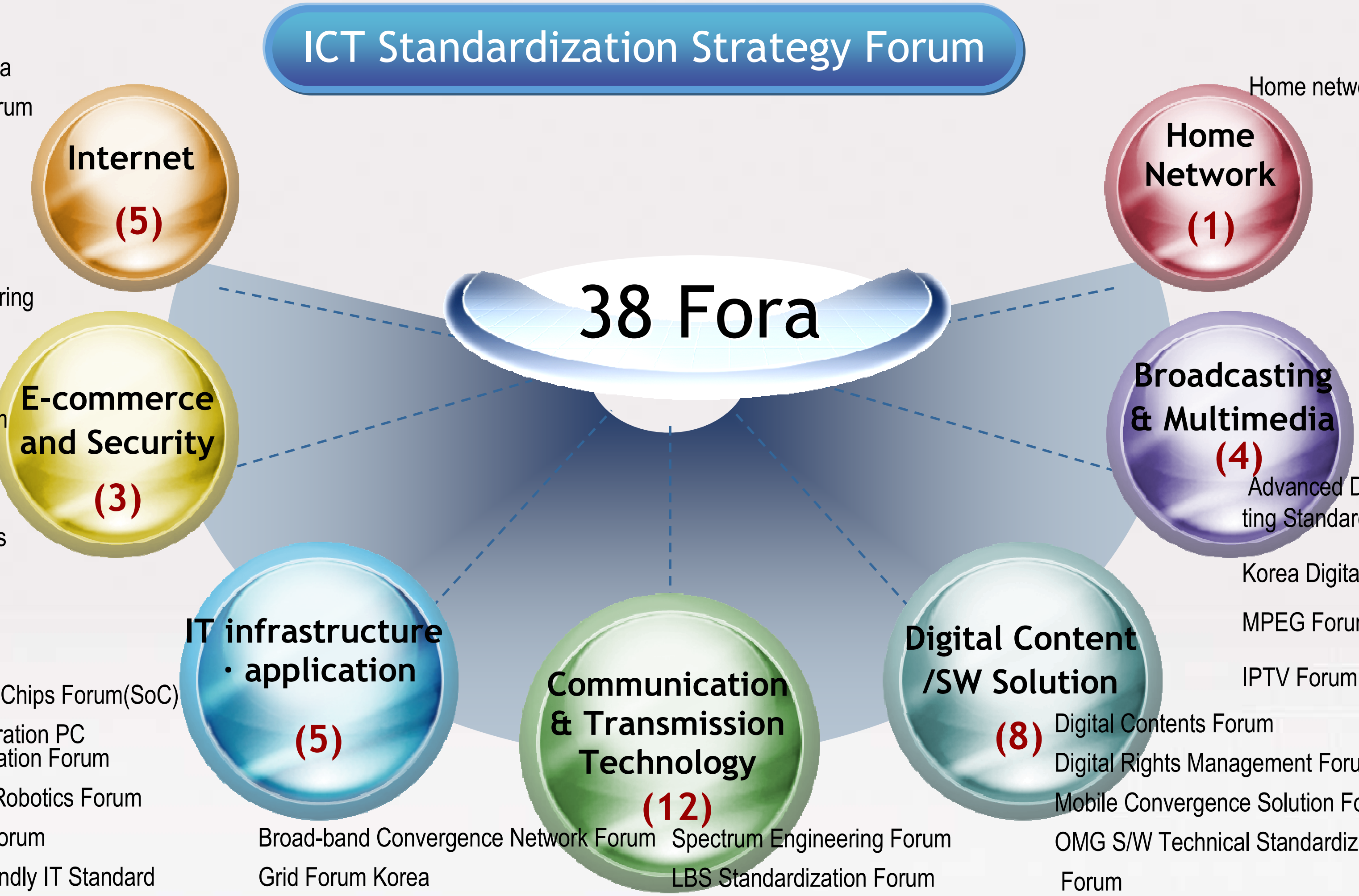
TTA Standardization Committee

Strategic Planning Committee

User advisory group

7 Technical Committees (TC)	58 Project Groups (PG)	59 Working Groups / Special Groups (WG)
Telecommunication (TC2)	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	NGN evolution, CDMA6, WiBro6, Mobile IPTV, Power induction, IPTV security, etc. (20 WGs)
Radio Communications (TC3)	WPAN, LBS, Measurement, Telematics/ITS, RFID/USN, PPDR, WBAN	ZigBee/WPAN, Radio determination, RFID wireless connection , etc. (13 WGs)
IT Application (TC4)	Multimedia, Electronic Commerce, Public Information, NGIS, Grid, Intelligent Service Robot, Distributed Resource Information Management, Post PC, Welfare Communication, SoC, SOA, u-Health	Visible light communication services, 5 areas including grid accounting
Information Security (TC5)	Information Security Infrastructure, Personal Information Security/ID Management, Cyber Security, Application Security/Assessment Authentication, Biometrics, DRM(Digital Rights Management)	Forensics, DRM interworking , etc. (4 WGs)
Infra S/W (TC6)	Embedded S/W, Open S/W, S/W Quality Evaluation, WEB, MetaData	Mobile web / Ubiquitous web applications
IMT(4G) (TC7)	IMT-Advanced, IMT WiBro, Mobile platform and service, Next-generation mobile communication, CR, WLAN, VHO, IT technology evaluation	OMA, Mobile standard platform, External interface for terminal, etc.(10 WGs)
Broadcasting (TC8)	DMB, Digital TV, Digital cable, Data Broadcasting, Satellite Broadcasting	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

Internet
(5)

- IPv6 Forum Korea
- Voice over IP Forum
- URI Forum
- Korea Wireless Internet Standardization Forum
- Future of Numbering Standardization Forum

E-commerce and Security
(3)

- Integrated Forum on Electronic Commerce (ECIF)
- Korea Biometrics Forum

IT infrastructure · application
(5)

- System on Chips Forum(SoC)
- Next Generation PC Standardization Forum
- Intelligent Robotics Forum
- U-Health Forum
- Senior Friendly IT Standard Forum

Communication & Transmission Technology
(12)

- 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

Digital Content /SW Solution
(8)

- 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

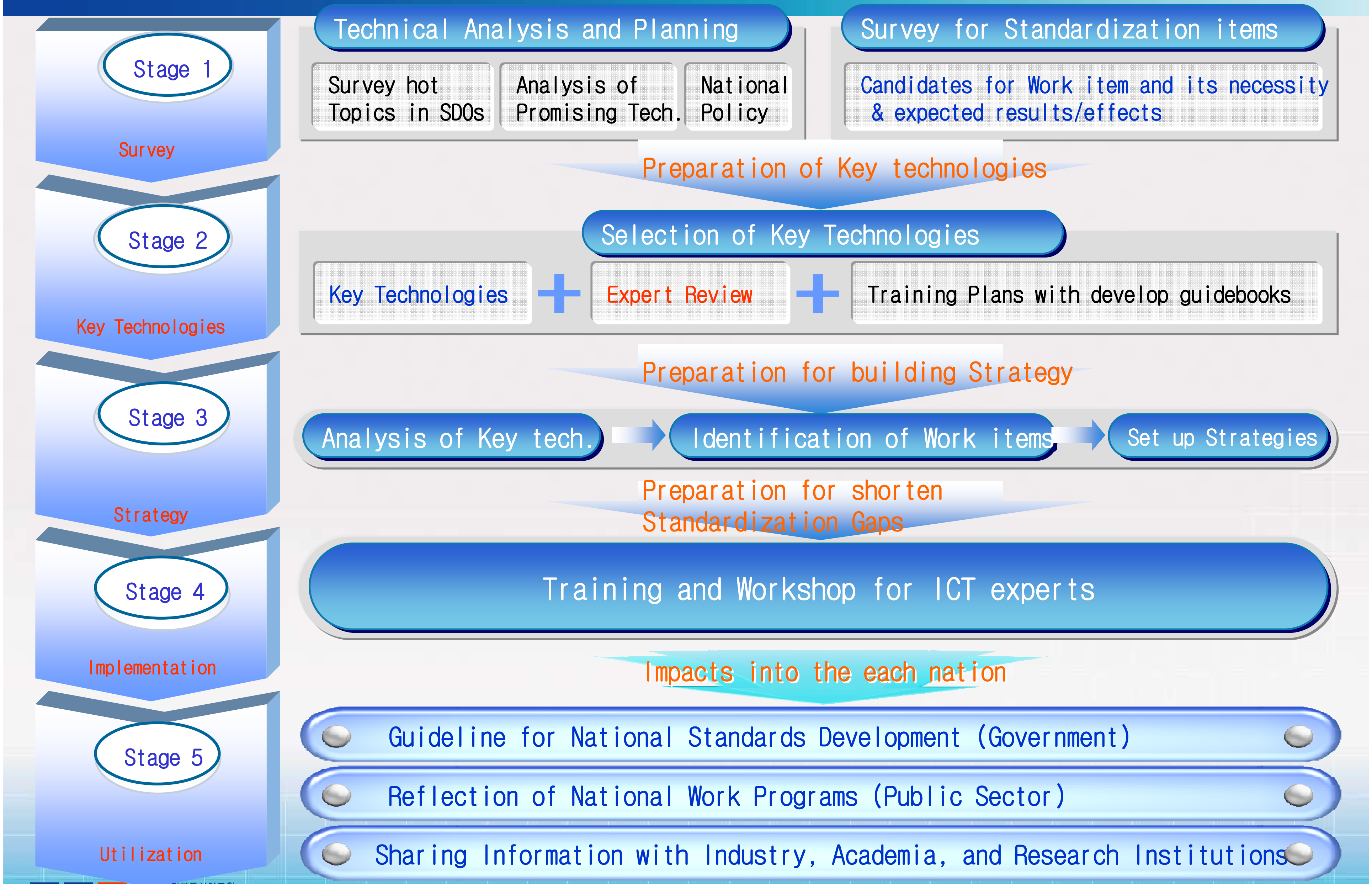
Broadcasting & Multimedia
(4)

- Advanced Digital Broadcasting Standardization Forum
- Korea Digital Cable Forum
- MPEG Forum
- IPTV Forum Korea

Home Network
(1)

- Home network Forum

4. Bridging the Standardization Gap: Step wise approach (1/2)



Stage 1
Survey

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

Stage 2
Key Technologies

Selection of Key Technologies

Key Technologies + Expert Review + Training Plans with develop guidebooks

Preparation for building Strategy

Stage 3
Strategy

Analysis of Key tech. → Identification of Work items → Set up Strategies

Preparation for shorten Standardization Gaps

Stage 4
Implementation

Training and Workshop for ICT experts

Impacts into the each nation

Stage 5
Utilization

- 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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