Korean Broadband Policies and Recommendations for the Asian Information Super Highway

September 25, 2013

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Broadband Policies in Korea
Brief History of Broadband Policy

1995

KII Project (~ a few Mbps)
* KII : Korea Information Infrastructure

PCs : 10M
Internet : 10M
e-Banking : 10M
m-phone : 30M

1999

Internet: 36M
m-phone: 48M
e-banking: 59M
IPTV: 2.6M

2001

BcN Project (50~100Mbps)
* BcN : Broadband Convergence Network

2002

2007

UBCN Project (up to 1Gbps)
* UBCN : Ultra Broadband Convergence Network

2009

Gigabit Internet Commercialization(2011~)
Rural Broadband Expansion(2010~)
Future Network R&D

2010

2015

* Korea Population : 50m
Broadband in Korea Today
Korea ranks the top

- In the number of FTTH subscribers, download speed, broadband quality and the number of households with broadband access

### Fibre/LAN Broadband subscribers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Subscribers (per 100 inhabitants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Korea</td>
<td>21.6</td>
</tr>
<tr>
<td>2</td>
<td>Japan</td>
<td>17.7</td>
</tr>
<tr>
<td>3</td>
<td>Sweden</td>
<td>10.3</td>
</tr>
<tr>
<td>4</td>
<td>Estonia</td>
<td>7.4</td>
</tr>
<tr>
<td>5</td>
<td>Norway</td>
<td>7.3</td>
</tr>
</tbody>
</table>

(OECD Feb. 2013)

### Households with Broadband access

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Percentage of all households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Korea</td>
<td>97.5</td>
</tr>
<tr>
<td>2</td>
<td>Iceland</td>
<td>87.0</td>
</tr>
<tr>
<td>3</td>
<td>Norway</td>
<td>82.6</td>
</tr>
<tr>
<td>3</td>
<td>Sweden</td>
<td>82.6</td>
</tr>
<tr>
<td>5</td>
<td>Denmark</td>
<td>80.1</td>
</tr>
</tbody>
</table>

(OECD Nov. 2011)

### Broadband Leadership

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Korea</td>
<td>157</td>
</tr>
<tr>
<td>2</td>
<td>Hong Kong</td>
<td>118</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>116</td>
</tr>
<tr>
<td>4</td>
<td>Iceland</td>
<td>115</td>
</tr>
<tr>
<td>5</td>
<td>Luxembourg</td>
<td>111</td>
</tr>
</tbody>
</table>

(Univ. of Oxford, Oct. 2010)

### Avg. Measured Connection Speed of Broadband

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Speed (Mb/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Korea</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Japan</td>
<td>10.8</td>
</tr>
<tr>
<td>3</td>
<td>Hong Kong</td>
<td>9.3</td>
</tr>
<tr>
<td>4</td>
<td>Latvia</td>
<td>8.9</td>
</tr>
<tr>
<td>5</td>
<td>Switzerland</td>
<td>8.7</td>
</tr>
</tbody>
</table>

(Akamai, Apr., 2013)
Success Factors of Korea’s Broadband [1]

Implementing Consistent & Strong Policies

- The government took part in all processes of developing national ICT infrastructure as a control tower from planning to implementation.
- The government took a leading role in implementing the policies consistently and strongly, as it set up goals directions, implementation frameworks and financing methods critical to the development of national ICT infrastructure.

Promoting Market Competitions

- The government encouraged market competition among service providers so that the users can enjoy high quality services in low price.
- The government supervised the time and the place of players’ competition, and even guaranteed a certain amount of revenues for service providers. As a result, the market could grow quickly, the players could gain strong competitiveness that enabled them to survive after the market-opening.
Success Factors of Korea’s Broadband [2]

Narrowing Gap between ICT Infrastructures and Services

A variety of ICT services utilizing the network were emerged continuously, improving the quality of people’s lives.

The government consistently built national ICT infrastructure with a long-term perspective, and based on this infrastructure, diverse ICT services developed and popularized, again driving the advancement of the infrastructure. Many government ICT projects including e-government, u-health, and national ICT education were implemented in line with the development of ICT infrastructure.

Virtuous Investment Cycle

The government actively supports the businesses building the network by creating the regulatory framework and making a lead investment.

The government bore the risk and reduced the uncertainty of building new infrastructure and adopting new technologies by making a lead investment. Such government leadership attracted the businesses to quickly adopt and diffuse new technologies and infrastructure by the businesses.
ASEAN ICT Infra Development Organizations
Singapore

- ICT-related Organization
  - Ministry of Information, Communications and the Arts, MICA
  - Infocomm Development Authority, IDA

- Policy for ICT (Broadband)
  - iN2015 master plan (including “Next Generation National Infocomm Infrastructure and Manpower development”)
  - Next Generation Nationwide Broadband Network,
    Next Gen NBN (through Open network)

- Feature of Organization (Broadband)
  - Government ministries make and enforce policies
  - Establish and expand broadband through government’s direct investment to private providers

- Broadband Providers
  - SingTel, StarHub, MobileOne (M1)
Malaysia

• **ICT-related Organization**
  - Ministry of Information Communication and Culture, MICC
  - Malaysian Communications and Multimedia Commission, MCMC

• **Policy for ICT (Broadband)**
  - Malaysian Information, Communications and Multimedia Services 886
  - National Broadband Plan, NBP
  - National Broadband Initiative, NBI

• **Feature of Organization (Broadband)**
  - Regulatory institution develops broadband policies
  - government makes direct investment to achieve policy goals at the national level

• **Broadband Providers**
  - Telekom, Malaysia, TIMEdotCOM, Maxis
Thailand

• ICT-related Organization
  - Ministry of Information and Communication Technology, MICT
  - National Broadcasting Telecommunications Commission, NBTC

• Policy for ICT (Broadband)
  - The National IT Policy Framework for the year 2001~2010
  - 2nd ICT Master Plan (2009-)
  - National Broadband Policy approved and initiated government investment made to establish the nationwide network for broadband service (2010.9)
  - TOT 3G/IP broadband network expansion project/NGN development project/FTTx service plan

• Feature of Organization (Broadband)
  - The state-owned telecom operator provide comprehensive communication services and implement national project such as infrastructure building
  - Central government, state-owned enterprises, and local governments collaborate for policy implementation

• Broadband Providers
  - TOT(Telephone Organization of Thailand), True
Vietnam

- ICT-related Organization
  - Ministry of Information and Communications, MIC
  - Vietnam Telecommunications Authority, VNTA
  - National Institute of Information and Communications Strategy, NIICS

- Policy for ICT (Broadband)
  - Master Plan for Information Technology use and Development in Vietnam by 2005
  - Vietnam’s Posts and Telecommunication Development Strategy until 2010 and Orientation until 2020

- Feature of Organization (Broadband)
  - Government ministries develop policies
  - State-owned telecom operators provide services
  - NIICS develops and implements policies and provides advices

- Broadband Providers
  - VNPT (Vietnam Posts and Telecommunications Group), FPT Telecom, Viettel Telecom
Philippines

- ICT-related Organization
  - Department of Science and Technology, DOST
  - Information and Communications Technology Office, ICTO
  - National Telecommunications Commission, NTC

- Policy for ICT (Broadband)
  - 2006-2010 ‘Philippine Strategic ICT Roadmap’ : Failure
  - The Philippine Digital Strategy, PDS (2011-2016)

- Feature of Organization (Broadband)
  - Government ministries make and implement policies by themselves

- Broadband Providers
  - PLDT (Philippine Long Distance Telephone Co.), Globe Telecom, BayanTel
Cambodia

• **ICT-related Organization**
  - Ministry of Posts & Telecommunication, MPTC
  - National Information Communications Technology Development Authority, NiDA

• **ICT (Broadband) Policy**
  - National Strategic Development Plan, NSDP
  - National Fiber cable network Project D2B8
  - National ICT Policy Making for expending Broadband network with ITU

• **Feature of Organization (Broadband)**
  - Government makes policies, and selects providers who implement the project

• **Broadband Providers**
  - Telecom Cambodia (Internet service Provider from “Camnet”)
    Viettel, CaGSM, CFOCN, HACL, Tele2 of MObitel, PPCTV
Indonesia

• ICT-related Organization
  - Departemen Komunikasi dan Informatika Republik Indonesia, DEPKOMINFO
  - Badan Regulasi Telekomunikasi Indonesia, BRTI
  - Meaningful Broadband Working Group, MBWG

• Policy for ICT (Broadband)
  - Palapa Ring project
  - Indonesia ICT 2025 Plan

• Feature of Organization (Broadband)
  - Government ministries make and enforce policies as well as advise on relevant issues directly under the President
  - An independent regulatory and supervisory institution exists
  - The state-owned telecom operator or selected private telecom companies are utilized to implement the project

• Broadband Providers
  - PT Indonusa Telemedia (broadband subsidiary of the state-owned provider Telkom), IM2 (broadband subsidiary of Indosat), XL Axiata (broadband subsidiary of Indosat)
Laos

- **ICT-related Organization**
  - *Ministry of Posts and Telecommunications, MPT*

- **Policy for ICT (Broadband)**
  - *ASEAN ICT Master Plan 2015*
  - *National Transmission Backbone 2010~2012*

- **Feature of Organization (Broadband)**
  - Government ministries make policies and investment
  - The state-owned telecom operators are utilized

- **Broadband Providers**
  - LTC*(Lao Telecommunications Company)*, ETL*(Enterprise of Telecommunications Lao, state-owned)*, Unitel, Tigo
Myanmar

• **ICT-related Organization**
  - Ministry of Communications and Information Technology, MCIT
  - Posts and Telecommunications Department, PTD
  - Myanmar Computer Federation, MCF

• **Policy for ICT (Broadband)**
  - The government has been carrying out the network construction since 2010, based on the ICT development plan 2030 (in addition, 3 stage e-government project has also been undergoing)

• **Feature of Organization (Broadband)**
  - Government discusses and enforces policies in cooperation with NGO(MFC)
  - the state owned telecom operator implement policies

• **Broadband Providers**
  - MPT (state-owned telecom operator), Red Link, Elilte Tech, Sky Net
Utilization of ICT Institutions

• Networking among ICT Ministries in ASEAN region
  - As governments are directly and indirectly involved in ICT development in ASEAN countries, their collaboration (ex. in setting the common goals, making a master plan) is the key for the success of the project

• Government Intervention for the Market Development
  - As the success of the project largely depend on the creation of the demand on broadband service, all players need to work together to share knowledge and analyze the markets to make relevant strategies to create the demand

• Government should take the lead in planning and implementing the project
  - Since many issues needs to be discussed and decided among countries, the government who represents the interest of the people, not the private company, should play a main role in planning and implementing the project.
  - In addition, only government can reorganize the laws/regulations so that the project can be carried out without problems.
Case Study: TEIN
TEIN Initiative and Evolution
- Partnership for Prosperity and Stability in the New Millennium -

- TEIN Initiative @ ASEM3 (October 2000) -
  ❖ Contribute to enhancing exchanges and cooperation between Asia and Europe through increased and more effective information flows;
  ❖ Enhance and diversify research exchanges and cooperation between Asia and Europe;
  ❖ Expand and diversify speedier and more powerful telecommunication connections between Asia and Europe

- Evolution of TEIN -
  
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>TEIN Initiative endorsed @ ASEM3 (Seoul)</td>
</tr>
<tr>
<td>2001</td>
<td>TEIN KR-FR launched (2Mbps) [TEIN quoted as “the basis of a strong partnership b/w Asia &amp; Europe” @ ASEM4 (Copenhagen)]</td>
</tr>
<tr>
<td>2003</td>
<td>TEIN KR-FR upgraded to 45M</td>
</tr>
<tr>
<td>Jan, 2004</td>
<td>TEIN2 announced by EU, funding 10M Euro for ASEM-Asia (SEA) partners</td>
</tr>
<tr>
<td>Dec, 2004</td>
<td>TEIN1(KR-FR) upgraded to 155M</td>
</tr>
<tr>
<td>Mar, 2006</td>
<td>TEIN3 Outline Proposal – extended to South Asia partners (EU funding 12M Euro)</td>
</tr>
<tr>
<td>Sep, 2006</td>
<td>TEIN2 Launch Event @ ASEM6 Summit</td>
</tr>
<tr>
<td>Dec, 2009</td>
<td>ASEM/TEIN3 Workshop - TEIN*CC proposal</td>
</tr>
<tr>
<td>Oct, 2010</td>
<td>TEIN4 and TEIN*CC endorsed @ ASEM8 Summit (Brussels)</td>
</tr>
<tr>
<td>Aug, 2011</td>
<td>TEIN*CC establish in Seoul, KOREA</td>
</tr>
<tr>
<td>Apr, 2012</td>
<td>TEIN-4 Project starts in TEIN*CC (4yrs)</td>
</tr>
</tbody>
</table>
In the ASEM8 Summit in Brussels on October 2010, the Leaders endorsed **TEIN4 and the establishment of the TEIN* Cooperation Center** in its Chair’s Statement.

**TEIN* Cooperation Center (TEIN*CC)** was established on August 2011 in Seoul, South Korea. It is a non-profit Foundation Corporation governed by the Korean Civil Act.

Supports from EC, Korean government, Seoul Metropolitan City
- Operational costs by Korean government
- TEIN4 programme (8M Euro/48months) by the EC
- Seoul Metropolitan City provides the TEIN*CC office and office facilities

**TEIN4 contract (Grant Contract) signed between EC and TEIN*CC on April 2012 (48 months).**

The 1st Governors’ Meeting and TEIN*CC Opening Ceremony in Seoul (May 2012)
Governors’ Meeting (19 partners)
- Chair: Francis Lee, SingAREN (SG), Vice Chair: Mary Fleming, AARNET (AU)
- R.S. Mani(NKN,IN)…etc.

Steering Committee (9 members)
- Chair: Mary Fleming(AARNET,AU), Vice Chair: Akhtar Hossain(UGC,BD)
- R.S. Mani(NKN,IN), Bhushan Raj Shrestha(NREN, NP), Francis Lee(SingAREN, SG), Chalermpol Charnsripinyo(ThaiREN, TH), Shigeki Goto(APAN), David West(DANTE), Bohyun Seo(KR), lellis Braganza(EC, Observer)

Executive Office (7+6)
- President (1): Mr. Tae-hee Lee, newsarmy@teincc.org
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- Administrative Management Team (3+3):
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  - Ms. Eunjin Hu, eunjinhu@teincc.org
  - Ms. Seung-Hwa Jeong (NIA), serenaj22@teincc.org
  - Mr. SeungChul Lim (Seoul City), oosscc55@teincc.org
  - Mr. HongGeun Ryu (Seoul City), rhg2000@teincc.org
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  - Ms. Molly Yap, mollyyap@teincc.org
  - Dr. YouHyeon Jeong (ETRI), yhjeong@teincc.org
  - Mr. Hyun Ho Choi (NIA), hhchoi@teincc.org
  - (KISA)
TEIN Partners

- Beneficiary (13 countries / economies)
  - Bangladesh: University Grants Commission (UGC)
  - Bhutan: Department of Information Technology and Telecom (DIT&T)
  - Cambodia: Institute of Technology of Cambodia (ITC)
  - India: National Knowledge Network (NKN)
  - Indonesia: Institut Teknologi Bandung (ITB)/INHERENT
  - Laos: Lao Education and Research Network (LERNet)
  - Malaysia: Malaysian Research and Education Network (MYREN)
  - Nepal: Nepal Research and Education Network (NREN)
  - Pakistan: Pakistan Education and Research Network (PERN)
  - Philippines: Advanced Science and Technology Institute (ASTI)
  - Sri Lanka: Lanka Education and Research Network (LEARN)
  - Thailand: Thailand Research Education Network Association (ThaiREN)
  - Vietnam: National Agency for Science and Technology Information (NASATI)

- Non-Beneficiary (6 countries / economies)
  - Australia: Australia, Academic and Research Network (AARNet)
  - China: China Education and Research Network (CERNet),
    China Science & Technology Network (CSTNet)
  - Hong Kong: Hong Kong Academic and Research Network (HARNet)
  - Japan: National Institute of Information and Communications (NICT),
    National Institute of Informatics (NII),
    Ministry of Agriculture, Forestry and Fisheries Research Network (MAFFIN)
  - Korea: National Information Society Agency (NIA)
  - Singapore: Singapore Advanced Research & Education Network (SingAREN)

Further country National Research and Education Networks (NRENs) may join during the period of TEIN projects.
- 19 Asian partners
- 50M+ connected users
- 4 hubs: Mumbai, Singapore, Hong Kong, Beijing
- Fastest Internet links for research within Asia
- Fastest and highest capacity direct Internet links for research with Europe
- 8M Euro EC funding (50% co-funding)
- More than 2M through TEIN*CC support from Korea Government
- Non-commercial
Recommendations
Recommendations

Building the Network with Scalability
- First, connect one or two countries with strong interest, and then publicizes the achievements, and further expands the network so that it can connect the entire Asian region.

Financial Sustainability is the Key
- Impose a rather small share of expenses among partner countries in the initial stages and then increase the share after sufficient verification of network use.

Setting Concrete Requirements
- Set the detailed and exact requirements through dialogue between the partner countries, ICT experts and network constructors.

Setting the Target Group and the Management
- Rather than building the network for the general public in countries where the number of Internet users has not reached a sufficient level, a specific user group, such as the government of each country, should be first selected as the target and then gradually expanded afterwards.
- In addition, should participating countries increase, a separate institution for overall management of the network and participating countries need to be built.
Conclusion

It is clear that the strong will and consensus among participating countries (or governments) is essential in building a large scaled international network like the Asian Information Super Highway.

In order to attract the governments’ interest, it is required to show them the benefits that can get from the project.

Therefore, following options can be suggested.
- Utilize the existing R&D network that many government already reached consensus on its need
- Improve it, so that it can be not only used for R&D purpose, but also for the backbone of the broadband connecting Asian countries.
Thank You