

# **Directions of developing Communication Policies for National IT Infrastructure**

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## **1. ICT Status of Korea**

Korea has the second most advanced technological infrastructure, the largest broadband subscribers, and the second lowest broadband cost in the world, according to the IMD World Competitive Yearbook 2005. Korea ranked first in the world in terms of broadband Internet penetration rates as of 2002 and 4th in terms of Internet user rates as of 2003.

The ICT sector has emerged as the single most important economic growth engine. The ICT industry in Korea contributed 41.9% to total economic growth in 2003. ICT's portion of total exports has been steadily growing since the 1990's. In 2004, IT exports amounted to US\$ 74.7 billion, or 29.4% of total exports. Based on broadband networks and information technologies, the country is leading the world particularly in hardware - semi-conductor, mobile phones, TFT-LCD, and digital TV. Its global competitiveness has also expanded to some of the software sector, most prominently in the online game industry.

Thanks to the world's best IT infrastructure, Korea has made significant progress with many forms of digital technology. In 2004, OECD declared the country's national e-commerce system needed 'no further action required' and suggested Korea's example as a benchmark for other governments. Up to 100,000 students can use high-speed Internet connections simultaneously to take free tutorials for the national aptitude test, which can determine college admissions.

## **2. IT839 Policy of Korea**

In 2004 South Korea proposed the IT839 Strategy for advancing its economic and technological development till 2015. It clearly laid out a roadmap for Korean electronic manufacturing capacity and a concrete goal of reaching \$ 20,000 per capita for Koreans. By identifying 8 services, 3 infrastructures and 9 new growth engines, the IT839 Strategy aggressively proposed to integrate key information technology industries and to be at least five years ahead of other developed countries in the cutting-edge ICT consumer services.

Based on the achievements of IT839, South Korean government re-proposes a blueprint for future society named the u-Korea strategy. The u-Korea strategy is proposed to construct a convenient living environment that resides on a ubiquitous infrastructure. Its goal is to develop new applications in IT industry and build up a convenient living environment.

The u-Korea strategy has two periods. The first period is from the year of 2006 to 2011. Its objectives are to build up the ubiquitous network infrastructure, to seek new applications of new technology, and to establish new social institutions in network society. The second period of u-Korea strategy begins in the year of 2011 and till 2015; the main objective is to develop and promote related service that based upon ubiquitous infrastructure, and to seize the leading position of Korea in the global economy.

### **3. Developing Communication Policies**

#### **1) WiBro**

WiBro is a wireless broadband Internet technology being developed by the Korean telecoms industry. WiBro is the Korean service name for IEEE 802.16e international standard. WiBro was devised to overcome the data rate limitation of mobile phones and to add mobility to broadband Internet access. In February 2002, the Korean government allocated 100 MHz of electromagnetic spectrum in the 2.3 - 2.4 GHz band, and in late 2004 WiBro Phase 1 was standardized by the TTA of Korea and in late 2005 ITU reflected WiBro as IEEE 802.16e. Two Korean Telco (KT, SKT) launched commercial service in June 2006, and the tariff is around 30 US\$.

WiBro base stations will offer an aggregate data throughput of 30 to 50 Mbit/s and cover a radius of 1-5 km allowing for the use of portable internet usage. In detail, it will provide mobility for moving devices up to 120 km/h (74.5 miles/h) compared to Wireless LAN having mobility up to walking speed and Mobile Phone having mobility up to 250 km/h. The technology will also offer Quality of Service. The inclusion of QoS allows for WiBro to stream video content and other loss-sensitive data in a reliable manner. These all appear to be the stronger advantages over the fixed WiMAX standard. Some Telcos in many countries are trying to commercialize this Mobile WiMAX (or WiBro). For example, TI (Italia), TVA (Brazil), Omnivision (Venezuela), PORTUS (Croatia), and Arialink (Michigan) will provide commercial service after test service around 2006-2007.

#### **2) DMB**

In 2005, Korea started S-DMB and T-DMB service on May 1 and December 1, respectively. As of December 2006, T-DMB service in Korea consists of, 7 TV channels, 12 radio channels, and 8 data channels. These are broadcast on six multiplexes in the VHF band on TV channels 8 and 12 (6MHz faster). As of April 2007, S-DMB service in Korea consists of 15 TV channels and 19 radio channels and 3 data channels. S-DMB service in Korea is provided on a subscription basis through TU Media and is accessible throughout the country. T-DMB service is provided free of charge, but access is limited in selected regions. Around one million receivers have been sold as of June 2006. Receivers are integrated in car navigation systems, mobile phones, portable media players, laptop computers and digital cameras. Korea has Full T-DMB serviced that include JSS, DLS, BWS, and TPEG in 2006. In Mid August 2007, Iriver, a multimedia and micro-technology company released their "NV", which utilizes Korea's DMB service.

#### **3) International cooperation through WiBro & DMB**

- Benefits of WiBro
  - Economical and easy to install ; Save 90% of investment to network
  - High performance solution ; High data rate, Scalability and extra
  - Broadband service in not only urban area but also rural & remote area
- Benefits of DMB
  - T-DMB can provide small 2~10 inch mobile TV now. But it will also provide more than 20 inch SD digital TV also.
- International cooperation through WiBro & DMB
  - Enhance the IT infrastructure environment and contribute in economic development of the region through continuous cooperative relationships.
  - Korean Government will cooperate in these areas.