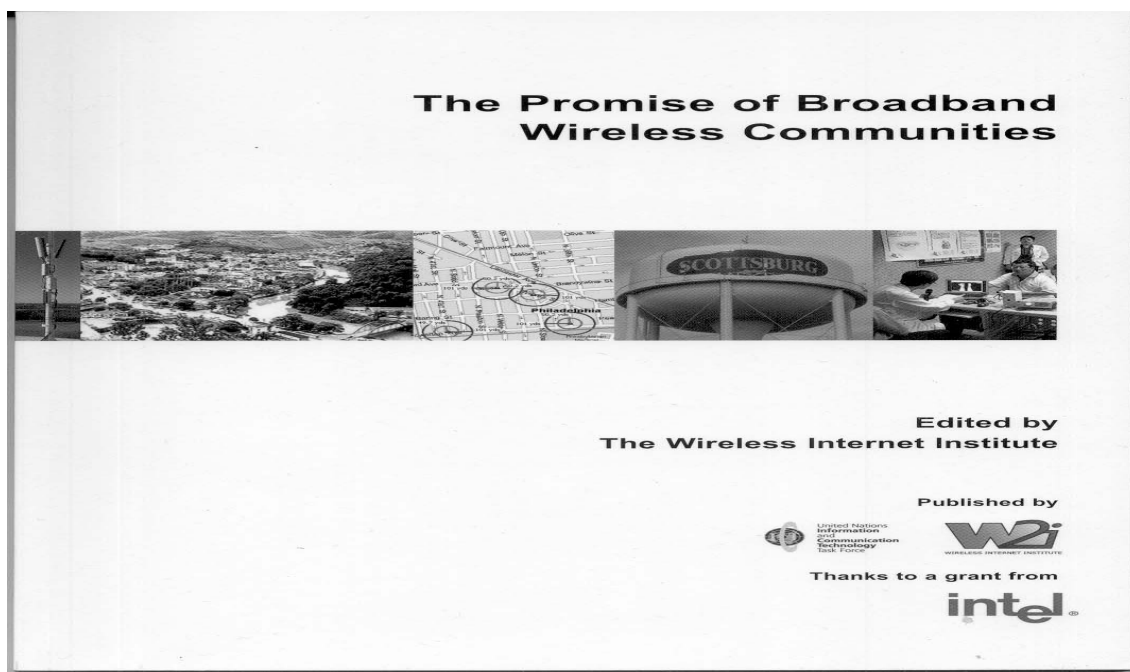


Strategic Options for Obama's Broadband Stimulus Initiative: S. Korea's Experiences for Reference Strategy



The Promise of Broadband Wireless Communities

“This book, a collaborative effort of the United Nations ICT Task Force and the Wireless Internet Institute (W2i), is intended as a resource and toolkit for local authorities seeking to plan, fund and deploy broadband-wireless networks in their communities. It also aims to raise awareness of the immense potential of wireless technologies in meeting the real needs of the poor. Indeed, the exponential growth in new technologies continues to offer vast opportunities. I look forward to working with all concerned to build an information society that benefits and empowers all the world’s people.”

—From the Foreword by UN Secretary-General Kofi Annan

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National Government as an Incubator for Broadband Distribution in South Korea

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South Korea is the world's most wired nation. There are 12 M high speed internet subscribers and 37 M mobile phone subscribers out of 48 M total population. Many households have broadband internet connections at the speeds of 10 Mbps or higher.

Korean government deserves receiving most of the credit for this success. Since the first master plan for informatization promotion has been established in 1996, the government worked closely with telecom operators on providing the communication infrastructure (155 Mbps ~ 5 Gbps) that connects 144 main cities in 2000 to deliver broadband services to the citizens. After the government announced that CDMA would be the standard for mobile services, SKT which is one of three major mobile telecom operators launched the world first commercial CDMA service in January 1996. Since then, Korea became a country with one of the world's highest mobile phone penetration rates.

The Korean government's continuing deregulatory telecommunication policy facilitated the rapid penetration of broadband internet service in Korea. The Korean government provided an environment for broadband growth by privatizing Korea Telecom and encouraging competition between different telecom operators. This lowers the service prices while delivering high quality internet services. Even rural areas could have broadband connections. Government also significantly invested to R&D of key technologies such as TDX exchange systems during mid 80's.

In addition to government's active policy support and investment, there are some aspects of Korean society which make the most wired country possible. Between 1998 and 2002, over 25,000 PC Roms emerged, providing the benefits of broadband to young adults; the place to play and enjoy gaming and multimedia with friends. Players want to upgrade the speed of their broadband connection to ensure the best level of play. Strong collaboration relationship between the public and private sector was also one of the key success factors.

Following the second master plan for informatization promotion -“e-Korea vision”- in 2002, the Korean government announced the third master plan for the broadband IT Korea -“u-Korea vision” - in 2004.

The u-Korea vision is looking for the next stage digital revolution -ubiquitous computing and communications era- that people can communicate and access information anywhere, anytime and anydevice. To support the u-Korea vision, Korean government launched a new national ICT strategy -IT839 initiative- outlining ambitious goals for eight services, three infrastructures and nine technologies. Under the IT839 initiative, the government encourages private sector’s investment and participation.

Highlight in IT839 strategy is the establishment of broadband convergence network (BcN) infracture and the deployment of wireless broadband Internet (Wibro) service using the 2.3GHz frequency band and based on the same standard proposed for WiMax.

BcN is the government`s most notable attempt to create an enhanced digital environment to keep pace with the new trends of media convergence. BcN will provide high speed connections at speeds of 50 Mbps to 100 Mbps for voice, data and video on a single platform. By successfully integrating the broadband convergence network with advanced end-user applications, Korea will be at least five years ahead of other developed countries in ICT based services.

WiBro service is for broadband internet connections with mobility. It is jointly developed by Electronics and Telecommunications Research Institute (ETRI) and Samsung Electronics. WiBro allows users to work with a word processor or watch a movie while trucking along at near-highway speeds. WiBro promises much higher data rates than one can get from the third-generation (3G) cellular system -an initial rate of 1 to 3 megabits per second, versus the 384 kilobits per second typical in advanced mobile phone networks today. The Korean government has already set regulatory guidelines for commercial WiBro services, and the telecom giant KT and SKT will be in full deployment of the service by mid-2006.

With the succesful launch of the BcN and WiBro, South Korea will be the most digitally dynamic society triggering drastic changes in a wide spectrum of social and economic activities.

The Digital-city Nation: South Korea's "u-City"

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u-City (ubiquitous ICT city) is the "Korea's 21C ICT mediated City", in which advanced ICT infrastructure and ubiquitous information services are integrated into the city space providing high convenience and quality for everyday city life, highly secured and well managed city environment, and creation of new business.

The u-City is a Korean version of new city development found in such diverse places around the world as Boston, Helsinki, Copenhagen, Singapore, and Malaysia in which information and communications technologies are woven into the design of the cities.

The main objective of Korea's u-City is to create environments in cities where residents can enjoy access to high-speed networks and advanced information services regardless of location and time, leveraging Korea's experience in most advanced ICT deployment.

The matured information and communication industry sector is already seeing the trend of slow growth. The u-City project will become the center of the government and private sectors' effort in sustaining growth for the country's economy: it is creating ICT converged construction industries and securing the growth phase of ICT industry by maximizing the synergy effect between the world top level ICT infrastructure and the most active city construction industry in Korea.

Local governments have been laying out several u-Citys such as Seoul's Digital Media City and Incheon's New Songdo City projects. Industry insiders believe that successful launch of the u-City could only be possible by linking the regional projects for balanced development, avoiding overlapping investment, while solving the economical, technical and legislative barriers through interaction between the government and private sectors.

Recently, the u-City Forum is established for concentrating the full effort of allied industry, government and civil experts for the development of u-City application services, related technology, and research for related regulations. The major members of the forum are central & local government including MIC, MCT, Incheon, Busan, Kyonggi, city developers such as the Korea Land Corp. and Korea Housing Corp., and high-tech heavyweights such as KT, SKT, Samsung and LG.

Following figure shows the u-City projects under development.



57,000 sq km and total population of 30 K digital media model town - Digital Media City (DMC) - in the Sangam region of Seoul will be complete by 2010. DMC will play a vital role in leading the future of Seoul. DMC will be a place where new added values are continually created by combining the attributes of digital media technology and culture. DMC will serve as an outpost supplying cultural products and services to satisfy local demands by utilizing advanced technologies, thereby becoming the ultimate breeding ground of technological innovation.

209,000 sq km and total population of 200 K ubiquitous computing model town in the Songdo district will be completed by 2014. As the largest urban development in Korea, New Songdo City Development, LLC (NSC), a joint venture between U.S. based The Gale Company and Korea's POSCO E&C signed an MOU with LG CNS, one of major ICT system integrator to establish "Songdo u-Life, LLC," a joint venture which will play a key role in constructing a u-City.

The scope of the Songdo u-City project will be approximately \$1 B to construct and manage a ubiquitous computing and communication infrastructure in the new city's households, schools, hospitals, and government offices, improving quality of life for residents and providing a highly-advanced digital environment for tenant companies.

Songdo u-Life, LLC will create a consortium among ICT companies to build a profit-generating business models including advanced digital services such as intelligent transport system (ITS), intelligent building system (IBS), home networks and smart card systems.

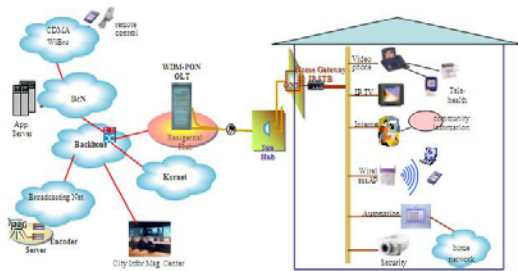
2,146 sq km and total population of 30 K digital model town in the Heungdeok district will be complete by 2008. The digital model town is one where the road system is connected with communication systems, and where all aspects of city life are managed by a central IT system. Residents can control electronic appliances while driving their cars and can check the traffic situation from their homes using FTTH fiber optic networks.

Busan, the nation's largest port city, will emerge as the world's first city with a ubiquitous wireless network over the next 5 years. To launch the \$1 B mega project, mayor of Busan and president of KT president signed a memorandum of understanding (MOU) for public-private partnership. The city government is pushing forward a plan to make the city as a logistics hub of Northeast Asia by building a "u-Port" in Busan harbor. The u-Port will use the ubiquitous technologies such as Radio Frequency Identification (RFID) and Wireless Sensor Networks (WSN) to provide cargo information in real time. It also plans a "u-Convention" facility to provide users access to tourism and geography information as well as translation services and electronic bill payment. "u-Healthcare" and "u-Traffic" service will also be provided as the main contents of the Busan u-City. The city is trying to invite as much private capital, from home and abroad, as possible.

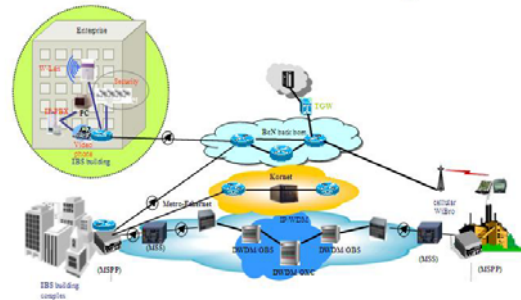
SK Telecom began working on a Telematics Model City in Cheju Island in 2004. Joint investment of \$10 M among central government (40%), local government (30%), and private sector (30%), Cheju u-City is to build a telematics service system for providing tourism and traffic information over 3000 renter cars in the Island.

Following figure shows the most common network and service schematics for Korea's u-City projects.

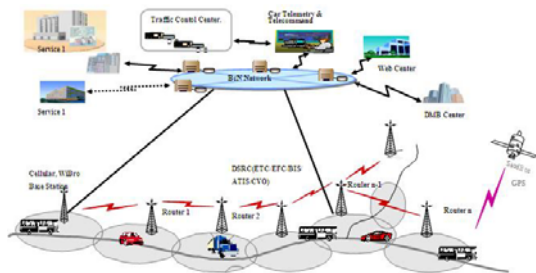
Residential Area



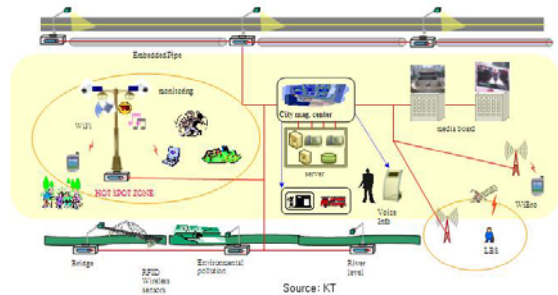
Commercial Building



Transportation



Citywide Area



Korean government announced the “u-Korea vision” in 2004 looking for the next stage digital revolution -ubiquitous computing and communications era- that people can communicate and access information anywhere anytime and anydevice. To support the u-Korea vision, Korean government launched a new national ICT strategy -IT839 initiative- outlining ambitious goals for eight services, three infrastructures and nine technologies. Fostering the realization of IT839 strategy in the u-City projects, u-Korea vision would be reached as early as possible.

