
	<p>“Innovations in Next Generation Networks” <u>ITU-T Kaleidoscope</u> <u>Event</u> Geneva, 12-13 May 2008</p>	
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Opening Keynote Speech

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Dear Mr. Malcolm Johnson, ITU-T Director,
Dear Alexander D. Gelman, Director of Standards, IEEE Communication Society,
Distinguished participants and fellow academic colleagues,
Ladies and Gentlemen,

First of all, please allow me to thank the ITU for inviting me to this very meaningful first event in a series of peer-reviewed ITU-T Kaleidoscope academic conferences on Innovations in Next Generation Networks.

As information and communication technology (ICT) plays a key role in the 21st century, I believe each and every country needs to rebuild its own development strategy based on ICT. Republic of Korea is a small nation located in the Far East Asia, but I think its path of progress or development can be a good role model for other developing countries.

For instance, the Gross National Product (GNP) per capita income of Korea was a mere 78 US dollars in 1960 regardless of mentioning that in the 1950's right after the Korean War, but it is now to surpass 20,000 US dollars in 2007', which indeed demonstrates a tremendous growth in a very short period of time. Today, it has been ranked the first in the semi-conductor and shipbuilding industries, the fourth in the textile industry, and the fifth in the automobile and steel industries. As a result, we could join the OECD in 1996, whilst OECD Ministerial Meeting - The Future of the Internet Economy - will be convened next month at Seoul, Korea. According to the ITU Digital Opportunity Index, moreover, Korea was ranked as the number one in addition to the highest broadband penetration in the world. However, it will be interesting to note that the cost of subscribing a fixed telephone was almost one third of house apart from a long waiting list mere until the early 1980's.

It was indeed the ICT industry which has significantly contributed to the development of Korea with 36% attribution of its economic growth. For example, Korea recently exported

as much as 320 billion US dollars and marked trade surplus of 16 billion US dollars, but the surplus from ICT alone was 54 billion US dollars. This shows that ICT was and is the driving force for the trade surplus of Korea. The development of the ICT has also contributed to democracy in politics, transparent governance, globalized information society, bridging the gap between urban and rural areas across the country, and education for most of populations regardless of ages and genders.

Another key driving force for the development of Korea in such a short period of time will be a high quality education in line with the vision to realize the Information Society from the early 1980's. Investment in education or educated people since the 1950's has led Korea to have not merely literate populations but also highly skilled manpower for the dynamic economy from the 1980's as one of the emerging tigers. For instance, there are over 400 universities in Korea, which demonstrates 66 per 1,000 populations. This is relative high in comparison with the 55 per 1,000 populations in the U.S.A. It is also worth noting that 41% of university students pursue their studies in the science and technology in Korea in comparisons with 29% in Germany, 21% in the U.K., and 20% in the U.S.A.

Most of all, so-called communications revolution has started from 1981 in Korea with the vision of preparing for the information welfare society led by the government – i.e., the top-down policy through introducing incremental liberalization in telecommunications started with duopoly in the 1980's to full competition in the 1990's, which aimed for providing high quality of telecommunication/ICT services with affordable prices with more choices accessed and used by all Korean citizens regardless of location, gender, ages and people with disabilities.

Such a policy followed by revising telecommunication legislations also intended to promote telecommunication technologies and foster telecommunication/ICT industries. In order to implement the policy, importance of research and development (R&D) on technology development and its socio-economic implications began to be recognized. Thus, service providers are obliged to contribute 3% of their turnovers to the research and development fund, which was invested into the development of such telecommunication technologies as TDX, D-RAM, Super-Mini Computers, CDMA etc. Several government sponsored research and development institutes were also established. For example, Electronic and Telecommunication Research Institute (ETRI) was formed for such specialized areas as hardware related electronics, semiconductors and communications, whilst Korea Information Society Development Institute (KISDI) was for socio-economic communications policy, and National Information Society Agency (NIA) was for informatizing the public sector and auditing the ICT projects.

In fact, it was such R&D institutes as ETRI together with leading

telecommunication/ICT industries like KT, Samsung, LG etc. which began to attend the ITU meetings and activities on standardization from the late 1980s to ensure interoperability for transnational communications, enhance economies of scale, and increase competitiveness in the globalizing telecommunication/ICT community. Indeed, the standardization has contributed and will continue to do so to the globalization of telecommunication/ICT markets. Thus, it is natural for the industry to lead the standardization especially for the new products and services with profits. I am also aware of the sensitive relation between standards and IPR to order to keep the balance between mass products for the economies of scale and incentives for innovation. But, ITU-T, I understand, has been dealing and managing the delicate balance for a long time.

In this regard, I would like to stress or urge for the needs of balance between profit-driven industry and innovation-led university in the standardization among all academia and industry leaders at this very timely and rightful forum today – i.e., ITU-T Kaleidoscope Event. However, both students and academia from universities in Korea like most of other countries – the developing countries in particular - are not familiar with the needs and roles of standardization especially in the converged ICT sector as well as the ITU, ITU-T in particular.

That is why it is very timely for the ITU to raise awareness of importance for the standardization from the universities, since students can be its future especially on the NGN in the developing world *inter alia* to bridge the standardization gap, through this kind of event. ITU can offer even more creative and attractive incentives such as a reputed prize or medal in telecommunication/ICT standards out of worldwide competition on innovative ideas for future networks and applications, which can be linked to markets by the industry. I believe that ITU has been ideally placed for all the players.

At the same time, universities and academia themselves also need to endeavor to participate or engage more actively in the standards development organizations (SDOs) like the ITU to elaborate a relevant and up-to-date education of future engineers and leaders in the telecommunication/ICT sector. Recognizing the convergences beyond the ICT *per se*, most of all, I wish ITU to lead not only the current convergence on ICT with broadcasting, telecommunications and information technologies but also the future multi-layered convergences of ICT with bio, nano, automobile and even environment-friendly technologies as the very platform allowing international experts and professionals to network and lead the technological innovation.

Having said all, I anticipate new wave of ICT revolution will start – if not already started - in Korea and possibly in other countries. Unlike in the 1980's when the top-down policy for liberalization was one of the driving forces for the communications revolution, for

instance, it may be driven by people *per se* – i.e., demands from the bottom-up – now and the future as witnessed by the booming Blogs, Myspace, Wikipedia etc.. In many Korean campuses, such scenes as on-line lectures, e-certificates, mobile TV and commerce, and many more based on not only 3G but also 4G technologies and applications became common among students' life. These students will be the very driving engine to innovate future NGN and its various services and applications. In this regard, the planned ITU-T Workshop on Robotics in Korea can be excellent and timely to share the trends of intelligent and converged technologies between telecommunications/ICTs and Robotics. Indeed, the future ahead will be a highly-advanced and intelligence-based society, where innovation or revolution in miniaturization and intelligence technologies embedded with chips in the objects will enable us to control everything around us and bring about an Ambient Intelligent environment.

As young generation leads to shift the socio-cultural paradigm, so they are the very driving or innovating force for the NGN and its various applications which can be accessed at anywhere and anytime by anyone and anything at the ubiquitous society. In order to encourage the university students and professors to be more creative and innovative for the future technologies and services, as if kaleidoscopic view, universities themselves may need to introduce standardization in their educational curriculum as early as possible. Also, universities may need to collaborate with the ITU and other standardizations organizations through various joint projects and initiatives for not only raising the awareness from universities but also building the environment-friendly information or ubiquitous society in both the developing and developed world for the better and greener future.

Last but not the least, I would like to congratulate speakers, whose excellent papers have been not only selected but also will pave the way for the future of next generation networks towards information society. I would like to thank you very much for your kind attention, while wishing every success of this first series of innovative event of the ITU.
