

# IEICE Global Plaza no.25

— Monthly community plaza in English for students, faculties and engineers —  
In Commemoration of Second Anniversary of IEICE Global Plaza Publication

## Essay

### Let's Jump Outside and Make Our World Wider



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On the occasion of the second anniversary of IEICE Global Plaza, I would like to refer to my idea of enforcing IEICE's contribution to ICT industries in the worldwide recession causing the depression of ICT industries, one of the keys being to encourage younger generation.

More than half a year has passed since I was assigned to serve IEICE as the President, and the remaining presidency has become less. As I stated in my address of policy at the beginning of my duty period, it was set up as one of the targets of activities for IEICE to contribute more toward revitalizing ICT industries, and some of strategic issues in this line which were discussed under the leadership of the former President Professor Aoyama have been commenced and achieved. For example, on the occasion of the biggest exhibition of IT and electronics in Asian region, "CEATEC Japan 2010", forums of some relevant IEICE Technical Committees were co-organized at the CEATEC venue, with the aim that IEICE's members working for industries would easily join the forums linked with the visit to CEATEC, and also to provide corporate engineers without membership with a chance to know the most updated R&D trend of IT and electronics. I myself attended some of the Technical Committees forums, and had a news flash on site with pleasure that the number of overall participants reached around twice as usual forums, and above all, quite many engineers of industries joined the forums. As other examples, I requested each of IEICE Sections to pick up the contribution to revitalization of industries as one of the targets of activities in this fiscal year. I am looking forward to hearing their novel and valuable proposals. The periodical meeting for opinion exchange between IEICE and Ministry of Internal Affairs and Communications which was set up last fiscal year also has been provided. IEICE Strategic Planning Office has been putting forward the improvement of IEICE's Web system, which is the entrance gate to IEICE, so that IEICE would be more useful for the members, and they are trying to commence the first stage of the master plan studied and refined over more than a year.

These days, I am worried about engineers who might have been introverted with diminishing vitality of the current ICT industries, especially in Japan. For example, the number of candidates who wish to go abroad for their studies or paper presentations in international conferences tends to reduce in my company. This seems to be the general trend, because I hear from leaders of many companies or Professors of universities that they are facing the same problem, especially among younger generation of engineers. Then, they will be more introverted due to the bad cycle of isolation from the wide world. The scale and quality of research activities environment depends on the policy, economy or social

situation in each country, but nowadays in Japan, they have been much improved, and that the number of people increased who could do without going out of their offices. Especially, due to the rapid development of Internet which enabled for PC users to easily retrieve the required information. My feeling is that, while the leaders or engineers in industries are enjoying this environment and settle in a closed and domestic society, most of them tend to be left behind those in industries who have kept efforts to jump outside with global views. It is true, people and industries who jump outside or go abroad for their research activities or business face much difficulties and are required to make so much efforts. Their efforts, however, are paid off, because they would have opportunities to have new ideas coming up through widely knowing different views or requirements, feeling the energy of people who work with strong will and power, facing novel fundamental research activities based on excellent long year foresights. As for the information retrievals, could engineers know points they would really like to know from the information passively given? Any information provided without effort may not be so effective, and may not lead to the truth which they are trying to catch, nor any new idea. I believe the important functions which any other procedures cannot achieve still remain in face-to-face discussion, especially out of your office.

IEICE will sustain you by continuously providing forums covering Technical Committees, General/Society Conferences and international symposiums/conferences for you to jump outside and meet many leading people. I hope as President of IEICE that younger engineers/researchers dare jump outside and extend your world, effectively use opportunities IEICE provides, and encourage yourself and contribute the revitalization of industries.

### Overview and Beyond of ICT Development in Korea and Expected International Collaborations between Universities and Industries



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Nowadays, Information and Communication Technology (ICT) has become a core engine for the economic growth and leading new power for the future society. Many of developed countries over the world have focused on R&D of ICT and related industrial developments, and now the results are shown in various patterns.

For the past few decades, the technology convergence has been rapidly progressed in various fields such as broadcast, communication, aviation, construction and vehicle, so that it became one of main streams of economics in Korea. This article overviews the trend of ICT development in Korea and refers to the possibilities of the future international cooperation between universities in promising technologies and related areas.

As well as in the other countries, the fundamental axis of ICT development in Korea is also derived from Government, national

research institutes and industries. Generally speaking, for the development of ICT in a country, the Government takes the role to present visions and strategies for ICT industry in a long-term perspective and makes the investment in R&D of strategic technologies. On the other hand, industries, research organizations and universities are encouraged to work on the development of innovative technologies, contents and new business models. This cooperative involvement of different sectors, active investment of industries and Government policy to create active demands, are the story of Korea's successful establishment for a strong ICT country. In particular, the foundation for technology growth in technology-intensive industries such as semi-conductors, displays, mobile phones has been settled by outstanding workforces based on the active investment by industries and Government strategy. In addition, our skilled man power and social consensus of digitalization have affected leading global ICT.

Currently, the major technologies in ICT under development in Korea are IPTV/smart TV, cloud computing, smart grid, green IT, etc. Such technologies are environment-friendly and foreseen as core technologies that will affect the direction for the future ICT. IPTV service providers in Korea, KT, SK Broadband and LG U+ have built their business in walled gardens. On the other hand, the Second generation IPTV service "IPTV 2.0" focuses on developing an open IPTV infrastructure that will support 4A (Anytime, Any device, Anywhere, Any content). Smart TV has emerged recently and competes against IPTVs for the next paradigm of connected TV. This means an alternative path to the final evolution of IPTV has been made.

In cloud computing area, Government of Korea has decided to invest about 167 million dollars in total, on Korean style cloud computing vitalization projects from 2010. Now expected applications of cloud computing technology on domestic industries are shown in various fields such as computer data processing, reducing management expenses, integrated business environments with enforced security, and utilizing company resources by virtualization of tasks in personal computers.

Domestic power lines are outstandingly efficient and stable comparing to other countries. So, Korea's approach to Smart Grid is a little different from United States' approaches which are based on replacing old power lines. It is based on reducing expenses for current energy and activating renewable energy. Domestic Smart Grid technologies have reached advanced level in mechanical side such as AMI (Advanced Metering Infrastructure) and Smart Meter but facilities of DR (Demand Response) and electric car look still falling behind. The level of power automatic distribution system technology in Korea is advanced, but plans and operations of intelligent power distribution system towards distributed generation and consumption patterns look falling behind as well.

On the other hand, the national strategy of green IT is to derive the competitiveness from green transformation to lead as the one of the advanced nations. For this purpose, 9 core projects have been proposed on the Green of IT and Green by IT which would be applied on economy and society using IT.

The core project in Green of IT is "World Best Green IT Product Development and Export Strategies". Industries with the most electricity consumption are main targets (i.e. Green PC, Green TV • Display, Green Server) and it is expected to reduce massive CO2 production in public sectors and hopefully lead Green IT markets. "Green IT Service Promotion Project" includes IDC (Internet Data Center) with resource integration technology development, cloud computing service platforms, broadcasting and communication infrastructure with low power consumption. The project of "Safe Network Structure with 10 Times Faster" puts its base on domestic exchanging and transmitting products to build the world leading Gigabit internet with high quality and advanced services by year 2012.

The Green by IT looks for the infrastructure of real life

environment including from office works to house works to reduce CO2 emissions and conversion to smart green traffic distribution systems, and construction of intelligent power line infrastructure. The Green by IT also covers environmental monitoring and disaster relief infrastructure including USN (Ubiquitous Sensor Network) to correspond with real time disaster prevention.

However, a problem of Korea IT industries is that a few major enterprises are leading hardware markets while the market of electronic parts and equipment is weak in comparison with the hardware market. Even though demands for software are skyrocketing, the quality of domestic software sounds low. This results in low utilization of domestic software from enterprises.

Also in universities, excellent students tend to avoid natural science and engineering majors, and the school system of universities requires minimum credits to be certified. This phenomenon results in discordance of quantitative and qualitative IT labor forces.

## Hot Topics

### Invited, Awarded Papers in IEICE Transactions on Communications Will Be Open for Free Retrieval Soon!

*IEICE Communications Society*

IEICE Communications Society has studied and discussed the reformation of English Transaction B entitled "IEICE Transactions on Communications" so that it would drastically impact on the general readers. As the first step of reformation, both of invited papers and awarded papers will be set out to open for free retrieval of those papers on the Web page. It is expected to not only enhance the academic level of IEICE but also take the initiative in social development by opening papers which the most of readers have retrieved, read and quoted. The number of papers which will be open is 90 in total over the past five years, during January 2006 to September 2010. The effective date will be informed soon.

## Upcoming International Conferences

**ISADS 2011** – IEICE Communications Soc./Information Systems Soc. The 10th International Symposium on Autonomous Decentralized Systems (ISADS 2011), in Tokyo and Hiroshima, on March 23-27, 2011. Due dates for papers and panel proposals is Aug 31. See it at <http://www.isads2011.info.hiroshima-cu.ac.jp/>.

**CrownCom2011** – ICST/ IEICE Communications Soc./others, 6<sup>th</sup> International ICST Conference on Cognitive Radio Oriented Wireless Networks, in Yokohama, Japan, on May 31-June 3, 2011, See it at <http://www.crowncom.org/2011/>.

**ICC 2011** – IEEE/IEEE-Communications Soc/IEICE Communications Soc/Science Council of Japan. IEEE International Conference on Communications, in Kyoto, Japan on June 5-9, 2011. See it at <http://www.ieee-icc.org/index.php>

**TWHM 2011** – IEICE Electronics Soc/Technical Committee on Electron Device, 2011 Topical Workshop on Heterostructure Microelectronics, in Gifu, Japan on August 28-31, 2011. See it at <http://www.twhm.net/>.

## Message from TFIPP Secretariat

This issue is delivered also by a free mail magazine "IEICE Global Plaza on Line" with updated news of interest for you. Please contact Prof.Takahashi, TFIPP (Task Force for International Policy and Planning) at [global@ieice.org](mailto:global@ieice.org), if you need. Back numbers are available in archives at [http://www.ieice.org/eng/global\\_plaza/index.html/](http://www.ieice.org/eng/global_plaza/index.html/).

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