Message from the Director and Dean

Why is system design and management study so powerful?

You’ll find the answer in this issue. Although it may sound odd, team problem solving, which is part of the core studies in system design and management, resembles a neural network in that both can solve various problems. If a perception, an artificial neural network, has enough interlayer neurons and learning processes are executed adequately, it can express every nonlinear calculation. Abstractly speaking, it can solve any kind of problem, just as a team can. Theoretically, if a team of experts in every field can thoroughly discuss a problem, they will find the best solution for it. Of course, it is impossible to gather enough experts to cover all areas or to have discussions that are extensive enough to find the best solution.

In the real world, like at SDM, the best possible teams are formed and team members conduct efficient discussions by utilizing various perspectives. In other words, SDM’s framework is already powerful enough to solve various problems. All we need to do is to share the framework among SDM and the stakeholders of the particular problems and cooperate to find solutions. We wish to apply SDM’s framework and solve various problems of our time—from science and technological issues to political, economic, and foreign affairs. If you have such issues, SDM would like to hear from you.
Manabu Eto, Director General at JETRO Geneva (Former Director at the Conformity Assessment Division of METI) gave an open lecture titled “Application of standardization in business strategy – making the most use of in-house intellectual properties (IP)” on July 1 in Room C3S10, of the Collaboration Complex on Hiyoshi Campus. Although the importance of standardization has been acknowledged, the business impact of standardization is not properly understood; it may cause a loss of business competitiveness. On the other hand, it allows other companies’ IP to be obtained at a low cost. Moreover, standardization can strengthen business activities if it is applied appropriately and in a timely manner. However, inappropriate standardization will only cause business to be unprofitable. In his lecture, Mr. Eto explained how to make use of in-house IP and about standardization for developing a successful business based on his extensive experience. SDM students learned to place more importance on considering not only technologies and businesses, but also IP and standardization over the life cycle of systems.

Yugo Nakamura, a popular web designer / media director gave an open lecture titled “Interactive Design” on June 29 in Room D205, Independence Wing, Hiyoshi Campus to a large audience that included over 100 outside participants. He introduced works from his early period (1998 when he started interactive design) to his latest works (INFOBAR) and shared how he drew inspiration. Though he called himself “second generation”, it was apparent that he is a pioneer in that he seeks new ideas and designs unique products. This rare opportunity to hear how a designer comes up with ideas was valuable. One characteristic pattern is the successful application of physical phenomena for design. The demo of water splash designs and the models of gravity, reactive force, and human touching fascinated the audience. Mr. Nakamura spoke not just about the actual design, but about the system design and the philosophy behind the design, which also benefited the SDM students.

As introduced in the July issue of SDM News, SDM discussed how to respond to the electricity shortages following the Great East Japan Earthquake, in light of Japan’s energy saving and “coolbiz” efforts. Associate Professor Ken L.V. Hijiño’s idea was to encourage teachers and students to wear “wasa-style” traditional Japanese clothing because it seems “cooler” to the eye and the body during the muggy summer climate in Japan. We expected not only that the traditional clothing that had been developed over the centuries would be comfortable and refreshing to wear, but also that it would be so inspiring; wasa-style clothing is comfortable and airy so motion becomes elegant. We feel unusually creative and free. The wasa-style project was featured in Japan Times (Morning edition, August 22, 2011) and Yomiuri Shimbun (Morning edition, August 22). Pictures of students and faculty members in wasa-style walking on campus and talking in a seminar were featured in nationwide newspapers. It was a good opportunity to promote SDM’s creative ideas and to show Jiga sakkō, “the pioneering of new classics.”

Launch of Kannai Future Center

On July 7, a shared office business incubation center “Kannai Future Center” was launched at mass × mass Kannai (Kitanaka-doori 3, Naka-ku, Yokohama). Over 120 participants gathered for a lively networking session. “mass × mass Kannai” is a community facility for entrepreneurs and creators in the Kannai area involved in city planning. In addition to a meeting space, it provides information and support for social entrepreneurs, artists and creators and aids in their collaboration in international networks. From SDM, Dean and Professor Takashi Maeno and Yoshinobu Soda, a SDM Research Institute researcher, introduced SDM and the Social Design Center. In addition, Hiroyasu Ichikawa (President of SocialCompany.org.), Haruaki Tanaka (President of Harumaki Project Co. Ltd.), Yutaro Yatsuzuka (President of KOKUYO Furniture Co, Ltd), Kenji Sekine (President of United People Corporation), and Tomohiko Okabe (CEO of kotolab.LLC), had a lively discussion about future collaboration, local revitalization, and social business.

Motoko Takeuchi wins the Best Paper Award at Euro SPI Conference

Motoko Takeuchi, VSE Center researcher at the SDM Research Institute, and co-authors Associate Professor Naohiko Kohtake, Associate Professor Seiko Shirasaka, SDM Research Institute researchers Kazunori Shioya and Yumi Furushita won the Best Paper Award for their Industrial Experience Report at the 8th Euro SPI Conference, held at Roskilde University in Denmark on June 27-29. The Euro SPI Conference is an international conference of industry-academia-government collaboration for sharing experiences and results through workshops and presentations on process improvement of services, software and systems. The paper used an example that applied ISO/IEC29110, the international standard for software development process for VSE (Very Small Entities) enacted in February 2011. This highly regarded research utilized actual cases to evaluate the feasibility of the new ISO/IEC29110 in industry based on perception and issues obtained from real cases. Furthermore, the paper introduced implementation plans for process assessment and process improvement in the VSE center using ISO/IEC29110, followed by a lively discussion with participants from all over the world.

Report on Earthling 2011

Think The Earth Project hosted Earthling 2011 with SDM and the Graduate School of Media Design (KMD) at Fujiwara Memorial Hall on Hiyoshi Campus on July 30 and 31, 2011. This event aims to think about possibilities for human beings 50 years from now in commemoration of the 50th anniversary of Gagarin’s flight into space. Over 600 people attended and 37,000 viewed the six sessions held over the two days on Ustream. The first day’s sessions were hosted by creators in advertising, media and manufacturing (Session 1), women working in disputed and deprived areas (Session 2) and venture capitalists starting up an ethical jewelry brand and a natural energy system (Session 3). Sessions on the second day were led by scientists and engineers in space, deep water and brain science (Session 4), SDM and KMD students (Session 5), and organizers of Earth Summit 2012 Japan and “Parent and child day” (Session 6). After the sessions, the presenters engaged the audience in discussion. From SDM, Professor Takashi Maeno and Associate Professor Naohiko Kohtake presented in Session 4 and Tomoaki Sakurai (2nd year master’s course) presented in Session 5. In addition, many SDM and KMD students assisted with the preparation of the event and with the Ustream delivery.

Earthling 2011:
http://www.thinktheearth.net/jp/earthling/
(in Japanese)
**Visible Light Communication Laboratory**

**Representative:** Professor Shinichiro Haruyama

1. **High precision navigation system using LED lighting**
   - We have the technology to develop indoor 3-D positioning to centimeter precision by adding information on visible LED lighting. This technology enables a robot in an indoor setting to be guided via overhead LED lighting placed two meters overhead. We can guide a wheelchair equipped with this system through a hospital as shown in the photo.

2. **Integral system design of visible light communication and augmented reality (AR) technologies**
   - Augmented reality combines and adds virtual objects as electronic information on top of image information of real environments such as the physical surroundings. Our research resulted in a friendly user interface, which overlays helpful information in floating graphics or objects. Future research will apply this technology to intelligent transportation systems.

3. **System design of visible light communication survey**
   - We have developed a “visible light communication 3-D position measurement system” together with Sumitomo Mitsui Construction Co., Ltd. This system applies visible light communication and a photo survey in a construction site. Thanks to this system, night-time surveying and unattended surveying, which were difficult with conventional technologies, are now available at a low cost. This system can measure with millimeter precision in a 40m x 40m area and maintain a survey of movement for a 24-hour period. In 2009, the Japan Society of Civil Engineers named this system as one of ten innovations in civil engineering.

**Train Services Laboratory**

**Representative:** Professor Shinichiro Haruyama

- We are proposing various ideas for future train transportation and related services from the users’ perspective based on technological, social, and psychological considerations. We have been conducting joint research on high-speed communication technology for a high-speed train with the JR Railway Technical Research Institute since 2007. In 2010, we achieved high-speed communication of about one gigabit per second between the moving Shinkansen bullet trains, local trains, and fixed sites. Currently we are working to improve the performance.

- We are researching the viability of on-board services using high-speed communication technology and other information technologies. If adopted commercially, individual passengers will be able to enjoy on-demand video and sound as well as use cloud computing services, as shown in the photo image.