SDM NEWS
System Design and Management

September 2014

A trial lesson at the MBA EXPO TOKYO 2014 Summer Review

Message from the Faculty

Design Abilities in Projects

Late summer greeting from Keio SDM! The nip of fall is in the air. I would like to take this opportunity to thank the supporters of our educational and research activities.

I teach Project Management at Keio SDM. In fact, only a few Japanese universities offer project management as a required subject. In today's diverse society, which is rapidly changing, various things interrelate with each other in a complex manner. Had Yukichi Fukuzawa been alive, he would no doubt be teaching project management, for I believe that it is a practical subject that is very much needed by society. With new technologies emerging in the world today, it is increasingly difficult to predict markets because people change their minds. To obtain a view of the entire picture of various situations surrounding a project and to actually draw things the way they should be is like a design process: expressing details by adding colors to a drawing on a large canvas. By doing this we can work concretely however complex the project is, and we begin to clearly see the goals, objectives and procedures for different tasks. Design sensibility is essential not only at the planning stage but also at the implementation phase. Designing is a process of making decisions without losing sight of the big picture while organizing the available information and balancing different effects in ever-changing situations. This is where Keio SDM's "system x design thinking" comes in. The SDM Research Institute affiliated with Keio SDM holds open seminars. As part of the seminars I am coordinating the Project Design Camp, which will be held in November and December. The camp will use a distinguished educational style and aims to put Keio SDM's capacity development method into practice. Through training opportunities like this, I hope to contribute to the nurturing of future project managers who are going to change society for the next generation.

Tetsuya Toma, Associate Professor
Graduate School of System Design and Management

News

TOPIC 1

Workshop: "Experiencing SDM Workshop Designed by Students (Seeing and Hearing is not Sufficient. Let's Experience SDM Workshop!)"

On Sunday, June 15, 2014 Keio SDM held a workshop titled, "Experiencing SDM Workshop Designed by Students (Seeing and hearing is not enough. Let's experience SDM Workshop!)." With its unique method of combining system thinking with design thinking, Keio SDM carries out research and education activities for innovative and systematic designs. We have been teaching a course called "Innovative Workshop Design" since 2013 and students taking the course are assigned to design a workshop. This time students designed a workshop on the theme of "How to enjoy gaps between ideals and realities." Students were divided into two teams and took turns in leading the first or second half of the workshop, which was part of the design suggested by the students. Around 40 individuals experienced and evaluated the workshop designed by students. We will continue to offer the lecture series this year and your continued support is greatly appreciated.

TOPIC 2
Extension Lecture by Ms. Akiko Suzuki, "System Design and Management for Late-Blooming Power: Detour Generates Power"

The lecture by Ms. Akiko Suzuki

The Sports Design Management Laboratory was established by the SDM Research Institute affiliated with Keio SDM last year. The laboratory aims to improve sports technicality, to nurture athletes and to promote the value of sports by collaborating with various non-sport sectors. On Thursday, April 24 2014, we held an extension lecture by inviting Ms. Akiko Suzuki, a former national team member for figure skating (women's singles), who is also a research fellow of the institute. A video from the World Figure Skating Championships 2014, the last stage for Ms. Akiko Suzuki as an athlete, was shown first and Ms. Akiko Suzuki went up to the stage. The lecture was carried out in the form of dialogue with Associate Professor Naohiko Kohatake, covering a variety of topics: that she began figure skating at young age, that she was unable to live a normal life as a student due to an eating disorder, and that she recovered gradually and became a member of national team to compete in the World Championships and Olympics. The dialogue also focused on what she was thinking, actions she took and what she gained at different stages of life. After the dialogue, Toshiaki Sakai, a member of the Sports Design Management Laboratory and a chief coach of the Keio University Tennis Club, went on stage and spoke about the late-blooming power of professional tennis players. Finally the extension lecture was concluded with a panel discussion with all of the three persons mentioned above. Because it was the first time that Ms. Akiko Suzuki gave a lecture, and the lecture took place right after the World Championship, more than 400 people attended and actively participated in the question and answer session. Ms. Akiko Suzuki gave insightful comments

A panel discussion by three speakers

such as: "What matters is whether you can achieve something and not if you can do better than others"; "The key is not to give up even though you feel like you have your spirit broken"; "You can generate good results if you believe that you can perform well because you are nervous."

Book written by Ms. Akiko Suzuki, "One by one. Little by little." KADOKAWA/Chukei Press
▶ http://www.amazon.co.jp/ひとつひとつ。少しずつ。-鈴木-明子/dp/4046002972/ref=sr_1_2?s=books&ie=UTF8&qid=1401210863&sr=1-2

TOPIC 3
Extension Lecture by Ms. Miyako Tanaka-Oulevey,"The Skills to Deal with Stress Introduced by Top Athletes-Coping Skills Enable to Live a Positive Life-"

The lecture by Ms. Miyako Tanaka-Oulevey

We invited Ms. Miyako Tanaka-Oulevey, Seoul Olympic bronze medalist in the synchronized swimming (women's duet) and a mental trainer and CEO of Polygone, Inc. to the extension lecture we held on Friday, May 30 2014. She is also a member of the Sports Design Management Laboratory of the SDM Research Institute affiliated with Keio SDM. According to her, "coping skills" are essential for dealing with stress. Top athletes and managers and business people also utilize this skill for mental training and others. One can gain two sets of skills through Ms. Tanaka's mental training: "skill to produce results" and "skill to overcome transitions in life." Her training is thus useful for all, not only for athletes. One can accomplish great results in improving his/her performance if she/he constantly asks herself/himself "Why?" and tries to understand her/his own feeling, said Ms. Tanaka while sharing her first-hand experiences and episodes. She spoke with such humor that the floor was filled with laughter. According to her, it is important that one "maintains a moderate level of tension" in a critical situation in order to bring out his/her real strength. No matter how great one may be physically, technically and tactically, one cannot bring out his/her real strength without the "psychological skill" of managing stress. During the lecture participants worked in pairs. It was an unusual pair work session where they asked each other "What are stresses to you?" and learned about each other's "feelings," thereby thinking about "ways to manage stresses." The 90-minute extension lecture ended on a high note and participants formed a long queue to ask additional questions even after the session ended. Ms. Tanaka's easy-to-understand coping theory is based on her Olympics experiences and humorous episodes and was thus attractive to many participants. Through this lecture the audience re-realized the importance of interacting with "emotions" that enable us to live a positive life.

TOPIC 4
Reports on International Symposium by INCOSE

The International Council on Systems Engineering (INCOSE) held the 24th International Symposium in Las Vegas, US from Monday, June 30 to Thursday, July 3, 2014. From Keio SDM three faculty members attended: Associate Professor Seiko Shirasaka, Associate Professor Makoto Ioki and Yoshikazu Tomita Lecturer. Nearly 500 people attended the symposium, out of which a record high of 11 people were from Japan. What is worth noting about this symposium is that INCOSE identified the most promising fields to which systems engineering can be applied: "biomedical and healthcare" and "automotive." On the other hand, although "aerospace and defense" has historically been the mainstream field to which systems engineering is applied, it faded away from the front line of INCOSE activities, for its practical application is becoming increasingly common. A brochure, "INCOSE SE Vision 2025," was handed out to all the participants this time. In this brochure they talk about expanding applications of systems engineering to social/natural systems as well as the future of systems engineering education. Regarding the expansion of applications, it says that systems engineering should be applied not only to engineering but also to other disciplines such as sociology/economics/cultural anthropology/political science. At Keio SDM systems engineering has always been one of the required subjects for all students. In this sense, Keio SDM may have had insight, for it has been practicing INCOSE's new vision before it was announced. Different educational approaches of various institutions, including corporations, militaries and universities, were introduced through lectures. At the symposium there was exhibition space too; nine universities including MIT had booths set up in order to publicize their systems engineering courses for private companies. In the US, it is common to find one-year certificate programs, in addition to the regular two-year master's courses. Keio SDM plans to gather information on the latest on systems engineering through academic symposiums organized by INCOSE and others, thereby striving to advocate systems engineering's wide application in collaboration with JCOSE (Japanese branch of INCOSE).

TOPIC 5
The Extension Lecture by Mr. Takeshi Uchiyamada and Keio SDM Information Session

Mr. Takeshi Uchiyamada, Chairman of Toyota Motor Corporation, gave a lecture entitled "Development of Prius and Toyota's approaches to Strengthening its Development Capability" at the SDM Extension Lecture on Friday, July 4 2014. It took place in the North Building Hall on Mita Campus and roughly 140 individuals filled the venue. A broad range of people from those in their twenties to those in their sixties were present, the majority of whom were working professionals keen to listen to the chairperson of Toyota, a world-famous Japanese company. Mr. Uchiyamada, who was the project leader for the development of the world's first hybrid automobile, Prius, spoke about his passion and belief behind the development efforts, using examples such as comparison with the Apollo program. The practical application of a hybrid engine, which was an entirely new technology, was not easy, he said. They were faced with many challenges, but the team broke through each barrier and managed to keep up the engineers' challenging spirits. They never gave up. Nobody could have told the story more vividly than Mr. Uchiyama. It was a highly insightful and memorable lecture.

After the extension lecture, Keio SDM Information Session was held in another classroom for those who were interested. First Associate Professor Naohiko Kohtake explained about the program. Then participants were given individual

Mr. Takeshi Uchiyamada speaking about the development of Prius

consultations by faculty members and current students. Time was limited for this information session because it was scheduled after the extension lecture. However, the level of satisfaction was high among the participants.

TOPIC 6

Participation in MBA EXPO TOKYO 2014 Summer Review

Keio SDM, together with Keio Business School, participated in the MBA EXPO TOKYO 2014 Summer Review held on Saturday, July 5 2014. More than 20 business schools participated from inside and outside Japan. Keio SDM, being a non-business school, attracted attention; Professor Masaru Nakano's trial lesson titled "Design Management of Business System" was packed with people and facilitated lively discussions. Associate Professor Tetsuya Toma and Associate Professor Naohiko Kohtake gave individual consultation at the booth, responding to visitors who asked various questions. As many as 450 people, mostly business people, attended the event; it was beneficial for Keio SDM in that we could find out about people's latest interests and different approaches of various business schools. We learned that one should focus on innovation education, which is beyond MBA and MOT, while applying scientific methods by incorporating group discussions, communications and case studies. We also learned that many schools admit students twice a year in spring and fall and have evening and weekend programs in addition to an e-learning program for those who want to learn while working. It motivated us to start discussing the

at the booth giving individual consultation

further improvement of our master's program.

TOPIC 7

Keio Systems School: "Introduction to System Thinking: Try Expressing All Objects and Things with Models"

workshop

Keio Systems School held a workshop entitled "Introduction to System Thinking: Try Expressing All Objects and Things with Models," on Sunday, July 13 2014. The workshop focused on promoting the understanding of "modeling," which is essential for system thinking. More specifically, the participants tried expressing all sorts of objects and things using models after they learned the essentials about modeling: logical thinking, multi-viewpoints and controlling the level of abstraction. For the session of expressing using models, we utilized "model brain" promoted by the Consortium for UML based Modeling Technologies Promotion (UMTP), a non-profit organization. Concerning the modeling workshop using "model brain," participants first simulated modeling analytically using existing things (for example, "Even monkeys fall from trees") and practiced creating new businesses and finding solutions by utilizing existing models. Nearly 70 people participated in the workshop, which was well received and helped enhance their interests in modeling.

TOPIC 8

Best Paper Award at iDECON2014

A research paper by Professor Tetsuro Ogi and Yu Sakuma (who completed his master's course in 2012) entitled "Development of Informal Communication Environment Using Interactive Tiled Display Wall," received the Best Paper Award at iDECON 2014 (3rd International Conference on Design and Concurrent Engineering). iDECON 2014 is an international conference for designing and concurrent engineering and was held in Malacca, Malaysia from Monday, September 22 to Tuesday, September 23. In this paper they developed a tiled display with a fish-eye camera in order to support informal communication between remote locations, which is crucial at an early stage of designing. The research has made simultaneous functioning of video conference using full scale and touch interaction possible, and its ideas and usability were well received.

COLUMN New Advancement of Tele Immersion Technology

Experiencing an American football game with a 360-degree video in a dome environment

The Tele-Immersion Technology Research Group (http://www.n3vr.org/tts/) (Leader: Professor Tetsuro Ogi) has been established inside the Virtual Reality Society of Japan with the aim of conducting research on tele-immersion. Tele-Immersion is a concept of establishing an immersive environment in which it is as if one existed at a remote location. System design, which incorporates element technologies such as immersive display technology, high-speed network technology, high resolution video, 3D location acquisition technology and communication technology, is needed to create an immersive environment. Thus far we conducted experiments on ultra-reality communication by connecting CAVE and tiled displays with high-speed networks among different universities. We also conducted experiments on 3D video communication with the International Space Station (ISS). It used to be that these sorts of experiments require large-scale experimental installation. In recent years, however, the device itself has become accessible even for individuals as high-resolution cameras become popular and the Internet becomes faster. The research group's recent attempts include filming sports games such as basketball and American football using 360-degree cameras and experiencing it in a dome environment. As the Tokyo Olympics approaches, the transmission of ultra reality will become an important theme and tele-immersion technology is expected to be used more widely as well.

(Tetsuro Ogi)

Laboratory / Center profile

The Universal Design Laboratory

Representative: Professor Hidekazu Nishimura
Research Area: universal design, barrier-free, accessibility, environmentally friendly
Members: Professor Yasushi Nakano, Faculty of Economics, Mr. Hideki Tsuboi, Toshiba Design Center, Mr. Kyoichi Ikeda, Toshiba Elevator and Building Systems Corporation, Mr. Kiyoshi Kobayashi, Toshiba Elevator and Building Systems Corporation, and others

The Universal Design Laboratory aims to make facilities and products friendlier to seniors and people with disabilities. Currently our research focuses on barrier-free transportation for people in collaboration with the Mobility System Management Center. When the Tokyo Olympics and Paralympics take place in 2020, many people are expected to use public transportation and facilities in Tokyo including foreign visitors. As part of our joint research with Toshiba Elevator and Building Systems Corporation, we are trying to improve elevator accessibility from the mobility point of view. In this regard Professor Yasushi Nakano (The Faculty of Economics) is guiding the laboratory based on his rich experience in universal designs and barrier-free research. We are also incorporating the voices of wheelchair users and people with visual impairments, who kindly cooperate with us and provide comments. More concretely, we focus on how the universal elevator design should be. Is the layout of buttons on the operating panel appropriate for wheelchair users? What is an easy-to-use operating panel for an amblyope? Are elevator cars designed to ensure safety for wheelchair users? What should the relationship be between the operating panel and handrail? Through fieldwork and prototyping, we pursue designs that are truly universal based on these grounds. We would also like to further explore how the elevator hall should be set up and the accessibility up to the elevator hall.
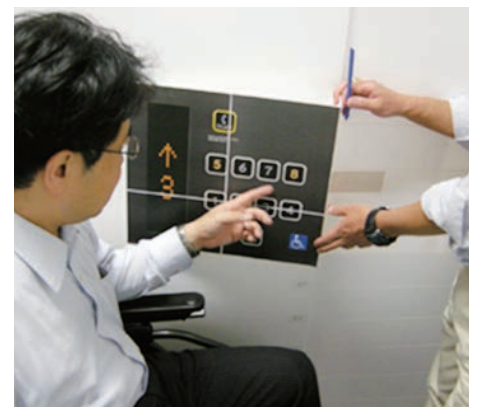
Examples of Universal Design

Elevator hall inside the Eighth Building on Mita Campus

Experiment: prototyping inside an elevator car

Exploring operating panel for wheelchairs

Modern History Offers a New Avenue for Tomorrow (SDM Lectures Transcripts)

The year 2011 was one that made us think about many things. We had such a horrifying experience that we are no longer certain whether Tokyo tomorrow would be the same as Tokyo today. When the catastrophe happened, the government did not function; instead they said prevaricating things. Macroeconomics worsened day by day. It almost felt as if there was no exit. It was around then that a senior trainer for the incoming Japan Maritime Self-Defense Force invited me to accompany a distant voyage, so I went onboard with a training squadron. While cruising on the Atlantic Ocean, I thought about what young people who will be in the front line of national defense need to know today, which led to the idea of writing this book. First I tried speaking about the ideas in my lectures – I organized my ideas into scripts for each class. This book is basically a collection of scripts with an introduction added to it.

I noticed most students at Keio SDM have a so-called history complex – they regret coming to Keio SDM without knowing or having interests in certain things. This book attempts to spur such readers to gain an awareness of various issues. The modern history of Japan and that of India are laid out in parallel. This book is what I call a "history for this generation" as it aims to cater to the needs of this generation. Apparently, my students found it interesting. Although this book has been treated as a kind of textbook now and then, no student seems to have become bored with my class because of my habit of not wanting to tell the same story twice - fortunately or unfortunately. People sometimes tell me that I should write about the dark side of the administration and the scene of speech preparation. However, a tell-all has never been my style and I will probably not write about those things.
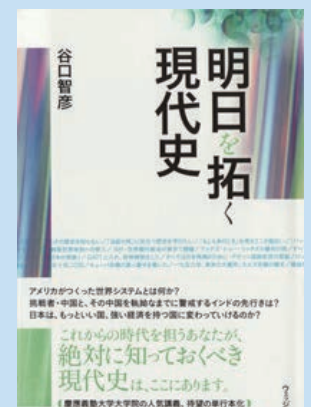
Author: Tomohiko Taniguchi
Publisher: Wedge April 1, 2013

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