



Photo: P. Krieger

A Japanese university: Educating standardization strategists in business

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information officers. The programmes pay particular attention to business standing and technology, and to business risk and reward. Thus, the graduates will be able to forecast/hedge technological risks quantitatively, adapting scientific and management knowledge to attain rewards.

Management of technology

Figure 1 shows an MOT programme, “Strategic management of industrial standardization and intellectual property”. The basics and applications of industrial standardization, including ISO activities, related policy and strategy with respect to their risk and reward, are composed of the following subjects.



Main building of the Faculty of Agriculture.

Standardization policy and strategy area

- *Standardization strategy*, by Prof. T. Yamamoto
- *Industrial standards*, by Prof. M. Tsutsumi
- *Standardization policy*, by Prof. M. Takagi

Specific technology area

- *Manufacturing systems standardization*, by Prof. Y. Furukawa
- *Products life cycle standards*, by Prof. Y. Furukawa
- *Total Quality Management and ISO 9000*, by Prof. R. Kaneko

About the author



Professor Yuji Furukawa, now the Dean and Professor of the Graduate School of Technology Management, Tokyo University of Agriculture and Technology,

and the Professor Emeritus of Tokyo Metropolitan University, is a well-known leader of both Japanese academic and governmental society. He is a member of Science Council of Japan, Policy Assessment Member of the Council for Science and Technology Policy, Japanese Head of IMS (Intelligent Manufacturing Systems) International Program, Chairman of the Industrial Cluster (TAMA, Greater Tokyo Initiative), and a member of the Industrial Structure Committee of METI (Ministry of Economics, Trade & Industry). He was the former Chairman of the Industrial Automation Standardization Committee of METI and contributed much to propose and utilize ISO standardization.

Strategic standardization is a key issue for manufacturers. Incorrect information on *de-facto* or *de-jure* issues, for example, could result in the collapse of a business. Professionals who specialize in strategic standardization are often trained on the job. They usually begin working with in-house company standards, and progressively deal with ISO standards. After some time and experience, and once they have become members of the company’s board, they can take charge of standard policy decisions.

Engineering schools already teach a variety of courses on standardization. In Japan and perhaps in other countries, however, there are no academic programmes to systematically train professionals on strategic industrial standardization, despite there being a demand from business.

Taking these trends into account, the Tokyo University of Agriculture and Technology (TUAT) opened the Professional Graduate School of Technology Management (MOT) in 2005. Its main goal is to train experienced engineers on the latest technological and management strategies (see Figure 1 overleaf), leading them on a path to become future chief executives or technology and/or

Main Focus

- *Environmental standards policy*, by Prof. H. Kameyama
- *Environment and ISO 14000*, by Prof. N. Kudo
- *Safety and security standards*, by Prof. M. Nakamura

Company's practices of strategic standardization

- Prof. T. Kato (Former President of Fuji Electric Co.) and Prof. K. Isayama (Former Vice President of Nissan Motor Car Co.) give their practices and experiences.

Students must complete a minimum of 46 credits during two years (divided into four semesters), and specific projects (field and case study, and business plan) are considered as required subjects.

Students interested in the "Strategic management of industrial standardization" programme can select several subjects from the list above. In addition, they have to take more than 10 subjects from the programme outlined in **Figure 1**. Upon successful completion of the MOT programme, candidates are awarded a Master of Management of Technology, which receives approval by the Ministry of Education of Japan.

Real business situations

Three years after its establishment, the TUAT/MOT programme has received very positive evaluations from renowned Japanese manufacturing companies. The programme accepts some 50 students per year, of which one-fifth are interested in strategic standardization.



Cherry blossoms at the engineering campus.



Mission Oriented Research and Education, the school motto: "for a beautiful Planet Earth".

For example, one of our graduates who came from Citizen Watch Co. took the strategic management of industrial standardization and intellectual property programme. He completed his business plan on "Wearable watch development for health diagnosis", and proposed a concept, its technological feasibility, the required amount of investment, its feasible market size, the related intellectual property rights strategy, and a *de-facto/de-jure* standard trend and policy to be used for building alliances with strategic partners. As a case study, he surveyed Seiko and Casio – strong competitors of Citizen Watch Co. As a field study, he carefully checked the trend of standardization for radio communication systems and related patents. The example shows that the programme can successfully train experienced engineers to learn, exercise and practice how to take advantage of standardization in a business environment.

Educating the world through the Web

One of the interesting features of TUAT/MOT is the thorough use of e-learning and technology. As shown in **Figure 2**, all of the required materials and information are listed and stored in a computer programme named JENZA-VER. Both professors and registered students can access and extract information. Lectures are given at either the main urban campus or the downtown campus, both connected by real time TV. Professors and students can therefore discuss together even if they are physically apart. In addition, all lectures are partially uploaded two or three days later, to enable students who could not attend the class to learn via the Web anywhere in the world.

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All the lectures are currently given in Japanese. In the near future, however, we expect to have them available in English. The lectures could then be delivered worldwide through internet education systems. As there is a high demand for education on industrial standardization strategy in Asian countries, we are planning to put this plan into practice. TUAT/MOT has recently agreed on a programme exchange with Shanghai Traffic University. We look forward to this first trial. ■

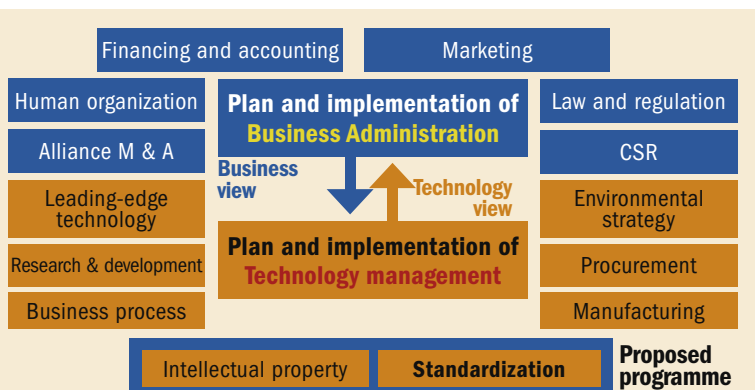


Figure 1 – MOT programmes of the TUAT Graduate School.

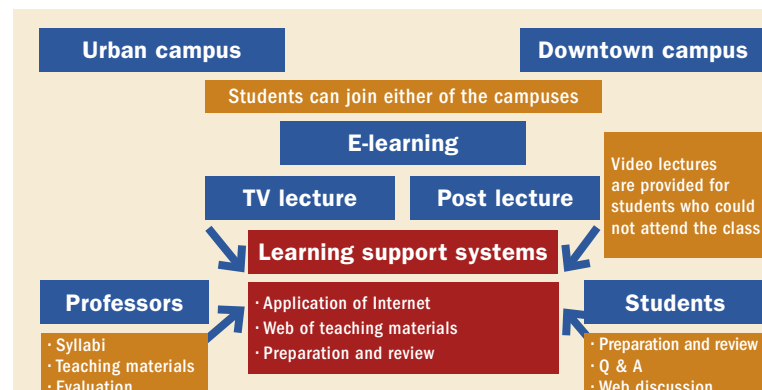


Figure 2 – E-learning system of the graduate school TUAT.