

The 2009 Winner



The 2009 ISO Award for Higher
Education in Standardization

The Netherlands – A business approach to standards

by Dr. Henk J. de Vries

The Rotterdam School of Management (RSM), Erasmus University is one of the leading business schools, both in research and education. We are Europe's number one business school, in terms of the number of scientific publications in high-ranked scientific journals in the management field. RSM's education is based on research and its close cooperation with industry and other stakeholders worldwide.



The Rotterdam School of

Management (RSM) of the Erasmus University

Since January 1994, RSM has hosted a Chair in Standardization, situated within the Department of Management of Technology and Innovation. This has been made possible by the Netherlands Standardization Institute (NEN), the ISO member for the country.

Standardization education consists of both elective courses and the inclusion of standardization in other courses. An array of bachelor/master (BA/MA) and executive education (MBA) programmes are available. The school's education programmes have been renewed several times to keep up-to-date with new developments and methodologies.

Bachelor in business administration

In the 3rd year of the business administration curriculum, groups of three students have to write a thesis. They learn to design a research project, conduct the research and report about it in the form of a

bachelor thesis. The topic of this thesis differs with each group. One option is to focus on standardization with the goal of :

- Getting a general overview of the area of standardization
- Understanding possible business benefits of standardization
- Becoming familiar with scientific research in the field of standardization.

General knowledge on standardization is achieved in the form of self-study, presentations and in-class discussions. The research topics differ per group (*see below*).

Students have to present their findings to a jury consisting of NEN's General-Director, a researcher from Erasmus University, and the Head of NEN's Business Development. Some of these bachelor theses have formed the basis for publications in scientific and professional journals.

From sport shoes to kite-surfing

Topics for 2009 theses:

- Impact of the ISO 9001 standard for quality management on radical innovations
- Impact of backwards compatibility in hardware and software on perceived customer value
- Impact of product assortment size on customer satisfaction – The case of jeans
- Consumer willingness to pay for more product variety – The case of Adidas sport shoes
- Mathematical optimization of preference ranges from a financial point of view – The case of sizes of kites used for kite-surfing
- Product standardization, innovation and IPR – Relating numbers of patents to the amount of participation in standardization
- Cradle to cradle certification.

Innovation and standardization management



Dr. Henk J. de Vries (left) presents Susanne Biesheuvel, Randy Schimanski and Stèphan Knook an award for the best thesis in 2006 on electronic payments. The main findings of the thesis were published in a Dutch marketing journal.

Learning objective of this masters elective is to provide participants with basic knowledge about standardization management, and its role in innovation management. The goal is to enable them to develop and employ a standardization strategy for an individual company, a supply chain or a branch of business.

The course covers standardization management not only at company level, but also at the level of industry associations and governments, nationally, regionally and internationally, and how this relates to innovation management.

Following a general introduction, the course addresses standardization by formal bodies at national, regional and international levels, by industry associations, industrial consortia, companies, and networks of organizations. Another topic covered by the course is conformity assessment. This is followed by methods and techniques of standardization, and the legal implications (including the use of standards as "soft laws" and the relation with intellectual property rights).

Next, we collect all this to innovation by linking standards and standardization to the phases of the innovation process and finding examples to back this. Finally, the question of how to manage standardization in relation to innovation is highlighted. This includes ways of organizing, within companies as well as between companies and other stakeholders.

The course includes scientific contributions from disciplines like economics, law and political science. The challenge is to combine these disciplines to solve real business problems. The scientific basis of this course is complemented with business input in the form of case studies, company visits, guest lectures, and real-life assignments.

Business excellence

In two other courses, standardization is part of the curriculum. The masters course "managing innovation" pays attention to the topic standards battles, using the case of HD-DVD versus Blu-ray.

The masters elective "business process excellence" addresses several standardization topics: standards for business processes, standards for management systems (ISO 9001, ISO 9004, ISO 14001), business excellence models (European Foundation for Quality Management, Deming Award, Malcolm Baldrige Award), and the role of standards in supply chains and in networks of organizations.

Master and PhD theses

Students can devote their master thesis to standardization. In many cases, this is combined with an internship in a company or other organization. The Web site www.rsm.nl/standardisation lists some of the topics. Some students have managed to win national best thesis awards. Some theses have formed the basis for publications in scientific and professional journals.

PhD trajectories are primarily research but can be seen as a form of education as well. In the past year, three PhD students have defended their thesis on the following:

- Standards battles for complex systems – Empirical research on the home network.
- Certification, accreditation and the professional – Case study about colleges for higher vocational education
- Realizing business benefits from company IT standardization.

Achieving business benefits

Recently, RSM Erasmus University has extended its executive education portfolio with two- and three-day courses. We were the first to develop a course on achieving business benefits by participation in international standardization. The course aims to provide knowledge enabling participants to influence International Standards development in such a way that the resulting standards are fit-for-use by the company to achieve the necessary business targets. The main topics include:

- The business impact of participation in international standardization
- How to calculate benefits of participation?
- Mapping the stakeholders and their stakes
- Understanding the International Standards development process
- How to use this process to achieve what your company intends to achieve?

The programme is interactive and presentations are alternated with exercises and discussions. The target group for the course is participants at the technical committee level in international standardization, with at least two years of standardization experience. The first course was held in January 2009 in Rotterdam with 15 participants from seven European countries. The course may be organized in other countries, and in cooperation with national standards bodies.

For more information: www.openprogrammes.com/is.

Stimulating standardization education

Our mission includes stimulating the development of standardization education, both in the Netherlands and abroad. Here are just a few of our initiatives:

Higher vocational education

We have been involved in a NEN project to stimulate and support standardization education at the level of higher vocational education in such areas as: electrotechnical engineering, mechanical engineering, construction, and business administration. Activities included lobbying, the development of educational materials and training of teachers.



The RSM Erasmus University developed teaching materials together with colleagues from China, Germany, Indonesia, Sri Lanka and Viet Nam.

Linking Dutch universities

We coordinate an academic network of researchers on standardization and conformity assessment. This informal group consists of researchers of the majority of Dutch universities, in different disciplines (including economics, business administration, law, history, and technology). The focus is on research, but education topics are addressed as well. We provide guest lectures at other universities and are currently involved in supporting another university in its development of a standardization course.

Republic of Korea

The curricula developed at the Catholic University of Washington, DC., and RSM Erasmus University have formed a benchmark for the start of standardization education activities in the Republic of Korea. Today, the Republic of Korea has the greatest numbers of university students in standardization education.

Asia Pacific Economic Cooperation

The Asia Pacific Economic Cooperation (APEC) operates a standardization education project. We collected and classified 1300 scientific and professional publications on standardization. These are intended to be used for, and underpin the teaching materials being developed in this APEC project. For this project, we had the assistance of guest researcher Vladislav Fomin, from Kaunas University, Lithuania.

Asia Link Project

We shared experiences and developed teaching materials together with colleagues from China, Germany, Indonesia, Sri Lanka, and Viet Nam.

For more information: www.asia-link-standardization.de/.

International Cooperation for Education about Standardization

We participated in the Tokyo meeting in February 2006, where the International Cooperation for Education about Standardization (ICES) was founded and were responsible for co-organizing the first ICES Workshop in Delft, the Netherlands in February 2007. ICES aims to promote and support standardization education worldwide.

European Academy for Standardization

Dr. Henk J. de Vries is Vice-President of the European Academy for Standardization (EURAS) is a rather informal organization of researchers and other interested people in the field of standardization. EURAS focuses on research but education is its second field of interest.

European standards bodies

We are involved in activities of the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) in order to stimulate standardization education. We have suggested possible European and national strategies and provide support in developing a repository of education materials.

Cooperation with Japan and China

At the request of the Japanese Ministry of Economy, Trade and Industry (METI), cooperation has been recently established between the Tokyo University of Agriculture and Technology's department on Management of Technology, the China Jiliang University in Hangzhou, China, and RSM Erasmus University. An agreement to cooperate in the field of standardization education and research was signed

by the three universities. The cooperation includes the exchange of ideas and teaching materials and, as far as feasible, of students.

Didactical approach

Academic teaching should be research-based, but the abstraction inherent to scientific research may also hinder proper understanding. Therefore, the starting point is not in research, but in creating moments of 'surprise' by confronting students with real-life situations, or inviting them to come up with their own experiences. The approach includes:

- Let students experience real-life cases with all related aspects
- Study several aspects in-depth using scientific methods
- Combine the findings from the different scientific abstractions and 'return' to reality. Iterations between science and reality may be needed.

For more information: www.rsm.nl/standardisation.

About the author



Henk J. de Vries is an Associate Professor in standardization at the RSM Erasmus University since 2003.

He has combined this position over the years with a position at Netherlands Standardization Institute (NEN), ISO member for the country. He wrote his dissertation on national standards bodies (Henk J. de Vries, 1999. *Standardization – A Business Approach to the Role of National Standardization Organizations*. Boston/Dordrecht/London: Kluwer Academic Publishers). He is the author of more than 200 publications on standardization.