

Standardization Education at the Rotterdam School of Management, Erasmus University

Henk J. de Vries

Associate Professor Standardization

Rotterdam School of Management, Erasmus University

Rotterdam, The Netherlands

hvries@rsm.nl, (+31 10) 408 20 02, <http://www.rsm.nl/hdevries>



Rotterdam School of Management, Erasmus University

Rotterdam, The Netherlands

- One of Europe's leading business schools
- 7500 graduate and post-graduate students
 - 30% from abroad
 - 80 nationalities
- 350 researchers
 - 30% from abroad
- Portfolio of top-ranked programmes
- Best business school in Europe in terms of the number of publications in top-scientific journals



Endowed chair of standardization

- **Prof. Dr. Knut Blind, 0.2 fte**
- Dr. Ir. Henk de Vries, 1.0 fte
- Dr. Ir. Robert van Wessel, 0.2 fte
- PhD candidate: **Vacancy**
- External PhD students:
 - Drs. Ing. Ries Haverkamp
 - Drs. Simon den Uijl
- Student assistants:
 - Najim Argam
 - Deniz Kaan Bayramoglu
 - Tom Degen
 - Rob van der Gaarden
 - Rutger Zoetmulder



Standardization education activities

- Bachelor Elective 'Standaard of Maatwerk'
- **Masters Elective 'Standardization and Innovation Management'**
- Masters Elective 'Business Process excellence'
- Master thesis projects
- PhD projects
- Executive course 'Achieving business goals by participation in International Standardisation',
<http://www.openprogrammes.com/standardisation>

See: **ISO Focus+, January 2010**, pp. 44-47

http://www.iso.org/iso/iso-focus-plus_index/iso-focusplus_online-bonus-articles/the-2009-iso-award/2009-award_the-netherlands.htm

Standardization and Innovation Management (1)

- **Elective** course
- Related to **Master Management of Innovation**
 - Covers all aspects of bringing a new product or service to the market
 - From idea generation to product launch
 - From internal management issues in the R&D process to long-term corporate innovation strategies
 - Interdisciplinary
- 10 ECTS

Standardization and Innovation Management

(2)

At the end of this course, students should have gained an improved **understanding** of:

- the phenomenon of standardization
- theories, models and approaches for standardization
- how standardization can impact innovation
- how standardization can be managed
- how to integrate standardization in innovation management.

This course intends to improve **skills** in

- Doing field research
- Reviewing literature
- Providing advice to an organisation
- Writing a structured report
- Presenting

Standardization and Innovation Management (3)

Educational approach

- Disclosing people for standardization
- Disclosing standardization for people
- Real-life experiences → Scientific abstractions
→ Integration → Managerial knowledge
- Herman Dooyeweerd (1953-1958) **A new critique of theoretical thought**. Parts 1-4. Amsterdam: Paris / Philadelphia: Presbyterian and Reformed Publishing Company
- Dirk van de Lagemaat (1986) **Onderwijzen in ondernemen**. Houten: Educaboek

Standardization and Innovation Management (4)

The challenge of designing a curriculum (1)

Dimensions of standardization

1. Levels (e.g., company, intra-company, national, international)
 2. Business sectors
 3. Subject matter areas (e.g., quality, safety, interoperability)
 4. Kinds of standards (e.g., terminology, reference models, compatibility, quality)
 5. Processes of standardization (idea, selection of standards-setting organization, drafting, decision making, distribution, selection, implementation, use, impact)
 6. Aspects (e.g., arithmetic, physical, psychological, economic, esthetical, law, ethical)
- Characterization of standardization (e.g. variety reduction)
 - Importance per stakeholder
 - Actual issues (e.g., IPR, New Approach)

Standardization and Innovation Management (5)

- (Interactive) lectures:
 - Introduction to standardization
 - Classifications of standards and innovations
 - History of standardization
 - Standardization at the national level (using the cases of China, The Netherlands and the USA)
 - Standardization by industry associations (using the case of ASTM International)
 - Standardization by industrial consortia
 - Macro-economic impact of standardization
 - Impact of standardization on industry sectors
 - Impact of standardization on companies
 - Standardization and world trade (including the role of the WTO)
 - Impact of standardization on developing countries
 - Standards and Intellectual Property Rights
 - Relating standardization to the innovation process
 - Impact of standardization on innovation, both at company level and at sector level
 - Mathematical approach to standardization: Preference ranges
 - Architecture of standards related to technology architecture
 - Product variety management
 - Standardization in the field of services
 - Standardization in the field of management systems
 - Conformity assessment
 - Relations between legislation and standardization (including The European 'New Approach', product liability, the use of standards in public procurement, anti-trust law)
 - Consumers and standardization
 - How to organize and manage standardization at company level? (including results from a best-practice study in process industries)

Standardization and Innovation Management (6)

- Teaching cases
 - HD-DVD versus Blu-ray – how to win a standards battle?
 - Japanese and Korean governmental standardization policies in the field of mobile telecommunication
- Role-playing
 - Developing a standard in a standardization committee



Standardization and Innovation Management (7)

- Guest lectures
 - **Philips Research**: using standardization in the process of developing radical innovations
 - **Ministry of the Interior and Kingdom Relations**: how to use standardization to achieve interoperability of governmental information systems?
 - **Ministry of Transport, Public Works and Water Management**: Standardization and certification in the public domain. Case: electronic billing of road tax
 - **NEN – Netherlands Standardization Institute**: impact of a national standard for Facility Management on innovation in this service sector and at company level
 - **IKEA Design Centre**: Innovation and standardization in a (retail) service environment
- Attending a congress
 - Topic: **Cradle to Cradle**: an approach to achieve sustainability by reducing or eliminating the use of materials and energy, using a combination of product innovation and supply chain innovation, and providing evidence using standards and certification

Standardization and Innovation Management (7)

- Visits to:
 - **ECN – Energy research Centre of the Netherlands**
 - Using standards for tests
 - Role of standards in getting market acceptance for scientific findings and technologies developed
 - Battles between competing standards)
 - **NEN – Netherlands Standardization Institute**
 - Standards development
 - Standards selling
 - Developing a new strategy for ISO
 - **Océ Technologies**
 - Use of standardization in the innovation process of copiers

Standardization and Innovation Management (9)

- **Individual assignment**

Write a **paper on Innovation and Standardization Management** including a review of scientific literature

- **Group assignment 1**

Calculate the **benefits and cost** of the involvement of a company in the development of one or more international standards

- **Group assignment 2**

Provide **strategic standardization advice** to a company or group of companies

Scientific papers about standardization education

- Choi, Dong Geun & Henk J. de Vries (2011) **Standardization as emerging content in technology education at all levels of education**. *International Journal of Technology and Design Education*. (forthcoming)
<http://www.springerlink.com/content/77566372j57240j1/fulltext.pdf>
- Choi, Donggeun, Henk J. de Vries & Danbee Kim (2009) **Standards Education Policy Development: Observations based on APEC Research**. *International Journal of IT Standards and Standardization Research*, 7, 2, 23-42.
- Vries, Henk J. de & Tineke M. Egyedi (2007) **Education about Standardization – Recent Findings**. *International Journal for IT Standards and Standardization Research*, 5, 2, 1-16.
- Vries, Henk J. de (2005) **Standardization Education**. In: Manfred J. Holler & Esko Niskanen (Eds.) *EURAS Yearbook of Standardization*, Vol. 5, 71-91 (Special issue of *Homo Oeconomicus*, 22, 1).

Education materials include:

- **Management book:** Simons, C.A.J. & H.J. de Vries (2002) **Standaard of maatwerk – Bedrijfskeuzes tussen uniformiteit en verscheidenheid**. Schoonhoven: Academic Service, 245 pp. See [zhttp://www2.nen.nl/nen/servlet/dispatcher.Dispatcher?id=083665](http://www2.nen.nl/nen/servlet/dispatcher.Dispatcher?id=083665).
- **Teaching modules:** Hesser, Univ.-Prof. Dr-Ing. Wilfried, Prof. Dr. A.J. Feilzer & Dr. Ir. H.J. de Vries (Eds) (2007) **Standardization in Companies and Markets**. Ed. 2. Hamburg: Helmut Schmidt University, 850 pp. **Also Internet modules**. See <http://www.asia-link-standardization.de/>.
- **Teaching case:** Vries, Henk J. de (2006) **Competing E-Purse Systems: A Standards Battle**. *Journal of Cases on Information Technology*, **8**, 1, 1-15.
- **Support for tracing standards:** De Vries, dr. ir. H.J. (2003) **Welke normen heb ik nodig voor mijn product of dienst?** Delft: Nederlands Normalisatie-instituut, 45 pp., <http://www2.nen.nl/getfile?docName=185070>;
De Vries, Henk J. & Harmen Willemse (2003) **Normen bij liften**. Delft: Nederlands Normalisatie-instituut, 22 pp., <http://www2.nen.nl/getfile?docName=185073>.
- **Standardization case in book on case study research:** De Vries, Henk J. & Florens Slob (2008) Case Study 7: Descriptive practice-oriented research – **Building a model of best practice of company standardization**. In: Jan Dul & Tony Hak (Eds) (2008) *Case Study Methodology in Business Research*. Amsterdam / Boston / Heidelberg / London / New York / Oxford / Paris / San Diego / San Francisco / Singapore / Sydney / Tokyo: Butterworth-Heinemann, pp. 240-249, 252.

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