Report of the EURAS 2001 Workshop

What happened at the EURAS Workshop 2001?

Each year the European Academy for Standardization (EURAS) holds a workshop. In 2001, the Workshop was hosted by the Delft University of Technology, Faculty of Technology, Policy and Management. It took place on the 28th-29th of June 2001 in Delft, the Netherlands.

Workshop theme: Standards, Compatibility & Infrastructure Development

Infrastructures such as broadcasting, transportation, electricity, etc. are complex, large socio-technical systems. Such systems seem resilient to change. Which role do standards play in the development of such systems? Their role would seem to be a dualistic one. On the one hand, standards would seem to work as a catalyst for processes of entrenchment ('lock-in'). On the other hand, however, standardising one part of the infrastructure would seem to create flexibility in the adjacent part (Mulgan, 1990). The latter perspective implies that standards could be used as a policy tool for infrastructure change. In the EURAS workshop, we foremost explored this second perspective because it has seldom been addressed.

Program

The workshop program included lectures with discussants, story telling, and two interactive experiments. Roughly fifty people took part. The group was multidisciplinary (technical, economic and social disciplines) and varied in background (academic, policy, business, standards bodies, etc). There were two guests of honour, Esko and Anita Niskanen of the Finnish Government Institute for Economic Research (co-organisers of many previous workshops), and six special guests to guarantee high level discussions throughout the workshop: Ole Hanseth (University of Oslo), Richard Hawkins (TNO Institute for Strategy, Technology and Policy), Timothy Schoechle (International Centre for Standards Research), Henk de Vries (Erasmus University), Raymund Werle (Max Planck Institute/Cologne), and Robin Williams (University of Edinburgh).

The participants played a very active role. They held the welcome speech (Manfred Holler), a keynote speech (Michael Kirosingh) or a farewell speech (Raymund Werle). They presented a paper, were discussant or session chair. Or, more on the spur of the moment, contributed eye-openers and future standards issues, and presented group findings.

Standards Tale

Timothy Schoechle (see above photograph) told us a beautiful tale of standardisation to educate and entertain us during a Chinese buffet. It was a tale about the power struggle within an international standards committee. Spontaneous anecdotes were later contributed by Patrick Duffy, Yves Chauvel and Vlad Fomin.

**Experiment 1: Infrastructure Entrenchment, Standards & Flexibility**

In the first interactive experiment, the workshop participants explored whether standards can be understood as a means to increase the flexibility of infrastructures (see the introductory slide show by Tineke Egyedi). Four groups were formed, each with an experienced, professional facilitator to orchestrate the interactive process. Every participant made a drawing, model or schema of a particular infrastructure (communication, transport, waterways, etc.), and addressed the following questions.

1. Give an example of an aspect or element that hinders the evolution of the selected infrastructure (i.e. an example of entrenchment/lock-in in this infrastructure).
2. Could standardisation or standards aid in solving the problem at stake (i.e. standardisation as a means to re-create flexibility in the infrastructure)?
3. What new insight did you get (i.e. eye-opener)?

Each group made an inventory of the main eye-openers. Back in the Amphitheatre the flip-overs with drawings and answers were stuck to the wall, and the eye-openers were presented to the plenum. It was a bright and colourful sight. Some drawings were very expressive and depicted very evocative metaphors (e.g. the biological cell drawn by Taavi Valdlo). Others were foremost intriguing, and required closer scrutiny. (The TU Delft is exploring whether there are means to re-use the drawings to inspire Dutch infrastructure policy.)
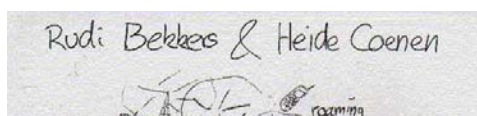

"Standardisation of different interfaces can have a complete other set of consequences." (Rudi Bekkers & Heide Coenen)
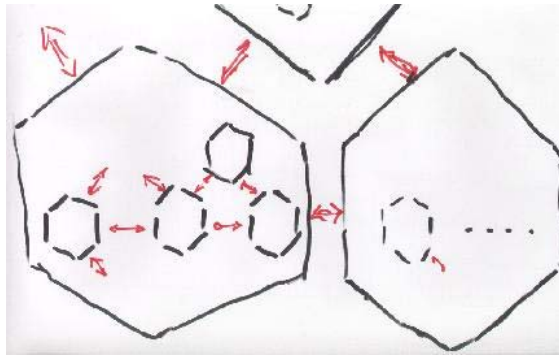
"I must find criteria for optimum size (value) of cell (subsystem) in different contexts." (Taavi Valdlo)

Keynote speech: Michael Kirosingh, discussant: Richard Hawkins

The theme of the second day was "Future standardisation issues". Michael Kirosingh (European Commission DG Enterprise/ Standardisation Unit) held an informative keynote speech about developments in Europe's standards policy. The timing of this speech was of particular interest because in a Council Resolution of 28 October 1999 the Commission had been requested to clarify its stance on a number of standardisation issues two days after the speech (1st of July 2001).
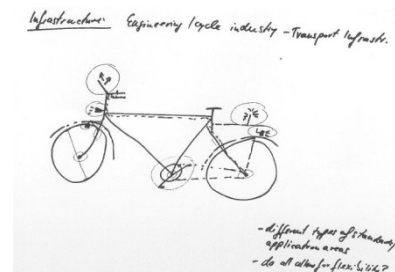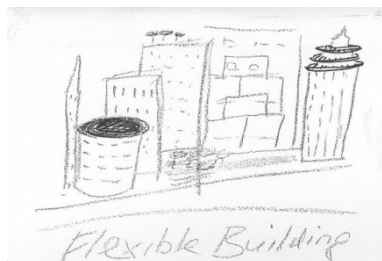
With respect to the drinking water infrastructure, "Flexibility for whom? Water filter is not flexible for consumers." (Ragna Zeiss)

"Standards in one field can create flexibility in another field." (anonymous)

Experiment 2: Future standardisation issues

In the second experiment, twenty-eight workshop participants prioritised standardisation issues by means of a computer-mediated group decision support system in two parallel sessions. The initial list of important future standardisation issues consisted of issues

contributed by workshop participants earlier on. To reach a common understanding, they were briefly discussed and supplemented. Next, each participant assigned 20 tokens to the issues deemed most important with a maximum of 5 tokens per issue. The table below depicts the top five most important standardisation issues of the coming years -according to those who participated in the experiment.

Choices Group 1 (N=17)

How to involve users in developing standards.

Standards, friends or foes of markets?

Adaptability Standards: achieving compatibility between incompatible standards

Should "non-technical" aspects be included in all standardisation processes?

How to protect user investments against new standards?

Choices Group 2 (N=11)

How to protect user investments against new standards?

Should "non-technical" aspects be included in all standardisation processes?

Adaptability Standards: achieving compatibility between incompatible standards

Evidence of impact of standards

Will studies of standardisation emerge as independent discipline?

Experiment 1

Experiment 2

In subgroups some issues were discussed in more detail. The assignment was to present to the plenary a one-liner and a symbol/drawing that summarised the discussion. Some drawings were eye-catching.

Close of the workshop: Raymund Werle

Raymund Werle of the Max-Planck-Institute in Cologne closed off the workshop reflecting on his personal 'eye-openers'. He did so with the following words.

"We are approaching the end of the conference on Standards, Compatibility and Infrastructure Development. What I am going to say is related to the issue of standards and flexibility – a central issue with regard to technical infrastructures. And I will close with a short remark concerning the social scientist's understanding of a technical standard.

I encountered the first eye-opener right at the beginning of this conference. Instead of being given the opportunity to enjoy a nice welcome speech we were confronted by Manfred Holler with a piece of evolutionary game theory. Using a simple model, Manfred Holler demonstrated that a not unimportant component of the communications infrastructure – a widely used word processor – has remained in a suboptimal state unintendedly supported by occasional use of people for whom this processor turned out to be not very useful – people who use formal mathematics in their papers. The Microsoft-Word case indicates that standards can lock-in and channel further development of an infrastructure into a specific path which often excludes new options while it at the same time helps to optimize the given options.

Another example: If we look at the transport infrastructure we can see that each transport mode (road, water, rail etc.) has developed in relative isolation from the others, locked-into its own architecture of standards within which is was optimized. The tendency of systems operators has prevailed to keep goods and passengers in their systems as long as possible and to only coordinate with others in order to facilitate access to their system. Terminals are regarded as points of access to a system rather than interfaces between systems. From this perspective standards create inflexibility and only facilitate the achievement of static optima (and their incremental development). This may explain why Kai Jacobs has had difficulties to involve actors from the different transport systems in his standardization project.

This brings us to one of yesterday's eye-openers. Here it was argued that standards are necessary but not sufficient to *overcome* lock-in problems. I would agree with this statement. But I would also agree with the contention that standards are necessary but not sufficient to *create* lock-in. Both aspects can be illustrated with the two infrastructural systems that attracted the highest attention during this conference: The mobile telephone system and the Internet. In mobile telephony we have observed strategies to achieve lock-in of specific systems through standards (such as GSM). With the Internet standards (such as TCP/IP) have been developed which helped to overcome lock-in and fragmentation of different computer networks.

If we regard the Internet as a model we can draw two conclusions. One is that it is not so much a single standard but the encompassing standards architecture which is decisive for the flexibility of a system. The other conclusion is that we need a protocol stack of the TCP/IP kind to overcome compatibility problems in the transport sector.

Standards themselves are a critical infrastructure of a society. They are supposed to facilitate and coordinate technical development and the use of technology. They are expected to support the control of production processes and traffic flows and they shall help to avoid negative externalities of technology. But standards are not technical artifacts. They are rules made by and addressed to human actors. Not technical artifacts but human actors are expected to comply with standards when they design, construct, operate and maintain technology. If they do not comply they risk to be sanctioned or punished: Technology does not work properly, gets out of control, systems break down. Human actors lose money, lose their jobs or even their lives. In this sense standards are *social facts* as Emile Durkheim put it."

Sponsorship

Delft, 8th of August 2001

Tineke M. Egyedi