The ICT Standardisation Policy of the EU – Changes Ahead!?

Kai Jakobs
RWTH Aachen University
CoSc Dept., Informatik 4
Ahornstr. 55, 52074 Aachen, Germany
+49-241-8021405
kai.jakobs@cs.rwth-aachen.de

Knut Blind
Berlin University of Technology
Faculty of Economics and Management
Müller-Breslau-Str.; D-10623 Berlin; Germany
+49(0)30-314-76638
Knut.Blind@isi.fraunhofer.de

Abstract
The paper first briefly discusses the current situation in the field of ICT standardisation, with a certain focus on Europe. Here, the perceived diminishing influence of Europe in the international standards arena has led to first (minor) initiatives by the European Commission, aiming at changes in their ICT standardisation policy. Some options currently under discussion are addressed.

Categories and Subject Descriptors
K.1 (Computer Industry) – standards; K.4.1 (Public Policy Issues) – regulation,

General Term
Standardisation

Keywords
ICT standardisation, standardisation policy

1. EMERGENCE OF THE CURRENT STANDARDISATION ENVIRONMENT
Over the last three decades, the world of ICT standardisation has changed dramatically, from the fairly simple and static situation that could be found in the seventies (see Figures 1 & 2 below).

Back in the seventies, there was a clear distinction between the then 'monopolist' CCITT (International Telegraph and Telephone Consultative Committee, the predecessor of the ITU-T) on the one hand, and the remainder of the world of ICT (Information and Communication technologies) standards on the other. CCITT were in charge of standards setting in the telecommunications sector. They was basically run by the national PTTs, which still enjoyed a monopoly situation in their respective countries. ISO was in charge of almost all other ICT-related standardisation activities. The national SDOs (Standards Developing Organisations; i.e., the 'formal' bodies, as opposed to standards consortia) developed their own specific standards, but also contributed to the work of ISO.

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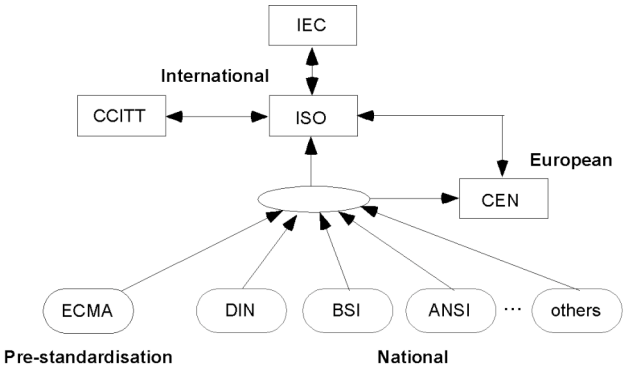

Figure 1: The ICT standardisation universe in the seventies (excerpt)

Over time, two trends contributed to an increasingly complex ICT standardisation environment:

- the growing importance of ICT,
- the globalisation of markets.

In a way, these were coupled, and further accelerated, by the Internet, which was 'discovered' for commercial use in the mid-nineties. Further complexity was caused by the liberalisation of the telecommunications markets and the associated emergence of regional bodies, such as ETSI in Europe, and ATIS in the US and TTC in Asia. This was reinforced by the still ongoing merger of the formerly distinct sectors of telecommunications and IT, which caused considerable changes in these markets.

These processes affected primarily SDOs, and the relations between them. In addition, and as 'external' competitors, standards consortia emerged as a new phenomenon (especially in the IT sector, not so much in telecommunication). This was largely in response to the enormous speed of technical development in ICT. 'Traditional' SDOs – including the European Standardisation Organisations (ESOs) – were widely considered as not being capable of coping with this speed. Well-known examples today include, for instance, the W3C (the World Wide Web Consortium), OASIS (the Organization for the Advancement of Structured Information Standards), or OMG (the Object Management Group).

Also, the economic importance of standards grew. A system 'ennobled' by having become a standard held the promise of huge financial gains for its proponents. Likewise, backing a loosing system would imply both severe monetary losses and a severely reduced market share for its supporters. In an attempt to save the day, new consortia could be established to standardise the loosing system. Obviously, this approach increased the number of consortia and led to an even higher complexity of the standards setting environment.

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As a result, for a number of years consortia emerged an amazing rate. This was largely in response to the enormous speed of technical development in ICT and e-business systems. 'Traditional' SDOs were widely considered as not being capable of coping with this speed. To further increase complexity, a proliferation of sector-specific standards may be observed in Europe, especially in the e-business domain. The most prominent representatives here include CEN/ISSS Workshop Agreements (CWAs), many of which have been tailored towards the needs of a dedicated industry sector.

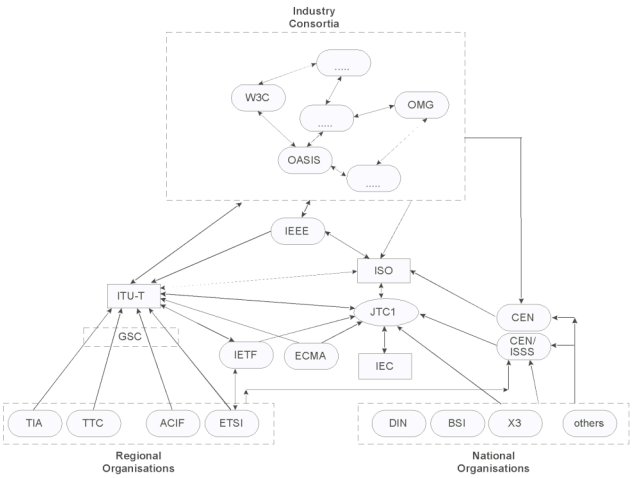

Figure 2: The ICT standardisation universe today (excerpt)

One effect, which was a direct result of the trends outlined above, is that many companies, especially large manufacturers, vendors, and service providers, are forced to participate in a much higher number of SSBs (Standards Setting Bodies; this term is used to denote both consortia and SDOs) than they used to, to make sure that they do not miss a potentially relevant development.

The Internet's standards body, the IETF (Internet Engineering Task Force), should also be mentioned. This body plays a somewhat special role thanks to the unprecedented importance of the Internet in today's economy. For many years the IETF had not been accepted as a standards setting body, and its output, the Internet Standards, were not recognised by government procurement regulations. This has changed by now, though.

2. THE EUROPEAN STANDARDISATION LANDSCAPE

The European Standardisation system comprises three ESOs. Of these, ETSI is in charge of telecommunication standardisation. CENELEC is working in the field of electrotechnical standardisation, and CEN basically covers all other topics. The system is very much based upon the international system, and close links exist between both systems (see Figure 3).

Against the background of the proliferation and increasing importance of standards consortia, concerns grew about the (future) relevance of the European ICT standardisation system. Similar earlier concerns – and the wish to get rid of the (perceived) reputation of being slow moving and not really up to the job – had already led to the introduction of 'lightweight' deliverables by the ESO. This time, however, the whole EU ICT standardisation policy was questioned.

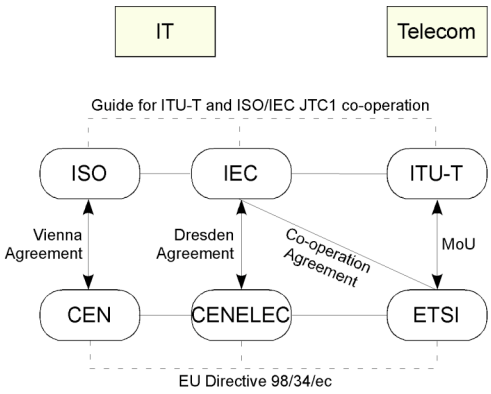

Figure 3: Co-operation and co-ordination agreements between European and international SDOs (taken from [1])

A report was commissioned in 2006 by the European Commission with the mandate to analyse the state-of-the-art in European ICT standardisation policy, and to provide recommendations on how to adapt it in the future [2].

3. IDENTIFIED ISSUES

In the ICT sector, various trends, many of them home-grown, are likely to contribute to a reduced importance of SDOs in general, and of the ESOs in particular. According to [2] and [3], these include, among others:

- Internal legal issues
  EU legislation (and, to a lesser degree, public procurement) can only reference standards produced by the ESOs. In particular, no standards developed by standards consortia or fora (like, for example, the W3C, OASIS, or OMG), as well as those developed by the IETF, IEEE and the likes the may be referenced. Closely related to that is a
- Lack of adequate European standards
  EU regulation, legislation and public procurement cannot reference many state-of-the-art standards solely because they have been developed by the 'wrong' standards setting bodies (SSBs; i.e., not by one of the ESOs).
- Lack of integration of standards consortia
  Here, the prevailing stance remains that "*It is considered doubtful whether, in the light of the speed of development and the limited participation of experts, the fundamental principles for accountability of standardisation such as openness, consensus and transparency are followed in a robust fashion* [by industrial fora and consortia]" [4].
- Lagging European efforts
  In the ICT standardisation area, EU work is lagging a long way behind market realities. This is not least due to the policies and cumbersome processes deployed by the ESOs (specifically CEN and CENELEC).
- Lack of adequate links to the R&D community
  The political support is largely limited to indirect support to pre-standardisation. In addition, some dedicated projects looking at the link between R&D and standardisation have been funded.
- Increasing influence of Asian countries, most notably China
  China has recognised the potential of actively pursuing ICT standardisation. This is done on two levels: through the development of national standards, and through strong participation in the international arena (primarily in formal bodies, though, as opposed to consortia).

The resulting preliminary problem tree is depicted in Figure 4.

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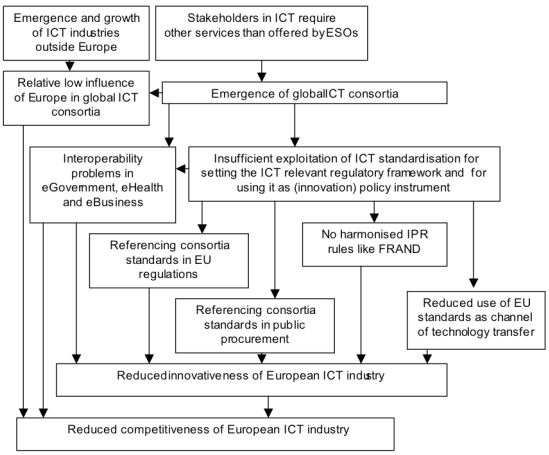

Figure 4: Preliminary problem tree

4. ENVISAGED POTENTIAL REMEDIES

To do something about especially the first four issues, the EU needs to re-consider their stance towards non-European SSBs. This holds all the more as there is evidence that industry doesn't really care about the 'status' of a standards setting body (i.e., whether a standard originated from a consortium or an SDO). Rather, an SSBs' characteristics need to be in line with a company's interests and its business model; see, e.g., [5].

Specifically, four potential lines of action have been identified [6]:"

1. No action at all at EU level.
2. Modest changes to European ICT standardisation policy, e.g.
   - create a permanent stakeholders' platform,
   - encourage deeper integration of the work of consortia / fora into the European standardisation system through agreements with the ESOs.
3. Significant changes to European ICT standardisation policy, e.g.
   - create the financial and legal possibility to reference non-ESO ICT standards in EU policies and legislation,
   - define ICT standards attributes based on WTO criteria,
   - use specific standards developed by particular consortia/ fora ('case by case basis'),
   - clarify the provisions applicable to the use of ICT standards in public procurement.
4. Comprehensive changes to European ICT standardisation policy, e.g.
   - recognition / accreditation of fora and consortia as standardisation organisations under Directive 98/34,
   - regulate the treatment of IPR related to ICT standards".

These options could be complemented by two additional ones. These two can be used in conjunction with each of the four options above. They have the additional benefit of not requiring any significant changes to the European ICT standardisation policy (if any).

5. Increase the participation of EU stakeholders, especially EU companies in global consortia
   - Provide technical and management support for interested companies
   - Provide financial support to (some disadvantaged) stakeholders (e.g., primarily for SMEs, NGOs, consumers)
   - Support participation of governmental organisations from both the EU and the Member States
6. Increase attractiveness of participation in ESO activities for all stakeholders, especially those from outside Europe
   - Allow direct participation in all ESOs (not only ETSI), not via NSBs
   - Provide incentives for stakeholders to participate, especially for those who are typically disadvantaged (SMEs, consumers, NGOs, etc,)
   - Increase attractiveness and 'credibility' of the New Deliverables published by ESO
   - Make IPR rules of ESOs more flexible

These options can initially be assessed on a rather rough and qualitative basis according to the following criteria:

Effectiveness. The extent to which options can be expected to achieve the objectives.

Efficiency. The extent to which objectives can be achieved for a given level of re-sources/at least cost (cost-effectiveness).

Consistency. The extent to which options are likely to limit trade-offs across the economic, social, and environmental domain (consistency with other policies).

Compatibility. The extend to which the options are in line with the legal framework (i.e., how much/little it would need to be changed).

Given the issues listed above (and the numerous others), #1 is hardly an option. In many areas SDOs (including the ESOS) have been marginalised by consortia (e.g., the W3C for Web-related technology), or by 'consortium-like' (from a European perspective) organisations like, e.g., the IEEE (Local Area Networks, both wired and wireless) and the IETF (for Internet-related standards). If the ESOs are to stay relevant in the ICT sector, and if Europe wants to play a major role in future standards developments in this sector, changes to the current policy are inevitable. This holds particularly for an improved integration of the work of standards consortia into the European standards environment (for example, in the field of public procurement).

The same holds for option 2. An entity that could easily assume the role of the suggested platform has already been established – the ICT Standards Board[1] (ICTSB). Whether or not consortia actually want to be integrated more deeply into the European standardisation system appears questionable. On the one hand, it would improve the relevance of their standards in Europe (e.g., in public procurement). On the other hand, they might fear a certain loss of independence and self-determination. Plus, as typically global entities, Europe is just of many relevant economic regions. Others might then claim similar rights.

Option 4 would probably bring about a whole host of legal problems that would take considerable time and efforts to be fully resolved. Moreover, given the very diverse policies and bylaws of individual consortia, a 'carte blanche' approach here would not be feasible (see below). In addition, it is highly unlikely that consortia would give up a major part of their independence (i.e., the right to set their own IPR regulations) for a better relation to the ESOs.

This leaves #3 as the only viable option. The WTO has identified a 'Code of Good Practice for the Preparation, Adoption,

[1] The ICTSB is an initiative from the three ESOs with the participation of several standards consortia to co-ordinate specification activities in the field of ICT.

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and Application of Standards' [7]. Compliance with this Code would thus be a minimum requirement for consortia to be accepted as potential sources of officially 'referencable' standards in the EU. It might, however, be advisable to identify additional criteria that should be met by consortia (e.g., about their openness, membership policies, IPR rules, etc). This option should also be implementable with an acceptable degree of legal/administrative overhead. From the consortia's point of view, this should also be an acceptable way forward. For one, they would keep their autonomy (without 'offending' anyone). And almost all major consortia's processes are fully in line with the WTO' Code of Good Practice anyway, so this wouldn't be an issue either. For a consortium's members, on the other hand, better access to European public procurement, or having a consortium's standard referenced by European Directives, for example, might well be of considerable commercial interest (especially if the 'price' to be paid is acceptable). Thus, consortia may experience a certain pressure from their members to comply with reasonable requirements from the European side.

Independent of the above, options 5 and 6 should be pursued in any case. Except for the task of providing financial support to (some disadvantaged) stakeholders (which may be argued to bring unfair advantages to some) they are perfectly in line with EU policies, comparably straightforward to implement, would be beneficial to all (including especially the 'Third Estate' in ICT standardisation; i.e., SMEs, users, consumers, NGOs, etc; see [8]).

Table 1 shows a brief summary of the initial evaluation of the options.

	Effective-ness	**Efficiency**	**Consis-tency**	**Compati-bility**
Option 1	Low	Low	High	High
Option 2	Medium	Medium	High	High
Option 3	High (short term)	High-medium	Medium	Medium
Option 4	High (short term)	High-medium	Medium	Medium-Low
Option 5	High (long term)	High-medium	High	High
Option 6	High (long term)	High-medium	Medium	High

Table 1: Preliminary assessment of the options

A relative ranking of the criteria 'Effectiveness'; 'Efficiency', 'Consistency', and 'Compatibility' would further help determine the viability of the Options. In any case, the level of incompatibility with the legal framework should be minimised. On the other hand, assuming that the European Commission is prepared to really pursue sustainable changes to their ICT standardisation policy, they need to be prepared to make changes. Along similar lines, 'consistency' should not be so much of issue here. This holds particularly since trade-offs would largely result from changes in the number and role of stakeholders active in the ICT standardisation process. Regrettably, imbalances here can be observed for both consortia and SDOs, and this situation is unlikely to change in the short run (see e.g., [9]). In contrast, for any policy change to be meaningful in practice, 'effectiveness' is crucial. This also holds for 'efficiency', albeit to a lesser extent – the new policy must not lead to increased overheads, whether in time or money, neither to a decrease in quality of the final outcome, the standard. However, improvements should become evident in the short/medium-term.

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