Consortium problem redefined:

Negotiating 'democracy' in the actor network on standardization

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This paper examines the standards consortium problem (i.e. lack democratic procedures) and the democratic rhetoric that surrounds it from a European perspective. The social shaping approach is used. The analysis addresses the organizational level (consortium procedures) and the actor network level (processes of meaning negotiation). The research method includes two in-depth case studies of consortium standardization: Java in ECMA and the Extended Markup Language (XML) in the World Wide Web Consortium (W3C). The findings illustrate inaccuracies and inconsistencies in the way the consortium problem is defined. They indicate that the dominant rhetoric underestimates the openness of most industry consortia and overestimates the practical implications of the formal democratic procedures. This unbalanced portrayal and sustained indistinctness about what is meant by 'democracy' are part of the meaning negotiation that takes place in the actor network. Implicitly, the European actor network is still predominantly defined as an instrument of regulatory governance. This marginalizes the role of consortia. The paper offers several suggestions that redefine the consortium problem.

Keywords: standards consortia, social shaping approach, social constructivist theory, meaning negotiation, European network on standardization, ECMA, W3C, democratic standards procedures.

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INTRODUCTION

In Article 14 of the *Council Resolution of 28 October 1999 on the role of standardization in Europe,* the European Commission is requested to examine how the European Union should deal with specifications that do not have the status of formal standards. The Council recognizes "(...) an increasing tendency of interested parties to elaborate technical specifications outside recognised standardization infrastructures." (Article 7) The resolution distinguishes between standards developed by official standards bodies such as the International Organization for Standardization (ISO) and on the European level, for example, the Comité Européen de Normalisation (CEN), and those from other sources. In the resolution context a main other source is the standards consortium[i]. The Council's feeling is, apparently, that there may be a need to deal differently with consortium standards than with formal ones, a feeling which, for example, the US government shares (Center for Regulatory Effectiveness (CRE), 2000).

No accepted definition exists as yet for the term 'standards consortium'. In practice, it can cover a variety of alliances. Some standards consortia focus solely on the development of technical standards or specifications (*specification groups*, Updegrove, 1995). These may be R&D-oriented and pre-competitive (*research consortia*, Updegrove, 1995; *proof of technology consortia*, Weiss & Cargill, 1992). They may focus on heightening the usability of existing standards (*implementation and application consortia;* Weiss & Cargill, 1992). Or, their goal may be to formalize dominant existing practices and de facto standards. Again other consortia may foremost promote the adoption of a certain technology (*strategic consortia*, Updegrove, 1995), organize educational activities for users of standards (Hawkins, 1999), or combine these activities with specification development. In this paper, *standards consortium* refers to an alliance of companies and organizations financed by membership fees, the aims of which include developing publicly available, multi-party industry standards or technical specifications. In practice, mostly large companies are members of these consortia.

The Council Resolution is but one example that there has been some unease and discussion about the role of standards consortia in the network of actors involved in standardization. The actor network appears to be caught up in a polarized discussion about what type of organization best serves the market for democratic and timely standards: standards consortia or the traditional formal standards bodies. The general feeling is that standards consortia work more effectively, but that they have restrictive membership rules and are undemocratic. The latter is a cause of concern for governments that require democratic accountability of the standards process if they are to refer to such standards in a regulatory context.

Much depends on the democratic rhetoric, as it is called in the following. For it is this rhetoric, which largely determines who is part of the European actor network on standardization and who is not. Those who are 'in' may have good arguments to emphasize the need for democratic standardization. However, after having gone uncontested for many decades, maybe it is time to question the obvious. This, to avoid a situation where standards consortia are being marginalized for the wrong reasons.

In the following, the assumptions and arguments are analyzed from which the current actor network largely draws its legitimacy. The social shaping approach is used to do so. Two cases of consortium standardization are discussed to uncover possible

inconsistencies and asymmetries in the reasoning applied. Indeed, in the last sections of this paper a redefinition of the 'consortium problem' is argued for.

METHODOLOGY

This paper uses data based on research funded by the European Commission. The latter request was, in short, to gather up-to date case material on consortium standardization, and to develop a perspective that offers new leads for policy. This required re-examination of the standards consortium problem and of the underlying assumptions. Does the way the problem of standards consortia is defined in dominant rhetoric accurately describe what is at stake? An explorative, qualitative approach was implied. Apart from a study of the literature and content analysis of documents, two in-depth case studies took place: Java standardization in *ECMA, an International Industry Association for Standardising Information and Communication Systems,* and standardization of the Extended Markup Language (XML) in the *World Wide Web Consortium* (W3C). The standards were selected because of their high profile and the sufficient amount of information this implied. Data was gathered, foremost, by means of participant observation (i.e. attending ECMA standard committee meetings), interviews with committee participants (face-to-face and by email) and, with respect to W3C standardization, in particular, content analysis of electronic contributions to and emails about the standards process. The research resulted in the report *Beyond Consortia, Beyond Standardization? New Case Material and Policy Threads* (Egyedi, 2001b).
In this paper the case findings are used to confirm or - when counter-examples arise - correct common sense assumptions (i.e. falsify the dominant rhetoric, if you will). They serve to illustrate, develop and argue a different line of reasoning. In the section that argues for a redefinition of the consortium problem, a *participative* social shaping approach is taken, one that interprets the research findings with the explicit aim of contributing to the debate.

CONCEPTUAL FRAMEWORK

The essence of the social shaping approach - or social constructivism, as the body of theory is also called - is straightforward. It emphasizes that everyday knowledge and scientific knowledge are social constructions (Berger & Luckmann, 1966; Bloor, 1976). The sense of objectivity is based on a shared perception thereof. That is, facts, artifacts and events can be interpreted in different ways. This is captured by the term *interpretative flexibility* (Collins, 1981). Their meaning thus becomes negotiable. Groups negotiate these meanings. In the process of acquiring consensus, the interpretative flexibility is reduced. This is called *closure* (Pinch & Bijker, 1984). Closure leads to stabilization of a meaning. Callon (1980), the developer of actor network theory, speaks of 'the dominant problem in an actor network' when referring to this process.
Social constructivists inspired Bijker (1990) to develop the Social Construction of Technology (SCOT) model. They also inspired the conceptual framework of the *Social Shaping of Standardization* (Egyedi, 1996). The framework draws together and builds forth on notions from the sociology of knowledge and social constructivism (Berger & Luckmann, 1966; Kuhn, 1970; Bloor, 1976; Collins, 1981), social studies of technology theories (Dosi, 1982; Pinch & Bijker, 1984; Bijker, 1990; Callon, 1980), institutional

theory (March & Olsen, 1989; Powell & DiMaggio, 1991; Jepperson, 1991) and theories from social psychology (Berkowitz, 1980).
Table 1 summarizes the main line of reasoning in the social shaping of standardization approach. For the purpose of this article, only part of the framework is relevant. In particular, understanding of the last two columns of table 1 suffices to locate the consortium problem and contextualize actor network issues that are analyzed further on. Below, first the defining concepts in table 1 are explained. Next, the levels of social aggregation in standardization are separately discussed, in particular, the level of the organization and of the actor network.

Social actors and attributes

Social actors are the main unit of analysis in the framework. The term refers to set of individuals (or organizations). Table 1 distinguishes three social actors: the standards committee (i.e. working group, etc.), the standards organization (i.e. standards body, consortium, etc.) and the actor network on standardization (i.e. consisting of standards organizations, interest groups, actor agencies such as the European Commission, World Trade Organization, etc.).
These social actors vary in what binds them together (*attributes*). That is, they differ with regard to what makes them *social* sources of influence in the field of standardization. Possible attributes include common interests, shared problems, shared beliefs, common activities, a common profession, etc. For example, a *practitioner community* is a group characterized by shared knowledge, heuristics, methods, and professional beliefs (Kuhn, 1970).
Social shaping occurs at all three levels relevant in standardization. However, the shaping process and the target of shaping differ. For example, at the standards committee level, whether analyzed in terms of interest groups (attribute: interest) or practitioner communities (attribute: paradigm), groups negotiate the standards content (target: standard). At the level of the standards organization, however, the source of social shaping is the standards procedures. The values and beliefs embedded in the procedures (attribute: standards ideology) structure the negotiation process (target: standards process).
In the following, the last two columns of Table 1, that is the level of the standards organization and that of the actor network, are discussed in detail.

Social actor> Characteristics	Standards Committee		Standards Organization	Actor Network on Standardization
Social shaping by (specific actor)	interest groups	practitioner communities	institutional provisions	corporate actors, interest groups, ..
• **Attribute**	interests	paradigms	standards ideology	interests
Social shaping through (process)	negotiating problem def. & standards solutions		structuring negotiation	negotiating problem def. of standardization
Social shaping of (target)	standards		standards process	role of standardization
Role standards organization	internally oriented (institutional context of committee)		mediates standards ideology via institutional provisions	externally oriented (as actor agency)

Table 1: Main elements in the social shaping approach to standardization (source: Egyedi, 1996).

Standards Organization

Moving a decision process from one arena to another with different structural features changes its outcome (March & Olsen, 1989; Besen, 1990). Analogously, the institutional context of standards committees is highly relevant to the outcome of the standards process (Genschel, 1993, p.26; Bonino & Spring, 1991, p.102). Organizational procedures embed ideas on how standardization should proceed, beliefs on what is important in the process of establishing standards and why it is important, assumptions about the standards environment, etc. These shared ideas, assumptions, values and beliefs are captured by the term *standardization ideology* (Egyedi, 1996). For example, the procedures of the formal standards bodies embed democratic values and reflect the desirability of a technically and politically neutral standards process. The ideal of decision-making by consensus reflects serious consideration of minority viewpoints. Etc. Together such features make up the tissue of the formal standards ideology. Once ideas are institutionalized, they acquire a taken-for-granted quality and are not easily dismissed or changed (e.g. March & Olsen, 1989, p.52). The institutionalized ideology of the formal standards bodies, thus, fosters continuity in their standardization approach. It indicates the role, which the formal standards bodies aim to play, and clarifies the direction in which institutional provisions influence current standards work. Standards procedures regulate the committee process. Rules are laid down on how the negotiation of insights and interests should proceed. As the rules of a game affect its outcome, institutional provisions for formal standardization affect standards. The same reasoning applies, of course, to the institutional provisions of the standards consortia. In both cases, the social shaping process at stake is a delayed and mediated form of social construction. In the wordings of Table 1, the standards organization shapes the

standards process by means of institutional structures and procedures. The latter mediate ideas and beliefs about how standardization should occur.

Actor Network on Standardization

An *actor network* is, loosely speaking, a society of organizations (Jepperson, 1991). To paraphrase Mulder (1992, p.21), in the field of standardization it is the ensemble of relationships which serve the objective of developing, maintaining and applying standards. It typically comprises standards organizations, interest groups (industry and users) and government agencies. It is a bounded network. Participants must acknowledge each other's roles in respect to standardization. Again paraphrasing Mulder (1992, p.20), a relationship between actors exists if they agree on the roles which each of them will fulfill with regard to standardization. However, the relationship between network constituents need not be voluntary. Actors may unwillingly be forced to recognize other actors. They are interdependent for they cannot alter their role without renegotiating their relations with other participants in the network (Mulder, 1992).

There are no clear-cut network boundaries. Who is 'in' and who is 'out' is negotiable, and is the cause of boundary skirmishes. Certain actors may occupy a pivotal position and have a disproportionate influence on how the network defines the dominant problem. Where significant changes in the network are handled through one actor, the actor is viewed as an *obligatory point of passage* (i.e. a kind of gatekeeper; Callon, 1986). For example, in the period leading up to the European common market in 1992, the European Commission played this role in regard to European standardization (Egyedi, 2000).

Actors negotiate the authoritative assignment of values and meanings (op. cit. Albert de la Bruhèze, 1992, p.14). At the actor network level, negotiations often concern the significance of standardization in respect to other political issues. This can be done, for example, by purposeful problematization of an aspect of standardization or by coupling standardization to other established political priorities (e.g. faltering regional industry). The meaning on which the actor network temporarily settles affects the position of the standards organizations in the network, and thereby the conditions under which formal and consortium standardization take place. Thus, actors negotiate about

(a) the problem of standardization (its role, i.e. significance and purpose) and, thereby, the role of the actor network;

(b) their position in the network and the network boundaries (who is included/excluded).

ANALYSIS OF THE PROBLEM DEFINITION

According to the dominant rhetoric, why are standards consortia a problem? The answer lies in the way governments sometimes use formal standards. To avoid frequent revision of European legislation in reaction to technical changes and standards developments, the European Union drew up the New Approach (1985). This approach entails that, where necessary, the European Union refers in legislation to the technical specifications developed and/or accredited by the European standards bodies. If for this purpose a new standard is needed, the government can mandate (fund) a standards body to develop one. In other words, if a reference to standards is needed for EU legislation - or public procurement - then the standards referred to will preferably be formal standards, or, 'voluntary consensus standards', as they are also called. The latter are developed in institutions with a 'democratic' decision culture, one that matches the political democratic

context in which regulation is developed. A politically accountable, 'democratic' development process is required. There is reciprocal dependence and, consequently, a strong alliance between the European Union and the European formal standards bodies. Together these two parties own the 'consortium problem'.
From the point of view of the formal standards bodies, the problem is that standards developing consortia are rivals (CEN/ISSS, 2000). They attract expertise from the group of large industrial companies, which often contributes significantly in terms of organizational support and technical contributions, is the reasoning. Consortia can produce specifications quicker than the formal bodies do, because they need not bother with a lengthy democratic and open process that demands consensus decision making, well-balanced representation of interest groups, etc. (Rada, 2000). The CRE-report (Center for Regulatory Effectiveness, 2000), a report that will be referred to more often because of its high significance for this paper, explicitly mentions that consortia deliver *non-consensus* specifications.) They need not compromise on standards content as much as the formal standards bodies do. Because of their speed, time-sensitive technology development is addressed there. That is, they are a competitive but undemocratic standards environment (e.g. CRE, 2000).
At least, this is the widely shared view of those who compare the formal standards bodies with standards consortia.[ii] If this view is correct, the government's problem with consortia would be that, although consortia address a very relevant area of technology in an efficient way, a politically correct alliance cannot be set up that allows reference to consortium standards. However, the problem 'as defined' is not as obvious as may seem. Recent literature already indicates that some underlying assumptions can be questioned. For example, doubts are raised about the speed of consortium standardization (Hawkins, 1999; Krechmer, 2000); findings differ with respect to whether the rise of standards consortia has led to a decline of industry participation in formal standardization (Hawkins, 1999; Cargill, 2000); moreover, the politically correct aims of the formal process are often not met, which makes a comparison difficult (Cargill, 2000).
In the following sections, the social shaping approach is used to analyze two cases of consortia. The findings partly support some of the doubts raised in standardization literature and raise new ones.

STANDARDS PROCEDURES OF ECMA AND W3C

Standards bodies influence committee processes by means of procedures and structures. They mediate a standards ideology. The ideology of the formal standards bodies has remained rather stable during the twentieth century - apart from a slight shift during the last decade. For example, participation in the international standards process, which was and is still based on *national membership* (national standards bodies), has become a less principled issue. Direct membership of interest parties and companies (e.g. in the European Telecommunications Standards Institute, ETSI) poses less of a problem.
But other ideological elements still apply or are striven for, such as the *consensus principle;* the *voluntary application* of standards; *quality of standards;* the *broad constituency of national delegations; democratic* working methods by means of a 'well-balanced influence of national members' in the management bodies of standards organizations and an open, democratic process of decision-making; *impartial, politically and financially independent* organizations and procedures; widely used and thus in

principle *international standards; fair competition and fair trade; openness in information;* and a rational, *technical discussion* (Egyedi, 1996).
The dominant rhetoric on the consortium problem is usually not very specific about what is meant by ‘democracy’. Reading between the lines, the most pressing problems appear to concern the 'openness' of membership procedures (i.e. diversity of participants and inclusion/exclusion of groups), and decisions making procedures (i.e. consensus and minority treatment). In the following sections, these two categories of procedures are examined with regard to ECMA and W3C as they appear in writing and, subsequently, as they work out in practice. The ECMA, an international Europe-based industry association for standardizing information and communication systems, was founded in 1961 and is one of the oldest consortia. W3C (World Wide Web Consortium) was founded in 1994 and is one of the younger ones.

Membership and decision procedures

Membership. ECMA and W3C demand membership fees. The fee structure roughly takes company profit into account: the more profit, the higher the fee. Small and medium-sized Enterprises (SMEs) can participate, and so can governmental and educational institutions - although ECMA procedures are less explicit on this account. Thus, membership is in principle open. There are at most some practical and organizational exclusion mechanisms (fee, participation in committees, etc.).
ECMA and W3C differ in respect to what the membership categories mean. Only Ordinary ECMA members (i.e. fully paying: 70,000 Swiss Franc in 2001) have a vote in the General Assembly (GA), whereas W3C bestows no extra voting benefits on full members ($US 50,000 per year).
Decision procedures. The overall decision structure of ECMA and W3C differs strongly. In ECMA the ultimate power lies in the hands of the General Assembly (inclusive) in which only ordinary members have a vote (exclusive). In other words, there is full democracy among members that pay the ordinary membership fee (large companies). In W3C, the ultimate power lies in the hands of the director, who formally has the role of a benevolent dictator. There is no democracy at this level. Indeed, 'if it is necessary to move on' the chair of W3C technical committees also has far going powers. However, the W3C standards process is consensus-oriented, strives for a vendor neutral solution, and an open process, according to the procedures. Some procedures give room to minority standpoints. W3C's mix of these democratic ideological features with 'dictatorship' leads to interesting procedural directions (W3C, 2001). ECMA procedures are internally - ideologically - consistent. They are consensus-oriented and give room to minority standpoints as well.
Where W3C's director appoints committee chairs, ECMA committee members elect the chair. If there is a deadlock in an ECMA technical committee (TC), voting takes place by simple majority of the members present at the meeting. In both W3C and ECMA, each member may assign several representatives to participate in the standards work, but the company only has one vote.
All in all, these two cases indicate that the procedures of - some! - consortia allow them to be reigned in an autocratic manner. But at committee level they largely share the

democratic values of the formal standards ideology and strive for consensus, address minority viewpoints, etc.

Effectuation of procedures

Consortia. Consortia are valued by some for their lack of bureaucracy and for the high pace of standards development, which this leads to. Others criticize them for lacking elaborate – e.g. Intellectual Property Right - procedures, or, conversely, for adopting the bureaucratic procedures of the formal standards bodies[iii].

In either case, it may not be wise to overly judge consortium standardization based paper procedures. Indeed, Hawkins (2000) argues that an informal manner of handling procedures is typical for consortia. This casts doubts on whether consortium procedures are applied.

Formal bodies. Analogously, we should question whether formal standards bodies handle their procedures in accordance with the underlying ideology. There, too, practice diverges from theory. For example, in practice the formal standards process is an exclusive one. Participation of end-users and SMEs is very low (Jakobs, 2000). Moreover, while formal bodies usually restrict access to committee drafts to participants - and seek consensus within this group - consortia more often actively seek comments from outside and post their drafts on the web (Rada, 2000). Furthermore, formal procedures are often strategically exploited in less than democratic ways. Examples are staging a voting during Christmas holiday (Egyedi, 2001a), and the dominant presence of US multinationals in European national delegations (Cargill, 1999). Whereas governments emphasize that consortia adhere to democratic procedures, the lack of diversity and well-balanced participation in formal standardization is well known. At present, it is as difficult for the formal bodies to amend this situation as it would be for consortia to meet such objectives. Both settings have much in common.[iv]

In sum, the two case studies indicate that formal standards bodies and standards consortia include and exclude the same constituency. Consortia more explicitly target industrial parties. Like the formal bodies, they also strive for consensus, address minority viewpoints, etc, that is, they share the values of the formal ideology at committee level. However, unlike the formal bodies, there is much variation in who is the ultimate gatekeeper, an individual director, like in W3C, or a collective, like the General Assembly (GA) in ECMA. This is the only real difference. The rest is foremost persuasive rhetoric.

CONSORTIA IN THE EUROPEAN ACTOR NETWORK

A reciprocal dependence exists between the European Commission and the European formal standards bodies (e.g. EU mandates for standards development).[v] In the period leading up to the European common market in 1992, the ties were strengthened. From the Commission's point of view, the actor network on standardization served the purpose regional governance (i.e. breaking down technical barriers to trade and harmonization of regulation among member-states). In the framework of the New Approach (1985), which arranged reference to standards in legislation and regulation, the European standards bodies were asked to play a pre-eminent role in the harmonization process. They willingly complied, but by doing so adopted a heavily regulation-oriented interpretation

of standardization. The Commission became an obligatory point of passage in the actor network: it determined which organization was to be part of the actor network and which one was not. For example, standards consortia that were accredited by the formal bodies fortified the formal standards setting and were included (Genschel, 1993). Non-accredited consortia were usually excluded. Little has changed since then - except that the number of influential standards specifications developed by non-accredited standards consortia has increased exponentially.

The formal standards bodies have always embraced democratic ideals for their standards work. This makes them particularly suitable as a government instrument of political and regulatory governance. By prioritizing democracy as a core value in standardization, as the Commission does, the latter strengthens the position of formal standards bodies (e.g. ISO and CEN) in the actor network. Consortia accreditation is part of an inclusion process. However, the rhetoric that defines consortia as a democratic problem is part of a negotiation process about who has a central position in the actor network. It marginalizes the role of consortia. The rhetoric derives part of its persuasiveness from keeping the meaning of the term ‘democracy’ vague as well as the assumptions that define its value. Their interpretative flexibility and negotiability are essential to dominant actors in the network.

The problem which consortia have, is that they do not easily fit into a context that defines standardization as instrument of political and regulatory governance. Their way of operating is best captured by defining standardization as a means to structure and self-govern market developments (Hawkins, 1998, pp.1-2; CRE, 2000, p.2) Not acknowledging consortia, would place consortium standardization outside the Commission’s the sphere of influence. It would estrange the actor network from and important source of standards. However, were the Commission to acknowledge consortia which do not seek 'democratic certification' as serious players, this would destabilize its relationship with the formal standards bodies. It would undermine the latter's role as standards developing organizations, and compromise the importance of the democratic standardization ideology, which many people still think of as a primary asset.

REDEFINITION OF THE PROBLEM

Recapitulating, the rhetoric emphasizes that consortia are a problem because they are undemocratic and therefore unfit for use in a network used as an instrument of regulatory governance. Does this well describe what is at stake? As previous sections showed, there are several questionable aspects to the consortium problem as it is defined. They are listed in Table 2, and require further thought. Below, the necessity of their redefinition is argued and illustrated.

	Aspect of the Consortium Problem	as defined	as redefined
1	standardization setting characterized as	area of (democratic) regulatory governance	fair market competition
2	democratic standards process • compatibility standards	consensus, well-balanced participation	• multi-party & simple majority voting (if no judicial status, no criterion)
	• health/safety/environm./ etc. standards		• consensus, well-balanced participation
3	approach to consortia	general	differentiated
4	aim of technical coordination	standardization	compatibility
5	stage of standardization emphasized	standards development	standards diffusion and implementation
6	stage of techn. development emphasized	technology research & development	technology diffusion in market

Table 2: Aspects of the consortium problem as it is defined in the dominant rhetoric and the proposed redefinition.

Democratic standardization? [1, 2]. The problem as defined says that consortia procedures are unfit for use in a regulatory governance context. However, whether the standardization setting should at all be interpreted as an area of regulatory governance is a question hardly addressed. In the current political and economic climate (e.g. privatization, neo-liberalism, multi-nationalism), imposing the democratic governance ideal on the standardization setting seems to be an anachronism. Except for *de jure* situations, where government legislation refers to standards, the democratic process should not be prescribed as a criterion for accepting standards. Instead, qualify 'democratic specification development' as a voluntary, marketable product asset (e.g. in a similar way to 'high quality'). Consumers will then decide whether its ‘democratic’ origin is an extra asset (i.e. market democracy'). This would apply to the vast majority of technical standards. In exceptional cases, where government reference to standards is at stake (estimated 30% of e.g. the ETSI standards), regarding *compatibility standards*, the democracy criterion should be worded more realistically in terms of multi-party participation and simple majority voting. Regarding *standards for health, safety, etc.*, the democracy criterion of consensus decision-making and a well-balanced participation in standards development are very appropriate. However, in these cases the democratic procedures of the formal standards bodies should be followed with more care. They should monitored more systematically.

Scope of consortia activities (3). As noted in the introduction, there are different kinds of consortia. For example, some try to involve as many actors as possible (inclusive), while others consist of a select number of like-minded participants (exclusive). Their activities can strongly differ (e.g. standards development- or implementation-oriented). Therefore, a differentiated approach is needed to deal with the 'consortium problem'.

Coordination of Technology: Compatibility [4]. The 'consortium problem' is defined as a standards development problem. Standards development, whether by means of formal standardization (technical committees), hybrid workshops (e.g. CEN/ISSS workshops), or specification consortia, is a means to coordinate technology development. However, the ultimate aim is not a standard but compatibility. Compatibility can also be achieved by other means than standardization. Other compatibility strategies are, for example, pure proprietary or proprietary-led multi-party specification development, and the community source approach to software development (Egyedi, 2001a).
Many issues that seem very important from the standardization standpoint take on a different meaning if compatibility is centered on. For example, the distinction between specifications and standards becomes unimportant. Moreover, at times, proprietary specifications can be at least as effective in fostering de facto compatibility as standardization strategies are. In comparison, multi-party non-consensus consortium standards would seem preferable if seen from the ‘democratic’ viewpoint.
Most importantly, shifting the focus from standardization towards compatibility largely dissolves the 'consortium problem as defined'.

Market Coordination by Specification and Strategic Consortia (5,6). Most specification consortia are also implementation-oriented. They aim at coordinating technology development in a multi-vendor environment. They succeed if companies implement the specifications consistently. The result is, ideally, a coordinated market segment, and outcome that requires the support of a business community. (Hawkins, 1999, p.162) Strategic consortia focus on developing such communities.
As the previous section showed, the 'consortium problem as defined' foremost focuses on standards development and R&D questions instead of standards implementation and technology diffusion in the market, respectively. A re-definition of the problem should take place along these lines.

CONCLUSIONS AND RECOMMENDATIONS

The ‘democratic rhetoric’ holds, in a nutshell, that standards consortia lack democratic procedures, which makes them a problematic source of standards for Europe. In the previous, this rhetoric was examined more closely on two levels.
At the organizational level the standards procedures and workings of two consortia were studied to falsify, as it were, beliefs and assumptions. Indeed, there are some inaccuracies and inconsistencies in the way the 'consortium problem' is defined. The cases indicate that dominant rhetoric underestimates the openness of most industry consortia and overestimates the practical implications of the formal democratic procedures. The findings show that, according to paper procedures, formal standards bodies and standards consortia roughly work in the same way. Consortia, too, strive for consensus, address minority viewpoints, etc.. Although the latter more explicitly target industrial parties, in practice both settings include and exclude the same constituencies. One real difference is that, formally, there is much variation among consortia about who is the ultimate gatekeeper: an individual or a collective. In practice this difference may be nominal, as seems to be the case with W3C. But, to be sure, more extensive research is needed that examines how standards procedures (of consortia and formal standards bodies) are followed up in practice.

The other level of analysis was that of the actor network on standardization. At this level the democratic rhetoric is interpreted as part of a negotiation process. It is a tool in shaping, firstly, the dominant meaning of standardization and the purpose of the actor network. The main tenet in the democratic rhetoric is, implicitly, that standardization is an instrument of regulatory governance. Standards that are used in this context require political accountably: 'democracy' and 'openness'. A weakness in the rhetoric line of reasoning is, for example, the underlying assumption that most standards are used in a regulatory context, which is not the case; or, the idea that 'democracy' has an intrinsic value, also in non-regulatory environments? The implications need to be addressed. Secondly, the democratic rhetoric sets the network boundaries and determines the position of actors in the network. Part of the shaping process is how the term 'democracy' is defined - namely only vaguely by inference. This *interpretative flexibility* prevents too easy compliance to democratic procedures by unwelcome parties. The outcome of past negotiations is a network currently dominated by the formal and accredited standards bodies, a regulation-oriented network that marginalizes consortia. Would the dominant meaning of standardization and the purpose of the actor network be redefined, for example as a means to structure and self-govern market developments, this would immediately affect the position of standards consortia.

The way the 'consortium problem' is defined in dominant rhetoric does not match well with developments in standardization. Therefore, a redefinition is recommended along the following lines.

- Except for *de jure* situations, a democratic standards process should not be imposed as a criterion for accepting standards. The significance of democratically developed should be a voluntary product asset.
- In *de jure* situations, where democratic legitimacy is still important, procedures on paper do not suffice. The factual standards process should be monitored.
- Since consortia activities and procedures can differ widely, a differentiated approach may also be needed to deal with the redefined consortium problem.
- The ultimate aim of (compatibility) standardization is compatibility. The latter can also be achieved by other means than standardization. A focus on compatibility instead of standardization largely dissolves the consortium problem as defined.
- The current actor network - and the 'consortium problem as defined' - focuses on standards development and R&D questions. Instead, the network should shift its focus towards issues of standards implementation and technology diffusion, respectively.

Concluding, a standards policy is recommended which bypasses possible rivalry between standardization settings, and goes beyond the inclusion of consortium standardization. Based on the shifts in emphasis proposed above, policy should, on the one hand, reflect a more pragmatic view for the majority of standards; on the other hand, it should give more substance to the aim of democratic accountability required in *de jure* contexts.

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[i]The CEN website www.cenorm.be/isss includes an elaborate list of consortia.

[ii] US sources comment that consortia are generally more under control of their members, have more money to manoeuvre, and their specs are accepted in practice in US public procurement (Cargill, 1999). The benefit of the formal bodies is, for example, less chance of anti-trust claims (CRE, 2000).

[iii] One reason why consortia sometimes adopt the formal procedures is that consortium standardisation is at times a stepping-stone for formalisation. In those cases, consortia must conform to the formal ground rules.

[iv] Interestingly, both formal standards bodies and standards consortia have been accused of administrative rubberstamping. W3C has been accused of rubberstamping the products of major vendors because of the 'member submission process' (Rada, 2000 p.22). This process makes it possible to consider proposals developed outside of W3C. The W3C rules explicitly state that this process is "*not* a means by which Members ask for 'ratification' of these documents as W3C Recommendations."

[v] In US legislation (i.e. the OMB circular), allegedly, no preference is given to formal (consensus) standards *vis a vis* (non-consensus) consortium standards (CRE report, 2000).