

# The Third Estate – The Role of SMEs in ICT Standards Setting

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Abstract: The paper first describes the roles of users in ICT standardisation, distinguishing between large users and SMEs. The different degrees of impact which the various stakeholders have on the process are then discussed. The outcome of a small survey of the views standards committees members have on SME user participation are also discussed. Finally, some suggestions are made on how meaningful participation of SME users in standards setting could be achieved; dedicated user groups are suggested as one means to increase SMEs' influence on the process.

## 1. Introduction and Motivation

*In the age of the French Revolution, the Third Estate comprised all those who were not members of the aristocracy or the clergy, including peasants, working people and the bourgeoisie. It made up 98% of the population in France.  
There are over 20 million SMEs in the EU, making up over 99 % of enterprises in most EU Member States.*

Today, the standards setting process in the Information and Communication Technologies (ICT) and e-business sectors are very much dominated by the large companies and other financially potent stakeholders. As a consequence, there is the real danger that standards – and thus, ultimately, policies – are based on the needs and requirements of a comparably small – albeit powerful – group of stakeholders. The action plan for innovation 'Innovate for a Competitive Europe' – rightly – says "*Voluntary standards, properly used, can help establish the compatibility of innovative concepts and products with related products and so can be a key enabler for innovation. ... SMEs should be more involved in standardisation, to exploit their potential for innovation and to enhance the accountability, openness and consensus-based character of the European standardisation system.*"

Yet, the Working Groups (WGs) of almost all standards setting bodies are populated by representatives of large, multi-national companies. The comparably few representatives of Small and Medium Enterprises (SMEs) typically come from highly specialised vendors or manufacturers. SME users – i.e. those who 'merely' deploy ICT systems – are hardly represented at all, and neither are their umbrella organisations.

Today, SMEs are under enormous pressure from their – frequently large – customers to deploy e-commerce systems (and the necessary underlying ICT infrastructure) which are compatible with the customer's respective systems. Yet, as these systems typically differ, SMEs would accordingly have to set up and maintain a number of different such systems. This is hardly a realistic option, and the use of standards-based systems is an SME's only chance to keep both its ICT environment manageable and all customers happy.

Unfortunately, few standards take into account SMEs' unique requirements. Major standards setting initiatives have already failed because of this. This paper will analyse what needs to be done to make standards setting in the ICT domain more accessible, and useful, for small and medium enterprises.

Against this background the paper will identify the pros and cons to be associated with SME participation in standards setting. The remainder of the paper is organised as follows. Chapter 2 provides some background information about the role users play in standards setting, the different characteristics of large users vs. SMEs, and the relations that exist between the different stakeholders of the standards setting process. The results of a small survey which tried to unveil standards committees members' views on SME user participation are presented in chapter 3. Some conclusions that may be drawn from a combination of the theoretical deliberations and the survey outcome are presented in chapter 4.

## **2. Some Background**

### *2.1 Users' Role in Standardisation*

There seems to be general agreement that user participation is a sine qua non for a standardisation activity to be successful, particularly in the field of ICT. In fact, increased user participation is often considered as the panacea for all problems. However, today only very limited numbers of user representatives can be observed in almost all major international standards organisations. For example, only about 3% of the members of the European Telecommunications Standards Institute (ETSI) qualify as 'users', only one of which is a 'true' SME; almost all others are umbrella organisations or administrative entities.

In fact, the importance of the involvement of all stakeholders in the standardisation process is nicely illustrated by the case of MAP<sup>i</sup>. The failure of this potentially very useful multi-million dollar initiative may not least be attributed to the complete absence of SMEs in the standardisation activity. The extremely complex specifications were done solely by very large companies, for which this complexity apparently was not such a big problem. Unfortunately, they failed to realise that the situation was very different for their SME suppliers. For them, the specifications were way too complex to be implemented and managed. Eventually, the whole initiative collapsed.

However, some recent research [1] suggests that the popular (among Standards Developing Organisations; SDOs) unconditional 'call for users' may at least be questionable, if not counter-productive. Users' major task in standardisation is the contribution of real-world requirements, which then establish the basis from which standards can be developed. Yet, 'requirements' is a very broad term, that not only refers to the technical domain, but is also closely linked to the particularities of the respective local environments. In each such environment very specific requirements and processes have developed over time. These, in turn, stand in the way of a straightforward installation of an IT system. It is here where long-standing, time-honoured traditions characterise the setting, and where technical systems as well as production and business processes have been designed to optimally meet the demands of this specific environment. A new system to be implemented here will have to be customised to a similar degree as have been the other artefacts.

Accordingly, contributing only functional and technical requirements does not suffice. Rather, organisational and other non-technical needs have to be considered, and user representatives need to be in a position to identify these needs. Thus, it does not make too much sense for users to send only technical people to the committees. Rather, corporate

strategists and managers also need to get involved, to make sure that the non-technical issues are adequately covered as well.

However, given the huge variety of business sectors, organisational forms and business philosophies, the many different intra- and inter-organisational interdependencies, and all the differences that come with varying company sizes, not to mention regional or national differences in culture and legislation it is most unlikely that coherent requirements will ever materialise, apart from maybe some very generic ones. That is, thanks to this context-specific – and thus very diverse – nature of most user requirements in standardisation an increased number of users is not a desirable goal per se. Yet, on the other hand it has to be made sure that all stakeholders have an adequate say. Accordingly, new mechanisms need to be introduced into the standards setting process to overcome this situation.

## *2.2 Large Users and SMEs*

A distinction has to be made between large user corporations and SMEs, as they differ considerably in terms of requirements on ICT systems, available resources, and relevant knowledge. Indeed, it has frequently been observed that SMEs do not normally participate in standardisation, a fact typically attributed to a lack of resources. It follows that measures have to be taken to enable smaller companies to contribute to the process as well. This is all the more important since SMEs are a major cornerstone of employment, and of increasing economical importance in the future [2].

At least in some cases leading edge users, strategically employing state-of-the-art technology to support advanced applications and organisational structures, have clear requirements for additions to existing services, or altogether new ones. They may, therefore, decide to carry these requirements into the standards setting process. To have a realistic chance of success, such efforts should be backed by sufficient resources. That is to say, if these leading edge users at the same time happen to be sufficiently large they may well be successful in pushing their requirements through.

In contrast to that, possibly less sophisticated, and particularly less prosperous organisations tend to consider involvement in standardisation being just not worth the effort. They either try to get by on what they have got, to talk to their service providers and/or vendors in order to get ‘customised’ solutions (with all the risks and problems associated with this approach), or to solve the problems internally by integrating ‘home-made’ enhancements (with largely the same problems as customised solutions). Moreover, to actively get involved in the standards setting process will probably be regarded as being far too expensive and time consuming for SMEs. What’s more, the eventual outcome of such involvement lies too far in the future, and is far too uncertain, as to be of any perceived real benefit.

Major differences between large organisations and SMEs can also be identified regarding adoption and usage of information technology. For instance, the former tend to go for systems based on ‘official’ standards (i.e. those produced by e.g. ETSI and ISO) if and when available, whereas most of the latter opt for readily available off-the shelf systems and services, which need to be cheap and easy to install, maintain and use. Proprietary systems are also used if SMEs are compelled to do so by e.g. a major business partner. The non-use of many standards-based services (e.g., X.500) by SMEs is largely due to the fact that insufficient knowledge and resources are believed to be available to employ these systems, which are perceived as being extremely complicated to deal with. This is a rather worrying indication that ‘official’ standards, and consequently the products implementing them, actually fail in adequately addressing the needs of major market segments for simplicity and usability. In fact, this perception, may be considered as a major

impediment to a more successful uptake of standards based systems. With SMEs being a large base of potential customers, this exemplifies an urgent need for simpler standards.

### 2.3 Relations between Stakeholders

The procedures adopted by the individual standards setting bodies suggest that the degree of control over, and influence on, the standards setting process is about equally distributed between the different stakeholders (including e.g. vendors, service providers, and users). One could, therefore, be tempted to assume that in this process interested parties meet, compile and review their needs and requirements, define the best technical approaches and mechanisms realistically feasible, and eventually come up with a standard that should survive in the market and should pretty much suit all needs.

Unfortunately, this does not quite capture reality. Especially the assumption of an equal influence of all stakeholders appears to be flawed – at least according to some earlier research [3]. In fact, it appears that so far development of IT standards has almost exclusively been technology driven; with standards produced solely reflecting providers’ and implementers’ priorities like, for example, manageability rather than usability. This can largely be attributed to the fact that relevant standardisation committees have typically been dominated by vendors and service providers. (see also [1] for a more elaborate discussion). Accordingly, a more realistic model is called for.

Figure 1 depicts the actual situation more realistically. Deliberately or not, manufacturers and service providers act as a sort of ‘buffer’ between corporate users and standards committees.

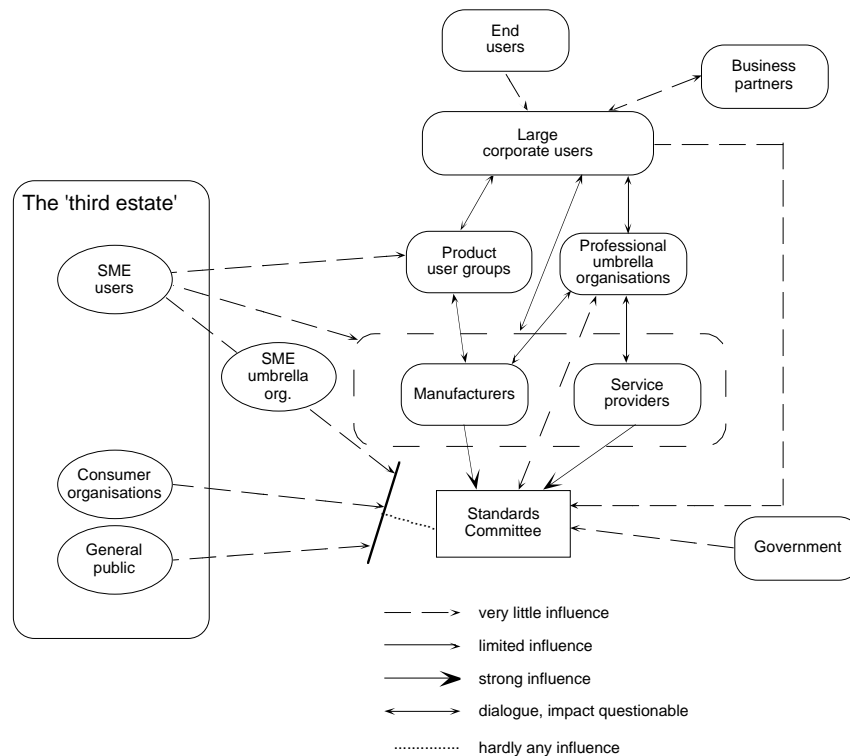


Figure 1: Relations between stakeholders in standardisation

The figure also shows that some entities seem to form what you might call the ‘third estate’ of standards setting. It comprises of the general public, consumer organisations and, most notably here, SME user companies. They are largely separate from the key players, with SME umbrella organisations located somewhere in between. Although they represent the vast majority of standard users these groups have extremely little say in the standards

setting process. This holds despite the fact that organisations such as NORMAPME, the ‘European Office of Crafts, Trades and SMEs for Standardisation’, are actively participating in selected standard working groups on behalf of their constituency.

### **3. Results**

#### *3.1 Methodology*

A survey was conducted to address some issues relating to SME users in standards setting. The overall number of recipients was around 375, about 300 of whom were with the ITU<sup>ii</sup>. All addresses were members of working groups relevant to the ICT/e-business domain. All of them held more senior positions in their respective WGs, as e.g. convenors or rapporteurs. Addresses were obtained from publicly available lists.

Open-ended questions were used, primarily to minimise interviewees’ bias, and to give them the opportunity to raise additional issues they might consider important.

The number of responses was not particularly encouraging – 19 from ITU and 7 from ISO (6.3% and 9.3%, respectively). From these numbers alone it is clear that this is a snapshot rather than a statistically valid result. However, the outcome is pretty much in line with an earlier study [1].

#### *3.2 Outcome*

First, a brief overall stock taking. Both ITU and ISO indeed appear to be dominated by large companies. SME representation (if any, that is) occurs primarily through small consultancy firms, as opposed to actual users. Also, the influence ‘real’ SMEs (i.e., excluding consultants) have on the process is said to be very limited in the WGs. At the decision level it is virtually nil.

It does not really come as a big surprise that ITU WGs are said to be very much dominated by representatives from regulators, vendors, and service providers / network operators (historically, the respective national PTTs were the only organisations with a right to vote).

SME participation is extremely limited in numbers (even non-existent for some groups), and accordingly their overall influence is equally limited.

Respondents’ opinions were split about SMEs’ influence at the technical level. A large minority basically stated that in many cases influence is related to market power. The majority, however, noted that the individual capabilities of the representatives (i.e., e.g., technical skills, language proficiency) is the deciding factor.

At the decision level, only administrations have the right to vote within the ITU. Thus, in a way they have the most influence. However, large companies are frequently heavily involved in the actual writing of the documents. Therefore, they are rather influential at this level as well. Very little, if any, influence is attributed to SMEs here.

With respect to the benefits and/or drawbacks group members associate with (increased) SME participation benefits clearly prevail. For one, the broadest possible participation is beneficial to standards setting per-se. SME participation would also broaden technical expertise, as they are frequently closer to state-of-the-art technical development than big companies, and less bound by internal rules and administrative procedures. Also, they would be welcome as a counter-weight to the interests of the big companies. This holds particularly if they represented fora or some other form of umbrella organisations.

Cost of participation is considered the major obstacle SMEs will face if they want to become active in standards setting. Suggestions how this could be overcome include increased deployment of electronic media to replace meetings, lower or waive fees for

SMEs, provide dedicated travel money. In addition, SMEs could join forces and co-sponsor representatives.

Within ISO, academia and, particularly, consultants seem to play a somewhat bigger role than they do in ITU. Apart from that, the make up of the working groups is similar to that of ITU.

Also not unlike the situation within ITU, SME representation seems to be very limited in most cases. However, one respondent said that SMEs account for about 90% of her group's membership (JTC1/SC7/WG18, 'Quality Management').

The importance of aspects like personality and technical proficiency was particularly stressed by the members of the ISO WGs. Only a small minority observed that size is related to a company's influence in a working group.

Perceived benefits and problems of SME participation are pretty much in line with those identified by the ITU members. However, overall the enthusiasm about SME participation appeared to be less pronounced here (with one exception). In particular, it was noted that the typical sporadic/infrequent participation of SME representatives may lead to inadequate familiarity with both technical aspects discussed as well as procedures, thus causing unnecessary delays to the process.

Again, the lack of funding was seen as the most important impediment to SME participation.

#### **4. Conclusions and Recommendations**

Today, the active participation in standard-setting is largely limited to large, multi-national companies in most relevant sectors, most notably including the ICT and e-business domains. In particular, SMEs hardly stand a chance to make their voice adequately heard. As standardisation and policy-making are mutually dependent, this is an extremely unsatisfactory situation. Ultimately, it means that the influence of globally acting multi-nationals on European policy is out of proportion with e.g. the number of jobs they provide in Europe. In a way, SMEs are part of a modern-day 'Third Estate' with respect to their capability to influence standardisation and thus, ultimately, policy making. This holds despite the fact that there are over 20 million SMEs in the EU.

Standardisation processes provide a platform where opportunities of technologies, requirements of companies, consumer preferences, and other needs of the society at large, e.g. protection of the environment, can be efficiently mediated. Standards that are useful and usable for all relevant stakeholders should be the outcome of these processes.

Moreover, "*Standards are a core part of the infrastructure that supports efficient innovation.*" [4] (see also [5] and [6] for similar accounts). With innovation being high on the agenda in Europe it would be extremely unhelpful if SMEs which, after all, form the employment and growth engine of the EU, were excluded from shaping this infrastructure upon which they very much rely.

##### *4.1 General*

Standards that are useful for all groups of stakeholders should be in everyone's (economic) interest. In Europe, it should be in the EU's very interest to make sure that all stakeholders are represented. Obviously, this must not compromise the independence of the standards setting bodies.

One possible approach here would be to provide funding for suitable SME umbrella organisations (I'm not even starting to think about the potentially resulting, or at least claimed, distortion of competition). It would then be their task to identify those standards committees whose work is of particular relevance to SMEs, and to represent their constituency's interests there. Yet, in this case two problem areas need to be addressed.

For one, SME users are not a homogeneous group. Accordingly, something needs to be done about the problem of diverse and context-specific user requirements. In particular, there is a need for a mechanism to align these requirements. This should ideally happen prior to the actual standardisation process. Dedicated ‘SME user groups’ might be an option worth considering, despite the problems that have to be associated with this approach.

Along similar lines, sector-specific standards may be a way to raise the interest of SMEs to actively participate in standards setting, as such standards might be closer to their specific business interests. This would, of course, imply the need for a mechanism to guarantee inter-sector interoperability.

Second, at the personal level, the credibility of SME user representatives is an issue. They would need to have a ‘mandate’ to make sure that they indeed represent their constituency, as opposed to their respective employers. Also, they would have to participate continuously, possess adequate technical knowledge (in order to be taken seriously by their – typically technically oriented – peers in the WGs), and be able to communicate SMEs’ needs and requirements. That is, a first step would have to be the training of dedicated ‘standards professionals’.

Despite all the above, one should not over-emphasise democracy in standards setting. That is, while in many cases broad participation is definitely desirable (or even a sine-qua-non), absence or under-representation of certain groups is not necessarily always a problem. For example, users are unlikely to contribute a lot to, e.g., PC interface standards (like, for instance, USB; these are typically fairly short-lived anyway). Always trying to bring in everyone at all costs may well be counter-productive.

## 4.2 Recommendations

A number of specific recommendations may be made based on the above. Most notably, these include:

- *Target user communities*  
The needs and requirements of different communities (e.g., business areas) may differ considerably. To attract attention these sector-specific problems need to be addressed. SDOs might want to explore this approach.
- *Make standards simpler*  
Complexity of the standards appears to be an issue for many users (not just SMEs). This may to a considerable extent be attributed to ISO’s tendency to design overarching, monolithic solutions. A more ‘incremental’ approach, not unlike the one adopted by the IETF, would be worth considering here.
- *Devise ways of integrating requirements from different types of users and sectors*  
Complex standards are not least a result of inadequate user representation on the committees. However, the context-specific nature of requirements makes meaningful user representation a non-trivial task. Dedicated ‘user groups’ might be an option worth considering, despite all problems associated with this approach.
- *Provide support for representation through SME-user umbrella organisations*  
An umbrella organisation (e.g., EuroChambers, Normapme) should represent their constituency. This should be done through dedicated and trained standards specialists.
- *Re-think the current standards setting process*  
Basically, user requirements can today only be fed into the process in the very early stages. Practical experience does not go into the process at all. A mechanism similar to the one employed by the IETF, but possibly going further to allow for real-life experience to go into the process, could be an option.

And, at a more general level:

- *Think of alternative/complementing ways to achieve interoperability*

For some problems (e.g., maintainability) other mechanisms of achieving interoperability may be more suitable than (European) standards (e.g., open source software; see also [7]).

- *Deploy standardisation as a means for the diffusion of innovations within the EU*

A standards working group is both a locus of innovation as well as an enabler of the diffusion of innovations by its members. Exploiting these potentials to the full would very much contribute towards a more innovation-friendly environment.

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<sup>i</sup> Manufacturing Automation Protocol', an initiative started by General Motors and other large companies in the mid-eighties to provide for inter-operability of IT systems in production environments (see e.g. [8]).

<sup>ii</sup> This imbalance is due to the unequal accessibility of addresses, which is much better for ITU WGs.