Between public and private - the nature of today's standards

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1. Introduction

The standards developed within the formal, traditional standard developing organisations (SDOs) were regarded by economists as public goods, i.e. goods whose benefits are available to everyone, and from which no one can be excluded and no one can fully appropriate the benefits (David & Shurmer, 1996; Kindleberger, 1983). However, with the advent of private consortia during the last decades, vested interest and commercial considerations have replaced the technocrat idealism that characterized SDOs, and the shared principles underlining the procedures of SDOs - due process, fairness and transparency, consensus, and voluntarism – have been adapted to the needs of the specific community of interests that private consortia serve (Hawkins, 1999). As a result, it is argued in the literature that standards become quasi-public goods, somewhere in between the public and the private dichotomy (Antonelli, 1994).

This paper investigates the character of standards developed within the private standard consortia realm. The first section provides an overview of the argument existing in the mainstream literature regarding the quasi-public character of standards in the light of the rise of standards consortia. The theoretical discussion regarding the quasi-public nature of standards is exemplified in the following section with a case study of a vertical industry standard consortium – Origo - operating in the UK life and pension insurance industry. The case study aims to elucidate the character of Origo standards by investigating the following issues:

- Who is involved in the standard developing process and who is excluded?
- What are the implications of participation for the characteristics of the standard?

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- Who benefits from the use of standards and is anyone excluded from the benefits?

The paper concludes with a discussion summarising the findings of the study.

2. The nature of standards

Ironically, there is still not one agreed standard definition of what a standard is in the literature. The existing definitions range from the very general, for example "*standards are pieces of general advice offered to large number of potential adopters*" (Brunsson & Jacobsson, 2000), to the very specific, such as the ISO/IEC definition:

"*[standard is] a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context*" (de Vries, 1999)

For the purposes of this paper, David and Steinmueller's (1994) definition is adopted because it encompasses both the broad and the specialised senses of "standards". Consequently, for the purposes of this paper, a standard is *"a set of technical specifications that can be adhered to by a producer, either tacitly, or in accord with some formal agreement, or in conformity with explicit regulatory authority*" (David & Steinmueller, 1994). This definition identifies an aspect of standards crucial to the aims of this paper – the ways in which standards emerge. Standards emerge either through market mechanisms, in which case users tacitly join a community of users, or through agreements within standards committees, in which case adherence to the standard can be either voluntary or mandatory.

This paper focuses on the latter type of standards: the standards developed through agreements within SDOs. According to the formal status of the organisation, there are official, formal SDOs which are recognized and often supported by governments, and private standard consortia which are usually based on more informal agreements or multilateral contracts (Werle, 2001).

2.1. The public nature of official SDOs standards

Before the early 1990s, standard setting was dominated by, but not limited to, traditional, official SDOs such as ISO, CEN and IEFT. For example, ECMA, one of the first examples

of standard consortia, was founded in 1963. However until the 1990s the number of such standard consortia outside the formal standard setting bodies was limited (Hawkins, 1999). According to David and Shurmer (1996), official SDOs share a number of common rules, including free and equal access to committee deliberations, public circulation of draft recommendations for wider comment, requirements for non-exclusive licensing of proprietary technology at reasonable fees, and restrictions on the use of monetary side-payments to secure consensus. Such rules are claimed to protect the standardisation process from being influenced by the private commercial interests of the vendors or users, thus ensuring that it would lead to standards that serve the public interest (David & Shurmer, 1996). As a result, the standards developed within formal, official SDOs were traditionally seen in the mainstream literature as "public goods", that is "*they are available for use by all and that use by one economic actor does not reduce the amount available to other*" (Kindleberger, 1983, pg. 377).

In the economic literature, an economic good can be characterised by two fundamental attributes: the degree to which it is rivalrous and the degree to which it is excludable (Sandler & Tschirdart, 1980). Rivalry refers to the ability of one firm or person to preclude the use of the good by any other, and excludability is the property that the use of the good by one firm or person limits its use by another. Based on this attributes, one can differentiate between two types of economic, private goods, which are both rivalrous and excludable, and public goods, which are neither rival nor excludable (Romer, 1990). Falling within the definition of "public goods", the standards developed within official SDOs were seen as being both non-rivalrous, i.e. the utilisation of the standards by one user does not physically exclude its utilisation by others, and non-excludable, i.e. every actor has equal access to the standards (Foray, 1994). In terms of participation in the standardisation process and access to the benefits coming from standard use, the conceptualisation of standards as public goods, and in particular the non-excludable nature, implies that no actors are excluded from standards development and from to the benefits from standards use.

The public good nature of the standards has a number of positive consequences for the market which such standards address, for example it means that the asymmetries in the cost of access to information are lowered, entry barriers are reduced, price-performance

calculation are simpler, and the ability of suppliers to impose switching costs is also lower (David & Steinmueller, 1994).

2.2. The non-pure private nature of private consortia standards

The same rules which ensured that standardisation through official SDOs serves the "public interest" and leads to positive effects on competition, also meant that standardisation within such formal organisations is slow and cumbersome (David & Shurmer, 1996). The slow pace and the bureaucracy of managing the standardisation process have become highly significant since the changes in the economic environment during the late 1980s early 1990s. The process within official SDOs was seen as incapable of dealing with the issues of inter-operability, the need for anticipatory standards in Information and Communication Technologies (ICT), and the shortening life cycle for IT products which became significant issues during the late 1980s (David & Shurmer, 1996; Hawkins, 1999). As a result, private standard consortia have shown an incredible growth during the 1990s, when in less than a decade more than 140 ICTs standard consortia were created (Rada & Ketchell, 2000).

In contrast with official SDOs, the majority of these consortia do not have any official status, they are simply private consortia and fora formed by a number of organisations in order to co-ordinate technology and market development activities. However, some of the older unofficial SDOs have received a quasi-official status, for example ECMA, which in a settlement with ETSI and CENELEC in 1991 was recognized as a SDO in its own right. Also, the development of standards is often just one of consortium's activities (Hawkins, 1999).

According to David and Shurmer (1996), a key characteristic of these consortia is that the commercial considerations of their members play an overt role in influencing standards development, whereas in the case of traditional SDOs such motivations, even if not necessarily less significant, are more covert. Therefore, although such consortia often follow the same rules as the official SDOs, such rules are adapted to the interests of the community that such consortia serve. For example, although the consensus principle is often part of the private standard consortia voting system, the range of actors involved in much smaller, hence limiting the array of technical and commercial interests involved in developing the standard. Participation can be also strictly controlled and limited to a

particular category of actors, whereas transparency can be restricted to the members of a particular community. In addition, the lack of official status means that there is no need to follow strictly all the stages in the bureaucratic process, in the same way that formal SDOs must. At the same time, it also means that such organisations have to account only to their members. Consequently, consensus is easier to achieve and standard development is quicker (Hawkins, 1999). At the same time, the access to standards use as well as standardisation process can be severely restricted, and the benefits are more than often unequally distributed among the members.

The rise of the private consortia during the last decades has led to a number of reforms initiatives in the formal SDOs in an effort to cope with the new conditions in which they must operate. Such reforms include procedural changes, for example the streamlining and strengthening of support functions, the development of new modes of inter-organisational coordination and cooperation such as arrangements between SDOs and private consortia, and the introduction of new mechanisms for conflict resolution (David & Shurmer, 1996). As official SDOs increasingly borrow from the features of private consortia, the distinction between private consortia and official SDOs becomes blurred. Such changes have led to the privatisation of a sphere of national and international cooperation for the provision of public goods (David & Shurmer, 1996). The standards lose their "public good" character as the private consortia system creates asymmetries in access to and influence on the standardisation process (Hawkins, 1999). Such asymmetries occur as a result of the adoption and elaboration costs involved in standardisation (Antonelli, 1994):

- the **adoption of any given standard** by an actor incurs switching costs to the degree that the standard is different from the type of products or services manufactured by the actor. Such costs are higher when such standards serve the private interests of a limited number of members, rather than the public interest, as in the case of standardisation within official SDOs[1]. These differences in the adoption costs could limit the ability of some actors to use the standards, which means that some actors could be excluded from the benefits of standardisation. A category of "adoption costs" which is ignored by Antonelli (1994) is the cost for an

[1] Vested interests are not absent from the process within formal SDOs, but they are less explicit. Consequently, the argument is not that adoption costs are not present for standards developed within SDOs, but rather that they are higher when such vested interests are explicitly part of the process.

actor adopting a standard that will not become widely implemented (e.g. the case of OSI). In this context, it could be argued that the existence of private consortia may reduce the risk that the new standard will not be widely adopted precisely because such standards are developed taking into considerations the interests of the community that they address. This means that whereas private consortia may increase the costs of aligning to the standard, they may reduce the uncertainty about whether the standard will be eventually adopted by a large community.

- at the same time, an actor's **participation in the standardisation process** requires expending resources. This expense inhibits the willingness of actors to participate in the elaboration of standards (Antonelli, 1994; Hawkins, 1999). Moreover, participation in private consortia is usually restricted to the community that such consortia serve, which actively excludes anyone from outside that community. Consequently, standards appears to lose their public character and become "non-pure private goods" (Antonelli, 1994) or what Buchanan (1965) calls "club goods" in that they preserve their non-rival character, but become excludable to some extent[2].

In terms of participation in the standardisation process and access to the benefits coming from standard use, the change in the conceptualisation of standards as non-pure private goods implies that actors are restricted in their access both to the elaboration of standards, and to the benefits resulting from standard use.

The economic argument regarding the public or quasi-public goods nature of standards focuses on the character of a standard at one point in time, without addressing its dynamic nature. Standards, as well as the process through which they are developed, evolve over time and may change in their nature. For example, the members of a consortium, and their roles may change with time, and the development process may become more or less inclusive. Such a change in the character of standards over time is not accounted for in the

[2] Even within official SDOs there is a debate within the existing literatures whether standards are public or private goods. A number of researchers have found for example the that users are excluded from participation in official SDOs generally due to the high costs that such participation entails (Foray, 1994; Jackobs, 2000; Mattli, 2001). Antonelli (1994) for example argues that actors incur elaboration and adoption costs regardless of the type of organisation where standards are developed.

economic literature, and represents one of the limitations of such studies, which should be addressed in future research.

This paper investigates the extent to which the standardisation process within private consortia, at one point in time, influences the excludable character of the standards in terms of access to the participation in the standards development process and access to the benefits of standards use.

3. The case study

The nature of the standards developed within private consortia is investigated using a case study of a standard organisation in the UK life and pension industry. Origo, the industry's technology standard development organisation, was created in 1989 by the major insurance companies in the industry and has operated initially as a portal to facilitate the exchange between the insurance companies and the financial intermediary market – the independent financial advisers (IFAs). However, at the end of 1998 the portal business was sold, and what remained of Origo focused on developing common industry standards for facilitating business to business interactions between the actors in the insurance sector. Origo standards cover most of the business processes involved in the business-to-business exchanges between large company providers, the portals in the industry, and the IFAs. Origo thus operates as a private standard consortium for the UK life and pension industry.

The case study in split into two parts, corresponding to the two research questions:

1. the level of participation in standard development within Origo;
2. the access to the benefits of using Origo standards.

3.1. Access to participation in the elaboration of Origo standards

The actors in the insurance industry can be classified in four types, product providers, portals, IFAs and back office suppliers. Such a categorisation can be also found in the structure of Origo membership. These four categories are described below:

- **Product providers** are large insurance companies which define the life and pensions products and supply data to the marketplace either via their direct sale force or indirectly via portals and IFAs. The providers are the only type of actors

that can become Origo sponsors, that is they pay a much larger fee to Origo than the Origo members. In exchange for this fee, they have the right to be involved in deciding the business strategy for the standardisation effort.

- **Independent Finacial Advisors** (IFAs) are intermediaries between product providers and the end customers. They interact with customers and offer face-to-face advice and sales. More than 80% of the UK IFA sector comprises small firms (Aitchinson & Stone, 2002).
- **Portals** are also intermediaries in the industry. They aggregate product information from all product providers and provide it online to the IFAs, and offer services such as consistent presentation of information and easy navigation. There are five main portals operating in the UK long term insurance market.
- **Back office suppliers** are IT vendors whose customers are the providers and the IFAs. The systems they supply integrate customer data for the IFAs.

There are 410 actors registered as Origo members, with more than half of these (52%) being system vendors, 28% are IFAs, 14% are portals and only 6% of Origo members are product providers. The registration process is open to anyone interested, even from outside the industry, based on an annual fee. Such a system shouldensure that the development process is non-excludable as all actors can become members of the standard consortium, However, being a registered member of Origo does not necessarily mean open access to the elaboration of standards. The reason for this is that whereas registration is open to anyone interested, participation in the elaboration of standards is structured on four levels. These levels correspond with the degree of influence that the actors involved have on the outcome of the development process, and participation in each of these levels is controlled and restricted. These levels are presented in the figure below, and discussed in detail in the remaining of the section.

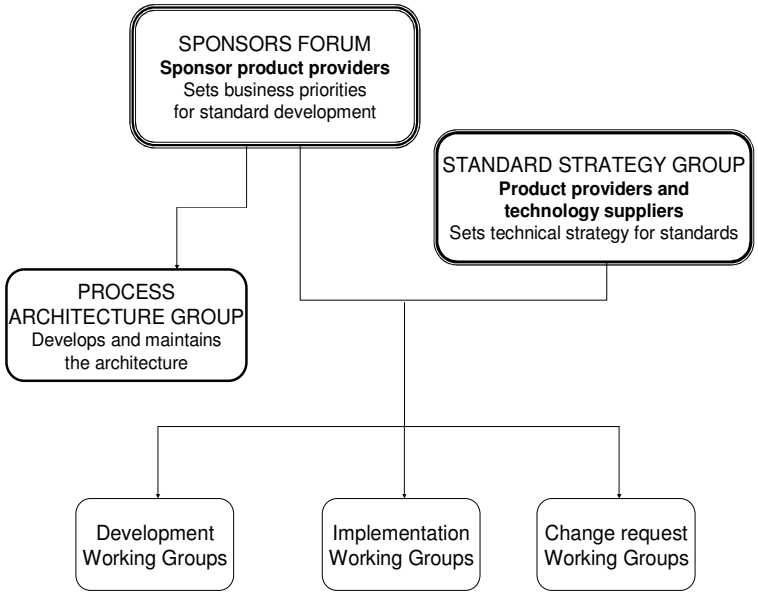

Figure 1. Levels of participation and influence in the elaboration of Origo standards

- On the top level there are the companies involved in Origo's **Sponsors Forum** (SF). SF dictates the business priorities in terms of standard development and identifies the business requirements that future standards will address. The members of the SF controls the business strategy behind Origo's standards development. Membership is only open to the 19 product providers that are sponsors of Origo.
- The second level is the Origo **Standard Strategy Group** (SSG), which dictates the technical strategy underpinning standards development. This group is open, in theory, to all Origo members. However according to interviewees, there are restrictive criteria in place that control who can be involved. For example membership is restricted by requirements for members to have the necessary expertise and the appropriate level of commitment in term of work load[3]. The participation in the SSG is again dominated by the product providers (8 out of the 15 members), with only two back office supplier and two portals in the group[4].
- At the middle level there is the **Process Architecture Group** (PAG) in charge with the development of the process architecture that will support standard development.

[3] Whereas such a requirements ensure that the group pools the needed expertise in standard development, it eliminates small IFAs since they usually do no have a separate IT department, and thus people employed with the required type of expertise.
[4] The remaining 3 members of the SSG are Origo employees.

PAG has been created only in 2003 and complements SSG in providing the technical infrastructure on which Working Groups base their standard development activities. Consequently, the influence of its members is limited to defining the technical aspects of the standards. As with the SSG, the participation in PAG is theoretically open to any Origo member, however in reality is again dominated by the PP (10 out of 22 members). However, IFAs are also actively present at this level with 3 members, more than portals (2 members) and system suppliers (2 members). Consequently, at this level the participation in standards development becomes more inclusive.

- At the lowest level are the **Working Groups** (WG) developing the standards themselves. The WGs are split into three categories depending on the stage in standard development that they address: Development WG, Implementation WG and Change Request WG. Work on the standards is based on the business priorities established by the SG and on the technical direction dictated by the SSG and PAG, but the organisations involved in the WG are able to bring their own needs and requirements in shaping these standards. Again, as with the two higher levels, participation is open to everyone interested. However, according to the interviewees, a typical working group is split between 50% product providers, 30% (including portals and back office suppliers) and 20% IFAs. Such a distribution shows that PP are, by and large, the most active actors involved in standardisation work, followed by technology suppliers. With the smallest amount of active involvement, and hence lowest influence on shaping the standards, are the IFAs.

In conclusion, the analysis of the active involvement in standard development tells a very different story to the Origo membership structure. The explicit exclusion at the business level and the criteria developed to control the participation at the technical level translate into a strong domination by the product providers in setting out the business and technical directions of the standards development. Portals and system suppliers comprise together only around a quarter of the SSG, making it difficult for them to shape the technical strategy. Consequently, their influence consists more in shaping the direction of the technical strategy during the negotiations between product providers, and eventually

tipping the balance in one direction or another when a split between product providers exists.

However, even at the level of the WG where there is not an active exclusion from the process: IFAs and technology suppliers represent together only half of the organisations actively involved. Such a low level of involvement from the part of the IFAs can be explained based on the specific nature of the IFA sector in Britain. Around 80% of the IFAs sector in UK is formed of small IFAs. Whereas large national and regionals IFAs are active in Origo WG, the small IFAs lack not only both the technical IT expertise and the necessary financial resources to participate, but also, to a certain extent, the interest to get involved. Whereas for PP, portals and for the small number of large IFAs that have separate IT departments, standards do bring immediate cost reductions, small IFAs generally buy off-the-shelf technology products. Consequently, the costs reductions as a result of using standardised technology are less apparent to the small IFAs.

As a result, there are two reasons for which active participation in the Origo standard development can, to a certain degree, be characterised as excludable :

- the nature of the Origo consortium promotes the interests of its product provider sponsors by restricting access to the upper levels of influence to product providers;
- the structure of the community that Origo serves, in which one of the categories of actors (IFAs) lack the expertise, the resources, and a strong motivation to engage in standards development.

3.2. Access to the benefits of standard use

The discussion before has investigated the excludable character of Origo standards in terms of the access to standards development process and has found that there are mechanisms to exclude certain actors depending on the level of influence. The question remains, are there actors excluded from the benefits of standard use?

To use Origo standards, one has to become an Origo member. For the different types of Origo members, there are different benefits that result from using the standard (regardless of their active involvement in the standard development process).

- According to the interviewees, the major benefit for product providers, portals and for system suppliers in using Origo standards is that they **reduce development costs** by enabling the use of standardised e-business solutions. Standards are seen as a common mechanism that applies to multiple platforms, hence reducing the costs involved in developing the platform to support the interactions between product providers and the IFAs market.
- For technology suppliers and for product providers, Origo standards can be **re-used both for internal and external purposes,** thus lowering the development costs even for non-standardised applications. For example, a number of respondents have emphasised that Origo standards are the starting point either in internal development or for bespoke solutions with other customers who do not use Origo standards. Such a re-use of Origo standards saves time and effort not only during the development of standardised solutions but also for other technology developments.

However, to the extent that standards are developed based on the business priorities negotiated between providers, it is expected that such standards better fit the existing requirements of the providers rather than the portals or system suppliers. As a result, such benefits coming from the reduction in development costs and the re-use of Origo standards in other applications may be expected to be higher in the case of product providers compared with technology suppliers since there is a better match between the standard and their requirements.

- For IFAs the benefit of using the standardised technology is less apparent, especially for the small IFAs which buy off-the-shelf technology from system suppliers. In general, the interviewees have emphasised that the use of Origo standards enables IFAs to quote, buy and service the products from the product providers and portals in a simple and cost effective way.

In conclusion, the access to the benefits of standard use appears to be more equally distributed among product providers and technology suppliers than the access to the participation in the development process. However, due to the excludable nature of standards development process, the access to benefits is again higher for product providers than for technology suppliers. Moreover, the direct benefit that IFAs have from the use of

standards is less evident than for the other players. Consequently, it appears to be an unequal split in the distribution of benefits coming from standard use between the actors in the industry in favour of the product providers.

4. Conclusions

The development of private consortia and the blurring of the boundaries between official and private SDOs have raised a number of concerns regarding the privatisation of what was considered to belong to the public domain, i.e. the development of "public goods" standards. A number of researchers have argued that standards become quasi public in character, i.e. although their use remains non-rival in nature, they become excludable to a certain extent. The discussion of one such private consortium standard setting in the UK insurance industry has shown that standards developed with private consortia can be excludable both in terms of access to the standard development process and access to the benefits coming from their use. Two ways in which such an exclusion is achieved have been identified:

1. The restriction of access to the higher levels of the governance structure of the consortium to a certain category\categories of potentially interested parties. Such restrictions mean that only certain categories of members will shape the business and technical directions of the standards.

2. The existence of the elaboration costs identified by Antonelli (1994). The elaboration costs restrict the ability of small firms to get involved in the standard development process, as such firms lack the necessary financial resources as well as the required expertise to get involved. At the same time, the incentives to get involved (both real and perceived) do not compensate for the elaboration costs: as technology is generally bought from technology suppliers, the major concern for IFAs is for that technology to work, with or without standards. In the UK insurance case, the existence of elaboration costs coupled with the nature of market structure, where the majority of IFAs are small firms which are not involved directly in technology development, means that one category of market actors is largely excluded from standardisation work.

However, it must be emphasised that the exclusive character in the case of Origo standards is not absolute. Without the involvement of technology suppliers in shaping the technical

strategy for standard development, as well as the involvement, even limited, of all industry players in the working groups, product providers could not:

(1) ensure the required legitimacy of Origo standards. The legitimacy claim is crucial: unless such standards are seen as representing the industry as whole, rather then the interests of one category of players, their adoption by the industry would be threatened;

(2) take into consideration the requirements of the entire community (as the IFAs present in Origo are seen as proxies for the entire IFAs community). Unless the whole industry's interests are catered for in the development of standards, the industry players would resist the adoption of Origo standards.

The partial exclusion from the standard development process was found to lead to a partial exclusion from the benefits of standard use. The reason is that as the ability to influence the shape of the standards is higher for a particular category, they will gain a higher share of the benefits resulting from the use of those standards than the other actors. The reason is that as standards are developed to match the interests of product providers, the switching costs (see Antonelli, 1994) are higher for technology providers (higher mismatch between existing products/requirements and the standard) than for product providers. Consequently, the cost reductions (and thus the gains) are higher for providers than for the other actors. However, there are no explicit mechanisms in place to limit the access to the benefits coming from standard use.

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