National IT and Telecom Agency

Ministry of Science
Technology and Innovation

Definition of open standards

1. Definition of standards

From the financial point of view, a standard may be defined as an agreement between a number of (but not necessarily all) players within a certain area of technology. Basically, the object of the agreement may vary from, for example, processes and organisational structures to something more tangible such as, for instance, the physical dimensions of technical components. In other contexts, the word standard is only used in cases where recognition has been granted by one or more standardisation bodies.

One financially interesting property of standards in the information and telecommunications area is that they are often subject to externalities, in the sense that the wider the use of the standard, the greater the usefulness for the individual user. As a result, the market shows a tendency to cluster around a dominant standard. This can be beneficial, as it results in a large number of interoperable users, but it can also be inexpedient in that these users may find themselves locked onto their choice, thus impeding the adoption of new standards.

One widely used method of dividing standards is to distinguish between market-created standards (de facto) and those introduced by a recognised standardisation body (de jure). The former type is often introduced by private companies in competition with other alternative standards, whereby the decision of the market determines which will emerge as the dominant (de facto) standard.

A **de facto** standard is introduced by a market player and establishes itself as the - or one of the - dominant standards without the backing of official standardisation bodies.

On the other hand, a de jure standard is usually the result of consensus between the members of the relevant standardisation body, which will often be made up of both public and commercial players. A standardisation procedure of this kind normally provides a more clearly foreseeable (although also more prolonged) standardisation process.

> A **de jure** standard is drawn up by a recognised official standardisation body.

A third form of standard is one prescribed by law: these are the so-called **mandatory standards**. These are often found in situations where substantial public interests are at stake - for example, in the form of safety standards or with the intention of preventing monopolies.

2. Open and proprietary standards

Recently, yet another type of distinction has been attracting great attention: whether a specific standard is of an open or a proprietary nature. In rough terms, it is a question of how stringent the restrictions placed by the "owners" of the standard on users are. Owners (who are often also referred to as sponsors) are those, who through special know-how and/or the enforcement of patents and copyrights are able to decide who may use the standard, and if so, what users should pay for it.

> A **proprietary standard** is characterised by the fact that it is owned by someone who puts restrictions on - or can put restrictions on - users' access and use.

It is important to stress that a certain standard is seldom completely open (so *everyone* can use it without restrictions) or completely proprietary (so *nobody* can use it), but will generally be situated somewhere between these two extremes. Thus owners will choose the degree of openness they expect to provide the greatest return. The underlying rationale in this context is that the greater the openness, the greater the dissemination of a certain standard, since it will be more attractive for users to use, but, on the other hand, the return per user (e.g. in the form of licence income) will be lower.

A public player able to choose between standards with varying degrees of openness, or who wishes to influence openness in the future choice of standards, must take a number of factors into consideration:
- First and foremost, the desire for a varied market with the least possible supplier-binding has to be considered. Open interface standards will make it easy for alternative suppliers to offer solutions which function modularly with already existing systems. In particular, open document standards and data specifications ensure interoperability and facilitate the exchange of information, thus providing users with greater freedom of the choice with regard to operating system and applications.
- Yet another important question concerns security: in proprietary software standards, source codes are often not available to users, and consequently users must rely on suppliers having protected their products adequately against hacking, fraud and other criminal invasions. If, on the other hand, the source code is open, users are themselves able to ascertain whether security is adequate.

Of these two issues, the first is most relevant in connection with a discussion of open *standards*. On the other hand, the second issue - concerning access to source codes - is more relevant relative to the *open source* discussion. Thus we

are dealing with two related problems, each with its predominant method of controlling the access of others to the technology: open standards, which principally concern the intellectual property rights such as patents and copyrights that protect the standard, and on the other hand, open source codes, which predominantly concern whether the source code is kept secret or not. There are many hybrid cases, since many standards come as software and as much closed-source software is not protected by secrecy but by intellectual property rights.

Thus there is a need for a definition of "open standards" which makes adequate allowance for these aspects and which makes it possible to evaluate the suitability of a particular solution.

3. The properties of a completely open standard

As mentioned above, many standards are situated somewhere between the two extremes, and are thus neither completely open nor completely proprietary. Consequently, the definition given here should not be regarded as a minimum requirement for a particular standard being designated as open. In practical use, the definition will provide the necessary evaluation parameters when the relative openness of a standard is to be described.

When we speak of the ideal open **standard** we refer to:

- An open standard is **accessible to everyone free of charge** (i.e. there is no discrimination between users, and no payment or other considerations are required as a condition of use of the standard)

- An open standard of necessity **remains** accessible and free of charge (i.e. owners renounce their options, if indeed such exist, to limit access to the standard at a later date, for example, by committing themselves to openness during the remainder of a possible patent's life)

- An open standard is accessible free of charge and documented **in all its details** (i.e. all aspects of the standard are transparent and documented, and both access to and use of the documentation is free)

One argument in favour of a reasonability approach rather than the stringent requirement for free use is that the development and maintenance of an efficient standard often implies the defrayal of considerable costs on the part of the standard's owner, both for actual development as well as for maintenance, distribution, support, etc. These costs will not be covered if the standard can be used free of charge, unless these are covered indirectly through the sale of a related product or service. Therefore, it is important to emphasise that in many cases the ideal open standard (as it is defined below) cannot be expected to arise and exist simply because there is a need for such.

Thus, an alternative might have been a less rigid definition, which, for example, states that the standard must be available under *reasonable* licence terms rather than it being free of charge. However, in this case the clarity of the definition

would be impaired, as such "reasonableness" would be open to widely different interpretations. Therefore an open standard is defined by its properties in its purest form, while stressing that it is not necessarily an ideal in the context of a pragmatic standardisation policy.

A completely **open standard** has the following properties**:**
- It is accessible and free of charge to all
- It remains accessible and free of charge
- It is accessible free of charge and documented in all its details

The broad definition is flexible enough to accommodate standards such as OIOXML and OCES while clearly including what we traditionally consider as open standards (HTML, TCP).

The Reference Profile establishes an overall framework for IT standards. At present, the Reference Profile includes evaluations of the status of 107 IT standards. These evaluations include the degree of openness as a criterion for the total degree of recommendation.

It should be noted that openness is merely one of many parameters in the evaluation of standards. A number of other aspects are also important, for example the actual dissemination of the standard, the credibility of the sponsor (the extent to which one can rely on the standard being maintained), its technical quality and the necessity for having an established standard in the area in question.

In the public forum, the question of open standards is closely connected to the question of intellectual property rights, including patents. The above definition restricts itself exclusively to the administration of possible rights, not the existence of such. In other words, this opens up for the possibility of accepting so-called "reasonable and non-discriminatory" (RAND) licensing types under certain circumstances, thereby converging with W3C's patent policy, which attempts to include both pragmatic and principal considerations.