

Standards and IP

Standards are a set of technical specifications that provide or intend to provide a common design for a product or process. Standards are particularly important in certain industries, such as the modern information economy, by ensuring the compatibility of two or more related products or processes to operate and/or communicate with one another. Standards established through industry collaborations can occur via Standard Setting Organizations (SSOs). A variety of IP and antitrust issues arise when SSOs adopt (or fail to adopt) a standard that is covered (partly or fully) by an IP right owned by a non-member. Asymmetric information between the members and the SSO can also lead to inefficiencies. For this reason, SSOs usually require their members to commit ex ante to licensing their patented (or patent pending) technologies on FRAND (fair, reasonable and non-discriminatory) licensing terms, to ensure that IP rights do not create excessive licensing burdens.

What is meant by standards?

Technology standards can be defined as the “specifications that provide users and vendors with a common platform and ensure compatibility between components of a technological system. These technical ‘rules of the game’ are being increasingly set in standards development organizations” (Jain, 2012).

Interoperability standards relate to specific pattern for organizing and transmitting information (TCP/IP Internet protocol), a platform of general compatible functionality (Microsoft Windows), or a joint interface with a programme (DeLong, 2006). These standards are critical in the modern information economy, and ensure compatibility of two or more related products or processes to operate and/or communicate with one another. Examples include mobile chargers and USB ports in laptops, which can be used with multiple devices.

De jure standards, as the name suggests, are set by law. *De facto standards* arise from a standardization battle and can transform into *de jure standards* if legislative bodies or government agencies promulgate them.

Another level of distinction is between proprietary and open standards. Proprietary standards are controlled by one entity, whereas different (invited) stakeholders develop open standards through an open and consensual process. The underlying intellectual property in open standards is either made available to all parties for free (no royalties) or licensed to all under reasonable terms and conditions (European Commission, 2004; ITU, 2005).

Standards set via industry collaborations usually occur via Standard Setting Organizations (SSOs) or trade unions, wherein participation in the standard setting process is often unhindered even for non-members. Some of the recognized international SSOs include ITU (International Telecommunication Union), ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission). These organizations are governed by national standardization bodies. According to Farrell and Simcoe (2012), SSOs promote technical coordination by replacing (or complementing) the bandwagon *de facto standards* process with an orderly and explicit search for consensus.

What challenges arise regarding IP and standards?

A variety of intellectual property and competition/antitrust issues arise when adopting (or failing to adopt) a standard.

- In a standard setting process, members come together to discuss the functionality and framing of the standard, and licensing terms to facilitate technology access and diffusion. In reality, this may be perceived as competing/ rival firms coming together to discuss anticompetitive market strategies. Holders of IP rights that form a commercially successful

standard or “standard-essential patents” have a stronger implicit market position and negotiation power. This will be particularly important where network effects are strong because emerging standards can fundamentally affect the value of some IP, namely that which acts as gatekeepers for firms to operate in certain markets (Foray, 2004).

- Two important concepts must be noted in relation to standards involving IP rights that have bearing on competition law (Geradin/OECD, 2010): (1) the problem of patent holdup, whereby a firm that holds a patent essential for the utilization of a given standard may be tempted to seek exploitative licensing terms, and (2) the problem of royalty stacking may occur, when a large number of companies hold patents that are essential to implement a single standard. Royalty stacking results in prohibitively high (cumulative) royalty rates, which negatively affect the implementation of a standard.
- Asymmetric information between the members and the SSO can lead to several inefficiencies. A company may undertake a “patent ambush strategy” by picking a standard through deceit or by providing incomplete information in order to wrongfully benefit from its granted or pending patents. If the SSO is unable to detect these actions, then this company can, ex post, create problems (i.e. infringement lawsuits, seeking prohibitive royalties or technology holdup) for other members that have already implemented the standard in their products or processes. This strategy creates greater losses if the members make substantial sunk cost investments in their products, which will make their cost of switching (moving to another standard) extremely high.

What are policy approaches to address challenges related to IP and standards?

Standard-setting organizations, such as the World Wide Web Consortium (W3C), ITU, American National Standards Institute (ANSI) and European Committee for Standardization (CEN), have detailed rules and policies governing the use, ownership and sharing of intellectual property underlying their standards. To address competition/antitrust issues, major SSOs (1) require members to disclose their IP rights, (2) offer royalty-free licensing of IP rights to all members that are part of the standard and (3) impose a “reasonable and non-discriminatory licensing rule” on members who are owners of IP rights in the standard.

Regarding the critical aspect of licensing, SSOs typically require their members to ex ante commit to licensing their patented (or patent pending) technologies that are included in the standard according to FRAND (fair, reasonable and non-discriminatory) licensing terms, to ensure that IP rights do not create excessive licensing burden. Whereas the “fair and reasonable” components of this licensing arrangement still suffer from legal and conceptual ambiguity, the “non-discriminatory” element has a clear connotation in which similar licensees are treated alike (e.g. in royalty payments) by a licensor. Rysman and Simcoe (2011) propose the Non-Assertion After Specified Time (NAAST) pricing, an alternative approach under which participating patent holders commit not to assert their patent after some previously specified time, but would be free to collect royalties as they wish up until that point. They argue that this approach has the advantage of assuring producers they can earn compensation, while providing free access to standards (at a certain point). They argue that this is preferable to RAND standards, which can be hard to adjudicate in practice.

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