

## C. *Patent Pools and Standards: Endeavors to Promote Access to Standard-Related Patents for Interoperability Purposes*

### I. **Overlaps and Demarcation between Patent Pools and Standard-Setting Organizations**

In order to confute the too often generalized association between patent pools and standard-setting organizations, it shall be observed that, as a matter of fact, the scenario is much more heterogeneous and, while there might certainly be areas of overlaps, the actual demarcations in the scope and range of activities of such practices shall not be overlooked. On the one hand, standardization bodies,<sup>30</sup> i.e. institutions purposefully committed at the development of standards, which can be formally constituted at national, trans-national<sup>31</sup> and international levels,<sup>32</sup> tend to closely cooperate, rather than to fiercely compete with each other, both by seeking to define boundaries between their respective fields of activities and, in principle, by operating in a hierarchical fashion, as far as their geographical scope is concerned. On the other hand, a patent pool does not necessarily have to support a standard at all, or it may even, under some circumstances, encompass partly substitute specifications, thus not necessarily identifying itself with a particular technological solution; then again, different patent pools, each ideally implementing and commercialising one given technology of which it shall detain all rights, may eventually support alternative standards.

#### 1. **Interface / Interoperability Standards**

So-called “interface or interoperability standards” detail how products, also from different manufacturers, shall interconnect with one another - as opposed to “quality or safety standards”, which establish characteristics required for a good to be either

- 30 In this respect, very clear and illustrative is the presentation from Tirole J., “Pools, Standards and Access to Intellectual Property”, Conference on “Guidelines for Merger Remedies - Prospects and Principles”, January 2002, available at:  
[http://www.cerna.ensmp.fr/terna\\_regulation/Documents/ColloqueMetR/Tirole.pdf](http://www.cerna.ensmp.fr/terna_regulation/Documents/ColloqueMetR/Tirole.pdf)
- 31 In the EU, standards bodies are actually recognized under: Directive 98/34 of June 22, 1998, on “Technical standards and regulations”, OJ L 204, July 21, 1998, p. 37 *et seq.*
- 32 For some instances of international standards organizations, see, *i.a.*:  
ANSI - American National Standards Institute (<http://www.ansi.org>);  
IEC - International Electro-technical Commission (<http://www.iec.ch>);  
IEEE - Institute of Electrical and Electronics Engineers (<http://www.ieee.org>);  
ISO - International Organization for Standardization (<http://www.iso.org>);  
ITU - The International Telecommunication Union (<http://www.itu.int/net/home/index.aspx>);  
IUPAC - International Union of Pure and Applied Chemistry (<http://www.iupac.org>);  
OGC - Open Geospatial Consortium (<http://www.opengeospatial.org>);  
W3C - World Wide Web Consortium (<http://www.w3.org>).

certified or sold in the marketplace. Remaining within the scope of this contribution, "interoperability" can basically be defined as the ability of products or processes to work together in order to fulfil a common task. Said quality may be enabled by ensuring seamless access to the technical information underling an interface standard.<sup>33</sup>

Thus, interoperability, as a target, and open standards, as a means, are the cornerstones of fast growing, complex industries, such as markedly the information and communication technologies' sectors,<sup>34</sup> where the traditional boundaries between distinct products or compounds are becoming increasingly faint. For this reason, it is fundamental to ensure that access to interface specifications is not obstructed by exercising unreasonably high licensing thresholds in relation to other prospectively interested market entrants.

Standards can arise either spontaneously - due to the high degree of market penetration of a particular technical solution, and be consequently followed for convenience (i.e. "de facto" standards) - or as a result of a previous convention, such as a norm or measure pursuing from a consensual procedure, thus legally binding the parties involved (i.e. "de jure" standards).<sup>35</sup> Within the latter case, we may still distinguish between so-called "formal" and "ad-hoc" standards, fundamentally according to the organism leading the process. In brief, "formal" standards, on the one hand, are commonly established by official standardization bodies, typically subjected to some kind of governmental control; "ad-hoc" standards, on the other hand, are set by unofficial industry groups, which purposefully cooperate together within the framework of the particularly initiated standard-setting procedure. Accordingly, while "de facto" standards emerge outside any pre-ordered standardization mechanism, both last-mentioned cases are certainly going to involve particularly pondered decisions about the technologies to be included under the elected specification and the IPR policy to be adopted.

- 33 For a comprehensive account of the interoperability debate in the software industry, see i.a.: Band J. and Katoh M., "Interfaces on Trial: Intellectual Property and Interoperability in the Global Software Industry", Westview Press, 1995.
- 34 For a major reference, see the definition adopted by the European Information & Communications Technology Industry Association (EICTA), according to which interoperability is "the ability of two or more networks, systems, devices, applications or components to exchange information between them and to use the information so exchanged", EICTA White Paper on Standardization and Interoperability, Brussels, Nov. 2006, available at: [http://www.eicta.org/fileadmin/user\\_upload/document/document1166544474.pdf](http://www.eicta.org/fileadmin/user_upload/document/document1166544474.pdf)
- 35 For a systematic classification and an economic analysis of the concepts adopted, see: Funk J., "Global Competition Between and Within Standards: the Case of Mobile Phones", Palgrave Macmillan Publisher, January 12, 2002, p. 1 *et seq.*

## 2. Pivotal Role of Patent Rights and Advantages of Collaborative Settings: Patent Pools Strategies to Overcome “Hold-Up” Problems

Unfortunately, in spite of all efforts for harmonization, there may be a fierce competition among different standards, and consequently their underlying supporting organizations, as many of them may never make it to the marketplace and, in a figurative way, go under before reaching the surface, as just few, dominant standards actually manage to finally become acclaimed as commercially endorsed specifications. This entails a significant waste, in terms of loss of technological solutions and undergone efforts, which is not always justified under purely objective criteria, since there is no merely scientific basis for the success of a particular standard over others, as they may in fact often eventually be selected on conventional grounds, especially within the publicly driven setting of standard-setting organizations.<sup>36</sup>

When a managing entity - either in the form of a standard-setting organization (in the case of “formal” standards) or as elective representative of industry groups (in the case of “ad-hoc” standards), the latter ideally convening into a patent pool - is in charge of the standardization process, the participants are anyway encouraged in the context of orchestrated collaborative endeavours to openly share their knowledge, thereby making their contributions to the development of the standard, strongly relying on the confidence that their technology is protected by IP rights. Such legal coverage represents, on the one hand, a means to overcome the risk of free riding over their own investments and, on the other hand, a promising source of royalty income to recoup the incurred R&D costs.<sup>37</sup>

Indeed, the view is shared that if patent rights did not actually apply to standard contributions at all, innovation in the field would have to rely on trade secrets, which paradoxically would eventually lead to more proprietary, even less open standards.<sup>38</sup>

36 See in this respect the affirmation, supported by empirical evidence, according to which: “Companies should move proactively to have their patented and non-patented technologies incorporated in standards. These recommendations are common regardless of the form of standardization activities whether it is public or private. Standardization activities are political negotiations and not a forum for assessing which technologies excel over others. Therefore, companies should delegate skilled negotiators to participate in such activities. Companies should also provide their employees with educational opportunities to improve their negotiation skills” [...] “If the participants in a standardization activity come to recognize a patent pool as a future option, coordination may become easier”, in : Yamada H., “International Standardization as a Strategic Tool - Standardization and Patent pools: Using Patent Licensing to Lead the Market”, International Engineering Consortium (IEC), Centenary Challenge, 2006, Geneva, respectively in Sect. 6.2 “Taking Advantage of Standardization Activities as Political Negotiations” and Sect. 6.3 “Exploring the Possibility of Forming Patent Pools”, also available at: [http://www.iecchallenge.org/papers/pdf\\_iecchallenge/yamada.pdf](http://www.iecchallenge.org/papers/pdf_iecchallenge/yamada.pdf)

37 For a supporting view, see *i.a.*: Yamada H., “Patent Exploitation in the Information and Communications Sector: Using Licensing to Lead the Market”, Science and Technology Trends: Quarterly Review, 2006, vol. 19, p. 11 *et seq.*

38 See in this respect, *i.a.*: Frain T., “Patents in Standards and Interoperability”, Colloquia on Selected Patent Issues, World Intellectual Property Organization, Geneva, November 29,

Hence, the framework underpinning open standards, as constructed over the delicate balance set by the patent legislator, would collapse and the overall number of initiatives to develop open standards would in the end decrease. Thus, together with the protection, a big deal of incentives would be ultimately lost. In fact, the revaluation of patent rights as catalyst for participation in the regulated context of standard-setting mechanisms offer a more mature standpoint to the ostensible allegation that wants patents and standards as respective antagonists.

Interestingly, it may consequently be deduced that, refuting the common prejudices here, the biggest threat to interoperability in the standards' domain is not actually posed by patent holders who are contributing to the specification, but, on the contrary, rather from owners of relevant technologies who are keeping out of the undergoing standard-setting process.<sup>39</sup> Indeed, non-participating patentees could hamper the benefits of standardization by exercising their exclusive prerogatives over their standard-related specifications, thus "holding-up" practicable access to the standard, not being bound to offer licenses under either reasonable and non-discriminatory (hereinafter RAND) or any other favourable conditions sponsored within the standard-setting body.

In fact, considering the terms constituting the RAND commitment, in principle the "reasonable" prong is supposed to eliminate the risk of monopoly overcharges in the royalty rate, while the "non-discriminatory" part shall protect against the potential of standard-related patent owners stifling downstream competition.<sup>40</sup>

While "hold-up" problems notoriously strike technological sectors more highly characterized by dense patent production, in this respect they become even more critical in case a standardization process is on the way. Among the several studies addressing the issue,<sup>41</sup> an effective solution advanced has been making participation in a standard-setting process subject to the preliminary condition that the relevant

2006, p. 2 *et seq.*, available at:

[http://www.wipo.int/export/sites/www/meetings/en/2006/patent\\_colloquia/11/pdf/frain\\_paper.pdf](http://www.wipo.int/export/sites/www/meetings/en/2006/patent_colloquia/11/pdf/frain_paper.pdf)

39 On the problem of deficient participation in patent pools, where it has been empirically demonstrated that between half and two-thirds of the eligible firms decide not to join the consortium, as conclusive founding, see more generally: Lerner J. *et al.*, "To Join or Not to Join: Examining Patent Pool Participation and Rent Sharing Rules", January 2008, available through the Social Science Research Network at:

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=945189](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=945189)

40 Nevertheless, it has been argued that the "non-discriminatory" prong of the RAND commitment shall be read narrowly to prohibit only discriminatory licenses to downstream competitor, but not also price differentiation overall, otherwise that would turn into an inflexible obligation to license at identical terms to all potential licensees. See on the point: Crane D., "Patent Pools, RAND Commitments, and the Problematics of Price Discrimination", *Cardozo Legal Studies Research Paper*, no. 232, April 2008, also available through the Social Science Research Network at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1120071](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1120071)

41 For a thorough analysis of the issue, see, *i.a.*: Shapiro C. *et al.*, "Standard Setting, Patents, and Hold-Up", *Antitrust Law Journal*, 2007, vol. 74, p. 603 *et seq.*, also available at: <http://faculty.haas.berkeley.edu/shapiro/standards2007.pdf>

patent owners agree to join a patent pool for the implementation of the standard, thereby delegating the power to conclude licenses under RAND terms to the pool's administration and, not last, also overcoming the related divergences of interpretation, and the deriving uncertainties, "a priori".<sup>42</sup> For the patent holders involved this is a "trade-off" between giving up their sovereign exclusivity in the determination of maximum royalties and the eventuality that their technology shall not be included in the standard upon refusal of committing to cooperate at an early stage. However, the threat of being excluded from orchestrated standard-setting endeavours at the outset seems compelling enough to choose the way of cooperation instead.

Alternatively, a complementary, "ex post" solution to counter "hold-up" problems, as advocated by this contribution and tailored around the flexibility of patent pooling arrangements, may consist in making the establishment of a patent pool subject to the "suspensive condition" of positively attracting all essential patent holders identified for implementing the pooled technology. In such a case, patent holders that shall not enter the pool will not be able to "free ride" the cooperative efforts undergone by "holding-up" the pool's licensees with the demand of higher royalties for their essential patent, which they would opportunistically keep outside of the pool. Indeed, following the scheme advanced, the pool itself would dissolve shall attempts to include all essential technologies eventually fail, leaving the need to conclude multiple individual licenses as the only, certainly less attractive alternative, where the sum of marginal costs may eventually result in higher total royalties and, consequently, diminished demand for all patentors, which is certainly an overall less convenient alternative than the one of constituting a pool.<sup>43</sup>

## II. Boosting Access to Standard-Related Patents for a Competitive Market Integration

Looking now at the overall ramifications of standardized applications on the economy, it is clear that they are gaining momentum in business reality today, and it surely represents a major "bonus" to be endorsing a positively established technical specification, taking into account the significant financial repercussions of the widespread adoption of a standardized solution on the marketplace, translated in terms of royalty income for the patent holders involved, ideally organized in the form of a pooling consortium. Besides, from a wider perspective, standards, if properly devel-

42 Approaching the issue from an economic perspective, said solution has been recently advocated by: Leveque F. and Meniere Y., "Early Commitments Help Patent Pool Formation", Cerna Working Paper, June 2008, also available through the Social Science Research Network at: [http://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=428080](http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=428080)

43 In fact, because of the multiple marginalization costs the demand may fall as the overall price charged may be too high. In simplified exemplificative terms, what happens is that the higher licensing fees demanded by owner A, also diminished the demand for the related technology licensed by owner B, because conveying in higher, less competitive total costs.