

STANDARDS FOR STANDARDS¹

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Abstract. This paper discusses the application of European competition law to standardization activities and associated IPR Policies and licensing arrangements. It briefly discusses the objectives of standardization activities in Europe and contains a general introduction into relevant principles of EC competition law. This is followed by a review of principles and antitrust case law relating to (1) restrictions on membership and access to the standardization process; (2) possible spill-over effects; (3) standard depth and overstandardization; (4) selection of technology for standards; (5) access to standards information and essential IPRs; (6) IPR Policies, and problems associated with non-disclosure, late disclosure, or incomplete disclosure of essential patents; (7) compulsory licensing of essential IPRs under Articles 81(3) (ex Article 85(3)) and 82 (ex Article 86) EC, and disputes concerning royalties and licensing terms in a standards environment. Some standards for standards appear at the end.

1. Sources of standards in Europe

While this paper concentrates on private standard-setting organizations (“SSO”), standards may be developed by a number of sources, and precedents relating to one category may be relevant to others also:

- single-firm *de facto* standards²
- multi-firm commercial standards, developed by trade associations or ad-hoc standards organizations, often leading to a patent pool³

¹ Paper for American Bar Association, Section of Antitrust law, Spring meeting 2002, Session on Trade Associations, Washington DC, April 26, 2002, and for the Joint Department of Justice Antitrust Division/Federal Trade EC Commission hearings on *Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy*, Session on *Comparative Law Topics: Licensing of Intellectual Property in Other Jurisdictions*, Washington DC, May 22, 2002.

² Cases include, e.g., *1984 IBM Undertaking*, Press release IP/84/291, [1984] 3 CMLR 255; *Decca Navigator System*, OJ 1989 L 43/27; and the currently pending European *Microsoft* cases (concerning client-to-server OS, OS to middleware, and server-to-server OS interoperability). According to the EC Commission, *IMS Health* would be another example, although this is disputed. *IMS Health*, EC Commission interim measures decision of July 3, 2001, OJ No L 59, 28.2.2002, p. 18; suspended: Case T-184/01R, orders of August 10, 2001 and October 26, 2001, in *IMS Health Inc. against the EC Commission of the European Communities*; suspension confirmed by the ECJ April 22, 2002; Reference to the ECJ: Case C-418/01, *IMS Health v. NDC Health*.

³ Cases include, e.g., *X-Open Group*, OJ No L 35, 6.2.1986, p. 36; *Philips Matsushita D2B*, OJ No C 220, 23.8.1991, p. 2; *Philips Matsushita DCC*, OJ No C 333, 17.12.1992, p. 2; *Philips VCR*, OJ No L 47, 18.1.1978, p. 42; *APS (Advanced Photographic System)*, EC Commission press release IP/98/353

- formal commercial standards bodies with mixed membership;⁴
- government standards⁵

2. Objectives of European standardization activities

When analyzing the competitive impact of a standards agreement and the availability of an exemption under Article 81(3) EC, European antitrust authorities will keep in mind that standards have several benefits, some of which may differ from US policy objectives.

(a) *Market integration*

In the European Economic Area, market integration is an important policy objective. Article 28 (ex Article 30) of the EC Treaty provides for the free movement of goods that were legally marketed elsewhere in the Community. Under Article 30 (ex Article 36) EC and the case law of the Court of Justice following *Cassis de Dijon*, however, individual Member States may bar marketing and imports of products that do not meet specifications that are necessary to protect mandatory requirements such as safety, consumer protection, or the integrity of telecommunications networks.

Where such permissible national standards differ, and especially where they are incompatible, trade between Member States is restricted. To eliminate these restrictions, it may be necessary to set European standards, recognized in all Member States and replacing incompatible national standards.⁶ Standards developed by private SSOs may have similar beneficial effects, and formal or Government standards may be prepared within private SSOs.

of April 15, 1998, *MPEG-2*, [1998] OJ No C 229/19, followed by EC Commission press release IP/98/1155; and *DVD*, EC Commission press release IP/00/1135. See also *MPEG-2*, Department of Justice, Antitrust Division Letter of 26 June 1997, available at <http://www.usdoj.gov/atr/public/busreview/1170.htm>; *DVD*, Department of Justice, Antitrust Division Letter of 16 December 1998, available at <http://www.usdoj.gov/atr/public/busreview/2121.htm>. On patent pools See also Antitrust Guidelines for the Licensing of Intellectual Property, issued by the U.S. Department of Justice and the Federal Trade EC Commission, April 6, 1995. Available at <http://www.usdoj.gov/atr/public/guidelines/ipguide.htm>.

⁴ Cases include, e.g., *ETSI IPR Undertaking* (settled, not published), *ETSI/DVSI* (complaint rejected, not published).

⁵ CEN, ISO, Cenelec, IEC, CCITT, and national standards bodies recognized under Directive 98/34 of June 22, 1998, on technical standards and regulations, OJ No L 204, 21.7.1998, p. 37. There are no competition cases, but these bodies are subject to Article 86 EC (ex Article 90), and could be subject to Articles 10 (ex Article 5) *juncto* 81 and 82 of the EC Treaty (ex Articles 85 and 86 EC). See, for instance, Case 18/88, *RTT v. GB-INNO-BM*. Thus, Member States must ensure that competition in the EC is not distorted.

⁶ While in the past such standards were promulgated by EC Council Directives regulating all relevant details, harmonization directives now tend to set out the essential requirements to be met, and mandate the European Telecommunications Standards Institute (“ETSI”), CEN, or Cenelec to develop the functional or design specifications to meet these requirements. Certain standards bodies such as ETSI include private firms, and agreements in that context are subject to scrutiny under Articles 81 and 82 EC.

(b) Economic efficiencies

Other beneficial effects of standardization, which underlie many commercial standardization arrangements, are product interoperability and compatibility reducing barriers to entry, rationalization of production, economies of scale, creation of network effects needed for the introduction of new technologies, creation of unified platforms for development of new products, and R&D efficiencies.⁷ Standardization may also allow opportunities for small and medium enterprises. In Europe, the GSM standard for portable telecommunications is often cited as a model for beneficial standardization.

3. General introduction of European antitrust law relevant for standards

(a) Article 81 EC

Article 81(1) of the EC Treaty prohibits agreements or arrangements between undertakings that may affect trade between EC Member States and that have as their object or effect the prevention, restriction, or distortion of competition within the common market. The restriction of competition must be appreciable. Article 81(2) EC provides that restrictions in such agreements are automatically void.⁸ Article 81(3) EC permits the EC Commission of the European Communities (the “EC Commission”) to exempt restrictive agreements that might otherwise be prohibited, if

- (a) they foster technical or economic progress,
- (b) are indispensable to achieve such progress,
- (c) benefit consumers, and
- (d) do not completely exclude competition.

Broad exemptions under Article 81(3) are contained in block exemption regulations.⁹ Standardization will therefore often be automatically exempted if the joint market share is less than 25% and the agreement meets the conditions of the joint R&D block exemption regulation.¹⁰ If the standardization concerns an entirely new product, or a product in which

⁷ See study by Swann for the UK Department of Trade and Industry on “The Economics of Standardization” available at <http://www.dti.gov.uk/strd/funding.htm#swannrep>.

⁸ If under applicable contract law the restrictive terms of the contract are severable, only the restrictive terms are void.

⁹ Block exemptions that may be relevant for standardization are Regulation 2659/2000 of November 29, 2000, on joint R&D Agreements, OJ No L 304, 5.12.2000, p. 7.

¹⁰ “Research and development” is defined as “the acquisition of know-how relating to products... and the carrying out of theoretical analysis, systematic study or experimentation, including experimental production, technical testing of product or processes, the establishment of the necessary facilities and the obtaining of intellectual property rights for the results” (Article 2(4)). This is broad enough to encompass many standardization programs.

none of the participating companies compete, the block exemption is available even above the 25% ceiling for the duration of the standard setting and seven years thereafter.¹¹

Until the introduction of the “modernization” of European antitrust law, expected in 2004, standardization and pooling may also be exempted by individual exemption decisions or comfort letters following a formal notification process.¹²

(b) The Guidelines on Horizontal Agreements

The EC Commission has recently adopted Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements.¹³ These include general principles applicable to standardization agreements, defined for the purpose of the Guidelines on Horizontal Agreements as agreements which have as their primary objective the definition of technical or quality requirements with which current or future products, production processes or methods may comply.¹⁴ Similar principles may apply to the terms of access to a particular quality or compliance mark.

According to the Guidelines on Horizontal Agreements, standards that have only “*negligible coverage of the relevant market*” are not caught by Article 81, so long as they remain *de minimis*, and the associated agreements do not include per se violations such as price fixing or output restrictions.¹⁵ A joint market share threshold of less than 10% can be used as a rule of thumb.¹⁶

Standardization agreements involving firms with a joint market share above 10% may still escape Article 81(1) if they are based on non-discriminatory, open and transparent procedures, provided that such agreements:

¹¹ Joint R&D Block Exemption, above, Article 4(1).

¹² For the modernization proposals, eliminating the notification process and ex ante review, and instead empowering national courts and competition authorities to apply Article 81(3) directly, see “Proposal for a Council Regulation on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty and amending Regulations (EEC) No 1017/68, (EEC) No 1988/74, (EEC) No 4056/86 and (EEC) No 3975/87,” Brussels, 27.9.2000, COM(2000) 582 final.

¹³ Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements, OJ 2001 C 3, p. 2, para 159.

¹⁴ Guidelines on Horizontal Agreements, para. 159. Standardization may involve joint research and development.

¹⁵ Guidelines on Horizontal Agreements, para. 164.

¹⁶ See EC Commission Notice on Agreements of Minor Importance, OJ No C 368, 22.12.2001, p. 13. The threshold for the enforcement of EC competition law with respect to horizontal agreements between competitors is a joint market share of 10%. Several markets could be relevant for the analysis of standards agreements including (a) the products being standardized or to be replaced by the standardized product; (b) the service market for standardization; (c) the service market for testing and certification; (d) the market for technology necessary for the implementation of the standard; and (e) innovation markets.

- (a) do not oblige manufacturers to comply with the standard, or
- (b) if they do mandate compliance) are “*parts of a wider agreement to ensure compatibility of products*”.¹⁷

Conversely, standards agreements would likely be prohibited if they “*use a standard as a means amongst other parts of a broader restrictive agreement aimed at excluding actual or potential competitors.*”¹⁸

Article 81(1) EC may, in addition, prohibit standardization agreements that limit product differentiation by discouraging or eliminating innovation, or giving competitors control over each other’s production or innovation.¹⁹ This applies in particular to agreements that prevent the participants or third parties from developing alternative standards or selling products that do not comply with the standards, or that prevent certain manufacturers from implementing the standard.²⁰

Even if a standardization agreement restricts competition, it may benefit from an exemption under Article 81(3) EC.²¹ The EC Commission made it clear that it:

“*generally takes a positive approach towards agreements that promote economic interpenetration in the common market or encourage the development of new markets and improved supply conditions.*”²²

This positive attitude is dependent on a finding that an appreciable proportion of the industry is involved in the setting of the standard in a transparent manner,²³ and that the agreements contain no restrictions of competition that are not indispensable to achieve the reasonable objectives of the standard, such as unnecessary restrictions on innovation.²⁴ Moreover, the

¹⁷ *Ibid.*, para 163.

¹⁸ Guidelines on Horizontal Agreements, para. 165.

¹⁹ Guidelines on Horizontal Agreements, para. 166.

²⁰ Guidelines on Horizontal Agreements, para. 167.

²¹ In the case of standardization agreements and vertical agreements, if issues arise, notification can be made, and exemption can be issued with retroactive effect. *See* Article 4(2)(3)(a) of Regulation 17/62, which provides that the EC Commission may grant exemptions for agreements that have as their “sole” object the development of uniform application of standards or types, even if these agreements have not been notified. The same applies for license agreements, *see* Article 4(2)(a) of Regulation 17/62 as amended by Council Regulation (EC) No 1216/1999 of 10 June 1999 amending Regulation No 17, OJ 1999 L 148/5. Regulation 17/62 will be superseded by a new directive that will very likely eliminate the possibility of notifying agreement for *ex ante* exemption.

²² Guidelines on Horizontal Agreements, para. 169.

²³ Guidelines on Horizontal Agreements, para. 169.

necessary information to apply the standards must be available to those wishing to enter the market.²⁵

(c) Article 82 EC

Article 82 EC bans abuses of a dominant position in a substantial part of the common market. The threshold question for the application of this article is the existence of a dominant position. Article 82 EC would in most cases not apply to the trade association developing the standard (although standards bodies could be found dominant in the service markets for standardization, and testing and certification). Should the standard become successful, however, manufacturers of compliant products may become dependent on the underlying technology. If the technology provider is found dominant, Article 82 EC would impose certain limitations on the exercise of its IPRs or contractual rights. In particular, dominant technology suppliers must not exercise their rights in a discriminatory fashion or with a view to creating or maintaining barriers to entry in a downstream market (the market for compliant products).

Technology suppliers with a dominant position must not engage in excessive pricing, discrimination, exclusionary practices, or retaliation against competitors. They may be required to license IPRs against their will, but only in exceptional circumstances.²⁶ The EC Commission has indicated that if a standard had been adopted, implemented, and made mandatory by a Community instrument, a refusal to license the technology necessary to use the standard would raise serious questions under Article 82 EC.²⁷ This does not, however, apply to technology that is not “essential” for a standard, even if that technology gives the user a competitive advantage in the standardized environment.

4. Competition issues

The Guidelines on Horizontal Agreements are a mere introduction, and do not provide a full overview of antitrust law as applied to SSOs. A number of competition concerns arise in connection with multilateral standardization, which can be grouped as follows:

1. Restrictions on access to the standardization process (and requirements to license future IPRs as a condition for participation);²⁸

²⁴ Guidelines on Horizontal Agreements, para. 173. The EC Commission recognizes in its Guidelines on Horizontal Agreements (para. 171) that it may be necessary in some cases to select a particular technology as a platform or framework for a standard, provided that the choice is justifiable and made through an open process.

²⁵ Guidelines on Horizontal Agreements on Horizontal Agreements, para 169.

²⁶ *Magill*, above. The EC Commission and the European Courts are currently considering possible compulsory licensing in the controversial *IMS Health* case (above; see John Temple Lang’s and Frank Fine’s presentations for today’s hearings).

²⁷ *EC Commission Communication on IPRs and Standardization*, COM 92/445, October 22, 1992, para. 5.1.11.

²⁸ *X-Open*, above, *ETSI IPR Undertaking*, above.

2. Spill-over effects (“horse-trading”, information exchange, platform for collusion);²⁹
3. Reduction of product differentiation (overstandardization);³⁰
4. open and objective selection of technology (and possible misuse of IP policy to influence technology choice);³¹
5. Access to quality mark; entrusting specific bodies with exclusive rights to test compliance with the standard;³²
6. Access to standards information and essential IPRs;³³
7. IPR Policies, and access to technology needed to comply with standards.³⁴

4.1 Open access to the standardization process

(a) Principle: wide industry participation required

The EC Commission’s positive attitude towards standards agreements is dependent on a finding that “*an appreciable proportion of the industry is involved in the setting of the standard in a transparent manner.*”³⁵ There are several reasons.

First, the benefits of standardization may not be achieved if the group is too small to create the network effect that a standard needs in order to succeed. If so, the benefits of standardization may not outweigh the risk of information exchange and spill-over.

Second, the EC Commission is concerned to maintain equality of opportunity in standardized markets. Participants in the standardization process have the opportunity to influence the direction of the standard (include their own technology or exclude their competitors’), obtain in-depth experience with the standards, and have advance information allowing them to obtain a lead start in implementation. This affects competition. Firms often vie with each

²⁹ *DVSI/ETSI*, above.

³⁰ *Philips VCR*, above, *ETSI/DVSI*, above.

³¹ *ETSI/DVSI*, above.

³² Guidelines on Horizontal Cooperation, para. 167.

³³ *X/Open*, above, *ETSI IPR Policy*, above, *IGR Stereo TV/Salora*, 11th EC Competition Policy Report, 1981, p. 63.

³⁴ *ETSI IPR Undertaking*, various patent pool cases; *Magill* and *IMS*, above.

³⁵ Guidelines on Horizontal Agreements on Horizontal Cooperation, above, para 169.

other to have their technology included in a standard, in order to minimize their cost and maximize efficiencies of scale and scope (especially if they also make complementary products). If they succeed, they not only limit their own cost, but may also raise their rivals' costs, to the extent the latter have to switch to a new technology and abandon their own solution. The greater the chances of success of the standard, and the wider its potential fields of application, the more important it is to allow "equality of opportunity" in the standards setting process.

Finally, collective boycott arrangement excluding particular (groups of) firms can be inefficient because they limit the available pool of knowledge and technology and thus risk creating lower-quality standards.

(b) Limitations on admission

Commercial standards groups have an incentive to broaden their membership so as to achieve network effects, but are not always required to admit everyone.

First, small groups of firms may prepare standards *en petit comite* by entering into joint R&D agreements in the pre-standardization phase, so as to present a joint solution for adoption as a standard. If the joint market share is less than 10% or the parties are not competitors at all, the agreement is *de minimis* and permissible even if the conditions of the Joint R&D block exemption are not met.³⁶ If the parties have explicitly agreed not to admit outsiders, the arrangements may still be automatically exempted if the joint market share is less than 25% and the agreement meets the conditions of the joint R&D block exemption regulation, or if the participants do not compete in the area, for instance, if the product is new.³⁷

Limitations on membership of groups with larger market share may be exempted under Article 81(3) EC if the selection criteria are necessary, objective, and relevant, and exclusion decisions can be appealed to a neutral panel or court. The EC Commission exempted membership restrictions in *X/Open* on the grounds that the development of standards for a common application environment were beneficial for competition, and that restriction of membership was necessary for practical and logistical reasons, considering that the standards group might become bogged down if all industry members were admitted.³⁸

(c) Burdensome conditions for admission

³⁶ Guidelines on Horizontal Agreements, para. 164. See also Notice on Agreements of Minor Importance.

³⁷ See above.

³⁸ *X/Open Group*, EC Commission Decision 87/69, OJ 1987, L 35, p. 36 (membership subject to majority decision, and limited to major manufacturers with UNIX expertise and a European presence). See also Guidelines on Horizontal Agreements, para. 172, suggesting that the parties must demonstrate that full openness entails "important inefficiencies" and that parties should provide for the "collective representation of interests". An essential element in the EC Commission's decision was that the negative effect on competition was reduced by the group's professed aim of making the results of the cooperation available "as widely and quickly as possible." The EC Commission also noted that members were not obligated to implement the standard or to refrain from implementing other standards.

The more influential the standards body, the more carefully membership criteria are scrutinized. Important standards organizations such as ETSI³⁹ cannot leverage their position to extract unreasonable and unnecessary concessions from their membership, and membership conditions themselves must not lead to restriction of competition. Thus, for instance, obligations to share information must remain limited to what is reasonably necessary and directly related to the standards work, and standards organizations should avoid membership conditions that impose general obligations to license IPRs for standards that the IPR holder does not support.⁴⁰

4.2 Spill-over effects (information exchange, commercial collusion, collective boycotts and market allocation)

I refer to the presentations by Charles Stark and Richard Wainwright at the ABA Spring meeting. Briefly, standards agreements would likely be prohibited if they “*use a standard as a means amongst other parts of a broader restrictive agreement aimed at excluding actual or potential competitors.*”⁴¹ An early case was a system for equipment approval by a central heating trade association in Belgium.⁴² The trade association members agreed to buy only equipment approved by the Accreditation Committee. That Committee consisted of Belgian firms that approved only Belgian products, and refused to approve imported products that also met the standards. This led to reduced imports without justification, in violation of Article 81(1) EC.

An exchange of technical information and market data on user requirements is inherent in the standardization effort. It need not affect competition, so long as it does not concern prices, customers, market position, production plans, or other sensitive market information concerning the products of the parties.⁴³ Standards groups should adopt antitrust compliance guidelines and procedures to ensure that their organization is not used as a platform for collusion.

³⁹ ETSI is the European Telecommunication Standards Institute. It was created by the CEPT following a recommendation of the EC Commission in its 1987 Green Paper on the development of the common market for telecommunications services and equipment for the purpose of establishment of common European standards in the telecommunications sector. Contrary to the CEPT, which only had Government members, ETSI’s members are administrative bodies, public network operators, manufactures, users and others. ETSI is the only EEA-wide organization to develop technical standards for telecommunications equipment and services. It is officially recognized as such by the EC and the EC Commission delegates to ETSI the task of developing European telecommunications standards. The standards adopted by ETSI are of both legal and practical importance.

⁴⁰ See, for instance, open letter from the EC Commission of February 1994, stating preliminary views on a complaint brought against ETSI, not published, and discussed in more detail below.

⁴¹ Guidelines on Horizontal Agreements, para. 165.

⁴² 1972 OJ No L 264, p.22.

⁴³ In certain cases, however, the Joint R&D Block Exemption may be available for joint exploitation arrangements, as discussed above.

4.3 **Risk of overstandardization: reduction of product diversity and abuse of buying power**

Standardization reduces technological variety, and may stifle competition through innovation.⁴⁴ Consumers may be deprived of a particular product, attribute, or quality that they may want. If a standard is binding legally or *de facto*, what is left is competition by imitation, essentially on grounds of price and image, and perhaps some competition on secondary product characteristics. Even price competition may be diminished, because reduction of product diversity creates cost commonalities and facilitates collusion or parallel pricing. Standardization is therefore prohibited by Article 81(1)(b) to the extent that it hinders innovation, freezes a particular stage of technical development, or blocks the network access of some users or service providers.

The degree of anticompetitive effect is analyzed on a case-by-case basis,⁴⁵ but will in general depend on:

- the market share of the participants (see above);
- any exclusivity agreed upon between the parties or that may naturally flow from the desire to reduce costs, to the extent it results in appreciable foreclosure of outlets for competing technology or standards;
- the standardization depth, to the extent that it prescribes not only functional specifications, but also design specifications. The effect on competition is greater if all product characteristics, or the core of the product, are subjected to standardization.

(a) Exclusion of alternative compliant technologies

Standards agreements must not reduce product diversity any more than is reasonably necessary to achieve the legitimate objectives of the standards.⁴⁶

For instance, when Philips and Sony entered into an agreement with other VCR producers “*on uniform application of technical standards for the VCR system*”, they agreed on a royalty-free cross-license of patents for the purpose of compatibility of cassettes with recorders from different vendors, but provided “*unlike the usual type of agreements on standards, for the adoption of the complete system of one of the parties (Philips) by the other parties*”.⁴⁷ No other systems were allowed. Moreover, no change could be made to the Philips system without the consent of all parties. In spite of the improved interoperability of cassettes with

⁴⁴ Guidelines on Horizontal Agreements, para. 22 (if standards agreements have negative effects “*these are likely to be on innovation or the variety of products. They may also give rise to foreclosure problems.*”)

⁴⁵ Guidelines on Horizontal Agreements, para. 170.

⁴⁶ Guidelines on Horizontal Agreements, para. 167.

⁴⁷ *Philips VCR*, above, para. 9.

video machines of different producers, the EC Commission refused exemption on the ground that:

“compliance with the VCR standards led to the exclusion of other, perhaps better, systems. Such an exclusion was particularly serious in view of the pre-eminent market position enjoyed by Philips [para. 29]. ...

[R]estrictions were imposed upon the parties which were not indispensable to the attainment of these improvements. The compatibility of VCR video cassettes with the machines made by other manufacturers would have been ensured even if the latter had to accept no more than an obligation to observe the VCR standards when manufacturing VCR equipment” [para. 31].

(b) design specifications vs. functional specifications

Unfortunately, the EC Commission is neither well equipped nor does it appear to be ready to apply the same principles as vigorously to formal standards organizations. When ETSI developed the standards for private digital mobile radio communication (TETRA), different technology providers vied to have their technology used as the basis for the standardized voice coder/decoder (“codec”). The main choice was between the algorithm and high-level software specifications of US firm DVSI that could be implemented in various ways, and the bit-specific software program of France’s Thomson Electronics that would exclude all choice of implementation and freeze further development.

Even though objective tests consistently showed the DVSI algorithm resulted in better quality products, ETSI selected the latter because DVSI refused to place its software implementation in source code form in the public domain – although the use of its software was not part of the specification of the standard, and DVSI was willing to license its code on fair, reasonable and non-discriminatory (“FRAND”) terms and conditions to implementers who did not want to write their own code.⁴⁸ In these circumstance, the ETSI members arguably misused their collective technology buying power to force DVSI to make its software public, and to punish it with foreclose when DVSI refused to give in to this pressure. The result was selection of lesser-quality Thomson technology.⁴⁹

⁴⁸ The ETSI Dispute Resolution Report specified: *“The standardization bodies are frequently accused of ‘over-standardizing’, and with justification. Here we have placed ourselves in a position that we are selecting a single manufacturer’s technology (...), rather than making a consensus between TC participants on a common technology. ... I am obliged to ask why it was necessary to publish within the standard the detailed information when DVSI made the offer to publicly provide about 100-150 pages of specifications for the TETRA codec that could be considered as sufficient information from a standards point of view and make the very detailed information (C-source code) available against undertakings, against the background of the company’s business success being dependent upon the retention of its trade secrets.”* For more details on this case, see Dolmans, “Restrictions on Innovation” in [1998] Antitrust Law Journal 455.

⁴⁹ DVSI pointed out that there were indications of possible collusion, but no disclosure or discovery proceedings existed in Europe, and the EC Commission did not investigate whether Thomson and others might have illegally coordinated their vote with a view to exclude DVSI.

The EC Commission refused to intervene on the ground that a bit-specific standard allowed better testing, development of compatible products, and type approval in this instance. At the same time, the EC Commission in its letter closing the case stated that:

“It is, of course, clear that overstandardization can have extremely negative effects on market development and competition: my services have already indicated to ETSI that ETSI should carefully examine standards and standards procedures in light of any potential impact on competition.”

The Guidelines on Horizontal Agreements suggest in paras. 171 and 173 that:

“In some cases, it would be necessary for the benefit of consumers or the economy at large to have only one technological solution. However, this standard must be set on a non-discriminatory basis. Ideally, standards should be technology neutral. ...

Agreements on standards should cover no more than what is necessary to ensure their aims, whether this is technical compatibility or a certain level of quality. For instance, it should be very clearly demonstrated why it is indispensable to the emergence of the economic benefits that an agreement to disseminate a standard in an industry where only one competitor offers an alternative should oblige the parties to the agreement to boycott the alternative.”

In practice, it may be possible to meet the objectives of standardization while maintaining a degree of product variety, by using functional specifications as opposed to design specifications that freeze implementation.

4.4 Open and objective selection of technology

Standardization activities may give rise to a temptation to engage in “horse-trading”. Members may have invested in a particular technology or may have an interest in limiting the cost and time of adapting their product lines to a new standard. There have been allegations, including in the DVSI case (above), that firms obstruct adoption of competing technologies, or strike deals to support each others’ complementary technologies for a standard.

Para. 169 of the Guidelines on Horizontal Agreements states briefly that standards should be set “*in a transparent manner*”. Para. 171 of the Guidelines on Horizontal Agreements adds:

“In some cases, it would be necessary for the benefit of consumers or the economy at large to have only one technological solution. However, this standard must be set on a non-discriminatory basis. Ideally, standards should be technology neutral. ...In any event, it must be justifiable why one standard is chosen over another.”

This seems inadequate guidance. To allow full and workable competition between technologies in the standardization process, and to ensure that the benefits of standardization are maximized so that they outweigh the restriction on innovation, the selection process of standards should be based on objective, relevant, qualitative and verifiable criteria. Equal treatment should be ensured regardless of the origin of the technology. Selection tests should be conducted in a fair, open and verifiable manner, by persons or entities that have no direct interest in the outcome, with a possibility of appeal to an independent body.

4.5 Open access to the standardization results and information

An essential consideration for exemption of a standardization arrangement is that the results be publicly available to all who wish to evaluate or implement the standard, as soon as reasonably possible. The Guidelines on Horizontal Agreements confirm that:

*“the necessary information to apply the standard must be available to those wishing to enter the market”*⁵⁰

Standards organization should therefore publish this information and often make it available on their website, or by references to other publicly available sources. Similarly, technology contributors are required to make their technology available to all who wish to implement the standard.

No distinction can be made between insiders and outsiders, contributors or non-contributors.⁵¹ An exception can be made, however, for owners of essential IPRs who refuse to license these IPRs on FRAND terms and conditions. In patent pool agreements for standardized technology the EC Commission has accepted Termination Clauses that permit the pool members to withhold or terminate licenses from Essential IPR owners who hold up the implementation of the standard.⁵²

The requirement of publication should not be interpreted as requiring IPR owners whose technology is included in a standard to place their technology in the public domain. The Guidelines on Horizontal Agreements specify that all that is needed is third-party access “*on fair, reasonable and non-discriminatory terms.*”⁵³

This leads to some of the most thorny current issues in the standards world: what IPR disclosure policies are appropriate in a standards context? Can standards bodies or antitrust authorities impose compulsory licenses on members or outsiders? Should standards bodies avoid technology protected by IPRs? What are permissible licensing conditions?

⁵⁰ Guidelines on Horizontal Agreements, para. 169. See also *X/Open*, above; *EC Commission Communication on IPRs and Standardization*, COM 92/445, October 22, 1992, para. 6.2.1.1 and 2. This requirement does not apply to joint R&D that does not have the pretension to create an industry standard, and that meets the conditions of the Joint R&D Block Exemption, above.

⁵¹ When ETSI proposed an IPR Undertaking that would have allowed ETSI members to withhold licenses to other members who refused to sign the Undertaking, the EC Commission objected to any “*general policy or commitment to exclude non-members/non-signatories from access to IPRs necessary for manufacturing equipment in compliance with ETSI standards.*” It warned that: “*It should be clear that any discriminatory treatment by ETSI members vis-à-vis non-members ... could give rise to ad hoc action under the competition rules.*” February 1994 letter to ETSI and CBEMA

⁵² See, for instance, EC Commission comfort letters in *MPEG-II*, IP/98/1155 and *DVD*, IP/00/1135. See also the FTC decision In the Matter of Intel Corporation, Docket 9288, U.S. Federal Trade EC Commission Complaint, available at <http://www.ftc.gov/os/1998/9806/intelfin.cmp.htm> and the settlement at <http://www.ftc.gov/os/1999/9903/d09288intelagreement.htm>.

⁵³ Guidelines on Horizontal Agreements, para 174; 1992 EC Commission Communication on IPRs and Standardization, para. 6.2.1.2.

4.6 IPR Policies and standards

(a) *Obligations to license as a condition for SSO membership (ETSI IPR Policy)*

Most IPR holders are in fact ready to license their IPRs for a standard, because it creates a market for their technology. For example, Members of the Digital Video Broadcasting (“DVB”) consortium undertake in paragraph 14.2 of the Statutes of the DVB Project that they are:

“willing to grant or cause the grant of non-exclusive, non-transferable, world-wide licenses on fair, reasonable and non-discriminatory terms and conditions under any [Essential IPRs which it has the free right to grant or cause the grant] for use in or [manufacture] of equipment fully complying with such specification to any third party which has or will submit an equivalent undertaking with respect to any relevant IPRs it may have or obtain with respect to such specification.”

While this looks like a compulsory license, private groups like DVB tend to adopt standards by unanimity, and compulsory licenses are avoided if the IPR owner can object to inclusion of its technology in a standard. Moreover, the IPR Policy allows for an “opt-out” under Article 14.3:

*“A Member shall have the right up until the time of final adoption as a standard by a recognised standards body of a specification approved by the Steering Board to declare to the DVB Steering Board that it will not make available licences under an IPR that was subject to the undertaking for licensing pursuant to article 14.2 above, only in the exceptional circumstances that the Member can demonstrate that a major business interest will be seriously jeopardised”*⁵⁴

Article 81 EC does not allow a standards body to force members to make licenses available against their will. In the case concerning the *ETSI IPR Undertaking*, ETSI members expressed concern that “submarine” patents would surface after many years of work on a standard, allowing the patent owner to block the standard or charge excessive royalties for standard-compliant products. In March of 1993, ETSI adopted a draft IPR Undertaking requiring its members to license all technology necessary for a standard, unless the IPR holder expressly reserved the right not to license an identified IPR within 180 days from the date the standard development was begun. (This was called a “license by default” system). Acceptance of the IPR Policy would become a condition for membership in ETSI, which in turn entailed various advantages such as the ability to influence standards and obtain advance information and experience.

A number of IT companies within ETSI expressed concern about the commercial uncertainty of having to commit to the licensing of unknown IPRs (even future IPRs) for standards that

⁵⁴ For a further description on how the DVB IPR Policy has evolved to include arbitration provisions and the fostering of licensing, see Carter Eltzroth, “IPR Policy of the DVB Project”, 2001, supplied to the DoJ.

did not yet exist. They also complained of the competitive disadvantage they would suffer if they were excluded from ETSI. In preliminary position, the EC Commission stated:

“The “license by default system”. ... an undertaking pursuant to which IPR holders are deprived of their freedom to decide whether or not to grant licenses on their existing and future technology is restrictive of competition: it amounts to a mutual renunciation of gaining competitive advantages thanks to technical efforts and thereby deprives the participants of the incentive to develop new technologies. ...

... Exemption under Article [81](3) could not be contemplated if the lack of information [on the precise technological content of the standard before the public enquiry stage] makes it technically unfeasible to identify and withhold IPR. If it is technically possible, but financially burdensome to carry out meaningful searches, an exemption under Article [81](3) could, however, be contemplated. ... ”⁵⁵

In this light, ETSI abandoned the IPR Undertaking. The current version of the IPR policy requires each member of ETSI to use reasonable endeavors to inform ETSI “timely” of IPRs of which it becomes aware that are “essential” for an ETSI standard (*i.e.*, where equipment complying with the standard could not be made without infringing that IPR).⁵⁶ This covers not only the member’s own IPR, but also third party IPRs of which the member is aware. When an “essential” IPR relating to a particular standard is notified, ETSI’s Director must request the owner to grant a license on fair, reasonable and non-discriminatory terms.⁵⁷

Any ETSI member not wishing to license an IPR in respect of a standard is required to reconsider and explain its position if no viable alternative technology is available for the standard that is blocked by that IPR.⁵⁸ It is not, however, forced to license the IPR. If a third party refuses to license an essential IPR, the Director of ETSI is requested to review the issue and may coordinate submission of a competition complaint to the EC Commission by the General Assembly of ETSI (possibly on the basis of *Magill*, see below).⁵⁹ If this is unsuccessful, the standard will have to be reviewed.

⁵⁵ Open letter from the EC Commission of February 1994, stating preliminary views on a complaint brought against ETSI, not published.

⁵⁶ ETSI IPR Policy, Annex 6 to the ETSI Rules of Procedure, Article 4. There is no obligation to conduct patent searches.

⁵⁷ ETSI IPR Policy, Article 6.

⁵⁸ ETSI IPR Policy, Article 8.

⁵⁹ The EC Commission granted negative clearance for ETSI’s interim IPR policy. Because the Policy no longer contains an element of compulsion, no further issues arise under Articles 81 or 82. See OJ 1995 No C 76, p. 5, and 25th Report on Competition Policy 1995, pp. 131-132. The new ETSI IPR Policy follows the principles of the 1992 EC Commission Communication on Standards and IPRs, which concluded that standards should be withdrawn if essential IPRs were unavailable and that IPR owners should do their best to disclose the existence of IPRs timely. It opposed compulsory licensing.

(b) *Should SSOs avoid IPRs (collective boycott)*

Because of the possible costs of royalties, the question arises whether standards bodies should avoid IP-protected technology altogether. This is a controversial issue especially in the Internet environment. The World-Wide Web Consortium proposed an IPR Policy in the fall of 2001 that would have allowed IP owners to charge RAND royalties for technologies incorporated in W3C standards. Until now, W3C standards were royalty-free.

In April 2002, the W3C backtracked: there was so much criticism from the open source community that W3C returned to a goal of “royalty-free” standard. According to Article 2 of the proposed Royalty-Free Patent Policy (working draft of February 26, 2002):

“As a condition of participating in a Working Group, each W3C Member and invited expert agrees to make any [Essential Claims](#) it controls available on [royalty-free] [RF terms](#), as defined in this policy. With the exception of the provisions of section 2.2 below, this licensing commitment is binding on participants for the life of the patents in question, regardless of changes in participation status or W3C Membership.

Specific patents may be excluded from the RF licensing commitment by a participant who seeks to remain in the Working Group only if that participant discloses specific patents that will not be licensed on RF terms within 60 days after the publication of the Working Group's requirements document. A participant who excludes patents may continue to participate in the Working Group.”

This appears to be a legally binding commitment, and a condition for further participation in the standards process. The *ETSI IPR Policy* case discussed above suggests that this could raise problems under EC competition law if participation in W3C conveys competitive advantages. IPR owners may in fact have an interest in making their technology available for free, since it expands their market and thus increases their ability to derive revenues from derivative services, but that should be a voluntary decision.⁶⁰

W3C is possibly dominant in Internet standard setting. A ban on IPRs and the exercise of power as the Internet SSO to force royalty-free licensing of IPRs could discourage innovation, and by limiting the pool of available technologies, might result in the selection of second-class technology as Internet standards. EC competition law, to the extent applicable, suggests that the open source movement should compete on the merits with the IPR community. A collective decision to boycott IPRs can only be adopted on objective, relevant and proportional grounds, *i.e.*, an evaluation of quality and total cost. Quality includes the technology itself as well as the possible benefits of open-source vs. IP based development.⁶¹

⁶⁰ In the words of the GNU General Public License of the Open Source Foundation, “*it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.*” <http://www.gnu.org/copyleft/gpl.html>

⁶¹ See Yochai Benkler’s fascinating paper, “Coase’s Penguin, or, Linux and the Nature of the Firm”, October 2001, available at <http://arxiv.org/ftp/cs/papers/0109/0109077.pdf>, who suggests that open source development benefits from a competitive advantage over traditional IP-based innovation, in that it fosters wide participation in the innovation and is more effective in matching the best available human capital to the best available information outputs.

The cost would include not only the possible royalties, but also the impact that inclusion of a IPR protected technology could have on the future availability of open source technology and the success of the standard. The open source community exists by virtue of the absence of IPRs, and assertion of IPRs in this context could cause open source innovation to grind to a halt.⁶² It would seem legitimate for an SSO to take this into account as a cost of including IPRs. Assuming membership is competitively important, the W3C should properly reason this decision, and evaluate whether less restrictive means than a complete boycott are available – for instance, possibly allowing IPR owners to charge for certain end-uses that do not hamper the open-source development process.

It would be one thing for an IPR Policy to require those who *actively* contribute technology to promise not to charge for that technology (or to inform the group of possible FRAND terms within a reasonable deadline), and another to exclude IPR owners altogether from the SSO because *another* member has proposed a technology on which it appears to have IPRs. A proper balance might be struck by, and an exemption under Article 81(3) might be available for, an IPR Policy that:

- (i) requires a member who *actively* contributes technology to commit to making any essential IPR claimed by it available free of royalties, unless within a reasonable deadline (a) the technology is withdrawn or (b) notice is given that royalties will be charged for certain uses, and what terms will apply, in which case the choice of technology may be revisited;
- (ii) arranges for regular reasonable patent searches;
- (iii) if an IPR is discovered that was not contributed by the IPR owner, provides for the SSO to request the IPR owner to take a position within a reasonable deadline, with possible review by courts or antitrust authorities in case a license is refused and no viable alternative technology is available;
- (iv) does not exclude from the SSO a member who does not wish to contribute its IPR for free.

The questions arise (a) what to do in case of incomplete disclosure, late disclosure, or non-disclosure; (b) in what conditions a compulsory license may be imposed under competition law; (c) what are the permissible terms and conditions of such a compulsory license.

⁶² See Lawrence Lessig, “The Architecture of Innovation”, *available at* www.law.duke.edu/pd/papers/lessig.pdf; Yochai Benkler, “Coase’s Penguin, or, Linux and the Nature of the Firm”, October 2001, above.

(c) SSO member's failure to disclose, and late IPR disclosure

The EC Commission is currently investigating whether an SSO member's late disclosure of patents in a standards environment could give rise to antitrust liability.⁶³

IPR owners are not always willing or able to provide timely disclosure of the existence of a potentially essential IPR during the early stages of the definition of a standard, and may not timely disclose even after the standard has been defined. This may be a matter of pure oversight, the simple inability to be aware of all relevant information within a large, multinational organization, or a lack of full understanding of the intimate details of a particular standard, which may be very complex. There may be legitimate doubt about the scope of a patent claim or its essentiality for the standard.⁶⁴ Finally, there are cases of deliberate concealment of patents, which in the US have led to the *Dell Computer*⁶⁵ and *Rambus v. Infineon* cases.⁶⁶

Not all IPR Policies require disclosure in all cases. The DVB Project, for instance, requires disclosure only if a member is unwilling or unable to license on FRAND terms. To date, no such notices have been given.

If two or more firms conspire to conceal the existence of an essential patent of which all of them are aware, liability likely exist under Article 81 EC. The very fact that the parties saw a need to hide the patent suggests that disclosure would have influenced the direction of the standards development. Article 81 EC applies not only to agreements that have as their "effect" the restriction of competition, but also agreements whose "object" is the "prevention, restriction or distortion of competition within the common market." Unless the parties have objective and proportional grounds to agree not to disclose the existence of a patent, which will be difficult to justify, Article 81 EC would normally apply.

⁶³ The brief discussion of this non-public case below is provisional, since no findings have been made and the case is still in its preliminary stages. The author represents one of the parties under investigation and has had no access to any facts gathered by complainants or other parties.

⁶⁴ The fact that patent application is unpublished may not be objective justification to conceal the existence of an application. In that case, the member should at least announce that an application is pending.

⁶⁵ In *Dell Computer*, the US FTC found that Dell had encouraged adoption of the VESA local bus standard, while deliberately concealing the existence of a blocking patent and actually stating positively that it had no such IPRs. Dell eventually agreed to a consent decree not to assert its patents. *Dell Computer*, 121 F.T.C. 616, and <http://www.ftc.gov/opa/9606/dell2htm>.

⁶⁶ In *Rambus v. Infineon*, Rambus sued Infineon for patent infringement. Infineon successfully counterclaimed on the basis of fraud, pointing out that in the early 1990s, Rambus used its membership of the Joint Electron Device Engineering Council (JEDEC), which sets industry wide standards for memory chips, to promote a Synchronous DRAM standard while at the same time amending its patent applications to cover the JEDEC SDRAM specifications. Rambus's business plan was to breach the JEDEC IPR policy, which requires declaration of known essential patents, because declaration would likely have resulted in a different standard designed to avoid the patent. After 1996, Rambus withdrew from JEDEC, but used a "mole" to obtain further information on the standard development. In May 2001, Rambus' infringement claims were rejected, followed by a jury verdict in favor of Infineon, and an order to pay Infineon's attorney fees to the tune of \$7 million. Rambus was permanently barred from suing Infineon for patent infringement.

In the particular case being investigated, there appears to be no evidence of collusion or violation of an IPR Policy. The alleged patent owner eventually disclosed the existence of a patent, initially without identifying it, but indicated that it will license on FRAND terms. Antitrust liability in these circumstances requires a finding of both (i) dominance, and (ii) abuse.

(i) Dominance. Before adoption of a standard, the SSO could normally modify the specification so as to avoid particular patents as and when the SSO becomes aware of the patents. This means that at the moment of the concealment, the IPR owner may not be dominant and may not be caught by Article 82 EC. This does not, however, mean that the IPR owner escapes scot-free: Even if Article 82 does not apply at the time of the concealment, it may apply to IPR enforcement *following* concealment. The more complex the standard and the more advanced the development work and implementation, the greater the switching costs for the SSO and the implementers, and the greater the chance of a finding of dominance, especially after a standard is adopted. The EC Commission has taken the position that:

*“A longer term benefit will probably accrue to the manufacturer who voluntarily licenses his technology to become a standard, since his market share will eventually grow significantly in respect of the rights for which he receives royalty payments even if he is no longer the sole manufacturer of the product itself, and even if the royalty rate which he receives is less than that which he would have obtained from a licensee on the open market”.*⁶⁷

Once a standard is adopted, and (a) the standard is *de facto* or *de jure* mandatory or (b) standard-compliant products represent more than 40% of the downstream market, the provider of an essential patent is likely to be found dominant in its technology market. If at that stage it enforces or continues to enforce its patent rights, the question arises whether that constitutes an abuse.

(ii) Abuse. Of course, no liability can exist if a firm was in good faith, and upon late disclosure decides to take the high road and license the patent royalty-free. For example, IBM recently agreed to license royalty-free a late-disclosed patent on the Electronic Business XML web standard created by a United Nations organization and by the Organization for the Advancement of Structured Information Standards (OASIS).

On the other end of the spectrum: Article 82 would likely apply if a dominant firm, who participated in the SSO, were to enforce an intentionally concealed patent to evict competitors from a standardized product market or exact excessive royalties (especially if it is active downstream and raises its rivals' costs in the process). The

⁶⁷ EC Commission Communication on IPRs and Standardization, para. 2.1.8. See also the EC Commission's Open letter to ETSI and CBEMA, dated February 1994, concerning the ETSI IPR Policy: *“Once an essential technology is included with the agreement of the IPR holder in a standard, particularly one that is made mandatory pursuant to Community legislation, the owner of the IPR relating to that technology occupies in most if not all situations a dominant position ... vis-à-vis manufacturers requiring licenses on that IPR in order to be able to participate in the market for the equipment in question.”*

abuse consists of the enforcement of a dominant upstream position in order to monopolize a downstream market that would not have been vulnerable to monopolization but for the patentee's concealment of the essential patent. The standard was created in reliance on the legitimate expectation that no essential patent applied, which expectation was in fact created by the patent owner. This argument is particularly powerful if there is evidence that the SSO members would have designed around the patent had they been aware of it. Excessive pricing may be an additional cause of action under Article 82(a) EC. Recent case law of the Court of Justice indicates that a patent owner would in such circumstances probably be deprived of its rights to enforce the patent altogether.⁶⁸ Although EC law does not prohibit the creation of a dominant position, the *Dell Computer* and *Rambus v. Infineon* cases would likely lead to the same result.

Enforcement of patents that were inadvertently not disclosed, or disclosed late but in good faith, should not *a priori* constitute an abuse. European antitrust authorities and courts would, however, review demands for royalties or damages with skepticism in such a situation, and may refuse damages altogether if there is evidence that the SSO could and would have avoided the patent had the patent been disclosed in time. Article 82(a) EC prohibits a dominant firm from "*imposing unfair purchase prices... or other unfair trading conditions.*" Whether a royalty is "fair" depends not only on the value derived by the licensee, but also whether the licensees were placed in a position to avoid or reduce the cost by modifying the standard. If they were not, and this is attributable to the patent owner's negligence or inaction, royalties would likely be limited to:

- what the licensor would have been able to charge in a competitive environment in the absence of the standard, taking into account any impact that the absence of the standard would have had on total demand and on the licensee's market share, if there is evidence that the standard would have been abandoned;
- nothing or a small amount, if the licensee can prove with sufficient degree of probability that the standard could and would have been redesigned to avoid the patent altogether, and would have achieved the same success; and
- normal RAND terms if the patent holder can show with a sufficient degree of probability that its negligence had no impact on the technology choice.

Patent owners should avoid demands for injunctive relief as a means to exclude competitors from the market, or to force prospective licensees to the negotiating table and extract excessive royalties, as this would likely be regarded as an abuse and a violation of the conditions for exemption of the standard agreement (see more detailed discussion below).

It should be noted that competition law is not the only available cause of action. An SSO or prospective licensee could rely on other claims, depending on applicable law,

⁶⁸ See *Micro Leader Business*, Case T-198/98, judgment of December 16, 1999 (appeal from the decision to reject Micro Leader's complaint against Microsoft) suggesting a European IPR abuse theory.

including contract or promissory estoppel (or *venire contra actum proprium* theories in civil law countries) if an IPR Policy applies, patent abuse, or unfair competition and general tort theories (which can be quite broad in certain European jurisdictions).

(d) Incomplete IPR disclosure by an SSO member

Even if an IPR is disclosed in time, some patentees do not identify their patents. It may be, for instance, that the patent application has not yet been published, in which case the IPR owner has a legitimate interest in withholding detailed information, so as not to jeopardize the patent grant. The difficulty is that in these circumstances, it is impossible to verify the validity and relevance of a patent, or the need to design around it. Incomplete disclosure could in certain cases therefore have a impact on competition:

(i) Refusal to license an unidentified patent. Incomplete disclosure combined with a refusal to license (or a demand for excessive terms) may be part of a strategy designed to influence the SSO's technology choice. In response to the incomplete disclosure, the SSO might feel compelled to modify or withdraw the standard. This could affect competition to the extent:

- it results in a lower quality standard;
- it drives the SSO towards a different technology to which other essential IPRs apply for which implementers have to pay; or
- the cause the SSO to abandon the standard altogether, thus depriving consumers from the benefits of standardization.

These effects are particularly offensive if it is discovered later that the patent does not exist, is invalid, or did not read on the initial standard design at all.

The problem is that no EC antitrust cause of action is available unless the firm is involved in collusion (in which case Article 81 EC applies), is dominant in a relevant market at the moment of making the incomplete disclosure (in which case Article 82 EC applies), or becomes dominant afterwards (possibly as a result of the SSO decision to switch to a different technology or to abandon the standard).

An example of a firm using patent disclosures to influence an SSO's technology choice – although in that case the patents were identified, there may have been justifications, and the dispute was eventually settled – is the dispute in the late 1990's between Ericsson and Qualcomm. Qualcomm reportedly threatened to use its CDMA patents, which it claimed were valid and essential, to block ETSI's proposed UMTS third-generation wireless communications standard. Qualcomm may have had justification for its position, but attempted to use its CDMA patent claims to force ETSI towards an alternative Qualcomm-owned CDMA-based standard.⁶⁹

⁶⁹ The dispute was settled on March 25, 1999 with a royalty-bearing cross-license of blocking patents with the right to sublicense, and an agreement jointly to support a worldwide CDMA standard (with

As indicated above, if no cause of action is available under Articles 81 or 82, an SSO or prospective licensee might still be able to rely on other claims, including contract or promissory estoppel if an IPR Policy applies, or unfair competition and general tort theories.

(ii) *Promise to license an unidentified patent on FRAND terms.* Incomplete disclosure combined with a promise to license on FRAND terms should normally not give rise to liability – unless (i) the discloser knows the patent to be invalid or non-essential and (ii) uses the disclosure successfully to influence technology choice or to torpedo the standard.

As indicated above, incomplete disclosure hampers the SSO's ability to verify the validity or essentiality of the claimed patent. This should normally not be a problem. Implementers who doubt the validity or applicability of the patents, can state their willingness to pay FRAND for any essential patents owned by the discloser, invite the latter to identify these patents, and if it refuses to do so, explain that they believe no royalties are due in the absence of sufficient information confirming that it in fact owns any patents reading on Implementations.⁷⁰ The discloser can respond by bringing suit to collect royalties, in which case it will have to disclose the patents, and the Implementer can challenge validity or applicability. The patentee should, however, refrain from requesting injunctive relief against Implementers who challenge the validity or applicability of the patents, or the level of the royalty because:

- (a) it is estopped from demanding an injunction against Implementers who have declared that they are prepared to pay FRAND royalties, since it has publicly stated that it is willing to license any patents it has on such terms, and
- (b) a demand for injunctive relief would raise competition problems under Articles 82 EC in a standardized environment, or breach the conditions for exemption of the standard agreement (or associated patent pool) under Article 81(3) EC.

Accordingly, the patentee should limit itself to an action for damages (lost profits). Injunctions to exclude the Implementer from the market should be permissible only if the Implementer indicates it will refuse to sign FRAND license agreement regardless of a finding of validity and applicability of the patents, or breaches material provisions.

If one or more Implementers take this approach, the patentee must at some stage take a decision whether to insist on execution of patent licenses. In accordance with Article 82 and the conditions for exemption under Article 81(3) EC, the patentee is obliged to avoid discrimination. It must either require each and every Implementer to

FRAND licensing of essential patents) Ericsson bought Qualcomm's terrestrial CDMA wireless infrastructure business.

⁷⁰ Licensees who wish to take this approach may wish to pay royalties in escrow pending litigation in order to demonstrate their good faith.

pay a FRAND royalty, or relinquish the right to royalties altogether. Pursuant to Articles 81(3) and 82, as applied in a standardized environment, the patentee cannot at the same time refrain from enforcing its rights against certain Implementers while continuing to extract consideration from others, since this would tilt the playing field.

4.7 Compulsory licenses and standards

If a standardization body and the IPR owner discover a blocking IPR after finalization of a standard, market forces would normally ensure that a license would be granted. The licensor might be tempted to demand a high royalty, but should take care not to impose excessive terms, since the standard could be withdrawn. There may be situations, however, where the IPR owner refuses to license third parties. If so, compulsory licenses may be available in three circumstances:

- (a) if the IPR owner is a member of the SSO, the readiness to license is a condition for exemption under Article 81(3) EC of a standards agreement or patent pool containing restrictive provisions, even in the absence of dominance,
- (b) if the IPR owner is a member of the SSO, the readiness to license is a condition for exemption of a *de facto* standards arrangements between jointly dominant firms, even in the absence of any restrictive provisions; and
- (c) in exceptional circumstances under Article 82 EC, a compulsory license can be imposed on members or non-members alike, if a refusal to license results in an abuse of dominance.

(a) Third-party licensing by SSO members as a condition for ad hoc exemption.

As discussed, Article 81(1) EC may apply to standardization agreements that compel compliance or reduce innovation by giving competitors control over each other's product development.⁷¹

If the standards agreement falls under the block exemption regulation for joint R&D agreements (which requires that the parties meet certain conditions and that their joint relevant market share not exceed 25%), no requirement to license third parties exists.⁷²

If the market share is higher or the agreement does not meet the conditions of the block exemption, a restrictive standards agreement may still benefit from an individual exemption under Article 81(3) EC if it is indispensable to foster technical or economic progress, provided that it benefits consumers and does not eliminate competition. The last condition cannot normally be met without licensing of essential patents to third parties. Standards agreements and patent pools often benefit from positive feedback mechanisms (network effects) such as interoperability or reputation that reinforce the members' market position.

⁷¹ Guidelines on Horizontal Agreements, para. 166

⁷² Regulation 2659/2000 of November 29, 2000, on joint R&D Agreements, OJ No L 304, 5.12.2000, p. 7.

They may eventually displace other technologies, foreclosing competitors who have no access to the IPRs needed to implement the standard.⁷³

For this reason, the EC Commission made it very clear in *X/Open* that a policy of enabling third parties to implement the specifications was crucial for its *ad hoc* exemption decision. It confirmed this in the Guidelines on Horizontal Agreements.⁷⁴ Where blocking IPRs apply, however, publication of specifications is not enough. This suggests that to benefit from Article 81(3) EC, participants in a restrictive standards agreement may have to agree not only to publish the specifications, but also to license blocking IPRs on FRAND terms (unless the joint R&D block exemption is available). If the parties want to deviate from this principle, it is up to them to demonstrate that restrictions on the use of or access to the standard provide economic benefits that could not be achieved otherwise.⁷⁵

Whether third parties would have a direct right of action to demand a compulsory license is not clear. The EC Commission and the courts could find the standardization (and the restrictive provisions) illegal and unenforceable, and the courts may award damages, but may not be able to impose a positive obligation to license. The EC Commission cannot compel action the omission of which is not in itself an infringement.⁷⁶

(b) *Non-restrictive standard agreement between jointly dominant firms.*

If the standard is (i) based on non-discriminatory, open and transparent procedures, (ii) does not oblige manufacturers to comply with the standard, or (if compliance is mandatory) is

⁷³ In *X/Open*, the EC Commission explained that lead time (delay in third party access) may also result in the elimination of competition. The lead time advantage is “*different in nature from the competitive advantage which the participants in a research and development project naturally hope to get over their competitors by offering a new product on the market; they hope that their new product will result in a demand from users but their competitors are not prevented from developing a competing product, whereas in the present case non-members wanting to implement the standard cannot do so before the standard becomes publicly available and, therefore, are placed in a situation of dependence on the members’ definitions and the publication thereof.*” *X/Open Group*, above, para. 32.

⁷⁴ Guidelines on Horizontal Agreements, para 169.

⁷⁵ Guidelines on Horizontal Agreements, para. 169.

⁷⁶ 1984 ECR 1129, *Ford I*, para. 19-24. Thus, the EC Commission cannot force firms to enter into a contract to remedy an infringement of Article 81 EC (see also Case T-24/90, *Automec Srl v. EC Commission* [1992] 5 C.M.L.R. 431, at paras. 51 and 52, (“There cannot be held to be any justification for such a restriction on freedom of contract where several remedies exist for bringing an infringement to an end. ... Consequently, the EC Commission undoubtedly has the power to find that an infringement exists and to order the parties concerned to bring it to an end, but it is not for the EC Commission to impose upon the parties its own choice from among all the various potential courses of action which are in conformity with the Treaty.”)). This principle is limited to Article 81 EC, and does not apply to remedies for violation of Article 82 (Cases C-241 and 242/91 P, *RTE and ITP v. EC Commission*, above). If the technology owner is in a dominant position, a compulsory license may be available under Article 82 EC. National tort law or unfair competition law may provide additional relief.

“part of a wider agreement to ensure compatibility of products”;⁷⁷ (iii) does not prohibit non-compliant products; and (iv) does not include collective boycott provisions or per se restrictions of competition, Article 81 would normally not apply. In such a case, the EC Commission can impose conditions for exemption only if the standard is so successful that foreclosure effects appear even in the absence of restrictive provisions.⁷⁸ The EC Commission proposes to use a joint dominance test:

*“Private standardization by jointly dominant companies: “There will be clearly a point at which the specification of a private standard by a group of firms that are jointly dominant is likely to lead to the creation of a de facto industry standard. The main concern will then be to ensure that these standards are as open as possible and applied in a clear and non-discriminatory manner. To avoid elimination of competition in the relevant market(s), access to the standard must be possible for third parties on fair, reasonable and non-discriminatory terms.”*⁷⁹

*To the extent that private organizations or groups of companies set a standard or their proprietary technology becomes a de facto standard, then competition will be eliminated if third parties are foreclosed from access to this standard.”*⁸⁰

The EC Commission may therefore use the last condition of Article 81(3) as a lever to obtain an open licensing policy by successful private standard bodies even in the absence of restrictive provisions.

As explained, it is unclear whether third parties would have a direct right of action to demand a compulsory license, since there is case-law indicating that the EC Commission cannot compel action the omission of which is not itself an infringement.⁸¹ Nevertheless, where the standard is already implemented in the market and successful enough to have become a *de facto* industry standard, the EC Commission may be able to impose a compulsory license under the “*effet utile*” doctrine, arguing that this is the only effective way to restore

⁷⁷ *Ibid.*, para 163. This normally applies to standards adopted by recognized standards bodies based on non-discriminatory, open and transparent procedures.

⁷⁸ See, for instance, *Advanced Photographic System* (jointly developed by Kodak, Fuji, Canon, Minolta and Nikon), EC Commission press release IP/98/353 of April 15, 1998 (EC Commission extracted commitment to grant licenses to third parties two years before introduction of the APS system, and well before the end of its development, as well as a promise to provide know-how and technical assistance). The APS standard may have failed because of restrictive application of competition rules, preventing joint branding and joint marketing.

⁷⁹ Guidelines on Horizontal Agreements, para. 174.

⁸⁰ Guidelines on Horizontal Agreements, para. 175.

⁸¹ 1984 ECR 1129, *Ford I*, para. 19-24.

conditions of competition.⁸² Moreover, a compulsory license may be available under Article 82 EC.

(c) Refusal to license by dominant company.

As explained, under certain IPR Policies such as ETSI's, if a third party refuses to license an essential IPR, a competition complaint may be filed with the EC Commission seeking a compulsory license. Under Article 82 EC, compulsory licenses are available only if the IPR owner is in a dominant position, which is likely to be the case if the IPR is essential.⁸³

Whether technology providers acquire a dominant position in the market for the supply of technology needed for the implementation of a standard is a matter of fact, depending on a number of factors such as the nature of the standard (mandatory or not), the degree to which the standard is or can be expected to be adopted by the market participants, the level of competition between compliant and non-compliant products, the number of compliant products incorporating competitive technology, and the countervailing power of the users. In most cases, however, suppliers of essential proprietary technology incorporated in successful standards will be deemed to have a dominant position.

(i) Compulsory licensing under Magill. In *Magill*, the Court of Justice held that a compulsory license can be imposed under Article 82 in exceptional circumstances only, in essence, when an intellectual property right is used as an instrument to achieve an abusive result that cannot be justified by the "specific subject matter" and "essential function" of the intellectual property right.⁸⁴ This principle should be carefully applied, especially where standardization is still under way (in which case the IPR owner may not be found per se dominant). Examples of exceptional situations include the following:

- ***Discrimination.*** Article 82(c) prohibits discrimination by dominant companies. Accordingly, a dominant licensor cannot withhold a license from certain producers of

⁸² Schermers/Waelbroeck, *Judicial Protection in the European Union*, 6th ed., 2001, para. 40 ff, citing extensive case-law. Thus, for instance, the EC Commission is entitled to issue interim measures even though Regulation 17/62 contains no such powers, if such measures are the only way to preserve the useful effect of a final EC Commission decision. See Case 792/79, *Camera Care v. EC Commission*, 1980 ECR 119.

⁸³ EC Commission Communication on IPRs and Standardization, para. 2.1.8 (quoted above). See also the EC Commission's Open letter to ETSI and CBEMA, dated February 1994, concerning the ETSI IPR Policy: "Once an essential technology is included with the agreement of the IPR holder in a standard, particularly one that is made mandatory pursuant to Community legislation, the owner of the IPR relating to that technology occupies in most if not all situations a dominant position ... vis-à-vis manufacturers requiring licenses on that IPR in order to be able to participate in the market for the equipment in question."

⁸⁴ Decision 89/205/EEC, *Magill TV Guide*, OJ 1989, No L 78, p. 43; appealed to the Court of First Instance, Cases T-69/89, 70/89 and 76/89 [1991] ECR II-485, 535 and 575; further appeal to the European Court of Justice Cases C-2441 and 242/91, [1995] ECR I-743. See also *Volvo v. Veng*, Case 238/87, [1988] ECR 6211, ¶ 9; *Consorzio Italiano Della Componentistica Di Ricambio Per Autoveicoli (CICRA) and Maxicar v. Renault*, Case 53/87, [1988] ECR 6039, ¶¶ 15-16; *Micro Leader Business*, Case T-198/98, judgment of December 16, 1999.

standards-compliant products if it has already given a license to others. A discriminatory refusal may be justified by objective and proportional considerations, such as a refusal or inability to pay royalties.

- ***Withdrawal of license.*** Dominant firms cannot cut off licenses from a competitor with a view to taking over the latter's position in a downstream market for the standardized product.⁸⁵
- ***Legitimate reliance.*** Although there is no direct precedent, Article 82 would likely prohibit a dominant company from refusing a license if it has through its statements, action, or inaction knowingly induced third parties to make investments in the development of a standard in legitimate reliance on the future availability of a license. An example would be a company that gave and subsequently withdrew a commitment to license a particular IPR, or a firm that voted for a standard knowing that it had a blocking patent without disclosing it (see discussion above).
- ***Refusal to meet customer demand for a new product.*** Under Article 82(b) EC, a dominant company must not limit product innovation by depriving customers of a new product or an existing product with significant new functionality (*e.g.*, interoperable equipment) for which there is “*a specific, constant, and regular pattern of potential demand*”. In *Magill*, the EC Commission decided and the Court of Justice confirmed that a refusal to license in such circumstances is an abuse if the effect of the refusal was to “exclude all competition” on the downstream market. This may apply, for instance, to a blocking IPR necessary for an interoperability standard.⁸⁶

The “abuse of rights” approach adopted by the Court in *Magill* would require the balancing of various interests: that of the user community, that of the competing equipment manufacturer, that of the IPR owner (in connection with justification), and the interest of society at large. There should be no compulsory license if improved competition or interoperability does not outweigh the disadvantage of reduced incentive to innovate. The EC Commission stated in 1992:

“Although it could be argued that consumers would benefit in the short term if intellectual property rights were compulsively licensed to serve as the basis of standards, in the long term, investment in research and development in the standardized industrial sectors would dry up within the Community. Non-Community entities with extensive research activities would be encouraged to keep their

⁸⁵ Joined Cases 6 & 7-73, *Commercial Solvents* 1974 ECR 223; Case 311/B4, *CBEM v. CNT and IPB (Telemarketing)*, [1985] ECR 3261.

⁸⁶ This principle also applies to single-firm standards. The EC Commission is currently investigating whether to require Microsoft to license certain information necessary for third-party products to interoperate with Microsoft client and workgroup server operating systems, and middleware. It is argued that by depriving third parties of this information, the latter are unable to develop interoperating systems with additional functionality or quality.

technology out of Community markets, while low cost manufacturing centres outside the Community would benefit from cheap licenses to use Community technology."⁸⁷

In *Magill*, the society's interests in innovation were arguably not affected, since the program information was a mere by-product of the main activity, and a compulsory license therefore did not discourage the development of the program information in the future. Similarly, the balance of interest would be against a compulsory license if:

- (i) it is possible to meet the objective of the proposed standard otherwise without prohibitive expense, for instance, if the standard can be redesigned without prohibitive delay or expense;
- (ii) Is the IPR is not essential for the standard. This would be the case if there is another technically effective way to implement the standard, for instance by designing around the patent;
- (iii) the benefits of the standard do not outweigh the negative impact of compulsory license on innovation;
- (iv) the IPR owner has a valid justification to withhold a license (*e.g.*, insufficient return on investment).

(ii) *The IMS case and the essential facility doctrine.* In the recent *IMS Health* decision, the EC Commission used the essential facilities doctrine as a basis for a compulsory license, significantly extending past case law.⁸⁸ For the first time, the EC Commission ordered a compulsory license in the absence of any indication of any abusive conduct. The mere refusal to license an intellectual property right was considered abusive, although (a) there was no indication that the refusal to license was instrumental in, or buttressed, another abuse, and (b) the prospective beneficiaries of the compulsory license merely wanted to market a copy, without innovation or improvements. The essence of the Decision is set out in ¶ 70, which provides that:

"The criteria for the establishment of abuse under Article 82 in cases relating to the exercise of a property right, as further clarified by the Court in Bronner, are whether (a) the refusal of access to the facility is likely to eliminate all competition in the relevant market; (b) such refusal is not capable of being objectively justified; and (c) the facility itself is indispensable to carrying on business, inasmuch as there is no actual or potential substitute for existence for that facility."

There is no reference in this paragraph to there being a "exceptional situation", as required by the *Magill* case for compulsory licensing. It is suggested elsewhere (¶ 180), however, that the EC Commission does in fact consider the situation exceptional because of the three factors mentioned above in combination with the consideration that customers gave input in

⁸⁷ *EC Commission Communication on IPRs and Standardization*, COM 92/445, October 22, 1992, para. 5.1.15.

⁸⁸ *IMS Health*, EC Commission decision of July 3, 2001, Case COMP D3/38.044 (interim measures); suspended: Case T-184/01, orders of August 10, 2001 and October 26, 2001, in *IMS Health Inc. against the EC Commission of the European Communities*; http://europa.eu.int/eur-lex/en/dat/2001/c_303/c_30320011027en00190020.pdf; suspension confirmed April 22, 2002.

the development of the 1860 Brick Structure, which led to what the Decision finds is a *de facto* industry standard:

“The EC Commission considers that there are ‘exceptional circumstances’ in this case within the meaning of the phrase used by the ECJ in Magill (paragraph 50) read in conjunction with the Ladbroke and Bronner cases. IMS has created, in collaboration with the pharmaceutical industry over a long period of time, a brick structure which has become the de facto industry standard for the presentation of regional data services and which the Frankfurt Court has found is its intellectual property right. IMS is now excluding all competition from the market for regional data services by refusing, without objective justification, to license this structure to competitors. As clarified in the Ladbroke judgement, there is no requirement for a refusal to supply to prevent the emergence of a new product in order to be abusive.”

Thus, the Decision appears to rest on three pillars: (i) that, as a matter of fact, customers gave significant input into the development of the 1860 Brick Structure; (ii) the 1860 Brick Structure has become the *de facto* industry standard; and (iii) IMS Health’s competitors cannot compete with IMS Health unless they are permitted to use the 1860 Brick Structure. The Court of Justice suspended the EC Commission’s decision on the ground that the argument that a compulsory license could only be granted if the refusal to grant the licence “prevent[s] the appearance of a new product on a market separate from that on which the undertaking in question is dominant constitutes a serious legal question that merits full consideration by the Court of First Instance in the main action” (paragraph 105 of the order). If the EC Commission’s approach is eventually upheld, it could become difficult to refuse licenses of essential IPRs, even if the IPR owner did not participate in the SSO and did not engage in any abuse, and even if the objective is not to innovate further, but to market products identical to those already marketed by the IPR owner. This proposition strikes at the heart of intellectual property, and it is questionable whether this is in the public interest.

(d) What are FRAND terms, and how to resolve royalty disputes?

From the perspective of EC competition law, “fair and reasonable terms” mean that the consideration extracted in exchange for the license must be justifiable, rational, and not exploitative. “Non-discriminatory terms” means that all similarly situated licensees and licensors must have access to the technology on the same terms and conditions, so as to enable them to compete on a level playing field. Deviation from the non-discrimination principle is allowed only if there is an objective justification and the difference in treatment is proportionate to the difference in circumstances.

(i) Level of royalties. There is little case law relevant for the question what level of royalties would be appropriate. The EC Commission has carefully avoided this issue in its compulsory license cases, requiring the parties to negotiate to reach agreement.⁸⁹ Little guidance is found in the case-law relating to Article 82(a) EC, which prohibits “unfair” pricing, *i.e.*, a royalty so excessive that it bears no reasonable relation to the economic value

⁸⁹ See, for instance, *IMS Health*, EC Commission decision of July 3, 2001, Case COMP D3/38.044 (interim measures, suspended).

of the licensed IPR.⁹⁰ The Court in *United Brands* explained that this must be determined objectively. There are several methods (some briefly described below), most of which are not particularly useful in the IPR context. An added complication is that standards often require access to large packages of essential patents, and compliance with a standard could become prohibitively expensive if a full royalty were charged for each of them.⁹¹

- (a) ***Cost-based pricing.*** A royalty might be based on the historical total fixed and variable cost of development, production, and marketing of the technology. Several difficulties arise, however. First, it is notoriously difficult to calculate the total historical cost of an IPR.⁹² More important, a cost based analysis ignores the value of the sparks of imagination that may represent the essence of the innovation. Cost-based pricing also ignores risk, which is especially high in high technology or other sectors relying on expensive R&D. An ex post analysis ignoring development risk and the value of “inspiration” would not give the right incentives for innovation.

For these reasons, historic cost or replacement cost are probably not an appropriate valuation tool for IPRs.⁹³ IPR owners should at least be allowed to allocate the costs (including the cost of capital) of unsuccessful projects to successful projects in the same sector, and obtain compensation for the value added by inspiration. Finally, adjustments should be made if as a result of standardization, the market expands, the price per unit decreases, and the IPR owner’s market share decreases. The effect if market expansion may be so strong as to make licensing at a low royalty more attractive than using the IPR to torpedo the standard.

- (b) ***Same firm price comparison.*** A second method would be to compare the royalties to those charged for other IPRs by the same firm in a competitive environment, and if the differences are appreciable, impose on the IPR owner the burden to justify the difference. The comparison must be done on a consistent basis, *i.e.*, involving the same quality and volumes, and ensuring that

⁹⁰ Cf. *General Motors* ([1975] ECR 1367) and *United Brands* ([1978] ECR 207). The Court indicated in the latter case that “it is for the EC Commission to prove that the applicants charged unfair prices.” The EC Commission normally passes the burden of *prima facie* proof on to the complainant.

⁹¹ The MPEG-LA pool includes more than 300 patents. For further discussion of the economic theory of the “complements”, see Shapiro, “Navigating the Patent Thicket: Cross Licenses, Patent Pools and Standard Setting,” March 2001, available at <http://haas.berkeley.edu/~shapiro/thicket.pdf>, p. 4.

⁹² This is even more of a problem if courts or authorities were to attempt to second-guess historic costs, for instance, by using Forward-Looking Long-Run Average Incremental Cost (“LRIC”) as a basis. LRIC seeks to calculate the replacement cost of the assets, and attempts to approximate the working of a competitive market where players cannot simply pass on their historic or embedded costs of technology development to the user, but must lower prices in response to efficient new entrants. See *EC Commission Communication on interconnection pricing in a liberalised telecommunications market*, OJ No C 84, March 19, 1998, p. 3 ff. This system is counterfactual and therefore unreliable especially in an innovation context, and discourages further investments.

⁹³ Cf. in a different circumstance, *Newark Morning Ledger Company v. United States*, 945 F.2d 555 (3d Cir. 1991) (No. 90-5637), cert. granted, *Newark Morning Ledger Co. v. United States*, 503 U.S. 970 (1992) (No. 91-1135), and *rev'd*, *Newark Morning Ledger Co. v. United States*, 507 U.S. 546 (1993) (No. 91-1135).

the lowest price on which the comparison is based is not loss-making.⁹⁴ This is, again, difficult in the case of IPRs, which are by definition unique. Again, adjustments should be made for the consequences of standardization.

- (c) **Market based pricing.** The method under (b) is unhelpful if the dominant firm charges similar royalties for all of its IPRs or the transactions are not comparable. A solution might be to review royalties realized by other firms for comparable licenses in competitive markets conditions.⁹⁵ This approach raises the difficulties of (b) above, but in addition requires adjustments for volume, quality and product differences, overhead differences, whether or not the product is standardized, and commercial policy differences.

Some experts suggest that “rules of thumb” can be derived from industry practice, suggesting that royalties for packages of essential patents should be no more than, say, 1% per patent with a maximum of 5% of the sales price of a standard-compliant product. Others value packages of essential patents at 15% to 25% of the net revenues or net profit derived from the sale of implementations. The results may differ in different industry sectors. Royalties should probably be less if the IP is not essential from the consumer’s perspective, if substantial value is added, or if the technology is integrated in a system providing a range of services or functions not covered by the IPR.⁹⁶

- (d) **Profit comparison.** Perhaps the most difficult approach is the one suggested by the UK Office of Fair Trading. It takes the position that “[a]n undertaking’s prices in a particular market can be regarded as excessive if they allow the undertaking to sustain profits higher than it could expect to earn in a competitive market.”⁹⁷ This seems to require not only a calculation of profits (and therefore a comparison of costs and prices as in method (a) above), but also a consistent comparison between the profits on the dominated market and a competitive market. This could be done either by a comparison along the lines of (b) or (c) above, with the difficulties that entails, or a comparison of the actual profit with the risk-adjusted minimum return on investment that shareholders require before investing in a business serving that market.⁹⁸

⁹⁴ *United Brands*, above, para. 244 (bananas were sold at a loss in Ireland for a limited period in order to obtain market access, and the EC Commission use of Irish prices as the basis for the comparison was therefore arbitrary).

⁹⁵ Cf. Case 30/87, *Bodson*, ECR 1988, p. 2507 § 31 (“a comparison between the prices charged by the group of undertakings which hold concessions and prices charged elsewhere”).

⁹⁶ It is for this reason that the PC industry refused to pay MPEG-LA the same amount for DVD functionality in PCs as MPEG-LA was able to charge DVD player producers.

⁹⁷ “Assessment of Individual Agreements and Conduct”, The Competition Act 1998, Office of Fair Trading Guidelines, OFT 414, September 1999, para. 2.7.

⁹⁸ OFT 414, above, para. 2.14. See also the cases recently decided by the Dutch competition authority NMa relying on WACC calculations, described by Eric Pijnacker Hordijk, “Excessive Pricing under E.C. Competition Law: An Update in the Light of “Dutch Developments””, 28th Annual Fordham Conference on International Antitrust Law and Policy, October 26, 2001.

(e) **Efficient Component Pricing Rule.** The “ECPR” was first adopted in *Clear v. New Zealand Telecom* and confirmed on appeal by the Privy Council of the English House of Lords.⁹⁹ Although originally designed for telecommunications interconnection pricing, it might be of use in compulsory licensing for standards. According to the ECPR, the supplier of a product component should not be forced by government intervention to receive for it less than the price that makes that supplier indifferent as to whether the other components of the final product are provided by itself or others. At that price level, there is less risk of discouraging further innovation. Thus, the royalty could be set at the sum of :

- (a) the marginal cost of providing the technology (presumably minimal),
- (b) *minus* the benefit derived from the use of the licensed technology in the standard (the increased opportunity that the IPR owner derives from market expansion resulting from standardization, *e.g.*, the expected revenue increase from sales of compliant products by the IPR owner itself),
- (c) *plus* the opportunity cost to the IPR owner of licensing the IPR (lost profits), equal to the revenues from the next-best use in a non-standardized environment,
- (d) *minus* the marginal cost of the next-best use, to the extent avoided

This price would normally reward the IPR owner for its innovation, and at the same time allows opportunity for licensees to compete with the licensor on efficiency and quality of implementation, and addition of new functionality. An adjustment may have to be made, if the royalty rate does not cover costs.

(ii) **Disputes and injunctive relief pending settlement.** The best way to avoid disputes is to invite active competition for the contribution of technology to a standard.¹⁰⁰ Most European SSOs do not appear to get involved in pricing – although there are instances of SSOs such as the DVB Project ensuring that terms and conditions are known before final decisions are adopted. At the technology selection stage, technologies compete on quality and functionality, and there appears to be no reason not to allow them to compete on price as well. The SSO may have some buying power, but at this stage, there is at least some scope for competition, because the users are not yet locked in.

Implementers who doubt the fairness of a proposed royalty after adoption of a standard, should be able to challenge the royalty without the risk of being foreclosed from market access during the challenge. Owners of essential IPRs for *de facto* or *de jure* standards – and

⁹⁹ *Telecom Corporation of New Zealand Limited v. Clear Communications Limited*, Auckland High Court, [1992] 5 TCLR 166; Privy Council, [1995] 1 NZLR 385. The “Efficient Component Pricing Rule” is also known as the “Baumol/Willig” rule, after the highly regarded industrial economists who developed it, or the “parity rule”. See Baumol, Ordover and Willig, “*Parity Pricing and Its Critics: A Necessary Condition for Efficiency in the Provision of Bottleneck Services to Competitors*”, [1997] 14 Yale J.on Reg. 145.

¹⁰⁰ See also Shapiro, “Navigating the Patent Thicket”, above, p. 26.

especially those who have committed to FRAND licensing in order to obtain an exemption under Article 81(3) EC – should limit themselves to suits for damages and refrain from requesting injunctive relief against implementers. As explained above, requests for injunctive relief would be inconsistent with their promise to license. It would also create concerns under Article 82 EC – taking into account that the owner of essential IPRs has disproportional power in a standardized environment where inter-technology competition is very limited. Producers of compliant products have no alternative, and the threat of injunctive relief would be inconsistent with the principle of equality of arms. Injunctive relief risks significantly reducing competition pending the litigation (which may be lengthy as a result of challenges to the validity and applicability of the patent), to the detriment of consumers. Injunctions to exclude the Implementer from the market should therefore be permissible only if the Implementer indicates it will refuse to sign FRAND license agreement regardless of a finding of validity and applicability of the patents, or breaches material provisions.

Experience suggests that when deprived of the ability to obtain injunctive relief, IPR owners will normally negotiate so as not to leave the royalty setting to the vicissitudes of litigation.

(iii) Cross-licenses. Essential IPR owners may request cross-licenses as alternative consideration from implementers who do not wish to pay royalties. It has been argued in at least one EU standardization dispute that (a) competition law does not allow a provision requiring licensees to cross-license the essential IPR owner and other licensees for free, and that (b) a royalty-free cross-license to the essential IPR and all other licensees would in effect prevent or inhibit the creation of a patent pool, because owners of essential patents who sign the Reciprocal Patent License are prevented from charging fair, reasonable, and non-discriminatory royalties for their patents.

No antitrust concern arose, because in the particular case, the licensees had the alternative of signing a royalty-bearing license if they wished to avoid the cross-license. In any event, a licensor of an Essential Patent is not required to license them to competitors who themselves refuse to make their Essential Patents available on FRAND terms.¹⁰¹ If it could not withhold its license in such circumstances, the latter, if they prevailed, would be able to take advantage of the standardization to control the market for Implementations while maintaining barriers to entry. The cross-license should, however, be limited to essential IPRs, and not cover additional non-essential improvements (unless a FRAND royalty-bearing license is made available as an alternative).¹⁰²

5. SUMMARY AND CONCLUSION: Some standards for standards

1. ***Openness.*** The greater the competitive advantage derived from participation in standardization, the more open a standards group must be.

¹⁰¹ *MPEG-II*, EC Commission press release IP/98/1155 and *DVD*, EC Commission press release IP/00/1135.

¹⁰² For the possibility of obtaining royalty-bearing grant-back licenses, see Article 2(1)(4) of the Technology Transfer Block Exemption Regulation.

2. ***No burdensome membership conditions.*** Especially in case of formal standards organizations, no obligations to share technology or other unreasonably burdensome conditions should be imposed as a condition for membership. Standard license agreements should be fair for both licensees and licensors.
3. ***Open access.*** The results of standardization should be made generally available to members and outsiders alike, on a non-discriminatory basis, as soon as reasonably possible.
4. ***Legitimate objectives.*** Standards should be avoided unless necessary for (and reasonably related to) legitimate objectives that qualify as essential requirements.
5. ***Reduce foreclosure.*** Especially in case of manufacturers controlling large market shares or in case of *de facto* or *de jure* mandatory standards, standardization must not be exclusive and must not prevent the use of additional technology, or the development of competing standards.
6. ***Avoid design specifications.*** To ensure maximum competition on quality and product differentiation, standardization depth (or the fixing of design specifications or freezing of implementation technology) must be limited to what is indispensable and proportionate in light of the standard's objective.
7. ***Fair technology selection procedures.*** The selection of technology for a standard should be based on objective, relevant, qualitative, and verifiable criteria. The total costs of a technology may be a ground for rejection. Equal treatment should be ensured regardless of the origin of the technology. Selection tests should be conducted in a fair, open and verifiable manner, by persons or entities that have no direct interest in the outcome. There should be a possibility of appeal to an independent body.
8. ***Limit exchange of information.*** Exchange of information should be limited to what is necessary to develop the standard. Implement standard antitrust compliance procedures to avoid spill-over.
9. ***Avoid unnecessary compulsory licenses.*** Compulsory licensing should be limited to cases where:
 - (a) the standardization body incurred expenses, legitimately relying on the expectation, induced by the IPR owner, that a license would be available on fair reasonable and non-discriminatory terms and conditions; or
 - (b) the license is necessary for the development of a new product for which there is "a specific, constant, and regular pattern of potential demand", which cannot be developed without standardization and without access to the IPR, and where the interests of the IPR owner and innovation do not outweigh those of standardization.
10. ***License the results on fair, reasonable and non-discriminatory terms.*** If standards are essential for market access, and IPRs are essential for compliance with the

standards, then the licensors must avoid any of the following potentially abusive licensing practices:

- ***discriminating pricing*** (including bilateral deals between licensors) for IPRs that are “essential” for compliance with the standard, thus distorting the level playing field in the downstream market;
- ***cross-subsidisation*** of activities in the downstream market, using royalties to gain a competitive advantage;
- ***price squeezing*** by imposition of royalty rates that do not leave an adequate margin for competitors;
- ***excessive royalties*** for the IPRs; ***predatory pricing*** in the downstream market, and ***tying*** of essential IPR to technology or products that are not essential to comply with the standard; and
- Litigation to obtain ***injunctive relief*** (as opposed to damages) against non-licensed users of essential IPRs who have declared a willingness to agree on fair, reasonable and non-discriminatory terms and conditions, unless the user is in breach of the license agreement or not in good faith.

The EC Commission’s case-law and practice in the context of essential facilities suggests that licensors of patents that are essential for compliance with a *de jure* or *de facto* mandatory should ensure separate accounting for their downstream manufacturing of standard-compliant products, so as to be able to demonstrate that they do not give competitive advantages to their own manufacturing divisions that they withhold from outsiders.