

OPEN STANDARDS: PUBLIC POLICY ASPECTS AND COMPETITION LAW REQUIREMENTS

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A. INTRODUCTION

Neelie Kroes, former EU Commissioner for Competition Policy and current EU Commissioner for the Digital Agenda, recently stated that “[i]t is in society’s best interest that standards should be as open as possible”.¹

This paper analyses the concept of “open standards” from a public policy and competition law perspective, addressing two interrelated policy developments:

First, the European Commission (the “Commission”) is modernising the EU ICT (International and Communication Technologies) standardisation policy. One of the aims is to reduce the dependence on the formal European Standards Organisations (ESOs) and to put increased reliance on standards emerging from “non-formal” fora and consortia. In that context, the Commission has proposed a list of “attributes”, many of which relate to open and transparent standards-setting procedures and the availability of resulting standards, which these organisations and the individual standards must respect in order to qualify for inclusion in EU policies, legislation and procurement.²

Second, the Commission is updating its guidance on the application of competition law to standards setting. Competition authorities and courts in both the US and the EU have traditionally been lenient in the application of competition law to co-operation regarding standards. To ensure that standards do not foreclose markets or otherwise restrict competition, however, competition law requirements often apply to the processes by which standards are adopted and the conditions under which they are made available for implementation. Recent high-profile cases show that industry standards can create difficult problems and have made industry standards a priority area for competition policy and enforcement. In May 2010 the Commission published new draft

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¹ N Kroes, European Commissioner for Competition Policy, “Setting the Standards High”, Address at Harvard Club of Belgium, “De Warande” Brussels, 15 October 2009. Reference: SPEECH/09/475.

² Commission White Paper, “Modernizing ICT Standardisation in the EU—The Way Forward”, COM(2009) 324 final, 2.

horizontal co-operation guidelines which reflect these recent experiences (“Draft 2010 Horizontal Guidelines”).³

The legal and policy aspects addressed by the Commission services coincide in important respects. The EU rules and policies aim to ensure requisite openness and transparency in the processes by which standards are created and to ensure the availability of the standards once they have been adopted. This should in turn safeguard consumer welfare by enabling high quality standards and thriving competition in goods and services implementing the standards. “Open standards” has become a catchphrase.

The recent developments raise interesting questions about appropriate public policy measures to encourage open standards and, in particular, the extent to which regulators should set out requirements for standards-setting organizations (SSOs). They also raise important questions about what SSOs and participants in standardisation activities must do to comply with competition law requirements.

In the following, these aspects of standardisation are being considered in more detail. The first part discusses the rationale behind standardisation, explores the concept of and the benefits associated with open standards, and analyses recent policy developments at the EU level.

The second part considers the relevant competition law requirements that apply to industry co-operation on standards. EU competition policy strongly supports the notion that industry standards should be open, transparent and non-discriminatory. A framework is presented for analysing whether individual standardisation agreements could lead to unlawful restrictions of competition in the markets involved.

B. OPEN STANDARDS: IMPLICATIONS FOR INNOVATION AND COMPETITION

1. The Logic and Limits of Standardisation

A standard is usefully defined as a set of technical specifications that provides a common design for some product or process.⁴ Standardisation agreements can cover various issues such as different grades or sizes of a particular product or technical specifications in markets where compatibility and interoperability with other products or systems is essential.⁵ It is the latter type of standards that will be considered here.

³ Available at: http://ec.europa.eu/competition/consultations/2010_horizontals/guidelines_en.pdf.

⁴ H Hovenkamp, “Standards Ownership and Competition Policy” (2007) 48 *Boston College Law Review* 87. Available at: <http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=2347&context=bclr>.

⁵ Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements, [2001] OJ C3/2, para 159.

Properly executed, standardisation generally leads to economic efficiency and substantial consumer benefits.⁶ Industry standards create compatibility and interoperability among products which is increasingly essential to many industries. This is particularly the case in the IT, telecoms and other network sectors. In 1998, the OECD defined the information and communications technology (ICT) sector as “a combination of manufacturing and services industries that capture, transmit and display data and information electronically”.⁷ Consequently, standardisation activities “are especially important in the information and communication technology industries, where the need for devices and networks to interoperate creates strong pressure for industry participants to devise common technical standards”.⁸ This allows customers and consumers around the world to connect, interact and to enjoy the benefits and convenience of new and improved IT and telecommunications products and services. Frequently, network effects mean that the customer value increases as more people use the same underlying technical solution or specification.⁹ Evident examples are the standardisation of basic protocols and interfaces which have been a prerequisite for the development of the Internet.¹⁰ Software-to-software interoperability standards are in turn indispensable for the myriad of IT- and Internet-based products and services available today, which have become essential components for all types of industries and businesses, and have become integral in the lives of private consumers.

⁶ See eg M Lemley, “Antitrust Intellectual Property and Standard Setting Organizations” (2002) 90 *California Law Review* 1889; *Broadcom Corp v Qualcomm, Inc*, No 06-4292, slip op at 13–14 (3d Cir 4 September, 2007):

“Private standard setting advances [the goal of maximising consumer welfare] on several levels. In the end-consumer market, standards that ensure interoperability of products facilitate the sharing of information among purchasers of products from competing manufacturers, thereby enhancing the utility of all products and enlarging the overall consumer market. . . . This, in turn, permits firms to spread the costs of research and development across a greater number of consumers, resulting in lower per-unit prices. . . . Industry-wide standards may also lower the cost to consumers of switching between competing products and services, thereby enhancing competition among suppliers.”

⁷ OECD, *Measuring the Information Economy Available* (2002), 19. Available at: <http://browse.oecdbookshop.org/oecd/pdfs/browseit/9202151E.PDF>.

⁸ M MacCarthy, “Open Standards, Competition and Patent Policies”, unpublished manuscript, Georgetown University (2009), 2. Available at: <http://explore.georgetown.edu/publications/43082/>.

⁹ D Geradin and M Rato, “Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of FRAND” (2007) 3 *European Competition Journal* 101, 103–04. Available at: <http://ssrn.com/abstract=946792>. According to the network effect theory, goods or services are valuable to a customer depending on the number of customers already owning those goods or using those services. Each new user of the product derives private benefits, but also confers external benefits on existing users.

¹⁰ See eg DJ Weitzer, “Standards, Patents and the Dynamics of Innovation on the World Wide Web” (2004). Available at: www.w3.org/2004/10/patents-standards-innovation.html.

Apart from allowing for interoperability, agreement on certain technological formats and trajectories can also reduce risks and speed up market adoption of new technologies. Implementers might otherwise have to take the risk of investing in one out of several technologies without knowing if it will become redundant, and buyers of the products and services could hesitate to purchase a certain variant until a *de facto* standard has emerged that makes alternative technical formats obsolete.¹¹ This means that the standardisation leads to economic benefits through unified platforms for the development of new products, network effects in the introduction of new technologies and economies of scale in production.

Finally, standardisation may also stimulate competition and lower prices in the markets for the standardised products and components by increasing the substitutability among different manufacturers' products.

In order for a standard to have these significant social benefits, it must be widely employed. This means, on the other hand, that successful standards inherently reduce the number of technical formats or variations at the level that is being standardised. Products not complying with the industry standard will as a consequence often struggle to make it to market or gain significant sales. Holders of intellectual property rights (IPRs) for technology that has been included in the standard could, unless restricted, therefore become gatekeepers to the market(s) and enjoy significantly enhanced market power in licensing.¹²

¹¹ The recent battle between Sony's Blu-Ray and Toshiba's HD-DVD is an example of two technologies competing to become the *de facto* standard, in this case for the next-generation DVD format. For further details, see eg T Smith, "Sony's Blu-ray Triumphs over Toshiba's HD-DVD", March 2008, Available at: www.wiglafjournal.com/pricing/2008/03/sonys-blu-ray-triumphs-over-toshibas-hd-dvd/. Competition between standards can result in consumer confusion and a delay in consumer interest, which may forestall widespread adaption. On the other hand, it results in user choice and competing standards can survive if consumers have different preferences and value choice over interoperability. See SA Bird, "Government at the Standard Bazaar" (2007) 18 *Stanford Law & Policy Review* 35, 48.

¹² The significance of the market power that the IP owner will realise as a result of having its IP included in the standard is mainly dependent on three factors.

(1) The level of competition that existed *ex ante*, before the technology selection was made. The more and the closer the substitutes were, the more inter-technology competition has been eliminated.

(2) The level of competition that exists between alternative standards *ex post*. In some industries, rival standards and proprietary solutions may coexist and compete effectively, which may make it less likely that an essential patent holder for one of those alternatives would possess market power. If the IP-holder were to raise the price of its input, the downstream implementer of the standard would be unable to compete. However, for important industry standards this is not always true.

(3) The level of "lock-in" that occurs in the selection process or thereafter. If standardisation is quick and unproblematic, and the standardised products uncomplicated, there may be little to prevent the industry from simply inventing around or redefining a standard in the event that one or several IP-holders were to raise prices. In reality it is often practically and economically very difficult to undo or change a standard that has been implemented. Technologies and patents soon become unavoidable. Industry frequently invests heavily in learning the techniques involved, developing infrastructure and products that implement the standard, and in production plants and equipment, etc, all tailored specifically for the anticipated technical format. Since downstream

The reduction of inter-technology competition that may result from standardisation means that it is important to consider the scope of what is being standardised. Kept at the right level, standardisation allows competition to thrive by enabling interoperability and compatibility. Such standards create a common baseline, from which developers and vendors can make competing implementations in the form of applications and services. However, agreeing on one technical solution limits the scope for inter-technology competition. “Over-standardisation” therefore tends to lessen competition through innovation, product development and design, and to reduce customer choice. Product differentiation is an important value since consumers have different preferences.¹³ Standards should therefore not overreach or define more than necessary—they should define the baseline and allow companies to compete from there.¹⁴ According to the Commission, “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.”¹⁵

The scope of a standard is nonetheless a difficult issue to assess, because it goes to the technical subject matter, ie the substance, of the standard. The scope of a standard could ultimately be an antitrust issue in situations where over-standardisation limits competition and product variety without being necessary in order to ensure interoperability or bring other countervailing benefits. Traditionally, however, competition authorities (and courts when deciding competition matters) have been reluctant to judge the technical merits of standards—a question they are arguably ill-placed to assess.¹⁶ Instead they have focused on the processes and procedures by which the standards were adopted and the conditions under which these were made available for implementation. These aspects of standardisation are also essential for the competitive

manufacturers can count on competitors’ products being closely substitutable (complying with the same standard), time is often of the essence in these investments. This means that implementers of the standard are soon locked-in to the selected technological format and it becomes commercially indispensable to comply with the standard. Investments like these can give rise to substantial obstacles to the use of alternative technologies and lead to “lock-in”. See DG. Swanson and WJ Baumol, “Reasonable and Non-discriminatory (RAND) Royalties, Standards Selection, and Control of Market Power” (2005) 73 *Antitrust Law Journal* 1, 9; J Farrell, J Hayes, C Shapiro and T Sullivan, “Standard Setting, Patents, and Hold-up” (2007) 74 *Antitrust Law Journal* 603; C Madero Villarejo and N Banasevic, “Standards and Market Power” (2008) 5(1) *CPI Antitrust Chronicle* 2 (formerly *GCP Magazine*).

¹³ Hovenkamp, *supra* n 4, 87. Similarly, if competing standards are developed and adopted by the market, the result may be standards-agnostic devices or multistandard platforms that are interoperable through conversion or gateway tools or otherwise. This is less difficult in regard to software as compared to hardware. Bird, *supra* n 11, 48.

¹⁴ See DA Balto, “Standard Setting in the 21st Century Network Economy” (2001) 18(6) *The Computer & Internet Lawyer* 5, 9. Available at: <http://lawseminars.com/materials/07STANVA/stanva%20m%2007g%20Balto%209-27.pdf>.

¹⁵ 2001 Horizontal Cooperation Guidelines, para 173. See also Draft 2010 Horizontal Cooperation Guidelines, para 308.

¹⁶ See Hovenkamp, *supra* n 4, 109.

implications of the standards and can more readily be made subject to observable regulatory requirements. Recently, this has led to much discussion about “open standards”.

2. Open Standards

“[T]he internet would not be the success it is today, had it not been built on open, interoperable standards and protocols . . . It was impossible to predict the many ways internet services would develop and it took an open environment to have the very successful—and unexpected—services that we have today. Not any one company could have dreamt them all.”¹⁷

(a) *The Concept of Open Standards*

The term “open standard” is frequently used, but the meaning is not unanimously shared. According to one definition, an open standard consists of:

“a publicly available technical ‘specification’ (i.e., a set of technical instructions and requirements) that is developed or approved/ratified and maintained by a consensus-based process in a voluntary, market-driven standards-setting organization that is open to all interested and qualified participants, and for which any patent rights necessary to implement the specification are made available by those developing the specification to all implementers on reasonable and non-discriminatory terms (with or without a royalty or fee).”¹⁸

Similar principles have been agreed at World Trade Organization (WTO) level. The Agreement on Technical Barrier to Trade sets out a code of good practice for both governments and non-governmental or industry bodies to prepare, adopt and apply voluntary standards.¹⁹ According to the WTO, over 100 countries have signed the agreement and over 200 standards-setting bodies apply the code.²⁰

¹⁷ J Almunia, European Commissioner for Competition Policy, “Competition in Digital Media and the Internet”, UCL Jevons Lecture, 7 July 2010. Available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/365>.

¹⁸ J Markwith, “Key Intellectual Property Issues in Acquisitions Involving Open Source Software” (2008) 14(2) *Computer and Telecommunications Law Review* 45, 47. This definition should be consistent with the definitions used by various formal SSOs. For example, the International Telecommunication Union (ITU) has listed relevant elements of open standards at: www.itu.int/ITU-T/othergroups/ipr-adhoc/openstandards.html

¹⁹ The Decision of the Committee on principles for the development of international standards, guides and recommendations with relation to article 2, 5 and annex 3 of the WTO/TBT Agreement. Available: www.wto.org/english/docs_e/legal_e/17-tbt.pdf.

²⁰ Agreement on Technical Barriers to Trade. The rules and the guiding principles of the standardisation process set out in this agreement cover also the ICT area. A Code of Good Practice for the Preparation, Adoption and Application of Standards by standardising bodies is included as an annex to the agreement.

Three formal SSOs (referred to as ESOs) have been recognised to partner with the EU: CEN,²¹ CENELEC²² and ETSI.²³ The ESOs form the foundation of the formal European standardisation system together with the official national standards bodies.²⁴ These bodies should follow the WTO principles and similar principles laid down by the EU.²⁵

The Commission has realised that the EU standardisation policy and reliance on a centralised system of formal standards bodies is outdated.²⁶ Particularly in the fast-paced IT industry, “non-formal” SSOs, such as OASIS, W3C and IETF and other fora and consortia for standards development, play a crucial role. In 2007 it was estimated that consortia and fora are the origin of around 60 per cent of the standards produced in the ICT sector.²⁷ In fact, the most widely implemented standards in the ICT sector, such as HTTP, HTML, CSS, Wifi and XML, have resulted from non-formal standardisation organisations.²⁸

²¹ CEN (European Committee for Standardization), founded 1961, provides the planning, drafting and adoption of European Standards in all areas of economic activity with the exception of electrotechnology and telecommunication (www.cen.eu).

²² CENELEC (Comité Européen de Normalisation Électrotechnique), founded 1973, is a non-profit technical organisation responsible for European Standardisation in the area of electrical engineering (www.cenelec.eu).

²³ ETSI (The European Telecommunications Standards Institute), founded 1988, is an independent, non-profit, standardisation organisation that produces and performs the maintenance of ICT standards and specifications. ETSI is responsible for having standardising, among others, the GSM cellphone system (www.etsi.org).

²⁴ In the EU, the regulatory framework for the European Standardisation System (ESS), provides for transparency between national standards organisations (NSOs), the Commission and European standards organisations (ESOs). See Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services, [1998] OJ L204/37. Apart from the NSOs, the three designated ESOs—CEN, CENELEC and ETSI—are formal actors in standards development. The ESOs are considered to be bodies pursuing an objective of general European interest and are also partly financed by the EU. The legal framework of standardisation in the ICT sector is completed by Council Decision 87/95/EEC of 22 December 1986 on standardisation in the field of information technology and telecommunications, [1987] OJ L36. This regulatory framework is under review as part of the modernisation efforts by the EU and is expected to be replaced in the near future.

²⁵ The EU standardisation system is based on the basic principles of “transparency, openness, consensus, independence of vested interests, efficiency and decision-taking on the basis of national representations”. Council Resolution of 18 June 1992 on the Role of European Standardisation in the European Economy, [1992] OJ C173/1, recital 8 and 9. Moreover, according to the regulator; “standardisation is a voluntary, consensus-driven activity, carried out by and for the interested parties themselves, based on openness and transparency, within independent and organised standards organisations, leading to the adoption of standards, compliance with which is voluntary”. Council Resolution of 28 October 1999 on the role of standardisation in Europe, [2000] OJ C141/1, recital 11.

²⁶ “Fora and consortia standards cannot currently be referenced, even if they could be of benefit in helping to achieve public policy goals. Without decisive action the EU risks becoming irrelevant in ICT standard setting which will take place almost entirely outside Europe, and without regard for European needs.” Commission White Paper, *supra* n 2, 4.

²⁷ See Study on the Specific Policy Needs for ICT Standardisation (2007), 15. Available at: http://ec.europa.eu/enterprise/sectors/ict/files/full_report_en.pdf.

²⁸ *Ibid.*, 105.

In 2009, the Commission therefore presented a White Paper outlining strategies for modernising its ICT standardisation policy.²⁹ A key concern has been how to involve non-formal standards bodies and the standards emerging from such activities while ensuring that appropriate standardisation procedures have been applied and that the resulting standards meet requisite criteria. This led the Commission to propose a list of attributes that should be met by SSOs and standards in order to be eligible for inclusion in European legislation and policies. Table I presents the proposed attributes that relate to the “openness” of the standardisation process and the resulting standards.

The Commission’s proposal has spurred significant discussion, particularly regarding the propriety of regulatory measures directing the organisation of SSOs and their IPR regimes.³⁰ The Commission is expected to present a legislative package which, among other things, will be based on the White Paper. Time will tell what the final policy will include and how detailed it will be. It can nevertheless be expected that the modernised EU policy will affect the balance between traditional formal SSOs, open standards-bodies of a less formal nature and standards development in restricted consortia. While the standards work in the formal ESOs will increasingly be supplemented by standards from non-formal bodies, it seems likely that the Commission will seek to prevent restricted consortia from gaining prominence through EU policies.

(b) The Benefits of Openness for Competition and Innovation

Standardisation can promote innovation by bringing together complementary expertise and resources and by combining and disseminating best-of-breed technologies. The actual innovation and technical development is often undertaken before the actual standardisation and the technology is then submitted to an SSO for specification. Standardisation can also take place through collaborative or individual efforts alongside or as part of the standardisation process. In either case, openness, in terms of wide participation and access to the standardisation process for innovators and technology providers, is conducive to technical development. As long as the process remains manageable and allows for efficient standardisation work, there is a strong public policy case for open standard procedures that invite innovators to the table.

This does not exclude that open SSOs are supplemented by standardisation efforts undertaken in more restricted groups, eg where it would be difficult to reach *ex ante* agreement in the industry or where development through open procedures would make the practical work less efficient to manage.³¹ The

²⁹ Commission White Paper, *supra* n 2, 2.

³⁰ See eg www.talkstandards.com/modernising-ict-standardisation-in-the-eu/.

³¹ For example, when a group of co-operating parties believe they will be quicker and more efficient in developing a product or specification that answers a market need, they should generally be encouraged to do so. The circumstances under which such co-operation on standards may restrict competition will be discussed in the next section.

Table 1. Attributes Proposed by the European Commission Relating to “Openness”

Attributes for the standards-setting procedure	Attributes for the resulting standards
<p><i>Openness:</i> The standardisation development process occurs within a non-profit-making organisation on the basis of an open decision-making process, accessible to all interested parties. The open standardisation process is driven by the relevant stakeholder categories and reflects user requirements.</p>	<p><i>Availability:</i> Resulting standards are publicly available for implementation and use at reasonable terms (for a reasonable fee or free of charge).</p>
<p><i>Consensus:</i> The standardisation process is collaborative and consensus based. The process does not favour any particular stakeholder.</p>	<p><i>Intellectual Property Rights:</i> IP essential to the implementation of standards is licensed to applicants on (F)RAND terms, which includes, at the discretion of the IPR holder, licensing essential IP without compensation.</p>
<p><i>Balance:</i> The standardisation process is accessible at any stage of development and decision making to relevant stakeholders. Participation of all interested categories of stakeholders is sought with a view to achieving balance.</p>	<p><i>Neutrality and stability:</i> Standards should whenever possible be performance oriented rather than based on design or descriptive characteristics. They should not distort the (global) market and should maintain the capacity for implementers to develop competition and innovation based upon them. Additionally, and in order to enhance their stability, standards should be based on advanced scientific and technological developments.</p>
<p><i>Transparency:</i> The standardisation process is accessible to all interested parties and all information concerning technical discussions and decisions making is archived and identified. Information on (new) standardisation activities is widely announced through suitable and accessible means. Consideration and response is given to comments by interested parties.</p>	<p><i>Quality:</i> The quality and level of detail are sufficient to permit the development of a variety of competing implementations of interoperable products and services. Standardised interfaces are not hidden or controlled by anyone other than standard setting organisations.</p>

Source: Commission White Paper, “Modernizing ICT Standardisation in the EU—The Way Forward”, COM(2009) 324 final, 4–6.

emergence of a large number of specialised standards-setting fora and consortia in the IT industry indicate that different models may be appropriate in different circumstances. *Ad hoc* consortia and collaborations of a more restricted nature play a complementary role as feeders of new technology. Promising standards resulting from restricted collaborations are frequently contributed to an SSO for

adoption as an open standard.³² This may encourage widespread adoption of the standard which is in the interest of the developing companies.³³ Similarly, small private groups may be formed within an SSO to work out proposals for evaluation by the larger group.³⁴

Open standardisation can also stimulate innovation by providing unified and interoperable platforms for the development of new products. Wide access to a resulting standard can stimulate competition through innovation, quality and price. It typically also reduces dependence on a specific product or supplier. Vendor lock-in can occur in different ways but is avoided or mitigated in circumstances where the standard is generally available and accessible.³⁵ The EU Digital Agenda indicates that by 2013 EU Member States should have implemented goals enunciated by the Member States for the “systematic promotion of open standards and interoperable systems”.³⁶ By avoiding closed standards in public procurement or regulation, European governments seek to avoid vendor lock-in and to avoid giving specific firms or property-holders market power that subsequently can be exploited.

In the IT and software industry, technical and economic developments such as cloud computing have intensified the discussion on interoperability, mobility and avoidance of vendor lock-in.³⁷ Open platform standards play a key role in these respects, in which portability/mobility may become not only a technical possibility but a customer requirement. Taken together, these developments can

³³ If such a standard is not subsequently adopted by an open SSO, it will be introduced to the market as a proprietary alternative, competing on quality and price with other standardised or non-standardised solutions. Where a proprietary standard is introduced to the market, implementers should be wary about the terms and conditions on which it is made available, in order to avoid getting locked-in to standards for which onerous terms might be imposed.

³⁴ This issue will be further discussed in the next section.

³⁵ One example of this are the “design teams” that exist within the realm of the IETF and which can have closed membership and private meetings but where the output is subject to approval, rejection or modification by the relevant working group in IETF. See www.ietf.org/iesg/statement/design-team.html.

³⁶ Roadmap for Open ICT Ecosystems, The Berkman Center for Internet & Society at Harvard University (2005), 26. Available at: <http://cyber.law.harvard.edu/epolicy/roadmap.pdf>. This report distinguishes between lock-in through knowledge, interoperability, functionality, standards, and security.

³⁷ In April 2010, ministers from all 27 EU Member States declared that they would “embed innovation and cost effectiveness into eGovernment through the systematic promotion of open standards and interoperable systems, development of EU wide e-authentication schemes and proactive development of e-invoicing, e-procurement and pre-commercial procurement”. Granada Ministerial Declaration on the European Digital Agenda. Available at: www.eu2010.es/export/sites/presidencia/comun/descargas/Ministerios/en_declaracion_granada.pdf.

³⁷ Cloud computing is Internet-based computing, whereby shared resources, software and information are provided to computers and other devices on demand. Rather than purchasing servers, software, data centre space or network equipment, users buy those resources as a fully outsourced service and access them through a web browser, regardless of their location or what device they are using. See http://en.wikipedia.org/wiki/Cloud_computing.

be expected to enable further innovation in applications and services, expand market demand, and increase substitutability between competing applications and services.

Interoperability standardisation thus involves a mix of standardised parameters (the “baseline”) and competing proprietary implementations and services. Open standards and proprietary innovations, products and services are therefore not at odds, but complementary components of the technology markets.³⁸ Moreover, there is normally no dichotomy between open standards and IPRs. However, the terms on which such IPRs are made available to implementers often determine the degree of availability of the standard.

A recent report commissioned by the Commission encourages SSOs to continue to ensure innovation-friendly policies, including finding a balance between the interests of the users of standards and the rights of IPR owners.³⁹ The report also highlighted that such a balance—aiming to promote innovation incentives in the relevant field—should take into consideration different business models and may look different in different areas of standardisation.⁴⁰

This is consistent with the Commission’s interim findings regarding IPRs in SSOs. In general, European policy allows proprietary technologies, protected by IPRs, to be incorporated in standards. Competition law (as further discussed in the next section) will often nevertheless require that essential IPRs for important industry standards are made available so that any interested party can implement the standard. This usually means that licenses must be made available on fair, reasonable and non-discriminatory (FRAND) terms. FRAND licensing also has been the model used by the formal European SSOs (eg ETSI). However, in the IT and software industry, standards have often implemented royalty-free policies (permitting other FRAND terms).⁴¹ The Commission states that while stakeholders in the telecoms industry generally support a FRAND (or RAND) approach to the licensing of essential IPR in standards,

“a majority of IT stakeholders . . . especially in the software industry and among its users, are of the opinion that a more satisfactory level of interoperability can be achieved using IPR policies which could be perceived to differ from a (F)RAND approach.”⁴²

³⁸ For an interesting discussion and prediction about the open v proprietary among browsers and applications see M Hirschom, “Closing the Digital Frontier” [2010] *Atlantic Magazine* July/August., Available at: www.theatlantic.com/magazine/archive/2010/07/closing-the-digital-frontier/8131/.

³⁹ Report of the Expert Panel for the Review of the European Standardization System (EXPRESS), “Standardization for a competitive and innovative Europe: a vision for 2020”, EXP 384 *final* (2010), 16–17. Available at: http://ec.europa.eu/enterprise/policies/european-standards/files/express/exp_384_express_report_final_distrib_en.pdf.

⁴⁰ *Ibid.*, 18.

⁴¹ *Ibid.*, 17.

⁴² Commission White Paper, *supra* n 2, 10.

(c) Openness in Practice

Varying degrees of “openness” for standards can reflect the priorities of the developers involved.⁴³ According to the Commission, the three formally recognised European SSOs already observe the draft “eligibility criteria” presented in the 2009 White Paper (described above). The Commission adds that the same applies for “some fora and consortia”.⁴⁴

In 2008 the International Data Corporation (IDC) conducted an evaluation of ten SSOs, including formal and non-formal organisations, regarding their degree of openness.⁴⁵ Interestingly, the IDC concluded it was difficult to see any patterns in the ratings between the different SSOs. According to the IDC, “Standard organizations are generally aware of the need of openness because they all aim at providing successful, widely accepted standards.”⁴⁶

The IDC observed that some organisations (eg W3C and IETF) apply “front-end openness”, allowing wide and free participation in the standards-setting process.⁴⁷ The voting process is then supplemented with a “back-end control” with a director or chair who can decide on the standardisation work.⁴⁸ Other

⁴³ A Gupta, “Are Open Standards a Prerequisite to Open Source? A Perspective in Light of Technical and Legal Developments” (2009) 15(1) *Computer and Telecommunications Law Review* 3, 3.

⁴⁴ Commission White Paper *supra* n 2, 4.

⁴⁵ International Data Corporation (IDC), Special Study—Evaluation of Ten Standard Setting Organizations with Regard to Open Standards (2008). The study was prepared by market research and analysis firm IDC for the Danish National IT and Telecom Agency (NITA) after the Danish parliament on 2 June 2006 unanimously adopted a parliamentary resolution instructing the government to ensure that the public sector’s use of information technology, including the use of software, should be based on open standards. Available at: www.talkstandards.com/library/Openness.pdf.

⁴⁶ *Ibid.*, 1.

⁴⁷ Membership of the W3C is open to any company or organisation, but not to individuals. Membership is associated with a yearly fee that depends on the type, origin and turnover of the entity. W3C is administered via a joint agreement between the Massachusetts Institute of Technology (MIT), the European Research Consortium for Informatics and Mathematics (ERCIM) and Keio University in Japan. MIT appoints the Director, who is the lead technical architect at W3C and responsible for assessing consensus within W3C for architectural choices, publication of technical reports, and new activities. In IETF, there is no formal membership. Participation is open to all and consists of individual technical contributors, rather than by formal representatives of organisations. The IETF describes itself as “a loosely self-organized group of people who contribute to the engineering and evolution of Internet technologies”. The work, which mainly is carried out through mailing lists, is organised around more than a hundred separate working groups (WGs) each dealing with a specific topic. The WGs are led by a chair who manages the work in the WG and determine when “rough consensus” has been reached within the WG. The WGs are organised into areas by subject matter. Each area is overseen by an area director (AD) selected by a nominations committee and appointed for two years. The ADs are responsible for appointing WG chairs. The ADs, together with the IETF Chair, form the Internet Engineering Steering Group (IESG), which is responsible for the overall operation of the IETF. The IESG ratifies or corrects the output from the WGs, gets WGs started and finished, and judges whether a WG has come up with a result that has community consensus.

⁴⁸ Participation is not only a question of formal rules. The increased use of mailing lists reduces the need for face-to-face meetings and telephone conferences and contributes, as a practical matter, to wide participation.

organisations are more restricted as regards participation (eg OMG,⁴⁹ ITU,⁵⁰ ISO⁵¹) but the decision-making on standards is then made exclusively through a formal voting process. All SSOs scored high as to their level of consensus-building and all focused on “openness” in their strategies. The differences were more in the implementation and the IDC could not conclude what would be the most appropriate model.⁵²

It is notable that both formal and non-formal SSOs often have incentives to adopt open procedures and standards, albeit in different ways. Recent examples would indicate that formal standards bodies, despite formal procedures, may in fact be less transparent and lend themselves to abuses and decisions that are not independent of vested interests.⁵³

Standards are nevertheless also developed in smaller, restricted, groups of firms or engineers.⁵⁴ The structures and procedures of these consortia vary

⁴⁹ Object Management Group (OMG), founded 1989, is an international, open membership, not-for-profit computer industry consortium focused on modelling (programs, systems and business processes) and model-based standards (www.omg.org).

⁵⁰ The International Telecommunication Union (ITU), established 1869, is an agency within the United Nations dealing with information and communication technology issues. ITU’s Telecommunication Standardization Sector (ITU-T) regulates and creates information and communications standards (www.itu.int).

⁵¹ The International Organization for Standardization (ISO), founded 1947, is an international-standards-setting body composed of representatives from various national standards organisations. The organisation promulgates worldwide proprietary industrial and commercial standards (www.iso.org).

⁵² IDC, *supra* n 45, 91–92.

⁵³ The standardisation of OOXML in ISO (ISO/IEC 29500:2008) received a lot of attention. Procedural irregularities and misconduct in the voting processes in national standards bodies around the world were reported. According to reports, IBM even threatened to consider leaving standards bodies that allowed Microsoft to exercise undue influence, leaning on countries in order to secure enough votes for OOXML to pass. A majority of the members of the Technical Committee of Norway’s ISO body, Standard Norge, resigned in protest against the decision of the Norwegian body to support OOXML under pressure from Microsoft (see eg www.theinquirer.net/inquirer/news/1012179/norway-standards-members-walk and <http://arstechnica.com/old/content/2008/10/norwegian-standards-body-implodes-over-ooxml-controversy.ars>) In a letter to ISO, the chairman of Standard Norge later stated that there had been “serious irregularities” with the voting process and that the vote should be changed to oppose ISO certification of OOXML (<http://blogs.freecode.no/isene/wp-content/uploads/2008/04/iso-protest.pdf>). Similar issues have been reported from other national ISO bodies. Moreover, although OOXML according to the ISO “is intended to be implemented by multiple applications on multiple platforms” (www.iso.org/iso/pressrelease.htm?refid=Ref1181), the OOXML specifications have been riddled with implementation and interoperability issues and have even been the subject of European Commission antitrust review (www.adjb.net/post/Microsoft-Fails-the-Standards-Test.aspx).

⁵⁴ “What makes the IT companies unusual, however, is their willingness to explore new methods of standardization—methods that are more responsive to the needs of their technology and industry. One of the methods that IT companies have chosen to use is the creation of consortia—groups of like minded organizations that have joined together to produce specifications that further the market. It is important to recognize is that these are organizations—usually commercial companies, academia, and occasionally government—who use the consortia structure do so to produce common specifications which benefit the entire market”. Prepared Statement of CF

significantly and may be akin to R&D co-operation, and may fail to meet the requirements of unrestricted and open processes proposed by the Commission for inclusion in EU policies and legislation (as described above). Where beneficial for the dissemination and acceptance of the standard, closed consortia could subsequently submit the standard to a recognised SSO for validation and adoption. This is something that frequently occurs in practice, in order to promote the status and implementation of a privately developed standard.⁵⁵ Some formal SSOs also apply “fast-track procedures” for approving submissions by international standardisation consortia.⁵⁶

As regards the design of IPR policies, the formally recognised SSOs today normally require the participants to disclose any patents that may be essential to the prospective standard and to make an irrevocable commitment to license such patents on (F)RAND terms. In March 2007, three big international players—IEC, ISO and ITU—announced that they had “aligned their policies which allow for commercial entities to contribute the fruits of their research and development (R&D) activity safe in the knowledge that their intellectual property rights are respected”.⁵⁷ The (F)RAND approach is considered appropriate where standards benefit from the inclusion of proprietary technologies and there is a concern that royalty-free licensing obligations would limit participation in SSOs and reduce the incentives of participants to innovate.

Historically, however, there has long been a preference in many sectors for adopting standards that would avoid infringing patents for which implementers would have to pay royalties.⁵⁸ The emergence of the Internet and web standards made some organisations even more determined in this respect. Following a long process and internal discussion, the W3C, which combines a broad technical programme and very large membership (including most of the largest IT companies in the world), adopted an IPR policy intended to make it nearly impossible to give final approval to a standard that would knowingly result in the

Cargill, Director of Standards, Sun Microsystems. Standards-setting and United States Competitiveness: Hearing Before the Subcommittee on Environment, Technology & Standards, 107th Congress, 28 June, 2001. Available at http://commdocs.house.gov/committees/science/hsy73317.000/hsy73317_of.htm.

⁵⁵ See Bird, *supra* n 11, 50. Bird refers to Bell Laboratories C Programming Language as one example of a proprietary standard that was adopted as an open standard and to hundreds of IT standards developed by International Committee for Information Technology Standards (INCITS) that subsequently have been designated as ISO or ANSI standards. Another illustration is the OpenDocument standard, originating from Sun Microsystems, subsequently developed by the OASIS industry consortium and finally adopted as an ISO and International Electrotechnical Commission (IEC) International Standard.

⁵⁶ See eg ISO’s “Stages of the Development of International Standards”. Available at: www.iso.org/iso/standards_development/processes_and_procedures/stages_description.htm.

⁵⁷ ISO, IEC and ITU. See press release: www.itu.int/newsroom/press_releases/2007/05.html.

⁵⁸ A Updegrave, “The Essential Guide to Standards, Chapter 4: Intellectual Property Rights And Standard Setting”. Available at: www.consortiuminfo.org/essentialguide/intellectual.ph.

requirement of payment of a royalty or other fee to a patent owner. OASIS amended its policy in 2005 and allows a working group, set up for the purpose, to decide whether to create a standard under rules conducive to open-source implementations or to allow RAND-royalty assertions.

Given the increased number and variety of SSOs, critics of current EU regulatory developments maintain that the policy-maker should not regulate or influence the scope design of SSOs beyond the requirements imposed by competition law. At the same time it is clear that the public policy aspects of standardisation involve a number of policy areas beyond competition policy, including policies for innovation, consumer protection and public procurement. Also, when the public authorities endorse a particular standard through public policies, legislation or procurement, they may significantly contribute to the adoption of that standard at the expense of potentially competing standards.⁵⁹ From that perspective, the Commission's initiative to lay down eligibility requirements for those specific purposes may be less surprising.

However, such regulatory requirements should not go further than necessary and should not force standards organisations to mimic the organisation and procedures of formal SSOs. The success and increased importance of various fora and consortia show that "we need to innovate standards but not standardize innovation".⁶⁰ Different governance and organisation models may be appropriate in different contexts.⁶¹

In this context, and considering the plethora of organisation and licensing models that exist in the ICT sector, the next section will consider under which circumstances limitations on openness can restrict competition and involve a violation of the antitrust rules.

⁵⁹ This has, of course, been recognised for a long time and is one of the reasons for the formal approach to standardisation in the EU regulatory framework. Recital 12 of Directive 98/34/EC reads: "Whereas it is necessary to clarify the concept of a de facto technical regulation; whereas, in particular, the provisions by which the public authority refers to technical specifications or other requirements, or encourages the observance thereof, and the provisions referring to products with which the public authority is associated, in the public interest, have the effect of conferring on such requirements or specifications a more binding value than they would otherwise have by virtue of their private origin". See also Commission Communication, Intellectual Property Rights and Standardization, COM(92) 445, para 2.3.3.

⁶⁰ A Jokar, "Talk Standards: We Need to Innovate Standards but not Standardize Innovation", 11 May 2009. Available at: www.talkstandards.com/talk-standards-we-need-to-innovate-standards-but-not-standardize-innovation/.

⁶¹ "The information technology industry does have a special challenge because it uses every kind of standardization process imaginable, ranging from the most informal meeting possible to the very formal processes that result in an American National Standard . . . Now, even within the subset of standardization processes called consortia, there is no single method of standards development, and it is this very flexibility that makes them useful." Statement of Oliver Smoot, Chairman of the Board, American National Standards Institute, Standards-setting and United States Competitiveness: Hearing Before the Subcommittee on Environment, Technology & Standards, 107th Congress, 28 June 2001. Available at http://commdocs.house.gov/committees/science/hsy73317.000/hsy73317_of.htm.

C. COMPETITION LAW REQUIREMENTS REGARDING OPEN STANDARDS

1. Introduction

As described above, standardisation activities have important welfare-enhancing properties, enabling and stimulating innovation and dissemination of technology. They can serve to create common technical baselines and interoperable platforms that supplement and stimulate competition between proprietary technologies, products and services. This creates consumer welfare through interoperability, cumulative innovation, best-of-breed technology combinations, reduced costs and risks, broadened markets, and increased substitutability.

Against the procompetitive background, competition authorities both in the US and the EU have generally taken a positive stance towards genuine standardisation activities.⁶² However, standard-setting activities can be akin to a cartel where the parties fix prices, exchange current or future price information, and agree to limit output or restrict sales. Leaving aside such hardcore restrictions that generally are illegal in any joint venture or co-operation, standardisation can also limit competition in other, more complex, ways.⁶³ Potential restrictions of competition relate to control over incentives and abilities for innovation, product variation, market access, and price. For example, agreeing on standards could raise rivals' costs or exclude competitors' technologies even if there is no technical rationale for doing so.⁶⁴

From a practical perspective, potential restrictions on "openness" can generally take place at two different levels:⁶⁵

- access to the standard setting process; and
- access to the resulting standard.

Access to the standards-setting process involves the rules and restrictions on admission and participation, but also the rules and processes governing the practical standardisation work, in particular as regards submissions of proposals, decision-making and technology selection/specification. The design of the IPR

⁶² Before the adoption of Regulation 1/2003, standards-setting agreements belonged to the limited group of agreements for which notification was not a necessary condition for subsequent application of Art 81(3) of the EC Treaty.

⁶³ "Antitrust's purpose is to protect competition while giving firms reasonable freedom to innovate, develop, produce, and distribute their products. Although standard setting can enable firms to improve along all of these avenues of business progress, it also can facilitate both of antitrust's twin evils: collusion and exclusion." Hovenkamp, *supra* n 4, 48.

⁶⁴ JJ Anton and DA Yao, "Standard-Setting Consortia, Antitrust and High-Technology Industries" (1995) 64 *Antitrust Law Journal* 247, 250. Available at: <http://faculty.fuqua.duke.edu/~jja1/bio/PDF/Scan%20Anton%20Yao%20ALJ%201995.PDF>.

⁶⁵ See eg J Gstalter, M Dolmans, M Bolhuis, U Decker, J-Y Art, P Hellström, M Välimäki, T Kramler and F Wenzel Bulst, "Open Standards and Antitrust" [2010] (1) *Concurrences* 13, 14.

policy may also be relevant in this respect, since it affects the incentives to participate and contribute technology for inclusion in the standard.

As regards the access to and availability of the results, it is important to be granted access to detailed documentation and specifications to allow implementation of the standard. If patents or other IPRs apply to the dissemination or implementation of the standards, the terms under which such an IPR is made available is key to the ability of implementers to exploit the standard.

In both these dimensions, the procedures and governance of the SSO activities as well as IPR-related considerations thus play an important role.

In the following, the competition law requirements relating to “openness” will be clarified, with particular focus on the Internet and software industries.

2. General Analytical Framework

(a) European Commission Guidelines

Standardisation activities are generally assessed as co-operation agreements under Article 101 of the Treaty on the Functioning of the European Union (TFEU) (which prohibits agreements that restrict competition). Occasionally, Article 102 TFEU (which prohibits the abuse of a dominant position) comes into play in the context of licensing by patent pools or individual IPR holders.

The chapter on standards-setting agreements in the current EU guidelines on the application of Article 101 to horizontal co-operation (“the 2001 Horizontal Guidelines”)⁶⁶ has been criticised for failing to identify the circumstances in which a restriction of competition under Article 101(1) would arise and when an exemption under Article 101(3) could apply despite such a restriction. The guidelines have been described as a safe harbour for formal SSOs and criticised for failing to establish a framework for resolving standards-setting issues outside the context of formal standards-setting bodies.⁶⁷

On the one hand, the 2001 Horizontal Guidelines state that certain standardisation agreements are unlikely to involve any restriction of competition for the purposes of Article 101(1) TFEU:

“Where participation in standard setting is unrestricted and transparent, standardisation agreements [as defined in the guidelines], which set no obligation to comply with the standard or which are parts of a wider agreement to ensure compatibility of products, do not restrict competition. This normally applies to standards adopted by the recognised standards bodies which are based on non-discriminatory, open and transparent procedures.”⁶⁸

⁶⁶ Guidelines on the applicability of Article 81 of the EC Treaty to Horizontal Cooperation Agreements, [2001] OJ C3/2.

⁶⁷ SD Anderman and J Kallaughner, *Technology Transfer and the New EU Competition Rules* (Oxford University Press, 2006), 250–52.

⁶⁸ 2001 Horizontal Cooperation Guidelines, para 163.

On the other hand, the Commission also explains that its positive approach to standardisation agreements is based on the efficiencies that can be expected in terms of economic interpenetration and development of new markets:

“To materialise those economic benefits, the necessary information to apply the standard must be available to those wishing to enter the market and an appreciable proportion of the industry must be involved in the setting of the standard in a transparent manner. *It will be for the parties to demonstrate that any restrictions on the setting, use or access to the standard provide economic benefits.*”⁶⁹

Then again, the requirements matter the most when the standard initiative will have a significant impact in the relevant markets:

“There will clearly be 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 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.”⁷⁰

This makes it difficult to tell how the Commission thinks potential restrictions that may result from the rules on participation or governance should be evaluated.

The Commission’s new Draft 2010 Horizontal Cooperation Guidelines expand on the implications of standards that involve IPRs.⁷¹ This is no doubt a result of the Commission’s recent experiences from the Rambus, IPComm and Qualcomm cases, and it is a welcome addition. Similar to the 2001 Horizontal Guidelines, the new draft guidelines set out those conditions where standardisation will generally *not* result in an appreciable restriction of competition and thus fall outside the scope of Article 101(1). According to the Commission, this will normally be the case where the standardisation agreement provides for:

- Unrestricted participation and procedures for adopting the standard guarantee that all relevant actors can participate in the process. Notably, the Commission specifies that “[t]here should be no bias in favour or against royalty free standards, depending on the relative benefits of the latter

⁶⁹ *Ibid*, para 169 (emphasis added). In addition, when applying the indispensability criterion under Art 101(3) to standardisation on one technological solution, the Commission states that this standard must be set on a non-discriminatory basis; should ideally be technology neutral; and it must in any event be justifiable why one standard is chosen over another. See 2001 Horizontal Cooperation Guidelines, para 171. Moreover, “[a]ll competitors in the market(s) affected by the standard should have the possibility of being involved in discussions. Therefore, participation in standard setting should be open to all, unless the parties demonstrate important inefficiencies in such participation or unless recognized procedures are foreseen for the collective representation of interests, as in formal standards bodies.” *Ibid*, para 172.

⁷⁰ 2001 Horizontal Cooperation Guidelines, para 174 (emphasis added).

⁷¹ Available at: http://ec.europa.eu/competition/consultations/2010_horizontals/guidelines_en.pdf.

compared to other alternatives” and the organisations should have “objective and non-discriminatory procedures for allocating voting rights”.⁷²

- Transparent procedures which allow stakeholders to inform themselves of upcoming, ongoing and finalised standardisation work.⁷³
- Binding rules on the SSO’s members that “seek to avoid the misuse of the standardization process through hold-ups and the charging of abusive royalty rates by IPR holders”. This is to ensure that access to the standard is provided on FRAND terms.⁷⁴

However, the Draft 2010 Horizontal Guidelines do not provide a framework for analysing when procedures that arguably are less than completely unrestricted, fully transparent, or which, for example, favor royalty-free licensing, would restrict competition for the purposes of Article 101(1). Instead, the relevant section describing the 101(3) analysis states that

“[t]he assessment of each standardization agreement must take into account the nature of the standard and its likely effect on the markets concerned, on the one hand, and the scope of restrictions that possibly go beyond the objective of achieving efficiencies, on the other.”⁷⁵

Similar to the 2001 Horizontal Guidelines, the Commission puts the burden of proof on the parties to demonstrate that restrictions on participation are indispensable and that, to ensure non-discriminatory selection of technology, it is justifiable that one standard or technology be chosen over another.⁷⁶ This may create more uncertainty than guidance for SSOs.

It would have been useful if the section on standards followed the same structure as the sections covering other types of horizontal co-operation in the Commission’s guidelines, first establishing a framework for analysing potential restrictions of competition, and thereafter explaining under which circumstances such restrictions may be exempted. This is also a point that has been stressed by stakeholders in the Commission’s public consultation.⁷⁷ According to news reports, the Commission has taken notice of these concerns and will in the final version seek to provide more guidance for agreements outside the safe harbour.⁷⁸

⁷² Draft 2010 Horizontal Cooperation Guidelines, para 278.

⁷³ *Ibid*, para 279.

⁷⁴ *Ibid*, paras 277 and 280.

⁷⁵ *Ibid*, para 303.

⁷⁶ *Ibid*, paras 306 and 308.

⁷⁷ See eg ECLF Working Group on Horizontal Agreements, “Comments on the Draft Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements” (2010) 6 *European Competition Journal* 507, 515. See also Commission, “Overview of the Feedback Received from Stakeholders in the Public Consultation on the Draft Texts Published in 2010”, para 10. Available at: http://ec.europa.eu/competition/consultations/2010_horizontals/consultation_summary.pdf.

⁷⁸ MLex, “Latest Horizontal Draft Tweaks Focus on Standardisation and Info Exchanges”, 3 November 2010.

This seems particularly relevant in a situation where the majority of standards in the ICT sector arise outside the traditional formal SSOs, and the Commission's other services are trying to find ways to increasingly rely on standards that emerge from various fora and consortia.

For such a framework, the following distinctions could usefully be made.

(b) Distinguish SSOs and Standards that Control or Affect Access to the Markets . . .

Restrictions relating to the standardisation process (level 1 above) can primarily result in foreclosure at the technology market level, ie certain market participants will not be able to promote their own technologies, solutions or expertise, either because they are not welcome to take part in the process, or the rules and procedures result in a process that is biased towards certain participants, or the IPR rules make it too unattractive to contribute. Conditions for access to the standardisation process may also affect the possibilities to compete in the market(s) where the standard will be implemented, eg by giving participating companies the possibility to influence the direction of the standard and providing advance information that is relevant to gaining time-to-market advantages in the implementation of the standard.

Once the standard is set, access to the specifications and any IPRs (level 2 above) is necessary to enable thriving competition in the provision of products or services that comply with the standard. If the specifications and any other necessary information are not made readily available, or the IP-holders seek to charge discriminatory or unreasonable licensing fees, this may restrict competition in the downstream markets.

It is nevertheless important to keep in mind that, in the absence of hard-core restrictions, agreements on standards fall under Article 101(1) TFEU only if they create an appreciable restriction of competition in some market. Thus, from a competition law perspective, any deviation from “non-discriminatory, open and transparent procedures” or “unrestricted use or access to the standard” will not automatically restrict competition. Standardisation agreements may be caught by Article 101(1) “insofar as they grant the parties joint control over production and/or innovation, thereby restricting their ability to compete on product characteristics, while affecting third parties like suppliers or purchasers of the standardised products”.⁷⁹

Whether restrictions on “openness” can amount to an appreciable restriction of competition depends, fundamentally, on the importance of the standard in the relevant market(s). As a practical matter, the greater the influence of the participating companies and their commitment to the standard, the more likely it is that restrictions in participation or access will translate into competitive disadvantages for excluded or otherwise disfavoured parties. If the participating

⁷⁹ 2001 Horizontal Cooperation Guidelines, para 166.

companies, individually or collectively, can ensure that the standard will be widely adopted in the industry, the SSO may effectively become a gatekeeper to the market for any provider of the technology that is being standardised. As pointed out by Maurits Dolmans: “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.”⁸⁰

Under such circumstances, the standardisation process effectively replaces the open market’s role in selecting a winning technology. It is therefore important that the standardisation process allows for ample *ex ante* inter-technology competition for inclusion in the standard.

Moreover, without access to the results of the standardisation effort, on economic terms, competition from non-participating companies would be eliminated in the markets for the standardised technologies. This is all the more important since agreement on an industry standard may also eliminate the possibilities for alternative solutions to enter the market and replace the standard in a reasonable time-frame.

SSOs that, due to significant industry participation or government-endorsed responsibilities, are pivotal to standardisation in a certain technical field must apply open, transparent, non-discriminatory procedures, and must ascertain general availability of specifications and licenses to essential IPRs to anyone that would like to implement the standard. Otherwise standardisation would exclude potential technology providers—distorting competition at the technology market—and restrict competition in the markets for the standardised products. Without far-reaching “openness”, standardisation could hamper competition at both levels, whilst failing to create offsetting benefits for consumers.

(c) . . . from Standards Facing Significant Competition

Not all standards-setting initiatives create a gatekeeper to the technology and product markets. Although a group of companies, perhaps organised in a consortium, are involved in developing joint specifications or software, other technology providers/developers often have other options at their disposal. Alternative standards and non-standardised proprietary versions may compete head to head in the market. In this “market-based” scenario, where the co-operation will not be decisive for market access, competition law requirements concerning the co-operation would be more lax, since restrictions on participation, technology selection and availability do not necessarily translate into restrictions of competition in the market. Such co-operation could be more akin

⁸⁰ M Dolmans, “Standards for Standards”, paper for the Joint DOJ/FTC hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Washington DC, 22 May 2002, s 4.1(a). Available at: www.ftc.gov/opp/intellect/020522dolmans.pdf.

to R&D collaboration and might be exemptable under the rules applicable to such agreements.⁸¹

According to the 2001 Horizontal Guidelines “no appreciable restriction exists for those standards that have a negligible coverage of the relevant market, as long as it remains so”.⁸² The qualification “as long as it remains so” ought to mean that co-operation on a standard that can be expected to gain significant traction in the market, or, where the co-operation is continuing, may lead to restrictions of competition. Nevertheless, if there is significant inter-technology competition *after* a given standardisation activity, and a *de facto* standard over time nevertheless emerges in the market, this would typically be the result of market forces and network effects having decided the winner among the competing alternatives. The fact that such a standard was the result of co-operation in a limited group of companies (a co-operation which involved no restriction of competition because the parties jointly could not ensure or influence the success of the standard) ought not to alter the competition law assessment. The co-operation that took place would not subsequently become restrictive of competition simply because it turns out the standard outcompetes the alternatives on the merits.

The drawback of this type of standardisation compared to industry-wide consensus building is that, at least initially, it will not resolve interoperability problems or create a common baseline. On the contrary, it will lead to duplication of efforts and technical fragmentation, and fail to create the efficiencies normally associated with industry standards with broad participation and commitment. Competing standards and solutions mean that interoperability issues will not be fully resolved unless and until a *de facto* standard emerges.

In the IT industry, individual firms, a number of SSOs and collaborative alliances (including open-source projects) produce prospective standards in the form of software and specifications.⁸³ Many of these specifications will never succeed or be picked up by the market and will thus have little competitive impact. Only a minority will be successful and create important foundations for the industry. Despite the apparent drawbacks, this way of organising standards development nevertheless has certain benefits.

⁸¹ See Regulation 2659/2000 on joint R&D Agreements, [2000] OJ L304/7. Agreements between competitors will be automatically exempted under this block exemption if the parties' joint market share is less than 25% and the agreement meets the conditions of the regulation. If the standardisation concerns an entirely new product, or a product in which none of the participating companies compete, the block exemption is available also above the 25% ceiling for the duration of the standard setting and seven years thereafter.

⁸² 2001 Horizontal Cooperation Guidelines, para 164.

⁸³ There has been a dramatic increase in the number and scope of informal groups. See www.cen.eu/cen/Sectors/Sectors/ISSS/Consortia/Pages/default.aspx, for a list of ICT consortia.

First, “[i]f all firms adhere to a single standard, there will be a certain inertia in the research & development process. With separate organizations, there is a greater incentive to ‘build a better mousetrap’.”⁸⁴ This assumes that standards competition still matters in network industries. Depending on the nature of the standard, competition between alternative solutions may bring important benefits to consumers, eg because they provide different attributes sought by consumers.

Second, where it would be difficult or impossible to find industry consensus around one solution *ex ante*, the development of competing contenders may allow for a market-based selection process of the most attractive alternative. This could also avoid premature standards selection. In the words of Commissioner Kroes: “Standardise too early and you will likely pick the wrong technology and hinder the development of the market.”⁸⁵ If the industry participants are reasonably sophisticated, they will not only select the technically most attractive option, but also consider the terms and conditions on which it is made available. In fact, in the IT industry, it is often *after* an innovation has been successfully introduced to the market that it becomes formally standardised, as a means to stimulate widespread adoption.⁸⁶ Moreover, the specifications are often validated by more than one organisation. Standardisation thus sends an important signal to the market about quality and availability.

An illustration of this point is the OpenDocument Format standard. The specifications were originally developed by Sun Microsystems and subsequently developed by the OASIS industry consortium. After OASIS approved OpenDocument Format as a standard in May 2005, it submitted the specification to ISO/IEC Joint Technical Committee 1 (JTC1) in November 2005. In 2006, the OpenDocument Format specification was approved for release as an ISO and IEC International Standard. OpenDocument 1.2 is currently being written by the ODF TC. It is expected to be approved of ODF 1.2 as an OASIS standard and subsequently submitted to ISO/IEC JTC1. When submitted to ISO, the standard will be reviewed and commented. For ODF 1.0, which was widely approved, this meant that editorial changes were made.⁸⁷

Third, having standards emerge from an array of firms, alliances and SSOs can create institutional competition at a higher level. There are many ways of organising these individual and collaborative efforts. By allowing different constellations, increased specialisation and a Darwinian approach to governance, the success of an SSO will lie in the merits of the specifications it produces. A current example is the standardisation efforts relating to cloud

⁸⁴ Balto, *supra* n 14, 10–11.

⁸⁵ Kroes, *supra* n 1.

⁸⁶ HTTP/HTML were introduced and garnered market acceptance prior to standardisation and were subsequently taken on by IETF for further development and improvement.

⁸⁷ See Summary of Voting in ISO at: www.jtc1sc34.org/repository/0728revc.htm.

computing,⁸⁸ where a range of standards initiatives are focusing on different aspects and trying to find what role they will play going forward.⁸⁹ On the other hand, the higher the degree of specialisation, the less the likelihood of competing standards and openness becomes more important in the procedures. Thus, even if there are a number of “competing” SSOs at a higher level, a given SSO or consortia may individually be important for access to the specific field in which they are active. This would have to be assessed on a case-by-case basis.

(d) Restrictions of Competition May Be Outweighed by Expected Efficiencies

Like other horizontal collaborations with a procompetitive rationale, standardisation agreements may be acceptable under the competition rules even where they involve some restriction of competition, provided that the benefits offset any such negative effects. In the situation where restrictions on competition result from the co-operation or from particular aspects thereof, it is therefore necessary to consider whether the co-operation or the individual restrictions were indispensable in order to achieve benefits that would otherwise not have materialised and which outweigh the negative effects on competition.

All SSOs and consortia need to regulate participation and decision-making procedures in some way or another. As described above, depending on the importance of the SSO and standard, various restrictions may tilt the level playing-field in the relevant technology and product markets. Nevertheless, it may be more efficient that a select group of companies or engineers engage in a particular technical development rather than involving the entire industry. Also, efficient standards development may call for executive rules that allow the work to proceed in a timely manner. As a consequence, appropriate restrictions may be conducive to bringing high-quality standards quickly to the market. These efficiencies must be evaluated on a case-by-case basis, considering both the industry context in which the standardisation activity is undertaken and the appropriateness of the restriction in order to achieve this end.

Standards may prevent competition between alternative technological formats or substitutable technologies and/or prevent market access for products that do not comply with the standard in question even where open procedures are applied. Where the opportunity for alternative, competing standards or non-standardised solutions are circumscribed, the agreement on an industry standard is likely to result in restrictions of competition in the meaning of Article 101(1) TFEU. In order to fulfil the criteria under Article 101(3), both the

⁸⁸ *Supra* n 38.

⁸⁹ See eg ISO/IEC, “Report of JTC 1/SWG-P on Possible Future Work on Cloud Computing in JTC 1” (2009). Available at: <http://isotc.iso.org/livelink/livelink?func=ll&objId=9246425&objAction=Open>.

standards-setting body and the holders of any essential patents must comply with certain obligations. Under Article 101(3) TFEU, customers and consumers must receive a fair share of the resulting benefits (which thus cannot stay solely with the collaborating parties) and competition may not be eliminated at any level. The latter is important, not least to restrictions in the availability of standards. The terms and conditions under which access to the standard is made available are often vital for the conditions for competition in downstream markets. For the patent-holders, this includes licensing on terms that do not frustrate the conditions for exemption under that provision. The Commission's prescription for important industry standards has been licensing on FRAND terms.⁹⁰

By contrast, where the development of the standard involved no appreciable restriction of competition in the first place because of its low industry coverage, the subsequent emergence of a *de facto* standard in the market ought not in itself create licensing obligations under Article 101(3).⁹¹ In such circumstances individual IPR-holders may be subject to non-discrimination obligations and licensing obligations under Article 102 TFEU.⁹²

Against this backdrop the next sections consider the most important aspects of open standards: provisions relating to participation, decision-making, and IPR licensing.

3. Membership Rules

There have been very few formal cases concerning the rules of SSOs under EU competition law.⁹³ However, one interesting Commission decision relates to membership criteria in IT standardisation.

⁹⁰ Draft 2010 Horizontal Cooperation Guidelines, para 314.

⁹¹ Presumably market acceptance of such a standard would in any event depend on the terms on which it is made available. In practice, small *ad hoc* groups may submit the standard to a recognised SSO to encourage widespread adoption, which would normally require licensing of any essential IPR on FRAND (or royalty-free) terms.

⁹² In exceptional circumstances, IP-holders may have a duty to license IPRs for *de facto* standards under Art 102 TFEU. See joined cases C-241/91 P and C-242/91 P *RTE, ITP & BBC v Commission* ("*Magill*"), [1995] ECR II-485; Case C-418/01 *IMS Health v NDC Health* ("*IMS*"), [2004] ECR I-5039. The EU courts have imposed a duty to license under Article 102 where:

- (1) the access was indispensable to enable an undertaking to carry on business on a market;
- (2) the refusal prevented the emergence of a product for which there was a potential consumer demand;
- (3) the refusal excluded effective competition on that neighboring market; and
- (4) the refusal was not objectively justified.

Exploitation of a proprietary platform that has become a *de facto* standard may also involve tying or bundling abuses. See Case T-201/04 *Microsoft v Commission*, [2007] ECR II-3601.

⁹³ Even before Art 101(3) TFEU became directly applicable through Council Regulation 1/2003 on the implementation of the rules on competition laid down in Arts 81 and 82 of the EC Treaty, [2003] OJ L1/1, standardisation agreements belonged to a limited group of agreements for which a notification for exemption to the European Commission did not have to be made.

In *X/Open*⁹⁴ a number of IT companies agreed to create an open industry standard to allow a common environment for Unix applications. A number of non-interoperable varieties of Unix had emerged, which meant that application software written for one Unix version would not function with any other without modification. The companies aimed at creating a common software environment by selecting appropriate interfaces and thereafter let national and international standards organisations standardise them.

- *Restricted membership.* The co-operation originally involved six international companies and was later extended to include three other parties. The parties of the group would decide on membership for other companies based on a majority vote and would consider “particularly those applicants who are major manufacturers in the European information technology industry, with their own established expertise concerning Unix operating systems in such industry”. The IT revenues of applicants were expected to be at least US\$500m and the applicant had to demonstrate willingness to contribute to future standards as well as an existing commitment to established standards.
- *Significant participants creating a potentially important standard.* The Commission found that the members were all of “considerable size in the computer industry”. They represented “a substantial opportunity for software houses” since applications complying with the standard could run on a wide range of hardware products offered by the members. This could also make the standard attractive for implementation by other hardware manufacturers.⁹⁵
- *Competitive disadvantages for non-members.* The Commission noted that the definitions adopted would be publicly available and in this respect “constitute an open industry standard”. However, non-members were excluded from influencing the results of the work of the group and would not get the know-how and technical understanding that members would. Also, members were in a position to implement the interfaces at an earlier stage, due to preferred access to the final definitions and information about the direction in which the work was going, whereas non-members could not implement the standard before it had been made publicly available. Since lead time can be a factor of considerable importance, membership of the group would thus confer an appreciable competitive advantage on the members vis-à-vis their competitors and affect the market entry possibilities of non-members.

As the rules enabled exclusion of competing companies and left the way open for possible discriminatory treatment of membership applications, which could result in an appreciable distortion of competition, the

⁹⁴ Commission decision 87/69/EEC of 15 December 1986 relating to a proceeding under Article 85 of the EEC Treaty (IV/31.458 ° X/Open Group), [1987] OJ L35/36.

⁹⁵ *Ibid.*, para 31.

Commission considered the co-operation could result in an appreciable distortion of competition under Article 101(1) TFEU.⁹⁶

- *Analysis of efficiencies.* The Commission nevertheless found that the advantages of creating an open industry standard (creating a wider availability of software and greater flexibility for users to change between hardware and software from different sources), outweighed the potential distortions of competition. The Commission agreed that it was indispensable to limit the group in order to achieve the standardisation objectives. According to the Commission, the “practical difficulties of bringing together representatives of the members with authority to commit their companies without endless discussions increase considerably with the number of members”. An essential factor was the willingness of the group to make the results available as soon as possible. This would both limit the competitive advantages conferred on members and increase the objective advantages of the co-operation.⁹⁷

The reasoning of the Commission confirms the analytical framework outlined above. If important industry players come together to form a standard that is likely to become important, this can affect competition to an appreciable extent. Restrictions may nevertheless be indispensable for an efficient operation and therefore outweigh negative effects.

Similarly, in the US, the courts have applied the rule of reason to decisions concerning the composition and membership of SSOs, including decisions to admit, reject, expel or “accredit members”. When asserting a rule-of-reason claim, it is insufficient merely to show that a competitor has been excluded from membership or participation in an SSO. The US Supreme Court has rejected the notion that restrictions on participation in collaborative projects or lack of due process automatically results in restrictions of competition.⁹⁸ Moreover, courts have recognised that it is often essential for SSOs to establish some criteria for membership and participation and have upheld such membership criteria to the extent that they are reasonably necessary to achieve the procompetitive goals of the organisation.⁹⁹

⁹⁶ *Ibid*, paras 32, 34–35.

⁹⁷ *Ibid*, para 42.

⁹⁸ In *Northwest Wholesale Stationers* the US Supreme Court held that the rule of reason applied to the situation where a co-operative expelled a member without explanation, notice or a hearing, and the co-operative did not possess “market power or exclusive access to an element essential to effective competition”. The Court held that “[i]f the challenged concerted activity of Northwest’s members would amount to per se violation of [Section] 1 of the Sherman Act, no amount of procedural protection would save it. If the challenged action would not amount to a violation of [Section] 1, no lack of procedural protection would convert it into a per se violation because the antitrust laws do not themselves impose on joint ventures a requirement of process.” *Northwest Wholesale Stationers Inc v Pacific Stationery & Printing Co*, 472 US 284, 296 (1985).

⁹⁹ American Bar Association, *Handbook on the Antitrust aspects of Standard Setting* (2004), 48.

It has been argued that over-inclusiveness may pose more significant competitive problems than exclusion as SSOs may end up in delay or stalemate if they require absolute consensus or if a power of veto exists. This may lead to the adoption of a new technology being delayed as the SSO tries to achieve consensus. In high-tech industries, where the need to respond to technological change can be urgent, collective standards-setting may be inconvenient.¹⁰⁰ In that respect it is nevertheless worth noting that “non-formal” SSOs in the IT sector—including W3C, IETF and OASIS—generally have very broad participation rights. In other words, they have managed to combine the need for flexible procedures and efficient standards development with a large number of participants.

4. Decision-Making and Technology Selection

Similar to the admission rules, the more important the standards-setting initiative, the more important are the checks and balances within the association in question. It is of limited help to be admitted as a member if you are prevented from making proposals or influencing the discussion, or the decisions and technology choices are made in a discriminatory manner that favour certain industry participants instead of being based on technical and economic merits.

It has been suggested that possible competitive harm in the technology market—in the form of foreclosure of disfavoured technologies and inhibition of future development efforts for excluded technologies—will often be absent, because there are no genuine competing technologies or because there is only room for one technology in the market.¹⁰¹ The first question is factual. The selection of a technology in the absence of alternatives does not per se restrict inter-technology competition. However, it can often be expected that alternative technical solutions exist.¹⁰² Moreover, standardisation may also restrict market access for future technologies. As regards the argument that there is only room for one technical solution, this misconstrues the primary anticompetitive effect of restricted participation or biased decision-making. As discussed above, important SSOs replace the market mechanism at the technology level. Certain technologies or specifications are announced as winners through agreement and centralised decision-making rather than through competition on the merits by way of normal competitive market processes. Since standardisation in such circumstances effectively eliminates inter-technology competition, competition

¹⁰⁰ Balto, *supra* n 14, 10.

¹⁰¹ Anderman and Kallaugher, *supra* n 67, 252.

¹⁰² “Standard-setting exercises normally arise only when there are technological alternatives to select among, and so, almost by definition, are likely to occur in competitive—perhaps very competitive—technology markets. Even when the conditions are competitive before the selection of a standard, however, the act of selection may lead to increased ex post market power for owners of the IP necessary to practice the winning standard.” Swanson and Baumol, *supra* n 12, 8.

between any alternative technologies thus takes place *for* the market rather than *in* the standardised technology market. In such circumstances, competition on the merits presupposes undistorted processes and broad participation. Combined with participation by the implementing companies, this should normally enable standardisation of state-of-art technologies.¹⁰³ When appropriate procedures are in place, competition authorities may not be in a place to second-guess the technical merits of chosen technologies.¹⁰⁴ Competition law is in any event a blunt instrument for dealing with such claims.¹⁰⁵

If the selection procedure is based on objective, relevant, qualitative and verifiable criteria, this may ensure competition between technologies in the standardisation process and ensure that the benefits of standardisation are maximised. Ideally, the origin of the technology should be irrelevant and 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.¹⁰⁶ Often, however, as the Commission recognises, “some tension is inevitable as each firm desires to promote its own solutions as part of the standard”.¹⁰⁷

The question of whether an organisation provides for due process must be assessed in its overall context. For example, where new SSOs and consortia develop governance structures that seek to avoid the bureaucracy and time lag traditionally associated with formal SSOs, they may still provide adequate checks and balances to avoid discrimination and bias in the development of the specifications. One example is IETF, where working groups make decisions through a “rough consensus” process.

The IETF rules do not require absolute consensus.

“In general, the dominant view of the working group shall prevail. (However, it must be noted that ‘dominance’ is not to be determined on the basis of volume or persistence, but rather a more general sense of agreement.) Consensus can be determined by a show of hands, humming, or any other means on which the WG agrees (by rough consensus, of course). Note that 51% of the working group does not qualify as ‘rough consensus’ and 99% is better than rough. It is up to the Chair to determine if rough consensus has been reached.”¹⁰⁸

¹⁰³ Anderman and Kallaughner, *supra* n 67, 252.

¹⁰⁴ According to Anderman and Kallaughner, *supra* n 67, it is also difficult to see how the failure of participants in standard-setting to incorporate procedures designed to ensure full participation and transparency would make it “likely” that an inferior technology would be chosen.

¹⁰⁵ Hovenkamp, *supra* n 4, 109.

¹⁰⁶ Dolmans, *supra* n 80. See also Balto, *supra* n 14, 9: “The goal should be a process that is either open to all or fair to all members and non-members. Clearly, an association does itself no favors by enforcing its rules and standards without regard to procedural safeguards, particularly notice, a hearing, and an opportunity to defend.”

¹⁰⁷ Draft 2010 Horizontal Cooperation Guidelines, para 270.

¹⁰⁸ IETF Working Group Guidelines and Procedures, s 3.3, “Session Management”, Harvard University (1998). Available at: <http://tools.ietf.org/html/rfc2418>.

This somewhat loosely structured decision-making process could potentially allow a working group chairman to steer the specifications in favour of certain interests or otherwise abuse the process. However, it must be seen in combination with both broad participation rights and generous appeal rights both as regards procedural and technical questions. “To achieve the goals of openness and fairness”, the rules also provide that “conflicts must be resolved by a process of open review and discussion”.¹⁰⁹ Several levels of conflict resolutions and appeals are available. In addition, further recourse is available in cases in which “the procedures . . . are claimed to be inadequate or insufficient to the protection of the rights of all parties in a fair and open Internet Standards Process”. Such claims can be made to the Internet Society Board of Trustees.

These structures work as checks and balances to ensure that the standardisation process is not biased, that participants can get their proposals reviewed and their views appropriately considered, and that the technical choices are made on the merits. This would prevent that “the process for selecting the technologies in the standard is de facto controlled by one or more stakeholders or . . . the standard-setting process is biased towards one or more participants”.¹¹⁰

5. IPR and Licensing Provisions

The availability of a standard is dependent on clear specifications being readily available for the implementers at no or reasonable cost. More contentious are questions relating to IPRs. The existence of a proprietary technology patent in a standard can give the IPR-holder market power which it previously lacked, which might lead to monopolisation (if the IPR-holder refuses to license other implementers), and thereby raise rivals costs (if the IPR-holder licenses competing implementers on onerous and discriminatory terms) and inflate the costs of production for the products and services that implement the standard (if the IPR-holder charges a monopoly price for licenses). This is the problem the Commission has expanded on in its Draft 2010 Horizontal Guidelines.

SSOs usually try to avoid this by mandating that members disclose any known patents that may be essential to the implementation of the standard. The SSO can either (1) try to avoid incorporating patented technology altogether, or (2) seek a commitment from the relevant IPR-holders that they will make licenses

¹⁰⁹ Any individual (whether a participant in the relevant Working Group or not) may appeal a Working Group recommendation, arguing that (a) his or her own views have not been adequately considered by the Working Group, or (b) the Working Group has made an incorrect technical choice which places the quality and/or integrity of the Working Group’s product(s) in significant jeopardy. The Internet Standards Process—Revision 3, s 6.5, “Conflict Resolution and Appeals”, Harvard University (1996). Available at <http://tools.ietf.org/html/rfc2026>.

¹¹⁰ Draft 2010 Horizontal Cooperation Guidelines, para 261.

available to anyone who wants to implement the standard on FRAND terms or on royalty-free terms.

As for the first option, it has been suggested that “Standardise on proprietary technology when non-proprietary alternatives are just as good, and you will raise costs for the industry as a whole, and risk lock-in to a particular vendor’s products.”¹¹¹ However, it may not be possible or desirable to refuse, as a matter of principle, to include proprietary technology in a given standard, provided any such rights are made generally available on reasonable terms. Where a patented technology appears to be better than the non-patented alternative, the SSO will have to perform the difficult balancing exercise between price and quality.

An example of this is the ongoing discussion regarding video codec for HTML5 standard. It is considered desirable to specify at least one video format which all web browsers should support, although the format may not be a mandatory part of the standard. Such a format should have good compression, good image quality, and low decode processor use.¹¹² Initially, Ogg Theora was the recommended standard video format in HTML5, but concerns that the technology was not technically mature, and that unknown patents might affect it once implemented, created a divide and resulted in intense discussion in W3C and the Internet community.

The main contender format was H.264/MPEG, which is widely used and considered of good technical quality, but which is covered by patents. Users of H.264 have to pay licensing fees to the MPEG LA patent pool, which includes patent-holders such as Microsoft and Apple. MPEG licensing would exclude open-source implementation, which, for example, would mean that Mozilla cannot implement the video codec. H.264 might also be subject to unknown patents, but has been deployed much more widely and so it is presumed that any patent-holders would have already have announced themselves.

There may be different solutions to the problem. Google has acquired On2 (which originally developed what became Ogg Theora) and created the WebM Project, a royalty-free, open-source release of VP8.¹¹³ This alternative seems to achieve the combination of openness, quality and third-party support.¹¹⁴ More recently, MPEG LA announced it will not charge any royalties for Internet video encoded using the H.264 standard.¹¹⁵

¹¹¹ Kroes, *supra* n 1.

¹¹² http://en.wikipedia.org/wiki/HTML5_video.

¹¹³ www.webmproject.org/.

¹¹⁴ See eg <http://ostatic.com/blog/support-spreads-out-for-googles-webm-video-format>.

¹¹⁵ See press release, “MPEG LA’s AVC License Will Not Charge Royalties for Internet Video that Is Free to End Users through Life of License”. Available at: www.mpegla.com/main/Pages/Media.aspx. and eg “Royalty-free H.264 May Clear Way for HTML5 Standard”, available at: www.macvideo.tv/encoding/news/index.cfm?newsId=3237307&pagType=allchandise.

SSOs are entitled to, and should, consider the costs and benefits of competing alternatives. If patented technology is included in the standard, the terms under which access to the standard is made available is often key to the conditions for competition in downstream markets. As discussed above, this is particularly likely to be the case where a substantial part of the industry is involved in the development of the standard, and is committed to implementation of the resulting standard. In such circumstances, the opportunity for alternative, competing standards or non-standardised solutions are circumscribed. The Commission's prescription for important standards is therefore licensing of essential IPR on FRAND terms. In contrast to the 2001 guidelines, the Draft 2010 Horizontal Cooperation Guidelines emphasise the relevance of the access on FRAND terms also for the analysis under Article 101(1) TFEU.¹¹⁶ In fact, the Draft 2010 Horizontal Guidelines even state that in order to avoid hold-ups and abusive royalty rates, a clear and balanced IPR policy is required which prescribes (i) good faith disclosures of IPRs that might be essential for the standard and (ii) an irrevocable commitment in writing to license that their IPRs to all third parties on FRAND terms.¹¹⁷

In the IT sector, FRAND licensing is not as common as in other areas of industry standardisation. Instead there is a strong proclivity towards royalty-free licensing among the relevant SSOs.¹¹⁸ The question then arises whether imposing royalty-free licensing requirements could restrict competition by potentially limiting participation in SSOs and discriminating against business models that are built on charging royalties for the use of IP protected technologies. Indeed, the Commission's Draft 2010 Horizontal Guidelines explicitly indicate that, to keep the standardisation agreement outside Article 101(1), the SSO rules should not exclude or discriminate against specific groups of IPR-holders and there should be no bias in favour of or against royalty-free standards.¹¹⁹ It has been pointed out that, to the extent this may be read to suggest that an SSO cannot require royalty-free licensing of essential IP without infringing Article 101, clarification may be required.¹²⁰

¹¹⁶2001 Horizontal Cooperation Guidelines, para 174. Draft 2010 Horizontal Cooperation Guidelines, paras 277, 282–83, 314.

¹¹⁷Draft 2010 Horizontal Cooperation Guidelines, paras 281 and 282.

¹¹⁸W3C is one of few SSOs in the industry with a strict royalty-free policy. Other SSOs apply IPR policies that are open for exceptions if that necessary to develop an attractive standard (OASIS) or they avoid prescribing any licensing terms but normally would not standardise patented technology unless the owner has agreed not to assert the patents (IETF).

¹¹⁹Draft 2010 Horizontal Cooperation Guidelines, para 278.

¹²⁰ECLF Working Group on Horizontal Agreements, *supra* n 77.

¹²¹It was an interim measure, to be evaluated and replaced by a definitive policy within four years. See R Bekkers and I Liotard, "European Standards for Mobile Communications: The Tense Relationship between Standards and Intellectual Property Rights" [1999] *European Intellectual Property Review* 11012. Available at: <http://hal.archives-ouvertes.fr/docs/00/35/11/98/PDF/EIPR-1999.pdf>.

Previously, the Commission has criticised IPR regimes in important SSOs whereby the members must agree to license essential IPR by “default”.

In 1993, following an intense four-year debate, in particular about the risks associated with patent hold-up, the General Assembly of ETSI adopted a new IPR policy.¹²¹ The new policy involved “licensing by default”. ETSI members were obliged to sign an “Undertaking” by which they committed to grant licenses of essential IPRs on fair, reasonable and non-exclusive conditions and the licensor was required to inform ETSI in advance of the maximum royalty fee that would be requested. Licenses could be withheld if notified to ETSI within 180 days after the Technical Assembly put the relevant draft standard in its work programme. If the procedure was not correctly adhered to, other members were allowed to refuse or terminate their licenses to the company in question thereby effectively blocking access to the market. ETSI was also planning measures to expel companies that did not sign the Undertaking.

CBEMA¹²² complained to the Commission, stating that ETSI’s new IPR policy was in breach of Articles 101 and 102 TFEU, and requested an end to the license-by-default system.¹²³ An intense lobbying effort was undertaken, primarily from American companies, and the US Department of Justice initiated an investigation.¹²⁴ ETSI also received letters from a number of companies threatening to leave ETSI if it implemented the 1993 policy.

The European Commission had earlier opened the possibility for a license-by-default system, but insisted that there must be a “genuine possibility” for IP-holders to withhold their IPR. Reviewing the proposed rules, the Commission was particularly sceptical as to whether an IPR-holder would have sufficient information to adequately determine if it had patents or patent applications. This was crucial, since if IPRs were not identified within 180 days, the “genuine” possibility to withhold IPR was lost.¹²⁵

While the policy had a justifiable objective, the Commission, in an open letter, informed ETSI that this was considered to be restrictive of competition and deprived participants of the incentive to develop new technologies.¹²⁶

The Commission had no objections to ETSI’s *ex ante* disclosure rule or the *ex ante* commitment to license on FRAND terms. What caused problems was the “license-by-default” obligation, whereby patent holders would agree *ex ante*, as a

¹²²The Computer and Business Equipment Manufacturers Association.

¹²³E Messmer, “CBEMA Tries to Derail Property Rights Policy” (1993) 10(27) *Network World* 23, 25.

¹²⁴EJ Iversen, “Standardization and Intellectual Property Rights: ETSI’s Controversial Search for New IPR-procedures” (1999), 6. Available at: http://eprints.utas.edu.au/1297/1/Iversen_ETSI_2002.pdf.

¹²⁵*Ibid.*, 7.

¹²⁶Dolmans, *supra* n 80.

¹²⁷G Ohana, M Hansen and O Shah, “Disclosure and Negotiation of Licensing Terms Prior to Adoption of Industry Standards: Preventing Another Patent Ambush?” (2003) 12 *European Competition Law Review* 644.

condition for participating in the SSO, that their patents be incorporated unless specifically withheld. The rule was perceived to go too far, even if the aim of it was to deter potential hold-up strategies.¹²⁷

This confirms that important SSOs, for which membership is important and grants competitive advantages (such as the ability to influence standards and obtain advance information and experience), should not attempt to obtain unreasonable and unnecessary concessions from their membership.¹²⁸ In particular, IPR policies should not diminish incentives for innovation for the standardised technologies.

As the Commission's Draft 2010 Horizontal Guidelines suggest, FRAND licensing in many contexts would be a balanced solution and the circumstances in which royalty-free licensing is appropriate may be more limited.¹²⁹ However, there are strong arguments which suggest that software-to-software interoperability standards are one of those areas where royalty-free licensing, on balance, would not restrict participation or lead to exclusion that would diminish innovation.

First, it is important to distinguish what is being standardised. Software standardisation driven by interoperability requirements at the communications/network layer is something different from standardisation in many other contexts. "[T]he Internet protocols like http need to be simple, global and standardised since they pertain to the communications paradigm."¹³⁰ While the development and adoption of a common protocol is essential, these standards may involve a relatively low level of technical innovation as such.¹³¹ This is different from, for example, complex hardware and telecommunications infrastructure standards where the standardised technology is the result of large private expenditure in R&D and testing. Moreover, these software standards will

¹²⁸ Dolmans, *supra* n 80.

¹²⁹ See M Lemley, "Ten Things to Do About Patent Holdup of Standards (and One Not To)", Stanford Public Law Working Paper No 923470 (2007), 5. Available at: <http://ssrn.com/abstract=923470>.

¹³⁰ A Joker "A Debate on Standards and the Evolution of Standards: Why Is it Needed Now?" 1 May 2009. Available at: www.talkstandards.com/a-debate-on-standards-and-the-evolution-of-standards-why-is-it-needed-now/.

¹³¹ It has been suggested that this is true as a general matter in the software industry: "[T]he amount of innovation in the software market is much smaller than is generally supposed. Especially in relatively mature sectors of technology, such as operating systems and databases." M Olson, "Dual Licensing", in C DiBona, M Stone and D Cooper (eds), *Open Sources 2.0* (Sebastopol, CA, O'Reilly Media, 2005), ch 5. Available at http://commons.oreilly.com/wiki/index.php/Open_Sources_2.0/Open_Source:_Competition_and_Evolution/Dual_Licensing. See also Federal Trade Commission, "To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy", A Report by the Federal Trade Commission (2003), ch 3, 45. Available at: www.ftc.gov/os/2003/10/innovationrpt.pdf.

¹³² "[T]he diversity of content represented by the over 2 billion Web pages is only possible because the creators of each of those pages is able to use key web standards such as HTML (hypertext Markup Language) and CSS (style sheets) without paying a royalty . . . Although it is clear that the RAND model has worked for other standards bodies, the experience of Web standards suggests

constitute a baseline to allow for interoperability, innovation and competition at the higher layers, among different implementations, applications and services. History has shown that, as such, these royalty-free interoperability standards are the key to innovation and dissemination in the IT industry.¹³² They create the ecosystem on which developers can build and combine.

Second, and related to the first point, in this area there are ample opportunities for companies to make money around the standard instead of making money from the standards themselves. This means that few companies have a business model that is dependent on licensing of the particular technology used to create software interoperability, compared to the other layers in the technology stack.

Third, while stakeholders in the telecoms industry generally support the RAND approach to the licensing of essential IPR in standards

“[a] majority of IT stakeholders . . . especially in the software industry and among its users, are of the opinion that a more satisfactory level of interoperability can be achieved using IPR policies which could be perceived to differ from a (F)RAND approach.”¹³³

In fact, when the W3C Patent Policy Working Group in 2001 proposed a two-track patent policy for W3C that would allow both RAND and royalty-free licensing modes, responses were dramatic. In particular, the open-source community reacted (in their thousands) declaring, *inter alia*, that they would stop using W3C web standards and impel alternative web standards.¹³⁴ When a revised policy was presented, based on royalty-free licensing requirements, the support was very high from within the ranks of the W3C membership. For this kind of standard, it thus seems that royalty-free licensing will *attract* contributors to the table that would otherwise not be interested in participating.

Fourthly, there are some market checks on the royalty-free rule. If the SSOs fail to attract wide participation and develop attractive specifications with broad support in the industry, other SSOs can compete with less restrictive policies.¹³⁵

otherwise. Web standards have flourished when participants have eschewed royalty payments and encouraged the widest possible implementation. However, when patent holders have sought fees, the process of developing and deploying open standards has been held up. We do not argue with the successes of other standards bodies with RAND licensing, however those successes are not enough to persuade us to radically alter the fundamental business model that has made the Web such a success.” DJ Weitzer, “Standards, Patents and the Dynamics of Innovation on the World Wide Web” (2004). Available at: www.w3.org/2004/10/patents-standards-innovation.html. See also T Berners-Lee, “Long Live the Web: A Call for Continued Open Standards and Neutrality”, 22 November 2010. Available at: www.scientificamerican.com/article.cfm?id=long-live-the-web

¹³³ Commission White Paper, *supra* n 2, 10.

¹³⁴ DJ Weitzer, “Standards, Patents and the Dynamics of Innovation on the World Wide Web” (2004). Available at: www.w3.org/2004/10/patents-standards-innovation.html.

¹³⁵ M MacCarthy, “Open Standards, Competition and Patent Policies”, unpublished manuscript, Georgetown University (2009), 14. Available at: <http://explore.georgetown.edu/publications/43082/>, accessed on 6 September 2010.

If superior standards would result from SSOs allowing FRAND licensing, those are likely to be accepted by the market. Moreover, even in the implementation of individual standards, competition may remain from non-royalty-free alternatives. Implementation is voluntary, and even parts of the standards can be replaced by the implementer, if superior alternatives exist that are considered worth the licensing fee.

Finally, even if royalty-free licensing conditions would have some restrictive effect on participation in software standardisation, it appears that there are several advantages that may offset any such restrictions:¹³⁶

- Royalty-free licensing provides the fullest possible access to the resulting standard and so provides the widest economic benefits for competition within a standard. It also reduces the cost of the resulting products and services.
- It has the specificity, transparency and certainty to avoid hold-up problems in a way that FRAND licensing has not (as evidenced by recent antitrust cases, court disputes and numerous articles on the meaning of FRAND).¹³⁷
- It increases trust in standards discussion and certainty about the future and reduces transaction costs in negotiations and patent evaluation, as well as the risk of litigation being brought about the validity of IPR or the terms on which it is licensed.

D. CONCLUSIONS

A number of observations seem appropriate from a *public policy perspective*:

- Standards create significant benefits, not least in the ICT industry, creating the basis for the development and commercialisation of interoperable, often proprietary, implementations. This increases compatibility and substitutability in the markets for the standardised products and services, leading to higher quality and increased competition. Standards thus complement proprietary R&D efforts, technologies, products and services. Together these fuel modern technology markets.
- Open standards processes, with broad participation rights and transparent procedures, bring a wide range of technology providers to the table. This can spur innovation incentives and ensure that standards combine “best-of-breed”

¹³⁶ *Ibid.*, 12–15.

¹³⁷ The vagueness of FRAND commitments can be expected to create increased problems as the technical convergence between telecommunications, IT and media, and their associated business models, continues. Today, a single device or service often includes many standardised technologies. “A mobile device that incorporates a camera, video, PDA functions, a Web browser, text messaging and wireless, for example, will implement hundreds of standards. If even a small percentage requires payment of royalties, the device may become uneconomical to produce.” Updegrave, *supra* n 58.

technologies. Open standards also ensure that the result is available to anyone that would like to implement the standard and that essential IPRs (if such exist) are made available either royalty-free or on (F)RAND terms.

- Where governments act as regulators or procurers with respect to standards, their involvement may significantly increase the market ubiquity of a given standard or technology. In such situations, open standards create a level playing-field for industry participants, ensure full implementation and avoid vendor lock-in.
- Regulatory requirements should nevertheless not force standards organisations to mimic the organisation and procedures of formal SSOs. The success and increased importance of various fora and consortia show that “we need to innovate standards but not standardize innovation”.¹³⁸ Different governance and organisation models may be appropriate in different contexts.
- Important “non-formal” SSOs (including W3C, IETF and OASIS) display a high degree of openness and attempt to protect themselves against abuse by vested interests. Openness is often in the self-interest of the SSO in order to produce widely accepted standards. More restricted consortia and collaborations play a complementary role as feeders of new technology, which if successful may become a *de facto* standard or an open standard after subsequent validation and adoption by an SSO.

As regards the *application of EU competition law to standardisation*, this paper particularly highlighted the following:

- Potential restrictions on “openness” can generally apply to (i) access to the standard-setting process; and (ii) access to the resulting standard. Such restrictions must be assessed on a case-by-case basis, since the competition law requirements depend on the likely competitive effects of the particular standard-setting initiative.
- The Draft 2010 Horizontal Guidelines adopt a “safe harbour approach”, outlining requirements under which co-operation on standards generally would *not* result in a restriction of competition and thus fall outside the scope of Article 101(1) TFEU altogether. However, they provide little concrete guidance on how the Commission would assess whether individual standards agreements fall under Article 101(1) TFEU and, if so, under which circumstances such agreements would benefit from the exception in Article 101(3) TFEU due to the expected efficiencies and consumer benefits.
- This safe harbour approach is typically useful for formal standards bodies and other SSOs with broad industry participation. Given the growing number and importance of specialised fora and consortia, a more general framework for competition law assessment would also be useful. This has been highlighted by

¹³⁸ Jokar, *supra* n 60.

stakeholders in the public consultation process and the Commission's final version is expected to include further clarification in this respect.

- For such a framework it is particularly relevant to distinguish whether the agreement involves an SSO (or a consortium) that controls or significantly impacts access to the markets (at the level of the standardised technology or the standardised products) or whether the resulting standard is likely to face significant competition.
- As a practical matter, the greater the influence of the participating companies and their commitment to the standard, the more likely it is that restrictions in participation in the standard-setting process or access to the standard restrict competition from excluded or otherwise disfavored parties. If, on the other hand, there are ample opportunities for competition between products that implement different standards, or for competition between standardised and non-standardised products, the individual standardisation effort will not be decisive for market access and potential restrictions do not necessarily translate into restrictions of competition in the market.
- EU competition policy strongly supports the notion that industry standards should be open, transparent and non-discriminatory. The parties will bear the burden of proof that any restrictions on competition are necessary in order to achieve countervailing benefits. Open models are therefore appropriate to ensure that the co-operation remains procompetitive, particularly for SSOs comprised of important industry players that aim to develop standards for wide implementation in the industry.
- The Commission's Draft 2010 Horizontal Guidelines state that in order to avoid hold-ups and abusive royalty rates, a clear and balanced IPR policy is required which prescribes (i) good faith disclosure of IPRs that might be essential for the standard and (ii) an irrevocable commitment in writing to license their IPRs to all third parties on FRAND terms.
- FRAND licensing is a balanced approach in many contexts and is often used in practice. However, in the IT sector there is a strong proclivity towards royalty-free standards. The question then arises whether such policies could restrict competition by potentially limiting participation in SSOs and discriminating against business models that are built on proprietary technology and IPR licensing.
- There are nevertheless strong arguments to suggest that royalty-free licensing for software and Internet interoperability standards do not restrict participation or lead to exclusion that would diminish innovation. On the contrary, it tends to increase participation and has proven to be essential to fundamental web standards and other similar technologies.
- Intervention by competition authorities may be called for as a last resort to remedy (and more importantly have a preventive effect on) abuses by SSO participants and safeguard the integrity of these important institutions for innovation.