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Working Party No. 2 on Competition and Regulation

STANDARD SETTING

-- United States --

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COMPETITIVE ASPECTS OF COLLABORATIVE STANDARD SETTING

1. Introduction

1. This submission by the U.S. Federal Trade Commission (“FTC”) and the U.S. Department of Justice (“DOJ”) [hereinafter collectively the “Agencies”] sets forth U.S. competition policy perspectives on standard setting. It first provides general background on the nature and effects of standards and standard setting, before briefly addressing the U.S. standard setting environment. It notes the global leadership role played by the U.S. private sector in standard setting, recognizes the procompetitive benefits of standard setting and explains how the Agencies seek to promote a procompetitive and innovative collaborative standard setting environment, through law enforcement actions and policy guidance. It then briefly surveys non-antitrust legal enforcement actions that also relate to competition policy concerns.

2. General background on standard setting

2.1 *The nature of standards and standard setting*

2. “Industry standards are widely acknowledged to be one of the engines driving the modern economy.¹ Standards can make products less costly for firms to produce and more valuable to consumers.² They can increase innovation, efficiency, and consumer choice; foster public health and safety; and serve as a ‘fundamental building block for international trade.’”^{3 4} Standards enable virtually all the products we

¹ Parts of this submission are substantially derived from U.S. Dep’t of Justice & Fed. Trade Comm’n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition (2007) (hereinafter 2007 IP Report), available at <http://www.justice.gov/atr/public/hearings/ip/222655.pdf>. Subsequent footnote references, also drawn from this Report, are made to dates and page numbers of the Hearing Record Transcript (“Hr’g Tr.”) of the 2002 joint FTC and DOJ “Hearings on Competition and Intellectual Property Law and Policy in the Knowledge Based Economy.”

² This submission is concerned with technical standards (hereinafter referred to as standards). A technical standard “includes all of the following: (1) Common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices. (2) The definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength.” OMB Circular A-119 Revised, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities (rev. Feb. 10, 1998) ¶ 3, available at <http://www.whitehouse.gov/omb/rewrite/circulars/a119/a119.html> (hereinafter OMB Circular A-119). The two primary types of standards are (1) interoperability standards, which guarantee that products made by different firms can interoperate, and (2) performance standards, which set minimum requirements for all products in a general product category. Gregory Tasse, *Standardization in Technology-Based Markets*, 29 Res. Pol’y 587, 589-90 (2000).

³ “Amy A. Marasco, Standards-Setting Practices: Competition, Innovation and Consumer Welfare (Apr. 18, 2002 Hr’g Tr.), at 3-4, <http://www.ftc.gov/opp/intellect/020418marasco.pdf>; see also Janice M. Mueller, *Patent Misuse Through the Capture of Industry Standards*, 17 Berkeley Tech L. J. 623, 631-32 (2002).” 2007 IP Report, *supra* note 1, at 33 & n2.

rely upon in modern society, including mechanical, electrical, information, telecommunications and other systems, to interoperate.⁵ “The most successful standards are often those that provide timely, widely adopted, and effective solutions to technical and systems problems.⁶”

3. The process by which standards are developed and adopted varies. Standards development in the United States may be characterized as sector based and market led.⁷ U.S. businesses often “collaborate to establish standards by working through standard setting organizations (“SSOs”) to develop a standard that all firms, regardless of whether they participate in the process, then can use in making products.⁸ Standards also may be set in the marketplace, where firms vigorously compete, [sometimes] in a winner-take-all standards war,⁹ to establish their own technology as the *de facto* standard.¹⁰”

⁴ The United States is a party to international trade agreements governing the development, adoption and implementation of standards-related measures. The particular rules governing standards-related measures under the World Trade Organization Agreement on Technical Barriers to Trade (TBT Agreement) and U.S. free trade agreements as well as the U.S. legal framework for implementing its standards-related trade obligations are described in the *2010 Report on Technical Barriers to Trade (TBT Report)*, available at <http://www.ustr.gov/sites/default/files/REPORT%20ON%20TECHNICAL%20BARRIERS%20TO%20TRADE%20FINALTO%20PRINTER%2025Mar09.pdf>.

⁵ With respect to beneficial network effects stemming from standardization-induced interoperability, see Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, J. Econ. Persp, Spring 1994, at 93, 109.

⁶ See Andrew Updegrave, Standard Setting and Consortium Structures (Apr. 18, 2002 Hr’g Tr.), at 1-2, available at <http://www.ftc.gov/opp/intellect/020418updegrave2.pdf>. 2007 IP Report, *supra* note 1, at 33.

⁷ In many other countries, a single organization is designated as the major standards developer, and that organization often works closely with, and is frequently a part of, the government.

⁸ “Hundreds of collaborative standard-setting groups operate worldwide, with diverse organizational structures and rules. . . . See, e.g., Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 Cal. L. Rev. 1889, 1904-06 (2002) (discussing the wide variation in policies among SSOs). They may be called standard development organizations, promoter’s groups, joint ventures, special interest groups, or consortia. For ease of discussion, this submission will refer to all such standard-setting groups as SSOs [(a term widely used in the law and economics literature)], recognizing that standard-setting organizations vary widely in size, formality, operation, and scope.” 2007 IP Report, *supra* note 1, at 33 n.5.

⁹ “In a ‘standards war,’ substitute products with incompatible designs are introduced into a market, and users’ purchasing decisions ultimately establish one design as the dominant design or *de facto* standard, in what can effectively be a winner-take-all competition. See Carl Shapiro & Hal R. Varian, *The Art of Standards War*, Cal. Mgmt. Rev, Winter 1999, at 8. A well-known war occurred between Sony’s Betamax format Video Cassette Recorder (‘VCR’) and Matsushita’s VHS format VCR, which ultimately resulted in VHS becoming the *de facto* standard. However, not all competition among incompatible designs results in the establishment of a *de facto* standard. For example, multiple competing products based on varying standards for video game consoles exist, including Sony’s PlayStation®3, Microsoft’s Xbox 360™, and Nintendo’s Wii™. Markets in which standards wars result in a single standard are typically those in which the network effects are the greatest—i.e., those markets in which there are substantial benefits if all customers have compatible products. *Id.* at 14.” 2007 IP Report, *supra* note 1, at 34 n.6. Of course, different standards may coexist even in an industry that has substantial network effects. A prime example is the coexistence of the Microsoft Windows Operating System and Apple Computer Macintosh platforms in personal computing.

¹⁰ See, e.g., Mueller, *supra* note 3, at 631-32; Daniel J. Gifford, Standards and Intellectual Property: Licensing Terms: Some Comments (Apr. 1. 2002 Hr’g Tr.), at 1 (discussing the Windows operating system as an example of a *de facto* standard chosen by the market), available at

2.2 *The U.S. Government and standard setting*

4. The U.S. Government (“USG”), through the National Technology Transfer and Advancement Act, and its implementing policies such as those contained in Office of Management and Budget (“OMB”) ¹¹ Circular A-119,¹² expresses a general preference for federal agencies’ reliance on voluntary consensus standards in lieu of government-unique standards to achieve regulatory and procurement objectives, except where inconsistent with law or otherwise impractical.¹³ ¹⁴ Circular A-119 also provides (where appropriate) for federal government agency staff participation in the activities of SSOs which, however, remain free of government control.¹⁵ The Standards Services Division (“SSD”) within the U.S. Commerce Department’s National Institute of Standards and Technology (“NIST”) publishes information related to standards and conformity assessment as a service to producers and users of such systems—both in the government and in the private sector.¹⁶

5. In pursuit of public policy goals reflected in statutes and implementing regulations, U.S. Government agencies play a key role in establishing and overseeing standards that bind private parties.¹⁷ One focus of standard setting by the U.S. Government (and other governments) is to ensure compatibility in cooperative endeavors where a lack of compatibility would spawn costly confusion or inefficient variety.¹⁸ The U.S. Government favors “performance standards” that express requirements in terms of outcomes rather than specifying the means to those ends. They are generally superior to engineering or

<http://www.ftc.gov/opp/intellect/020418danieljgifford.pdf>. Of course, as described *supra* note 9, multiple competing standards may coexist in certain industries, reflecting differences in consumer tastes.

¹¹ OMB is the agency that oversees overall management of the Executive Branch of the U.S. Federal Government.

¹² See OMB Circular A-119, *supra* note 2.

¹³ Encouraging reliance on voluntary standards supports the following USG goals: (1) it reduces USG costs associated with developing and maintaining standards and decreases the burdens of complying with agency regulation; (2) it provides incentives and opportunities to establish standards that serve national needs; and (3) it encourages long-term growth for U.S. enterprises by promoting efficiency and economic competition through standard harmonization. *Id.* at ¶ 2.

¹⁴ For a description of the U.S. legal and institutional framework regarding the use of standards in support of regulation, see *Report on the Use of Voluntary Standards in Support of Regulation in the United States* (2009), available at <http://ts.nist.gov/Standards/upload/Use-of-Voluntary-Standards-in-Support-of-US-Regulation.pdf>.

¹⁵ Moreover, USG staff participation does not imply government endorsement of a standard. OMB Circular A-119, *supra* note 2, ¶7.e.

¹⁶ NIST also provides a good overview of the role of the private sector in U.S. standard setting in the NIST publication entitled NISTIR 7614, *The ABC’s of Standards Activities* (Aug. 2009), available at <http://ts.nist.gov/Standards/Information/upload/NISTIR-7614.pdf>.

¹⁷ The brief discussion of USG agency standards activities in paragraphs 5-7 (and of state standard-setting activities in paragraph 8) is merely meant to be illustrative.

¹⁸ See Joseph Farrell and Paul Klempner, *Coordination and Lock-in: Competition with Switching Costs and Network Effects*, 3 Handbook of Indus. Org. § 3.1, at 2007 (2007). The authors cite as examples nationally mandated standards requiring everyone to drive on the same side of the road, and establishing broadcast frequencies and mobile phone standards. The authors caution that governments should not always seek rapid standardization when the merits of competing standards are unclear, and that governments are wise in seldom intervening to displace an established standard because it is deemed inefficient. The authors point out that governments may be inexperienced, that standards may need to evolve, and (partly as a result) compliance may not be clear. See *id.*

design standards because performance standards give the regulated parties the flexibility to achieve regulatory objectives in the most cost-effective way.¹⁹

6. Some U.S. Government agencies establish technical regulations that mandate compliance with standards as the result of specific statutory responsibilities. For example, through its Wireless Telecommunications Bureau, the Federal Communications Commission (“FCC”) oversees the licensing of spectrum frequencies to private users and regulates the use of radio spectrum to fulfill the communications needs of businesses, aircraft and ship operators, and individuals.²⁰

7. Most government standard setting activities, however, focus on performance standards, without reference to specific technologies or interoperability requirements. This provides industry with the maximum flexibility to meet mandated requirements. U.S. Government agencies, such as, for example, the Consumer Product Safety Commission (“CPSC”),²¹ the Food and Drug Administration (“FDA”),²² and the Environmental Protection Agency (“EPA”),²³ may set safety, health, and environmental requirements designed to protect the public, but they rely on voluntary consensus standards, where possible, to meet their regulatory objectives.

8. In addition, U.S. state and local governments may also opt to mandate compliance with standards to meet their particular subfederal or local policy objectives. For example, the California Air Resources Board (“CARB”) promulgates a variety of regulatory ambient air quality requirements designed to limit air pollution in California.²⁴

3. Potential procompetitive benefits of collaborative standard setting

9. In many contexts, the collaborative standard setting process can produce substantial benefits. The U.S. Supreme Court has stated that when “private associations promulgate safety standards based on the merits of objective expert judgments and through procedures that prevent the standard-setting process from being biased by members with economic interests in stifling product competition... those private standards can have significant procompetitive advantages.”²⁵ As the FTC has noted, “[t]ypically, the procompetitive benefits of standard setting outweigh the loss of market competition. For this reason, antitrust enforcement has shown a high degree of acceptance of, and tolerance for, standard-setting activities.”²⁶ DOJ has

¹⁹ OMB Circular A-4, *Regulatory Analysis*, at 8 (Sept. 17, 2003), available at <http://www.whitehouse.gov/OMB/circulars/a004/a-4.pdf>.

²⁰ The role of the FCC’s Wireless Communications Bureau is delineated at <http://wireless.fcc.gov/>. The FCC also plays a pivotal regulatory role with regard to the U.S. adoption of a digital television standard. See <http://www.dtv.gov/>. Other regulatory functions carried out by the FCC are described at <http://www.fcc.gov/aboutus.html>.

²¹ For a listing of mandatory government product safety standards issued by the CPSC, as well as non-mandatory voluntary standards, see <http://www.cpsc.gov/cgi-bin/regs.aspx>.

²² The FDA’s regulations governing food safety standards are found at http://www.access.gpo.gov/nara/cfr/waisidx_08/21cfr130_08.html.

²³ The EPA, for example, establishes standards that require specified reductions in emissions of hazardous air pollutants. For a description of these standards, see <http://www.epa.gov/lawsregs/laws/caa.html>.

²⁴ CARB’s ambient air quality standards are set forth at <http://www.epa.gov/lawsregs/laws/caa.html>. They are stricter than EPA standards in several respects.

²⁵ *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 501 (1988).

²⁶ *In re Rambus, Inc.*, Docket No. 9302 (Opinion of the Commission filed Aug. 2, 2006), at 3, available at <http://www.ftc.gov/os/adipro/d9302/060802commissionopinion.pdf>.

recognized that “[p]erformance standards can improve the health and safety of consumers and improve consumers' confidence in a product's quality. Interoperability standards can enable consumers to share information with each other and to interconnect compatible products from different producers. In addition, the collaborative standard-setting process can enable industry participants to share knowledge and develop a "best-of-breed" product or process.”²⁷ Moreover, “by agreeing on an industry standard, firms may be able to avoid many of the costs and delays of a standards war, thus substantially reducing transaction costs to both consumers and firms” and speeding up the introduction of new products and services that benefit consumers.²⁸ Standard setting may also help to prevent coordination failures that can arise in markets that have network effects.²⁹ In such markets, consumers' individual decisions may lead them to choose incompatible networks, even though they would all be better off if they coordinated.³⁰ An SSO can provide leadership that prevents this situation from occurring. In short, competition that centers on a particular standard may be very socially beneficial and this reflects the general nature of standard setting in the United States.³¹

4. Potential harm to competition from collaborative standard setting

10. Nevertheless, collaborative standard setting is not free of potential social costs. Firms that choose to work through an SSO to develop and adopt standards may be competitors within their particular industry. Thus, agreement among competitors about which standard is best suited for them replaces consumer choice and the competition that otherwise would have occurred in the market to make their product the consumer-chosen standard. Consumers could lose some benefit if competitors proceed via agreement rather than through competition and market forces to choose a key industry technology. Social welfare may suffer if alternative standards are prevented arbitrarily from competing in the marketplace. Recognizing that collaboratively set standards can reduce competition and consumer choice and have the potential to prescribe the direction in which a market will develop,³² U.S. courts have been sensitive to

²⁷ Letter from Thomas O. Barnett, Assistant Attorney Gen., U.S. Dep't of Justice, to Robert A. Skitol, Esq. (Oct. 30, 2006) [hereinafter VITA Business Review Letter], available at <http://www.justice.gov/atr/public/busreview/219380.pdf>.

²⁸ 2007 IP Report, *supra* note 1, at 34. “Standards wars offer consumers a choice of products that incorporate alternative potential standards. During a standards war, however, some consumers may delay purchasing until the *de facto* standard is chosen because they do not want to bear the costs of moving from a losing standard to the winning standard. Jeffrey Church & Roger Ware, *Network Industries, Intellectual Property Rights and Competition Policy*, Competition Policy And Intellectual Property Rights In The Knowledge-based Economy 230-39 (Robert D. Anderson & Nancy T. Gallini eds., 1998); *see also* Katz & Shapiro, *supra* note 5, at 105-08 (discussing the concept of consumers tipping toward a *de facto* standard). To win a standards war, a firm may have to incur significant costs or limit its assertion of market power in order to establish an installed base of users. The winner of a standards war, however, may have significant market power, often because it can enforce its patent rights to prevent others from making products that conform to the standard. *See, e.g.*, David Balto & Robert Pitofsky, *Antitrust and High-Tech Industries: The New Challenge*, 43 *Antitrust Bull.* 583, 599 (1998).” 2007 IP Report, *supra* note 1, at 34 n.8. As described *supra* note 9, however, products embodying different standards may maintain a significant market presence in certain industries, such as video gaming and personal computing.

²⁹ “[T]here are network effects if one agent’s adoption of a good (a) benefits other adopters of the good (a ‘total effect’) and (b) increases others’ incentive to adopt it (a ‘marginal effect’).” Farrell and Klemperer, *supra* note 18, § 3.7, at 2054.

³⁰ *See id.* § 3.4.1, at 2022-2024.

³¹ *See, e.g.*, *Consol. Metal Prods. v. Am. Petroleum Inst.*, 846 F.2d 284 (5th Cir. 1988).

³² *See Standard Sanitary Mfg. Co. v. United States*, 226 U.S. 20, 41 (1912); Bureau of Consumer Protection, Fed. Trade Comm’n, Standards and Certification: Final Staff Report 28, 34 (1983); Katz & Shapiro, *supra*

antitrust issues that may arise in the context of collaboratively set standards. In a few cases, relative to the vast number of U.S.- based standards that have been set, they have found antitrust liability in circumstances involving the manipulation of the standard setting process or the improper use of the resulting standard to gain competitive advantage over rivals.³³ In addition to enforcing the law, the FTC and the DOJ also have described their policy positions in reports and advisory opinions³⁴ on key competition questions raised by standard setting. The Agencies apply the same general antitrust principles to all standard-setting activities regardless of industry sector. Generally, unless the standard-setting process is used as a sham to cloak naked price fixing or bid rigging, the Agencies analyze action during the standard-setting process under the rule of reason. Although antitrust law is the primary means of addressing competition concerns raised by standard setting, such concerns may be addressed under certain circumstances by other legal doctrines, such as patent, contract, and tort law.³⁵

4.1 Competition case law development

11. As noted previously,³⁶ despite its potential procompetitive benefits, standard setting may also sometimes provide opportunities to distort the competitive process. U.S. court and agency decisions have long held that competition law may be applied to prevent harm to competition associated with standard setting. In particular, challenged conduct has included the anticompetitive exclusion of rivals; the achievement of monopoly power through anticompetitive “hold up” tied to standard setting; and the exercise of market power through renegeing on contract terms that reflect standard setting bargains. Key cases representing these different categories are discussed below.

4.1.1 Anticompetitive exclusion involving standard setting

12. The Supreme Court has condemned efforts by firms to use SSO proceedings as a means of excluding products produced by rivals. In the *Radiant Burners case*,³⁷ the Supreme Court considered allegations that manufacturers of gas burners had violated Section 1 of the Sherman Act, which prohibits concerted action that unreasonably restricts competition, by conspiring to manipulate the American Gas Association’s certification tests for such products. The plaintiff claimed that its competing product had been effectively excluded from the market as a result of tests that were not based on objective standards; that competitors of those seeking certification improperly influenced the Association’s decisions; and that the Association and its utility members agreed to refuse to sell gas for use in burners that were not certified. The trial court dismissed the complaint, but the Supreme Court reversed, stressing the potential for harm to competition, stating: “It is obvious that petitioner cannot sell its gas burners, whatever may be their virtues, if, because of the alleged conspiracy, the purchasers cannot buy gas for use in those burners.”³⁸

13. The Supreme Court has also held that an SSO itself may be liable for antitrust damages if its agents or employees collude with private parties to manipulate quality or safety standards to exclude a

note 5, at 105-06; Richard Gilbert, *Symposium on Compatibility: Incentives and Market Structure*, 40 J. Indus. Econ. 1 (1992).

³³ Key U.S. antitrust cases are discussed *infra* paragraphs 12-24.

³⁴ See the discussion of the 2007 IP Report, *supra* note 1, and of DOJ business review letters concerning *ex ante* licensing within SSOs, *infra* paragraphs 28-36.

³⁵ See discussion of pertinent cases *infra* paragraphs 38-40.

³⁶ See *supra* paragraphs 2 & 9.

³⁷ *Radiant Burners, Inc. v. Peoples Gas Light & Coke Co.*, 364 U.S. 656 (1961).

³⁸ *Id.* at 659.

competitor. In *Hydrolevel*,³⁹ the defendant was the American Society of Mechanical Engineers (“ASME”), an SSO that developed safety codes for boilers and other heavy equipment. One of ASME’s members (a competitor of the plaintiff) persuaded the chairman of one of ASME’s subcommittees to provide an unofficial (and unjustified) letter stating that plaintiff’s product was unsafe. Thereafter, the competitor used that response to discourage customers from buying the plaintiff’s product. Hydrolevel sued the employer of the subcommittee chairman, the competitor, and ASME for violating Section 1 of the Sherman Act. The Supreme Court affirmed a jury verdict against ASME, holding the SSO liable for the actions of its subcommittee chairman because he acted on the “apparent authority” of ASME to discourage customers from purchasing one competitor’s water boiler safety device. The Supreme Court noted that ASME had not enacted any “meaningful safeguards” to try and prevent such actions.⁴⁰

14. The *Allied Tube*⁴¹ case involved an SSO conspiracy to exclude a rival technology. The SSO, the National Fire Protection Association (“NFPA”), set in the National Electrical Code (“NEC”) the specifications for electrical conduit used to carry electrical wire in buildings. Local government building codes widely adopted the NEC. In the 1970s, the NEC only certified electrical conduit made of steel. Starting in 1980, however, plaintiff Indian Head Inc. began offering electrical conduit made of polyvinyl chloride (“PVC”) and initiated a proposal to obtain NFPA approval to include PVC conduit as a type of electrical conduit in the 1981 edition of the NEC. Indian Head’s proposal was scheduled for consideration at the 1980 annual NFPA meeting, where it could be rejected or adopted by a simple majority of the members present. Fearing that PVC would cut into their market, defendant Allied Tube and Conduit Corporation and other steel conduit makers collectively agreed to “pack” the 1980 NFPA meeting with new NFPA members, whose only function would be to vote against Indian Head’s PVC proposal. The new members’ costs of attending were paid by the steel conduit conspirators. After the PVC proposal was voted down, Indian Head sued Allied Tube and the steel conduit conspirators. A jury held for Indian Head, finding Allied Tube and the others had “subverted” the NFPA consensus standard setting process and thereby illegally restrained trade in violation of Section 1 of the Sherman Antitrust Act. The Supreme Court affirmed the jury verdict. In so doing, it stressed that an SSO cannot validate the anticompetitive activities of its members simply by adopting rules that fail to provide safeguards sufficient to prevent the standard setting process from being biased by members with economic interests in restraining competition.

4.1.2 Anticompetitive “hold up” tied to standard setting

15. More recently, antitrust issues have arisen in “collaborative standard setting as standards have increasingly incorporated technologies that are protected by intellectual property (“IP”) rights. These issues involve the potential for ‘hold up’ by the owner of patented technology after its technology has been chosen by the SSO as a standard and others have incurred sunk costs that effectively increase the relative cost of switching to an alternative standard.⁴² Before, or *ex ante*,⁴³ adoption of a standard, multiple

³⁹ Am. Soc’y of Mech. Eng’rs v. Hydrolevel Corp., 456 U.S. 556 (1982).

⁴⁰ *Id.* at 570-73.

⁴¹ Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492 (1988).

⁴² “In the standard setting context, firms may make sunk investments in developing and implementing a standard that are specific to particular IP. To the extent that these investments are not redeployable using other IP, those developing and using the standard may be held up by the IP holders. See Carl Shapiro, Standard Setting Organizations: Evaluating the Anticompetitive Risks of Negotiating Intellectual Property Licensing Terms and Conditions Before a Standard Is Set (Nov. 6, 2002 Hr’g Tr.), at 15-16 (“In addition to the word ‘hold-up,’ opportunism is a word that’s commonly used in the relevant economic literature, at least, which is [i]n transaction cost economics, the notion that somebody might wait, perhaps, until commitments were made and then seek to extract a high royalty or might try to steer things in a direction so that they would have an essential patent but not have made a firm commitment *ex ante* on the terms on which it would be licensed.”), <http://www.ftc.gov/opp/intellect/021106ftctrans.pdf>; see also Timothy J.

technologies may compete to be incorporated into the standard under consideration.”⁴⁴ Afterwards, unless they have protected themselves *ex ante*, users of the “winning” “technology may lack effective substitutes⁴⁵ precisely because the SSO chose it as the standard.⁴⁶ Thus, *ex post*, the owner of a patented technology necessary to implement the standard may have the power to extract higher royalties or other licensing terms that reflect the absence of competitive alternatives.”⁴⁷ The users of the patented technology

Muris, *The FTC and the Law of Monopolization*, 67 Antitrust L.J. 693, 704-06 (2000) (describing factual considerations as to whether a company could engage in a hold up); cf. Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post Contract Hold-Up Analysis to Vertical Relationships*, 67 Antitrust L.J. 283 (1999). Moreover, this hold up may cause firms to sink less investment in developing and implementing standards.” 2007 IP Report, *supra* note 1, at 35 n.11. A more detailed economic assessment of the costs of hold up in standard setting in the presence of patent rights is found in Joseph Farrell et al., *Standard Setting, Patents, and Hold-Up*, 74 Antitrust L. J. 603 (2007). As the authors explain, “[h]old-up is a particular problem in the context of cooperative standard setting for two reasons. First, when standards are involved, an entire industry may make specific investments that are subject to hold-up. Second, coordination problems can make it especially hard to shift away from an agreed-upon standard in response to excessive royalty demands. If each user’s leading alternative to sticking with the standard is unilateral switching, and thus losing compatibility with others, then the patent holder’s subsequent advantage . . . includes not only its technology’s inherent advantage and the value of the user’s own sunk investments, but also the value of compatibility to the user. . . . In other cases, users’ best alternative to *ex post* licenses may be a coordinated shift to a new standard, perhaps via reconsideration by the SSO itself. However, SSO processes take a long time. . . . In the language of the economics of standards, hold-up can be severe if there is substantial (or strong) inertia. Moving from one standard to another is often costly and disruptive, and thus, it is *ex post* both normal and efficient for an industry to be reluctant to make such a shift. Of course, this does not imply that exploiting that reluctance is efficient.” *Id.* at 616-17 (citations omitted).

⁴³ “Whether and at what point hold up can occur will vary, depending on a variety of factors. A sufficient condition for hold up to occur is that the cost of switching to the best alternative standard must be greater than the benefits of switching to the best alternative standard.” 2007 IP Report, *supra* note 1, at 35 n.12.

⁴⁴ *Id.* at 35 n.11. See generally, e.g., Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 Antitrust L. J. 1 (2005) (proposing that SSOs conduct *ex ante* auctions of their standards, where IP owners would submit RAND commitments coupled with licensing terms and the standardization selection process then would be based on technological merit and price). For a critique of this proposal, see Damien Geradin, Anne Layne-Farrar, and A. Jorge Padilla, *The Ex Ante Auction Model for the Control of Market Power in Standard Setting Organizations* (CEMFI Working Paper No. 0703, 2007), available at <ftp://ftp.cemfi.es/wp/07/0703.pdf>.

⁴⁵ “See, e.g., Carl Shapiro & Hal r. Varian, *Information Rules: A Strategic Guide To The Network Economy* 103-34 (1999).” 2007 IP Report, *supra* note 1, at 36 n.14.

⁴⁶ “Collaborative *de jure* standards sometimes face a market test for acceptance, just as *de facto* standards do. If a standard chosen by an SSO must compete with rival standards, then the owner of any patented technology necessary to implement the SSO’s standard may have little market power. See, e.g., Apr. 18 Hr’g Tr. at 76 (Lemley). The opportunity for users of the SSO’s standard to move to a rival standard if the royalty rates are too high may limit the owner to a competitive royalty rate.” *Id.* at 36 n.15.

⁴⁷ “Nov. 6 Hr’g Tr. at 15 (Shapiro) (“So, the notion of holdup would be that *ex post* there are very few choices, and a company that controls an essential patent is in a very strong bargaining position to extract royalties or other concessions from people who want to comply with the standard. *Ex ante*, the bargaining positions are very different because, let’s suppose, there would be maybe lots of choices . . .”).” 2007 IP Report, *supra* note 1, at 36 n.16. Those higher royalties reflect the high costs of retooling production and ensuring compatibility with other components and products associated with choosing an alternative product design not compatible with the standard. Such costs are delineated in Mark Lemley and Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 Tex. L. Rev. 1991, 1992-3 (2007). Professors Lemley and Shapiro argue that the threat of hold up gives patent holders excessive bargaining power in component-

do not receive the price benefits that competition between technologies can provide.⁴⁸ Consumers of the products using the standard would be harmed to the extent those higher royalties were passed on in the form of higher prices.⁴⁹

16. “To mitigate this type of hold up, some SSOs require participants to disclose the existence of IP rights that may be infringed by the potential users of a standard in development.⁵⁰ SSOs also may require SSO members to commit to license any of their IP that is essential to an SSO standard on “reasonable and nondiscriminatory” (“RAND”) terms.”⁵¹ Some SSOs require or permit disclosure of maximum licensing terms “before selecting a particular technology as part of a standard.”⁵² A few SSOs (perhaps the most prominent being the World Wide Web Consortium, the international SSO that develops technical Internet standards) require that members’ IP incorporated in standards be licensed on royalty-free terms.

17. The FTC has brought three cases that alleged anticompetitive manipulation of standards setting processes designed to achieve hold up under Section 5 of the FTC Act, which prohibits unfair methods of competition. In *Dell*,⁵³ “the FTC alleged that during an SSO’s deliberations about a certain standard, Dell, a member of the SSO, had twice certified that it had no intellectual property relevant to the standard, and that the SSO adopted the standard based, in part, on Dell’s certifications. After the SSO adopted the standard, Dell demanded royalties from those using its technology in connection with that standard. The [FTC] accepted a consent agreement under which Dell agreed not to enforce the patent in question against firms using it as part of the standard.”⁵⁴

18. *Rambus*⁵⁵ involved a firm, Rambus, that participated in and then withdrew from involvement in the Joint Electronic Device Engineering Councils (JEDEC), an SSO comprised of major computer companies that developed standards for different classes of “dynamic random access memory” (DRAM) computer chips. JEDEC required that its members participate in good faith, and the FTC found that JEDEC’s policies created the expectation that members would disclose patents and patent applications that

based industries that allow the “patent owner to capture value that has nothing to do with its invention, merely because the infringer cannot separate the infringing component from the non-infringing ones” after it has sunk costs into the design and marketing of a product. *Id.* at 2010. *See also, e.g.*, Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. Corp. L. 1151, 1160 (2009).

⁴⁸ Moreover, hold up may impose other harms: “the *prospect* of hold-up may induce users to postpone or avoid making commitments. Users may also make inefficient investments to partially protect themselves from possible hold-up.” Farrell et al., *supra* note 42, at 615 (emphasis in the original).

⁴⁹ In other words, the royalties that can result from hold up tax consumer welfare and can harm consumers by raising prices. “For consumer harm to occur, it is not necessary that a hold up result in higher marginal costs for producers. For example, higher lump sum or fixed royalties might discourage entry among firms that would produce the standardized product. The reduction in competition at the downstream level, and possible reduction in product adoption, might harm consumers.” 2007 IP Report, *supra* note 1, at 36 n.17.

⁵⁰ Disclosure rules have limitations, however. “Disclosure, even of an issued patent, let alone of an application, does not clearly reveal what will eventually be held to be covered by a valid patent. This patent fog stems from various aspects of [U.S.] patent policy[.]” Farrell et al., *supra* note 42, at 629.

⁵¹ 2007 IP Report, *supra* note 1, at 36.

⁵² *Id.*

⁵³ *In re Dell*, 121 F.T.C. 616 (1998).

⁵⁴ 2007 IP Report, *supra* note 1, at 44. *See* Decision and Order, *In re Dell*, 121 F.T.C. at 618-23.

⁵⁵ *In re Rambus, Inc.*, Docket No. 9302 (Opinion of the Commission filed Aug. 2, 2006), *available at* <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>. The following discussion is based on the facts set forth in the FTC’s opinion.

later might be enforced against those practicing the JEDEC standards. In addition, JEDEC members were obligated to offer assurances to license patented technologies on RAND terms, before members voted to adopt a standard that would incorporate those technologies.

19. The FTC found that Rambus violated section 5 of the FTC Act by engaging in deceptive conduct before JEDEC when it failed to disclose relevant patents and patent applications, and misled JEDEC members into believing that Rambus was not seeking patent rights that would cover implementations of JEDEC standards. The FTC further found that Rambus's actions contributed significantly to JEDEC's technology selections and that JEDEC's choice of standard contributed significantly to Rambus's acquisition of monopoly power. According to the FTC, the switching costs that developed as chip manufacturers became increasingly committed to the standard locked the industry in and rendered Rambus's monopoly power durable. The FTC concluded that Rambus unlawfully monopolized the markets for four technologies incorporated into the SSO's standards in violation of section 5 of the FTC Act. In a subsequent opinion and order on remedy in *Rambus*,⁵⁶ the FTC barred Rambus from making future misrepresentations and omissions to SSOs and directed Rambus to license key patented technologies based on certain specified maximum allowable royalty rates.

20. Rambus appealed, and a panel of the U.S. Court of Appeals for the District of Columbia overturned the FTC's decision and remanded the case to the FTC for further proceedings.⁵⁷ The court opined that, if JEDEC, in the world that would have existed "but for" Rambus's deception, would have standardized the very same technologies, then Rambus's alleged deception could not be said to have had an effect on competition in violation of the antitrust laws. The court did not view JEDEC's loss of an opportunity to seek favorable RAND licensing terms as an "antitrust" harm. Because the FTC did not reject the possibility that JEDEC would have developed the same standard even absent Rambus's deceptive conduct, the court held that "the Commission failed to demonstrate that Rambus's conduct was exclusionary, and thus to establish its claim that Rambus unlawfully monopolized the relevant markets."⁵⁸ The full D.C. Circuit Court of Appeals and the Supreme Court refused to review this decision, and the FTC ended the case by dismissing the complaint against Rambus.⁵⁹

21. The third FTC case involved standards set by a state governmental body. "In 2003, the FTC filed an administrative complaint against the Union Oil Company of California ("Unocal") for allegedly misrepresenting information involving proposed low emissions gasoline standards in state regulatory proceedings" before the California Air Resources Board ("CARB").⁶⁰ "According to the complaint, Unocal presented research results in these proceedings that it had represented as non-proprietary, and [CARB] used these results in setting its standards. At the same time, Unocal was pursuing patent rights to cover these research results. The FTC's complaint asserted that Unocal misrepresented its proprietary interest in the standard until members of the refining industry had spent billions of dollars modifying their refineries to become compliant with the new standards. Unocal then alleged that [those implementing] the

⁵⁶ *In re Rambus, Inc.*, Docket No. 9302 (Opinion of the Commission on Remedy and Final Order, issued February 2, 2007, as modified April 27, 2007), available at <http://www.ftc.gov/os/adjpro/d9302/070205opinion.pdf>.

⁵⁷ *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008), *reh'g en banc denied* (Sept. 9, 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

⁵⁸ *Id.* at 467.

⁵⁹ The FTC dismissed its complaint against Rambus on May 12, 2009. *In re Rambus, Inc.*, Docket No. 9302 (Order Returning Matter to Adjudication and Dismissing Complaint, May 12, 2009), available at <http://www.ftc.gov/os/adjpro/d9302/090512orderdismisscomplaint.pdf>.

⁶⁰ 2007 IP Report, *supra* note 1, at 45. *In re Union Oil Company of California*, Docket No. 9305 (Complaint, March 4, 2003), available at <http://www.ftc.gov/os/adjpro/d9305/030304unocaladmincmplt.pdf>.

new standards would infringe its patents. This conduct allegedly enabled Unocal to charge substantial royalties, costing consumers hundreds of millions of dollars per year. The Unocal matter settled as part of a larger dual consent agreement that allowed Chevron Corporation to acquire Unocal. Under the terms of the settlement, Unocal [agreed not] to enforce its patents related to the reformulated gasoline standard set by [CARB].”⁶¹

22. Private antitrust cases also involve allegations of hold up tied to standard setting. A particularly significant example is the 2007 *Broadcom v. Qualcomm* decision, in which the U.S. Court of Appeals for the Third Circuit held that the district court erred in dismissing monopolization and attempted monopolization claims against a manufacturer of patented chipset technology based on its alleged failure to license its patented technology on fair, reasonable, and nondiscriminatory (“FRAND”) terms as it had committed to do during the standard setting process.⁶² The court held that “(1) in a consensus-oriented private standard-setting environment, (2) a patent holder’s intentionally false promise to license essential proprietary technology on FRAND terms, (3) coupled with an SDO’s reliance on that promise when including the technology in a standard, and (4) the patent holder’s subsequent breach of that promise, is actionable anticompetitive conduct.”⁶³ In so holding, the court favorably cited the FTC’s discussion of the antitrust harm associated with standard setting hold ups, found in *Dell, Rambus, and Unocal*, discussed above.⁶⁴ The court remanded the claims to the district court for proceedings to determine whether the claims could be proven. The parties agreed to settle this litigation in April 2009.

4.1.3 Obtaining market power by renegeing on contract terms

23. In its 2008 *N-Data* consent decree, the FTC condemned a breach of a licensing commitment made to an SSO and subsequently relied upon by the market.⁶⁵ In January 2008, the FTC issued a complaint alleging that the N-Data company violated both prongs of section 5 of the FTC Act (unfair methods of competition and unfair acts or practices), based upon its assertion of patents obtained indirectly from National Semiconductor (“National”).⁶⁶ In particular, the Complaint alleged that N-Data and its predecessor in interest, Vertical Networks, Inc. (“Vertical”), engaged in a prohibited course of conduct when they sought to break a patent licensing commitment made by National to the Institute of Electrical and Electronics Engineers (IEEE).⁶⁷ National employees participated in IEEE meetings which led to the adoption of a new IEEE local area network data protocol standard known as “Fast Ethernet.” The IEEE incorporated National’s patented “NWay” technology within Fast Ethernet, in light of National’s letter to the IEEE offering to license NWay to any requesting party on a non-discriminatory basis. (The IEEE had considered adopting a Fast Ethernet standard without NWay.) National committed that the license would be paid-up and royalty-free after payment of a one-time fee of one thousand dollars. Subsequently National assigned the NWay patents to Vertical, and Vertical acknowledged that it had been informed that

⁶¹ 2007 IP Report, *supra* note 1, at 45. See Statement of the Federal Trade Commission, *In re Union Oil Company of California*, Dkt. No. 9305 and *Chevron/Unocal*, File No. 051-0125 (June 10, 2005), available at www.ftc.gov/os/adjpro/d9305/050802statement.pdf.

⁶² *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3d Cir. 2007).

⁶³ *Id.* at 314.

⁶⁴ *Id.* at 310-12.

⁶⁵ *In re Negotiated Data Solutions, LLC*, File No. 051-0094 (Sept. 23, 2008), electronic case file available at <http://www.ftc.gov/os/caselist/0510094/index.shtm>.

⁶⁶ Complaint, *In re Negotiated Data Solutions, LLC*, File No. 051-0094 (2008), available at <http://www.ftc.gov/os/caselist/0510094/080923ndscomplaint.pdf>. The following factual summary is based on the FTC’s complaint.

⁶⁷ *Id.*

those patents might be encumbered by National's actions and letter. Subsequently, however, Vertical sought licensing fees on a higher per-unit basis, and sued several companies that tendered one thousand dollar payments, per National's original offer. In 2003, Vertical assigned its patents to N-Data and ceased operations. N-Data continued sending notice letters and asserting the NWay patents in infringement suits.

24. An FTC majority found that N-Data engaged in an "unfair method of competition" under Section 5 of the FTC Act by engaging in patent hold up – specifically by exploiting the incorporation of NWay into the Fast Ethernet standard and renegeing on a known commitment made by its predecessor in interest.⁶⁸ According to the FTC, even if N-Data's actions did not violate the Sherman Antitrust Act because N-Data's alleged misconduct did not cause its monopoly power, N-Data's conduct still threatened to raise prices for an entire industry and to "subvert" the IEEE standard setting process in a way that endangered the viability of standard setting generally. N-Data's conduct threatened to reduce the value of standard setting by raising the possibility of "opportunistic lawsuits." Consequently, firms would be less likely to rely on new or existing standards. Further, new standards might be adversely affected because SSOs would unreasonably seek to avoid incorporating any patented technologies for fear of an N-Data like hold-up. The FTC also noted that National's prior licensing commitment was made to an industry-wide body, thereby involving numerous, injured third parties lacking privity with patentees and having mixed incentives to pass on royalties. Finally, the FTC also found that N-Data's behavior involved an "unfair act" under Section 5 of the FTC Act in that it caused (1) substantial consumer injury, (2) not outweighed by countervailing benefits, (3) which consumers could not reasonably have avoided. In settling these charges, N-Data agreed to be placed under an order prohibiting it from enforcing the N-Way patents unless it first offered a one thousand dollar one-time paid-up license – the license terms National had agreed to before NWay was incorporated into the Fast Ethernet standard.⁶⁹

4.2 Competition policy guidance regarding *ex ante* licensing

25. The Agencies have provided policy guidance to the private sector regarding actions they might take *ex ante* to avoid competitive problems associated with hold ups. That policy guidance is embodied in a 2007 Report jointly issued by the Agencies, and in specific DOJ "business review letters" responding to SSO proposals regarding *ex ante* patent licensing negotiations.

4.2.1 2007 report by the agencies on antitrust and intellectual property

26. As part of its efforts to inform consumers, businesses, and intellectual property rights holders about how the DOJ and FTC view activities involving intellectual property in the broader context of competition, the agencies issued a joint report in April 2007 entitled ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION ("Report").⁷⁰

27. The Report was based on a series of hearings in 2002 that included comments from more than 300 stakeholders, including those with interests in biotechnology, computer hardware and software, the Internet, and pharmaceuticals, as well as independent investors, and leading scholars and practitioners in antitrust law, intellectual property law, and economics. Recognizing that intellectual property laws and antitrust laws share the common goals of "encouraging innovation, industry and competition," the agencies

⁶⁸ The following summary of the FTC majority's conclusions is based on *In re* Negotiated Data Solutions, LLC, File No. 051-0094 (2008), Statement of the Federal Trade Commission (Jan. 23, 2008), available at <http://www.ftc.gov/os/caselist/0510094/080122statement.pdf>.

⁶⁹ *In re* Negotiated Data Solutions, LLC, File No. 051-0094 (2008), Decision and Order (Sept. 22, 2008), available at <http://www.ftc.gov/os/caselist/0510094/080923ndsdo.pdf>.

⁷⁰ 2007 IP Report, *supra* note 1.

reported they will use a flexible rule of reason approach to determine antitrust liability for the vast majority of conduct involving intellectual property rights. In particular, the Report assessed potential procompetitive and anticompetitive ramifications of *ex ante* licensing negotiations within SSOs that the Agencies would consider in applying a rule of reason analysis.⁷¹

28. The Report examined joint negotiation of licensing terms by participants in SSOs before the standard is set and determined that such negotiations can be procompetitive. “In most cases, it is likely that the Agencies would find that joint *ex ante* activity undertaken by an SSO or its members to establish licensing terms as part of the standard-setting process is likely to confer substantial procompetitive benefits by avoiding hold up that could occur after a standard is set, and this would be an important element of a rule of reason analysis.”⁷² *Ex ante* negotiations may, however, raise competition concerns in certain settings. “For example, such negotiations might be unreasonable if there were no viable alternatives to a particular patented technology that is incorporated into a standard, the IP holder’s market power was not enhanced by the standard, and all potential licensees refuse to license that particular patented technology except on agreed upon licensing terms. In such circumstances, the *ex ante* negotiation among potential licensees does not preserve competition among technologies that existed during the development of the standard but may instead simply eliminate competition among the potential licensees for the patented technology.”⁷³

29. The Report developed a rubric for assessing the competitive impact of various ways licensing terms might be disclosed and discussed within standard setting organizations.

“First, an IP holder’s voluntary and unilateral disclosure of its licensing terms, including its royalty rate, is not a collective act subject to review under section 1 of the Sherman Act. Further, a unilateral announcement of a price before “selling” the technology to the standard setting body (without more) cannot be exclusionary conduct and therefore cannot violate section 2. Second, bilateral ex ante negotiations about licensing terms that take place between an individual SSO member and an individual intellectual property holder (without more) outside the auspices of the SSO also are unlikely to require any special antitrust scrutiny because IP rights holders are merely negotiating terms with individual buyers. Third, per se condemnation is not warranted for joint SSO activities that mitigate hold up and that take place before deciding which technology to include in a standard. Rather, the Agencies will apply the rule of reason when evaluating joint activities that mitigate hold up by allowing the “buyers” (members of the SSO who are potential licensees of the standard) to negotiate licensing terms with the “sellers” (the rival IP holders) before competition among the technologies ends and potentially confers market power (or additional market power) on the holder of the chosen technology. Such joint activities could take various forms, including joint ex ante licensing negotiations or an SSO rule that requires intellectual property holders to announce their intended (or maximum) licensing terms for technologies being considered for adoption in a standard.”⁷⁴

⁷¹ Such negotiations would be condemned as illegal *per se* only if they involved “a sham to cover up naked agreements on the licensing terms each IP holder w[ould] offer the SSO” or an “effort by manufacturing rivals to fix the price of the standardized products they ‘s[old].’” 2007 IP Report, *supra* note 1 at 55.

⁷² *Id.* at 52.

⁷³ *Id.* at 53.

⁷⁴ *Id.* at 54 (citations omitted).

4.2.2 DOJ business review letters on *ex ante* licensing

30. Competition policy guidance also is reflected in two DOJ business review letters⁷⁵ issued to specific SSOs. In October 2006, DOJ issued a business review letter to the VMEbus International Trade Association (“VITA”) stating that it did not intend to challenge VITA’s proposed patent policy for its standard setting activities. Under the terms of the proposed policy, patent holders would be required to declare their own most restrictive licensing terms. Such declarations could potentially decrease the price of licenses for use under the standard if patent holders compete to increase the chance that their patented technology would be selected by the working group setting the standard. DOJ concluded that the policy would preserve the benefits of competition between alternative technologies, helping VITA to avoid hold up and to improve its decision making by broadening the basis on which working group members decide which technologies to include in its standards.⁷⁶

31. DOJ also concluded that the policy’s prohibition on joint negotiation or discussion of licensing terms among the working group members (or with third parties) meant that the price of licenses would not be anticompetitively depressed by the concerted action of working group members. DOJ noted that it likely would evaluate any antitrust concerns about such negotiations or discussions under the rule of reason because such actions could be procompetitive.

32. Pursuant to the VITA policy, actual licensing terms will continue to be determined bilaterally between the patent holder and each potential licensee, subject to the cap declared by the patent holder during the standard setting process. If SSO members use the patent policy procedures to fix the prices of downstream products, or if patent holders decide to rig their declarations of most restrictive licensing terms, DOJ would not hesitate to challenge such activities as *per se* illegal.

33. After the Department issued its business review letter to VITA, DOJ received a request for a business review letter from IEEE and its standards association, IEEE-SA, asking DOJ for its views on IEEE-SA’s proposed patent policy.⁷⁷ This policy, which IEEE believed would ensure the wide adoption of IEEE standards, provided patent holders the option of making a voluntary assurance about their intended maximum royalty rates and most restrictive licensing terms, made all licensing assurances by patent holders irrevocable, and made such assurances binding on future owners of the patents.

34. In April 2007, DOJ issued a favorable business review letter to IEEE, concluding that IEEE’s proposed policy could generate benefits similar to those generated by VITA’s proposed policy, even though IEEE’s proposal does not require patent holders to publicly commit to their most restrictive licensing terms. Patent holders could compete on licensing terms to increase the likelihood of being selected for the standard. The basis for the decision-making of the working group could be expanded, and the development, implementation, and adoption of IEEE standards could take place faster. The policy might also decrease patent litigation after the standard is set. DOJ also noted that SSOs may legitimately choose not to adopt patent policies like IEEE’s or VITA’s and that experimentation and competition between SSOs in this area should help determine over time which policies will work best in particular contexts.

⁷⁵ Under DOJ’s business review letter procedures, “persons concerned about the legality under the antitrust laws of proposed business conduct can request the Department’s Antitrust Division to state its current enforcement intentions with respect to that conduct.” Press Release, U.S. Dep’t of Justice, Pilot Program Announced to Expedite Business Review Process (Dec. 1, 1992), *available at* <http://www.justice.gov/atr/public/busreview/201659a.pdf>.

⁷⁶ VITA Business Review Letter, *supra* note 27.

⁷⁷ Letter from Thomas O. Barnett, Assistant Attorney Gen., U.S. Dep’t of Justice, to Michael A. Lindsey, Esq., Dorsey & Whitney LLP (Apr. 30, 2007), *available at* <http://www.atrnet.gov/subdocs/222978.pdf>.

4.3 *Non-competition law cases*

35. In the U.S., the harm to competition arising out of standard setting activities also has been dealt with in cases not involving the application of competition law. Representative examples of such cases are set forth below.

36. Equitable patent law defenses may be invoked to combat anticompetitive hold up. In *Qualcomm v. Broadcom*,⁷⁸ the U.S. Court of Appeals for the Federal Circuit held that a federal district court properly ruled that Qualcomm (1) had a duty to disclose certain patents related to video compression technology in connection with its participation in the Joint Video Team (“JVT”) SSO; (2) that it breached this duty through silence; and (3) that this breach of duty constituted misconduct that sharply limited Qualcomm’s ability to enforce its patent rights. Qualcomm had sued Broadcom for infringement of certain patents incorporated into the “H.264” JVT standard. The district court found that JVT participants treated JVT’s policies as imposing a duty of patent disclosure upon participants, that Qualcomm’s patents “reasonably might be necessary” to practice the H.264 standard, and that a proper remedy for Qualcomm’s breach of disclosure duty was to make the patents unenforceable against the world.⁷⁹ The Federal Circuit agreed with the district court’s ruling that Qualcomm had ‘impliedly waived’ assertion of its patent rights through its misconduct, that Qualcomm was “equitably estopped” from enforcing its patents against Broadcom, but determined that the remedy should be limited to render the patents in question unenforceable only against the H.264 standard, not against the world (i.e., Qualcomm could enforce these patents against firms making products not covered by the standard).

37. The breadth and detail of the Federal Circuit’s *Qualcomm v. Broadcom* holding (and the fact that it was handed down by the one U.S. Federal Court of Appeals with jurisdiction over patent-related complaints) indicates that users of a standard may be able to avoid anticompetitive hold up without invoking antitrust law, if they can show that a patentee whose patents apply to the standard violated SSO disclosure rules. When explicit patentee misconduct can be shown,⁸⁰ U.S. patent law doctrine does provide some leeway for combating serious harms to the competitive process stemming from SSO activities.

38. Finally, some scholars have highlighted the possibility that contract and tort law may in appropriate instances be used to combat hold ups that harm competition.⁸¹ With regard to contracts, “both the Uniform Commercial Code and Restatement (2nd) of Contracts require that [a contract] . . . modification be made in ‘good faith’ by the transacting parties, which would include factors such as losses suffered by the parties under the current terms and market changes since formation of the original agreement. These doctrines can, in principle, be applied to minimize hold up behavior by identifying

⁷⁸ *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004 (Fed. Cir. 2008). This is distinct from the 2007 *Qualcomm v. Broadcom* case, discussed *supra* paragraph 22.

⁷⁹ The Federal Circuit had previously held in *Rambus Inc. v. Infineon Technologies AG*, 318 F.3d 1081 (Fed. Cir 2003), that an SSO-imposed duty to disclose patents or patent applications only extends to patent claims that “reasonably might be necessary” to practice the standard in question. In the *Infineon* case, the Federal Circuit found that the factual record showed that Rambus’s claimed technology did not fall within the JEDEC SSO’s disclosure duty, and that therefore substantial evidence did not support a jury’s verdict that Rambus had breached its disclosure duty.

⁸⁰ See, e.g., *Hynix Semiconductor, Inc. v. Rambus, Inc.*, 2009 U.S. Dist. Lexis 13530 (N.D. Cal. Feb. 23, 2009) and *Micron Technology, Inc. v. Rambus, Inc.*, 2009 U.S. Dist. Lexis 1260 (D. Del. Jan 9, 2009) (injunction requested by patentee denied and patents ruled unenforceable in the face of “obstructive” or “misleading” conduct that included spoliation of evidence). The misconduct cited in *Hynix* led the court to deny Rambus an injunction after patent infringement liability was found.

⁸¹ See Bruce H. Kobayashi and Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. Competition L. & Econ. 469, 506-516 (2009).

attempts to hold up a transacting party and preventing parties from using the court to facilitate a holdup.”⁸² With regard to a tort claim used to combat wrongful SSO-related conduct, “such a claim would have the advantage, from the plaintiff’s perspective, of avoiding the burden of defining markets or demonstrating harm to competition.”⁸³ Of course, issues such as standing (whether a private party is within the zone of those authorized to file suit under the legal doctrine in question) and the lack of treble damages (available in U.S. private antitrust suits but not in contract or tort suits), among other complications, may limit the scope of these legal doctrines to combat anticompetitive SSO activity.

5. Concluding comments

39. Standard setting is a central feature of modern economies that confers great benefits on society. In the United States, most standard setting activity is carried out by the private sector and has long been subject to antitrust scrutiny. This paper identifies several standard setting activities that can harm the competitive process, thereby retarding innovation and reducing welfare. When merited, competition policy has been deployed in the United States to deal with specific instances of such competitive harm and to provide general policy guidance. The Agencies, working in cooperation with other U.S. Government agencies, will continue to study standard setting and to develop policies and enforcement programs aimed at enhancing the welfare benefits of standards.⁸⁴ Appropriate government actions in this regard can help spur economic growth, enhance efficiency, and promote innovation.

⁸² *Id.* at 508 (citations omitted). As the authors explain, “UCC 2-209’s good faith standard allows contract law, in principle, to distinguish between mutually beneficial modifications and holdup in the form of post-contractual opportunism. The comments to UCC 2-209 are instructive with respect to what types of obligations satisfy this standard, mentioning specifically ‘a market shift which makes performance come to involve a loss.’ The common law takes a similar approach, distinguishing those modifications motivated by unanticipated changes in market circumstances from opportunism. This flexible inquiry enables judges to . . . minimize holdup behavior and lower transaction costs.” *Id.* at 508 (citations omitted).

⁸³ *Id.* at 515.

⁸⁴ Additional policy insights on appropriate remedies for competitive harm associated with standard setting activities may be derived from an FTC Report that is being prepared in light of 2008-2009 FTC Hearings on the Evolving Intellectual Property Marketplace. (The 2009 FTC Hearings, which sought information on changes in the intellectual property marketplace and the implications of such changes for public policy, are described at <http://www.ftc.gov/os/2008/11/P093900ipwksprfn.pdf>.) The Report may deal with the economic and legal foundations of patent remedies, including reasonable royalty damages. The Report’s analysis may shed further light on the appropriate evaluation of possible remedial actions designed to prevent anticompetitive SSO hold ups, such as the establishment *ex ante* of “RAND” licensing requirements for essential IP. See discussion *supra* paragraphs 28-34.