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INTELLECTUAL PROPERTY AND STANDARD SETTING

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**FORTHCOMING
ABA HANDBOOK ON THE ANTITRUST
ASPECTS OF STANDARDS SETTING (2010)**

Bruce H. Kobayashi and Joshua D. Wright[♦]

ABSTRACT

This Chapter, forthcoming in the ABA Handbook on the Antitrust Aspects of Standards Setting (2010) provides an analytical overview of the antitrust issues involving intellectual property and standard setting including, but not limited to, patent holdup, royalty stacking, refusals to license, and patent pools.

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SECTION IV

INTELLECTUAL PROPERTY AND STANDARD SETTING

The increasing importance of standard setting organizations (“SSOs”) in the economy, and the prevalence of intellectual property in standards, has created a number of new challenges for competition policy. These challenges take place in the context of a broader policy debate concerning the optimal scope of intellectual property rights. Market adoption of standards that call for standard-compliant products to use intellectual property rights raises the potential for market power. The existence of many independent property rights incorporated into a single standardized product raises the potential for increased transactional costs and coordination problems. Conduct designed to exploit these issues may raise antitrust concerns. But so too may measures that firms and SSOs adopt in response to these problems.

This Chapter begins by describing the economic issues that arise in the context of intellectual property rights and standard setting in Part IV.A., emphasizing the economic costs and benefits of standards in terms of the incentive to innovate. We then turn to royalty stacking and the patent holdup problem, and the potential legal and private solutions to these problems discussed in the literature, including the adoption of disclosure and licensing rules by SSOs. In IV.B, we discuss the antitrust issues involving intellectual property and standard setting beginning with refusals to include technology in the standard or to license, patent ambush, ex-ante licensing, and patent pools.

A. The Economics of Intellectual Property and Standard Setting

1. Economic Benefits of Including Property Rights in Standards

a. The Economics of Intellectual Property

The economic issues which arise in the context of intellectual property rights in SSOs are related to the broader policy debate involving intellectual property rights more generally. Intellectual property rights

incentivize the creation of inventions, ideas, and original works.¹ They facilitate the sale and licensing of intellectual property by defining the scope of property right protection and lowering transaction costs. And they produce incentives to develop alternative technologies as well as improvements and other derivative uses.

The primary focus of the economic literature has been on the incentive function of intellectual property.² This function is illustrated by considering the sale of ideas in the absence of enforceable intellectual property rights. The sale of an idea requires disclosure to the potential buyer. In the absence of enforceable intellectual property rights, the potential buyer – now with knowledge of the idea – has no incentive to purchase or license the idea. This possibility deters the seller from disclosing the idea in the first place. Enforceable property rights solve this problem by allowing the seller to disclose the idea without fear that the idea will be legally appropriated without compensation. The inventor can anticipate the ability to appropriate the returns from investment in producing the idea, which serves as an incentive to invest in producing and to disclose the idea in the first place.

A second and related focus of the economic literature is the optimal tradeoff between these incentives and the ability to use the idea.³ Because ideas have the attributes of a public good (use of the idea by one person does not prevent others from also using the idea), static efficiency considerations dictate the widespread use of the idea. The creation of incentives to produce inventions and other ideas through property rights can result in above marginal cost pricing of ideas; this use of intellectual property rights to generate incentives can inefficiently limit use from the static welfare perspective. This implies a trade off between the creation of incentives to develop ideas with the static use effects. This use-creation tradeoff explains in general why limitations on both the scope and length of intellectual property rights are appropriate.⁴ The tradeoff is most acute when intellectual property rights confer significant market power to the holder of these rights.

¹ See generally Landes & Posner, *The Economic Structure of Intellectual Property Law* (2003).

² *Id.*

³ See, e.g., Landes and Posner, *supra* note 1, at 11.

⁴ Edmund W. Kitch, *Elementary and Persistent Errors in the Economic Analysis of Intellectual Property*, 53 VAND. L. REV. 1727 (2000).

A third focus of the economic literature is that, intellectual property rights can function to facilitate transactions by lowering transactions and information costs. Well defined intellectual property rights facilitate both the licensing and sale of intellectual property rights. Such rights also allow others to avoid infringement of intellectual property rights by using non-infringing substitutes or by entering a licensing agreement with the owner.⁵ When intellectual property rights are not well defined, they may instead raise transactions and information costs.⁶

b. The Economics of Standards

The economic goals of standard setting are complex. Standard-setting involves important benefits and costs. Two primary types of standards are those that set minimum performance levels and those that guarantee interoperability.⁷ The former type of standard often serves to inform consumers and facilitate quality assurance by ensuring that products meet a minimum level of performance or quality. Interoperability standards guarantee that products made by different companies are compatible with other products that incorporate the standard,⁸ generating significant consumer benefits when the standard is widely adopted. Interoperability can also reduce the costs of production by reducing firms' costs of acquiring technical information, thus simplifying both the design and production of products that incorporate the standard. The benefits of interoperability are magnified in "network" markets, where the value of a product or service to an individual

⁵ F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. R. 697 (2001).

⁶ See Discussion in Part IV.2; *see e.g.*, JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* (2009); MICHAEL A. HELLER, *THE GRIDLOCK ECONOMY* (2008); Michael A. Heller & Rebecca A. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998).

⁷ U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* (2007), at 33, available at <http://www.usdoj.gov/atr/public/hearings/ip/222655.pdf>.

⁸ *See, e.g.*, CARL CARGILL & SHERRIE BOLIN, *Standardization: A Failing Paradigm*, in *STANDARDS AND PUBLIC POLICY* (Greenstein & Stango, eds., 2007).

consumer is dependent upon the total number of consumers that adopt compatible products.⁹ On the other hand, adoption of uniform standards can have potential costs. In the absence of property rights to standards, the adoption of a uniform standard may create incentives for free riding and suppress incentives for firms to improve on the current standard or create alternative standards.¹⁰ As a result of these effects, individual firms' choices to adopt competing proprietary standards using incompatible technology may increase welfare relative to use of a mandated standard.¹¹ This result highlights the importance of intellectual property rights to standards, discussed in the next section.

c. Standards with Intellectual Property

Standards can be the subject of patents and copyrights, or can include components that are patentable or the subject of copyright. The application of intellectual property to standards can be beneficial for the same reasons as why intellectual property is generally beneficial. Intellectual property rights give incentives for firms to invest in the production of standards, and can facilitate the licensing of the standard. Thus, the absence of intellectual property rights for standards can lead to the underproduction of standards. Moreover, ownership of a standard in markets characterized by network effects is beneficial, as ownership allows for the internalization of the network benefits, and prevents the underutilization of the standard that would occur if the network benefits were network externalities. Precluding the use of intellectual property rights in the standard-setting process, particularly in those sectors where

⁹ For a discussion of network effects, *see e.g.*, S. J. Liebowitz & Stephen E. Margolis, *Network Effects and Externalities*, in THE NEW PALGRAVE ENCYCLOPEDIA OF LAW AND ECONOMICS, (P. Newman, ed., 2004); Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998).

¹⁰ *See* Luis Cabral & David Salant, *Evolving Technologies and Standards Regulation* (April 2006), *available at* <http://ssrn.com/abstract=1120862>; *see generally*, STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, *WINNERS, LOSERS & MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY* (1999) (discussing standards competition).

¹¹ *Id.* In their model, Cabral and Salant assume that the process of standardization results in all firms access to marginal improvements made by individual firms. Thus, firms turn to incompatible and proprietary technologies as a way to internalize any benefits from their investments in innovation.

standards are prevalent, may deter investment into research and development and reduce the quality of the final product.

Additionally, patents disclosed to SSOs are cited much more frequently and for a longer period of time than other patents. This suggests that allowing intellectual property rights to be adopted into standards plays an significant role in introducing important technologies into the marketplace.¹² SSOs also recognize the importance of intellectual property rights in the standardization process and have made efforts to eliminate disputes arising from the use of proprietary technologies.¹³

However, the application of intellectual property rights to standards presents a case where the use-creation tradeoff is affected by the potential for significant market power and the existence of multiple, overlapping property rights. Because adoption of a standard often requires specific investments, those that have adopted standards can be left without viable alternatives after such investments are made, even when many feasible alternatives existed at the time the standard was chosen. If the standard is successful and is widely adopted, a firm that owns intellectual property that covers the standard or an essential component may possess significant *ex-post* market power. Moreover, standards may be covered by several patents. Thus, intellectual property rights covering standards may lead to the problem of valuing the contribution of multiple patents as well as the anticommons problems identified above.

While including proprietary technologies in standards can increase the value of the standard to consumers, and standard setting in the presence of intellectual property rights also presents significant competitive risks. The selection of proprietary technologies therefore

¹² See Marc Rysman & Tim Simcoe, *Patent Performance of Voluntary Standard Setting Organizations* (Oct. 11, 2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=851245.

¹³ ETSI General Assembly, ETSI Guide on Intellectual Property Rights (IPRs) (2007), <http://www.ipo.org/AM/Template.cfm?Section=Home&Template=/CM/ContentDisplay.cfm&ContentID=16481> (“Intellectual property plays an important role in standardization, especially in the telecommunications and electronic communications sectors.”).

raises the possibility that standards, net of any potential welfare benefits, will result in significant market power, supra-competitive returns, and harm to competition. The result of these potential welfare costs and benefits is a tension between standard setting, intellectual property rights, and antitrust.

2. *Patent Hold-Up*

a. *General Nature of the Problem*

The patent hold-up problem has become one of the most controversial issues in antitrust policy. The basic economics of patent holdup in the standard-setting context are generally well understood and related to the more general problem of holdup in the presence of relationship-specific investments.¹⁴

b. The Holdup Problem in the SSO Context

The patent holdup problem in the SSO context contemplates a scenario in which the SSO selects a standard, members of the SSO make specific investments related to the selection of a particular technology, only to learn that the standard-compliant products infringe upon a patent right. In this scenario, the patent owner may engage in “holdup” by demanding a higher royalty rate than if negotiation had been conducted before the standard was set:

¹⁴ See Benjamin Klein, Robert G. Crawford and Armen A. Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978); OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING* 52-56 (1985). Benjamin Klein and others have emphasized the distinction between contract law and antitrust law in resolving holdup by emphasizing that the correct competitive analysis in cases of *ex post* opportunism occurs *ex ante* at the time of contracting. For instance, in the case of *ex post* contractual opportunism by franchisors against franchisees, the opportunism is generally a contract problem and not an antitrust problem because franchisors generally do not have antitrust market power at the time the agreement was entered into. See, e.g., Benjamin Klein, *Market Power in Antitrust: Economic Analysis after Kodak*, 3 SUP. CT. ECON. REV. 43, 85 (1993); 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).

The antitrust agencies have described the holdup problem as follows:

A holder of IP incorporated into a standard can exploit its position if it is costly for users of the standard to switch to a different technology after the standard is set. Making such a change would require abandoning that standard and developing a new one, but developing an alternative standard could be costly and may delay the introduction of a new product. The profits lost by such a delay may represent a significant portion of the cost of developing the alternative standard. In addition, to implement an alternative standard for an existing product that requires compatibility and interoperability, the SSO members might incur switching costs in redesigning components that had been based on the old standard and might have to subsidize consumers' migration from a standard based on one technology to a standard based on another technology. Generally, the greater the cost of switching to an alternative standard, the more an IP holder can charge for a license.¹⁵

Patent holdup, like other forms of contractual holdup, is made possible by the combination of incomplete contracting and asset specificity. Not all forms of contractual holdup create antitrust issues. For example, consider a landlord who signs an initial lease with a tenant under highly competitive conditions which are reflected in the terms. After the tenant has become "locked in," the landlord takes advantage of the incompleteness of the contract to impose a new "parking fee" against the tenant, effectively raising the price. Most would agree this is not actionable *antitrust* conduct. While antitrust enforcement is one method of increasing the costs of patent holdup, one can also expect transacting parties in this environment involving substantial holdup potential to draft contract terms to minimize those costs.

The use of contractual terms to minimize the probability of holdup may, in part, explain why there are relatively few instances of litigated patent holdup among the thousands of standards adopted. One

¹⁵ U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 7, at 37-38.

constraint commonly used to prevent post-adoption holdup is requiring patent holders to promise to license their propriety technology on reasonable and nondiscriminatory (“RAND”) or fair, reasonable and nondiscriminatory (“FRAND”) terms.¹⁶ These commitments prevent a patent holder from seeking traditional property rights remedies, such as injunctions and punitive damages, and instead allow only the recovery of agreed-to royalties.¹⁷ Another reasons why patent holdup problems are relatively scarce is because the decision to engage in holdup is a short-term strategy that can create significant problems for a firm down the road.¹⁸ Many patent holders are repeat players that hope to license their technology in subsequent standards. Once a firm has gained a reputation for patent holdup it will be much more difficult to convince SSO members to adopt its technology in the future. The few instances of patent holdup that have been documented typically involve firms that have no long-term stake in the industry.¹⁹

3. *Royalty Stacking*

a. *General Nature of the Problem*

The problem of royalty stacking is a particular manifestation of the anticommons problem. In general, when a standard is covered by patents held by multiple parties, intellectual property rights can increase the transactions costs of licensing and use of the standard.²⁰ Royalty stacking cost refers the aggregated burden of the multiple royalties.²¹

¹⁶ See *infra* Part A.4.b

¹⁷ Joseph S. Miller, *Standard Setting, Patents and Access to Lock-in: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. 351 (2007).

¹⁸ Damien Geradin, Anne Layne-Farrar & A. Jorge Padilla, *The Complements Problem Within Standard Setting: Assessing the Evidence on Royalty Stacking* 21-22 (2008), available at <http://ssrn.com/abstract=949599>.

¹⁹ *Id.* (citing Bronwyn H. Hall & Rosemary Ham Ziedonis, *An Empirical Analysis of Patent Litigation in the Semiconductor Industry* (2007), available at http://elsa.berkeley.edu/~bhhall/papers/HallZiedonis07_PatentLitigation_AEA.pdf).

²⁰ Michael Heller, *The Tragedy of the Anticommons*, 111 HARV. L. REV. 621 (1998); Heller & Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 1 Science 280 (1998); Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools,*

Royalty stacking creates two primary issues. First, the aggregate royalty burden may be inefficiently high because of pricing externalities between the multiple complementary patented components contained in the standard. This problem arises because sellers of complementary inputs do not take into account the negative effect an increase in the price of their input has on the sales of the downstream product and other complementary inputs. As a result, when multiple input owners independently set the price of their inputs, the price charged will typically be higher, and thus output will be lower, than the price and output that would be set by a vertically integrated monopolist.²²

Second, if the standard has substantial value not attributable to the intellectual property right, negotiations over intellectual property rights will also involve bargaining over these rents.²³ Where there are many independent patent owners, small percentage over charges on individual patents can result in substantial aggregate rent extraction. This in turn can suppress use of the standard, or in the extreme, result in the use of inferior standards that are not protected by intellectual property.

b. Evidence of Royalty Stacking

While there is indirect evidence of royalty stacking, it is not clear the extent to which royalty stacking serves to impede the choice and licensing of standards. Many commentators have noted that the conditions for the creation of royalty stacking, the existence of numerous complementary inputs covered by patents owned by numerous independent owners, exist in many modern industries.²⁴

and Standard-Setting, in INNOVATION POLICY AND THE ECONOMY 119, (Adam Jaffe, Joshua Lerner & Scott Stern, eds., 2001).

²¹ Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007).

²² Cournot, *Researches into the Mathematical Principles of the Theory of Wealth*, English Edition, New York, Kelley (1838); Lemley & Shapiro, *supra* note 21, at 2013.

²³ Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043 (2002).

²⁴ Lemley & Shapiro, *supra* note 21 (suggesting conditions favorable to the existence of royalty stacking exist in cellular telephony and WIFI industries). *But see* Damien Geradin, Anne Layne-Farrar & A. Jorge

Several studies examining patterns of patenting behavior found that the rate of patenting was positively correlated to a measure of ownership dispersion.²⁵ However, there is little direct evidence to suggest that higher patenting rates or dispersed ownership in these industries have created significant and widespread licensing problems.²⁶

4. *SSO Rules Dealing with Intellectual Property Issues*

SSOs utilize a variety of rules to govern their members' ownership of intellectual property rights in an effort to prevent potential holdup problems.²⁷ These policies are typically articulated in the SSO's

Padilla, *Royalty Stacking in High Tech Industries: Testing the Theory* (2007), available at <http://ssrn.com/abstract=949599>) (noting that patent ownership in mobile telephone industry is relatively concentrated, and noting high licensing rates in the industries and the absence of direct evidence of royalty stacking); Damien Geradin, Anne Layne-Farrar & A. Jorge Padilla, *supra* note 18; Doug Lichtman, *Patent Holdouts in the Standard-Setting Process*, Academic Advisory Council Bulletin 1.3, May 2006, available at <http://ssrn.com/abstract=902646>; (arguing that the existence of multiple overlapping rights can reduce anticommons problems).

²⁵ R. H. Ziedonis, *Don't fence me in: Fragmented Markets for Technology and the Patent Acquisition Strategies of Firms*, 50 MGMT. SCI. 804 (2004) (examining patenting and ownership dispersion in the semiconductor industry); Michael D. Noel & Mark A. Schankerman, *Strategic Patenting and Software Innovation*, CEPR Discussion Paper No. 5701, (2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=922111 (examining the software industry).

²⁶ Damien Geradin, Anne Layne-Farrar & A. Jorge Padilla, *Royalty Stacking in High Tech Industries: Testing the Theory* (2007), available at <http://ssrn.com/abstract=949599>; Damien Geradin & Miguel Rato, *Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of FRAND* (2006), available at <http://ssrn.com/abstract=946792>.

²⁷ HERBERT HOVENKAMP ET AL, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 35.6c1 (Supp. 2008); see also Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL L. REV. 1889 (2002). The author surveyed the rules and bylaws of forty-three standard-setting organizations and found significant diversity in the requirements imposed.

bylaws and can be divided into two principal categories: (1) disclosure rules and (2) licensing obligations.²⁸ Understanding how these rules operate is important for determining whether in trying to protect against holdup a SSO has impermissibly harmed competition and violated antitrust laws.²⁹

a. Disclosure Rules

Many SSOs require their members, either expressly or implicitly, to disclose intellectual property rights that are relevant to a proposed standard.³⁰ In doing so, SSOs can seek to the potential for future holdup problems and decide whether to pursue an alternative standard that does not require the use of patented technology.³¹ Many SSOs only require their members to disclose issued patents, though some also require disclosure of pending patent applications.³² Some SSOs break their disclosure requirements down even further by distinguishing between unpublished and published patent applications.³³ It is important to note that any disclosure rules only bind those patents held by members of the SSO,³⁴ and that the nature and scope of the disclosure rule will affect individual firms' incentives to join the SSO.³⁵ The existence of patents held by non-members, including patents intentionally held out of the SSO for strategic reasons, must be discovered through a patent search.³⁶

A member can typically satisfy an SSO's disclosure requirement by providing information on the existence and scope of the patent.³⁷

²⁸ HOVENKAMP ET AL, supra note 277; see also Lemley, supra note 277, at 1905. (finding that SSO rules pertaining to intellectual property rights are often stated in the organization's bylaws). For a recent empirical analyses of SSO Rules, see B. Chiao, J. Lerner, & J. Tirole, *The Rules of Standard-Setting Organizations: An Empirical Analysis*, 38 RAND J. Econ. 905 (2007).

²⁹ HOVENKAMP ET AL, supra note 277, at § 35.6c.

³⁰ Lemley, supra note 27, at 1904-05.

³¹ HOVENKAMP ET AL, supra note 277, at §35.6c2 (citing *Rambus, Inc.* Docket No. 9302 (F.T.C. Aug. 2, 2006)).

³² Lemley, supra note 27 at 1904-05.

³³ *Id.* at 1905.

³⁴ *Id.* at 1909-10.

³⁵ *Id.* at 1959.

³⁶ See Lichtman, supra note 24, at 4 (discussing imperfect nature of this process).

³⁷ HOVENKAMP ET AL, supra note 27, at §35.6c2.

SSOs generally do not require their members to provide details on a patent's technical aspects.³⁸

SSOs may also require their members to conduct a search of their files to make certain that all relevant patents are disclosed.³⁹ SSOs requiring such a search may even specify in their bylaws what constitutes a sufficient search to satisfy the disclosure requirement.⁴⁰ A final type of disclosure rule requires SSO members to disclose not only their intellectual property rights, but also provide in advance the price at which the member would license the right.⁴¹

b. Licensing Obligations

While some SSOs prohibit their members from owning an intellectual property right that is included as part of a standard, others permit ownership if members agree to license such rights on a predetermined basis.⁴² Some SSOs employing licensing obligations require members to license their rights on a royalty-free basis, which ultimately makes the rights valueless with regard to the standard, but allows patent owners to continue collect royalties when the technology is used in other contexts.⁴³ A more common condition imposed by SSOs is that intellectual property rights be licensed on “reasonable and nondiscriminatory terms” or “fair, reasonable and nondiscriminatory.”⁴⁴ Other SSOs also specify that the members’ licensing agreements do not create a “monopolistic abuse” of the patent.⁴⁵

Licensing obligations, including FRAND commitments, are often limited to patents covered by the SSOs disclosure rules. Such limits serve to encourage participation in the SSO by narrowing the

³⁸

Id.

³⁹ Lemley, *supra* note 277, at 1905.

⁴⁰

Id.

⁴¹ HOVENKAMP ET AL, *supra* note 27, at § 35.6c2.

⁴² *Id.* at 35.6c3; *see also id.* at § 35.6c1, n. 24.

⁴³ Lemley, *supra* note 27, at 1905.

⁴⁴ HOVENKAMP ET AL, *supra* note 27, at § 35.6c3; *see also* Lemley, *supra* note 27, at 1906.

⁴⁵ Lemley, *supra* note 27, at 1906.

obligations placed on IP holders.⁴⁶ However, because the nature and scope of the disclosure obligations are often ill defined,⁴⁷ such limited licensing obligations may fail to constrain a patentee's ability to holdup the SSO.

Finally, SSO rules also differ with regard to whom members must extend preferential licensing obligations.⁴⁸ Some SSOs require that member license their intellectual property rights only to other members of the SSO.⁴⁹ Other SSOs require the compulsory licensing obligations extend to any party using the standard.⁵⁰

c. Antitrust Issues Involving Intellectual Property and Standard Setting

The combination of intellectual property issues, the coordination of rivals in the standard setting environment, and the myriad of unique and creative contractual arrangements reached by firms in dynamically competitive markets generates a number of antitrust issues. In this Section, we consider a number of these issues including refusals to deal or grant access to the standard, misconduct at standard adoption stage such as patent holdup and ambush, ex ante licensing, and patent pools.

(1) *Refusal to Allow Patented Technologies in Standard*

Antitrust issues may arise when an SSO refuses to adopt standards solely because they would incorporate intellectual property. In *American Society of Sanitary Engineering* the FTC entered into a consent agreement prohibiting the American Society of Sanitary Engineering ("ASSE") from refusing a manufacturer's request for a new standard, or a modification to an existing standard, solely on the grounds that the manufacturer's product it sought to qualify was patented.⁵¹

⁴⁶ See Chiao, et al., *supra* note 28 (empirical evidence showing that more sponsor friendly SSO intellectual property policies result in higher quality standards).

⁴⁷ Most SSOs do not require a full patent search. See Lemley, *supra* note 27 at 1904. Rather, disclosure obligations are often based on knowledge of the participant or on a "good faith" inquiry within a firm. *Id* at 1906.

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ 106 F.T.C. 324 (1985).

The ASSE was comprised of members of the plumbing industry who help develop and sell plumbing product standards and seals of approval.⁵² Numerous states and local jurisdictions used ASSE standards in place of evaluations by regulatory officials to determine what products may be sold in their jurisdictions⁵³ or had adopted the organization's standards into their building codes.⁵⁴ Even in jurisdictions where ASSE standards are not required by law, compliance with these standards is viewed as an important competitive advantage.⁵⁵

J.H. Industries developed a new toilet tank fill valve that used an alternative technology to that specified by ASSE standards.⁵⁶ J.H. produced significant evidence to show that its design was as safe as the ASSE approved design, but ASSE refused to issue or modify a standard to incorporate the J.H. design.⁵⁷ As a result, J.H. could not market its products in those areas that relied on ASSE approval.⁵⁸

The FTC alleged that ASSE's actions constituted a concerted refusal to deal because ASSE did not offer any basis regarding the merits of the Fillpro design to justify a refusal to issue a new standard or modify the existing standard.⁵⁹ The FTC also alleged that ASSE's policy of refusing to develop a standard for products that are either patented or that only have one manufacturer constituted an unreasonably restraint of trade that harmed competition in the plumbing device industry.⁶⁰ The resulting consent decree prohibited ASSE from refusing an applicant's request for a new standard or modification to an existing standard solely on the grounds that the product is patented or has only one manufacturer when ASSE has already issued a standard that covers a competing product and the new product meets the performance requirements of the existing standard.⁶¹

⁵² *Id.* at ¶¶ 1-2.
⁵³ *Id.* at ¶ 9.
⁵⁴ *Id.*
⁵⁵ *Id.* at ¶ 10.
⁵⁶ *Id.*
⁵⁷ *Id.* at ¶ 16.
⁵⁸ *Id.* at ¶ 17.
⁵⁹ *Id.* at ¶¶ 18-20.
⁶⁰ *Id.* at ¶ 24.
⁶¹ 106 F.T.C. 324 (1985).

(2) *Refusal to Provide Access to or License a Unilateral Standard*

The antitrust laws have long recognized that a firm may generally select which other firms to deal with and may decline to deal with a firm in its “own independent discretion.”⁶² The same general principle applies in the standards context. A firm that owns or controls a standard is generally under no obligation to license the standard or otherwise provide access to the standard.

Under certain circumstances, however, courts have held that a refusal to deal may support an antitrust claim if the refusal lacks any legitimate business justification or is “pretextual” and the other elements essential to a monopolization claim under Section 2 of the Sherman Act are present (e.g., the possession of monopoly power and some causal link between the refusal to deal and the acquisition or maintenance of monopoly power).⁶³ A firm that is denied access to a standard may attempt to invoke a variety of “refusal to deal” theories against the firm that owns or controls the standard. As explained below, additional complexities arise if (as is often the case) the standard incorporates or consists of intellectual property.

(A) GENERALLY

Courts are reluctant to obligate firms, even those with monopoly power, to deal with their rivals. Forced sharing of facilities or intellectual property may tend to discourage investment and innovation and may also require antitrust courts and enforcers to act as “central planners” evaluating the price, quantity, and other terms of dealing – a role for which they are “ill-suited.”⁶⁴ In those few cases where courts

⁶² U.S. v. Colgate, 250 U.S. 300, 307 (1919) (“In the absence of any purpose to create or maintain a monopoly, the [Sherman] act does not restrict the long-recognized right of trader or manufacturer engaged in an entirely private business, freely to exercise his own independent any purpose to parties with whom he will deal”). See also Verizon Commc’ns., Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 408 (2004).

⁶³ See, e.g., Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 604-05 (1985); Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 485-86 (1992); Associated Press v. United States, 326 U.S. 1 (1945).

⁶⁴ *Trinko*, 124 S. Ct. at 879.

have imposed liability for a refusal to deal, the defendant typically had discontinued an established practice of cooperation - which suggested that the refusal to deal had an exclusionary purpose and effect.

While not arising in the standard-setting context, *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*⁶⁵ is a significant case analyzing the scope of antitrust liability for refusals to deal. There, the owner of a ski area alleged that an owner of several competing ski areas engaged in monopolization by discontinuing a long-standing practice of issuing joint, multiple day passes for both firms' ski areas. The defendant persisted in refusing to buy joint tickets even after the plaintiff offered to buy the defendant's tickets, as part of the multiple area pass, at full retail prices.⁶⁶ The Supreme Court upheld a jury verdict for the plaintiff reasoning that "the jury may well have concluded that [the defendant] elected to forgo these short-run benefits because it was more interested in reducing competition ... over the long run by harming its smaller competitor."⁶⁷

More recently, the Supreme Court in *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*,⁶⁸ addressed a claim that an incumbent local exchange carrier had failed to provide a competing telephone company with equivalent and timely access to local network elements, as required by the Telecommunications Act of 1996.⁶⁹ The Supreme Court held that the defendant exchange carrier's alleged refusal to cooperate with a rival did not state an antitrust claim.⁷⁰ The Court distinguished *Aspen Skiing* on the grounds, among other things, that (1) the defendant was not alleged to have discontinued a course of dealing with its rivals; (2) the defendant had not refused to sell the relevant services at the retail price it would have charged but for government regulation, and (3) the services at issue were only available separately as a result of government compulsion - independent of government

⁶⁵ 472 U.S. 585, 604-05 (1985).

⁶⁶ *Id.* At 593-94.

⁶⁷ *Id.* at 608.

⁶⁸ 124 S. Ct. 872 (2004).

⁶⁹ Pub. L. 104-104, 110 Stat. 56.

⁷⁰ *Trinko*, 124 S. Ct. at 880.

regulation they would not have been separately available in the first place, and certainly not at the price mandated by the government.⁷¹

Trinko sets a stringent standard for monopolization claims premised on refusals to deal, and the court construed the scope of *Aspen Skiing* narrowly - referring to that case as “at or near the outer boundary of § 2 liability.”⁷² Following *Trinko*, it may be difficult to assert a refusal to deal claim involving denial of access to the defendant’s facilities in the absence of evidence that, among other things, the defendant changed a long standing practice of cooperation and passed up a clearly profitable offer from the excluded competitor.

In *Linkline*, the Court extended its holding in *Trinko* to apply to the wholesale price in price-squeeze claims.⁷³ The Court found that its reasoning in *Trinko* applied “with equal force to price-squeeze claims”,⁷⁴ and held that claims that the defendant’s wholesale prices were too high could not be brought when the defendant had no antitrust duty to deal with the plaintiffs at wholesale. The Court found that, as was the case in *Trinko*, there was no antitrust duty to deal with a rival at wholesale. Given this, it certainly did not have any duty to deal with the plaintiff “under terms and conditions that the rivals find commercially advantageous.”⁷⁵ Moreover, with respect to the part of the claim that the defendant’s retail prices were too low, the court found no allegation that the defendant’s pricing conduct met either of the *Brooke Group* requirements for predatory pricing. As a result, the Court held that the plaintiff’s price squeeze claim is “nothing more than an amalgamation of a meritless claim at the retail level and a meritless claim at the wholesale level. If there is no duty to deal at the wholesale level and no predatory pricing at the retail level, then a firm is certainly not required to price

⁷¹ *Id.* The Court distinguished *United States v. Terminal R.R. Ass’n*, 224 U.S. 383 (1912) and *Associated Press v. United States*, 326 U.S. 1 (1945), on the ground that both involved *concerted* action “which presents greater anticompetitive concerns and is amenable to a remedy that does not require judicial estimation of free market forces: simply requiring that the outsider be granted nondiscriminatory admission to the club.” *Trinko*, 124 S. Ct. at 880 n.3.

⁷² 124 S. Ct. at 879.

⁷³ *Pacific Bell Telephone Co. v. Linkline Communications Inc.*, 129 S.Ct. 1109 (2009).

⁷⁴ *Id.*

⁷⁵ *Id.* at 1119.

both of these services in a manner that preserves its rivals' profit margins.”⁷⁶

(1) *Compelling Access to a Standard under the Essential Facilities Doctrine*

An antitrust plaintiff might invoke the “essential facilities” doctrine to challenge under § 2 of the Sherman Act the unilateral decision of a firm that controls or owns a standard not to license or otherwise grant access to that standard. Some lower courts have explained that the essential facilities doctrine is not an independent basis for antitrust liability but merely a type of monopolization claim.⁷⁷ The Supreme Court recently noted that it has never expressly approved or disapproved of this doctrine.⁷⁸

Those lower courts adopting the essential facilities doctrine have required a plaintiff to demonstrate, at a minimum: (1) that the defendant is a monopolist by virtue of controlling a facility that is essential to competition in the relevant market; (2) that the defendant’s competitors are unable reasonably to duplicate the facility; (3) that the defendant denied a competitor access to the facility; and (4) that it is feasible to provide access to the competitor.⁷⁹ In applying the essential facilities doctrine, courts generally adopt a fairly narrow definition of “essential” - in some situations limiting the term to “facilities that are a natural monopoly, facilities whose duplication is forbidden by law, and perhaps those that are publicly subsidized and thus could not practicably be built privately.”⁸⁰ In addition, it is a defense to an essential facilities claim that the denial of access was motivated by a legitimate business purpose,

⁷⁶ *Id* at 1120.

⁷⁷ *Kramer v. Pollock-Krasner Found.*, 890 F. Supp. 250, 257 (S.D.N.Y. 1995) (“The ‘essential facilities’ doctrine is not an independent cause of action, but rather a type of monopolization claim.”); *Viacom Int’l Inc. v. Time Inc.*, 785 F. Supp. 371, 376 n.12 (S.D.N.Y. 1992) (“[T]he doctrine is more properly characterized as a label that may aid in the analysis of a monopoly claim, not a statement of a separate violation of law.”).

⁷⁸ *Trinko*. 124 S. Ct. at 881.

⁷⁹ *See generally* *MCI Commc’ns. Corp. v. AT&T*, 708 F.2d 1081, 1132-33 (7th Cir. 1983).

⁸⁰ *Twin Labs, Inc. v. Weider Health & Fitness*, 900 F.2d 566, 569 (2d Cir. 1990) (quoting P. AREEDA & H. HOVENKAMP, *ANTITRUST LAW* ¶ 736.2 (Supp. 1988)).

such as discouraging free riding, preserving or enhancing the defendant's image, or ensuring low costs for the defendant's own customers.⁸¹

Of potential relevance to standard setting are recent cases interpreting the essential facilities doctrine in the context of telecommunications networks. Telecommunications networks are the paradigmatic "networks" exhibiting "network effects" in that the value of these networks to users may increase as more consumers adopt them and competitors may claim they require access to the networks in order to serve customers. However, the pervasive government regulation of the telecommunications industry makes it difficult to predict how these cases would be applied in the context of other, less regulated, industries.

As discussed above, the plaintiff in *Trinko*⁸² claimed that an incumbent local exchange carrier violated Section 2 of the Sherman Act by failing to share in a manner required by the Telecommunications Act of 1996 certain "essential" network elements with a competing telephone company. The Supreme Court declined to recognize or repudiate the essential facilities doctrine. Instead, the Court ruled that, regardless of its validity, this doctrine was inapplicable because a governmental agency (here the FCC) had the power to compel and regulate the sharing of the facilities at issue.⁸³ And, as discussed above, in *Linkline* the Court found that its reasoning in *Trinko* also applied with equal force to price squeeze claims.⁸⁴ The Court noted that, as was the case in *Trinko*, any duty to deal with the plaintiff arose only from FCC regulations, and not from the Sherman Act. As a result, the defendant had no antitrust duty to deal with its rivals at wholesale.

⁸¹ See generally *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1381 (9th Cir. 1992) (refusal to deal justified by interest in maintaining lower rates for other customers); *City of Col. Station v. City of Bryan*, 932 F. Supp. 877 (S.D. Tex. 1996) (noting that "courts have found a monopolist's goals of discouraging free riding, enhancing its image, or ensuring low costs for its customers to be legitimate business motivations").

⁸² 124 S. Ct. 872 (2004).

⁸³ *Id.* at 881 (citing P. AREEDA & H. HOVENKAMP, ANTITRUST LAW ¶ 773e (Supp. 2003)).

⁸⁴ 129 S.Ct. 1109 (2009).

In *MCI Communications Corp. v. AT&T*,⁸⁵ MCI claimed that AT&T unlawfully refused to provide MCI with adequate interconnections with AT&T's local telephone network. MCI charged that it was consequently unable to offer certain services to its customers. Applying the four-part test described above; the court concluded that the AT&T local telephone network was an "essential facility" that was "generally regarded as a natural monopoly and regulated as such." Noting that "the antitrust laws have imposed on firms controlling an essential facility the obligation to make the facility available on nondiscriminatory terms,"⁸⁶ the court ruled that AT&T's refusal to provide certain interconnection services to MCI constituted unlawful monopolization.

In contrast, the court in *Southern Pacific Communications Co. v. AT&T*,⁸⁷ rejected the plaintiff's claim that AT&T had charged discriminatory and excessively high prices for interconnection services. The court held that absolute equality of access to essential facilities is not mandated by the antitrust laws.⁸⁸ It continued, "the antitrust laws do not require that an essential facility be shared if such sharing would be impractical or would inhibit the defendant's ability to serve its customers adequately."⁸⁹

Implicit in the foregoing cases is that the entity refused access to the allegedly "essential" facility must typically be a competitor of the firm that owns or controls the essential facility. In *Intergraph Corp. v. Intel Corp.*,⁹⁰ the plaintiff charged Intel with illegal monopolization under the essential facilities doctrine because Intel had withdrawn technical assistance and pre-release access to Intel's new "essential"

⁸⁵ 708 F.2d 1081, 1132-33 (7th Cir. 1983).

⁸⁶ *Id.* at 1132.

⁸⁷ 740 F.2d 980, 1007-08 (D.C. Cir. 1984).

⁸⁸ *Id.* at 1009.

⁸⁹ *Id.* More recently, in *Cyber Promotions, Inc. v. America Online, Inc.*, 948 F. Supp. 456,460 (E.D. Pa. 1996), the court held that AOL's mechanism that allowed its subscribers to block junk e-mails (such as the e-mail advertisements sent by the plaintiff) did not unlawfully deny plaintiff access to an essential facility (i.e., AOL's subscriber base). Rather, the plaintiff was only "denied the access to AOL's system in the manner which it prefers." *Id.* Consequently, the court rejected the plaintiff's motion for injunctive relief. *Id.* at 460, 465.

⁹⁰ 195 F.3d 1346 (Fed. Cir. 1999).

microprocessor products (in reaction to Intergraph's patent law suit against Intel). The court rejected plaintiff's claim, ruling that Intel did not unlawfully refuse to deal. The court's decision was based on the lack of evidence that the plaintiff and Intel competed in any relevant market and the plaintiff's failure to prove that Intel withheld information for the purpose of enhancing its competitive position.⁹¹

(2) *Refusal to License the Intellectual Property Underlying or Constituting the Standard*

Both unilateral and cooperative standards often incorporate or embody intellectual property rights. In order to comply or interoperate with such standards, a firm typically must obtain a license from the intellectual property owner or owners. If a license is denied, the firm may challenge the denial as an unlawful refusal to deal.

Courts have long held that the *unilateral* refusal to license intellectual property cannot form the basis for an antitrust claim because the right not to license is inherent in intellectual property ownership.⁹² Recently, however, a conflict has emerged among the federal courts of appeals concerning whether a monopolist's refusal to license intellectual property may provide a basis for a monopolization claim under Section 2. As explained below, at least one case suggests that such a refusal is per se lawful under all circumstances as an exercise of the inherent rights of intellectual property. Another case suggests that such a refusal is only presumptively lawful, but that this presumption may be rebutted by evidence that the purpose and effect of the refusal was to obtain or maintain monopoly power.

The leading case suggesting that intellectual property owners may not be immune from refusal-to-license antitrust claims is *Image Technical Services, Inc. v. Eastman Kodak Co.*⁹³ There, certain

⁹¹ *Id.* at 1359.

⁹² *See, e.g.,* Hartford-Empire Co. v. United States, 323 U.S. 386, 432-33 (patent owner "has no obligation either to use it or to grant its use to others"), *clarified*, 324 U.S. 570 (1945); Cont'l Paper Bag Co. v. E. Paper Bag Co., 210 U.S. 405, 429 (1908) ("exclusion may be said to have been of the very essence of the right conferred by the patent, as it is the privilege of any owner of property to use or not use it, without question of motive").

⁹³ 125 F.3d 1195 (9th Cir. 1997).

independent service organizations (ISOs) that serviced Kodak copiers alleged that Kodak engaged in a pattern of exclusionary practices including refusing to license intellectual property to the ISOs - in order to maintain its parts and service monopolies. The Ninth Circuit held that an intellectual property owner was entitled to a presumption that a refusal to license was, motivated by a legitimate desire to protect intellectual property rights.⁹⁴ The court went on to hold, however, that this presumption was overcome under the facts of the case - including evidence that (1) the employee responsible for the challenged refusal to deal testified that intellectual property did not motivate his decision and (2) the defendant's blanket refusal to license covered thousands of parts, of which only 65 were patented.⁹⁵

In *In re Independent Service Organizations Antitrust Litigation*,⁹⁶ the Federal Circuit reached a different conclusion, essentially holding that the refusal to license intellectual property was virtually per se lawful. The court ruled that Xerox had not infringed the antitrust laws by refusing to sell patented parts and copyrighted software to ISOs. The court stated:

In the absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation, the patent holder may enforce the statutory right to exclude others from making, using, or selling the claimed invention free from liability under the antitrust laws.⁹⁷

None of these “exceptional situations” had been proved and therefore Xerox’s subjective motivation for exerting its statutory rights was irrelevant. The *Xerox* court distinguished *Kodak* on the basis that *Kodak*

⁹⁴ *Id.* at 1218 (citing *Data Gen. v. Grumman Sys. Support*, 36 F.3d 1147, 1187 (1st Cir. 1994)).

⁹⁵ *Id.* at 1219-20.

⁹⁶ 203 F.3d 1322, 1327-28 (Fed. Cir. 2000).

⁹⁷ *Id.* at 1327. *See also* *Townshend v. Rockwell Int’l Corp.*, No. C99-0400, 2000 U.S. Dist. LEXIS 5070, at *23 (N.D. Cal. Mar. 28, 2000) (“a patent holder is permitted under the antitrust laws to completely exclude others from practicing his or her technology”).

was a tying case and no patents had been asserted in defense of the antitrust claims.⁹⁸

3. *Patent Holdup and Patent Ambush*

It is useful to distinguish two categories of conduct by patent holders in the standard setting process that might raise antitrust issues. The first is deceptive conduct during the development of the standard, which involves the patent holder employing deception or fraud with respect to its patent rights or licensing terms in its attempt to have its proprietary technology adopted in a standard. A patent holder may intentionally deceive an SSO into adopting the holder's proprietary technology by making false representations regarding the coverage of its intellectual property rights, and after standard-specific investments are sunk, may threaten patent infringement suits against those producing standard-compliant products. Alternatively, a patent holder may convince an SSO to adopt its patented technology by falsely promising that it will license on FRAND terms.

The second category of potentially actionable antitrust conduct in the standard setting context requires neither deception nor the breach of a promise involving a FRAND commitment. It involves the situation in which a patent holder makes a good faith commitment to license on

⁹⁸ Although some of Kodak's parts were patent protected, the Supreme Court did not specifically address the question of antitrust liability based upon a unilateral refusal to deal in a patented product. *See also* Hewitt Pate, *Refusals to Deal and Intellectual Property Rights*, 10 GEO. MASON L. REV. 429, 438 (Spring 2002) (criticizing *Kodak* decision as setting "a dangerous precedent that has the potential to elevate intent-based inquiries over the analysis of the likely competitive effects of unilateral refusals to deal. By doing so threatens the proper balance between antitrust and intellectual property rights."). *See also* Michelle M. Burtis & Bruce H. Kobayashi, *Why and Original can be Better than a Copy: Intellectual Property, the Antitrust Refusal to Deal, and ISO Antitrust Litigation*, 9 SUP. CT. ECON. REV. 143 (2001). For evidence that lower courts have limited plaintiff's claims based on the aftermarket holdup theory central to the Court's *Kodak* decision, see David A.J. Goldfine & Kenneth M. Vorrasi, *The Fall of Kodak Aftermarket Doctrine: Dying a Slow Death in the Lower Courts*, 72 ANTITRUST L. J. 209 (2004); Bruce H. Kobayashi & Joshua D. Wright, *Substantive Preemption, Federalism, and Limits on Antitrust: An Application to Patent Holdup* (forthcoming, J. COMP. L. & ECON (2009).

FRAND terms but later repudiates or seeks to renegotiate that commitment. The FTC has challenged such conduct as a violation of Section 5 of the FTC Act.⁹⁹ There is also some scholarly commentary endorsing the proposition that deviations from ex ante FRAND commitments would also support a Section 2 theory.¹⁰⁰ We discuss patent ambush and patent holdup involving deception, which generally involve monopolization claims under Section 2, separately from the good faith renegotiation of ex ante FRAND commitments, which thus far have been analyzed solely under Section 5 of the FTC Act.

a. Patent Ambush and Patent Holdup Involving Deception

The common elements of anticompetitive theories of deception-based patent ambush and patent holdup claims are that: (1) deception causes the SSO to adopt the patent holder's proprietary technology; (2) inclusion in the standard bestows monopoly power on the firm; (3) rival technology holders are excluded as a result of this conduct; and (4) consumers are harmed as the monopolist is able to extract supra-competitive royalties from SSO members which are passed on to consumers in the form of higher prices.

While deception is ordinarily a business tort that does not give rise to monopolization concerns,¹⁰¹ deception about intellectual property rights has the potential to exclude rivals and allow a firm to unlawfully acquire monopoly power. This form of deception was precisely what the FTC alleged took place in *Rambus*:

Rambus refused to disclose the existence of its patents and applications, which deprived JEDEC members of critical information as they worked to evaluate potential standards. Rambus took additional actions that misled members to believe that Rambus was not seeking patents

⁹⁹ In re Negotiated Data Solutions LLC (N-Data), No. 051-0094 (F.T.C. Jan. 23, 2008).

¹⁰⁰ Joseph Farrell et al., *Standard Setting, Patents, and Hold Up*, 74 ANTITRUST L.J. 603 (2007).

¹⁰¹ See P. AREEDA & H. HOVENKAMP, ANTITRUST LAW 782 (3d ed. 2008). See generally Joshua D. Wright, *Antitrust Analysis of Category Management: Conwood Co. v. United States Tobacco*, 19 SUP. CT. ECON. REV. __ (2009).

that would cover implementations of the standards under consideration by JEDEC. Rambus also went a step further: through its participation in JEDEC, Rambus gained information about the pending standard, and then amended its patent applications to ensure that subsequently-issued patents would cover the ultimate standard. Through its successful strategy, Rambus was able to conceal its patents and patent applications until after the standards were adopted and the market was locked in. Only then did Rambus reveal its patents -- through patent infringement lawsuits against JEDEC members who practiced the standard.¹⁰²

The FTC alleged that this conduct violated both Section 5 of the FTC Act and Section 2 of the Sherman Act, appealing to authority that deceptive conduct can constitute exclusionary conduct and form the basis of a monopolization claim.¹⁰³

Having found that deception in the form of intentional failure to disclose patent rights could form the basis of a monopolization claim, the Commission also found that Rambus' conduct resulted in one of two mutually exclusive scenarios, either of which alone constituted a violation of Section 2. Under the first scenario, Rambus' conduct may have caused its proprietary technology to be adopted rather than an alternative. The Commission observed that alternative technologies were available to JEDEC and could have been adopted had they known about the undisclosed patent rights and noted that "exclusionary conduct need not be the exclusive cause of the monopoly position" and must only satisfy a less stringent standard of appearing "capable of making a significant contribution to creating or maintaining monopoly power." Under the second scenario, the Commission pointed to the possibility that JEDEC may have adopted Rambus' proprietary technology even

¹⁰² *Rambus, Inc.*, 2006 WL 2330117, 2006-2 Trade Cases 75364 (FTC, Aug. 2, 2006), *rev'd*, 522 F.3d 456 (D.C. Cir. 2008)

¹⁰³ *See, e.g.*, *Conwood Co., LP v. U.S. Tobacco Co.*, 290 F.3d 768 (6th Cir. 2002), *cert. denied*, 537 U.S. 1148 (2003); *U.S. v. Microsoft Corp.*, 253 F.3d 34, 76-77 (D.C. Cir. 2001), *cert. denied*, 534 U.S. 952 (2001); *Caribbean Broad. Sys. Ltd. v. Cable & Wireless PLC*, 148 F.3d 1080, 1087 (D.C. Cir. 1998); *International Travel Arrangers, Inc. v. Western Airlines*, 623 F.2d 1255, 1262-63, 1270 (8th Cir.), *cert. denied*, 449 U.S. 1063 (1980).

with knowledge of the patent rights but only after securing RAND assurances. Thus Rambus' conduct may have resulted in JEDEC losing the benefit of a RAND pricing constraint and, consequently, paying higher royalty prices. The Commission found that because both scenarios adequately established a causal link between Rambus' deceptive conduct and some anticompetitive effect there was no need to show which scenario was more probable than the other.¹⁰⁴

While *Rambus* was on appeal to the D.C. Circuit, the Third Circuit held in *Broadcom v. Qualcomm* that intentionally deceiving the SSO with respect to a royalty commitment could constitute a monopolization cause of action under the following conditions:

(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 [Standard Determining Organization'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.¹⁰⁵

Broadcom relies heavily on the Commission's analysis in *Rambus*, emphasizing the notion that deception is a traditional and conventional antitrust concern,¹⁰⁶ and equating the intentional creation of deceptive FRAND commitments with deceptive nondisclosure of intellectual property rights.

After *Broadcom* was decided, the D.C. Circuit reversed the Commission in the *Rambus* case on the grounds that deceptive behavior that allowed a firm with lawfully acquired monopoly power to increase

¹⁰⁴ Joshua D. Wright, *Why the Supreme Court was Correct to Deny Certiorari in FTC v. Rambus*, 9 GCP Mag. Mar. (2) (2009), <http://www.globalcompetitionpolicy.org/index.php?id=1620&action=907>.

¹⁰⁵ *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 314 (3rd Cir. 2007).

¹⁰⁶ *Broadcom*, 501 F.3d at 311-12, 314 ("The FTC likened the deception of an SDO to the type of deceptive conduct that the D.C. Circuit found to violate § 2 of the Sherman Act in *Microsoft*" and such a claim "follows directly from established principles of antitrust law").

prices, while perhaps grounds for a common law claim, cannot form the basis of a Section 2 violation. Relying on *NYNEX*, the D.C. Circuit noted that “an otherwise lawful monopolist’s use of deception simply to obtain higher prices normally has no particular tendency to exclude rivals and thus to diminish competition.” The key distinction the D.C. Circuit emphasized is the difference between deception resulting in higher prices but not exclusion on the one hand --- actions which amount to the mere exercise of pre-existing monopoly power which is clearly immunized under *NYNEX* --- and deception which harms competition by excluding rivals and resulting in the acquisition of monopoly power on the other:

Even if deception raises the price secured by a seller, but does so without harming competition, it is beyond the antitrust laws' reach. Cases that recognize deception as exclusionary hinge, therefore, on whether the conduct impaired rivals in a manner tending to bring about or protect a defendant's monopoly power. In *Microsoft*, for example, we found Microsoft engaged in anticompetitive conduct when it tricked independent software developers into believing that its software development tools could be used to design cross-platform Java applications when, in fact, they produced Windows-specific ones. The deceit had caused "developers who were opting for portability over performance . . . unwittingly [to write] Java applications that [ran] only on Windows." The focus of our antitrust scrutiny, therefore, was properly placed on the resulting harms to competition rather than the deception itself.

The D.C. Circuit concluded that Rambus’s conduct was not sufficient to have such an exclusionary impact because, without a showing that the conduct caused JEDEC to adopt Rambus’ technology rather than an alternative technology, the only losses associated with the conduct are the failure to secure a RAND commitment. The court concluded that such a loss was merely deception resulting in higher prices rather than exclusionary conduct because the Commission conceded that it failed to prove that JEDEC would not have adopted the technology even if Rambus had disclosed its patents. Thus, while it remains clear after *Rambus* that deception in the standard setting process can give rise to a Section 2 claim, plaintiffs must satisfy the burden of establishing that the conduct resulted in the adoption of the proprietary

technology and not merely that it prevented the SSO from securing a RAND commitment and lower royalty rates.¹⁰⁷

The D.C. Circuit highlighted a possible tension between its view of *NYNEX* and that of the Third Circuit in *Broadcom*. In *Broadcom*, the Third Circuit held that the plaintiff had stated a claim under Section 2 of the Sherman Act that Qualcomm's alleged intentional misrepresentation with respect to RAND terms before a standard setting body allowed it to monopolize the markets for cellular phone technology and components.¹⁰⁸ The standard setting body, ETSI, required that members commit to license their technologies on FRAND terms. Qualcomm's proprietary technology was adopted by ETSI. *Broadcom* alleged that ETSI adopted Qualcomm's technology, at least in part, as the result of its intentionally false commitment to license on FRAND terms.

The court reasoned that because SSOs require members to disclose patent rights or make FRAND commitments, and these rules allow SSOs to make decisions based on estimates of the costs of alternative technologies conditional upon those commitments, misrepresentations of those commitments resulting in lock-in distort the competitive process. The Third Circuit noted that such distortions are exclusionary because they involve the selection of one technology rather than an alternative, and can harm consumers because such holdup "may permit it to demand supra-competitive royalties" and "measures such as FRAND commitments become important safeguards against monopoly power."¹⁰⁹ Thus, while the *Broadcom* holding was explicitly premised on an "intentionally false promise to license essential proprietary technology on FRAND terms," the reasoning of the court could have broader implications.

Reacting to these possible implications, the *Rambus* court made clear its views that antitrust law would not extend to deceptive conduct that merely raises prices:

While the Commission's brief doesn't mention *NYNEX*, much less try to distinguish it, it does cite *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3d Cir. 2007). . .

¹⁰⁷ See Kobayashi & Wright, *supra* note 98.

¹⁰⁸ *Broadcom*, 501 F.3d 297 (3d Cir. 2007).

¹⁰⁹ *Id.* at 314.

. To the extent that the ruling (which simply reversed a grant of dismissal) rested on the argument that deceit lured the SSO away from non-proprietary technology, see *id.*, it cannot help the Commission in view of its inability to find that Rambus's behavior caused JEDEC's choice; to the extent that it may have rested on a supposition that there is a cognizable violation of the Sherman Act when a lawful monopolist's deceit has the effect of raising prices (without an effect on competitive structure), it conflicts with *NYNEX*.

Thus, while it is clear that deception in the standard setting process concerning one's intellectual property rights can support a violation of Section 2 of the Sherman Act, *Rambus's* requirements that such conduct be linked causally to the adoption of the proprietary standard and not merely result in higher prices represent significant hurdles to patent ambush and holdup based monopolization claims.

Another controversy that arises in the context of patent holdup cases is whether a patent holder who participates in an SSO has a duty to disclose its patents to that SSO. In *Qualcomm v. Broadcom*, the Federal Circuit held that although the SSO's written intellectual property rights policy did not clearly require its members to disclose relevant patents such a duty nevertheless existed because of the importance of identifying intellectual property rights to the SSO's goal of creating effective standard.¹¹⁰ The case arose after Qualcomm tried to assert two patents that had been adopted as part of a standard created by JVT, an SSO in which Qualcomm participated. The court found that given the relevant context the language of the written policy should be read in favor of requiring disclosure. While the written policy arguably only *encouraged* disclosure, the court found that in light of the fact that non-disclosure would frustrate the SSO's goals the language should be read broadly so as to require disclosure. However, even if the written policy had failed to impose a duty to disclose, the court observed that it would still have found such an obligation existed because the SSO member's shared understanding of the policy established that they treated it as creating a duty. Importantly, the members' shared understanding was not in direct contradiction to the written policy.

¹¹⁰ *Qualcomm v. Broadcom*, 548 F.3d 1004 (Fed. Cir. 2009).

In *Rambus v. Hynix*, the District Court for the Northern District of California distinguished *Qualcomm* and found that the SSO's written policy did not include a duty to disclose. The court found that because JEDEC's disclosure policy was substantially lacking in clarity it could not even be read broadly as creating a duty to disclose. Moreover, the jury found, and the evidence supported, that the SSO members did not share an expectation that patents relevant to proposed standards would be disclosed.¹¹¹ Finally, unlike in *Qualcomm*, the court found that there was no evidence that Rambus had intentionally concealed the patents from the SSO.

Qualcomm indicates that courts may be willing to find a duty to disclose in an SSO's written intellectual property policy, even though that policy is unclear, so long as the context and the members' shared understanding reasonably supports such a reading. Nevertheless, if the written policy is substantially unclear and the member's do not share an expectation of disclosure, courts may still be reluctant to find such a duty exists.

b. Repudiation of Licensing Commitment Made in Good Faith

In contrast to each of the cases discussed above which involve some form of deception, fraud, or intentional misrepresentation in the standard setting process, the FTC's recent enforcement action against *N-Data* under Section 5 of the FTC Act did not involve any such allegations. *N-Data* involved what might be described as "pure" ex post contractual opportunism where the patent holder attempts to renegotiate or deviate from the original FRAND commitment made in good faith, and without deception, in favor of higher royalty rates.

The *N-Data* Majority Statement represent an important development in antitrust theories of patent holdup, and a significant deviation from prior patent holdup enforcement actions like *Dell*, *Unocal*, *Rambus*, and *Broadcom*, which required deception as a precondition for antitrust liability. *N-Data* is significant not only because it assigns antitrust liability without requiring evidence of deception or otherwise exclusionary conduct, but also because it did so without evidence of any breach of a contractual commitment or a

¹¹¹ *Hynix Semiconductor Inc., v. Rambus, Inc.*, 609 F.Supp.2d 988 (N.D. Cal. 2009).

rigorous showing of consumer injury. It is also significant that it was brought under Section 5 of the FTC Act rather than Section 2 of the Sherman Act.

The facts alleged were as follows. In 1994, IEEE adopted National's N-Way Ethernet auto-negotiation technology in its 802.3u standard. National committed to license the technology for a one-time fee of \$1,000. Chairman Majoras notes in her dissenting statement that "no one contends National deceived SSO members at the time of its initial licensing offer in 1994." Indeed, the FTC did not allege that National engaged in any deception, bad conduct, or misrepresentation at the time the technology was adopted. In 1998, National assigned its rights to another company, Vertical. When Vertical attempted to deviate from the 1994 commitments in a 2002 proposal to the IEEE by altering the licensing terms of the one-time \$1,000 fee to a FRAND commitment, the IEEE did not object and requested and negotiated a number of changes in Vertical's proposal before ultimately posting Vertical's letter on its website along with National's 1994 letter. Vertical assigned its rights to N-Data in 2003.

The Majority Statement, joined by Commissioners Harbour, Leibowitz, and Rosch characterizes N-Data's conduct as "oppressive" and "coercive," and argues that there is "no doubt that the type of behavior engaged in by N-Data harms consumers." The majority found that N-Data's conduct was both an unfair method of competition and an unfair business practice under Section 5. It also asserts that "bad faith or deceptive behavior that undermines the [standard setting] process may also undermine competition." The Majority claims that N-Data's renegotiation of National's original 1994 commitments allowed it to "increase the price of an Ethernet technology used by almost every American consumer who owns a computer." However, the Majority Statement asserted that only three companies had entered into agreements for the patents and N-Data had never received royalties on any terms inconsistent with the original 1994 terms.

N-Data raises a number of issues. The first is whether the FTC's extension of its patent holdup enforcement agenda to cases lacking deception could be accomplished under Section 2 rather than Section 5. While *NYNEX* and *Rambus* appears to allow patent ambush and holdup claims involving deception under Section 2 of the Sherman Act, both

appear to rule out a monopolization claim in *N-Data*. The Commission's theory of antitrust liability was not that N-Data acquired monopoly power when the IEEE adopted its Ethernet technology into its standard, as the contractual commitment entered into between N-Data and IEEE constrained N-Data's ability to raise prices. Rather, the theory was that N-Data unlawfully acquired monopoly power at the moment that it violated this contractual pricing constraint with its attempt to renegotiate those prior \$1,000 licensing commitments. *NYNEX* precludes such a theory because it explicitly allows the setting of monopoly prices, and even deceptive conduct increasing prices, after monopoly power was lawfully obtained.

The alternative is to rely on the theory that a firm with pre-existing monopoly power engages in exclusionary conduct whenever it evades a constraint on its pricing. In this case, the pricing constraint takes the form of the FRAND commitment. However, the Court's reasoning in *NYNEX* indicates that it would have concluded that N-Data lawfully obtained monopoly power at the time its technology was included in the standard and would characterize the renegotiation as the *exercise* of that power. Indeed, *NYNEX* concludes that regulatory fraud by a monopolist to increase prices is not exclusionary even when it generates harm to consumers.¹¹²

N-Data also raises the issue of alternative state and federal remedies for patent ambush and holdup. Specifically, Commissioner Kovacic's dissenting statement exhibited some concern that the FTC's consent decree would have significant collateral effects in the form of private actions under state antitrust and consumer protection statutes. Others have also raised the issue of whether alternative state and federal remedies might be superior to antitrust enforcement given the difficulties of identifying and distinguishing mere breach of promise in the standard setting context from exclusionary conduct that harms the competitive process.¹¹³ For example, in discussing the *Broadcom* decision, Professor

¹¹² The Supreme Court has also consistently recognized that the presence of business conduct that increases price is not a sufficient condition for Section 2 liability. *Verizon Commc'ns., Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 414; *Weyerhaeuser v. Ross-Simmons Hardwood Lumber Co.*, 127 S. Ct. 1069, 1078 (2007); *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 223 (1993).

¹¹³ *See, e.g., Kobayashi & Wright*, supra note 98.

Hovenkamp notes that while “breach of a promise is only rarely an antitrust violation” “the more obvious remedy for breach of a promise to license at a certain rate would be a contract suit, or perhaps use of a doctrine such as equitable estoppel to prevent the defendant from renegeing on its promises.”

4. *Ex-ante Licensing Policies*

a. The Economics of Ex-Ante Licensing

The use of ex-ante licensing has been offered as a solution to the problem of SSO holdup. Ex ante licensing rules require patent holders to disclose the maximum royalty rate they would charge if their patent were to be adopted as part of an industry standard. Patent holders are required to commit to these maximum royalty rates prior to the SSO making an investment in a particular technology, thus eliminating patent holders’ ability to engage in ex post negotiations in a supra-competitive environment.¹¹⁴ In addition, some have suggested the use of patent auctions to solve the valuation problem, which would in turn minimize the problem of royalty stacking.¹¹⁵

¹¹⁴ For a general discussion of the use of ex-ante competition to control the exercise of ex-post market power, see Harold Demsetz, *Why Regulate Utilities?*, 11 J. LAW ECON. 55 (1968). For an application of this theory to innovation, see Ben T. Yu, *Potential Competition and Contracting in Innovation*, 24 J. L. & ECON. 215 (1981).

¹¹⁵ In these auctions, owners of competing technologies would compete to have their technology selected as the standard by offering the most attractive bid (e.g., the most attractive FRAND commitment). See Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 737 (2005); Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 15 (2005); Anne Layne-Farrar, Gerard Llobet, and A. Jorge Padilla, *Preventing Patent Hold up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting* (2009), available at <http://ssrn.com/abstract=1129551>, Damien Geradin, Anne Layne-Farrar, and A. Jorge Padilla, *The Ex Ante Auction Model for the Control of Market Power in Standard Setting Organizations* (2007), available at <http://ssrn.com/abstract=979393> (discussing potential auction design problems).

There are, however, several reasons that implementation of ex-ante competition may be problematic. Some have pointed out that use of patent auctions may not accurately solve the valuation problem. Specifically, the theoretical conditions under which auctions are efficient mechanisms that elicit bids that accurately reflect true values may not be satisfied. As a result, use of such auctions may result in systematic errors, and may serve to suppress the incentive function of the patent system.¹¹⁶

A second problem is that use of ex-ante competition to solve the holdup and valuation problems will involve activity that generates antitrust concerns. Specifically, the use of ex-ante patent auctions will involve the exchange of both price and non-price information between competitors, and also involve collective price setting by competitors. Both types of behavior can be anticompetitive, and have been found to violate the antitrust laws. Naked buyer cartels are per se illegal¹¹⁷, and the exchange of price information may be illegal per se.¹¹⁸ While not per se illegal, the exchange of non-price information has in some cases been held to violate the antitrust laws.¹¹⁹ Moreover, the Supreme Court, in *Hydrolevel* has held that the antitrust laws apply to SSO when the standard setting process is misused by the members for anticompetitive ends.¹²⁰ Thus, an important question with regard to using ex-ante competition and patent auctions is whether SSO members would face antitrust liability.

b. Antitrust Concerns

(1) *Information Exchange*

As noted above, the exchange of both price and non price information has been held to violate the antitrust laws. In theory,

¹¹⁶ See, e.g., Geradin & Layne-Farrar, *The Logic and Limits of Ex Ante Competition in a Standard Setting Environment*, 3 COMP. POL'Y INT'L 79 (2007); Michael R. Franzinger, *Latent Dangers in a Patent Pool: The European Commission's Approval of the 3G Wireless Technology Licensing Agreements*, 91 CAL L. REV. 1693 (2003).

¹¹⁷ *Mandeville Island Farms v. Am. Crystal Sugar Co.*, 334 U.S. 219 (1948).

¹¹⁸ See, e.g., *Am. Column & Lumber v. U.S.*, 257 U.S. 377 (1921); HOVENKAMP, ET AL., *supra* note 27, §35.2 at 35-16 .

¹¹⁹ *E. Sales Retail Lumber Dealers Assn. v. U.S.*, 234 U.S. 600 (1914).

¹²⁰ *Am. Soc'y of Mech Eng'rs v. Hydrolevel Corp.*, 456 U.S. 556 (1982).

information exchanges can facilitate collusion,¹²¹ and some courts have held that that exchange of price information is per se illegal.¹²² However, formal models show that even the exchange of price information can result in an increase in welfare.¹²³ The claim that collective ex-ante price setting would help solve holdup and royalty stacking problems similarly implies that the procompetitive effects of such activity would in some cases outweigh anticompetitive harm. Thus, some commentators have argued that a flexible approach under the rule of reason that takes into account the procompetitive benefits of collective price setting and information exchanges in the standard setting process.¹²⁴ And some courts have followed such a flexible approach. For example, the Supreme Court in *Maple Flooring* held that a trade association that exchanged information, including some price information, acted lawfully and did not violate the antitrust laws.¹²⁵ The Court found that there was a legitimate purpose for the exchange of information. Thus, while the naked exchange of price information constitutes a per se offense, exchanges of information that has a legitimate purpose is not, and may be lawful under a rule of reason analysis.

(2) *Monopsony Power*

Antitrust concerns may also arise in the standard-setting process if SSO members are allowed to collaborate during licensing negotiations with a patent holder. If SSO members are able to collude and acquire market power they can in effect act as a monopsony or buyer cartels and suppress the royalty costs paid in exchange for using of the patent.¹²⁶ The potential for SSO member collusion during licensing negotiations raises serious questions about SSO policies that may ostensibly serve to prevent post-adoption holdup but which ultimately facilitate collusion

¹²¹ See, e.g., Richard Clarke, *Collusion and the Incentives for Information Sharing*, 14 Bell J. Econ. 383 (1983).

¹²² *Am. Column & Lumber*, 257 U.S. 377 (1921).

¹²³ See, e.g., Alison Kirby, *Trade Associations as Information Exchange Mechanisms*, 19 RAND J. Econ. 138 (1988)

¹²⁴ HOVENKAMP, ET AL., *supra* note 27, § 35.2 at 35-17, §35.4.

¹²⁵ *Maple Flooring Mfrs. Ass'n. v. U.S.*, 268 U.S. 563 (1925).

¹²⁶ See e.g., J. Gregory Sidak, *Patent Holdup and Oligopsonistic Collusion in Standard-Setting Organizations*, 5 J. COMPETITION L. & ECON. 123 (2009); Geradin & Rato, *supra* note 26.

and harm competition in the form of reduced innovation or higher prices to consumers.

In several lower court decisions, courts have allowed cases to proceed because of the possibility that the SSO may possess and exercise monopsony power. In *Addamax Corp. v. Open Software Foundation*, the plaintiff challenged a consortium of UNIX computer vendor's collective choice of a particular vendor to supply a software component. The district court dismissed the plaintiff's per se claims, but denied the defendant's summary judgment motions. The court found that whether or not the UNIX standard had monopsony power was a genuine issue of material fact. On appeal, the First Circuit affirmed the application of the rule of reason, but dismissed the plaintiff's claims. The district court decisions in *Sony v. Soundview* and *Golden Bridge v. Nokia* illustrate courts' concern that, without proper safeguards, ex ante licensing rules could facilitate price-fixing and the exercise of monopsony power. In addition, the Department of Justice's Antitrust Division and the Federal Trade Commission have stated that while ex ante licensing has a "strong potential for procompetitive benefit," such rules risk creating an opportunity for price-fixing and other anticompetitive joint licensing discussions.¹²⁷

In *Sony v. Soundview* the district court refused to dismiss a suit against several manufacturers who allegedly conspired to fix the licensing price for a patent held by Sony.¹²⁸ The facts in this case arose following the Federal Communication Commission's ("FCC") decision to mandate the use of "V-chips," a device that enables parents to block inappropriate television content from their children.¹²⁹ The Electronic Industries Alliance ("EIA") sought to create a standard to help their members implement the new federal regulation and discovered that several patents were relevant to the technology, including a patent owned by Soundview.¹³⁰ After being informed that it held a relevant patent, Soundview notified EIA and industry members that it would agree to license its technology on "reasonable terms on a 'non-exclusive, non-discriminatory basis.'¹³¹ EIA never responded to the Soundview's

¹²⁷ U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 7, at 54-55.

¹²⁸ *Sony Elecs., Inc. v. Soundview Techs., Inc.*, 157 F.Supp.2d 180 (D. Conn. 2001).

¹²⁹ *Id.* at 181.

¹³⁰ *Id.*

¹³¹ *Id.* at 182.

offer.¹³² Instead, Soundview alleged that EIA executives and industry manufacturing members agreed to a uniform price of five cents per television for the Soundview patent.¹³³

While not reaching the merits of the case, the court found that Soundview had sufficiently stated an antitrust claim.¹³⁴ Sony argued that Soundview's complaint failed to adequately allege an antitrust injury because antitrust laws were designed to safeguard the competitive process for the benefit of consumers.¹³⁵ An agreement between manufacturers that a price of five cents per television is reasonable for Soundview's patent does not increase consumer prices and therefore does not violate antitrust laws.¹³⁶ In fact, Sony argued, such agreements would reduce production costs, thereby reducing consumer prices.¹³⁷ The court rejected this argument, stating instead that an agreement among manufacturers to set a uniform licensing price could constitute a traditional monopsony conspiracy, or buy-side monopoly.¹³⁸ Such agreements, the court found, may harm consumer welfare by potentially reducing the incentive to invest in research and development, and, eventually, driving out suppliers.¹³⁹

Soundview is often cited as an example of the potential antitrust liability SSOs and their members are exposed to by engaging in ex ante licensing.¹⁴⁰ At least one commentator believes that such an interpretation is unwarranted because the V-chip standard was adopted through regulation and therefore the negotiations giving rise to the antitrust liability actually arose ex post, rather than ex ante.¹⁴¹ However, in a separate opinion dismissing a motion by Sony for summary

¹³²

Id.

¹³³

Id. at 182.

¹³⁴

Id. at 188.

¹³⁵

Id. at 184.

¹³⁶

Id.

¹³⁷

Id.

¹³⁸

Id. at 185.

¹³⁹

Id. at 185.

¹⁴⁰

See Gerald Masoudi, Deputy Assistant Attorney General, Antitrust Division, Department of Justice, Efficiency in Analysis of Antitrust, Standard Setting, and Intellectual Property, Address at the Tilburg Law & Economic Center (Jan. 18, 2007), <http://www.usdoj.gov/atr/public/speeches/220972.pdf>.

¹⁴¹

Id.

judgment, the court found that the government had not required the industry to adopt any specific technology to satisfy the regulation.¹⁴²

In *Golden Bridge v. Nokia*, the court found that an antitrust violation could arise in the ex ante licensing context even without SSO member's actually discussing licensing fees. In this case, the defendant and plaintiffs were members of the Third Generation Partnership Project ("3GPP"), a SSO consisting of representatives from the wireless telecommunications industry.¹⁴³ Golden Bridge Technology ("GBT") owned a patent that had been incorporated as an optional part of a 3GPP standard.¹⁴⁴ However, soon after GBT began negotiating licensing agreements with manufacturers, GBT's patent was removed from the standard.¹⁴⁵ GBT claimed that 3GPP members engaged in an anticompetitive boycott by removing GBT's patent from the standard so that manufacturers would not have to pay the licensing fee.¹⁴⁶ Moreover, GBT argued that removing its patent effectively excluded GBT from the market because in order to ensure compatibility, manufacturers only purchased technology conforming to 3GPP standards.¹⁴⁷ The court held that GBT had sufficiently alleged a potential *per se* violation of the Sherman Act because the denial of a 3GPP standard would effectively block access to the market.¹⁴⁸ Thus, while SSOs are generally free to choose their standards based on merit, *Golden Bridge* illustrates that a decision to revoke a standard, even if based on price, may fall susceptible to antitrust scrutiny if the effect of that decision is to eliminate access to the marketplace.

Finally, in addition to the district court decisions listed above, the Department of Justice ("DOJ") Antitrust Division and Federal Trade Commission ("FTC") have also weigh in on the antitrust implications of ex ante licensing. In 2007, the two antitrust agencies release a joint report to help clarify the law.¹⁴⁹ While refraining from taking a position

¹⁴² Sony Elecs., Inc. v. Soundview Techs., Inc., 157 F.Supp.2d 172, 177 (D. Conn. 2001).

¹⁴³ Golden Bridge Tech., Inc v. Nokia, Inc. 416 F.Supp.2d 525, 527 (E.D.Tex. 2006).

¹⁴⁴ *Id.* at 528.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 532.

¹⁴⁸ *Id.*

¹⁴⁹ U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 7, at 49-56.

on whether SSOs should establish ex ante rules, the agencies made clear that such rules could a “strong potential for procompetitive benefits”¹⁵⁰ For that reason, the agencies have decide to apply the rule of reason when evaluating joint ex ante licensing¹⁵¹

In 2006 and 2007, the DOJ released two letters evaluating ex ante licensing policies proposed by the VMEbus International Trade Association (VITA) and the Institute of Electrical and Electronics Engineers (“IEEE”), respectively.¹⁵² DOJ’s review concluded that under a rule of reason approach, both proposals preserved, rather than threatened, competition. DOJ stated that ex ante licensing policies that are accompanied by rules requiring non-disclosed patents to be licensed royalty-free, not only helps prevent potential holdups, but also provide SSO members with valuable information when selecting a standard. By requiring patent holders to provide maximum royalty rates, SSO members can select standards based on technical merit as well as on licensing costs. Further, ex ante licensing provides patent holders with an incentive to offer lower licensing fees as they compete for the benefits associated with being be selected as part of a standard. The DOJ made clear, however, that SSO members could not engage in joint negotiations in an effort to lower licensing fees for patented technologies. The patent holder and each licensee must individually negotiate with the understanding that the licensing price will not be above the previously declared maximum royalty fee. Finally, the DOJ also declared that using patent holder’s declarations of maximum royalty prices to fix downstream prices would constitute a *per se* violation of the Sherman Act.

In addition, Congress has favored a rule of reason approach to standard setting organizations by passing the Standards Development Organization Advancement Act (SDOAA) of 2004. The SDOAA protects the activities of SSOs by applying the rule of reason to the cooperative standards development activities of SSO members. The

¹⁵⁰ *Id.* at 53.

¹⁵¹ *Id.* at 54.

¹⁵² Letter from Thomas O. Barnett, Assistant Att’y Gen., U.S. Dep’t of Justice, to Robert A. Skitol (Oct. 30, 2006), <http://www.usdoj.gov/atr/public/busreview/219380.pdf>; Letter from Thomas O. Barnett, Assistant Att’y Gen., U.S. Dep’t of Justice, to Michael A. Lindsey (Apr. 30, 2007), <http://www.usdoj.gov/atr/public/busreview/222978.pdf>.

SDOAA explicitly excludes, however, exchanges of information among competitors that is not reasonably required for the purpose of developing or promulgating a standard. It also excludes agreements to allocate markets, or any agreement or conspiracy that would set or restrain prices of any good or service. Thus, under these limitations of the SDOAA, activities that would be per se illegal under the antitrust laws generally continue to be per se illegal under the SDOAA.

Thus, while it appears that several district court decisions demonstrate that ex ante licensing that involves collective price setting by and SSO can potentially lead to antitrust liability, there is an increasing consensus that such activities can be lawful if it can be shown that the collective activities have a legitimate, procompetitive purpose.¹⁵³ Thus, with appropriate safeguards, such policies may create more efficient standard setting procedures that mitigate the threat of holdup without introducing a heightened threat of anticompetitive behavior.

5. *Patent Pools*

a. Patent Pools as the Solution to Royalty Stacking

Patent pools and other cross licensing agreements involve exchanges of patent rights. Cross licenses involve the bilateral exchange of patent rights, while patent pools generally involve the pooling of multiple patents from multiple owners. In general, the analysis of patent pools for antitrust purposes, including evaluating the horizontal aspects of patent pools, or vertical restrictions governing those who take licenses from the pool, are the same as for patent license restrictions generally.

In the context of a complex standard covered by many patents, use of patent pools can have obvious pro-competitive benefits. The 1995 DOJ/FTC Intellectual Property Licensing Guidelines identify several procompetitive benefits of patent pools. These include serving as a contractual solution to the problems of blocking patents, serving to reduce transactions costs, integrating complementary technologies, and avoiding costly infringement litigation. In addition, as noted above,

¹⁵³ *But see* Sidak, *supra* note **Error! Bookmark not defined.** (disputing the benefits of such oligopolistic coordination, and arguing for per se treatment).

patent pools can be a solution to the problem of royalty stacking, and other potential anticommons problems.¹⁵⁴

Indeed, the Supreme Court has recognized the efficiency of pooling arrangements. In *Standard Oil*, the court analyzed a patent pool consisting of 73 patents related to “cracking” processed used in refining gasoline.¹⁵⁵ In holding that the pool did not violate the antitrust laws, the court noted that patent pools provided several procompetitive benefits, including a private mechanism for settling patent litigation and avoiding the costs of litigation. The benefit was of particular importance in the presence of blocking patents.¹⁵⁶ And in *Broadcast Music*, a case involving the pooling of public performance rights under copyright, the court recognized the transaction costs reducing function of performance rights organizations in allowing those organizations to set the price for non-exclusive blanket licenses that allowed the public performance of any or all of the works in the pool.¹⁵⁷

b. Theories of Anticompetitive Effects

On the other hand, patent pools may serve anticompetitive ends. For example, patent pools can be used to facilitate price fixing.¹⁵⁸ In its

¹⁵⁴ See, e.g., Josh Lerner, Marcin Strojwas, & Jean Tirole, *The Design of Patent Pools: The Determinants of Licensing Rules*, 38 RAND J. ECON. 610 (2007); Philip B. Nelson, Patent Pools: An Economic Assessment of Current Law and Policy, 38 RUTGERS L.J. 539 (2007). See also George Bittlingmayer, *Property Rights, Progress, and the Aircraft Patent Agreement*, 31 J. L. & ECON. 227 (1998) (analyzing the aircraft patent pool and finding evidence that the pool reduced transactions costs and promoted innovation).

¹⁵⁵ *Standard Oil Co. v. U.S.*, 283 U.S. 163 (1931).

¹⁵⁶ HOVENKAMP, ET AL., *supra* note 27, §34.4C1 at 34-25 (citing cases where courts have recognized the procompetitive nature of clearing blocking patents).

¹⁵⁷ *Broadcast Music Inc. v. Columbia Broadcasting Systems*, 441 U.S. 1 (1979).

¹⁵⁸ HOVENKAMP, ET AL., *supra* note 27, at 34-20. See also George Priest, *Cartels and Patent Licensing Arrangements*, 20 J. L. & Econ. 309 (1977); Richard J. Gilbert, *Antitrust for Patent Pools: A Century of Policy Evolution*, working paper, available at http://works.bepress.com/cgi/viewcontent.cgi?article=1010&context=richard_gilbert. In addition, patent pools can serve as a mechanism through

first decision analyzing patent pools, *National Harrow*, the Court adopted an approach in which the patent laws trumped the antitrust laws.¹⁵⁹ The Court quickly retreated from that position in *Standard Sanitary*,¹⁶⁰ even though the licensing restrictions were less onerous than those evaluated in *National Harrow*, and there was some evidence that the pool eliminated blocking patents.¹⁶¹ In its next case, *Hartford Empire*, the court struck down a patent pool involving the production of glass containers that contained output restraints.¹⁶²

Some commentators have suggested that the evaluation of the competitive effects of a patent pool be centered upon whether the pool contains complementary or blocking patents, or whether or not the patent pools competing patents, with antitrust scrutiny more likely in the latter case.¹⁶³ However, in *Line Material* the Court struck down a cross licensing agreement in the presence of blocking patents.¹⁶⁴ In that case, the Court recognized the procompetitive function of the cross license to solve the blocking patents problem. The Court objected to provisions that gave one of the parties the power to fix prices of the downstream product. The Court also struck down a cross licensing agreement in *U.S. Gypsum* that contained licensing that contained similar price-fixing provisions.¹⁶⁵ The Court extended these holdings to patent pools in *New Wrinkle*, where the Court struck down a patent pool which fixed the minimum prices of the downstream products produced by licensees of the pool.¹⁶⁶ Similarly, the Court struck down a series of cross licenses in *U.S. v. Singer*.¹⁶⁷

which competitors exchange information. For a discussion of these issues, see Part B.4.B.1.

¹⁵⁹ E. Bement & Sons v. National Harrow, 186 U.S. 70 (1902).

¹⁶⁰ Standard Sanitary Mfg. Co., v. U.S., 226 U.S. 20 (1912).

¹⁶¹ Gilbert, *supra* note 158, at 5.

¹⁶² Hartford Empire Co. v. United States, 323 U.S. 386 (1945).

¹⁶³ Goller, *Competing, Complementary and Blocking Patents: Their Role in Determining Antitrust Violations in Areas of Cross-Licensing, Patent Pooling and Package Licensing*, 50 J. Pat. Trademark Off. Socy. 723 (1968). But see HOVENKAMP, ET AL., *supra* note 27 §34.2c at 34-6.

¹⁶⁴ U.S. v. Line Materials Co., 333 U.S. 287 (1948).

¹⁶⁵ U.S. v. U.S. Gypsum Co., 438 U.S. 422 (1978).

¹⁶⁶ U.S. v. New Wrinkle, 342 U.S. 371 (1952).

¹⁶⁷ U.S. v. Singer Mfg. Co., 374 U.S. 174 (1963).

A recent illustration of an antitrust challenge to a patent pool is the FTC's recent actions against Summit Technology and Visx.¹⁶⁸ In that case, the FTC alleged that the patent pooling arrangement was an illegal price fixing scheme, and should be dissolved. The pool involved patents that covered two competing technologies used to perform laser surgery. The parties argued that the pool was necessary to address blocking patents and to avoid costly litigation. The FTC rejected the parties' argument, and focused on the fact that pool established a \$250 fee that was paid by Summit of Visx to the pool each time a procedure was performed. These proceeds would then be split by the two companies according to a predetermined formula. The FTC argued that this fee operated as a de facto price floor, and resulted in both companies charging, with few exceptions, a minimum \$250 per procedure fee. In addition, the Visx patent pool included a exclusivity provisions which could be used to exclude third party manufacturers from obtaining sublicenses from the pool.

In addition, the DOJ has issued favorable business review letters concerning patent pooling arrangements covering DVD-video¹⁶⁹ and DVD-ROM,¹⁷⁰ MPEG-2 standards,¹⁷¹ and 3G patent pool.¹⁷² A common feature of all of these pools is that these pools would only include patents "essential" to the standard in the pool. The requirement that patents be essential to the standard results in the selection of complementary patents for inclusion in the pool, and serve to exclude competing patents from the pool. As a result, these pools contain patents where efficiencies from lowered transactions costs, reductions in complementary pricing

¹⁶⁸ Summit Technology and Visx, Inc., Docket Number 9286, (1998) FTC Complaint No. 9286.

¹⁶⁹ Letter from Joel I. Klein, Assistant Attorney Gen., U.S. Dep't of Justice, to Garrard R. Beeney, Esq. (Dec. 16, 1998), available at <http://www.usdoj.gov/atr/public/busreview/2121.pdf>.

¹⁷⁰ Letter from Joel I. Klein, Assistant Attorney Gen., U.S. Dep't of Justice, to Carey R. Ramos, Esq. (June 10, 1999), available at <http://www.usdoj.gov/atr/public/busreview/2485.pdf>. This pool was unsuccessfully challenged in *Matsushita Elec. Indus. Co. v. Cinram Int'l, Inc.*, 299 F. Supp. 2d 370 (D. Del. 2004).

¹⁷¹ Letter from Joel I. Klein, Acting Assistant Attorney Gen., U.S. Dep't of Justice, to Garrard R. Beeney, Esq. (June 26, 1997), available at <http://www.usdoj.gov/atr/public/busreview/215742.pdf>.

¹⁷² Letter from Charles A. James, Assistant Attorney Gen., U.S. Dep't of Justice, to Ky P. Ewing, Esq. (Nov. 12, 2002), available at <http://www.usdoj.gov/atr/public/busreview/200455.pdf>.

externalities, and reductions in the potential for ex-post holdup are the most likely to be present, while simultaneously eliminating substitute patents, which pose the greatest risk of generating anticompetitive effects.

Patent Pool agreements can also be used to suppress development of alternative technologies. In *Princo Corp. v. International Trade Com'n*, the Federal Circuit held that a defendant in a patent infringement case could establish a defense of patent misuse by establishing the existence of an agreement to prevent licensing of the pool patents in a way that would allow a potential competitor to develop a competing technology.¹⁷³ This case involved a patent pool covering CD-R and CD-RW technologies.¹⁷⁴ The defendant/appellant Princo argued that a particular pool patent (the Lagadec patent) covered a technology that could allow development of an alternative technology that would compete with the product currently produced using the pool patents.¹⁷⁵ It also argued that the pool members, Phillips and Sony, had agreed to license the Lagadec patent in a way that would prevent development of this alternative technology.¹⁷⁶ While the Federal Circuit upheld the rejections of Princo's tying claims, it remanded the case to the ITC to determine whether the pool members agreed that this technology "would not be licensed in a manner allowing its development as competitive technology."¹⁷⁷

c. Bundling and Patent Pools

Blanket license of patents contained in pools also raise questions of bundling and tying, and can constitute both an antitrust violation and patent misuse. In *U.S. Phillips*, the Federal Circuit examined the questions of whether a license to essential and nonessential patents in a pool constituted patent misuse.¹⁷⁸ *U.S. Phillips* contributed patents to several patent pools covering the CD-R, CD-RW technologies. The pools eventually evolved into separate pools for essential and non

¹⁷³ *Princo Corp. v. International Trade Com'n*, 563 F.3d 1301 (Fed. Cir. 2009)

¹⁷⁴ The bundling and tying issues in this case are discussed in the following section.

¹⁷⁵ *Id.* at 1313.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* at 1321.

¹⁷⁸ *U.S. Phillips Corporation v. ITC*, 424 F3d 1179 (Fed Cir. 2005).

essential patents. In order to use the technology covered by the patents contained in the pool, a manufacturer must pay for a license to use the patents in the essential patents pool. In addition, a licensee of the essential pool could also obtain a license for the non-essential license pool without incurring an additional fee.

The case was generated when some firms that licensed CD-R and CR-RW pool patents stopped paying royalties. In response, Phillips initiated an action at the International Trade Commission (ITC) alleging that these firms were violating section 337(a)(1)(B) of the Tariff Act of 1930¹⁷⁹ by importing into the United States CD-Rs and CD-RWs that infringed six of Phillips's patents. In response to the allegations of patent infringement, the respondents raised patent misuse as an affirmative defense. Specifically, they argued that Phillips had engaged in unlawful tying. The administrative law judge held that the pool constituted an illegal tie between essential and unessential patents. The ALJ suggested that the fact that the pool included non-essential patent might allow the patent owners to foreclose competition.¹⁸⁰ In addition, the ALJ questioned the procedure through which the pool defined essential patents. He found the pool constituted an illegal tying arrangement per se and under a rule of reason. The ITC affirmed the ALJ's determination that the pool was an illegal tying arrangement per se and under the rule of reason.

The ITC's decision was reversed by the Federal Circuit. The Federal Circuit rejected the ITC's approach to defining essential patents, and instead adopted an approach that would deem a patent non-essential only if a "commercially feasible" alternative existed. It also adopted an approach that would determine essentiality as of the time the licenses in question were executed in order to avoid ex-post disputes over this issue as circumstances changed. In short, the Federal Circuit adopted a standard of essentiality that includes both commercial as well as literal essentiality. In doing so, it adopted the commonly used standard, and affirmed the de facto safe harbor set out in the DOJ's DVE review letter.

¹⁷⁹ 19 U.S.C. § 1337(a)(1)(B).

¹⁸⁰ For a discussion of the use of bundling to foreclose competition, see Bruce H. Kobayashi, *Does Economics Provide a Reliable Guide to Regulating Commodity Bundling by Firms? A Survey of the Economic Literature*, 1 J. Comp. L. & Econ. 707 (2005).

The Federal Circuit also rejected the ALJ's holding that the pool constituted illegal tying per se and under a rule of reason. The court rejected that the pools were analogous to the block booking schemes the Court condemned in *Paramount* and *Loew's*¹⁸¹ because licensees of the pool were not required or forced to use non-essential patents.¹⁸² Rather, the Federal Circuit held that the pool licenses were analogous to the blanket licenses in the Broadcast Music case, and noted that such arrangement can serve the same transactions costs reducing function as the blanket licenses in that case.

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¹⁸¹ U.S. v. Paramount Pictures, Inc., 334 U.S. 131 (1948); United States v. Loew's, Inc., 371 U.S. 38 (1962).

¹⁸² While the Federal Circuit is correct that the pool licenses lack the coercive element the Court suggests characterizes the earlier cases, it is not clear that the television stations in the Loew's case were required to show films licensed as part of the blocks. For an economic analysis of these cases finding that the block booking schemes reduced information costs, see Roy Kenney and Benjamin Klein, *The Economics of Block Booking*, 26 J. L. & Econ. 497 (1983).