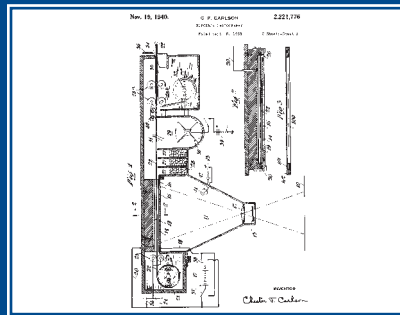
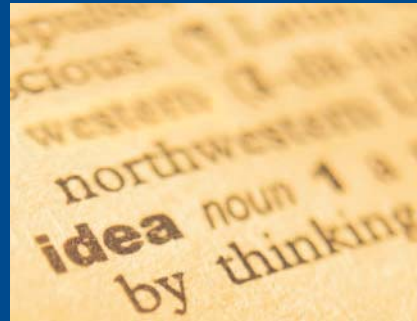
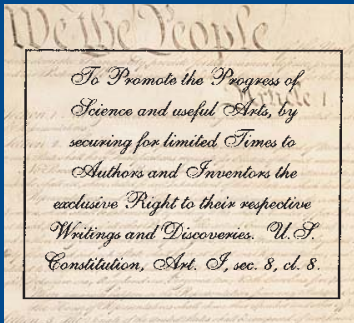

ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS:

Promoting Innovation and Competition



ISSUED BY THE
U.S. DEPARTMENT OF JUSTICE
AND THE
FEDERAL TRADE COMMISSION



APRIL 2007

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INTRODUCTION

Over the past several decades, antitrust enforcers and the courts have come to recognize that intellectual property laws and antitrust laws share the same fundamental goals of enhancing consumer welfare and promoting innovation. This recognition signaled a significant shift from the view that prevailed earlier in the twentieth century, when the goals of antitrust and intellectual property law were viewed as incompatible: intellectual property law's grant of exclusivity was seen as creating monopolies that were in tension with antitrust law's attack on monopoly power. Such generalizations are relegated to the past. Modern understanding of these two disciplines is that intellectual property and antitrust laws work in tandem to bring new and better technologies, products, and services to consumers at lower prices.

Intellectual property laws create exclusive rights that provide incentives for innovation by "establishing enforceable property rights for the creators of new and useful products, more efficient processes, and original works of expression."¹ These property

rights promote innovation by allowing intellectual property owners to prevent others from appropriating much of the value derived from their inventions or original expressions. These rights also can facilitate the commercialization of these inventions or expressions and encourage public disclosure, thereby enabling others to learn from the protected property.

Antitrust laws, in turn, ensure that new proprietary technologies, products, and services are bought, sold, traded, and licensed in a competitive environment. In today's dynamic marketplace, new technological improvements are constantly replacing those that came before, as competitors are driven to improve their existing products or introduce new products in order to maintain their market share. Antitrust laws foster competition by prohibiting anticompetitive mergers, collusion, and exclusionary uses of monopoly power. Yet, it is well understood that exercise of monopoly power, including the charging of monopoly prices, through the exercise of a lawfully gained monopoly position will not run afoul of the antitrust laws.²

¹ U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 1 (1995), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,132, *available at*

<http://www.usdoj.gov/atr/public/guidelines/0558.pdf>[hereinafter ANTITRUST-IP GUIDELINES].

² *Verizon Commc'ns Inc. v. Law Offices of Curtis V.*

The same principle applies to monopoly power that is based on intellectual property rights. As Judge Posner has explained, “It is not a violation of [the antitrust] laws to acquire a monopoly by lawful means, and those means include innovations protected from competition by the intellectual property laws.”³

Although some intellectual property rights may create monopolies, intellectual property rights do not necessarily (and indeed only rarely) create monopolies because consumers may be able to substitute other technologies or products for the protected technologies or products. Therefore, antitrust doctrine does not presume the existence of market power from the mere presence of an intellectual property right.⁴

Consequently, antitrust and intellectual property are properly perceived as complementary bodies of law that work together to bring innovation to consumers: antitrust laws protect robust competition in the marketplace, while intellectual property laws protect the ability to earn a return on the investments necessary to innovate. Both spur competition among rivals to be the first to enter the marketplace with a desirable technology, product, or service.

Trinko, LLP, 540 U.S. 398, 407 (2004).

³ Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 930-31 (2001).

⁴ *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1284 (2006) (“[T]he mere fact that a tying product is patented does not support [a market power] presumption.”); ANTITRUST-IP GUIDELINES § 2.2 (“The Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.”).

Although there is broad consensus that the basic goals of antitrust and intellectual property law are aligned, difficult questions can arise when antitrust law is applied to specific activities involving intellectual property rights that do create market power. That may happen when, for instance, a standard of manufacture for an entire industry or the only treatment for a particular disease incorporates patented technology, or when the research and development (“R&D”), invention, manufacture, or distribution of a product or process without good substitutes involves the licensing of protected technology. The Antitrust Division of the U.S. Department of Justice and the U.S. Federal Trade Commission (the “Agencies”) frequently address complex antitrust questions related to conduct involving the exercise of intellectual property rights in enforcement actions, reports, testimony, reviews of proposed business conduct, and *amicus curiae* or “friend of the court” briefs filed in the federal courts of appeals and the Supreme Court. In doing so, the Agencies must apply antitrust principles to identify illegal collusive or exclusionary conduct while at the same time supporting the incentives to innovate created by intellectual property rights. Condemning efficient activity involving intellectual property rights could undermine that incentive to innovate, and thus slow the engine that drives much economic growth in the United States. However, failure to challenge illegal collusive or exclusionary conduct, involving intellectual property as well as other forms of property, can have substantial negative consequences for consumers.

Recognizing that both robust competition and intellectual property rights are crucial to a well-functioning market economy, the Agencies conducted a series of Hearings, beginning in February 2002, designed to develop a better understanding of the questions that arise when antitrust law is applied to conduct involving intellectual property rights and to examine the Agencies' approach toward analyzing such conduct. The Hearings, entitled "Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy," assembled business people from large and small firms, academics, and legal practitioners. During the Hearings, the Agencies heard a wide range of views from more than 300 panelists and received more than 100 written comments.⁵ In conjunction with the Hearings, the Agencies also reviewed the scholarly literature addressing issues on the cutting edge of legal doctrine and economic theory, concerning how best to reward innovation while encouraging competition.⁶ This Report synthesizes many of the views expressed during the Hearings, in the written submissions, and in the literature, and draws conclusions where appropriate on the proper analysis for evaluating certain activities involving intellectual property rights, as well as the key considerations that should inform the

⁵ Hearings information and materials can be accessed on the Agencies' websites. DOJ/Antitrust, *Competition and Intellectual Property Law in the Knowledge-Based Economy*, <http://www.usdoj.gov/atr/hearing.htm>; Federal Trade Commission, *Competition and Intellectual Property Law in the Knowledge-Based Economy*, <http://www.ftc.gov/opp/intellect>.

⁶ For a complete list of the scholarly literature cited by the Agencies, see Appendix G.

Agencies' analysis.⁷

Many of these key considerations are found within the framework of the Antitrust Guidelines for the Licensing of Intellectual Property ("Antitrust-IP Guidelines"). The Agencies' review of intellectual property and antitrust law and policy illustrates that the Antitrust-IP Guidelines remain an integral part of the Agencies' analysis of intellectual property and antitrust issues. For over a decade, the Agencies have relied on the sound principles of these guidelines to aid their analysis of complex licensing agreements. Those principles will continue to guide the Agencies as they consider new and challenging antitrust questions that involve intellectual property rights.

The general principles articulated in section 2 of these Guidelines provide a solid foundation for this analysis. First, the Guidelines state that agreements involving intellectual property can be analyzed using the same antitrust rules applied to agreements involving any other property.⁸ During the Hearings, former Deputy Assistant Attorney General Richard J. Gilbert explained that

⁷ In October 2003, the FTC issued a report, based on a portion of the Hearings record, which made a series of recommendations for reform of the patent system designed to maintain a proper balance between competition and intellectual property policies. FEDERAL TRADE COMM'N, *TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY* Executive Summary, at I-V (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

⁸ ANTITRUST-IP GUIDELINES § 2.1 ("The Agencies apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of tangible or intangible property.").

“[w]hat this mean[s is] not that intellectual property is the same as other forms of property. It clearly is not the same. . . . [B]ut in terms of how to analyze intellectual property issues, the same [antitrust] principles apply.”⁹ Second, the Guidelines state that an intellectual property right does not necessarily create market power. Rather, the Agencies determine whether substitutes for the protected technology or product prevent the intellectual property right holder from exercising market power.¹⁰ Third, the Guidelines state that intellectual property licensing is generally procompetitive because it allows firms to combine intellectual property rights with other complementary factors of production such as manufacturing and production facilities and workforces.¹¹

As the Antitrust-IP Guidelines suggest, many of the difficult questions that the Agencies encounter in the application of antitrust principles to intellectual property stem from differences between the characteristics of intellectual property and other forms of property. Intellectual property is more easily misappropriated than many other forms of property in that it is often easier

to copy and may be used without interfering with the ability of others also to use it. The fixed costs of creating intellectual property can be high, while the marginal costs of using intellectual property are often low. Moreover, the boundaries of intellectual property rights are often uncertain and difficult to define, so that neither the intellectual property holder nor competitors know the precise extent of protection afforded by the intellectual property right without a decision from a court or binding arbiter. The value of intellectual property typically depends more on its combination with other factors of production, such as manufacturing and distribution facilities, workforces, or complementary intellectual property, than does tangible property. Finally, the duration of some, but not all, intellectual property rights is limited.¹² The application of antitrust law to intellectual property requires careful attention to these differences.

This Report discusses how these principles are applied to particular activities involving intellectual property rights. The first two chapters of this Report focus on certain methods that an

⁹ Feb. 6, 2002 Hr’g Tr., Welcome and Overview of Hearings at 85 (Gilbert), <http://www.ftc.gov/opp/intellect/020206ftc.pdf> [hereinafter Feb. 6 Tr.]. For example, the Agencies analyze acquisitions of intellectual property pursuant to the Horizontal Merger Guidelines, examining whether the acquisitions are likely to substantially lessen competition. U.S. DEP’T OF JUSTICE & FEDERAL TRADE COMM’N, HORIZONTAL MERGER GUIDELINES (1992, rev. ed. 1997), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,104, *available at* <http://www.usdoj.gov/atr/public/guidelines/hmg.pdf>.

¹⁰ ANTITRUST-IP GUIDELINES § 2.1.

¹¹ *Id.* § 2.3.

¹² Patents are valid for a term of twenty years from the date on which the application for the patent was filed. 35 U.S.C. § 154(a)(2) (2000). Most copyrights are valid for the life of the author plus seventy years or ninety-five years after the work is first published if the creator is a corporation. 17 U.S.C. § 302(a), (c) (2000). Trade secrets enjoy perpetual protection provided the secret information is not disclosed. 1 ROGER M. MILGRIM, MILGRIM ON TRADE SECRETS § 1.05[1], at 1-197 (2005). Trademarks are protected as long as the mark continues to indicate a specific source or quality and is not abandoned by the owner. 1 J. THOMAS MCCARTHY, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 6.8, at 6-11 to -12 (4th ed. 2005).

individual holder of intellectual property rights might employ to maximize the benefits it receives from its intellectual property. Chapter 1 addresses the antitrust consequences for a patent holder that unilaterally and unconditionally refuses to license its patent. Chapter 2 addresses collaboratively set standards and “hold up,” or the ability of an intellectual property holder to extract more favorable licensing terms after a standard is set.

The remaining chapters of this Report focus directly on intellectual property licensing practices. Chapter 3 addresses patent pools and cross-licensing arrangements and analyzes licensing structures used to lower the risk that patent-pooling agreements will cause competitive harm. Chapter 4 considers the procompetitive and anticompetitive effects of specific types of restrictions in intellectual property licenses, including non-assertion clauses, grantbacks, and reach-through royalty agreements. The antitrust consequences of tying and bundling of intellectual property rights are assessed in Chapter 5. Finally, in Chapter 6, the Report addresses the competitive significance of restrictions that attempt to extend the temporal reach of patents. The Agencies’ conclusions regarding these topics are summarized in this introduction.

CHAPTER 1: THE STRATEGIC USE OF LICENSING: UNILATERAL REFUSALS TO LICENSE PATENTS

Although intellectual property law and antitrust law are complementary, two divergent appellate decisions, *Image Technical Services, Inc. v. Eastman Kodak Co.* (“Kodak”)¹³ and *In re Independent Service Organizations Antitrust Litigation (CSU)*,¹⁴ illustrate the potential for conflict regarding unilateral refusals to license patents. Panelists explored the circumstances, if any, under which courts should impose antitrust liability for a refusal to license a patent. Panelists agreed that neither *Kodak* nor *CSU* provide sufficient guidance on potential antitrust liability for a refusal to license. Most panelists rejected the approach of the U.S. Court of Appeals for the Ninth Circuit in *Kodak*, which impracticably focused on the subjective intent of the patent holder that had refused to license its patent. As one panelist noted, *Kodak* presents a standard that is out of step with the modern focus of antitrust analysis, which is on objective economic evidence. Panelists also criticized the decision of the U.S. Court of Appeals for the Federal Circuit in *CSU*, which, in dictum, narrowly construed the circumstances in which antitrust liability can arise for a refusal to license. These circumstances – illegal tying, fraud on the U.S. Patent and Trademark Office, and sham litigation – provided little guidance, according to panelists, because they are independent bases for antitrust liability.

¹³ 125 F.3d 1195 (9th Cir. 1997).

¹⁴ 203 F.3d 1322 (Fed. Cir. 2000).

Other panelists feared the *CSU* decision would be interpreted broadly to encompass conduct beyond the unilateral refusal to license, to instances in which the patentee attaches conditions to a license.

Most panelists concluded, consistent with the Antitrust-IP Guidelines, that antitrust laws should be applied in the same manner to intellectual property as they are to other property. Panelists offered differing views on other issues, however, such as whether challenging refusals to license would have significant chilling effects on innovation, the possible competitive effects of refusals to license, and whether compulsory licensing is a workable remedy for an antitrust violation. Although some panelists favored the possibility of antitrust liability for refusals to license in narrow circumstances, others favored a categorical exemption from antitrust liability for unilateral, unconditional refusals to license. Panelists agreed that conditional refusals to license, which have the potential to cause competitive harm, can and should be treated as an antitrust violation in appropriate circumstances.

The Agencies' Conclusions:

- **Section 271(d)(4) of the Patent Act does not create antitrust immunity for unilateral refusals to license patents.**
- **Statements in Supreme Court jurisprudence support the unilateral right to refuse to grant a patent license is a core part of the patent grant.**
- **Antitrust liability for mere unilateral, unconditional refusals to license patents will not play a meaningful part in the interface between patent rights and antitrust protections. Antitrust liability for refusals to license competitors would compel firms to reach out and affirmatively assist their rivals, a result that is “in some tension with the underlying purpose of antitrust law.”¹⁵ Moreover, liability would restrict the patent holder’s ability to exercise a core part of the patent – the right to exclude.**
- **Conditional refusals to license that cause competitive harm are subject to antitrust liability.**

CHAPTER 2: COMPETITION CONCERNS WHEN PATENTS ARE INCORPORATED INTO COLLABORATIVELY SET STANDARDS

Industry standards are widely acknowledged to be one of the engines of the modern economy. Standards can make products less costly for firms to produce and more valuable to consumers. They can increase innovation, efficiency, and consumer choice; foster public health and safety; and serve as a “fundamental building block for international trade.”¹⁶ Standards make networks, such as the Internet and telecommunications, more

¹⁵ *Trinko*, 540 U.S. at 407-08 (setting forth three sources of that tension).

¹⁶ Amy A. Marasco, *Standards-Setting Practices: Competition, Innovation and Consumer Welfare* (Apr. 18, 2002 Hr’g R.) at 3-4, <http://www.ftc.gov/opp/intellect/020418marasco.pdf>.

valuable to consumers by allowing products to interoperate.

Businesses can collaborate to establish industry standards by working through standard-setting organizations (“SSOs”). During the standard-setting process, SSO members often jointly evaluate and choose between substitute technologies. This process can raise antitrust concerns, and indeed, some collaborative standard-setting activities have been challenged under the antitrust laws. Unique antitrust issues arise when the standards adopted involve, as they frequently do, intellectual property rights. If a technology lacks effective substitutes because an SSO chose to include it in a standard, and the costs associated with switching to an alternative standard are high, the owner of patents on that technology may be able to hold up firms wishing to implement the standard by setting higher royalties and less favorable licensing terms than it could have done before the standard was set.

To mitigate the potential for hold up, many SSOs have required participants to disclose the existence of intellectual property rights that may be infringed by a standard and to commit to licensing on reasonable and nondiscriminatory (“RAND”) terms. Panelists agreed that intellectual property disclosure rules can help avoid hold up by informing SSO members early about relevant intellectual property rights that may be asserted by those participating in the standard-setting process. Those rules can be successful in preventing hold up, however, only if participants comply. At the Hearings, panelists also noted the potential costs

associated with disclosure requirements, including slowing the adoption of a standard and deterring wide-spread participation in the SSO.

Some SSOs and SSO members would like to further mitigate the potential for hold up by requiring patent owners to commit to licensing terms before the SSO will select the patented technology as part of a standard. Panelists addressed how *ex ante* licensing discussions could alleviate hold up. There was general consensus among panelists that a more transparent process for setting licensing terms would be desirable, but many expressed concern that such discussions could increase the risk of an antitrust challenge. Further, the increased administrative costs and delays associated with that transparency led many panelists to disfavor including *ex ante* discussions in the standard-setting process for practical reasons that were independent of antitrust concerns.

The Agencies’ Conclusions:

- ***Ex ante* consideration of licensing terms by SSO participants can be procompetitive.**
- **Joint *ex ante* consideration of licensing terms by SSO participants is unlikely to constitute a *per se* antitrust violation. The Agencies will usually apply the rule of reason when evaluating joint activities that mitigate hold up by allowing potential licensees of the standard to negotiate licensing terms with IP holders. Such *ex ante* negotiations of licensing terms are most likely to be reasonable when the adoption of a standard will**

create or enhance market power for a patent holder.

- **An intellectual property owner's unilateral announcement of licensing terms does not violate section 1 of the Sherman Act.**
- **An intellectual property owner's unilateral announcement of price terms, without more, does not violate section 2 of the Sherman Act.**
- **Bilateral *ex ante* negotiations about licensing terms that take place between an individual SSO member and an individual intellectual property holder outside the auspices of the SSO are unlikely (without more) to require any special antitrust scrutiny because intellectual property rights holders are merely negotiating individual terms with individual buyers.**
- **The Agencies take no position as to whether SSOs should engage in joint *ex ante* discussion of licensing terms.**

CHAPTER 3: ANTITRUST ANALYSIS OF PORTFOLIO CROSS-LICENSING AGREEMENTS AND PATENT POOLS

In many industries, the patent rights necessary to commercialize a product are frequently controlled by multiple rights holders. This fragmentation of rights can increase the costs of bringing products to market due to the transaction costs of negotiating multiple licenses, and greater

cumulative royalty payments. Portfolio cross licenses and patent pools can help solve the problems created by these overlapping patent rights, or patent thickets, by removing the need for patent-by-patent licensing, thus reducing transaction costs for licensees. In addition, patent-pooling agreements may mitigate royalty stacking and hold-up problems that can occur when multiple patent holders individually demand royalties from a licensee. At the same time, portfolio cross licenses and patent pools preserve the financial incentives for inventors to commercialize their existing innovations and undertake new, potentially patentable R&D.

Although both cross-licensing and patent-pooling agreements have the potential to generate significant efficiencies, they also may generate anticompetitive effects if the arrangements result in price fixing, coordinated output restrictions among competitors, or foreclosure of innovation. For instance, horizontal coordination among the pool's licensors could lead to a reduction in price competition between technologies or downstream products. Moreover,

a pooling arrangement that requires members to grant licenses to each other for current and future technology at minimal cost may reduce the incentives of its members to engage in research and development because members of the pool have to share their successful research and development and each of the members can free ride on the

accomplishments of other pool members.¹⁷

Pooling agreements typically warrant greater antitrust scrutiny than do cross-licensing agreements due to the collective pricing of pooled patents, greater possibilities for collusion, and generally a larger number of market participants.

Hearing panelists discussed several topics, including the similarities and differences between pooling and cross-licensing agreements, the potential procompetitive benefits and anticompetitive effects of pools and cross licenses, and the safeguards that have been proposed through the Department's business review procedures to help ensure that patent pools do not harm competition. Panelists generally agreed that the Agencies' existing guidance in this area has been instructive and helpful.

The Agencies' Conclusions:

- **The Agencies will continue to evaluate the competitive effects of cross licenses and patent pools under the framework of the Antitrust-IP Guidelines. Given the cognizable benefits and potential anticompetitive effects associated with both of these licensing practices, the Agencies typically will analyze both types of agreements under the rule of reason.**
- **Combining complementary patents within a pool is generally procompetitive.**

- **Including substitute patents in a pool does not make the pool presumptively anticompetitive; competitive effects will be ascertained on a case-by-case basis.**
- **The competitive significance of a pool's licensing terms will be analyzed on a case-by-case basis considering both their procompetitive benefits and anticompetitive effects.**
- **The Agencies will not generally assess the reasonableness of royalties set by a pool. The focus of the Agencies' analysis is on the pool's formation and whether its structure would likely enable pool participants to impair competition.**

CHAPTER 4: VARIATIONS ON INTELLECTUAL PROPERTY LICENSING PRACTICES

Because the Agencies recognize that most business transactions involving the use, distribution, transfer, or exchange of intellectual property rights are procompetitive, they most commonly evaluate the competitive impact of such transactions under the rule of reason. For restraints in intellectual property licenses, this approach means inquiring "whether the restraint is likely to have anticompetitive effects, and, if so, whether the restraint is reasonably necessary to achieve procompetitive benefits that outweigh those anticompetitive effects."¹⁸ The analysis of a particular licensing restraint inquires

¹⁷ ANTITRUST-IP GUIDELINES § 5.5.

¹⁸ *Id.* § 3.4.

whether the restraint “harms competition among entities that would have been actual or likely potential competitors” in the absence of the license.¹⁹ Restraints that encourage licensees to develop and market the licensed technology or that reduce the transaction costs of licensing the technology are more likely to be found reasonable. When assessing licensing restraints, the Agencies will not search for unrealistic least restrictive alternatives for the restraint.²⁰ The Agencies will, however, treat as unlawful *per se* those restraints that courts have found plainly anticompetitive, such as price fixing and market division among horizontal competitors, because they always, or almost always, tend to raise prices or reduce output.²¹

Hearings panelists discussed several specific licensing practices that are analyzed using the framework of the Antitrust-IP Guidelines: non-assertion clauses, grantbacks, and reach-through royalty agreements. Panelists considered when these practices might be procompetitive, under what circumstances they might be anticompetitive, and whether the Antitrust-IP Guidelines provide adequate guidance for evaluating the antitrust implications of these arrangements. Panelists generally agreed that the basic principles set forth in the Antitrust-IP Guidelines are preferable to bright line, *per se* rules that affirmatively approve or condemn a specific licensing practice without regard to the circumstances in

which these rules are applied.

The Agencies’ Conclusion:

- **The Agencies will continue to apply the flexible rule of reason analysis of the Antitrust-IP Guidelines to assess intellectual property licensing agreements, including non-assertion clauses, grantbacks, and reach-through royalty agreements.**

CHAPTER 5: ANTITRUST ISSUES IN THE TYING AND BUNDLING OF INTELLECTUAL PROPERTY RIGHTS

A tying arrangement occurs when, through a contractual or technological requirement, a seller conditions the sale or lease of one product or service on the customer’s agreement to take a second product or service. A “requirements tie-in” sale occurs when a seller requires customers who purchase one product from the seller (e.g., a printer) also to make all their purchases of another product from the seller (e.g., ink cartridges). Such tying allows the seller to, for example, charge customers different amounts depending on their product usage. A bundled sale typically refers to a sale in which the products are sold only in fixed proportions (e.g., one pair of shoes and one pair of shoe laces, or a newspaper, which can be viewed as a bundle of sections, some of which may not be read at all by individual customers).

Intellectual property bundling can take various forms and labels, depending

¹⁹ *Id.* § 3.1.

²⁰ *Id.* § 4.2.

²¹ *Id.* § 3.4.

on whether the product linked to the intellectual property also embodies intellectual property, whether one price or separate prices are charged, and whether the linkage is accomplished contractually or technologically. Classic “contractual” patent tying occurs when the tying product is patented (such as a mimeograph machine), the tied product is a commodity used as an input for the tying product (such as ink or paper), and the sale of the patented product is conditioned on the purchase of the unpatented product. A “technological tie” may be defined as one in which “the tying and tied products are bundled together physically or produced in such a way that they are compatible only with each other.”²² Multiple intellectual property rights may themselves be combined into bundles or licensed in packages, such as the “block booking” of motion pictures or television shows.

Economic theory can identify both procompetitive and anticompetitive effects when two or more products are tied or bundled together and at least one of these products involves intellectual property rights. In spite of this, under current antitrust case law, tying arrangements, including those involving intellectual property, continue to be *per se* illegal if the seller has market power in the tying product and certain other conditions are met.²³ However, the application of the *per se* rule to tying has

evolved to incorporate a market analysis.²⁴

One Hearing panel discussed how the Agencies and the courts could best analyze IP tying and bundling, both to reach the right answers in particular cases and to give private parties a reasonable ability to predict how their licensing practices will be treated under the antitrust laws. Several panelists recognized the efficiencies potentially associated with the tying and bundling of intellectual property rights and panelists were generally in favor of a more flexible application of the antitrust laws to intellectual property tying and bundling.

The Agencies’ Conclusion:

- **The Antitrust-IP Guidelines will continue to guide the Agencies’ analysis of intellectual property tying and bundling. Pursuant to the Antitrust-IP Guidelines, the Agencies consider both the anticompetitive effects and the efficiencies attributable to a tie, and would be likely to challenge a tying arrangement if: “(1) the seller has market power in the tying product, (2) the arrangement has an adverse effect on competition in the relevant market for the tied product, and (3) efficiency justifications for the arrangement do not outweigh the**

²² 1 HERBERT HOVENKAMP, MARK D. JANIS & MARK A. LEMLEY, *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW* § 21.5b2, at 21-104 (2002). An example would be a razor and razor blade cartridge.

²³ *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 9 (1984); *Ill. Tool*, 126 S. Ct. at 1284.

²⁴ *Nat’l Collegiate Athletic Ass’n v. Bd. of Regents of the Univ. of Okla.*, 468 U.S. 85, 104 n.26 (1984) (“[W]hile the Court has spoken of a ‘*per se*’ rule against tying arrangements, it has also recognized that tying may have procompetitive justifications that make it inappropriate to condemn without considerable market analysis.”).

anticompetitive effects.”²⁵ If a package license constitutes tying,²⁶ the Agencies will evaluate it pursuant to the same principles they use to analyze other tying arrangements.

CHAPTER 6: COMPETITIVE ISSUES REGARDING PRACTICES THAT EXTEND THE MARKET POWER CONFERRED BY A PATENT BEYOND ITS STATUTORY TERM

A portion of the Hearings focused on the competitive impact of practices that firms may use to extend the reach of a patent beyond the expiration of a patent’s statutory term, such as collecting royalties beyond the statutory term, the use of exclusive contracts that deprive rivals or potential entrants of a source of supply or access to customers, or bundling trade secrets with patents. Of course, these efforts do not have the potential to cause competitive concern unless the patent in question is associated with market power, i.e., when the patent holder can profitably “maintain prices above, or output below, competitive levels for a significant period of time.”²⁷ Moreover, although some of these practices may have the *potential* to extend the ability to exercise the market power conferred by a patent, many

²⁵ ANTITRUST-IP GUIDELINES § 5.3 (footnotes omitted).

²⁶ The Antitrust-IP Guidelines describe package licensing as “the licensing of multiple items of intellectual property in a single license or in a group of related licenses,” which “may be a form of tying arrangement if the licensing of one product is conditioned upon the acceptance of a license for another, separate product.” *Id.*

²⁷ *Id.* § 2.2.

practices do not actually do so, and as panelists observed, they may, in fact, offer efficiencies. Accordingly, panelists identified the fundamental question for assessing competitive harm that may result from such practices to be whether the patent holder is exercising market power arising from the patent beyond its statutory term to prevent expansion by those already in the market or to deter the entry of substitute products or processes into the market.

The Agencies’ Conclusions:

- **The starting point for evaluating practices that extend beyond a patent’s expiration is analyzing whether the patent in question confers market power.**
- **Standard antitrust analysis applies to practices that have the potential to extend the market power conferred by a patent beyond its expiration.**
- **Collecting royalties beyond a patent’s statutory term can be efficient. Although there are limitations on a patent owner’s ability to collect royalties beyond a patent’s statutory term,²⁸ that practice may permit licensees to pay lower royalty rates over a longer period of time, which reduces the deadweight loss associated with a patent monopoly and allows the patent holder to recover the full value of the patent, thereby preserving innovation incentives.**

²⁸ See *Brulotte v. Thys Co.*, 379 U.S. 29 (1964).

Holding the Hearings and developing this Report has improved the understanding of the Agencies regarding issues at the intersection of antitrust and intellectual property law. Listening to the differing perspectives of the panelists, and reviewing the submissions and the literature, has helped hone the Agencies' analysis of compelling issues at the intellectual property-antitrust interface that will continue to arise as we move further into the twenty-first century. The Hearings confirmed that the rigorous economic analysis introduced into competition law in the 1980s, which the Agencies continue to apply today, is robust enough to tackle unexplored questions that lie ahead. This analysis focuses on preserving incentives for creativity and innovation, and avoids applying intellectual property-specific rules that may undermine creativity and innovation. The Hearings further confirmed the continuing vitality of the principles espoused in the Antitrust-IP Guidelines in guiding the Agencies' consideration of challenging antitrust questions in this area. The Agencies will continue to identify those circumstances under which it may be necessary for the Agencies to intervene in order to prevent practices that are harmful to competition or innovation. Using our improved understanding of intellectual property, the Agencies better can ensure that intellectual property and antitrust laws continue to achieve their common goals of "encouraging innovation, industry and competition."²⁹

²⁹ See *Atari Games Corp. v. Nintendo of Am., Inc.*, 897 F.2d 1572, 1576 (Fed. Cir. 1990); Feb. 6 Tr. at 11-12 (James).

CHAPTER 1

THE STRATEGIC USE OF LICENSING: UNILATERAL REFUSALS TO LICENSE PATENTS

I. INTRODUCTION

The appropriate application of the antitrust laws to unilateral refusals to license patents is the subject of much debate. Differing resolutions of that debate at this particular intersection of antitrust and patent law may explain divergent decisions from the courts of appeals. In *Image Technical Services, Inc. v. Eastman Kodak Co.* (“Kodak”),¹ the United States Court of Appeals for the Ninth Circuit affirmed Sherman Act liability relating to a unilateral refusal to license intellectual property. Yet in *In re Independent Service Organizations Antitrust Litigation (CSU)*,² the United States Court of Appeals for the Federal Circuit affirmed summary judgment for a defendant under similar circumstances.

As a part of the Hearings, attorneys and economists explored the circumstances, if any, under which courts should impose antitrust liability for a refusal to license patents.³ Panelists

critiqued the *Kodak* and *CSU* decisions; discussed the likely economic effects of permitting, and prohibiting, antitrust liability for unilateral refusals to license patents; and debated the proper legal

Ashish Arora, Visiting Associate Professor of Economics, Stanford University, Associate Professor of Economics and Public Policy, Carnegie Mellon University; Jonathan I. Gleklen, Partner, Arnold & Porter; Paul F. Kirsch, Partner, Townsend and Townsend and Crew LLP; Benjamin Klein, Professor of Economics, University of California, Los Angeles; Jeffrey K. MacKie-Mason, Arthur W. Burks Professor of Information and Computer Science, Professor of Economics and Public Policy, University of Michigan; A. Douglas Melamed, Partner, Wilmer, Cutler & Pickering; Carl Shapiro, Transamerica Professor of Business Strategy, Haas School of Business; Director and Professor of Economics, Institute of Business and Economic Research, University of California, Berkeley; Christopher J. Sprigman, Counsel, King & Spalding; Mark D. Whitener, Antitrust and General Counsel, General Electric; John Shepard Wiley, Jr., Professor of Law, University of California, Los Angeles. This session was moderated by then-Deputy Assistant Attorney General R. Hewitt Pate, Antitrust Division, U.S. Department of Justice; Pam Cole, Attorney, Antitrust Division, U.S. Department of Justice; Suzanne Majewski, Economist, Antitrust Division, U.S. Department of Justice; Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; and C. Edward Polk, Jr., then-Associate Solicitor, U.S. Patent and Trademark Office. May 1, 2002 Hr’g Tr., The Strategic Use of Licensing: Is There Cause for Concern About Unilateral Refusals to Deal? at 2-3, <http://www.ftc.gov/opp/intellect/020501xscript.pdf> [hereinafter May 1 Tr.].

¹ 125 F.3d 1195 (9th Cir. 1997).

² 203 F.3d 1322 (Fed. Cir. 2000).

³ The May 1, 2002 Hearing panelists included:

analysis of unilateral refusals to license.

II. THE KODAK AND CSU DECISIONS

Panelists indicated that neither *Kodak* nor *CSU* provides sufficient guidance on potential antitrust liability for unilateral refusals to license patents. Moreover, the divergence in approaches taken by the two decisions makes it difficult to determine the contours of potential liability for refusals to license patents and thereby creates uncertainty for licensors and licensees.

A. The Basic Facts and Holdings of the Cases

The panelists framed the debate about imposing antitrust liability for unilateral refusals to license patents around the *Kodak* and *CSU* opinions, which raise many of the key issues. Plaintiffs in both cases were independent service organizations (“ISOs”) that sued original equipment manufacturers (“OEMs”), alleging the OEMs violated section 2 of the Sherman Act by refusing to sell patented parts and to license patented and copyrighted software.⁴

⁴ In *Kodak*, the defendant’s refusal to deal did not distinguish among parts on the basis of patent rights. The *Kodak* court found that the defendant had monopoly power in an “all parts” market, including many parts not protected by patent rights. *Kodak*, 125 F.3d at 1219-20. In *CSU*, plaintiffs likewise alleged refusals to deal extending to items not protected by patent rights. The district court initially granted summary judgment for the defendant for the refusal to license patented parts, while explicitly reserving judgment on the refusal to sell unpatented parts. *In re Indep. Serv. Orgs. Antitrust Litig.*, 964 F. Supp. 1479, 1490 & n.8 (D. Kan. 1997). Before the case went to the Federal Circuit, plaintiffs conceded that they could not prove antitrust injury only from the refusal to sell

Plaintiffs’ theory in both cases was that section 2 was violated because the defendants each had a monopoly in a relevant parts market and, by refusing to supply parts to the ISOs, they were extending their monopolies into the servicing of their equipment.

In *Kodak*, the Ninth Circuit held that a “reluctance to sell . . . patented or copyrighted parts was a presumptively legitimate business justification,” but the “presumption may also be rebutted by evidence of pretext.”⁵ The court also held that there was sufficient evidence of pretext because the defendant refused to sell both patented and unpatented parts and was not even thinking about its patent rights when it did so.⁶

In contrast, the Federal Circuit in *CSU* declined to consider the “patentee’s subjective motivation for refusing to sell or license its patented products,” in effect making the presumption of a legitimate business justification conclusive.⁷ In much discussed dictum, the court added that a “patent holder may enforce the statutory right to exclude others . . . free from liability under the antitrust laws” in

unpatented parts, so the court granted summary judgment on all antitrust claims. Order, *In re Indep. Serv. Orgs. Antitrust Litig.*, No. MDL-1021 (D. Kan. Jan. 8, 1999). Consequently, the only issue before the Federal Circuit was whether the unilateral refusal to sell or license patented parts could violate the antitrust laws.

⁵ *Kodak*, 125 F.3d at 1219.

⁶ *Id.* at 1219-20.

⁷ *CSU*, 203 F.3d at 1327; May 1 Tr. at 19-26 (Gleklen); Jonathan I. Gleklen, *Antitrust Liability for Unilateral Refusals to License Intellectual Property: Xerox and Its Critics* (May 1, 2002 Hr’g R.) at 2-4, <http://www.ftc.gov/opp/intellect/020501gleklen.pdf> [hereinafter Gleklen Submission].

the “absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation.”⁸

B. Panelist Views on *Kodak*

Panelists almost uniformly found problematic *Kodak*'s subjective intent standard. One panelist found it “fundamentally flawed” because it would permit a refusal to deal motivated by a desire to protect return on research and development (“R&D”) investment but prohibit a refusal to deal motivated by the practically indistinguishable desire to maximize profit by excluding competition.⁹ This panelist also argued, and others agreed, that there is no limiting principle to the subjective motivation inquiry.¹⁰ Another panelist argued that *Kodak*'s focus on subjective motivation is out of step with modern antitrust analysis's focus on objective economic aspects of conduct, rather than on motive.¹¹ Yet another noted the practical problems associated with an intent-based test: “From a counseling standpoint, the Ninth Circuit's distinction between legitimate and ‘pretextual’ assertions of patent rights is both unworkable in practice and very difficult to explain to business people who want to

know how to ensure that their activities are lawful.”¹² And one panelist asserted that the subjective motivation standard would dramatically increase the costs of enforcing intellectual property rights, because intellectual property holders facing refusal to license claims would not be able to win motions to dismiss.¹³

One panelist suggested reading the *Kodak* decision to reject *Kodak*'s proffered business justification as feeble and belated.¹⁴ *Kodak*'s staunchest defender on the panel noted that other predatory conduct is often associated with refusals to license.¹⁵ He argued that the *Kodak* rule, augmented by a detailed analysis of the market, is better than that in *CSU*, because the *Kodak* rule does not immunize patentees from antitrust liability when they act anticompetitively; rather, it balances the patent owner's interests in getting a return on innovation and the public interest in competition. Moreover, he asserted, refusal to license claims would not wreak havoc in the business world because it is difficult to prove market power and anticompetitive intent.¹⁶

⁸ 203 F.3d at 1327.

⁹ May 1 Tr. at 152-53 (Shapiro).

¹⁰ *Id.* at 152-54 (Shapiro); *see also id.* at 181-82 (MacKie-Mason); *id.* at 223-24, 228-31 (Whitener).

¹¹ A. Douglas Melamed & Ali M. Stoepelwerth, *The CSU Case: Facts, Formalism and the Intersection of Antitrust and Intellectual Property Law*, 10 GEO. MASON L. REV. 407, 426-27 (2002); *see also* May 1 Tr. at 246-47 (Melamed) (proposing objective test for analyzing refusals to deal that examines whether conduct made “economic sense” but for its tendency to exclude a rival).

¹² Mark D. Whitener, *Statement* (May 1, 2002 Hr'g R.) at 6, <http://www.ftc.gov/opp/intellect/020501whitener.pdf> [hereinafter Whitener Submission].

¹³ *See* May 1 Tr. at 38 (Gleklen).

¹⁴ *Id.* at 201-02 (Sprigman).

¹⁵ Paul F. Kirsch, *Refusals to License IP – The Perspective of the Private Plaintiff* (May 1, 2002 Hr'g R.) (slides) at 3, <http://www.ftc.gov/opp/intellect/020501kirsch.pdf> [hereinafter Kirsch Presentation].

¹⁶ May 1 Tr. at 134-35, 137, 200-01 (Kirsch); *see also* Kirsch Presentation at 7.

As noted above, some have read *Kodak* as giving undue weight to defendant-patentees' subjective intent. To be sure, reliance on a defendant's subjective intent to determine whether a refusal to license violates antitrust law establishes a framework that is difficult to administer.¹⁷ Some commentators state that finding a firm's motive or intent through employees' statements is "both impossible and meaningless, for the documentary evidence of every large firm will almost always provide ample examples suggesting both kinds of intent," i.e., the intent to protect intellectual property rights and the intent to create or maintain a monopoly.¹⁸ Such a situation would be untenable, and the Agencies do not believe the Ninth Circuit should be read to have reached this result. Accordingly, the Agencies' "focus is upon the effect of [the] conduct, not upon the intent behind it."¹⁹

¹⁷ See, e.g., May 1 Tr. at 152 (Shapiro); *id.* at 181 (MacKie-Mason); *id.* at 229-30 (Whitener); R. Hewitt Pate, Acting Assistant Attorney Gen., U.S. Dep't of Justice, Antitrust and Intellectual Property, Remarks at the American Intellectual Property Law Association 2003 Mid-Winter Institute 14 (Jan. 24, 2003) (criticizing the Ninth Circuit's decision to permit subjective inquiry into the intellectual property holder's motivations for refusing to deal), available at <http://www.usdoj.gov/atr/public/speeches/200701.pdf>. But see May 1 Tr. at 133-35 (Kirsch) (endorsing Ninth Circuit's intent test).

¹⁸ 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 709b2, at 222 (2d ed. 2002).

¹⁹ *United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001) (en banc); see also R. Hewitt Pate, *Refusals to Deal and Intellectual Property Rights*, 10 GEO. MASON L. REV. 429, 440 (2002); Michelle M. Burtis & Bruce H. Kobayashi, *Why an Original Can Be Better than a Copy: Intellectual Property, the Antitrust Refusal to Deal, and ISO Antitrust Litigation*, 9 SUPREME CT. ECON. REV. 143, 166 (2001) (noting the relevance of a patent holder's intent in certain refusal to deal cases

"[K]nowledge of intent may help [courts] to interpret facts and to predict consequences."²⁰

C. Panelist Views on CSU

Two panelists interpreted CSU to stand for the proposition that a refusal to license is the exercise of the statutory right to exclude others from making, using, or selling a patented invention and therefore cannot be deemed exclusionary conduct.²¹ Nevertheless, these panelists were uneasy about the Federal Circuit's opinion.²² They interpreted the dictum quoted above²³ to identify three exceptions to the purported general right of a patent owner unilaterally to refuse to license – illegal tying, fraud on the Patent and Trademark Office, and sham litigation.²⁴ One panelist criticized these exceptions as providing insufficient guidance because they identify potential sources of antitrust liability that are unrelated to unconditional, unilateral refusals to license.²⁵

Another panelist argued that CSU's holding could protect anticompetitive refusals to deal, citing a hypothetical

involving patented and unpatented parts).

²⁰ *Chi. Bd. of Trade v. United States*, 246 U.S. 231, 238 (1918).

²¹ May 1 Tr. at 29-30 (Gleklen); *id.* at 231-35 (Whitener).

²² *Id.* at 25-26 (Gleklen); Gleklen Submission at 8-9, 15; Whitener Submission at 7-9 & n.14.

²³ *Supra* note 8 and accompanying text.

²⁴ May 1 Tr. at 25-26 (Gleklen); see *id.* at 232 (Whitener); CSU, 203 F.3d at 1327 n.7.

²⁵ See May 1 Tr. at 25-27 (Gleklen); Gleklen Submission at 8-9.

based on AT&T's attempt to prevent MCI from connecting to its network in the 1970s. He argued that, had AT&T patented an interface necessary for its competitors to interconnect with its network, AT&T might not have been obliged to open its network under *CSU*.²⁶ In this panelist's view, *CSU* is inconsistent with the trend of antitrust laws' "move[] away from the rigidities of formalism . . . in favor of a fact-based analysis that applies rigorous economic principles to distinguish anticompetitive from procompetitive conduct."²⁷

A panelist also expressed concern that *CSU* might be applied too broadly, allowing a patent holder to attach conditions to a license on the theory that doing so was less restrictive than not licensing at all.²⁸ A source of such concerns was *Townshend v. Rockwell International Corp.*, a patent infringement case involving the technology for the 56K modem.²⁹ In assessing the defendant's antitrust counterclaim, the court reasoned that "[b]ecause a patent owner has the legal right to refuse to license his or her patent on any terms, the existence of a predicate condition to a license agreement cannot state an antitrust violation."³⁰ Concerns about such a lesser-included rights rationale were expressed by many panelists, including some who thought it

appropriate to grant antitrust immunity to unconditional refusals to license.³¹ Panelists also argued that conditional refusals to license deserve antitrust scrutiny because they can create anticompetitive incentives that cannot be created through unconditional refusals to license.³² Consequently, they argued, the *CSU* decision combined with such a lesser-included rights analysis could effectively extend antitrust immunity to all manner of restrictions, such as exclusive dealing, cross-licensing requirements, exclusive grantbacks, tying, selective licensing, or even price-fixing – clearly an undesirable result.³³

D. Ambiguity as to the Scope of the Patent Grant

The *Kodak* and *CSU* opinions recognized that the application of antitrust law to unilateral refusals to license sometimes requires a determination of the scope of those intellectual property rights. As the Ninth Circuit put it, "the right of exclusion [does not] protect an attempt to extend a lawful monopoly beyond the grant of a patent."³⁴

²⁶ May 1 Tr. at 248-52 (Melamed); *see also* Melamed & Stoepelwerth, 10 GEO. MASON L. REV. at 424.

²⁷ Melamed & Stoepelwerth, 10 GEO. MASON L. REV. at 425; *see also* May 1 Tr. at 252 (Melamed).

²⁸ May 1 Tr. at 45 (Sprigman).

²⁹ 2000-1 Trade Cas. (CCH) ¶ 72,890, 2000 WL 433505 (N.D. Cal. 2000).

³⁰ *Id.* ¶ 72,890, at 87,634, 2000 WL 433505, at *8.

³¹ May 1 Tr. at 66-67 (Gleklen) (identifying price fixing as beyond the statutory grant); *see also id.* at 232-34 (Whitener) (acknowledging that conduct other than "pure" unilateral, unconditional refusals to deal should not be treated as categorically legal).

³² *Id.* at 155 (Shapiro); *see also id.* at 204 (MacKie-Mason) (asserting that distinguishing between conditional and unconditional refusals is not always easy).

³³ *See id.* at 154-57 (Shapiro); *id.* at 45 (Sprigman); *see also* 3 AREEDA & HOVENKAMP, ANTITRUST LAW ¶ 709c, at 232-34 (identifying price-fixing, market division, exclusive dealing, and reciprocity as categories of suspect conditional refusals).

³⁴ *Kodak*, 125 F.3d at 1216; *see also CSU*, 203 F.3d at 1327. *But see* Melamed & Stoepelwerth, 10 GEO.

The *Kodak* and *CSU* courts agreed that the scope of the patent grant is not coterminous with the bounds of the relevant market, so the right to exclude may permit a patent holder to maintain a monopoly over not just the market for the patented parts but possibly also over closely related markets.³⁵ Neither court, however, defined the scope of the patent grant.³⁶ This omission led some panelists to speculate about the appropriate definition.

MASON L. REV. at 425-26 (arguing that there are “a number of problems” with using the scope of the patent grant to define a safe harbor for unilateral refusals to license, e.g., making it difficult to define a market involving a patented product and its components, creating incentives to avoid otherwise efficient vertical integration, and being inconsistent with the contributory infringement patent doctrine).

³⁵ *Kodak*, 125 F.3d at 1217 (“Parts and service here have been proven separate markets in the antitrust context, but this does not resolve the question [of] whether the service market falls reasonably within the patent . . . grant for the purpose of determining the extent of the exclusive rights conveyed.”) (internal quotation marks omitted); *CSU*, 203 F.3d at 1327 (“[A] patent may confer the right to exclude competition altogether in more than one antitrust market.”); *id.* at 1328 (“We answer the threshold question of whether Xerox’s refusal to sell its patented parts exceeds the scope of the patent grant in the negative.”); *see also* May 1 Tr. at 179 (MacKie-Mason) (“[T]here is no really good reason to believe the patent scope is the same as the relevant antitrust market.”); Pate, 10 GEO. MASON L. REV. at 441 (“A patent holder can lawfully acquire more than one economic monopoly by exercising the exclusionary power of a single patent, and should not be found liable for exercising its unilateral right to refuse to license or use its invention in the markets where he holds these monopolies. There is no unlawful extension of monopoly power when a patent holder merely exercises its rights inherent in the patent grant.”).

³⁶ *See* May 1 Tr. at 25 (Gleklen) (“The Federal Circuit’s decision focuses on whether [intellectual property] was used to obtain monopoly power outside the statutory grant without actually saying . . . what is the statutory grant.”); *Kodak*, 125 F.3d at 1217 (discussing, but not defining, the concept of patent scope).

One panelist suggested that “outside the statutory patent grant” may mean that the refusal to license has innovation effects that would prevent competition after the patent has expired.³⁷ Another suggested that so long as there is only a refusal to allow others to make, use, offer to sell, or sell something within the claims of the patent, the patentee acts within the statutory grant.³⁸ A third panelist asserted that formal definitions are not particularly illuminating and that the phrase should mean nothing more than that the patent owner can exploit whatever power is lawfully obtained through the intellectual property laws so long as the owner does not sacrifice profits for the strategic objective of gaining more than the lawfully obtained power.³⁹ Another panelist responded that to make this determination someone would have to decide how much return firms should be able to get on their intellectual property, but economics provides no basis for doing so.⁴⁰

III. POLICY ISSUES RELATING TO UNILATERAL REFUSALS TO LICENSE

Panelists at the Hearing frequently addressed four basic policy issues relating to antitrust liability in the context of the licensing of patents: Should antitrust law accord special treatment to patents, or is conventional antitrust analysis sufficiently sensitive to the issues raised by patents? Should a patent holder be

³⁷ May 1 Tr. at 65 (Sprigman).

³⁸ *Id.* at 66 (Gleklen).

³⁹ *Id.* at 69-70 (Melamed).

⁴⁰ *Id.* at 180 (MacKie-Mason).

presumed to possess market power? Is compulsory licensing a workable remedy for a unilateral refusal to license patents? And would prohibiting unilateral refusals to license have a significant ill effect on incentives to invest in innovation? Panelists also offered some new perspectives on the possible competitive effects of unilateral refusals to license.

A. Should Antitrust Law Accord Special Treatment to Patents?

Most panelists concluded that the antitrust laws should be applied in the same manner to intellectual and other property.⁴¹ One panelist noted that the essence of a patent is the right to exclude competitors, which he believed distinguishes patents from other property.⁴² Others countered that the right to exclude is an essential part of all forms of property.⁴³ As one panelist explained, “all forms of [commercial] property . . . involve some investment to create or protect the property . . . with the hope of some financial return that has to be based in some significant part on the

ability to exclude others.”⁴⁴ In this panelist’s view there is no economic reason to treat intellectual property differently from other forms of property.⁴⁵

Courts have recognized that patents, similar to other property rights, have limits, and these limits are “narrowly and strictly confined to the precise terms of the grant.”⁴⁶ Courts have also held that certain types of conduct involving patent rights can result in antitrust liability. For example, attempting to enforce a patent obtained through fraud on the Patent and Trademark Office may constitute monopolization in violation of section 2 of the Sherman Act,⁴⁷ and the demonstration of an objectively baseless assertion of infringement can overcome a *Noerr* defense.⁴⁸ Patent licensing terms may constitute tying or price fixing in violation of section 1 of the Sherman Act.⁴⁹

⁴¹ “The Agencies apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of tangible or intangible property.” U.S. DEP’T OF JUSTICE & FEDERAL TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 2.1 (1995), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,132, available at <http://www.usdoj.gov/atr/public/guidelines/0558.pdf> [hereinafter ANTITRUST-IP GUIDELINES]. Special characteristics of intellectual property, “such as ease of misappropriation” can “distinguish it from many other forms of property” and “can be taken into account by standard antitrust analysis.” *Id.*

⁴² See May 1 Tr. at 30 (Gleklen).

⁴³ E.g., *id.* at 47 (Sprigman).

⁴⁴ *Id.* at 143-44 (Shapiro).

⁴⁵ *Id.* at 143-46 (Shapiro).

⁴⁶ *Mercoind Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661, 665 (1944).

⁴⁷ See *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177-80 (1965).

⁴⁸ See *Profl Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49 (1993) (construing *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961)).

⁴⁹ See *United States v. Line Material Co.*, 333 U.S. 287, 308-15 (1948) (price fixing); *Int’l Salt Co. v. United States*, 332 U.S. 392, 395-96 (1947) (tying); *United States v. Masonite Corp.*, 316 U.S. 265, 274-80 (1942) (price fixing); *United States v. Univis Lens Co.*, 316 U.S. 241, 250-54 (1942) (price fixing); *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 452-59 (1940) (price fixing).

B. Should Market Power Be Presumed with Patents?

With respect to many violations of the antitrust laws, the possession of market or monopoly power is an element of the offense. When analyzing the defendant OEMs' refusals to license their patents, neither *Kodak* nor *CSU* presumed the defendants had market power on the basis of the patents.⁵⁰ Similarly, the Agencies have stated that, when analyzing agreements to license, they do not presume that a patent owner has market power.⁵¹ And the U.S. Supreme Court recently agreed.⁵² Although a patent gives the patent owner the right to exclude others from making, using, or selling a particular product or process, the existence of close substitutes for the product or process may prevent the patent owner from exercising market power. As the Solicitor General recently explained: "[T]he Patent and Trademark Office has issued scores of patents for items such as bottle openers, toothbrushes, and paper clips. It would be implausible to presume that the owner of such a patent possesses market power merely by virtue of the patent."⁵³

⁵⁰ *CSU*, 203 F.3d at 1325 ("A patent alone does not demonstrate market power."); see also *Kodak*, 125 F.3d at 1202-08, 1219 (stating that Kodak possessed monopoly power in "all parts" market).

⁵¹ ANTITRUST-IP GUIDELINES § 2.2.

⁵² *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1284 (2006) ("[T]he mere fact that a tying product is patented does not support [a market power] presumption.").

⁵³ Brief for the United States as Amicus Curiae Supporting Petitioners at 12, *Ill. Tool Works Inc.*, 126 S. Ct. 1281 (No. 04-1329) (citation omitted), available at <http://www.usdoj.gov/osg/briefs/2005/3mer/1ami/2004-1329.mer.ami.pdf>.

If a patent *does* result in market power, that alone does not necessarily create a violation. The Supreme Court has made clear that "[t]he mere possession of monopoly power, and the concomitant charging of monopoly prices," is not unlawful "unless it is accompanied by an element of anticompetitive conduct."⁵⁴

C. If an Antitrust Violation Were Found, Would There Be Workable Remedies for Unconditional, Unilateral Refusals to License Patents?

If a unilateral refusal to license patents were found to violate the antitrust laws, one appropriate remedy likely would entail compulsory licensing. Some panelists argued that the courts and Agencies are not well-equipped to determine appropriate licensing terms and conditions and, as a result, compulsory licensing would be problematic.⁵⁵ Another panelist noted

⁵⁴ *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004); see also *Blue Cross & Blue Shield United v. Marshfield Clinic*, 65 F.3d 1406, 1413 (7th Cir. 1995) (Posner, C.J.) ("[A lawful monopolist may] charge any price that it wants, for the antitrust laws are not a price-control statute or a public-utility or common-carrier rate-regulation statute.") (citations omitted); *Kartell v. Blue Shield of Mass., Inc.*, 749 F.2d 922, 927 (1st Cir. 1984) (Breyer, J.) ("[E]ven a monopolist is free to exploit whatever market power it may possess when that exploitation takes the form of charging uncompetitive prices.").

⁵⁵ May 1 Tr. at 146-47 (Shapiro); Whitener Submission at 10; see also May 1 Tr. at 149 (Shapiro) (urging the Agencies not to impose a regulatory scheme through the antitrust laws in lieu of dealing with the underlying issue of reforming the patent system, if the patents at issue are perceived to be "bad patents"). A licensor's moral or ethical objections to licensing a specific potential licensee would add to the difficulties of determining appropriate compensation for a compulsory license.

that compulsory licensing might not work because transfer of some technologies requires not only a patent license, but also the transfer of related know-how, and it may be difficult for courts to enforce a requirement that this know-how be transferred.⁵⁶ Moreover, if compulsory licensing is a generally available remedy for unconditional, unilateral refusals to license patents, this panelist argued, firms may shift their strategies away from filing patents and toward reliance on trade secrets. Such an outcome would be unfortunate, he said, because patents enable more effective disclosure of knowledge and therefore make licensing easier.⁵⁷

Some panelists thought these concerns were overstated and that courts, which set licensing rates in other contexts (such as infringement suits), could do so in this context as well or, alternatively, could send the parties back to the bargaining table.⁵⁸ In response, other panelists objected to this analogy, arguing that trying to calculate a forward-looking price is more difficult than what courts currently do—i.e., make the plaintiff whole for past actions.⁵⁹ One panelist noted that markets for voluntary licensing typically arise when intellectual property rights are well defined, and that when

these markets for technology exist, courts could observe a market price of the technology for the purpose of compulsory licensing.⁶⁰

Most panelists appeared to take for granted that court-ordered licensing would occur at royalty rates far less than those a monopolist would charge. The Supreme Court has made clear, however, that—consistent with the view of the Agencies—the mere possession of lawful monopoly power, and the concomitant charging of monopoly prices, is not only lawful, it is an important element of the free-market system.⁶¹

D. What Would Be the Effect of Liability for Refusals to License Patents on Incentives to Innovate?

Some participants argued that innovation is reduced by the risk of compulsory licensing at royalties far below monopoly levels, royalties which may not be sufficient to cover the research and development expenses that led to the patented invention.⁶² By contrast, those who favored liability for some refusals to license patents were not convinced that antitrust liability would have a negative

⁵⁶ May 1 Tr. at 101 (Arora); *see also id.* at 125 (Shapiro).

⁵⁷ *Id.* at 102 (Arora).

⁵⁸ *Id.* at 184-85 (Sprigman); *id.* at 55 (Sprigman) (suggesting the imposition of the same rates as those for similarly situated licensees); *id.* at 187 (Melamed) (explaining that precision is not terribly important when converting a property rule into a liability rule).

⁵⁹ May 1 Tr. at 188 (Gleklen); *see also id.* at 189 (Whitener).

⁶⁰ *See id.* at 94-102 (Arora); Ashish Arora, *Refusal to License: A Transaction Approach* (May 1, 2002 Hr'g R.) (slides) at 3, <http://www.ftc.gov/opp/intellect/020501arora.pdf>.

⁶¹ *Trinko*, 540 U.S. at 407.

⁶² May 1 Tr. at 228 (Whitener); *see also* Carl Shapiro, *Competition Policy and Innovation* 13 (Organisation for Econ. Co-operation and Dev., STI Working Paper No. 2002/11, 2002) (submitted as part of the May 1, 2002 Hr'g R.), *available at* <http://www.ftc.gov/opp/intellect/020501carlshapiro.pdf> [hereinafter Shapiro Submission].

effect on innovation⁶³ or were skeptical of society's ability to determine the appropriate balance between innovation and exclusion. One panelist asked "whether innovation incentives are sufficiently sensitive at the kinds of margins we're talking about of narrow refusal to deal liability [such] that we can *reliably* say across industries that there is going to be any significant incentive diminution at all."⁶⁴

E. Competitive Effects of Refusals to License Patents

Two panelists argued that apparent refusals to license intellectual property may really be attempts to license it at high prices and to engage in price discrimination.⁶⁵ They observed that price discrimination can be good for consumers, allowing markets or consumers to be served that otherwise would not have been.⁶⁶ Therefore, they contended, imposing antitrust liability for a refusal to license may prevent socially beneficial price discrimination.⁶⁷

Another panelist responded to the argument that only "one monopoly rent" can be extracted by pointing out that an intellectual property monopolist may have difficulty exploiting its monopoly unless it restricts competition

downstream by making a credible commitment to restrict or refuse licenses.⁶⁸ Without such commitments, he suggested, the potential licensees would know that the intellectual property owner would have the incentive to sell additional licenses and thus continue to create competition, and erode profits, in the downstream market. Knowing this, potential licensees would be willing to pay less for a license and invest less in the licensed invention. This panelist observed that, if the intellectual property holder is able credibly to commit to selling a limited number of licenses, and thus to limiting competition in the downstream market, each potential licensee will be willing to pay more for a license.⁶⁹ The licensee also may be willing to invest more in the licensed invention as a result of the intellectual property holder's restriction on the number of licenses sold.⁷⁰ The intellectual property holder maximizes its return by choosing its licensing terms optimally,⁷¹ and "the upstream monopolist in practice will find it difficult to fully exploit its market power without some form of exclusion."⁷²

⁶³ May 1 Tr. at 136-37 (Kirsch); Kirsch Presentation at 9.

⁶⁴ May 1 Tr. at 56-57 (Sprigman) (emphasis added).

⁶⁵ *Id.* at 80-81 (Wiley); *id.* at 81-94 (Klein).

⁶⁶ *Id.* at 89-90 (Klein); *see also id.* at 81 (Wiley).

⁶⁷ *See* Benjamin Klein & John Shepard Wiley Jr., *Competitive Price Discrimination as an Antitrust Justification for Intellectual Property Refusals to Deal*, 70 ANTITRUST L.J. 599, 640-42 (2003).

⁶⁸ May 22 Hr'g Tr., Refusals to License and Compulsory Licensing in the European Union, Canada, and Australia (Morning Session) at 33-37 (Rey), <http://www.ftc.gov/opp/intellect/020522trans.pdf>.

⁶⁹ *Id.* at 36-37 (Rey).

⁷⁰ *See also* ANTITRUST-IP GUIDELINES § 2.3 (recognizing that licensing arrangements involving exclusivity can encourage licensees to invest in the products embodying the licensed IP and to engage in follow-on innovation).

⁷¹ *See* May 22 Tr. at 34, 36-38 (Rey); Patrick Rey & Jean Tirole, *A Primer on Foreclosure* (May 22 Hr'g R.) at 7-8, <http://www.ftc.gov/opp/intellect/020522reydoc.pdf>.

⁷² May 22 Tr. at 32 (Rey).

The panelist argued that the ability to exploit an intellectual property bottleneck may generate important incentives to innovate and cautioned that regulating the exploitation of intellectual property amounts to regulating the return on R&D investment and is a very difficult economic exercise.⁷³

IV. LEGAL ANALYSIS OF UNILATERAL REFUSALS TO LICENSE PATENTS

Imposing antitrust liability for unilateral refusals to deal raises a variety of legal issues. A threshold question is whether a 1988 amendment to the Patent Act impliedly created an immunity when it restricted misuse defenses to infringement claims. More fundamental is the question of how the basic statutory right to exclude relates to unilateral refusal to deal claims and to other antitrust claims involving patent licensing.

A. Does Section 271(d)(4) of Title 35 of the U.S. Code Create an Immunity for Unilateral Refusals to License Patents?

Panelists extensively discussed the import of section 271(d)(4) of Title 35 of the U.S. Code, added by a 1988 amendment to the Patent Act, which provides that “[n]o patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied

relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent”⁷⁴ One panelist argued that the 1988 amendment granted antitrust immunity for refusals to license patents.⁷⁵ Other panelists concluded that the amendment on its face does not apply to antitrust claims.⁷⁶ In *Illinois Tool Works Inc. v. Independent Ink, Inc.*, for example, the Supreme Court stated that “the 1988 amendment does not expressly refer to the antitrust laws.”⁷⁷ Under this view, the provision does not govern whether antitrust claims challenging the patentee’s refusal to license are viable.

Proponents of a broader reading of section 271(d)(4) sometimes note that the provision refers to both “misuse” and “illegal extension of the patent right.” To

⁷⁴ 35 U.S.C. § 271(d) (2000).

⁷⁵ May 1 Tr. at 33-35 (Gleklen); Jonathan I. Gleklen, *Unilateral Refusals to License IP* (May 1, 2002 Hr’g R.) (slides) at 11, <http://www.ftc.gov/opp/intellect/020501gleklenppt.pdf>.

⁷⁶ May 1 Tr. at 51-52 (Sprigman); Melamed & Stoepelwerth, 10 *GEO. MASON L. REV.* at 410-12.

⁷⁷ 126 S. Ct. at 1290-91; *Scheiber v. Dolby Labs., Inc.*, 293 F.3d 1014, 1019 (7th Cir. 2002) (Posner, C.J.) (construing language of section 271(d) to govern only actions based on infringement); *Kodak*, 125 F.3d at 1214 n.7 (“[The provision at best] indicate[s] congressional intent to protect the core patent right of exclusion.”); *see also* Brief for the United States as Amicus Curiae at 12 n.6, *CSU*, 531 U.S. 1143 (2001) (No. 00-62) (“On its face [section 271(d)] does not address antitrust liability for monopolization or attempted monopolization by refusal to deal.”), *denying cert.* to 203 F.3d 1322, available at <http://www.usdoj.gov/osg/briefs/2000/2pet/6invt/2000-0062.pet.ami.inv.pdf>. *But cf.* *CSU*, 203 F.3d at 1326 (citing section 271(d) as support for a “patentee’s right to exclude”); *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999) (citing section 271(d)(4)).

⁷³ *See id.* at 41-42 (Rey) (stating it is prudent to be “more tolerant” when a bottleneck “is the result of innovation” as opposed to economies of scale or historical accident).

save the latter phrase from being “surplusage,” they read that language to “refer to unlawfulness other than misuse, and the obvious extension is to antitrust violations.”⁷⁸ But Congress might have used the phrases “illegal extension of the patent right” and “misuse” to describe different aspects of the doctrine of patent misuse.⁷⁹ This would be consistent with the notion that, had Congress intended to refer to antitrust violations or claims, it could have done so explicitly.⁸⁰ Moreover, courts have held that section 271(d)(4)’s companion provision, section 271(d)(5), does not immunize patentees from antitrust liability for the conduct it governs—conditioning a license, or sale of a patented product, on the purchase of some other product or the taking of some

other license⁸¹—and it would seem anomalous to read the phrase “illegal extension of the patent right” to immunize patentees from antitrust liability for their refusals to license, but not for such conditioning of licenses.

Others who read section 271(d)(4) to grant antitrust immunity contend that it would “make[] little sense to preclude an infringer from asserting a misuse defense based on a patent holder’s refusal to deal while simultaneously allowing the infringer to recover treble damages under the antitrust laws for the very same conduct.”⁸² But nothing precludes a reading of the statute to permit treble damages but not the rather different consequences of a misuse holding (i.e., barring enforcement of the patent against anyone until the misuse is purged).

The Agencies weigh these opposing arguments against the backdrop of the well-established principle that immunity from antitrust laws is both exceptional and disfavored.⁸³ Absent

⁷⁸ 3 AREEDA & HOVENKAMP, ANTITRUST LAW ¶ 709c, at 234 n.71; see also May 1 Tr. at 34-35 (Gleklen); CSU, 203 F.3d at 1326 (emphasizing the phrase “illegal extension of the patent right” in section 271(d) in arguing that the provision supports “patentee’s right to exclude”); Sharon Brawner McCullen, *The Federal Circuit and Ninth Circuit Face-Off: Does a Patent Holder Violate the Sherman Act by Unilaterally Excluding Others from a Patented Invention in More than One Relevant Market?*, 74 TEMP. L. REV. 469, 494 & n.254 (2001) (“The Supreme Court has repeatedly used the language of whether the patent holder’s actions have ‘expanded’ or ‘enlarge[d]’ the patent grant to analyze allegations of antitrust violations.”).

⁷⁹ “The reference to ‘illegal extension of the patent right’ as well as ‘misuse’ recognizes the differing formulations of activity deemed to be ‘misuse’ and that misuse is often characterized as illegal extension of the patent right.” S. REP. NO. 100-492, at 19 (1988). (No committee report on the 1988 amendment exists. The cited report describes an earlier bill containing the “illegal extension” language now appearing in section 271(d)(4)). See also *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 510-12 (7th Cir. 1982) (discussing how the patent misuse doctrine could go beyond the specific practices thought to extend the patent right).

⁸⁰ Cf. *Scheiber*, 293 F.3d at 1019-21 (construing another provision of section 271(d) in light of this principle).

⁸¹ See, e.g., *id.* at 1019-20 (finding section 271(d)(5) inapplicable because the provision “merely limits defenses to infringement suits”); *Grid Sys. Corp. v. Tex. Instruments Inc.*, 771 F. Supp. 1033, 1037 n.2 (N.D. Cal. 1991) (rejecting argument that section 271(d)(5) affects antitrust claims, noting that the provision “relates only to the defense of patent misuse as a defense to an infringement claim”).

⁸² *In re Indep. Serv. Orgs. Antitrust Litig.*, 989 F. Supp. 1131, 1136 (D. Kan. 1997); see also May 1 Tr. at 35 (Gleklen); Peter M. Boyle, Penelope M. Lister & J. Clayton Everett, Jr., *Antitrust Law at the Federal Circuit: Red Light or Green Light at the IP-Antitrust Intersection?*, 69 ANTITRUST L.J. 739, 749 (2001).

⁸³ *Oversight of Enforcement of the Antitrust Laws Before the Subcomm. on Antitrust, Business Rights, and Competition of the S. Comm. on the Judiciary*, 107th Cong. 134 (2002) (statement of the Federal Trade Commission), available at

“clear, express Congressional intent to immunize conduct or . . . repugnancy between some other body of law and antitrust,” a finding of immunity is unwarranted.⁸⁴ The United States Court of Appeals for the First Circuit, rejecting antitrust immunity for copyright holders’ refusals to license, noted that “the Sherman Act does not explicitly exempt [the protection of original works of authorship] from antitrust scrutiny and courts should be wary of creating implied exemptions.”⁸⁵ The Agencies approach the interpretation of section 271(d)(4) with the same wariness. Nothing in section 271(d)(4) expressly addresses whether a unilateral and unconditional refusal to license could give rise to antitrust liability.⁸⁶ The section can perhaps be said to shed some light on Congress’s view of the nature of the patent right. But the Agencies do not read the statute to create antitrust *immunity* for such refusals to license.

B. When Do Refusals to License Patents Violate the Antitrust Laws?

As a threshold matter, antitrust liability for refusal to assist competitors—whether by licensing

<http://a257.g.akamaitech.net/7/257/2422/03jul20031230/www.access.gpo.gov/congress/senate/pdf/107hr/87867.pdf>; May 1 Tr. at 237 (Melamed); see also *Square D Co. v. Niagara Frontier Tariff Bureau, Inc.*, 476 U.S. 409, 421 (1986) (“[E]xemptions from the antitrust laws are strictly construed and strongly disfavored.”).

⁸⁴ May 1 Tr. at 238 (Melamed).

⁸⁵ *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 36 F.3d 1147, 1185 (1st Cir. 1994).

⁸⁶ *Cf. Ill. Tool*, 126 S. Ct. at 1290 (recognizing that “[35 U.S.C. § 271(d)(5)] does not expressly refer to the antitrust laws”).

patents or otherwise—is a rare exception to the ordinary rules of antitrust. As expressed in *United States v. Colgate & Co.*, the Sherman Act generally “does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise [its] own independent discretion as to parties with whom [it] will deal.”⁸⁷ Although this right to refuse to deal is not unqualified,⁸⁸ the Supreme Court stated in *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP* that it has “been very cautious in recognizing such exceptions, because of the uncertain virtue of forced sharing and the difficulty of identifying and remedying anticompetitive conduct by a single firm.”⁸⁹

The *Trinko* Court articulated three reasons why requiring firms to “share the source of their advantage” with rivals is “in some tension with the underlying purpose of antitrust law.”⁹⁰ First, compelling firms to share “may lessen the incentive for the monopolist, the rival, or both to invest in . . . economically

⁸⁷ 250 U.S. 300, 307 (1919).

⁸⁸ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 601 (1985).

⁸⁹ 540 U.S. at 408 (concluding that Verizon’s alleged failure to provide adequate assistance to its rivals did not state an antitrust claim). The case involved a regulatory scheme that required incumbent local telephone companies to give certain forms of access to their networks to competitors. *Id.* at 401, 412-13. In reaching its decision, the Court stated that it had “never recognized [the essential facilities] doctrine” created by lower courts and had no need to decide the issue in this case. *Id.* at 411.

⁹⁰ *Id.* at 407-08; see also *id.* at 399 (“Traditional antitrust principles do not justify adding [*Trinko*] to the few existing exceptions from the proposition that there is no duty to aid competitors.”).

beneficial facilities.”⁹¹ Second, “[e]nforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill-suited.”⁹² Finally, “compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion.”⁹³ Indeed, imposing liability for such refusals arguably would go beyond requiring firms to refrain from anticompetitive conduct that harms rivals and would instead compel firms to reach out and affirmatively assist their rivals.

The *Trinko* Court’s description of *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*⁹⁴ as being “at or near the outer boundary of [section] 2 liability”⁹⁵ confirms that unilateral refusals to deal are rarely anticompetitive, whether or not

they involve patents.⁹⁶ This suggests that *Aspen Skiing* will not support liability for unilateral refusals to license patents to rivals, except, perhaps, when a patent owner refuses to continue to license under circumstances paralleling those presented in *Aspen*.⁹⁷

⁹¹ *Id.* at 407-08.

⁹² *Id.* at 408.

⁹³ *Id.*

⁹⁴ 472 U.S. 585 (1985). The facts of *Aspen* are described in *Trinko*, 540 U.S. at 408-09 (“The Aspen ski area consisted of four mountain areas. The defendant, who owned three of those areas, and the plaintiff, who owned the fourth, had cooperated for years in the issuance of a joint, multiple-day, all-area ski ticket. After repeatedly demanding an increased share of the proceeds, the defendant canceled the joint ticket. The plaintiff, concerned that skiers would bypass its mountain without some joint offering, tried a variety of increasingly desperate measures to recreate the joint ticket, even to the point of in effect offering to buy the defendant’s tickets at retail price. The defendant refused even that. We upheld a jury verdict for the plaintiff, reasoning that ‘[t]he 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.’ *Aspen Skiing* is at or near the outer boundary of [section] 2 liability.”) (citations omitted).

⁹⁵ *Trinko*, 540 U.S. at 409.

⁹⁶ See Brief for the United States and the Federal Trade Commission as Amici Curiae Supporting Petitioner at 15, *Trinko*, 540 U.S. 398 (No. 02-682) (noting that section 2 of the Sherman Act is violated only by conduct properly considered “exclusionary or predatory,” and proposing that, when “the plaintiff asserts that the defendant was under a duty to assist a rival, . . . conduct is not exclusionary or predatory unless it would make no economic sense for the defendant but for its tendency to eliminate or lessen competition”), available at <http://www.usdoj.gov/atr/cases/f201000/201048.pdf>. In *Trinko*, the Supreme Court did not adopt a specific standard, but it stressed the very facts in *Aspen Skiing* that suggest a section 2 violation under the Agencies’ proposed standard. *Trinko*, 540 U.S. at 409 (“The unilateral termination of a voluntary (*and thus presumably profitable*) course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end. Similarly, the defendant’s unwillingness to renew the ticket *even if compensated at retail price* revealed a distinctly anticompetitive bent.”) (citation omitted).

⁹⁷ One panelist articulated possible reasons for imposing a duty to continue to license: (1) the licensing arrangement has been shown to be feasible, (2) there is an existing template for the terms and conditions of the license, and (3) licensees have relied on the expectation of such dealing. May 1 Tr. at 158 (Shapiro) (listing arguments for (and against) imposing liability for a refusal to license intellectual property in the context of a historical course of dealing). That same panelist, however, along with others, raised several arguments against imposing liability for terminating a prior course of conduct. Some noted that relying on a prior course of conduct might unfairly punish licensors who legitimately desire to change their licensing practices. *Id.* at 117-18 (Whitener); *id.* at 118-20 (Gleklen); see also *id.* at 158-60 (Shapiro). In addition, one panelist noted that there can be countervailing legitimate reasons to refuse to license, e.g., protecting a trade secret. Melamed & Stoepelwerth, 10 GEO. MASON L. REV. at 420. Furthermore, as one panelist mentioned, rather than counting on broad antitrust protection, which might have adverse effects on competition by significantly constraining the dealings of the patent holder, third

A central question is whether “the few existing exceptions [to] the proposition that there is no duty to aid competitors”⁹⁸ should include an antitrust limitation on unilateral, unconditional refusals to offer a patent license to a competitor. Some panelists favored a categorical exemption from antitrust liability for unilateral, unconditional refusals to license.⁹⁹ One panelist noted that the essence of a patent is the right to exclude competitors, which he believed distinguishes patents from other property.¹⁰⁰ Other panelists favored allowing liability for unilateral, unconditional refusals to license under narrow circumstances, with such refusals assessed on a case-specific, fact-intensive basis, without safe harbors.¹⁰¹ Panelists who favored antitrust liability for unilateral refusals to license suggested a liability rule based on *Aspen Skiing*,¹⁰² or broad antitrust principles for identifying anticompetitive conduct.¹⁰³

parties should seek explicit commitments before making investments in reliance on a continuing duty to deal. May 1 Tr. at 157-59 (Shapiro).

⁹⁸ *Trinko*, 540 U.S. at 411.

⁹⁹ May 1 Tr. at 41-42 (Gleklen); *id.* at 233-35 (Whitener); Whitener Submission at 14-15.

¹⁰⁰ See May 1 Tr. at 30 (Gleklen). *But see supra* Part III.A.

¹⁰¹ Melamed & Stoepfelwerth, 10 GEO. MASON L. REV. at 423-27; May 1 Tr. at 134-35, 200 (Kirsch); *id.* at 163, 168, 172-73 (MacKie-Mason); *id.* at 242 (Melamed); *id.* at 59, 202, 206-07 (Sprigman).

¹⁰² May 1 Tr. at 51 (Sprigman).

¹⁰³ Melamed & Stoepfelwerth, 10 GEO. MASON L. REV. at 419 (“[A]nticompetitive conduct is conduct that serves no legitimate purpose, or is itself unprofitable, and is undertaken in order to exclude or weaken competitors in anticipation of increased market power and resulting supracompetitive recoupment.”); May 1 Tr. at 242-46 (Melamed); *id.* at 121-22 (Sprigman). Another panelist questioned how

The owner of a patent has the statutory “right to exclude others from making, using, offering for sale, or selling the invention.”¹⁰⁴ That right has been described as “the essence” of a patent grant,¹⁰⁵ and a line of Supreme Court and courts of appeals cases extending back a century suggests that exercising that right by refusing to license a patent, without more, would not violate the antitrust laws.¹⁰⁶ None of the Supreme Court cases

the concept of recoupment would apply when the conduct at issue is a decision not to give up patented property, asking: “Is it recoupment if I make more money in servicing equipment because I didn’t sell my patented parts to ISOs?” *Id.* at 208-09 (Whitener).

¹⁰⁴ 35 U.S.C. § 154(a)(1) (2000).

¹⁰⁵ *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 215 (1980) (“[T]he essence of a patent grant is the right to exclude others from profiting by the patented invention.”); *cf. eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837, 1840 (2006) (“[T]he creation of a right is distinct from the provision of remedies for violations of that right.”).

¹⁰⁶ *Hartford-Empire Co. v. United States*, 323 U.S. 386, 432 (1945) (“A patent owner is not in the position of a quasi-trustee for the public or under any obligation to see that the public acquires the free right to use the invention. He has no obligation either to use it or to grant its use to others.”); *Mercoid*, 320 U.S. at 666 (“The fact that the patentee has the power to refuse a license does not enable him to enlarge the monopoly”); *United States v. United Shoe Mach. Co. of N.J.*, 247 U.S. 32, 57 (1918) (“[A patent’s] strength is in the restraint, the right to exclude others from the use of the invention Its exertion within the field . . . is not an offense against the Anti-Trust Act.”); *Bement v. Nat’l Harrow Co.*, 186 U.S. 70, 90 (1902) (“[A patentee’s] title is exclusive, and so clearly within the constitutional provisions in respect of private property that he is neither bound to use his discovery himself nor permit others to use it.” (quoting *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288, 295 (6th Cir. 1896))); *see also Intergraph*, 195 F.3d at 1362 (“[T]he antitrust laws do not negate the patentee’s right to exclude others from patent property.”); *Data Gen. Corp.*, 36 F.3d at 1186 (“[In the context of a unilateral refusal to license copyrights,] [t]he courts appear to have partly settled an analogous conflict between the patent laws and the antitrust laws, treating the former as creating an

squarely holds that the unilateral refusal to license a patent could never violate the antitrust laws, or that the antitrust laws should be applied in a different manner to intellectual and other property,¹⁰⁷ but the strong statements in these cases are indicative of the traditional understanding that the unilateral right to decline the grant of a license is a core part of the patent grant. Prior to *Kodak*, no reported federal antitrust decision had imposed liability for the refusal to license a patent.¹⁰⁸ Even in the controversial

implied limited exception to the latter.”); *Miller Insituform, Inc. v. Insituform of N. Am., Inc.*, 830 F.2d 606, 609 (6th Cir. 1987) (“A patent holder who lawfully acquires a patent cannot be held liable under Section 2 of the Sherman Act for maintaining the monopoly power he lawfully acquired by refusing to license the patent to others.”); *United States v. Westinghouse Elec. Corp.*, 648 F.2d 642, 647 (9th Cir. 1981) (“The right to license [a] patent, exclusively or otherwise, or to refuse to license at all, is ‘the untrammelled right’ of the patentee.”); *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195, 1204 (2d Cir. 1981) (“Where a patent holder . . . merely exercises his ‘right to exclude others from making, using, or selling the invention’ by refusing unilaterally to license his patent . . . such conduct is expressly permitted by the patent laws.” (quoting 35 U.S.C. § 154)) (citation omitted); *id.* at 1206 (“[W]here a patent has been lawfully acquired, subsequent conduct permissible under the patent laws cannot trigger any liability under the antitrust laws.”). The most widely quoted dictum may be that of *Simpson v. Union Oil Co. of Cal.*, which indicated that “[t]he patent laws which give a [temporary] monopoly on ‘making, using, or selling the invention’ are *in pari materia* with the antitrust laws and modify them *pro tanto*.” 377 U.S. 13, 24 (1964). The apparent meaning of this statement is that the patent laws effectively modify the antitrust laws to the extent, and only to the extent, of precluding liability for the mere exclusion of others from making, using, or selling the patented invention.

¹⁰⁷ See *supra* notes 46-49 and accompanying text.

¹⁰⁸ See Herbert Hovenkamp, Mark D. Janis, & Mark A. Lemley, *Unilateral Refusals to License*, 2 J. COMPETITION L. & ECON. 1, 42 (2006) (“Courts are properly extremely reluctant to find liability on the basis of a company’s unilateral refusal to deal, even if that company is a monopolist. That reluctance is

Kodak case itself, the outcome might be explained as a result of Kodak’s refusal to sell thousands of unpatented parts.¹⁰⁹

Taking all of the relevant factors together—including the fact that no case supported this type of antitrust liability before *Kodak*, and the silence of section 271(d)(4) on the issue, the Agencies conclude that liability for mere unconditional, unilateral refusals to license will not play a meaningful part in the interface between patent rights and antitrust protections. Of course, there are numerous imaginable scenarios that involve conduct that goes beyond a mere refusal to license a patent and could give rise to antitrust liability.¹¹⁰ In *Motion Picture Patents Co. v. Universal Film Manufacturing Co.*,¹¹¹ the Supreme Court

even stronger when a refusal to license intellectual property rights is at stake, because the ability to exclude others from using the right is at the heart of IP policy.”).

¹⁰⁹ Although *Kodak* might be read to suggest that the Ninth Circuit was consciously departing from the line of cases indicating that the refusal to license a patent would not violate the antitrust laws, that interpretation may be mistaken. Technically, the *Kodak* court addressed whether it was harmless error for the district court’s instructions to the jury to have given no weight to Kodak’s patents on sixty-five of the thousands of parts at issue. 125 F.3d at 1214, 1218-20. In light of the court’s remarks concerning the plaintiffs’ claimed “all parts” market, *id.* at 1220, it is not clear that *Kodak* is properly described as imposing antitrust liability for a refusal to license patents. Moreover, as noted above, the *Kodak* decision has been criticized, even by those who would prefer to depart from those cases indicating that the mere refusal to license does not support antitrust liability. See *supra* Part II.B.

¹¹⁰ See, e.g., *Cont’l Ore Co. v. Union Carbide & Carbon Corp.*, 370 U.S. 690, 698-99 (1962) (stating that a jury must be allowed to consider evidence of alleged collusive conduct by defendants, including concerted refusal to deal).

¹¹¹ 243 U.S. 502 (1917).

rejected the theory that “since the patentee may withhold his patent altogether from public use he must logically and necessarily be permitted to impose any conditions which he chooses upon any use which he may allow of it.”¹¹² The Court explained that the “defect in this thinking springs from the substituting of inference and argument for the language of the statute and from failure to distinguish between the rights which are given to the inventor by the patent law and which he may assert against all the world through an infringement proceeding, and rights which he may create for himself by private contract which, however, are subject to the rules of general [law] as distinguished from those of the patent law.”¹¹³ Conduct going beyond a mere refusal thus may merit scrutiny under the antitrust laws.¹¹⁴ As noted above, the terms of a license agreement are subject to section 1 of the Sherman Act, which “reaches unreasonable restraints of trade effected by a ‘contract, combination . . . or conspiracy.’”¹¹⁵

¹¹² *Id.* at 514.

¹¹³ *Id.*

¹¹⁴ Hovenkamp et al., 2 J. COMPETITION L. & ECON. at 37-38 (“The maker of a product is generally free to decide to whom it will sell, and to terminate its buyers at will, but this right does not include the right to impose certain types of conditions on those buyers – notably, but not exclusively, tying arrangements and resale price restrictions.”) (footnote omitted).

¹¹⁵ *Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752, 768 (1984) (quoting section 1 of the Sherman Act). The applicability of section 1 to agreements related to patents was made clear by *Motion Picture Patents*, 243 U.S. at 514. Moreover, no provision of the Patent Act on its face grants patentees untrammelled rights to do as they wish with patented inventions. The basic right of patentees is the right to exclude others from making, using, offering to sell, or

V. CONCLUSION

Whether, and if so when, to impose antitrust liability for unconditional, unilateral refusals to license patents has been a subject of much debate among antitrust and patent law practitioners and policymakers. At the Hearing, panelists offered widely differing views on the relevant economic, policy, and legal issues. Some panelists favored antitrust liability for unilateral, unconditional refusals to license under narrow circumstances, with such refusals assessed on a case-specific, fact-intensive basis, without formalistic rules or safe harbors.¹¹⁶ Others favored a categorical exemption from antitrust liability for unilateral, unconditional refusals to license.¹¹⁷ Panelists agreed that conditional refusals to license could cause competitive harm and should not be immune from antitrust liability. Panelists also agreed that the judicial decisions do not provide satisfactory guidance. All but one panelist found the subjective

selling the patented invention. This is not a right of the patentee to make, use, offer to sell, or sell the patented invention. Whether and on what terms the patentee may make, use, offer to sell, or sell are governed by other bodies of law. Moreover, practices designed to create legal rights to exclude extending beyond the invention described by the patent claims, or beyond the temporal limits of the patent—i.e., practices that seek to extend the legal monopoly granted in the patent—are disfavored in patent law and are fully subject to the antitrust laws. See *infra* Chapter 4, *Variations on Intellectual Property Licensing Practices*; *infra* Chapter 6, *Competitive Issues Regarding Practices That Extend the Market Power Conferred by a Patent Beyond Its Statutory Term*.

¹¹⁶ May 1 Tr. at 134-35, 200-01 (Kirsch); *id.* at 163, 168, 172-73 (MacKie-Mason); *id.* at 242 (Melamed); *id.* at 59, 202, 206-08 (Sprigman).

¹¹⁷ *Id.* at 41-42 (Gleklen); *id.* at 233-36 (Whitener); Whitener Submission at 14-15.

motivation test for refusals to license articulated in *Kodak* to be unsound and unworkable, and panelists agreed that the CSU decision is difficult to parse and so broadly drafted that it creates uncertainty.

The panel discussion provided the Agencies with significant guidance on many of the concerns associated with potential liability for refusals to license. The Supreme Court in *Trinko* has since provided important guidance on the fundamental principles underlying claimed duties to assist competitors. The Agencies agree with the panel that there are circumstances in which imposing conditions for a license may be anticompetitive, and that view is consistent with a long line of antitrust cases. The Agencies also conclude that antitrust liability for mere unilateral, unconditional refusals to license patents will not play a meaningful part in the interface between patent rights and antitrust protections.

CHAPTER 2

COMPETITION CONCERNS WHEN PATENTS ARE INCORPORATED INTO COLLABORATIVELY SET STANDARDS

I. BACKGROUND AND INTRODUCTION

Industry standards are widely acknowledged to be one of the engines driving the modern economy. Standards can make products less costly for firms to produce and more valuable to consumers.¹ They can increase innovation, efficiency, and consumer choice; foster public health and safety; and serve as a “fundamental building block for international trade.”² Standards make networks, such as the Internet and wireless telecommunications, more valuable by allowing products to

interoperate.³ The most successful standards are often those that provide timely, widely adopted, and effective solutions to technical problems.⁴

The process by which industry standards are set varies. Commonly, businesses collaborate to establish standards by working through standard-setting organizations (“SSOs”) to develop a standard that all firms, regardless of whether they participate in the process, then can use in making products.⁵

¹ The two primary types of standards are (1) interoperability standards, which guarantee that products made by different firms can interoperate, and (2) performance standards, which set minimum requirements for all products in a general product category. Gregory Tasse, *Standardization in Technology-Based Markets*, 29 RES. POL’Y 587, 589-90 (2000).

² Amy A. Marasco, *Standards-Setting Practices: Competition, Innovation and Consumer Welfare* (Apr. 18, 2002 Hr’g R.) at 3-4, <http://www.ftc.gov/opp/intellect/020418marasco.pdf> [hereinafter Marasco Submission]; see also Janice M. Mueller, *Patent Misuse Through the Capture of Industry Standards*, 17 BERKELEY TECH. L.J. 623, 631-32 (2002).

³ Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, J. ECON. PERSP., Spring 1994, at 93, 109 [hereinafter Katz & Shapiro, *Systems Competition*]; see also Apr. 18, 2002 Hr’g Tr., Standard-Setting Practices: Competition, Innovation and Consumer Welfare at 85-86 (Cargill), <http://www.ftc.gov/opp/intellect/020418trans.pdf> [hereinafter Apr. 18 Tr.].

⁴ See Andrew Updegrove, *Standard Setting and Consortium Structures* (Apr. 18, 2002 Hr’g R.) at 1-2, <http://www.ftc.gov/opp/intellect/020418updegrove2.pdf> [hereinafter Updegrove Submission I].

⁵ Hundreds of collaborative standard-setting groups operate worldwide, with diverse organizational structures and rules. See Apr. 18 Tr. at 63-64 (Deutsch); Scott K. Peterson, *Patents and Standard-Setting Processes* (Apr. 18, 2002 Hr’g R.) at 9, <http://www.ftc.gov/opp/intellect/020418scottkpeterson.pdf> [hereinafter Peterson Submission I]; Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1904-06

However, standards also may be set in the marketplace where firms vigorously compete in a winner-take-all standards war⁶ to establish their own technology as the *de facto* standard.⁷

Firms that choose to work through an SSO to develop and adopt standards may be competitors within their particular industry. Thus, agreement among competitors about which standard is best suited for them replaces consumer choice and the competition that otherwise

(2002) (discussing the wide variation in policies among standard-setting organizations (“SSOs”)). They may be called standard development organizations, promoter’s groups, joint ventures, special interest groups, or consortia. For ease of discussion, this Report will refer to all these standard-setting groups as SSOs, recognizing that standard-setting organizations vary widely in size, formality, operation, and scope.

⁶ In a “standards war,” substitute products with incompatible designs are introduced into a market, and users’ purchase decisions ultimately establish one design as the dominant design or *de facto* standard, in what can effectively be a winner-take-all competition. See Carl Shapiro & Hal R. Varian, *The Art of Standards War*, CAL. MGMT. REV., Winter 1999, at 8 [hereinafter Shapiro & Varian, *The Art of Standards War*]. A well-known war occurred between Sony’s Betamax format Video Cassette Recorder (“VCR”) and Matsushita’s VHS format VCR, which ultimately resulted in VHS becoming the *de facto* standard. However, not all competition among incompatible designs results in the establishment of a *de facto* standard. For example, multiple competing standards for video game consoles exist, including Sony’s PlayStation[®]3, Microsoft’s Xbox 360[™], and Nintendo’s Wii[™]. Markets in which standards wars result in a single standard are typically those in which the network effects are the greatest — i.e., those markets in which there are substantial benefits if all customers have compatible products. *Id.* at 14.

⁷ Mueller, 17 BERKELEY TECH. L.J. at 633-34; Daniel J. Gifford, *Standards and Intellectual Property: Licensing Terms: Some Comments* (Apr. 18, 2002 Hr’g R.) at 1 (discussing the Windows operating system as an example of a *de facto* standard chosen by the market), <http://www.ftc.gov/opp/intellect/020418danieljgifford.pdf> [hereinafter Gifford Submission].

would have occurred in the market to make their product the consumer-chosen standard. In many contexts, this process can produce substantial benefits. By agreeing on an industry standard, firms may be able to avoid many of the costs and delays of a standards war, thus substantially reducing transaction costs to both consumers and firms.⁸

Recognizing that collaboratively set standards can reduce competition and consumer choice and have the potential to prescribe the direction in which a market will develop,⁹ courts have been sensitive to antitrust issues that may arise in the context of collaboratively set standards. They have found antitrust liability in

⁸ Standards wars offer consumers a choice of products that incorporate alternative potential standards. During a standards war, however, some consumers may delay purchasing until the *de facto* standard is chosen because they do not want to be stuck with the costs of moving from a losing standard to the winning standard. Jeffrey Church & Roger Ware, *Network Industries, Intellectual Property Rights and Competition Policy*, in COMPETITION POLICY AND INTELLECTUAL PROPERTY RIGHTS IN THE KNOWLEDGE-BASED ECONOMY 230-39 (Robert D. Anderson & Nancy T. Gallini eds., 1998); see also Katz & Shapiro, *Systems Competition* at 105-08 (discussing the concept of consumers tipping toward a *de facto* standard). To win a standards war, a firm may have to incur significant costs or limit its assertion of market power in order to establish an installed base of users. The winner of a standards war, however, may have significant market power, often because it can enforce its patent rights to prevent others from making products that conform to the standard. See, e.g., David Balto & Robert Pitofsky, *Antitrust and High-Tech Industries: The New Challenge*, 43 ANTITRUST BULL. 583, 599 (1998).

⁹ See *Standard Sanitary Mfg. Co. v. United States*, 226 U.S. 20, 41 (1912); BUREAU OF CONSUMER PROTECTION, FEDERAL TRADE COMM’N, STANDARDS AND CERTIFICATION: FINAL STAFF REPORT 28, 34 (1983); Katz & Shapiro, *Systems Competition* at 105-06; Richard Gilbert, *Symposium on Compatibility: Incentives and Market Structure*, 40 J. INDUS. ECON. 1 (1992).

circumstances involving the manipulation of the standard-setting process or the improper use of the resulting standard to gain competitive advantage over rivals.¹⁰

This Chapter focuses on antitrust issues that may arise from collaborative standard setting when standards incorporate technologies that are protected by intellectual property (“IP”) rights. These issues involve the potential for “hold up” by the owner of patented technology after its technology has been chosen by the SSO as a standard and others have incurred sunk costs which effectively increase the relative cost of switching to an alternative standard.¹¹

¹⁰ See *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 509-11 (1988) (affirming court of appeals’ reinstatement of a jury verdict awarding damages for a Sherman Act violation where producers and sellers of steel conduit had packed a meeting with new members whose sole function was to vote against a proposal to allow the use of equally viable plastic conduit in the building industry); *Am. Soc’y of Mech. Eng’rs v. Hydrolevel Corp.*, 456 U.S. 556, 574 (1982) (finding SSO liable for actions of its agents acting with apparent authority to discourage customers from purchasing one competitor’s water boiler safety device, stating that it did not comply with the SSO’s safety code, even though it did); see also *Radiant Burners, Inc. v. Peoples Gas Light & Coke Co.*, 364 U.S. 656, 659-60 (1961) (holding that complaint alleging agreement by American Gas Association members to refuse to sell gas to customers using a non-Association certified product states a claim of a *per se* violation of section 1 of the Sherman Act).

¹¹ This type of hold up is a variant of the classical “hold-up problem.” The hold-up problem pertains to problems of relationship-specific investment, whereas the hold up contemplated here pertains to standards-specific investment. The hold-up problem indicates the prospect of under-investment in collaborations in which parties must sink investments that are specific to the collaboration, investments that may be costly to redeploy or have a significantly lower value if redeployed outside of the collaboration. The potential for one party to hold up another party that has sunk investments specific to the relationship may

Before, or *ex ante*,¹² multiple technologies

discourage that other party from investing efficiently in the collaboration in the first place. For further discussion of the hold-up problem, see generally Benjamin Klein, Robert G. Crawford & 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); Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 J. POL. ECON. 691, 692, 716-18 (1986); Suzanne E. Majewski & Dean V. Williamson, *Incomplete Contracting and the Structure of R&D Joint Venture Contracts*, in 15 *ADVANCES IN THE STUDY OF ENTREPRENEURSHIP, INNOVATION, AND ECONOMIC GROWTH: INTELLECTUAL PROPERTY AND ENTREPRENEURSHIP* 201-28 (Gary D. Libecap ed., 2004).

In the standard-setting context, firms may make sunk investments in developing and implementing a standard that are specific to particular intellectual property. To the extent that these investments are not redeployable using other IP, those developing and using the standard may be held up by the IP holders. See Nov. 6, 2002 Hr’g Tr., *Standard Setting Organizations: Evaluating the Anticompetitive Risks of Negotiating Intellectual Property Licensing Terms and Conditions Before a Standard Is Set* at 15-16 (Shapiro) (“In addition to the word ‘hold-up,’ opportunism is a word that’s commonly used in the relevant economic literature, at least, which is [i]n transaction cost economics, the notion that somebody might wait, perhaps, until commitments were made and then seek to extract a high royalty or might try to steer things in a direction so that they would have an essential patent but not have made a firm commitment *ex ante* on the terms on which it would be licensed.”), <http://www.ftc.gov/opp/intellect/021106ftctrans.pdf> [hereinafter Nov. 6 Tr.]; see also Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 *ANTITRUST L.J.* 693, 704-06 (2000) (describing factual considerations as to whether a company could engage in a hold up); cf. Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post Contract Hold-Up Analysis to Vertical Relationships*, 67 *ANTITRUST L.J.* 283 (1999). Moreover, this hold up may cause firms to sink less investment in developing and implementing standards.

¹² Whether and at what point hold up can occur will vary, depending on a variety of factors. For hold up to occur, the cost of switching to the best alternative standard must be greater than the benefits of

may compete to be incorporated into the standard under consideration.¹³ Afterwards, or *ex post*, the chosen technology may lack effective substitutes¹⁴ precisely because the SSO chose it as the standard.¹⁵ Thus, *ex post*, the owner of a patented technology necessary to implement the standard may have the power to extract higher royalties or other licensing terms that reflect the absence of competitive alternatives.¹⁶ Consumers of the products using the standard would be harmed if those higher royalties were passed on in the form of higher prices.¹⁷

switching to the best alternative standard.

¹³ Daniel G. Swanson, *Evaluating Market Power in Technology Markets when Standards Are Selected in Which Private Parties Own Intellectual Property Rights* (Apr. 18, 2002 Hr'g R.) at 2-3, <http://www.ftc.gov/opp/intellect/020418danielswanson.pdf> [hereinafter Swanson Submission] (discussing the possibility of available substitutes).

¹⁴ See, e.g., CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 103-34 (1999).

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

¹⁶ Nov. 6 Tr. at 15 (Shapiro) ("So, the notion of hold-up would be that *ex post* there are very few choices, and a company that controls an essential patent is in a very strong bargaining position to extract royalties or other concessions from people who want to comply with the standard. *Ex ante*, the bargaining positions are very different because, let's suppose, there would be maybe lots of choices . . .").

¹⁷ For consumer harm to occur, it is not necessary that hold up result in higher marginal costs for producers. For example, higher lump sum or fixed royalties might discourage entry among firms that would produce the standardized product. The

To mitigate this type of hold up, some SSOs require participants to disclose the existence of IP rights that may be infringed by the potential users of a standard in development. SSOs also may require SSO members to commit to license any of their IP that is essential to an SSO standard on "reasonable and nondiscriminatory" ("RAND") terms.¹⁸ Some SSOs and SSO members would like to further mitigate hold up by requiring IP holders to commit to specific licensing terms before selecting a particular technology as part of a standard.

Two questions that can arise from these efforts to mitigate hold up involve quite different competition concerns. The first question involves unilateral conduct. It asks whether an SSO member harms competition by failing to disclose, or by engaging in deceptive conduct regarding, the existence of intellectual property rights during the standard-setting process and later alleging that implementation of the standard infringes that member's IP, and thus, requires a license and the payment of royalties. The FTC has alleged violations of section 5 of the Federal Trade Commission Act in three matters involving such conduct in different factual settings,¹⁹ and the Commission

reduction in competition at the downstream level, and possible reduction in product adoption, might harm consumers.

¹⁸ See *infra* note 72-73 and accompanying text.

¹⁹ Complaint, *In re Dell*, 121 F.T.C. 616, 616-18 (1996) (No. C-3658) (resolved by consent order, 121 F.T.C. at 618-26), available at <http://www.ftc.gov/os/decisions/vol121.htm> [hereinafter *Dell* Complaint]; Complaint, *In re Rambus, Inc.*, No. 9302 (F.T.C. 2002), available at <http://www.ftc.gov/os/adjpro/d9302/020618admincomp.pdf>; Complaint, *In re Union Oil Co. of Cal.*, No. 9305 (F.T.C. Mar. 4, 2003), available at <http://www.ftc.gov/os/2003/03/unocalcp.htm>

recently found a violation of section 5 in one of these proceedings, following a full adjudicative trial.²⁰

The second question involves joint conduct and asks whether *ex ante* negotiation of licensing terms by SSO participants constitutes a *per se* violation of section 1 of the Sherman Act because competitors would be acting jointly to negotiate licensing terms with each of the firms whose technology may be considered for inclusion in the SSO's standard.²¹ In the Agencies' view, a *per se* approach fails to recognize that negotiating licensing terms during the standard-setting process may increase competition between technologies that are being considered for inclusion in a standard. In light of these potential procompetitive benefits, the Agencies would generally expect to apply the rule of reason to evaluate conduct such as multilateral *ex ante* licensing negotiations or SSO requirements to disclose model licensing terms.²²

[hereinafter *Unocal* Complaint], resolved by consent order, No. 9305 (F.T.C. July 27, 2005), available at <http://www.ftc.gov/os/adjpro/d9305/050802do.pdf>.

²⁰ *In re Rambus, Inc.*, No. 9302 (F.T.C. July 31, 2006), available at <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>, remedy ordered, *In re Rambus, Inc.*, No. 9302 (F.T.C. Feb. 2, 2007), available at <http://www.ftc.gov/os/adjpro/d9302/070205opinion.pdf> and <http://www.ftc.gov/os/adjpro/d9302/070205finalorder.pdf>.

²¹ The term "negotiation" is used in this Chapter to encompass a range of activities relating to the consideration of the price of a technology input for a standard, including disclosure of most restrictive licensing terms, discussion of the relative costs of alternative technology inputs, or negotiation of licensing terms leading to a licensing agreement.

²² *Infra* Parts V-VI.

In announcing this policy guidance, the Agencies seek to resolve open questions about the Agencies' enforcement intentions that may have discouraged SSOs from attempting to mitigate the threat of licensing hold up by evaluating licensing terms and conditions before hold up can occur. The Agencies recognize that the evaluation of licensing terms before the standard is set can present substantial practical challenges and costs for an SSO, so even with this guidance there may be non-antitrust reasons for an SSO not to engage in such evaluations. When making this decision, SSOs and their members should bear in mind that the Agencies will still condemn as *per se* illegal activities designed to reduce or eliminate competition among members of an SSO – such as bid rigging by members who otherwise would compete in licensing technologies for adoption by the SSO or naked price fixing on downstream products by members who otherwise would compete in selling downstream products compliant with the standard – even if these activities are cloaked by multilateral *ex ante* licensing negotiations for the purported purpose of setting a standard.

II. HOLD UP IN THE CONTEXT OF JOINT STANDARD SETTING

Panelists reported that after a standard has been adopted and switching to an alternative standard would require significant additional costs, the holder of a patent that covers technology needed to implement the standard can force users of the technology to choose between two unpleasant options: "You either don't make the standard or you accede to the –

I don't want to say blackmail, but that's [what it] tends to be in that environment."²³ Anointing a patented technology as the standard improves the bargaining position of the owner of the needed technology in licensing negotiations because "[i]f you are the owner of one of the rights to one of those many equally valuable [technologies], then it is the standard-setting process that will reduce the substitution, possibly eliminate the substitutes, and elevate your technology to [be] the most valuable."²⁴

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.²⁵

²³ Apr. 18 Tr. at 56-57 (Cargill).

²⁴ Apr. 18 Tr. at 47-48 (Rapp); *see also id.* at 248-51 (Peterson) (discussing the "anointing" phenomenon); *id.* at 76-77 (Lemley).

²⁵ The most direct source of switching costs is the difference between the costs of acquiring new

Generally, the greater the cost of switching to an alternative standard, the more an IP holder can charge for a license.

infrastructure to implement a new standard and the salvage value of current infrastructure that is supporting the existing standard but would not be used to support a new standard. In the absence of network effects, this switching cost can be viewed as an upper bound on the extent to which the underlying technology's patent owner can hold up firms using the standard. A second source of switching costs can be network effects such as compatibility. It may be impractical to change the existing standard for one piece of infrastructure if that piece must be compatible with other pieces of infrastructure. Thus, for example, a person wanting to upgrade his word processing software may be locked in to his current software if there is a large benefit to maintaining compatibility with the software of other colleagues.

There is a vast literature on network effects and the role of standards in network effects. Much of it was developed in between the mid-1980s and early 1990s by Joseph Farrell, Richard Gilbert, Michael Katz, Garth Saloner, and Carl Shapiro. Other major contributors to this field have been Timothy Bresnahan, Jeff Church, Neil Gandal, and Nicholas Economides. For an overview of the literature, see Bertrand V. Quélin, Tamym Abdessemed, Jean-Philippe Bonardi & Rodolphe Durand, *Standardisation of Network Technologies: Market Processes or the Result of Inter-firm Co-operation?*, 15 J. ECON. SURVS. 543 (2001). *See generally* Dennis W. Carlton & J. Mark Klammer, *The Need for Coordination Among Firms, with Special Reference to Network Industries*, 50 U. CHI. L. REV. 446 (1983); Katz & Shapiro, 8 J. ECON. PERSP. at 93; Michael L. Katz & Carl Shapiro, *Technology Adoption in the Presence of Network Externalities*, 94 J. POL. ECON. 822 (1986); Joseph Farrell & Garth Saloner, *Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation*, 76 AM. ECON. REV. 940 (1986); Joseph Farrell & Garth Saloner, *Converters, Compatibility and the Control of Interfaces*, 40 J. INDUS. ECON. 9 (1992); Michael L. Katz & Carl Shapiro, *Product Introduction with Network Externalities*, 40 J. INDUS. ECON. 55 (1992); Jeffrey Church & Neil Gandal, *Network Effects, Software Provision, and Standardization*, 40 J. INDUS. ECON. 85 (1992); Nicholas Economides, *The Economics of Networks*, 14 INT'L J. INDUS. ORG. 673 (1996).

It is useful to distinguish between the licensing terms a patent holder could obtain solely based on the merits of its technology and the terms that it could obtain because its technology was included in the standard. This distinction can be cast as differentiating two sources of potential market power, defined as “the ability to raise prices above those that would be charged in a competitive market.”²⁶ The mere existence of a patent or other intellectual property right does not necessarily create market power for the IP holder, although it may in some cases.²⁷ If the intellectual property right does convey market power “it would be worthwhile . . . to distinguish between the market power that comes from the technology on its own and the market power that comes just from the standard, the act of setting a standard that elevates a technology above the competitors.”²⁸ Of

²⁶ *Nat’l Collegiate Athletic Ass’n v. Bd. of Regents of the Univ. of Okla.*, 468 U.S. 85, 109 n.38 (1984).

²⁷ *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1284 (2006) (“[T]he mere fact that a tying product is patented does not support [a market power] presumption.”); U.S. DEP’T OF JUSTICE & FEDERAL TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 2.2 (1995), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,132 (“The Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.”), available at <http://www.usdoj.gov/atr/public/guidelines/0558.pdf> [hereinafter ANTITRUST-IP GUIDELINES].

²⁸ Apr. 18 Tr. at 321-22 (Stiroh); see Nov. 6 Tr. at 39-40 (Farrell) (“[T]he core point is the extent to which an IP holder acquires additional bargaining power through the SDO having completed its – or gone a certain distance in its standard[s] option process.”); Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043, 1044 (2002) (“When an industry standard incorporates a patented invention, the legal challenge is to distinguish several market effects. Some of the demand for products that comply with the standard may be for the inherent technical advantages of the

course, an analysis of potential harm arising from failure to disclose relevant IP would focus on the market power of the IP holder that was acquired through the standard-setting process. In contrast, any claim that *ex ante* licensing discussions violate section 1 of the Sherman Act would focus on the exercise of market power by the SSO members as a group, not on the market power of the IP holder.

Panelists at the Hearings discussed a range of related practical, legal, and economic issues regarding hold up within SSOs, including the extent to which hold up occurs.²⁹ Some panelists said hold up

invention. A patentee is generally entitled to revenues attributable to this demand. But some of the demand may also be created by the adoption of the standard. The patentee is not entitled to revenues attributable to this demand.”) (footnotes omitted).

²⁹ Panelists discussed these topics at several sessions of the Hearings. The first session was held on April 18, 2002 and was divided into two parts. The morning session was titled “Disclosure of Intellectual Property in Standards Activities.” The panelists included: Michael Antalics, Partner, O’Melveny & Myers, L.L.P.; Carl Cargill, Director of Standards, Sun Microsystems, Inc.; Donald R. Deutsch, Vice President, Standards Strategy and Architecture, Oracle Corp.; Ernest Gellhorn, Professor of Law, George Mason University School of Law; Peter Grindley, Senior Managing Economist, LECG, Ltd., London; Mark Lemley, Professor of Law, and Director, Berkeley Center for Law & Technology, Boalt Hall School of Law, University of California, Berkeley, Of Counsel, Kecker & Van Nest; Amy A. Marasco, Vice President and General Counsel, American National Standards Institute; Richard T. Rapp, President, National Economic Research Associates; David J. Teece, Mitsubishi Bank Professor of International Business and Finance, Haas School of Business, University of California, Berkeley; and Dennis A. Yao, Associate Professor of Business and Public Policy, The Wharton School, University of Pennsylvania. The panel was moderated by Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; Tor Winston, Economist, U.S. Department of Justice; and Robert W. Bahr, then-Deputy Solicitor, U.S. Patent and Trademark Office. The afternoon session was

was the rare exception in a system that otherwise works well.³⁰ Other panelists

titled “Licensing Terms in Standards Activities” and the panelists were: Stanley M. Besen, Vice President, Charles River Associates; Daniel J. Gifford, Robins, Kaplan, Miller & Ciresi Professor of Law, University of Minnesota School of Law; Richard Holleman, Industry Standards Consultant; Allen M. Lo, Director of Intellectual Property, Juniper Networks, Inc.; Mark R. Patterson, Associate Professor of Law, Fordham University School of Law; Scott K. Peterson, Corporate Counsel for Intellectual Property, Hewlett-Packard Company, Chair, American National Standards Institute Patent Committee; Lauren J. Stiroh, Vice President, National Economics Research Associates; Daniel Swanson, Partner, Gibson, Dunn & Crutcher LLP; Andrew Updegrave, Partner, Lucash, Gesmer & Updegrave, LLP; and Daniel J. Weitzner, Director of Technology and Society Activities, World Wide Web Consortium. The panel was moderated by Carolyn Galbreath, then-Attorney, U.S. Department of Justice; Tor Winston, Economist, U.S. Department of Justice; Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; and Robert Bahr, then-Deputy Solicitor, U.S. Patent and Trademark Office. Apr. 18 Tr. at 2-5.

The second session was held on the morning of November 6, 2002, titled “Standard-Setting Organizations: Evaluating the Anticompetitive Risks of Negotiating Intellectual Property Licensing Terms and Conditions Before a Standard Is Set.” The panelists included: Joseph Farrell, Professor of Economics and Chair of the Competition Policy Center, University of California, Berkeley; Joseph Kattan, Partner, Gibson, Dunn & Crutcher; Scott K. Peterson, Corporate Counsel for Intellectual Property, Hewlett-Packard Company; Carl Shapiro, Transamerica Professor of Business Strategy, Haas School of Business, Director and Professor of Economics, Institute of Business and Economic Research, University of California, Berkeley; Earle Thompson, Intellectual Asset Manager and Senior Counsel, Texas Instruments, Inc.; and Paul Vishny, Member, D’Ancona & Pflaum, LLC, General Counsel, Telecommunications Industry Association. The panel was moderated by Carolyn Galbreath, then-Attorney, U.S. Department of Justice; Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; and Tor Winston, Economist, U.S. Department of Justice. Nov. 6 Tr. at 3-13.

³⁰ Apr. 18 Tr. at 236-37 (Holleman) (stating that the extent to which patent holders try to extract unreasonable terms is *de minimis*); Nov. 6 Tr. at 80

questioned this assertion, suggesting that hold up may be more widespread. They posited that, although litigation involving hold up may be rare, market participants often may have little incentive to complain about hold up because they can pass on the hidden costs of hold up to consumers or because there is no venue for resolving complaints.³¹

III. FACTORS OTHER THAN SSO RULES THAT MAY MITIGATE HOLD UP

Panelists suggested several factors, independent of specific SSO rules or practices, that may deter some IP holders from holding up licensees. First, IP holders that are frequent participants in standard-setting activities may incur “reputation and business costs . . . that could be sufficiently large as to be the primary deterrent [of fraudulent non-disclosure] as opposed to whatever legal remedies [the antitrust community] comes up with.”³² One panelist stated:

(Kattan); *id.* (Thompson); *id.* at 21 (Kattan).

³¹ Nov. 6 Tr. at 26-27 (Farrell) (“I think it’s also relevant to observe that to the extent that the people paying royalties are competing against each other and are all – or believe that they’re all paying roughly the same royalty, there’s a lot of pass-through, so it’s the final consumer rather than these competitors who end up paying.”); *accord id.* at 18 (Thompson) (“[T]hat may be a tax on the industry, and . . . it doesn’t hurt me worse than anybody else.”). *But see id.* at 56 (Kattan) (companies without cross licenses have a higher cost position and therefore an incentive to complain about high royalty rates).

³² Apr. 18 Tr. at 122 (Yao); *see also* Stanley M. Besen, *Standard Setting and Intellectual Property: An Outline of the Issues* (Apr. 18, 2002 Hr’g R.) at 2 n.5 (“[T]he license fee that a winning [patentee] will demand may be constrained by its desire to develop a reputation for reasonableness, in order to increase the likelihood that its technology will be chosen in future standards competitions . . .”), <http://www.ftc.gov/>

“You fool people two or three times and the next time you go back to play with them they don’t like you. And that hurts more than the actual [legal] remedy. . . . People start to mistrust you after that.”³³ Yet even that panelist acknowledged that this market cure has its limits: “[T]he next time you may be allied with [the firm that failed to disclose its IP] and have to support them no matter what. So it’s not really deep penalties. I mean we play too quickly, too fast.”³⁴

Second, one panelist suggested that in some cases a licensor may try to affect the SSO’s technology choice by informally indicating the terms under which it intends to license intellectual property incorporated into a standard.³⁵ A licensor also might make bilateral *ex ante* licensing commitments outside the formal standard-setting process.³⁶ This panelist stated that information filters back to the standards committee fairly quickly if it becomes apparent that an IP holder is not being forthcoming about terms during bilateral negotiations. Upon receiving such confirmation, the committee can consider alternative technologies before the standard is set, he noted.³⁷

opp/intellect/020418stanleymbesen.pdf [hereinafter Besen Submission].

³³ Apr. 18 Tr. at 124 (Cargill).

³⁴ *Id.* at 124-25 (Cargill).

³⁵ See Richard J. Holleman, *Comments on Standards Setting and Intellectual Property* (Apr. 18, 2002 Hr’g R.) at 3, <http://www.ftc.gov/opp/intellect/020418richardjholleman.pdf> [hereinafter Holleman Submission I].

³⁶ Apr. 18 Tr. at 194-95 (Holleman); Nov. 6 Tr. at 52-53 (Vishny).

³⁷ Apr. 18 Tr. at 194-95 (Holleman).

Third, an IP holder might enjoy a first-mover advantage if its technology is adopted as the standard. IP holders that produce and sell a product using the standard sometimes may find it more profitable to offer attractive licensing terms in order to promote the adoption of the product using the standard, increasing demand for its product rather than extracting high royalties.³⁸ As one panelist put it, “if you in fact have your technology accepted as a standard you have a tremendous competitive advantage . . . because you are the first mover, you are the most competent.”³⁹

Fourth, IP holders that have broad cross-licensing agreements with the owner of the selected IP might be protected from hold up.⁴⁰ Of course, this protection is not available to firms that have little IP to offer in cross-licensing deals.⁴¹

³⁸ Apr. 18 Tr. at 225-26 (Updegrave) (“So the first thing is that most people who are going to respond to a call [for a standard] aren’t people who want to make that product and collect royalties on it. They are people who want a head start from already being at that starting point. They don’t want to saddle competitors with royalties because what they want is a big market for that product. And they’re satisfied with a head start.”).

³⁹ *Id.* at 58 (Cargill).

⁴⁰ Nov. 6 Tr. at 18 (Thompson); *cf. id.* at 27-28 (Farrell) (asking whether institutions using “mutual assured destruction or portfolio cross-licensing” can solve licensing hold up, and inquiring about the limits of these solutions).

⁴¹ Apr. 18 Tr. at 242-43 (Lo).

IV. CURRENT SSO METHODS TO AVOID OR MITIGATE HOLD UP

Many SSOs have developed policies to mitigate hold up. The provisions of such SSO policies fall, broadly speaking, into two nonexclusive categories: disclosure rules and licensing rules. Disclosure rules require SSO participants to disclose patents (and, sometimes, patent applications and other intellectual property or confidential information) related to a standard under consideration. Licensing rules restrict the terms that holders of such intellectual property can demand. The most common licensing rule requires that IP holders license to users of the standard on RAND terms. Some SSOs require the incorporated IP to be licensed on royalty-free terms.

A. Use of Disclosure Rules to Deter Hold Up

Panelists noted that disclosure rules can help avoid hold up by informing SSO members about relevant intellectual property held by those participating in the standard-setting process, thus allowing SSO members jointly to decide whether to incorporate the patented technology in a standard.⁴² Some SSOs have no disclosure requirements. The disclosure policies of those that do are diverse.⁴³ Some policies state express disclosure obligations, while others impose implied obligations; the policies may cover existing patents,

pending patents, or other IP rights; and they also may require an SSO member to search its own inventory for patents.⁴⁴

1. Benefits and Costs of SSO Disclosure Policies

Panelists said that SSO policies to mitigate hold up confer substantial procompetitive benefits.⁴⁵ One panelist stated that such policies serve to clear patent thickets, and he found it “significant that they exist primarily in industries in which it looks like patent hold-up is the biggest problem.”⁴⁶ Panelists opined that “the fundamental reason that drives most disclosure rules is that people want to make informed decisions. . . . It’s really designed to avoid the hold-up situation where they create a standard without knowing that there is intellectual property incorporated into it.”⁴⁷

Panelists suggested that disclosure rules also have costs and limitations, however. For example, compliance with disclosure rules may slow down standards development, which could be particularly costly in fast-paced markets with short product life cycles.⁴⁸

⁴⁴ *Id.* at 1904-05.

⁴⁵ Apr. 18 Tr. at 35-36 (Lemley); *Id.* at 86 (Cargill) (“[D]isclosure is a method of achieving a risk reduction goal.”). *See generally* Nov. 6 Tr. at 50 (Peterson) (stressing that costs should be known); *Id.* at 85 (Shapiro) (same).

⁴⁶ Apr. 18 Tr. at 36 (Lemley).

⁴⁷ *Id.* at 42 (Antalics); *see id.* at 108-09 (Lemley) (stating that the system can be gamed the most when disclosure is required but licensing is not).

⁴⁸ Richard J. Holleman, *A Response: Government Guidelines Should Not Be Used in Connection with Standard Setting* (Apr. 18, 2002 Hr’g R.) at 2

⁴² *Id.* at 42-43 (Antalics).

⁴³ Lemley, 90 CAL. L. REV. at 1904.

Complying with differing disclosure policies in different SSOs can be costly to IP holders,⁴⁹ especially for those with large patent portfolios who participate in many SSOs.⁵⁰ The cost of compliance may cause some IP holders to opt out of some collaborative standard setting.⁵¹ As a

(mandatory patent disclosure rule could slow down the standardization process), <http://www.ftc.gov/opp/intellect/020418richardjholleman2.pdf> [hereinafter Holleman Submission II]; see Apr. 18 Tr. at 101-02 (Teece) (noting that if lawyers must insert themselves into the market-building work of the technical and marketing people who generally run certain SSOs and other consortia, the standard-setting process will become slower and “more deliberate”); *id.* at 73 (Antalics) (“[Y]ou could have good products that are delayed coming to market if this whole process is taking longer.”).

⁴⁹ Institute of Electrical and Electronics Engineers (“IEEE”), *Comments Regarding Competition and Intellectual Property* (Public Comments Hr’g R.) at 2-3 (noting costs of disclosure rules, including costs of potential searches for relevant patents), <http://www.ftc.gov/os/comments/intelpropertycomments/ieee.pdf> [hereinafter IEEE Submission]. Simply learning the disclosure and other obligations of each SSO a firm has joined is no small job, one panelist noted, and not all firms take on the task of educating themselves about the intellectual property policies of the SSOs they have joined and how those policies interact. Apr. 18 Tr. at 30-31 (Lemley). This leads to “a recipe for maximum confusion when complex systems standards are invoked. And, unfortunately, that is exactly where we are today.” Carl Cargill, *Intellectual Property Rights and Standards Setting Organizations: An Overview of Failed Evolution* (Apr. 18, 2002 Hr’g R.) at 8, <http://www.ftc.gov/opp/intellect/020418cargill.pdf>.

⁵⁰ See Apr. 18 Tr. at 84-85 (Cargill) (“There is not an organization in the [Information Technology] industry I believe that doesn’t belong to at least 30, 40, or 50 consortia, standards organizations, [or] alliances. We play against ourselves sometimes.”).

⁵¹ Apr. 18 Tr. at 95-96 (Marasco) (describing costs of conducting a patent portfolio search); *id.* at 63-64 (Deutsch) (stating that if an SSO’s disclosure policy is too burdensome, IP holders won’t come to the table because of the high cost); Mar. 20, 2002 Hr’g Tr., *Business Perspectives on Patents: Hardware and Semiconductors* at 62-63 (McCurdy) (noting costs of educating firm’s SSO delegates about firm’s patents or patent applications),

result, “whatever they might have had to contribute to the process is going to be lost.”⁵² Furthermore, IP holders that choose not to participate in an SSO are not bound by the SSO’s disclosure rules.⁵³ Finally, disclosure rules that are not well-crafted may not help prevent hold up. Panelists said that disclosure rules drafted by engineers and business people may reflect their authors’ laudable ethos – to work collaboratively toward a standard – but sometimes fail to consider carefully the intellectual property and antitrust issues.⁵⁴

2. FTC Challenges to Hold Ups Based on the Failure to Disclose IP Rights

In the past ten years, the FTC has brought three cases challenging alleged hold ups based on failures to disclose the existence of IP rights as unfair competition under section 5 of the FTC

<http://www.ftc.gov/opp/intellect/020320trans.pdf>; see also *id.* at 64 (Zanfagna) (acknowledging such challenges at “a company the size of Honeywell”); *In re Dell*, 121 F.T.C. at 633 (Azcuenaga, Comm’r, dissenting) (noting that imposing burdens on SSO members, including antitrust liability, may dissuade some firms from participating in the standards-setting process).

⁵² Apr. 18 Tr. at 73 (Antalics).

⁵³ See *id.* at 63 (Deutsch).

⁵⁴ Apr. 18 Tr. at 202-03 (Updegrave) (explaining that companies founding consortia ask their business marketing or technical experts to start them, and “their acquaintance with intellectual property policies may be slim to nil”); *id.* at 29-30 (Lemley) (stating that some SSOs establish their intellectual property rules ad hoc in response to issues that happen to arise, and not in a comprehensive, forward-looking way); *id.* at 90, 92-93 (Cargill) (stating that the engineers who draft SSO disclosure rules do not know when they are being misled about legal issues, and that SSO intellectual property policies have always been an afterthought).

Act.⁵⁵ The first FTC matter, *In re Dell*,⁵⁶ highlighted to industry the possibility of antitrust liability for deceiving SSOs and their members.⁵⁷ In that case, the FTC alleged that during an SSO's deliberations about a certain standard, Dell, a member of the SSO, had twice certified that it had no intellectual property relevant to the standard, and that the SSO adopted the standard based, in part, on Dell's certifications. After the SSO adopted the standard, Dell allegedly demanded royalties from those using its technology in connection with that standard. The Commission accepted a consent agreement under which Dell agreed not

to enforce the patent in question against firms using it as part of the standard.⁵⁸

In a recent case, *In re Rambus*, the Commission determined that Rambus had acquired monopoly power through deceptive, exclusionary conduct in connection with its participation in an SSO. According to the Commission's opinion, Rambus engaged in a course of conduct "calculated to mislead [SSO] members by fostering the belief that Rambus neither had, nor was seeking, relevant patents that would be enforced" against products compliant with the SSO's standards.⁵⁹ The Commission found that "Rambus's course of conduct constituted deception under Section 5 of the FTC Act."⁶⁰ The Commission further found that Rambus's course of conduct contributed significantly to the SSO's technology selections and that the SSO's choice of standard contributed significantly to Rambus's acquisition of monopoly power.⁶¹ According to the Commission, the switching costs that developed as manufacturers became increasingly committed to the standard locked the industry in and rendered Rambus's monopoly power durable.⁶² The Commission concluded that Rambus unlawfully monopolized the markets for four technologies incorporated into the SSO's standards in violation of section 5 of the FTC Act.⁶³

⁵⁵ A variety of other mechanisms may be available to challenge hold up in the context of an SSO. Some have used actions for fraud. See, e.g., *Rambus, Inc. v. Infineon Techs. AG*, 164 F. Supp. 2d 743, 750-58 (E.D. Va. 2001) (upholding jury verdict finding actual fraud based on firm's non-disclosure of patents related to a standard), *rev'd in part*, 318 F.3d 1081 (Fed. Cir. 2003) (reversing a denial of judgment for defendant as a matter of law upon determining that the record showed no breach of SSO disclosure duty). Others recommend using contract actions to enforce disclosure policies. See Mark A. Lemley, *Intellectual Property Rights and Standard Setting Organizations* (Apr. 18, 2002 Hr'g R.) at 38-42, <http://www.ftc.gov/opp/intellect/020418lemley.pdf> [hereinafter Lemley Submission]. Some have used the doctrine of equitable estoppel to enforce disclosure policies. See *Symbol Techs., Inc. v. Proxim Inc.*, No. Civ. 01-801-SLR, 2004 WL 1770290 (D. Del. July 28, 2004) (rejecting an estoppel defense when the firm had no duty to disclose its patent rights). Others have suggested the doctrines of implied license or patent misuse to enforce disclosure policies. See, e.g., Lemley Submission at 51-56; David R. Steinman & Danielle S. Fitzpatrick, *Antitrust Counterclaims in Patent Infringement Cases: A Guide to Walker Process and Sham-Litigation Claims*, 10 TEX. INTELL. PROP. L.J. 95, 96 & n.2, 106 (2001).

⁵⁶ 121 F.T.C. 616.

⁵⁷ Apr. 18 Tr. at 32-33 (Lemley); see also Feb. 28 Hr'g Tr., Business Perspectives on Patents: Hardware and Semiconductors (Afternoon Session) at 742 (Telecky), <http://www.ftc.gov/opp/intellect/020228ftc.pdf> [hereinafter Feb. 28 Tr.].

⁵⁸ See Decision and Order, *In re Dell*, 121 F.T.C. at 618-23.

⁵⁹ *In re Rambus, Inc.*, No. 9302, slip op. at 67.

⁶⁰ *Id.*

⁶¹ *Id.* at 74-79.

⁶² *Id.* at 98-114.

⁶³ *Id.* at 3-5, 118-19. Private litigation has also

One other FTC case resulted in a consent order. In 2003, the FTC filed an administrative complaint against the Union Oil Company of California (“Unocal”) for allegedly misrepresenting information involving proposed low-emissions gasoline standards in state regulatory proceedings. According to the complaint, Unocal presented research results in these proceedings that it had represented as non-proprietary, and the state regulating board used these results in setting its standards. At the same time, Unocal was pursuing patent rights to cover these research results. The FTC’s complaint asserted that Unocal misrepresented its proprietary interest in the standard until members of the refining industry had spent billions of dollars modifying their refineries to become compliant with the new standards. Unocal then alleged that the new standards infringed its patents. This conduct allegedly enabled Unocal to charge substantial royalties, costing consumers hundreds of millions of dollars per year.⁶⁴ An initial ALJ decision dismissed the complaint on *Noerr-*

challenged Rambus’s actions before the SSO. *E.g., Samsung Elecs. Co. v. Rambus, Inc.*, 439 F. Supp. 2d 524 (E.D. Va. 2006); *Hynix Semiconductor Inc. v. Rambus Inc.*, 441 F. Supp. 2d 1066 (N.D. Cal. 2006); *Micron Tech., Inc. v. Rambus Inc.*, 189 F. Supp. 2d 201 (D. Del. 2002); *Infineon*, 164 F. Supp. 2d 743, *rev’d in part*, 318 F.3d 1081 (Fed. Cir. 2003). A district judge on remand dismissed Rambus’s infringement claims against Infineon in light of Rambus’s failure to retain certain documents related to the case; in lieu of pursuing an appeal, Rambus settled the case and all other claims against Infineon related to the memory chip technology. Under the agreement, Infineon has agreed to pay Rambus royalties for the use of its technology and to grant Rambus a perpetual license for Infineon’s memory interfaces. *See Licensing Settlement Ends Patent Suit by Rambus*, N.Y. TIMES, Mar. 22, 2005, at C15.

⁶⁴ *See Unocal Complaint* paras. 1-10.

*Pennington*⁶⁵ and jurisdictional grounds,⁶⁶ but the full Commission reversed, holding that Unocal’s alleged misleading statements to the state regulatory board were not protected as a matter of law by the *Noerr-Pennington* doctrine, and that the FTC had ample jurisdiction to consider whether Unocal’s actions caused competitive harm.⁶⁷ The Unocal matter settled as part of a larger dual consent agreement that allowed Chevron Corporation to acquire Unocal. Under the terms of the settlement, Unocal will not enforce its patents related to the reformulated gasoline standard set by the state board.⁶⁸

B. Use of Licensing Rules to Deter Hold Up

Even if SSO members are informed about the existence of patented technologies through disclosure during a standard-setting process, hold up over licensing terms may still be a concern. One panelist identified six “ways that

⁶⁵ *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961); *United Mine Workers v. Pennington*, 381 U.S. 657 (1965).

⁶⁶ *In re Union Oil Co. of Cal.*, No. 9305, slip op. at 67 (F.T.C. Nov. 25, 2003), *available at* <http://www.ftc.gov/os/2003/11/031126unionoil.pdf>, *rev’d*, No. 9305 (F.T.C. July 7, 2004), *available at* <http://www.ftc.gov/os/adjpro/d9305/040706commissionopinion.pdf> [hereinafter *Unocal Commission Opinion*].

⁶⁷ *Unocal Commission Opinion*, slip op. at 25 (“[T]he decided weight of precedent concludes that deliberate misrepresentation that cuts to the core of an administrative proceeding’s legitimacy can fall outside *Noerr-Pennington* protections.”).

⁶⁸ *See Statement of the Federal Trade Commission: In the Matter of Union Oil Company of California*, Dkt. No. 9305 and *Chevron/Unocal*, File No. 051-0125 (June 10, 2005), *available at* www.ftc.gov/os/adjpro/d9305/050802statement.pdf.

patent license terms revealed only after the standard is adopted can generate conflict and impair many parties' abilit[ies] to compete in the affected market."⁶⁹ Some SSOs use licensing rules, such as requiring IP holders to commit to licensing on RAND terms, to mitigate hold up.⁷⁰ Others, particularly those

focused on Internet-based industries, actively promote the development of standards that are licensed on a royalty-free basis.⁷¹

1. Use of RAND Licensing

Some believe that commitments by IP holders to license IP incorporated into a standard on RAND terms is an effective means for SSOs to avoid hold up.⁷² Others believe that "a commitment to offer a license on terms that are merely specified as 'RAND' is not an adequate safeguard against abusive use of a patent that has become essential to a standard."⁷³

⁶⁹ Peterson Submission I at 8 (the patentee: (1) "seeks a royalty that is . . . greater than the average profit margin of all of the parties who will need licenses"; (2) "seeks a broad grantback that appears even-handed but [which has] significantly disparate effects on different parties, perhaps forcing particular licensees to forfeit the value of their own major innovation investments, but patentee refuses to deviate from its 'standard' agreement for any reason"; (3) "demands a minimum annual royalty based on 'administrative costs' but [has] the effect of locking out smaller rivals and new entrants"; (4) "seeks royalties from downstream providers (e.g., manufacturers of finished goods) and refuses to license suppliers of upstream inputs"; (5) "requires admissions of infringement and validity, and/or retains the right to immediately terminate a license if the licensor challenges infringement or validity"; (6) "requires acceptance of venue in a 'home court' which might be fine for large companies but a major problem for small companies or foreign competitors"); see also Nov. 6 Tr. at 34 (Vishny) (stating that "looking at the licensing process as relating to fees, is terribly simplistic").

⁷⁰ Lemley, 90 CAL. L. REV. at 1906; *Standards-Setting and United States Competitiveness: Hearing Before the H. Subcomm. on Environment, Technology, and Standards of the H. Comm. on Science*, 107th Cong. 62, 88 n.22 (2001) (statement of Carl Cargill) (asserting that RAND terms must be offered for intellectual property to be included in an International Organization for Standardization standard) [hereinafter Cargill Congressional Submission]. Recently courts and commentators have been addressing the meaning and application of RAND terms. E.g., *Broadcom Corp. v. Qualcomm Inc.*, No. CIV A 05-3350 MLC, 2006 WL 2528545 (D.N.J. Aug. 31, 2006) (dismissing allegation that SSO participant had violated antitrust law by renegeing on a commitment to license on fair, reasonable, and nondiscriminatory terms), *appeal docketed*, No. 06-4292 (3d Cir. Oct. 4, 2006); *United States v. Microsoft Corp.*, 231 F. Supp. 2d 144, 193 (D.D.C. 2002) (requiring licenses to be offered on RAND terms and recognizing that "'reasonableness' is generally an objective standard"); *ESS Tech., Inc. v.*

PC-Tel, Inc., No. C-99-20292 RMW, 2001 WL 1891713, at *3-*6 (N.D. Cal. 2001) (applying the fifteen criteria announced in *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970), as appropriate to determine RAND calculation in context of a patent license). Some scholars have proposed alternative methodologies for determining appropriate licensing terms. See, e.g., Patterson, 17 BERKELEY TECH. L.J. at 1056-73 (proposing that benefits to which the patentee is entitled be calculated by determining portion of demand attributable to the patentee's invention); Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 25-45 (2005) (advocating the use of the "efficient component pricing rule" to determine a competitively neutral licensing fee).

⁷¹ See Apr. 18 Tr. at 23-24 (Lemley); *id.* at 207-08 (Updegrave); *id.* at 266-67 (Weitzner).

⁷² Nov. 6 Tr. at 22-23 (Vishny) (stating that hold up is resolved in a reasonable period of time within the Telecommunications Industry Association and that other standard development organizations, such as the IEEE, the American National Standards Institute ("ANSI"), and the Alliance for Telecommunications Industry Solutions, have not had complaints arise about RAND terms); see also Apr. 18 Tr. at 270-72 (Updegrave) (explaining that competition from other consortia promotes willingness to license on RAND terms).

⁷³ E.g., Scott K. Peterson, *Consideration of Patents During the Setting of Standards* (Nov. 6, 2002 Hr'g R.) at 6, <http://www.ftc.gov/opp/intellect/>

Some panelists attributed the potential inadequacy of a RAND commitment to the difficulty of defining the terms “reasonable” and “nondiscriminatory.”⁷⁴ Few SSOs give “much explanation of what those terms mean or how licensing disputes [are to] be resolved,”⁷⁵ and courts may be reluctant to determine what is a “reasonable” price.⁷⁶ The meaning of “nondiscriminatory” may be similarly unclear.⁷⁷

Some panelists raised concerns about the extent to which commitments to

license on RAND terms succeed in mitigating hold up and whether SSOs are able to assess the full extent of RAND failures. Supporting those who believe that hold up is more widespread than it appears, one panelist said that “[licensees are] not going to come back to the SDO [standard development organization] and complain [about RAND licensing terms]. The SDOs have made it very clear that they don’t want to hear about this stuff.”⁷⁸ The absence of a good forum for potential licensees to complain about RAND licensing terms may enhance licensors’ ability to hold up licensees.⁷⁹

2. Royalty-Free Licensing Standards

A few SSOs require IP holders to commit to royalty-free licensing before incorporating the IP into a standard.⁸⁰ The evolution of the Internet may present the best opportunity to study market experiments in royalty-free licensing. For example, the World Wide Web Consortium requires all participants to commit to royalty-free licensing terms.⁸¹

021106peterson.pdf [hereinafter Peterson Submission II].

⁷⁴ Nov. 6 Tr. at 63 (Shapiro) (“[S]ince reasonable is so vague, it doesn’t amount to anything.”); *id.* at 64 (Thompson) (“RAND [is] an empty term . . .”); *id.* at 64 (Vishny) (“[T]he people who are negotiating for the establishment . . . of a standard don’t know what [RAND] mean[s].”).

⁷⁵ Lemley, 90 CAL. L. REV. at 1906; *see also id.* at 1954 n.272 (“[T]here has not been much in the way of judicial explication of [RAND licensing terms] so far . . .”).

⁷⁶ One panelist explained: “[T]he insights of modern economics tell us that prices are determined in markets and are the result of supply and demand. It’s not something that’s typically easy for a [c]ourt sitting as a regulatory body to determine and to effectively administer. Courts are very, very loath to take the role of markets. . . . So from the standpoint of imposing constraints on the possible subsequent development of market power as the result of anointment or selection as a part of a standard, obviously one wants to give incentives to standard setting organizations. One wants to bestow them with the power to put limits, effective limits that will restrain that exercise after the technology is chosen. And the whole trick is doing that in a way that’s consistent with antitrust law.” Apr. 18 Tr. at 286-87 (Swanson).

⁷⁷ *See id.* at 302-03 (Holleman) (stating that licensing is nondiscriminatory if licenses are made available to everyone who requests a license although there is no guarantee that the terms and conditions of each license will be identical); *see also id.* at 272 (Updegrave).

⁷⁸ Nov. 6 Tr. at 28 (Peterson).

⁷⁹ *See id.* at 27-28 (Farrell).

⁸⁰ *See, e.g.,* Lemley, 90 CAL. L. REV. at 1905 (identifying only four standards groups of the forty-three studied that require royalty-free licensing of patents incorporated in a standard); Apr. 18 Tr. at 257-69 (Weitzner) (discussing the World Wide Web Consortium and the Platform for Privacy Preferences). In practice, however, a royalty-free license may not eliminate the need for agreement concerning the other terms and conditions under which the license is offered. Apr. 18 Tr. at 191 (Holleman).

⁸¹ *See, e.g.,* Press Release, World Wide Web Consortium, World Wide Web Consortium Approves Patent Policy (May 21, 2003) (announcing finalized royalty-free patent policy), <http://www.w3.org/2003/05/patentpolicy-pressrelease.html.en>.

Some panelists endorsed royalty-free licenses as the best means for limiting licensing hold up and for growing markets.⁸² Some asserted that giving a royalty-free license might be of little competitive consequence to an intellectual property holder that is a market player. Such might be the case because the intellectual property holder could retain a first-mover advantage and be in the best position to implement the standard, or the IP holder could license its other protected technologies that are complements to those incorporated in the standard.⁸³ Others raised concerns about royalty-free licensing and argued that royalty-free licenses, even those infused with a first-mover advantage, might not provide an efficient incentive for research and development (“R&D”).⁸⁴ One panelist stated, “economists generally know[,] and antitrust lawyers generally suspect[,] that zero is rarely a reasonable

price.”⁸⁵ Panelists debated whether mandatory royalty-free licenses might represent the ultimate monopsony by collectively depriving the licensor of the ability to extract economic benefit from its intellectual property.⁸⁶

Neither Agency advocates that SSOs adopt any specific disclosure or licensing policy, and the Agencies do not suggest that any specific disclosure or licensing policy is required.

⁸² Apr. 18 Tr. at 294-96 (Lo); *see also* Andrew Updegrove, *Observations on the Current Dynamics of Consortium Standard Setting* (Apr. 18, 2002 Hr’g R.) at 3-4, <http://www.ftc.gov/opp/intellect/020418updegrove3.pdf> [hereinafter Updegrove Submission II] (permitting intellectual property holders to charge royalties in the context of the Internet could cripple it, while forbidding royalties in a more limited commercial area might “unnecessarily deprive a member of the full economic value” of its intellectual property). Others discussed the value of “open” standards. *See, e.g.*, Cargill Congressional Submission at 21-22; Apr. 18 Tr. at 137 (Cargill).

⁸³ Apr. 18 Tr. at 225-26 (Updegrove); David J. Teece & Edward F. Sherry, *Standards Setting and Antitrust*, 87 MINN. L. REV. 1913, 1954 (2003) (“[A] patent holder may be willing to license its patents royalty-free to all interested parties [T]his is most likely to occur . . . when the patent holder will benefit from others’ adoption of its patented technology as a standard because the patent holder has other complementary capabilities that will enable it to profit from its innovation in a manner other than collecting royalties.”).

⁸⁴ *E.g.*, Apr. 18 Tr. at 221-22 (Besen).

⁸⁵ *Id.* at 288 (Swanson); *id.* at 289 (“[I]n the intellectual property realm obviously the reason why we have intellectual property protection is to give those who have engaged in costly efforts to create intellectual property sufficient protection to give them the expectation that they will get a return for that, some return greater than zero.”).

⁸⁶ *Compare* Nov. 6 Tr. at 66-67 (Farrell) (“[I] think that [a royalty-free license] raises the technology monopsony concern much more sharply than ex ante negotiation I also think that the way these things are often structured, they’re as duties on member participants. And to the extent that . . . might create an incentive not to join, it seems like that could be a real concern.”), *with id.* at 67-68 (Kattan) (“[I] think [Farrell is] beginning from a faulty factual premise. The way that the organizations that provide for royalty-free licensing work is not by requiring members to commit up front to royalty-free licensing. It is rather by agreeing that there will be a license, which will be royalty-free. If you want to take advantage of the license and get a royalty-free license from all the other members who agree to sign the license, then you have to agree to give them a reciprocal license. So, it doesn’t create a monopsony problem, it gives you a choice. What is more valuable to me? Getting a royalty-free license from everybody else or paying everybody else the royalties that they may ask for and at the same time charging royalties for my patents. So, it’s fundamentally different from the kind of hold-up that [Farrell] is talking about.”). For a discussion of group buying power, see *infra* Part V.B.2.

V. USING *EX ANTE* LICENSING NEGOTIATIONS TO MITIGATE HOLD UP

In some cases, market factors, IP disclosures, and commitments to license on RAND terms may not sufficiently mitigate the potential for licensing hold up.⁸⁷ Some SSO members have suggested that SSOs should be permitted to require IP holders to make specific licensing commitments that are better defined than RAND terms. These well-defined licensing commitments could be introduced into the standard-setting process through *ex ante* unilateral announcements of licensing terms by IP holders or through *ex ante* multilateral licensing negotiations between IP holders and the group of SSO members.

An economist at the hearings noted that “[i]t is efficient [for standard setters] to choose the technology that involves the lowest cost of producing [the] product,” so they would likely prefer to be able to combine the selection of technology for a standard with the negotiation of licensing terms for that technology.⁸⁸ Another panelist explained: “A truly informed and intelligent decision [that] . . . would best serve all parties’ interests – including the public’s interest in competitive market conditions – cannot be made without knowing what the patent holder would extract from all users as the price for admission into the affected market.”⁸⁹

To illustrate this point, the economist described a stylized setting in which an SSO needed to select one of multiple alternative protected technologies.⁹⁰ He suggested that the SSO could hold an auction and require the holders of the IP to submit “bids” describing the licensing terms to which they would agree if their technology were incorporated into the standard. He explained that, under his simplifying assumptions, one would expect such an auction to result in the SSO selecting the efficient technology, and that the terms of the licensing agreement would reflect the relative benefit of the selected technology.⁹¹ Several panelists expressed concern that such auctions or negotiations could slow down the standard-setting process, raise the costs of participation, and potentially result in antitrust liability.⁹² For these reasons, many SSOs and companies strictly prohibit discussions of licensing terms within SSOs.⁹³

L. REV. at 1947 (“[Monopsony problems do] not mean that members of the SSO should be prohibited from discussing price. Finding out what a ‘reasonable and nondiscriminatory’ license will actually cost will help determine the true value of a proposed standard and how it compares to possible alternatives.”).

⁸⁷ Peterson Submission II at 6; Peterson Submission I at 9-12; *see also* Nov. 6 Tr. at 59-60 (Farrell).

⁸⁸ Apr. 18 Tr. at 214-15 (Besen); *accord* Nov. 6 Tr. at 50-51 (Peterson).

⁸⁹ Peterson Submission I at 11; *accord* Lemley, 90 CAL.

⁹⁰ Dr. Besen made several other simplifying assumptions: the alternative technologies are equally capable of performing in the standard, but they have different manufacturing costs and the holders of the relevant intellectual property rights are not members of the SSO. He also discussed how relaxing the various assumptions would complicate this analysis. Apr. 18 Tr. at 217-24 (Besen); Besen Submission at 1-3.

⁹¹ *See* Apr. 18 Tr. at 214 (Besen); Besen Submission.

⁹² *See, e.g.*, Nov. 6 Tr. at 33 (Thompson).

⁹³ Peterson Submission I at 9-10 & n.2; Apr. 18 Tr. at 171 (Lemley); *see also id.* at 153 (Cargill).

A. Practical Reasons for the Lack of *Ex Ante* Licensing Negotiations

There was a general consensus among panelists that a more transparent process for setting licensing terms is desirable. Nonetheless, the increased administrative costs and delays associated with such transparency led many panelists to disfavor *ex ante* discussions for practical reasons, independent of antitrust considerations.⁹⁴

Several panelists stated that *ex ante* licensing negotiations would require firms to completely overhaul how they participate in SSOs. Currently, firms are typically represented at SSOs by technical experts who focus on selecting the best technology for a standard, not on negotiating licensing terms.⁹⁵ Multilateral *ex ante* negotiations would likely require lawyers and business and marketing personnel to also participate in the process.⁹⁶ Such participation would likely increase the costs and lengthen the already significant amount of time that it takes to adopt a standard, which may dissuade some firms from participating.⁹⁷

⁹⁴ See, e.g., Nov. 6 Tr. at 79-80 (Vishny) (asserting that *ex ante* discussions are “highly unworkable and impractical”); Apr. 18 Tr. at 193-94 (Holleman) (stating that committees do not want to discuss terms and conditions of licenses).

⁹⁵ Apr. 18 Tr. at 173 (Marasco); *id.* at 195 (Holleman).

⁹⁶ Nov. 6 Tr. at 33 (Thompson) (asserting that Texas Instruments does not have enough “rare breed” licensing attorney/engineers to engage in *ex ante* negotiations with all of the standards bodies in which Texas Instruments participates).

⁹⁷ *Id.* at 87 (Thompson) (“At some point [*ex ante* discussions are] either going to add to my cost, which, by the way, gets passed on to the consumer at some point, or it’s going to be we don’t participate in

B. Antitrust Concerns About *Ex Ante* Licensing Negotiations

Panelists raised concerns about two categories of antitrust liability that could result from *ex ante* negotiation of licensing terms: (1) naked agreements to restrain trade by intellectual property holders or SSO members, and (2) the exercise of group buying power by those that participate in the standard-setting process.

1. Naked Restraints of Trade by Intellectual Property Holders or SSO Members

As discussed above, standard-setting activities were the subject of several U.S. Supreme Court decisions between the 1960s and 1980s that dealt principally with exclusionary practices and the “capture” of an SSO by a group of competitors.⁹⁸ These cases have influenced the strict antitrust compliance rules and procedures adopted by many SSOs.⁹⁹

certain groups. To me, it’s a major longer term concern and I’m not sure if the thing that we’re trying to fix, which doesn’t seem to be a real problem, is worth presenting another problem down the road.”); see *id.* at 25-26 (Farrell). However, one panelist labeled the stated concerns about extra administrative costs as a “red herring” because Agency guidance permitting *ex ante* negotiations would not require participants to undertake them; it would merely allow participants to decide for themselves whether it was worth the costs. *Id.* at 65-66 (Shapiro).

⁹⁸ *Radiant Burners*, 364 U.S. 656; *Nat’l Soc’y of Prof’l Eng’rs v. United States*, 435 U.S. 679 (1978); *Am. Soc’y of Mech. Eng’rs*, 456 U.S. 556; *Allied Tube*, 486 U.S. 492.

⁹⁹ In 2004, Congress enacted legislation to limit the potential antitrust liability of SSOs that meet certain open-process standards. The Standards Development Organization Advancement Act of 2004 provides that the antitrust rule of reason applies to these SSOs

Some panelists extrapolated from the usual antitrust “presumption that when competitors get into the same room together[,] as Adam Smith said, little good can come out of it.”¹⁰⁰ In the opinion of those panelists, standard setting that involves intellectual property rights raises the potential for section 1 *per se* liability for individuals and firms participating in *ex ante* multilateral licensing negotiations.¹⁰¹

Sham multilateral licensing negotiations certainly may offer an opportunity for SSO members to reach naked price-fixing agreements that lack

while they are engaged in standards development activities. It also provides special rules for attorney fees in any antitrust case challenging the standards development activity of an SSO. In addition, qualifying SSOs may limit their antitrust liability for standards development activities to actual, as opposed to treble, damages if they file a proper notification with the Agencies. 15 U.S.C. §§ 4301-4305 (Supp. 4 2006).

¹⁰⁰ Apr. 18 Tr. at 127 (Gellhorn).

¹⁰¹ See, e.g., Nov. 6 Tr. at 43-47 (Vishny); *Sony Elecs., Inc. v. Soundview Techs., Inc.*, 157 F. Supp. 2d 180 (D. Conn. 2001) (denying a motion to dismiss an antitrust claim against a group of standard setters based on allegations of price-fixing and group boycott). Soundview alleged that the group sought to fix the licensing fee for its patent that was likely infringed by the standard and then refused to accept a license, choosing instead to challenge the patent’s validity. Although some cite *Soundview* for the proposition that antitrust liability may attach in the *ex ante* licensing context, the reliance is somewhat misplaced. The conduct allegedly giving rise to antitrust liability in *Soundview* occurred *ex post*, after the standard had been adopted. See also *Golden Bridge Tech., Inc. v. Nokia, Inc.*, 416 F. Supp. 2d 525 (E.D. Tex. 2006) (denying defendants’ motion to dismiss plaintiff’s claim that members of the Third Generation Partnership Project conspired to remove plaintiff’s Common Packet Channel technology from a Wideband Code Division Multiple Process wireless communications standard set by the organization in violation of section 1 of the Sherman Act and various state laws).

plausible and cognizable justifications, restraints that the Agencies and courts summarily condemn.¹⁰² For example, if manufacturers use the cover of multilateral licensing negotiations to reach naked agreements on the prices of the products they sell downstream, summary condemnation is warranted.¹⁰³ Meeting to discuss royalty rates within an SSO may give manufacturers an opportunity to discuss downstream prices with less risk of detection, making collusion less expensive.¹⁰⁴ Likewise, summary condemnation would be justified if IP holders were to reach naked agreements on the licensing terms they will propose to an SSO that permits multilateral licensing negotiations, thus,

¹⁰² ANTITRUST-IP GUIDELINES § 3.4 ex.7 (describing likely Agency challenge under the *per se* rule of “a sham intended to cloak [the] true nature” of a particular licensing agreement); *Addamax Corp. v. Open Software Found., Inc.*, 152 F.3d 48, 52 & n.5 (1st Cir. 1998) (stating that joint ventures are generally reviewed under rule of reason “unless they amount to complete shams”).

¹⁰³ See *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 223-24 (1940).

¹⁰⁴ ROGER D. BLAIR & JEFFREY L. HARRISON, *MONOPSONY: ANTITRUST LAW AND ECONOMICS* 124 (1993) (“[S]ince the parties are permitted to gather for the purpose of determining a uniform purchase price, it would be more difficult to detect when they had crossed over to at least a tacit agreement on selling price. This decreased likelihood of detection lowers the risk associated with the price fixing collusion.”); see also Peterson Submission II at 7 (discussing risk of collusion on product prices, development, or marketing). For similar reasons, some fear that information-sharing among buyer-members of business-to-business electronic marketplaces could facilitate downstream coordination. FEDERAL TRADE COMM’N, *ENTERING THE 21ST CENTURY: COMPETITION POLICY IN THE WORLD OF B2B ELECTRONIC MARKETPLACES* pt. 3, at 4 (2000), available at <http://www.ftc.gov/os/2000/10/b2breport.pdf>; Blair & Harrison, *Monopsony* at 159 (“[P]ermission’ to collude as buyers creates a huge danger that collusion as sellers will also occur.”).

in effect, rigging their selling bids.¹⁰⁵

2. Group Buying Power

Standards set by SSOs, like all types of standards, can promote competition by lowering prices, increasing consumer choice, or improving quality. In the absence of nakedly anticompetitive restraints by an SSO or by its members, it is appropriate to determine whether an SSO's efforts to reduce opportunities for IP holders to hold up future users of a standard violates the antitrust laws pursuant to the rule of reason. Relying on the rule of reason when analyzing the competitive harm that might arise from implementation of an SSO policy promoting *ex ante* licensing negotiations is appropriate because *ex ante* negotiations may mitigate the market power of patent holders created by SSO members when they incorporate a particular technology in a standard that creates or expands a market for that technology. As one panelist explained, "to talk about per se liability is to disregard the integrative effort that takes place in developing the standard and in creating the demand for the technology."¹⁰⁶

¹⁰⁵ See *Socony-Vacuum Oil Co.*, 310 U.S. at 223 ("Under the Sherman Act a combination formed for the purpose and with the effect of raising, depressing, fixing, pegging, or stabilizing the price of a commodity in interstate or foreign commerce is illegal *per se.*"); 12 HERBERT HOVENKAMP, ANTITRUST LAW ¶ 2005, at 65-71 (1999).

¹⁰⁶ Nov. 6 Tr. at 45-46 (Kattan) (referencing Gail F. Levine, *B2Bs, E-Commerce & the All-Or-Nothing Deal*, 28 RUTGERS COMPUTER & TECH. L.J. 383 (2002)); see also *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 20, 23-24 (1979) (holding that blanket license agreements are not "naked restraints of trade" that would constitute *per se* price fixing and should be examined under the rule of reason); Robert A. Skitol,

In most cases, it is likely that the Agencies would find that joint *ex ante* activity undertaken by an SSO or its members to establish licensing terms as part of the standard-setting process is likely to confer substantial procompetitive benefits by avoiding hold up that could occur after a standard is set, and this would be an important element of a rule of reason analysis. *Ex ante* licensing discussions may lead to price competition, in effect allowing for broader competition among alternative technologies vying for inclusion in the standard.¹⁰⁷ Patent holders choosing to participate in the standard-setting process would compete against other patent holders, as well as against public domain technologies, on the basis of technical merit and on price and other licensing terms in order to have their technology included in the standard. *Ex ante* licensing discussions can thus preserve the benefits of competition that exist by increasing the *ex ante* knowledge of SSO decision-makers about licensing terms and may improve the quality of their decisions, enabling them to make tradeoffs between price and technical

Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting, 72 ANTITRUST L.J. 727, 739 (2005) (examining how the effects of monopsony power fall within the rule of reason); cf. Patterson, 17 BERKELEY TECH. L.J. at 1078 ("[The SSO itself] should be treated as a single entity when involved in negotiations related to the standard. . . . In such circumstances, the individual members are not pooling their market shares to gain greater power, but are using the power of the standard.").

¹⁰⁷ *Chi. Bd. of Trade v. United States*, 246 U.S. 231, 238 (1918) ("The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition.").

merit that are not possible unless the price of patented technological inputs is known before the standard is set. This *ex ante* knowledge may place an upper bound on a patent holder's RAND commitment, and it lowers the risk that users of a standard will face demands for more restrictive licensing terms after the standard is set than SSO members expected when they chose to include the patented technology in the standard. Reducing this risk may speed adoption of the standard in the marketplace.

Nonetheless, joint *ex ante* licensing negotiations may raise competition concerns in some settings.¹⁰⁸ For example, such negotiations might be unreasonable if there were no viable alternatives to a particular patented technology that is incorporated into a standard, the IP holder's market power was not enhanced by the standard, and all potential licensees refuse to license that particular patented technology except on agreed-upon licensing terms. In such circumstances, the *ex ante* negotiation among potential licensees does not preserve competition among technologies that existed during the development of the standard but may instead simply eliminate competition among the potential licensees for the patented technology.

¹⁰⁸ See, e.g., Deborah Platt Majoras, Chairman, Federal Trade Comm'n, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, Remarks at Standardization and the Law: Developing the Golden Mean for Global Trade 8-9 (Sept. 23, 2005), available at <http://www.ftc.gov/speeches/majoras/050923stanford.pdf> (noting that joint *ex ante* bargaining could, in theory, reduce incentives for innovation but questioning whether that risk would be a frequent practical concern).

VI. AGENCY POLICY CONCLUSIONS ABOUT ANTITRUST CONCERNS ASSOCIATED WITH *EX ANTE* LICENSING NEGOTIATIONS

Some SSOs, and their participants, have hesitated to allow the question of price to be part of the formal standard-setting process in any form. They have allowed neither *ex ante* unilateral announcements of licensing terms by firms that own the protected technology nor joint discussions about licensing terms between these firms and the SSO members.¹⁰⁹ To the extent such prohibitions are based on concerns about *per se* illegality of *ex ante* agreements on licensing terms, they fail to account for the procompetitive reasons SSO members have to broaden *ex ante* competition between technologies beyond the traditional selection criteria, such as technical merit.¹¹⁰ Such *ex ante* knowledge about licensing terms could help mitigate hold up that is not resolved in the first instance by the existence of SSO rules requiring disclosure of IP or by requirements that SSO members license

¹⁰⁹ Marasco Submission at 7, 11; Skitol, 72 ANTITRUST L.J. at 728-29; Peterson Submission II at 6 ("Some participants in standards development activities have refused to permit license terms to be taken into consideration in the selection of a standard because of a concern about antitrust risks."); Lemley, 90 CAL. L. REV. at 1965 ("[S]ome SSOs expressly forbid discussion of [the terms on which licenses must be granted beyond the vague requirement that they be reasonable] when a standard is under consideration, presumably for fear of antitrust liability."); see also Besen Submission at 2 n.2.

¹¹⁰ Cf. Patterson, 17 BERKELEY TECH. L.J. at 1056 ("Antitrust law can and should distinguish . . . between collective action that facilitates negotiation in the patent-standard context and anticompetitive collusion among potential licensees.").

on RAND terms. Because of the strong potential for procompetitive benefits, the Agencies will evaluate joint *ex ante* activity to establish licensing terms under the rule of reason. The Agencies' general approach to these issues is outlined below.

First, an IP holder's voluntary and unilateral disclosure of its licensing terms, including its royalty rate, is not a collective act subject to review under section 1 of the Sherman Act. Further, a unilateral announcement of a price before "selling" the technology to the standard-setting body (without more) cannot be exclusionary conduct and therefore cannot violate section 2.¹¹¹

Second, bilateral *ex ante* negotiations about licensing terms that take place between an individual SSO member and an individual intellectual property holder (without more) outside the auspices of the SSO also are unlikely to require any special antitrust scrutiny because IP rights holders are merely negotiating terms with individual buyers.¹¹²

¹¹¹ Michael A. Carrier, *Why Antitrust Should Defer to the Intellectual Property Rules of Standard-Setting Organizations: A Commentary on Teece & Sherry*, 87 MINN. L. REV. 2019, 2036-37 (2003) (stating that announcing licensing terms before a standard is adopted is not an antitrust violation); cf. Marasco Submission at 11 ("Certainly nothing in the ANSI Policy prohibits a patent holder from voluntarily disclosing its proposed licensing terms and conditions.").

¹¹² Bilateral negotiations between individual SSO members and individual patent holders already take place on occasion. Apr. 18 Tr. at 194-95 (Holleman); Holleman Submission II at 4 ("[O]utside of the activities of the SDO, individual standards participants are able to approach the patent holder to inquire [about] available licensing terms.").

Third, *per se* condemnation is not warranted for joint SSO activities that mitigate hold up and that take place before deciding which technology to include in a standard.¹¹³ Rather, the Agencies will apply the rule of reason when evaluating joint activities that mitigate hold up by allowing the "buyers" (members of the SSO who are potential licensees of the standard) to negotiate licensing terms with the "sellers" (the rival IP holders) before competition among the technologies ends and potentially confers market power (or additional market power) on the holder of the chosen technology. Such joint activities could take various forms, including joint *ex ante* licensing negotiations or an SSO rule that requires intellectual property holders to announce their intended (or maximum)¹¹⁴ licensing terms for technologies being considered for adoption in a standard. The Department recently analyzed an SSO's proposal to require member firms to disclose their intended most restrictive licensing terms for patents essential to a standard. Pursuant to the rule of reason, the Department concluded that it would not take enforcement action if the policy were adopted because the policy

¹¹³ See Majoras, *Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting* at 7; R. Hewitt Pate, Assistant Attorney Gen., U.S. Dep't of Justice, *Competition and Intellectual Property in the U.S.: Licensing Freedom and the Limits of Antitrust*, Remarks at the 2005 EU Competition Workshop 9-10 (June 3, 2005), available at <http://www.usdoj.gov/atr/public/speeches/209359.pdf>.

¹¹⁴ A patent holder may wish to announce a maximum royalty rate, rather than a single rate applicable to all licensees if it anticipates that licensing arrangements with some SSO members might involve cross licensing, which could lower the royalty rate appropriate for particular SSO members.

preserved competition between technologies during the standard-setting process.¹¹⁵

If intellectual property holders turn joint *ex ante* licensing discussions into a sham to cover up naked agreements on the licensing terms each IP holder will offer the SSO, *per se* condemnation of such agreements among “sellers” of IP rights may be warranted. Similarly, *ex ante* discussion of licensing terms within the standard-setting process may provide an opportunity for SSO members to reach side price-fixing agreements that are *per se* illegal. The Agencies will almost certainly treat as *per se* illegal any effort by manufacturing rivals to fix the price of the standardized products they “sell” instead of discussing the price of the terms on which they will “buy” a technology input that is needed to comply with the standard. However, such risks are not sufficient to condemn *all* multilateral *ex ante* licensing negotiations, particularly given the fact that “[t]hose developing standards already have extensive experience managing this risk.”¹¹⁶

¹¹⁵ Letter from Thomas O. Barnett, Assistant Attorney Gen., U.S. Dep’t of Justice, to Robert A. Skitol, Esq., Drinker Biddle & Reath LLP (Oct. 30, 2006), available at <http://www.usdoj.gov/atr/public/busreview/219380.pdf>.

¹¹⁶ Peterson Submission II at 7; see also *Vogel v. Am. Soc’y of Appraisers*, 744 F.2d 598, 603 (7th Cir. 1984) (“[T]he danger that abolishing an anticompetitive fee system will lead to adoption of an equally or more anticompetitive one in its place is . . . too speculative to bring the *per se* rule into play.”). See generally U.S. DEP’T OF JUSTICE & FEDERAL TRADE COMM’N, STATEMENTS OF ANTITRUST ENFORCEMENT POLICY IN HEALTH CARE (1996), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,153, at 20,812-14, 20,813 n.20 (clarifying that certain joint purchasing agreements do not raise antitrust concerns, but that attendant anticompetitive

The Agencies do not suggest that SSOs are required to sponsor such discussions during the standard-setting process. Concerns about legitimate licensing discussions spilling over into dangerous antitrust territory may dissuade some groups from conducting them in the first place. Moreover, it is fully within the legitimate purview of each SSO and its members to conclude that *ex ante* licensing discussions are unproductive or too time consuming or costly.¹¹⁷ An SSO may also fear that requiring *ex ante* commitments to licensing terms would deter some IP holders from participating in the standard-setting process, depriving the standard-setting process of the expertise of those IP holders.

The Agencies take no position as to whether SSOs should engage in joint *ex ante* discussion of licensing terms but recognize that joint *ex ante* activity to establish licensing terms as part of the standard-setting process will not warrant *per se* condemnation. Such activity might mitigate the potential for IP holders to hold up those seeking to use a standard by demanding licensing terms greater than they would have received before their proprietary technology was included in the standard. Given the strong potential for procompetitive

activities remain unlawful), available at <http://www.usdoj.gov/atr/public/guidelines/1791.pdf>.

¹¹⁷ See, e.g., IEEE Submission at 5 (“The standard-setting process is designed to develop the best technical standard, as independent of marketing and intellectual property rights issues as possible.”); Holleman Submission II at 4-5 (“Discussions [within SSOs about which technology to support] should be focused on technical issues – not licensing terms and conditions.”).

benefits, the Agencies will evaluate joint *ex ante* negotiation of licensing terms pursuant to the rule of reason.

