ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS:

Promoting Innovation and Competition

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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]

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[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.

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.

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.").

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 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

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[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.

[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.

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[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 traditional understanding that 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 though 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 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.**

[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.

[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

[1] 125 F.3d 1195 (9th Cir. 1997).

[2] 203 F.3d 1322 (Fed. Cir. 2000).

[3] The May 1, 2002 Hearing panelists included: 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.].

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] 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

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[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 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]

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[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. Stoeppelwerth, *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] "[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 above[23] 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

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[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 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]

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

[27] Melamed & Stoeppelwerth, 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 & Stoeppelwerth, 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.

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

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).

[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]

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[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] *Mercoid 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 Prof'l 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]

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

[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.

[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

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[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 innovation[63] 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]

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[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

[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).

[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 & Stoeppelwerth, 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/6invit/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)).

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 license[81]—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 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

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http://a257.g.akamaitech.net/7/257/2422/03jul20031230/www.access.gpo.gov/congress/senate/pdf/107hrg/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").

[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]

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[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 re-create 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 & Stoeppelwerth, 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]

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

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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 & Stoeppelwerth, 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 & Stoeppelwerth, 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 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 *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

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 untrammeled 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 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]

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

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[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 untrammeled 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 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 Tassey, *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 war[6] 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 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

(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].

[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]

Before, or *ex ante*,[12] multiple technologies

[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 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 substitutes[14] 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]

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

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 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/d9302/020618admincmp.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]

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 –

[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.

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

[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 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 Klamer, *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 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

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[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 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, Keker & 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 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:

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 Updegrove, Partner, Lucash, Gesmer & Updegrove, 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 (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]

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]

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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).

[38] Apr. 18 Tr. at 225-26 (Updegrove) ("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]

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[42] *Id.* at 42-43 (Antalics).

[43] Lemley, 90 CAL. L. REV. at 1904.

[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

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 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

(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), 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 (Updegrove) (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]

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[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-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

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.

[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 reneging 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 (Updegrove); *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 (Updegrove) (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 (Updegrove).

[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]

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[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. 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.").

[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]

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]

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[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 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 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,

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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).

[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]

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

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[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, *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]

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

[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.").

[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]

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

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[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 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.

CHAPTER 3

ANTITRUST ANALYSIS OF PORTFOLIO CROSS-LICENSING AGREEMENTS AND PATENT POOLS

I. INTRODUCTION

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 thicket, by reducing transaction costs for licensees while preserving the financial incentives for inventors to commercialize their existing innovations and undertake new, potentially patentable research and development ("R&D").[1]

A portfolio cross license, under which two firms license large blocks of their respective patents to one another, can provide a partial solution to the problem of patent thickets because it removes the need for patent-by-patent licensing. This bilateral licensing solution, however, is not likely to be much help when a firm requires licenses to a small number of patents held by each of many firms. In such cases, patent-pooling agreements may create substantial transaction efficiencies by enabling multiple patent holders to pool their patented technologies and, through a joint entity, license them as a group to each other and to third parties. As a result, patent pools may reduce the transaction costs of multiple licensing negotiations and may mitigate royalty stacking and hold up problems that can occur when multiple patent holders individually demand royalties from a licensee.[2]

[1] Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, *in* 1 INNOVATION POLICY AND THE ECONOMY 119, 120 (Adam B. Jaffe et al. eds., 2000) [hereinafter Shapiro, *Navigating the Patent Thicket*]; *see also* discussion *infra* Part II.A, II.B. *See generally* FEDERAL TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY ch. 3 (2003) (discussing circumstances under which patent thickets arise in various industries), *available at* http://www.ftc.gov/os/2003/10/innovationrpt.pdf [hereinafter FTC INNOVATION REPORT].

[2] U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 5.5 (1995), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,132, *available at*

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.[3] 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 larger number of market participants.

The Agencies dedicated several sessions of the Hearings to the subject of cross-licensing and patent-pooling agreements. Participants discussed a number of 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 to help ensure that patent pools do not harm competition.[4]

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http://www.usdoj.gov/atr/public/guidelines/0558.pdf [hereinafter ANTITRUST-IP GUIDELINES]; Robert P. Merges, *Institutions for Intellectual Property Transactions: The Case of Patent Pools, in* EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY 123, 129-30, 132, 144 (Rochelle Cooper Dreyfuss et al. eds., 2000), *available at* http://www.law.berkeley.edu/institutes/bclt/pubs/merges/pools.pdf at 10-11, 14, 26 [hereinafter Merges, *The Case of Patent Pools*]. A manufacturer may be required to pay royalties for each patent his product, production process, or development process infringes. When these individually priced licensing fees are stacked together they can represent a significant cost of production. *See* discussion of royalty stacking *infra* Part II.A; *see also* discussion of hold up *infra* Part III.A.

[3] ANTITRUST-IP GUIDELINES § 5.5.

[4] Panelists addressing this topic at the April 17, 2002 Hearing included: Garrard R. Beeney, Partner, Sullivan & Cromwell; Jeffery Fromm, Senior Managing Counsel, Hewlett-Packard Company; Baryn S. Futa, Manager and Chief Executive Officer, MPEG LA, LLC; Peter Grindley, Senior Managing Economist, LECG, Ltd., London; Christopher J. Kelly, Special Counsel, Litigation Department, Kaye Scholer LLP; James J. Kulbaski, Partner, Oblon, Spivak, McClelland, Maier & Newstadt, PC; Josh Lerner, Jacob H. Schiff Professor of Investment Banking, Harvard Business School; David McGowan, Associate Professor of Law, University of Minnesota Law School; M. Howard Morse, Partner, Drinker, Biddle & Reath, LLP; Joshua A. Newberg, Assistant Professor, Robert H. Smith School of Business, University of Maryland; Jonathan D. Putnam, Assistant Professor of the Law and Economics of Intellectual Property, University of Toronto School of Law; Lawrence M. Sung, Assistant Professor, University of Maryland School of Law, Baltimore. This panel was moderated by Frances Marshall, Special Counsel for Intellectual Property, Antitrust Division, U.S. Department of Justice; Mary Sullivan, then-Assistant Chief, Antitrust Division, U.S. Department of Justice; William Cohen, then-Assistant General Counsel, Policy Studies, Federal Trade Commission; and Raymond T. Chen, Assistant Solicitor, U.S. Patent and Trademark Office. Apr. 17, 2002 Hr'g Tr., Patent Pools and Cross-Licensing: When Do They Promote or Harm Competition?, http://www.ftc.gov/opp/intellect/020417trans.pdf [hereinafter Apr. 17 Tr.].

Portfolio cross-licensing agreements were also discussed at the afternoon session of the November 6, 2002 Hearing. The panelists included: Michelle Burtis, Director, LECG, LLC; Joseph Farrell, Professor of Economics and Chair of the Competition Policy Center, University of California, Berkeley; Jeffrey Fromm, Former Senior Managing Counsel, Hewlett-Packard Company; Michael McFalls, Partner, Jones Day, Reavis & Pogue; Barbara M. McGarey, Chief Counsel, National Institutes of Health; Janusz A. Ordover, Professor of Economics, New York University; Charles F. (Rick) Rule, Partner, Fried, Frank, Harris, Shriver & Jacobson; 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. This panel was moderated by David Scheffman, then-Director, Bureau of Economics, Federal Trade Commission; Gail Levine, then-Assistant General Counsel, Policy Studies, Federal Trade Commission; Sarah Mathias, then-Attorney, Policy Studies, Office

The Agencies continue to develop scholarship and guidance on patent pools and similar licensing agreements. As part of this process, the Hearing participants and the Agencies identified a number of key concerns and best practices that may be of benefit to patent licensors and licensees contemplating entering into cross-licensing and pooling agreements.

II. PORTFOLIO CROSS LICENSES

Portfolio cross licenses are commonly bilateral agreements between two parties seeking to avoid infringement litigation.[5] They are licenses to broad portfolios of technology, generally related to a particular field of use.[6] Some panelists noted that cross licenses usually grant the licensee the right to use the patented technology only in a limited field and for a fixed period of time. Cross licenses often cover both existing patents as well as those issued during the period of the agreement. Panelists further suggested that most cross licenses require royalty payments and are granted on a non-exclusive basis so that the parties retain the right to license their patents to others.[7]

A. Efficiencies

Portfolio cross licenses may be especially useful in industries, such as the semiconductor and computer industries, that are characterized by large numbers of overlapping patent rights.[8] The most

of the General Counsel, Federal Trade Commission; and Frances Marshall, Special Counsel for Intellectual Property, Antitrust Division, U.S. Department of Justice. Nov. 6, 2002 Hr'g Tr., Relationships Among Competitors and Incentives to Compete: Cross-Licensing of Patent Portfolios, Grantbacks, Reach-Through Royalties, and Non-Assertion Clauses (Afternoon Session), http://www.ftc.gov/opp/intellect/021106ftctrans.pdf [hereinafter Nov. 6 Tr.].

[5] ANTITRUST-IP GUIDELINES § 5.5; *see also* Feb. 27, 2002 Hr'g Tr., Business Perspectives on Patents: Software and the Internet (Morning Session) at 356 (Friedman) ("[In the software industry t]he maintenance of a patent portfolio serves mainly as a means of keeping detente or for cross-licensing opportunities."), http://www.ftc.gov/ opp/intellect/020227trans.pdf [hereinafter Feb. 27 Tr.]; Feb. 28, 2002 Hr'g Tr., Business Perspectives on Patents: Hardware and Semiconductors (Afternoon Session) at 662 (Hall) (stating that software industry participants "pile up a lot of patents because the other guy has a lot of patents" and can engage in cross-licensing negotiations if threatened), http://www.ftc.gov/opp/intellect/020228ftc.pdf [hereinafter Feb. 28 Tr.].

[6] Peter C. Grindley & David J. Teece, *Managing Intellectual Capital: Licensing and Cross-Licensing in Semiconductors and Electronics*, CAL. MGMT. REV., Winter 1997, at 8, 9 [hereinafter Grindley & Teece, *Cross-Licensing in Semiconductors*].

[7] Peter Grindley, *IP, Cross-Licensing and Patent Pools: Similarities and Contrasts* (Apr. 17, 2002 Hr'g R.) (slides) at 6, http://www.ftc.gov/opp/intellect/020417petergrindley.pdf [hereinafter Grindley Presentation]; *see also* Nov. 6 Tr. at 109 (Fromm); Grindley & Teece, *Cross-Licensing in Semiconductors* at 17.

[8] Nov. 6 Tr. at 97-98 (Shapiro); *id.* at 99-100 (Fromm). Panelists did not specifically discuss portfolio cross licensing as a practice in the pharmaceutical or biotechnology industries. Feb. 26, 2002 Hr'g Tr., Business Perspectives on Patents: Biotech and Pharmaceuticals (Afternoon Session) at 314-15 (Blackburn), http://www.ftc.gov/opp/intellect/020226trans.pdf [hereinafter Feb. 26 Tr.]. *But see* Lawrence M. Sung, *Greater Predictability May Result in Patent Pools* (Apr. 17, 2002 Hr'g R.) (discussing concerns with the proliferation and seemingly broad scope of some biotechnology patents and the benefits of patent pooling and other cooperative licensing arrangements for biotechnology research and development ("R&D")), http://www.ftc.gov/opp/intellect/020417lawrencemsung1.pdf [hereinafter Sung Submission]. Others cautioned that a "proliferation of gene patents, including multiple patents on various research tools" may eventually create a patent thicket in biotechnology as well. ORGANISATION FOR ECON. CO-OPERATION & DEV., GENETIC INVENTIONS, INTELLECTUAL PROPERTY RIGHTS AND LICENSING PRACTICES: EVIDENCE AND POLICES 15 (2002). More recent papers and presentations also suggest that patent licensing issues may become more

significant potential benefit of portfolio cross licensing is that it allows firms operating within a patent thicket[9] to use each other's patented technology without the risk of litigation, including the risk of facing an injunction that shuts down production.[10] Panelists suggested that this elimination of risk, or "patent peace," can give firms the design freedom they need to improve current products or design new products without fear of infringement.[11] Some commentators agreed that portfolio cross licensing may encourage long-term investments in both manufacturing capacity and R&D because the parties to the portfolio cross license do not fear "unforeseen, and unforeseeable, infringement actions."[12] Portfolio cross

complex and difficult in the biotechnology industry in the future. *See, e.g.*, COMM. ON INTELLECTUAL PROP. RIGHTS IN GENOMIC & PROTEIN RESEARCH & INNOVATION, NAT'L ACADS., REAPING THE BENEFITS OF GENOMIC AND PROTEOMIC RESEARCH: INTELLECTUAL PROPERTY RIGHTS, INNOVATION, AND PUBLIC HEALTH 2-3 (Stephen A. Merrill & Anne-Marie Mazza eds., 2006) ("[Although IP does not appear to be hampering current research to any great degree,] the patent landscape, which already is becoming complicated in areas such as gene expression and protein-protein interactions, could become considerably more complex and burdensome over time."); James Simon, *Dealing with Patent Fragmentation: The SARS Patent Pool as a Model* (May 27, 2005), http://www.law.kuleuven.be/cir/27-05-05%20studiedag%20presentaties/SARS%20patent%20pool-JSimon.pdf [hereinafter Simon Presentation Slides].

[9] *See* Feb. 28 Tr. at 667-68 (Detkin) ("[In the semiconductor industry,] people are tripping over each other's patents right and left."); *id.* at 684 (Poppen) ("[T]hese [semiconductors] are very complex products; hundreds, thousands of patents cover a single product."); *id.* at 676-77 (Barr) ("[T]he proliferation, sheer number of issued patents in our fields [*i.e.*, the semiconductor and computer industries] makes it virtually impossible to search all potentially relevant patents . . . ."); Nov. 6 Tr. at 100 (Fromm) ("In any group of five or 10,000 patents, I'm reasonably certain that I can find [a patent of mine infringing] somebody else's product and vice versa.").

[10] Nov. 6 Tr. at 102 (Fromm) ("[T]he objective during that four-year period was to prevent any continuing litigation over the patent portfolios during that period so people would be able to design products and ship them without the threat of injunctions . . . ."); *see also id.* at 98, 111 (Shapiro); COMM. ON INTELLECTUAL PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., NAT'L ACADS., A PATENT SYSTEM FOR THE 21ST CENTURY 37 (Stephen A. Merrill et al. eds., 2004) ("[T]he avoidance of litigation is important, since litigation can be especially damaging in an industry where a new product can provoke multiple infringement suits and the capital investment required to produce it is very large."). In May 2006, the U.S. Supreme Court held that a categorical grant (or denial) of an injunction in a patent case was not an appropriate application of the traditional rules of equity, which govern patent cases as well as other federal cases involving injunctions. *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837 (2006).

[11] Nov. 6 Tr. at 111 (Shapiro) ("[M]ultiple companies who are engaging in these cross-licenses have the design freedom and the freedom from paying royalties and therefore, can make better, cheaper products."); *see also id.* at 104-05 (Ordover) ("[I]f you want to stimulate current product competition then cross-licensing is an obviously very effective way to minimize some of the dangers for firms making sunk investments."). Consider, for example, AT&T's liberal licensing and portfolio cross-licensing policy, which, according to some, "promote[d] new services and reduce[d] costs," making AT&T one of the first companies to have "'design freedom' as a core component of its patent strategy." Grindley & Teece, *Cross-Licensing in Semiconductors* at 12 (noting this policy was in place at the time AT&T entered its 1956 consent decree). Grindley and Teece believe that AT&T created the policy in part because it "figured that its service customers would be better off if its technologies were widely diffused amongst its actual and potential suppliers, as this would lower prices and increase the performance of procured components." *Id.*

[12] DAVID J. TEECE, MANAGING INTELLECTUAL CAPITAL: ORGANIZATIONAL, STRATEGIC, AND POLICY DIMENSIONS 139 (2002); *see also* Apr. 17 Tr. at 228-29 (Grindley) (noting that broad cross licenses reduce uncertainty over future infringement litigation). The need for patents to cross license also may foster future innovation by encouraging small companies to engage in research and development to obtain their own patents. Nov. 6 Tr. at 108-09 (Fromm). *But cf.* Nov. 6 Tr. at 104-07 (Ordover) (noting that although broad cross licenses encourage sunk investment from

licenses also can reduce transaction costs to licensors by allowing firms to license multiple patents at once.[13]

A portfolio cross-licensing arrangement among multiple patent holders may also mitigate the problem of stacking royalties.[14] Royalty stacking occurs when access to multiple patents is required to produce an end product, forcing the manufacturer's products "to bear multiple patent burdens," usually in the form of multiple licensing fees.[15] Royalty stacking can make production unprofitable and retard innovation. But when a rights holder enters into a portfolio cross-licensing arrangement, it may acquire access to all the blocking technologies required for production at a lower royalty rate than if each input were independently priced.[16] As one economist has stated, a portfolio license can alleviate the "drag on innovation and commercialization of new technologies" that royalty stacking creates.[17]

One panelist questioned whether patent thickets are much of a problem and suggested that, if a patent holder will not license a patent or tries to extract a royalty that is too high, other firms may respond by designing around the technology covered by the patent.[18] He argued that when firms design around each other's intellectual property rights, they avoid royalties, and may be able to offer newer, less expensive products to consumers.[19] Others were skeptical that design-around attempts would be successful.[20]

B. Competitive Concerns

Portfolio cross licenses with provisions that may facilitate the

incumbents, they could discourage R&D by entrants who lack portfolios of patents to license).

[13] Grindley Presentation at 10; *see also* Feb. 26 Tr. at 208-09 (Teece) ("[W]hen you have a portfolio . . . you don't necessarily know which patents read on which products, and that if in fact you force unbundling of a portfolio . . . you require the owner of the intellectual property to incur a tremendous amount of transaction costs."); Grindley & Teece, *Cross-Licensing in Semiconductors* at 9 ("It is simply too cumbersome and costly to license only the specific patents you need for specific products. The portfolio approach reduces transaction costs and allows licensees freedom to design and manufacture without infringement."). *But see* Grindley Presentation at 9 (noting that negotiating a portfolio cross license is intense, with negotiations typically lasting eighteen to twenty-four months).

[14] Shapiro, *Navigating the Patent Thicket* at 123-24.

[15] *Id.* at 124.

[16] *Id.* at 123-24.

[17] *Id.* at 124. Royalty-free portfolio cross licenses can reduce production costs, which may allow licensees to offer lower prices to consumers because they do not have to account for per-unit royalties in the final price of the product. *See* Nov. 6 Tr. at 98 (Shapiro). Typically, however, these cross-licensing agreements are not royalty-free. *See* Grindley Presentation at 6. The returns on a portfolio cross license vary. Returns can be based on fixed fees or running royalties. In the former case, there may be "balancing payments at the outset to reflect differences in the strength of the two companies' patent portfolios." Shapiro, *Navigating the Patent Thicket* at 130; *see also* Nov. 6 Tr. at 102 (Fromm); Grindley Presentation at 9.

[18] Feb. 28 Tr. at 758-60 (Telecky).

[19] Fredrick J. Telecky, Jr., *Statement* (Feb. 28, 2002 Hr'g R.) at 3 (stating that a product created by design-around activity may cost the manufacturer less because the payment of royalties is avoided), http://www.ftc.gov/opp/intellect/020228telecky.pdf [hereinafter Telecky Submission].

[20] *E.g.*, Feb. 28 Tr. at 676 (Barr) ("[D]esign-around is very expensive . . . [and] is worse in industries where a large number of patents have potentially read on a given product because the likelihood of stepping on a landmine is so great.").

coordination of other activity—such as the setting of prices, dividing markets, or licensing to third parties—can raise antitrust concerns.[21] Some panelists suggested that a portfolio cross-licensing regime can pose a barrier to entry if existing relationships make it harder for "new firms to come in and overcome the patent thicket."[22] Other panelists doubted that portfolio cross-licensing arrangements create barriers to entry because, they said, companies engaged in portfolio cross licensing are generally willing to license their portfolios to all interested parties.[23] Panelists also found that new firms entering the market frequently develop their own patents with their own R&D.[24]

C. Analysis

The Agencies continue to recognize that most of the nonexclusive cross-licensing agreements of the type discussed herein generally do not raise competition concerns. When the licensing of intellectual property allows firms to combine complementary factors of production, such licensing can be procompetitive.[25] Accordingly, cross-licensing (and pooling) arrangements typically are analyzed pursuant to the rule of reason.[26] Indeed, the case law generally establishes that both cross-licensing and patent-pooling agreements should be so analyzed because, although

[21] *See, e.g.*, Nov. 6 Tr. at 116-17 (Rule) (noting that patent-pooling and cross-licensing arrangements could serve as a mechanism for coordinating other activity, such as prices); John H. Barton, *Patents and Antitrust: A Rethinking in Light of Patent Breadth and Sequential Innovation*, 65 ANTITRUST L.J. 449, 464 (1997) ("[Portfolio cross licenses can be anticompetitive if the cross-licensing system amounts] to the creation of a common front in which, in a form of oligopolistic parallelism, members hesitate to license their own patents to outsiders, thus protecting the group's position even at the expense of the individual firm's short-term interest."); *see also* ANTITRUST-IP GUIDELINES § 5.5 ("When cross-licensing or pooling arrangements are mechanisms to accomplish naked price fixing or market division, they are subject to challenge under the per se rule.").

[22] Nov. 6 Tr. at 105 (Ordover). Claims of such an arrangement arose in the late 1980s when Allied Signal alleged that Japanese firms had copied certain Allied technology (while Allied was waiting for Japanese patents on that technology) and then formed a licensing cartel to exclude Allied from exploiting its own technology in Japan. *See* Janusz A. Ordover, *A Patent System for Both Diffusion and Exclusion*, J. ECON. PERSP., Winter 1991, at 43, 47 n.4; *see also* A PATENT SYSTEM FOR THE 21ST CENTURY at 37-38 ("In semiconductors, for example, the need to have substantial patent assets to trade in order to participate in the pervasive cross-licensing of portfolios probably acts as a barrier to new entrants, although the enormous capital required to establish semiconductor manufacturing capacity is an even more substantial barrier.").

[23] *See* Jeffery Fromm, *Statement* (Apr. 17, 2002 Hr'g R.) at 8, http://www.ftc.gov/opp/intellect/020417jefferyfromm.pdf (stating that such agreements are pervasive in the high technology sector) [hereinafter Fromm Submission]; Telecky Submission at 3.

[24] Nov. 6 Tr. at 108-09 (Fromm) ("[Smaller companies] take one hit for $10 million and then they very quickly start finding their own patents on their own R&D."); *see also id.* at 111-12 (Shapiro) (noting that a patent thicket may give small firms with one patent an advantage negotiating with larger companies because the smaller firms are likely to have less financial exposure from hold up in terms of their revenues than the larger firms); Telecky Submission at 3 ("After [new firms] themselves have become technology contributors and have patents of their own, those patents can be used as trading material to obtain necessary patent licenses.").

[25] ANTITRUST-IP GUIDELINES § 2.3; *see also* Richard Gilbert & Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties*, 1997 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS 283, 325-26 (stating that assembling complementary patents enhances their usage, which in turn causes efficiency gains).

[26] ANTITRUST-IP GUIDELINES §§ 3.4, 5.5.

they have the potential to diminish competition in some circumstances,[27] they also can be procompetitive mechanisms for using technologies that require access to a large number of patents.[28] The Agencies' general approach in analyzing a licensing restraint pursuant to the rule of reason is to inquire whether the restraint "harms competition among entities that would have been actual or likely potential competitors" in the absence of the license and whether the restraint is reasonably necessary to achieve procompetitive benefits that outweigh those anticompetitive effects.[29]

"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."[30] In evaluating cross-licensing agreements, patent pools, or any other IP-related conduct, the Agencies do not presume that market power is necessarily associated with an intellectual property right.[31] The Agencies also do not presume market power derives from a cross-licensing agreement (or patent pool) because there may be viable alternatives to participation in the licensing agreement that would preclude the assertion of market power. The Agencies believe that antitrust concerns about exclusion from portfolio cross licenses are unlikely unless the parties to the portfolio cross licenses collectively possess market power.[32]

Of course, agreements that are determined to be mechanisms to accomplish naked price fixing or market division are subject to challenge under the *per se* rule.[33] The Agencies would be concerned, therefore, if a cross-licensing relationship were a method for collusion on price or output by downstream producers.[34]

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[27] *See supra* Part II.B; *infra* Part III.B, D (discussing anticompetitive concerns that could arise with both patent pools and cross-licensing arrangements); Steven C. Carlson, *Patent Pools and the Antitrust Dilemma*, 16 YALE J. ON REG. 359, 376-78, 383-84 (1999); Apr. 17 Tr. at 107-15 (Newberg). *See generally* M. Howard Morse, *Cross-Licensing and Patent Pools* (Apr. 17, 2002 Hr'g R.) at 4-6, http://www.ftc.gov/opp/intellect/020417mhowardmorse.pdf [hereinafter Morse Submission]; Richard J. Gilbert, *Antitrust for Patent Pools: A Century of Policy Evolution*, 2004 STAN. TECH. L. REV. 3, ¶¶ 6-87 (2004), http://stlr.stanford.edu/STLR/Articles/04_STLR_3/index.htm (follow "Acrobat/PDF" hyperlink); Joshua A. Newberg, *Antitrust, Patent Pools and the Management of Uncertainty*, 3 ATLANTIC L.J. 1, 6-21 (2000), *available at* http://www.ftc.gov/opp/intellect/020417joshuanewberg.pdf.

[28] *See supra* notes 8-13 and accompanying text.

[29] ANTITRUST-IP GUIDELINES § 3.1; *see also id.* at §§ 3.3, 3.4, 5.5.

[30] *Id.* § 2.1 (explaining that the flexibility of general antitrust principles allows the Agencies to take into account differences between intellectual property and other forms of property).

[31] *Id.* § 2.2 ("Although the intellectual property right confers the power to exclude with respect to the *specific* product, process, or work in question, there will often be sufficient actual or potential close substitutes for such product, process, or work to prevent the exercise of market power."). The U.S. Supreme Court recently adopted this view in the tying context as well. *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1293 (2006). *See also supra* Chapter 1, *The Strategic Use of Licensing: Unilateral Refusals to License Patents* Part II.B; *infra* Chapter 5, *Antitrust Issues in the Tying and Bundling of Intellectual Property Rights* Part III.B

[32] *See* ANTITRUST-IP GUIDELINES § 5.5 ("[E]xclusion from cross-licensing and pooling arrangements among parties that collectively possess market power may, under some circumstances, harm competition.").

[33] *Id.* § 3.4.

[34] Such a concern could arise, for example, if competitors in a market entered into a sham cross-

The Antitrust-IP Guidelines provide a safe harbor if the parties to a cross license "collectively account for no more than twenty percent of each relevant market significantly affected by the restraint," and the restraint is not "facially anticompetitive."[35] The Agencies recognize that, if a cross-licensing agreement were to affect a technology market, market share data may be unavailable or may not accurately represent the parties' competitive significance in the marketplace. In such cases, the Agencies would consider whether "there are four or more independently controlled technologies in addition to the technologies controlled by the parties to the licensing arrangement that may be substitutable for the licensed technology at a comparable cost to the user."[36]

III. PATENT POOLS

A. Efficiencies

Patent pools generally are created when a group of patent holders each decides to license its respective patents to each other and to third parties collectively. They often are formed when multiple patented technologies are needed to produce a standardized product.[37] One panelist noted that patent-pooling agreements usually last for the life cycle of the technology or standard rather than for a fixed period of time.[38] Patent pools also help to mitigate the "hold up" and "hold out" problems that can sometimes stymie industry efforts to make a product that conforms to an industry standard. According to some commentators, hold up can arise when firms make relationship-specific investments, after which they may face efforts by others to recontract for more of the surplus. The problem derives from the inability of parties to enter into complete (and costlessly enforced) contracts.[39] Others explained that hold out can arise when buyers need multiple complementary rights, and sellers arrive in a sequenced fashion. In such a situation, players may strategically delay the start of a negotiation so as to garner the greatest surplus by becoming the last

licensing arrangement in which each participant agreed to pay every other participant a large per unit licensing fee. Such an arrangement would impose a high effective marginal cost on each competitor which would help facilitate a tacit agreement to limit output and raise prices. Michael L. Katz & Carl Shapiro, *On the Licensing of Innovations*, 16 RAND J. ECON. 504, 512-13 (1985).

[35] ANTITRUST-IP GUIDELINES § 4.3.

[36] *Id.*

[37] Grindley Presentation at 10; *see also* James J. Kulbaski, *Comments on Patent Pools and Standards for Federal Trade Commission Hearings Regarding Competition & Intellectual Property* (Apr. 17, 2002 Hr'g R.) at 1 ("A patent pool is the most cost effective and efficient way of collecting and distributing royalties for patents that are essential to an industry standard."), http://www.ftc.gov/opp/intellect/020417jamesjkulbaski.pdf [hereinafter Kulbaski Submission]; Apr. 17 Tr. at 176-77 (Beeney) ("The high cost of R&D and the increasing need in a global competitive economy to reduce development costs and reduce risks that develop initiatives that lead to marketable products has led to at least two significant developments: First, product standardization as efforts are made to avoid format wars . . . ; second, joint development of single products as multiple industry participants attempt to share the risk and costs of new product development."); *id.* at 50 (Lerner) ("[F]acilitating the standard setting process seems to be an important motivation . . . .").

[38] Grindley Presentation at 13.

[39] *See* OLIVER E. WILLIAMSON, THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING 20-21, 388 (1985).

bidding seller.[40] As a result, the total burden of all royalty payments may be higher than if a single royalty is demanded by a monopolist of all patents essential to the production of a final product.[41]

Panelists and commentators noted that patent pools can reduce transaction costs for licensees in several ways. For example, obtaining a pool license may be less costly than negotiating separate licenses with each patent owner.[42] By licensing their pooled patents on a group basis, patent pool members can offer "one-stop shopping" to firms seeking to manufacture products using those patents. According to panelists, this simplified approach to licensing can enable more rapid development and adoption of new technologies than could be achieved with cross licensing alone.[43]

Some panelists and commentators argue that pools may reduce costs by eliminating infringement litigation[44] and, by using an independent expert to determine which patents to include in the pool, reassure licensees that the patents being licensed are essential to manufacturing products that comply with the standard. Additionally, one commentator suggested that pools can institutionalize the exchange of non-patented (or non-copyrighted) technical information.[45] For these reasons, panelists noted that patent pools "have become

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[40] Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293, 1298 n.9 (1996) ("A holdout is someone who refuses to agree to a bargain for strategic reasons. For example, if a city government needs to buy five parcels of land from property owners *A*, *B*, *C*, *D*, and *E*, *E* might wait until the other four (*A-D*) have sold their land. This puts *E* in the driver's seat in bargaining with the city: *E* can now charge a very high price—in theory, up to the total amount the city has to spend on the project, minus what was paid to *A-D*—for his or her land. Since this price will often be more than the average price paid to *A-D*, and in any event more than the price *E* could have obtained if he or she were not the last to sell, such a holdout strategy will be rational in many cases. *See generally,* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral,* 85 HARV. L. REV. 1089, 1106-07 (1972).").

[41] Shapiro, *Navigating the Patent Thicket* at 121, 123-24; *see also* AUGUSTIN COURNOT, RESEARCHES INTO THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH 99-104 (1929) (noting that this problem is generally known as the "double margin problem"); Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347, 347-52 (1950).

[42] Grindley Presentation at 10; *see also* Feb. 28 Tr. at 733 (Barr) (stating that pools limit problems posed by stacking royalties by consolidating administration); JEANNE CLARK, JOE PICCOLO, BRIAN STANTON & KARIN TYSON, U.S. PATENT & TRADEMARK OFFICE, PATENT POOLS: A SOLUTION TO THE PROBLEM OF ACCESS IN BIOTECHNOLOGY PATENTS? (2000) (asserting that reducing transaction costs is particularly important for biotechnology firms), *available at* http://www.uspto.gov/web/offices/pac/dapp/opla/patentpool.pdf [hereinafter CLARK ET AL., BIOTECH PATENT POOLS]; Kulbaski Submission at 7 (suggesting that the transaction costs for companies seeking to license seventy-five patents from fourteen licensors could rival the cost of patent litigation); Merges, *The Case of Patent Pools* at 134 (article), 17 (Internet).

[43] Kulbaski Submission at 6-7; Merges, *The Case of Patent Pools* at 144 (article), 25 (Internet) (stating that one stop licensing for non-member licenses is an important pool feature); *see also* Baryn S. Futa, *Statement* (Apr. 17, 2002 Hr'g R.) at 1 ("[A]s a convenience to users who would like to acquire patent rights from multiple parties in a single transaction, MPEG LA offers a one-stop license."), http://www.ftc.gov/opp/intellect/020417barynfuta.pdf [hereinafter Futa Submission].

[44] Kulbaski Submission at 7; Carlson, 16 YALE J. ON REG. at 379 (stating that patent pools arising from litigation settlements can reduce litigation costs); *see also* Merges, *The Case of Patent Pools* at 136-37 (article), 19 (Internet) (asserting that a chief function of the aircraft pool was to "eliminate ruinous litigation").

[45] Merges, *The Case of Patent Pools* at 139 (article), 22 (Internet).

critically important mechanisms for enabling widespread use of new technologies."[46]

B. Competitive Concerns

The panelists generally noted that pools composed of pure substitute patents, (i.e., patents covering technologies that compete with each other and that licensees can choose among), are more likely to harm social welfare than are pools of complementary patents, (i.e., patents covering separate aspects of a given technology that do not compete with each other). Pools composed only of complementary patents tend to increase efficiencies and lower prices to consumers. The panelists addressed other areas that might raise competitive concern, including whether patents included in the pool were essential and valid, whether patent pool members retained the ability to license their patents outside of the pool, whether grantback[47] requirements reduce incentives to innovate, whether access to competitively sensitive, proprietary business information should be limited, whether the Agencies should review pool royalty rates, and whether pools that refuse to offer licenses to subsets of the pool's patents cause competitive harm. The panelists also discussed several mechanisms that could lower the risk of competitive concerns.[48] The following sections review the Agencies' guidance regarding patent pools and analyze panelists' comments on specific issues of competitive concern.

C. Existing Agency Guidance on Patent Pools

In recent years, the Agencies have provided substantial guidance regarding the antitrust analysis used to evaluate the potential harms associated with patent pools and, to a lesser extent, cross-licensing agreements.[49] As explained in

[46] Feb. 28 Tr. at 700 (Fox); *see also* Fromm Submission at 1; Sung Submission at 4-6 (discussing the benefits of patent pooling for biotechnology research and development); Futa Submission at 2.

[47] *See* definition of grantback *infra* Part III.D.3.a.

[48] *See infra* Part III.C.3-6.

[49] In addition, courts have reviewed antitrust claims lodged against numerous pooling and cross-licensing agreements over the past century. *See, e.g.*, *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1 (1979) (copyright pooling arrangement); *United States v. Singer Mfg. Co.*, 374 U.S. 174 (1963); *United States v. New Wrinkle, Inc.*, 342 U.S. 371 (1952); *United States v. Line Material Co.*, 333 U.S. 287 (1948); *United States v. U.S. Gypsum Co.*, 333 U.S. 364 (1948); *Hartford-Empire Co. v. United States*, 323 U.S. 386 (1945); *Standard Oil Co. v. United States*, 283 U.S. 163 (1931); *Standard Sanitary Mfg. Co. v. United States*, 226 U.S. 20 (1912); *Bement v. Nat'l Harrow Co.*, 186 U.S. 70 (1902); *Carpet Seaming Tape Licensing Corp. v. Best Seam Inc.*, 616 F.2d 1133 (9th Cir. 1980); *Kobe, Inc. v. Dempsey Pump Co.*, 198 F.2d 416 (10th Cir. 1952); *Baker-Cammack Hosiery Mills, Inc. v. Davis Co.*, 181 F.2d 550 (4th Cir. 1950); *Cutter Labs., Inc. v. Lyophile-Cryochem Corp.*, 179 F.2d 80 (9th Cir. 1949); *King v. Anthony Pools, Inc.*, 202 F. Supp. 426 (S.D. Cal. 1962). The economic and legal analyses articulated in these older cases are often less sophisticated than contemporary antitrust doctrine developed and applied by the Agencies in other fields. For example, few earlier opinions give significant weight to the relationships among the patents in the pool, whereas modern economic analysis of patent pools examines whether the patent rights in the pool are complements or substitutes for one another. Also the courts' terminology is inconsistent. Courts often have applied the term "patent pools" to arrangements that the Agencies would now describe as portfolio cross licenses because these "pools" did not license to third parties. *See, e.g.*, *Hartford-Empire Co.*, 323 U.S. at 392, 413 (describing licensing agreements where defendants created a multi-firm portfolio of patents and licensed them only to each other, not to third parties, as a "patent pool"); *see also Line Material Co.*, 333 U.S. at 313 n.24 ("The words 'patent pool' are not words of

the Antitrust-IP Guidelines, the Agencies have two primary concerns when analyzing the likely effects on competition of a potential or actual patent pool. First, horizontal coordination among the pool's licensors could lead to a reduction in price competition among downstream products. In particular, a pool that includes patents for substitute technologies could lead to increased prices in the final goods market due to the absence of competition among those substitute technologies.[50] In addition, participants in the pool might be able to use it to collude, for example, by exchanging competitively sensitive information, such as pricing, marketing, or R&D information through the mechanism of the pool.

Second, the Agencies are concerned that combining patent rights in a pool could discourage R&D, new product development, and cost-reducing process innovations. Licensors could be discouraged from making investments in innovation if "a pooling arrangement . . . requires members to grant licenses to each other at minimal cost . . . 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."[51] Licensees could be discouraged from innovating if the licensors do not retain the right to license their patents independently or if licensees are not adequately rewarded for innovations that they grant back to the pool.[52]

The Agencies have supplemented the pooling analysis found in the Antitrust-IP Guidelines in several business review letters issued by the Department of Justice[53] and in the FTC's enforcement action against the patent pool formed by Summit Technology, Inc. and VISX, Inc. ("*Summit-VISX*").[54]

art. The expression is used in this opinion to convey the idea of a linking of the right to use patents issued to more than one patentee."). In recent years, only a few courts have reviewed antitrust claims involving portfolio cross-licensing and patent-pooling agreements. *See, e.g.*, *Matsushita Elec. Indus. Co. v. Cinram Int'l, Inc.*, 299 F. Supp. 2d 370 (D. Del. 2004) (granting summary judgment on antitrust counterclaims involving a six-company digital video disc pool and holding pool participants provided realistic opportunity for individual licensing of patents).

[50] *See* ANTITRUST-IP GUIDELINES § 5.5. The Guidelines state that patent pools have the greatest potential to unreasonably limit competition among entities that would have been actual or likely potential competitors in a relevant market in the absence of the license. *Id.* §§ 3.1, 4.1, 5.1, 5.5. According to the Antitrust-IP Guidelines, vertical license restrictions may harm horizontal competition if they foreclose access to, or significantly raise the price of, an important input, or if they facilitate coordination to increase price or reduce output among competitors. *Id.* §§ 4.1, 5.3, 5.4.

[51] ANTITRUST-IP GUIDELINES § 5.5.

[52] *Id.* The guidelines also note, however, that such pooling arrangements can have procompetitive benefits, especially if they do not include a large fraction of the potential research and development in an innovation market. *Id.*

[53] *See infra* Part III.C.1.

[54] Decision and Order, *In re Summit Tech., Inc.*, 127 F.T.C. 208, 217 (1999) (No. 9286), *available at* http://www.ftc.gov/os/decisions/docs/Volume127.pdf [hereinafter *Summit* Consent Decree]; Decision and Order, *In re VISX, Inc.*, 127 F.T.C. 236 (1999) (No. 9286), *available at* http://www.ftc.gov/os/decisions/docs/Volume127.pdf [hereinafter *VISX* Consent Decree]; Complaint, *Summit*, 127 F.T.C. at 208 (No. 9286) [hereinafter FTC *Summit-VISX* Complaint].

1. U.S. Department of Justice Business Review Letters

The Department analyzed patent pool proposals in three business review letters issued in the late 1990s: the MPEG-2 pool Business Review Letter,[55] the three-member DVD pool ("3C DVD") Business Review Letter,[56] and the six-member DVD pool ("6C DVD") Business Review Letter.[57] In its 2002 3G Business Review Letter, the Department analyzed a patent platform arrangement that involved five separate wireless communication technologies and shared some characteristics of a patent-pooling agreement.[58]

a. The MPEG-2 Pool

MPEG-2 is a digital video compression technology used in many different products and services, including DVDs and telecommunications, as well as cable, satellite, and broadcast television.[59] When making products that meet the MPEG-2 standard, a company could infringe on the patent rights of many different rights holders. As a result, firms interested in adopting the MPEG-2 standard hired an independent patent expert to search for the patents that were "essential" to its implementation.[60] Nine companies[61] that held twenty-seven essential patents among them,[62] along with one other company,[63] formed MPEG LA, which acts as the pool's licensing administrator.[64] MPEG LA retains an independent technical expert to determine whether other patents are essential to the MPEG-2 standard.[65] MPEG LA assembles and offers a package of hardware and software licenses to the pool members' patents that are "essential" to comply with the MPEG-2

[55] Letter from Joel I. Klein, Acting Assistant Attorney Gen., U.S. Dep't of Justice, to G[a]rrard R. Beeney, Esq. (June 26, 1997), *available at* http://www.usdoj.gov/atr/public/busreview/215742.pdf [hereinafter MPEG-2 Business Review Letter].

[56] Letter from Joel I. Klein, Assistant Attorney Gen., U.S. Dep't of Justice, to Garrard R. Beeney, Esq. (Dec. 16, 1998), *available at* http://www.usdoj.gov/atr/public/busreview/2121.pdf [hereinafter 3C DVD Business Review Letter]. The original name for this technology was "Digital Video Disc;" however, the word "video" was exchanged for "versatile" due to an expansion of applications for the technology. *See* DVD Forum, DVD Primer, http://www.dvdforum.org/faq-dvdprimer.htm (last visited Apr. 11, 2007).

[57] Letter from Joel I. Klein, Assistant Attorney Gen., U.S. Dep't of Justice, to Carey R. Ramos, Esq. (June 10, 1999), *available at* http://www.usdoj.gov/atr/public/busreview/2485.pdf [hereinafter 6C DVD Business Review Letter].

[58] Letter from Charles A. James, Assistant Attorney Gen., U.S. Dep't of Justice, to Ky P. Ewing, Esq. (Nov. 12, 2002), *available at* http://www.usdoj.gov/atr/public/ busreview/200455.pdf [hereinafter 3G Business Review Letter].

[59] MPEG-2 Business Review Letter at 2.

[60] *Id.* at 3-5.

[61] *Id.* at 1, 3 (noting that original pool members were Trustees of Columbia University, Fujitsu Ltd., General Instrument Corp., Lucent Technologies Inc., Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corp., Philips Electronics N.V., Scientific-Atlanta, Inc., and Sony Corp.).

[62] *Id.* at 3. As of April 2002, the MPEG-2 pool included 425 patents (100 patent families) owned by twenty-one entities. Futa Submission at 2. As of January 10, 2006, the MPEG-2 pool had grown and included over 800 patents. *See* MPEG LA, MPEG-2 Attachment 1, http://www.mpegla.com/m2/m2-att1.pdf (last visited Apr. 11, 2007).

[63] MPEG-2 Business Review Letter at 3 (Cable Television Laboratories, Inc.).

[64] *Id.* at 3-4.

[65] *Id.* at 5; *see also infra* Part III.D.1 (discussing essentiality as a method for excluding substitute patents).

standard, and distributes royalty income among the contributing patent holders on a per-patent basis.[66] Pool members and third parties can challenge the "essentiality" of patents in the pool, i.e., whether access to the patents in the pool is indeed necessary to manufacture products in compliance with the standard.[67] The pool license agreement also requires every licensee to grant back licenses to the pool's members on all MPEG-2-related patents the licensee may have or develop.[68]

b. The DVD Pools

The Department issued two business review letters concerning patent-pooling arrangements related to DVD-Video and DVD-ROM standards. The Department issued the first of these, the 3C DVD Business Review Letter, on December 16, 1998. The 3C DVD pool was created by three firms licensing a total of 210 patents.[69] In lieu of an independent administrator, one of the licensors, Philips, acts as the joint licensor on behalf of the other pool members through bilateral agreements with the rights holders.[70] Pool members grant licenses to essential patents (defined as "necessary (as a practical matter) for compliance with the DVD[-Video or DVD-ROM] Standard Specifications") to the pool on a nonexclusive basis.[71] The essentiality of the patents is determined by a patent expert retained by the licensors.[72] Royalties are distributed on a negotiated basis that is not contingent on the number of patents contributed to the pool.[73]

The Department issued the second of these letters, the 6C DVD Business Review Letter, on June 10, 1999. The 6C DVD pool was formed by six firms.[74] Toshiba acts as the joint licensor for the pool through a multilateral agreement with the other five firms.[75] The parties grant to the pool, on a nonexclusive basis, licenses to essential patents (defined as patents that are "necessarily infringed" or for which "there is no realistic alternative" for "implementing the DVD Standard Specifications.").[76] Members of this pool are obliged to offer licenses independently of the pool.[77] Whether a patent is "essential" to the standard is determined by an expert retained by the

[66] MPEG-2 Business Review Letter at 3-4, 6.

[67] *Id.* at 5.

[68] *Id.* at 7.

[69] 3C DVD Business Review Letter at 1-4 (pool formed by Koninklijke Philips Electronics, N.V., Sony Corp. of Japan, and Pioneer Electronic Corp. of Japan).

[70] *Id.* at 4-5.

[71] *Id.* at 3, 4-5 (internal quotation marks omitted); *see also infra* Part III.D.1 (discussing essentiality as a method for excluding substitute patents).

[72] 3C DVD Business Review Letter at 3-4, 9-10.

[73] *Id.* at 5-6.

[74] 6C DVD Business Review Letter at 1 (original pool members were Hitachi, Ltd., Matsushita Electric Industrial Co., Mitsubishi Electric Corp., Time Warner Inc., Toshiba Corp., and Victor Company of Japan, Ltd.); *see also* Christopher J. Kelly, *Patent Pools and Antitrust Enforcement – 1997-2001* (Apr. 17, 2002 Hr'g R.) (slides) at 11, http://www.ftc.gov/opp/intellect/020417christopherjkelly.pdf [hereinafter Kelly Presentation].

[75] 6C DVD Business Review Letter at 2-3.

[76] *Id.* at 3 (internal quotation marks omitted); *see also infra* Part III.D.1 (discussing essentiality as a method for excluding substitute patents).

[77] 6C DVD Business Review Letter at 3.

pool.[78] The licensing program also provides for a quadrennial review by the patent expert as to whether the pool's patents remain essential to practicing the standard. It further provides for interim review of individual patents if their essentiality is questioned.[79] Royalties are allocated on a per-patent basis, with some adjustments for the age of the patent.[80]

Both DVD pools require licensees to grant back to the licensors, as well as to the other pool licensees, licenses on any essential DVD patents that they may own or control during the term of the license, on reasonable and nondiscriminatory terms.[81]

c. The 3G "Patent Platform" Licensing Program

The Third-Generation Mobile Communication System ("3G") is a digital wireless communication technology. At the time the Department issued the 3G Business Review Letter, there were five different 3G technologies[82] rather than a single standard, which was the case in the patent pools discussed above. As many as forty-five companies claimed ownership of patents essential to at least one of the 3G technologies.[83] A nineteen-company partnership formed a licensing arrangement dubbed a "patent platform," which proposed creating five separate and independent licensing "platform companies," one for each 3G technology, with a separate licensing administrator and board of directors for each.[84] The platform companies make licensing and royalty decisions independently, but coordinate through a single management company for functions such as promoting the 3G platform concept and evaluating patents in order to exclude those that are not essential to any relevant 3G technology.[85]

Each 3G platform company shares many features with patent pools. The platform companies, however, do not aggregate the essential patents relevant to a particular 3G technology into a single license. Instead, each patent is licensed individually. A licensee may choose to use "a default Standard License" established by the relevant platform company "separately with each essential patent licensor." Or a licensee may choose to use "an Interim License, on terms similar to the Standard License, while negotiating terms bilaterally with the essential patent licensor for a final license that may vary from the Standard License."[86] The platform arrangements are "structured to take into account substitutability between 3G technologies by creating an independent PlatformCo to handle all licensing matters, including [the] setting of actual royalty rates, with respect to each individual 3G technology."[87] Over time, each platform

[78] *Id.* at 3-4.

[79] *Id.* at 4-5.

[80] *Id.* at 6-7 & n.33.

[81] 3C DVD Business Review Letter at 6; 6C DVD Business Review Letter at 8.

[82] 3G Business Review Letter at 2.

[83] *Id.* at 3.

[84] *Id.* at 4.

[85] *Id.* at 5.

[86] *Id.* at 7.

[87] *Id.* at 10; 3G Business Review Letter at 1 n.2 ("PlatformCo is the generic name for several entities

company may modify the license terms for the technology it is administering and each platform company "independently determine[s] the key values used to calculate royalties."[88]

d. The Department's Review

The Department concluded that each of these patent-pooling proposals were likely to create substantial integrative efficiencies by reducing the time and expense of disseminating the patents to interested licensees, clearing blocking positions, and integrating complementary technologies. The Department expected the 3G platform proposal to deliver somewhat fewer licensing efficiencies because the patent rights would not be integrated into a single bundle.[89] To address the Department's concern that the pooling arrangement could reduce horizontal price competition between licensors, which could result in an increase in prices of products that used the licensed patents or in a decrease in price competition between downstream market participants,[90] each entity engaged an independent expert to review the patents and exclude substitute technologies from the licensing arrangement by admitting to the pool only those complementary patents essential to manufacture products complying with the standard.[91] The proponents sought to ensure that the licensing agent did not have access to competitively sensitive proprietary information, such as cost data, and included provisions that prevented such information from being shared with any of the licensors or licensees.[92]

The Department relied on several factors to assess whether the pools were likely to harm innovation.[93] The first was the statutory presumption that issued patents are valid,[94] a presumption reinforced by the mechanisms created by the pool and platform proponents to exclude invalid patents from the licensing arrangements.[95] The Department also relied upon the proponents' representations that the licensors would

that would be established with licensing-related responsibilities for essential patents concerning specific 3G technologies, while ManCo is an entity that would be established to oversee certain defined common functions related to 3G patents such as evaluation of essentiality.").

[88] *Id.* at 10.

[89] *See id.* at 11.

[90] MPEG-2 Business Review Letter at 11; 3C DVD Business Review Letter at 9; 6C DVD Business Review Letter at 10; 3G Business Review Letter at 9.

[91] MPEG-2 Business Review Letter at 10-11; 3C DVD Business Review Letter at 10-13; 6C DVD Business Review Letter at 12-13; 3G Business Review Letter at 10. The distinction between complementary and substitutable goods arises from a perspective of consumer demand. More generally, A and B are economic complements if the demand for A rises as the price of B falls. A and B are economic substitutes if the demand for A rises as the price of B rises. HAL R. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 110 (4th ed. 1992); *see also* Morse Submission at 3; Roger B. Andewelt, *Analysis of Patent Pools Under the Antitrust Laws*, 53 ANTITRUST L.J. 611, 612-14 (1985).

[92] MPEG-2 Business Review Letter at 12; 3C DVD Business Review Letter at 13; 6C DVD Business Review Letter at 14; 3G Business Review Letter at 13.

[93] MPEG-2 Business Review Letter at 9, 11; 3C DVD Business Review Letter at 9; 6C DVD Business Review Letter at 10; 3G Business Review Letter at 9.

[94] 35 U.S.C. § 282 (2000) ("A patent shall be presumed valid.").

[95] MPEG-2 Business Review Letter at 9 & n.40; 3C DVD Business Review Letter at 9; 6C DVD Business Review Letter at 10-11; 3G Business Review Letter at 9.

retain the right to license their patents individually,[96] the scope of grantback clauses would be limited,[97] the license agreement would be available to all interested licensees,[98] and the pool would provide a clear understanding of the contents of the license.[99]

Following extensive review of the potential efficiencies and competitive harms, as well as the safeguards implemented by the proponents to guard against these harms, the Department issued a business review letter in each case stating that, based on the information provided, "the Department is not presently inclined to initiate antitrust enforcement action against the conduct you have described."[100]

The Department's analyses of the anticipated competitive effects of these pools and the 3G Patent Platform pursuant to its business review procedure may differ from decisions made in the context of enforcement investigations.[101] Business review letters inform parties of the Department's enforcement intentions based largely on the parties' description of the relevant facts before the proposed activity has commenced. Parties desiring a favorable business review often incorporate mechanisms designed to eliminate or minimize the risk of anticompetitive effects, in order to give the Department sufficient confidence in its assessment of the likely competitive effects of the proposed activity to permit the issuance of a favorable letter.[102] Investigations of conduct, by contrast, typically address whether a party is violating, or has violated, the antitrust laws. In an enforcement investigation examining a patent pool currently in effect, failure to incorporate all the safeguards set forth in the pooling business review letters will not automatically lead to the conclusion that a pool is anticompetitive. Rather, the Agencies will evaluate the particular facts and circumstances to determine whether

[96] MPEG-2 Business Review Letter at 12; 3C DVD Business Review Letter at 13-14; 3G Business Review Letter at 12; *see also* 6C DVD Business Review Letter at 14 n.66.

[97] MPEG-2 Business Review Letter at 13-14; 3C DVD Business Review Letter at 14; 6C DVD Business Review Letter at 14-16; 3G Business Review Letter at 12.

[98] MPEG-2 Business Review Letter at 11; 3C DVD Business Review Letter at 13-14; 6C DVD Business Review Letter at 15-16.

[99] MPEG-2 Business Review Letter at 12; 3C DVD Business Review Letter at 15; 3G Business Review Letter at 13.

[100] MPEG-2 Business Review Letter at 17; 3C DVD Business Review Letter at 15; 6C DVD Business Review Letter at 16; 3G Business Review Letter at 13. The Department's response to a business review request will almost always fall into one of three categories: (1) the Department does not presently intend to challenge the proposed conduct, (2) the Department "declines to state its enforcement intentions," or (3) the Department finds that it "cannot state that it would not challenge the proposed conduct if it is implemented." In the second case, the Department might or might not challenge the conduct if implemented. In the third case, such a challenge is probable. U.S. DEP'T OF JUSTICE, ANTITRUST DIVISION MANUAL ch. 3, pt. H.1.g. (3d ed. 1998, rev. 2002), *available at* http://www.usdoj.gov/atr/foia/divisionmanual/three.htm.

[101] *See* Antitrust Division Business Review Procedure, 28 C.F.R. § 50.6 (2002). The FTC's advisory opinion procedure is similarly differentiated from its enforcement investigations. *See* 16 C.F.R. §§ 1.1-1.4 (2003) (FTC advisory opinion procedure).

[102] Fromm Submission at 2 ("The MPEG LA and DVD letters delineate basic rules that can minimize antitrust risk and that are now widely employed."); Morse Submission at 7 ("[The Department's pooling business review letters] set forth a road map of practices that should minimize antitrust risk.").

the actual conduct has an anticompetitive effect.

2. The Summit-VISX Pool

In 1998, the FTC challenged a pool formed by Summit Technology, Inc. and VISX, Inc. that contained patents relating to the manufacture and use of lasers employed in performing photo-refractive keratectomy ("PRK"), which is a form of vision-correcting eye surgery.[103] At the time, Summit and VISX were the only firms whose laser equipment had received marketing approval from the U.S. Food and Drug Administration for performing PRK.[104] Through the pool, Summit and VISX relinquished the right to license their patents unilaterally, but each received the right to prohibit the pool from licensing any third party. The pool issued no third-party licenses over its six year existence.[105] In addition, the pool agreement required each company to pay a $250 fee for each PRK procedure performed with its laser equipment. That fee functioned as a price floor for the "per-procedure fee" that each company charged ophthalmologists using its equipment. As a result, Summit and VISX both charged doctors $250 for each PRK procedure they performed.[106]

The FTC alleged that the pool eliminated competition between Summit and VISX in the sale or leasing of PRK equipment, and in the licensing of technology related to PRK.[107] The parties contended that the pool reduced the uncertainty and expense of patent litigation because it included potentially blocking patents.[108] The FTC rejected the argument that the parties' patent portfolios justified the pool's complete elimination of price competition. As the Analysis to Aid Public Comment explained, "Summit and VISX could have achieved these efficiencies by any number of significantly less restrictive means, including simple licenses or cross-licenses that did not dictate prices to users or restrict entry."[109]

The Complaint further alleged that patent infringement would not have precluded either firm from coming to market, in part because VISX had procured a key patent through fraud on the U.S. Patent and Trademark Office ("PTO"), rendering it unenforceable.[110]

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[103] FTC *Summit-VISX* Complaint paras. 8, 25-30.

[104] *Id.* para. 6.

[105] *Id.* paras. 9-10; Analysis of Proposed Consent Order to Aid Public Comment para. 8, *In re Summit Tech., Inc.*, No. 9286 (F.T.C. Aug. 21, 1998), *available at* http://www.ftc.gov/os/1998/08/d09286ana.htm [hereinafter *Summit-VISX* Analysis].

[106] FTC *Summit-VISX* Complaint paras. 11-12.

[107] *Id.* paras. 8, 25-30.

[108] *Summit-VISX* Analysis para. 10.

[109] *Id.*; *see also* ANTITRUST-IP GUIDELINES § 4.2 ("The existence of practical and significantly less restrictive alternatives is relevant to a determination of whether a restraint is reasonably necessary. If it is clear that the parties could have achieved similar efficiencies by means that are significantly less restrictive, then the Agencies will not give weight to the parties' efficiency claim. In making this assessment, however, the Agencies will not engage in a search for a theoretically least restrictive alternative that is not realistic in the practical prospective business situation faced by the parties.").

[110] *See* FTC *Summit-VISX* Complaint paras. 14-21, 29-30. In economic terms, a patent blocks "another when the second cannot be practiced without using the first;" the patent can neither be substituted for nor, as a practical matter, invented around. ANTITRUST-IP GUIDELINES § 2.3; *see also* Ian Simmons, Patrick Lynch & Theodore H. Frank, *"I Know It When I See It":*

The FTC's allegations concerning the pool were settled through consent orders that dissolved the agreement.[111]

D. Specific Issues of Competitive Concern

1. Substitutes Within a Patent Pool

a. Competitive Concerns

The panelists generally agreed that pools composed of pure substitute patents are more likely to harm social welfare than are pools of complementary patents, which tend to increase efficiencies and lower prices to consumers. As one panelist stated, "[b]y combining substitute patents, a pool can be used as a price-fixing mechanism, ultimately raising the price of products and services that utilize the pooled patents"[112] and thus harming competition and consumers.

Panelists noted, however, that categorizing patents as complements or substitutes is not a simple task. In many cases, patents in a pool are not pure complements or pure substitutes, but display characteristics of both. As one panelist explained, "as much as we long to categorize intellectual property neatly in the conceptually distinct categories of competing, complementary, [and] blocking, patents[,] like facts[,] are stubborn things that frequently defy such convenient classifications. They may straddle one or more classifications."[113]

The panelists also discussed various tests for determining whether a patent is essential to a standard or technology. They noted that each of the pools that received a business review letter from the Department used a slightly

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Defining and Demonstrating "Blocking Patents," ANTITRUST, Summer 2002, at 48, 49 ("A patent is blocking if circumventing it (1) is not commercially practicable, or (2) will not produce a commercially viable product.") [hereinafter Simmons et al., *Blocking Patents*].

[111] *VISX* Consent Decree at pt. II; *Summit* Consent Decree at pt. II. The Consent Decrees also required each company to license to each other, on a royalty-free and nonexclusive basis, the patents each firm contributed to the patent pool. According to the Analysis to Aid Public Comment, although the Complaint contended that VISX and Summit could have competed absent the pool, subsequent sunk-cost investments in reliance on the pool made a cross license desirable in order to approximate the competitive conditions that would have been achieved had the pool not been formed. *Summit-VISX* Analysis para.7. The FTC's litigation continued against VISX on allegations that it had procured a key patent through fraud on the PTO. After the PTO issued a Reexamination Certificate concerning the disputed patent, the Commission dismissed the complaint on this issue. *See* Order Reopening the Record and Dismissing the Complaint, *In re VISX, Inc.*, No. 9286 (F.T.C. Feb. 7, 2001), *available at* http://www.ftc.gov/os/2001/02/summitvisxorder.htm.

[112] Morse Submission at 7; *see also* CLARK ET AL., BIOTECH PATENT POOLS at 10-11 (stating that concerns about a patent pool expanding monopoly pricing can be addressed by carefully evaluating whether the patents are truly "blocking" as outlined in the Antitrust-IP Guidelines); Josh Lerner, *Patent Pools: Some Policy Considerations* (Apr. 17, 2002 Hr'g R.) (slides) at 9 (asserting that pools containing direct or perfect substitutes harm social welfare), http://www.ftc.gov/opp/intellect/020417joshlerner.pdf [hereinafter Lerner Presentation]; Garrard R. Beeney, *Pro-competitive Aspects of Intellectual Property Pools: A Proposal for Safe Harbor Provisions* (Apr. 17, 2002 Hr'g R.) at 5, http://www.ftc.gov/opp/intellect/020417garrardrbeeney.pdf [hereinafter Beeney Submission]; Shapiro, *Navigating the Patent Thicket* at 134 ("[I]nclusion of truly *complementary* patents in a patent pool is desirable and procompetitive, but assembly of *substitute* or rival patents in a pool can eliminate competition and lead to elevated license fees.").

[113] Apr. 17 Tr. at 107-08 (Newberg); *see also id.* at 38-39 (Lerner).

different test for essentiality. In one panelist's view, the DVD pools' "economic test" is more efficient than the MPEG-2 pool's "technically essential test" for licensees and, therefore, should be preferred by antitrust enforcers.[114] Another panelist stated that either definition is acceptable and that few competitive issues would arise so long as each definition was faithfully applied.[115] A third panelist noted that the practical implementation of the different definitions of essentiality is "pretty much the same."[116] Using the criteria that a patent must contain a claim essential to implementing the standard was described by some panelists as an effective means of assuring that the patents included are not substitutes.[117] In one panelist's view, where no standard has been set, it should be sufficient to define a clear and limited field of use for a pool's license in order to determine whether the included patents are complements or substitutes and to "assess the competitive impact of a pool . . . on . . . innovation and downstream product markets."[118]

A number of panelists discussed whether, and under what circumstances, substitute patents should be allowed in a patent pool. One panelist urged the inclusion of multiple substitute technologies into pools when licensees using the pool's patents must also infringe one of the substitute technologies in order to produce or create a downstream product that complies with the standard. Including this limited class of substitutes, he argued, would decrease transaction costs and increase the pool's efficiency.[119] That might be the case, he suggested, when the manufacturing steps, calculations, or processes that produce a defined product could be accomplished in more than one way.[120]

The same panelist asserted that barring the substitute patents that cover these functions required licensees to both acquire a license from the patent pool and negotiate a license from one of the patent holders of the competing technologies, which increases transaction costs.[121] Instead, this panelist suggested that all competing options be allowed into the pool and licensees could select which method to use under the pool license.[122] To retain choice among the competing technologies, the pool's members could require that the portion of the license royalty attributable to the competing process be distributed proportionate to actual use by the licensees, he said.[123]

This panelist suggested as an alternative, albeit a less desirable one, that

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[114] David McGowan, *Enforcement Issues Regarding Pooling and Cross-Licensing* (Apr. 17, 2002 Hr'g R.) at 4, http://www.ftc.gov/opp/intellect/020417davidmcgowan.pdf [hereinafter McGowan Submission].

[115] Beeney Submission at 8.

[116] Apr. 17 Tr. at 210-11 (Kulbaski).

[117] *Id.* at 160-61 (Kelly).

[118] Beeney Submission at 5; *see also* Apr. 17 Tr. at 232-33 (Beeney).

[119] Apr. 17 Tr. at 181-85 (Beeney); Beeney Submission at 5-7.

[120] Apr. 17 Tr. at 181 (Beeney); Beeney Submission at 6.

[121] Apr. 17 Tr. at 183 (Beeney); Beeney Submission at 6.

[122] Apr. 17 Tr. at 184 (Beeney); Beeney Submission at 7.

[123] Apr. 17 Tr. at 185 (Beeney); Beeney Submission at 7.

the pool's members select one of the competing technologies for inclusion in the pool, provided the process of selection does not disproportionately reward one patent holder, exclude the others from the market, or limit licensees' choice of which method to employ.[124]

Panelists' reactions to these proposals were mixed. One panelist stated that including only one of several substitute patents in a pool "risks foreclosing markets to competing patents outside the pool" because a licensee would not purchase both a pool license and a license for a substitute patent, even if that substitute were a superior technology.[125] One economist on the panel asserted that pools containing patents that inhabit the middle ground of impure complements and substitutes can be welfare-enhancing,[126] while another panelist stated that, although including partial substitutes in the pool "may increase transactions efficiency, [it could] increase [both] administration costs and antitrust concerns."[127]

b. Analysis

The Antitrust-IP Guidelines state that "combin[ing] complementary factors of production . . . is generally procompetitive."[128] Analyzing the competitive effects of a patent pool depends in substantial part on the characterization of the patents within the pool. Accordingly, the Department's favorable business reviews of pools have relied heavily on assurances from the parties that the pools contain only complementary patents, stating that "a combination of complementary intellectual property rights, especially ones that block the application for which they are jointly licensed, can be an efficient and procompetitive method of disseminating those rights to would-be users."[129] Similarly, the FTC's *Summit-VISX* Complaint challenged the combining of patents in a pool that were alleged to cover substitute technologies.[130]

[124] Apr. 17 Tr. at 184 (Beeney); Beeney Submission at 6-7.

[125] Morse Submission at 8; *see also* Michael R. Franzinger, *Latent Dangers in a Patent Pool: The European Commission's Approval of the 3G Wireless Technology Licensing Agreements*, 91 CAL. L. REV. 1693, 1723 (2003) (recommending that 3G licensing agreements include a clause requiring removal of an essential patent if a patented improvement is devised so the improvement and the formerly essential patent can compete for the license fees); *cf.* Regis C. Worley, *The MPEG LA Patent Pool: A Rule of Reason Analysis and Suggestion to Improve Procompetitiveness*, 24 T. JEFFERSON L. REV. 299, 316 (2002) (arguing that the most procompetitive outcome is to substitute a new improvement patent for the original essential patent).

[126] Apr. 17 Tr. at 38-39 (Lerner); Lerner Presentation at 9; *see also* Merges, *The Case of Patent Pools* at 164 (article), 49 (Internet) ("[S]trict complementarity, based on industry standards, should not be deemed essential to future pools.").

[127] Grindley Presentation at 12.

[128] ANTITRUST-IP GUIDELINES § 2.0.

[129] MPEG-2 Business Review Letter at 9; *see also* 3C DVD Business Review Letter at 8-9; 6C DVD Business Review Letter at 11. One panelist critiqued the Department's terminology, arguing that review should focus on patent claims, not whole patents. Apr. 17 Tr. at 215 (Fromm). Although review of the patents does indeed examine the independent claims within the patent, once such a claim is deemed complementary it is not separated from the rest of the patent so the entire patent is placed within the pool. *Id.* at 218-19 (Kulbaski) ("[T]he evaluator looks at one independent claim and usually picks the broadest claim . . . . And if that claim is found to be essential, then I believe the letter issued by the evaluator says that this patent is then essential to the standard . . . .").

[130] FTC *Summit-VISX* Complaint paras. 14-21, 29-30.

In short, a pool containing complementary patents, i.e., patents covering technologies that perform different functions but are used collectively to produce the licensed product, may have the pro-competitive effect of lowering the total royalty rate to licensees, thereby lowering the final product cost to consumers.[131] As noted in the DOJ business review letters and in the FTC's *VISX* case, a pool containing substitutable patents, i.e., patents covering technologies that compete with each other and that licensee producers would choose between, may have the anticompetitive effect of increasing the total royalty rate to licensees.[132] Thus, an important part of the analysis of a patent pool is whether, and to what extent, licensees use the patents in the pool as complements or as substitutes.[133]

(i) Determining Which Patents May "Swim" in the Pool

The enforcement conclusions of both Agencies depend heavily on the particular facts of each pooling proposal or existing pool. The Agencies continue to believe that pools consisting only of complementary patents are least likely to prove anticompetitive. One way to approach the issue of excluding substitute patents from a pool is to determine whether a patent is essential for purposes of complying with a particular standard.[134] The pooling proposals approved by the Department have each defined the term "essential" to the standard in a slightly different manner. The MPEG-2 pool limits essential patents to those that are "technically essential" to produce a product pursuant to the standard's specifications, whereas the DVD pools also include patents that are practically (or economically) essential.[135] Although there is a slightly greater degree of subjectivity in the criterion used by the DVD pools than in the criterion used by the MPEG-2 pool, both were found reasonable based on the facts presented at the time.[136] If properly determined, essentiality should guarantee that the patents in the pool are complements.[137]

The Department has stated that if several patented technologies could be used to comply with part of a standard, then including any of these technological substitutes in the pool could raise competitive concerns.[138] The Agencies

[131] *See supra* notes 14-17 and accompanying text (concerning royalty-stacking in connection with portfolio cross licenses).

[132] *See* Josh Lerner & Jean Tirole, *Efficient Patent Pools*, 94 AM. ECON. REV. 691, 695-98, 706 (2004).

[133] MPEG-2 Business Review Letter at 15-16; 3C DVD Business Review Letter at 15; 6C DVD Business Review Letter at 16; 3G Business Review Letter at 13; *see also* FTC *Summit-VISX* Complaint para. 8.

[134] *See* 6C DVD Business Review Letter at 10; 3C DVD Business Review Letter at 8-9.

[135] MPEG-2 Business Review Letter at 9-10; 3C DVD Business Review Letter at 3; 6C DVD Business Review Letter at 3.

[136] *See* Apr. 17 Tr. at 168 (Kelly).

[137] Whether a patent is essential to a standard or technology also depends on when the determination is made. For example, a patent may be essential when the pool is first formed, but as a result of innovations or changes in the standard, over time that same patent may no longer be essential. The Department's review of the MPEG-2 and 6C DVD pools noted that both pools had mechanisms for reviewing essentiality at the formation of the pool and at later points in time. MPEG-2 Business Review Letter at 5; 6C DVD Business Review Letter at 3-5.

[138] 6C DVD Business Review Letter at 11-12.

acknowledge, however, that it might be reasonable to include substitute patents in a pool in certain situations. Evaluating the competitive costs and benefits of a pool containing substitute technology would depend, of course, on the facts available to the Agencies. In the context of a DVD patent pool, the Department found that "[i]nclusion in the pool of two or more [substitute] patents would risk turning the pool into a price-fixing mechanism."[139] At that time, however, the Department also noted that it would not challenge the inclusion of substitute patents in a pool without taking into account whether such inclusion creates significant efficiencies.[140] The Agencies' previous guidance should not be interpreted to exclude the possibility of including some substitute patents in the pool. The Agencies will consider the inclusion of some substitutes as one of the many factors in their rule of reason analysis of any pooling agreement.

(ii) Patent Validity

An invalid or unenforceable patent is not in a complementary relationship with other patents in the pool. The Department's positive view of patent-licensing agreements in its business review letters assumes that the licensed patents are valid. Some of the pooling proposals approved by the Department include a process to eliminate patents held to be invalid or unenforceable by a court in order to ensure that only valid patents are included in the license.[141] Such mechanisms are important because the presence of invalid patents in a pool could raise competitive concerns. For example, the Summit-VISX pooling agreement raised competitive concerns for the FTC in part because a key VISX pool patent was allegedly obtained by fraud on the PTO.[142] According to the complaint, the pooling arrangement prevented competition that otherwise would have occurred, and *inter alia*, served as a price-fixing mechanism for PRK technology.[143]

2. Exclusive and Nonexclusive Licensing

a. Competitive Concerns

According to some panelists, exclusively licensing patents to a pool can reduce innovation. As one panelist noted, "licensors and licensees [need to] be free to combine technology either to improve or compete with the pooled technology," so that products are made at lower cost over time.[144] Panelists identified both

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[139] *Id.* at 12; 3C DVD Business Review Letter at 10.

[140] 6C DVD Business Review Letter at 12 n.64.

[141] MPEG-2 Business Review Letter at 5; 6C DVD Business Review Letter at 11. Noting the possible trade-off in increased administrative costs, one panelist proposed using independent experts to evaluate the validity or enforceability of the patents in the pool as part of the admission process or to resolve disputes. David McGowan, *Enforcement Issues Regarding Pooling and Cross-Licensing* (Apr. 17, 2002 Hr'g R.) (slides) at 10, http://www.ftc.gov/opp/intellect/020417mcgowan.pdf [hereinafter McGowan Presentation]; *see also* Apr. 17 Tr. at 75-77 (McGowan). The proposed pools reviewed by the Department all engage an expert to determine essentiality but not patent validity or enforceability. MPEG-2 Business Review Letter at 5; 3C DVD Business Review Letter at 4; 6C DVD Business Review Letter at 3-4.

[142] *See supra* notes 103-11 and accompanying text.

[143] *See* FTC *Summit-VISX* Complaint paras. 14-21, 29-30.

[144] Apr. 17 Tr. at 79, 97-100 (McGowan); McGowan

licensors and licensees as sources of resistance to licensing outside the pool.[145] Panelists observed that, if the size of the pool is small, licensees will have greater opportunity and incentive to license outside the pool. According to one panelist, potential licensees will have less opportunity and incentive to seek licenses outside the pool as the number of licensors in the pool grows, because the transaction costs associated with separately acquiring the pool's patents will tend to increase.[146] Another panelist clarified that, although the amount of independent licensing may decrease as the size of the pool increases, the size of the pool would not necessarily affect the willingness of pool members to support rival standards or to join other pools.[147]

A third panelist explained that nonexclusivity "leave[s] open the possibility of some rights that are in that pool becoming part of different standards, competing standards, products that might become substitutes even if they're not now, for the pool product."[148] This panelist noted that whether a pool member has the incentive to license independently depends on whether the license will maximize profits. He explained that the decision will be based, in part, on "the expected value of the innovation on an alternative standard."[149]

b. Analysis

In the pooling proposals reviewed by the Department, each licensor proposed granting a nonexclusive license to the pool and retaining the right to license its patent outside the pool.[150] By contrast, VISX and Summit granted exclusive licenses to the pool and each company retained veto power to prevent the other company from licensing the pooled intellectual property outside the pool.[151] Exclusive licenses may be desirable, and thus potentially procompetitive if they are necessary to provide a significant incentive for the licensees to invest in complementary assets (e.g., when complementary assets

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Presentation at 12; *see also* Apr. 17 Tr. at 157 (Kelly); Beeney Submission at 14.

[145] Apr. 17 Tr. at 69, 85 (McGowan); *id.* at 86 (Lerner). One panelist asserted that some licensors are not motivated to license independently. *Id.* at 92-93 (Fromm). One court has held that patent pooling does not violate sections 1 and 2 of the Sherman Act when independent licensing is a realistic option, finding $.06 per DVD disk royalty differential between cost of the pool license and cost of multiple individual licenses meant that independent licensing was a realistic alternative because the differential was not higher than the value of relevant rights conveyed. *Matsushita*, 299 F. Supp. 2d at 377, 379.

[146] Apr. 17 Tr. at 86-87 (Lerner) ("To the extent that . . . the number of . . . licensors in the pool is small, then the propensity to license outside the pool is high. To the extent that the number of licensors in the pool is very large, large being a number, say, greater than four . . . essentially licensing from, say, five or six or ten different licensors, the probability of someone being able to invest the effort and the time . . . goes down. The opportunity in a large pool to actually do this licensing outside the pool is in fact . . . for many firms not a real opportunity. Even firms that have significant economic incentive to do so, they simply don't have the number of hours in the day before a product has to be introduced."); *id.* at 93 (Fromm) ("[T]he practical realities tend to push [licensees] towards the pool . . . because of time and cost.").

[147] *Id.* at 87-88 (Kelly).

[148] *Id.* at 84 (McGowan).

[149] *Id.* at 85 (McGowan).

[150] MPEG-2 Business Review Letter at 4; 3C DVD Business Review Letter at 5-6; 6C DVD Business Review Letter at 3, 6.

[151] FTC *Summit-VISX* Complaint para. 9.

would be subject to free-riding absent the exclusive license). Allowing independent licensing outside the pool, however, permits innovators that invent around one or more pool patents to compete with the pool.[152] Determining the competitive significance of the exclusive nature of licenses granted to the pool thus depends on the specific facts of the case.

Creating the opportunity for independent licensing does not guarantee that such a license will be granted. A pool's licensors generally are free to choose both whether to grant separate licenses and to set the royalty rates for any such licenses. A competitive concern would arise, however, if decisions on licensing outside a pool were part of a concerted attempt by the pool's licensors to hinder the ability of others (outside the pool) to offer a competitive product or process.

3. Grantbacks

a. Competitive Concerns

The Antitrust-IP Guidelines define a grantback as an agreement by which a licensee extends to the licensor the "right to use the licensee's improvements to the licensed technology."[153] According to panelists and commentators, however, licensors may define a grantback's scope more broadly to cover "inventions which relate in any way to the subject of the licensed patent,"[154] or even to cover inventions entirely unrelated to the licensed technology.[155] Some panelists noted that broadly written grantbacks can deter innovation by reducing the returns available to the follow-on innovator.[156] Of particular concern to some panelists is the scope of the rights to be granted back to the licensor and whether the innovator retains the right to license to others.[157]

b. Analysis

Grantbacks can promote competition within patent pools by enabling licensors to practice improvements that licensees make to the

[152] *See* Lerner & Tirole, 94 AM. ECON. REV. at 698-700.

[153] ANTITRUST-IP GUIDELINES § 5.6.

[154] Richard E. Donovan, *Antitrust Issues in Licensing*, *in* ADVANCED LICENSING AGREEMENTS FOR THE NEW ECONOMY 2001, at 643, 660 (2001).

[155] Morse Submission at 14; Nov. 6 Tr. at 117-18 (McFalls) ("[A] grantback is . . . a licensing provision in which a licensee agrees to license back . . . some IP which may or may not be related to the initial IP licensed, for some period of time, in some or all parts of the world.").

[156] Beeney Submission at 11-12 (suggesting the breadth of grantbacks should be negotiable depending on the intellectual property investments of licensees); Kulbaski Submission at 4-5; Fromm Submission at 6-7. One panelist suggested that a grantback licensor should be guaranteed, in most circumstances, that it will receive a reasonable royalty for its patents. Beeney Submission at 11-12 & n.16 (noting that a "reasonable" royalty could be that collected by the licensors and that in at least one context a grantback need not be royalty-bearing); *see also* McGowan Presentation at 12 (asserting that grantbacks should bear royalties); ANTITRUST-IP GUIDELINES § 5.6.

[157] McGowan Presentation at 12 (asserting that grantbacks should be nonexclusive). Another panelist urged the Agencies to more strictly enforce the limitations on grantbacks articulated in the business review letters, in particular those that cover unrelated technologies, future patents, and nonessential patents. Apr. 17 Tr. at 205-06 (Morse); *see also* ANTITRUST-IP GUIDELINES § 5.6 ("Compared with an exclusive grantback, a non-exclusive grantback, which leaves the licensee free to license improvements [in] technology to others, is less likely to have anticompetitive effects.").

licensed technology.[158] Grantbacks can limit the ability of licensees to refuse to license patented improvements.[159] As a result, a pool's licensors (and other licensees) can continue to produce goods conforming to the pool's patents. Grantbacks can promote innovation incentives by rewarding first innovators for enabling follow-on innovation by others.[160] They also can promote the subsequent licensing of the results of the innovation.[161]

The Agencies, however, recognize the concerns raised by the panelists. Indeed, the pooling proposals reviewed by the Department contained mechanisms designed to narrow grantbacks, making them more likely to be procompetitive. These grantbacks are limited to innovations within the scope of the existing patents in the pool and are further limited to include only essential patents, so as to add only complementary patents to the pool.[162] In addition, the grantbacks are nonexclusive, so licensees may freely use their own inventions and license them to others.[163] Such narrowly tailored grantbacks are unlikely to raise competitive concerns.

4. Access to Information

a. Competitive Concerns

Administering a patent pool may require the pool's licensing agent to have access to competitively sensitive proprietary information of licensors and licensees, many of which may compete against each other in downstream markets. Such was the case in the DVD pools, for example, where many of the pools' licensors and licensees were competitors in the DVD disc and player manufacturing markets. Many of them were also competitors in the market for content, such as recorded music, films, and entertainment software, that are incorporated in the DVDs.[164] A patent pool could serve as a mechanism that facilitates downstream price coordination among the licensors if it were used to disseminate information between them about one another's use of the pool's technologies.[165] Innovation incentives

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[158] *See infra* Chapter 4, *Variations on Intellectual Property Licensing Practices* Part III.A (discussing the efficiencies associated with grantbacks).

[159] ANTITRUST-IP GUIDELINES § 5.6; Grindley Presentation at 13; Beeney Submission at 12; *see also* Apr. 17 Tr. at 79-80 (McGowan) (asserting that grantbacks help standards evolve); 1 HERBERT HOVENKAMP, MARK D. JANIS & MARK A. LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 25.2, at 25-2 (2002).

[160] Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, J. ECON. PERSP., Winter 1991, at 29, 31 (stating that first innovators will have the correct incentive to invest only if they receive some of the social surplus provided by second-generation products).

[161] ANTITRUST-IP GUIDELINES § 5.6.

[162] MPEG-2 Business Review Letter at 13; 3C DVD Business Review Letter at 8, 14; 6C DVD Business Review Letter at 8-9, 14-16; *see also* ANTITRUST-IP GUIDELINES § 5.6.

[163] MPEG-2 Business Review Letter at 12-13; 3C DVD Business Review Letter at 14; 6C DVD Business Review Letter at 14-15.

[164] 3C DVD Business Review Letter at 2 n.2; 6C DVD Business Review Letter at 2 n.2.

[165] The Agencies have found U.S. markets conducive to coordinated interaction when certain market factors are present, including the ready availability of reliable competitive information, homogeneous products, and high concentration levels. U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, COMMENTARY ON THE HORIZONTAL MERGER GUIDELINES 18-23 (2006),

might also be reduced if concerns about others in the pool misappropriating proprietary information leads rivals within the pool to invest less in areas such as product development.[166]

b. Analysis

Pooling agreements that limit licensors' access to each others' competitively sensitive proprietary information, such as cost data, output levels, and prices of final products, lowers the risk that licensors will be able to coordinate their activities in final product markets.[167] Limiting access to such information also makes it less likely that rivals within the pool will have concerns about others misappropriating their data. Existing pools have used several mechanisms to keep these types of information confidential. In the MPEG-2 pooling proposal, the pool hired an independent licensing administrator so that the licensors would not be privy to information gathered from other pool participants.[168] In both DVD pooling proposals, where one of the pool's licensors also acts as the program administrator, the parties designed so-called "walls" to sufficiently limit access to each others' sensitive information.[169]

5. Royalties for the Pool's Patents

a. Competitive Concerns

Panelists raised several concerns about the amount of royalties charged by patent pools. Some panelists suggested that licensing terms should be reviewed over time, set as a reasonable percentage of the downstream price, or capped in order to ensure that the royalties remain reasonable.[170] One panelist suggested that a pool that charges smaller royalties to licensors that are also licensees (insiders) than it charges to pure licensees (outsiders) might produce anticompetitive effects in downstream markets. He argued that doing so would "allow inefficient [licensor] competitors to dominate downstream markets by combining the power of the patents in the pool to the exclusion of efficient independent competitors."[171]

b. Analysis

The Agencies generally do not assess the reasonableness of royalties set by patent pools.[172] Rather, the Agencies

available at http://www.usdoj.gov/atr/public/guidelines/215247.pdf.

[166] *See* U.S. DEP'T OF JUSTICE, ANTITRUST DIVISION POLICY GUIDE TO MERGER REMEDIES 23 (2004), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,171, *available at* http://www.usdoj.gov/atr/public/guidelines/205108.pdf.

[167] 3C DVD Business Review Letter at 11-12; 6C DVD Business Review Letter at 14.

[168] MPEG-2 Business Review Letter at 4, 11.

[169] *See* Beeney Submission at 13; 3C DVD Business Review Letter at 7-8, 13; 6C DVD Business Review Letter at 9-10, 14.

[170] Morse Submission at 12; *see also* Fromm Submission at 3-4.

[171] Morse Submission at 12-13; *see also* Fromm Submission at 3; Apr. 17 Tr. at 249-50 (Fromm).

[172] *See* 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, Address Before the 2005 EU Competition Workshop 9 (June 3, 2005), *available at* http://www.usdoj.gov/atr/public/speeches/209359.pdf ("Bringing a complaint to the Antitrust Division about 'excessive' royalties, without more, is a losing strategy."). Several panelists were adamant that the Agencies should not involve themselves in the setting

focus on the pool's formation and whether its structure, including the terms of the contract among pool participants, would likely enable pool participants to raise prices or restrict output in a relevant market. In the MPEG-2 and DVD Business Review Letters, the Department noted that when royalties are a small portion of the downstream price, it is unlikely that they are being used to coordinate downstream prices.[173] Royalties that are a significant portion of the downstream price, however, do not necessarily raise concerns, and other indications of coordination of downstream prices would be required before the Agencies would be likely to investigate further. Indeed, theoretical economic models show that if only complementary patents are pooled, the royalties the pool charges should be lower than those that would be charged if no pool were formed.[174]

The Agencies will not presume that different royalty payments faced by different licensees (e.g., insiders and outsiders) are anticompetitive. Whether such an arrangement could be anticompetitive would depend upon the specific facts of the case. The Agencies may examine the structure and amount of royalties as one of the many factors when investigating alleged price coordination.

6. Requests for Partial-Pool Licenses

a. Competitive Concerns

Panelists also discussed whether it harms competition if patent pools do not offer licensees the option of licensing only some of a pool's patents, a partial-pool license at a lower royalty rate, instead of offering only a single comprehensive blanket license.[175] One panelist asserted that partial licenses are needed because, even if a pool were originally devised to include only those patents deemed essential to a standard, over time some of those patents would no longer be essential to all the pool's licensees.[176] In addition, some licensees may desire partial licenses if they already have access to some of the necessary technology through pre-existing licenses. In such instances, one panelist asserted that requiring a blanket license forces licensees to pay for access to intellectual property they do not need.[177]

Other panelists responded that offering only a blanket license is not harmful to those seeking a partial license, provided that the pool members retain the right to license their contributed patents independently, thereby creating the opportunity to enter into bilateral

of pools' royalties. According to one panelist: "Marketplace acceptance is the best gauge of fair and reasonable [licensing terms] . . . . Every license must be priced to sell. In the end, we are dealing with very sophisticated users who have many market choices." Futa Submission at 3; Apr. 17 Tr. at 245 (Futa). Another panelist stated that lawyers are not well-equipped to set royalties and that pools would disappear if the freedom to set royalties disappeared. *See* Apr. 17 Tr. at 283 (Beeney).

[173] MPEG-2 Business Review Letter at 11; 3C DVD Business Review Letter at 13; 6C DVD Business Review Letter at 14.

[174] Shapiro, *Navigating the Patent Thicket* at 123-24, 149-50; Lerner & Tirole, 94 AM. ECON. REV. at 695-97.

[175] Apr. 17 Tr. at 246-77 (Futa, Fromm, Kelly, Beeney, Grindley, Morse).

[176] *Id.* at 251 (Fromm).

[177] Fromm Submission at 4-5.

agreements for particular patents.[178] Furthermore, one panelist argued, if pools were required to let firms pick and choose which patents they wanted and then had to vary the royalties accordingly, the pool administrator could be required to offer many different permutations of licenses, perhaps at differing royalties.[179] In such situations, some panelists suggested that a pool offering partial licenses in addition to the broader pool license may not create the efficiencies that flow from reducing transaction costs.[180]

b. Analysis

In general, a refusal to license less than all of a pool's intellectual property will not raise competitive concerns, provided that the licensors retain the ability to license their patents individually and the pool's design is otherwise procompetitive. In this way, licensees are not required to purchase access to more technology than they need. However, the combined price of the individual licenses may be more than the price of the pooled patents which benefits from lower transaction costs. In addition, although partial pool licensing could be used to cull nonessential patents from the pool over time, requiring such partial licenses would tend to undermine the chief efficiency benefit of pooling arrangements, namely, the ability to offer as close to "one-stop shopping" as possible for a given technology.[181] Other more efficient means to accomplish this goal are available, such as continuous review of the licensed patent portfolio that is designed to exclude patents from the pool that have become nonessential over time.

IV. CONCLUSION

Both cross licenses and patent pools are based on reciprocal agreements to share patent rights,[182] and they can achieve similar efficiencies,[183] including integrating complementary technologies, reducing transaction costs, clearing blocking patents, decreasing infringement litigation and the uncertainties related to

[178] Apr. 17 Tr. at 262-63 (Futa). *But see id.* at 252 (Fromm) (asserting that the possibility of negotiating individual licenses is "more illusory than real"); Fromm Submission at 5 ("[Individual licensing is problematic due to] major transaction costs and time required for multiple negotiations; holders' disincentives to entertain negotiations; likelihood that the sum of individually negotiated royalties would significantly exceed the prescribed package license royalty; and the likely necessity of exchanging competitively sensitive information with one's competitors in the administration of individual licenses.").

[179] Apr. 17 Tr. at 275-76 (Beeney); *see also* Futa Submission at 5 (stating licensees could attempt to customize, in myriad ways, number of patents, length of term, and parts of the standard).

[180] Apr. 17 Tr. at 267-68 (Grindley); *id.* at 274-77 (Beeney). Moreover, according to one pool administrator, the market develops subset licenses when multiple firms request such a license. *Id.* at 262-63 (Futa). In response, one panelist noted that the ability to license fewer than all the patents in a pool is important for the first mover, who will have lost the innovation advantage once multiple firms start requesting a specific subset license. *Id.* at 264-66 (Fromm); *see also* Fromm Submission at 5.

[181] *See supra* Parts III.A, III.C.1.d.

[182] *See* Joel I. Klein, Acting Assistant Attorney Gen., U.S. Dep't of Justice, Cross-Licensing and Antitrust Law, Address Before the American Intellectual Property Law Association 3 n.3 (May 2, 1997), *available at* http://www.usdoj.gov/atr/public/speeches/1118.pdf; Andewelt, 53 ANTITRUST L.J. at 611.

[183] ANTITRUST-IP GUIDELINES § 5.5; Apr. 17 Tr. at 178 (Beeney); McGowan Submission at 2; Kelly Presentation at 5.

it, and promoting the dissemination of technology. Although pools and cross licenses seek to achieve these benefits via methods that differ in fundamental ways, the competitive analysis set forth in the Antitrust-IP Guidelines is robust enough to take these differences into account. Indeed, the panelists generally agreed that the Agencies' guidance regarding the antitrust analysis of patent pools and cross-licensing agreements is sound.[184]

That analysis acknowledges that cross licensing and patent pooling can offer substantial efficiencies, but also that they sometimes present certain competitive risks. Provisions in portfolio cross licenses that may facilitate price fixing, for example, can raise antitrust concerns. The Agencies generally review portfolio cross licenses under the rule of reason.

The Agencies likewise generally review patent pools under the rule of reason. As noted above, patent pools can help firms cut through overlapping patent rights and bring products to market. However, in certain circumstances, they can also facilitate horizontal coordination among the pool's licensors or discourage innovation. For example, there may be an anticompetitive risk in a pool containing substitute patents. One solution is to exclude substitute patents from the pool by ensuring that each patent is essential to the standard, or principle, around which the pool is organized. Likewise, exclusivity in patent pools can provide incentives for procompetitive investment, but may also pose competitive concerns regarding reduced innovation. Similarly, broadly written grantbacks in a patent-pooling agreement can promote competition by giving licensors access to downstream improvements, or they can erode incentives for future innovation. Moreover, limiting licensors' access to the competitively sensitive information of others in the pool can minimize the anticompetitive risk of improper information sharing in the pool.

Despite concerns voiced about the anticompetitive potential of "high" royalty rates in a pool, the Agencies generally will not police the "reasonableness" of pool royalty rates. Likewise, pool licensing provisions that require the licensing of all (not just some) of the pool's intellectual property do not generally raise competitive concerns if the licensors retain the ability to license their patents individually and the pool's design is otherwise procompetitive.

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[184] Apr. 17 Tr. at 193 (Morse); Feb. 27 Tr. at 512 (Shapiro) ("[B]y and large the [A]gencies have done well to recognize the benefits of cross-licenses and patent pools, and they should affirm those benefits going forward. . . . [T]he DOJ's . . . business review letters in the MPEG and DVD patent pools . . . were exemplary in that respect."); Apr. 17 Tr. at 175 (Beeney); *id.* at 57 (McGowan); *id.* at 40 (Lerner); Feb. 28 Tr. at 700 (Fox).

CHAPTER 4

VARIATIONS ON INTELLECTUAL PROPERTY LICENSING PRACTICES

I. INTRODUCTION

For over a decade, the Agencies have relied on the Antitrust Guidelines for the Licensing of Intellectual Property ("Antitrust-IP Guidelines") to aid in their analysis of complex licensing practices.[1] Recognizing that intellectual property ("IP") rights are critical to a well-functioning market economy, the Agencies crystalized some fundamental principles regarding the intersection of IP and antitrust law and policy in the Antitrust-IP Guidelines. These principles include recognizing that: (1) an IP right does not necessarily create market power;[2] (2) agreements involving IP can be analyzed using the same antitrust rules applied to agreements involving any other property;[3] and (3) IP licensing is generally procompetitive.[4] The vast majority of licensing restraints "can be expected to contribute to an efficiency-enhancing integration of economic activity," by, for example, "facilitat[ing] the combination of the licensor's intellectual property with [other] complementary factors of production."[5] The Agencies therefore will evaluate such

[1] U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (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] *Id.* § 2.2.

[3] *Id.* § 2.1.

[4] *Id.* § 2.0.

[5] *Id.* § 3.4. Recognizing that intellectual property licensing is generally procompetitive, many foreign jurisdictions have followed the United States' lead in creating transparency in this area by adopting their own intellectual property guidelines. *E.g.*, COMPETITION BUREAU, GOV'T OF CAN., INTELLECTUAL PROPERTY ENFORCEMENT GUIDELINES (2000), *available at* http://www.strategis.ic.gc.ca/pics/ct/ipege.pdf; Guidelines on the Application of Article 81 of the EC Treaty to Technology Transfer Agreements (EC), 2004 O.J. (C 101) 2, *available at* http://www.europa.eu.int/eur-lex/pri/en/oj/dat/2004/c_101/c_10120040427en00020042.pdf; JAPAN FAIR TRADE COMM'N, GUIDELINES FOR PATENT AND KNOW-HOW LICENSING AGREEMENTS UNDER THE ANTIMONOPOLY ACT (1999), *available at* http://www.jftc.go.jp/e-page/legislation/ama/patentandknow-how.pdf; KOREA FAIR TRADE COMM'N, GUIDELINES OF REVIEWING UNDUE EXERCISE OF INTELLECTUAL PROPERTY RIGHTS (2000), *available at* http://ftc.go.kr/data/hwp/ irp_guidelines.doc; COMPETITION COMM'N OF SING., GUIDELINES ON THE TREATMENT OF INTELLECTUAL PROPERTY RIGHTS (2005), *available at* http://www.ccs.gov.sg/NR/rdonlyres/A67B68FC-DB6F-415B-9DF1-5A97FC6855A9/6714/CCSGuidelineonIPR20051228websitefinal2.pdf; TAIWAN FAIR TRADE COMM'N, RULES FOR REVIEW OF TECHNOLOGY LICENSING ARRANGEMENT CASES, *available at* http://www.globalcompetitionforum.org/regions/asia/Taipei/Technology%20Licensing.pdf.

agreements pursuant to the rule of reason.[6]

During the Agencies' Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, panelists discussed several licensing practices that have the potential to promote licensing efficiencies, including non-assertion clauses,[7] grantbacks,[8] and reach-through licensing agreements.[9] They 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.[10] The 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 it is being employed.[11] Moreover, panelists agreed that, although theories of anticompetitive licensing practices may exist, identifying such scenarios in practice requires a highly fact-specific, case-by-case analysis. Consequently, applying simple rules to broad classes of behavior can risk great inefficiency.[12] To avoid this risk, the Agencies will continue to use the flexible rule of reason to assess the competitive significance of the licensing arrangements discussed in this Chapter, evaluating a particular agreement's ability to harm or enhance competition in the factual circumstances in which it arises.[13]

II. NON-ASSERTION CLAUSES

According to panelists, non-assertion clauses typically provide that a contracting party will not assert patents or other IP rights against the other contracting party, even if that party were to engage in an infringing use.[14] Panelists said that such clauses are entered into for a variety of reasons, but that, as a practical matter, non-assertion clauses serve one of the same functions as a license or cross license, i.e., they permit

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[6] ANTITRUST-IP GUIDELINES § 3.4.

[7] *See infra* Part II.

[8] *See infra* Part III.

[9] *See infra* Part IV.

[10] The panelists discussing these topics included: Michelle Burtis, Director, LECG, Inc.; Joseph Farrell, Professor of Economics and Chair of the Competition Policy Center, University of California, Berkeley; Jeffery Fromm, Former Senior Managing Counsel, Hewlett-Packard Company; Michael McFalls, Partner, Jones Day Reavis & Pogue; Barbara M. McGarey, Deputy Associate General Counsel, National Institutes of Health; Janusz A. Ordover, Department of Economics, New York University; Charles F. (Rick) Rule, Partner, Fried, Frank, Harris, Shriver & Jacobson; Carl Shapiro, Transamerica Professor of Business Strategy, Haas School of Business, University of California, Berkeley. The panel was moderated by Gail Levine, then-Deputy Assistant General Counsel for Policy Studies, Federal Trade Commission; Frances Marshall, Special Counsel for Intellectual Property, U.S. Department of Justice; Sarah Mathias, then-Attorney, Policy Studies, Federal Trade Commission; and David L. Scheffman, then-Director, Bureau of Economics, Federal Trade Commission. Nov. 6, 2002 Hr'g Tr., Relationships Among Competitors and Incentives to Compete: Cross-Licensing of Patent Portfolios, Grantbacks, Reach-Through Royalties, and Non-Assertion Clauses (Afternoon Session), http://www.ftc.gov/opp/intellect/021106ftctrans.pdf [hereinafter Nov. 6 Tr.].

[11] *E.g.*, Nov. 6 Tr. at 146-47 (Rule); *see also id.* at 185-86 (Shapiro).

[12] *See, e.g., id.* at 145 (Ordover).

[13] *See* ANTITRUST-IP GUIDELINES § 3.4.

[14] Nov. 6 Tr. at 121-22 (McFalls).

the contracting parties to avoid costly litigation over the use of an IP right.[15] A non-assertion clause is "a convenient way for people to be able to effectively give comfort to somebody they would otherwise license," one panelist explained.[16] In this respect, panelists stated, non-assertion clauses are similar to nonexclusive, royalty-free licenses that allow the parties to allocate risk and to avoid litigation by contract.[17] Panelists observed that non-assertion clauses can appear in multilateral or bilateral agreements, and they can cover existing or potential future patents, or both.[18] Pure non-assertion clauses that do not transfer a right to use the patent, do not, by themselves, provide for the transfer of know-how, something that frequently accompanies the affirmative licensing of patent rights.[19]

[15] *Id.* at 121 (McFalls) ("[I]nstead of giving somebody an affirmative grant . . . [you] say, within this field, just as with a license, I'm not going to [sue] you on patents that I have today."); *see also id.* at 127-28 (Rule).

[16] *Id.* at 121 (McFalls).

[17] *Id.*; *id.* at 125 (Farrell) (stating that a non-assertion clause is essentially "royalty-free permission to use one another's IP").

[18] Nov. 6 Tr. at 122-23 (Fromm); *id.* at 127-28 (Rule). Non-assertion agreements may also encompass different categories of IP rights. For example, a non-assertion agreement may permit use of one type of IP (e.g., patents) in return for use of a different type of intellectual property (e.g., copyright). *Id.* at 123 (Fromm).

[19] *Cf.* David J. Teece, Peter Grindley & Edward Sherry, *Understanding the Licensing Option*, *in* MANAGING INTELLECTUAL CAPITAL 135, 135-38 (2000) (discussing when know-how is typically transferred between firms).

A. Efficiencies of Non-Assertion Clauses

Panelists stated that non-assertion clauses may create efficiencies akin to those created by patent licenses.[20] For example, one panelist said that non-assertion clauses tend to reduce transaction costs because they "guarantee to the licensor . . . that any intellectual property issue that exists at [the time of the license negotiation] will be surfaced by the licensee."[21] Indeed, according to this panelist, the licensee typically will benefit by, in effect, "charging" the licensor for the value of the right it is giving up—a right to assert a hidden blocking patent, for example.[22] This panelist reported that non-assertion agreements also can facilitate the sharing of information, because a licensor who is unafraid of the eventual developments of blocking patents is more likely to "provide information and details that otherwise might be used by the licensee to develop a blocking patent position."[23] The panelist asserted that such exchanges of information are procompetitive because both parties to the non-assertion agreement avoid hidden blocking patents.[24] Finally, the panelist saw an

[20] One panelist stated that a licensor may negotiate a non-assertion clause in lieu of a grantback to prevent its licensee from asserting a hidden blocking position after the product has become successful. Nov. 6 Tr. at 127-28 (Rule). This panelist explained that non-assertion clauses can cover both existing and future portfolios, whereas a grantback generally is limited to future technology. *Id.* at 127 (Rule).

[21] *Id.* at 128 (Rule).

[22] *Id.*

[23] *Id.* at 129 (Rule).

[24] *Id.*

additional potential benefit if a non-assertion clause can eliminate patent hold up for the licensor's other licensees because the clause applies to the licensor *and* to "those who license from the licensor."[25]

B. Competitive Concerns Regarding Non-Assertion Clauses

Panelists expressed concern over the use of broad non-assertion clauses, such as those that are unlimited in scope or duration, or are more extensive than a license. Some panelists noted that such clauses raise competitive concerns because, by limiting the ability of licensees to collect rents on their own IP, they may discourage independent innovation.[26] Another concern is that a broad non-assertion agreement between the only two participants in a market may help to maintain an illegitimate duopoly or monopoly if the participants agree not to challenge each other's questionable patents.[27]

Invalid patents impair competition,[28] and as a matter of patent policy, challenges to their validity are encouraged.[29] As the Solicitor General recently urged, "[w]hile patent licensing in general should be encouraged because it allows the efficient exploitation of technology and promotes competition and innovation, public policy strongly

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[25] Nov. 6 Tr. at 129 (Rule). One panelist also noted that non-assertion clauses may be used in lieu of a license to avoid breaching an exclusive licensing obligation in another contract or to provide a means of avoiding the application of a "Most Favored Nation" ("MFN") clause in another licensing agreement. *Id.* at 121 (McFalls). Another panelist reported that courts have not accepted attempts to label grantbacks as non-assertion clauses so as to avoid having to comply with a MFN clause. *Id.* at 123 (Fromm).

[26] *Id.* at 136 (Fromm) ("[A broad non-assertion clause] can't help but be a disincentive to the licensee, the grantor of the non-assert, to further innovate because essentially what [it has] done is [it has] eliminated the patent thicket, that's for sure."); *see also id.* at 137-38 (Rule) ("[Y]ou can certainly abuse a non-assert if it's way too broad and it's unconnected to the underlying licensed technology."); *id.* at 143 (Fromm) (stating that the proper focus is on whether the non-assertion clause is "significantly more extensive" than the scope of a license). According to panelists, although a patent thicket has the potential to impede innovation when access to certain inputs necessary for production is difficult, the elimination of a patent thicket altogether can slow innovation when no firm has the incentive to innovate by designing around an infringing patent. *See, e.g.*, Frederick J. Telecky, Jr., *Statement* (Feb. 28, 2002 Hr'g R.) at 3 ("Without the need to design around, simple inertia and practicalities such as the necessity of qualifying a new product with customers can be a barrier to innovation."), http://www.ftc.gov/opp/intellect/020228telecky.pdf.

[27] *See* R. Hewitt Pate, Acting Assistant Attorney Gen., U.S. Dep't of Justice, Antitrust and Intellectual Property, Address Before the American Intellectual Property Law Association 2003 Mid-Winter Institute 9 (Jan. 24, 2003) ("[P]otential concerns may arise with agreements among IPR holders not to challenge one another's IPR claims through either innovation or litigation . . . ."), *available at* http://www.usdoj.gov/atr/public/speeches/200701.pdf.

[28] FEDERAL TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, Executive Summary, at 5 (2003), *available at* http://www.ftc.gov/os/2003/10/innovationrpt.pdf [hereinafter FTC Innovation Report].

[29] *See Lear v. Adkins*, 395 U.S. 653, 674 (1969) ("[E]nforcing [a] contractual provision [that would require a licensee to continue to pay royalties during the time it is challenging the patent's validity in courts] would undermine the strong federal policy favoring the full and free use of ideas in the public domain."); *see also MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764, 777 (2007) ("We hold that [a licensee is] not required, insofar as Article III is concerned, to break or terminate its 1997 license agreement before seeking a declaratory judgment in federal court that the underlying patent is invalid, unenforceable, or not infringed.").

favors ridding the economy of invalid patents, which impede efficient licensing, hinder competition, and undermine incentives for innovation."[30] Public policy also concomitantly favors the swift resolution of patent litigation on terms not harmful to competition.[31]

III. GRANTBACKS

A grantback is "an arrangement under which a licensee agrees to extend to the licensor of intellectual property the right to use the licensee's improvements to the licensed technology."[32] Panelists said that a grantback is similar to a non-assertion clause in that it provides the freedom to use a particular intellectual property right, but it encompasses only future improvements.[33] Panelists noted that the two arrangements are often negotiated in the same way,[34] and that their economic effects are virtually identical.[35]

According to panelists, the scope, terms, and duration of grantbacks vary.[36] One panelist stated that a grantback may give exclusive rights to use future improvements solely to the licensor, leaving none to the licensee,[37] or it may allow both parties to share those rights to the exclusion of others.[38] Conversely, panelists noted, a grantback may be nonexclusive, thus allowing one or both contracting parties to license to others the right on the improvement.[39] Grantbacks may be limited by geographic scope or territory or by field of use, a panelist explained.[40] According to one panelist, grantbacks "may not be related to the initial IP licensed."[41] For example, a research tool patent license may grant back to the licensor the rights to make a drug created with the use of the research tool patent, even though the patent

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[30] Brief for the United States as Amicus Curiae Supporting Petitioner at 23-24, *MedImmune*, 127 S. Ct. 764 (No. 05-608) (internal citations omitted), *available at* http://www.usdoj.gov/osg/briefs/2005/3mer/1ami/2005-0608.mer.ami.pdf.

[31] ANTITRUST-IP GUIDELINES § 5.5 ("Settlements involving the cross-licensing of intellectual property rights can be an efficient means to avoid litigation, and in general, courts favor such settlements."); Brief for the United States as Amicus Curiae at 17, *Andrx Pharms. Inc. v. Kroger Co.*, 543 U.S. 939 (2004) (No. 03-779) (recognizing that settlements that end litigation may "facilitate innovation and investment in the patented technology by eliminating litigation risks and providing certainty over patent rights") (internal quotations omitted), *denying cert. to In re Cardizem CD Antitrust Litig.*, 332 F.3d 896 (2003), *available at* http://www.usdoj.gov/osg/briefs/2004/2pet/6invit/2003-0779.pet.ami.inv.pdf; *cf. id.* at 8 ("Although 'public policy wisely encourages settlements' of legal disputes, *McDermott, Inc. v. AmClyde*, 511 U.S. 202, 215 (1994), it does not follow that all settlements are in the public interest.").

[32] ANTITRUST-IP GUIDELINES § 5.6; *see also supra* Chapter 3, *Antitrust Analysis of Portfolio Cross-Licensing Agreements and Patent Pools* Part III.D.3 (noting that patent pools may include grantbacks to access newly developed, essential IP).

[33] *See* Nov. 6 Tr. at 119, 121-22 (McFalls); *id.* at 120, 124 (Fromm).

[34] *Id.* at 123-24 (Fromm).

[35] *Id.* at 124 (Fromm) (referring to nonexclusive agreements); *id.* at 124-25 (Shapiro); *see also* discussion of non-assertion clauses *supra* Part II.

[36] *See* Nov. 6 Tr. at 118-19 (McFalls); *id.* at 120 (Fromm).

[37] *Id.* at 118 (McFalls).

[38] *Id.* at 118-19 (McFalls).

[39] *Id.* at 119 (McFalls); *see also id.* at 120 (Fromm) (stating that grantbacks, at least as to improvements, are "reasonably pervasive" in the computer industry).

[40] Nov. 6 Tr. at 118 (McFalls).

[41] *Id.* at 117-18 (McFalls).

claiming the drug would not infringe the research tool patent.[42] One panelist explained that like many other licensing arrangements, grantbacks may or may not be royalty-free.[43]

A. Efficiencies of Grantbacks

The Agencies already have noted that grantbacks, particularly those that are nonexclusive, can offer efficiencies to licensees and licensors.[44] A grantback can facilitate downstream licensing because it provides a good way to value the licensed intellectual property, one panelist asserted, stating that a grantback is "a useful way for the original licensor to get some value later on [when an] initial contract may be hard to write."[45] Moreover, a nonexclusive grantback can "serve as [an] alternative[] to higher royalty rates where the nature and value of future improvements is uncertain."[46] The Agencies recognize that a grantback can foster the sharing of risk and "reward the licensor for making possible further innovation based on or informed by the licensed technology."[47] Panelists stated that, like a non-assertion clause, a grantback can also facilitate bargaining[48] and encourage information exchange by eliminating a licensor's concern that a licensee will assert a blocking patent position in the future.[49]

B. Competitive Concerns Associated with Grantbacks

Panelists stated that the primary anticompetitive concern presented by grantbacks is their potential for adverse effects on innovation.[50] Some have expressed concern that an exclusive grantback that allows only the original licensor to reap the rewards of any follow-on invention can deter innovation

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[42] *See* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 699 (1998); Jane Nielsen, *Reach-Through Rights in Biomedical Patent Licensing: A Comparative Analysis of Their Anticompetitive Reach*, 32 FED. L. REV. 169, 170-71, 176 (2004); *see also infra* Part IV (discussing reach-through licensing agreements).

[43] Nov. 6 Tr. at 118 (McFalls).

[44] ANTITRUST-IP GUIDELINES § 5.6; *see also* 1 HERBERT HOVENKAMP, MARK D. JANIS & MARK A. LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW §§ 25.2 to -.4, at 25-2 to -10 (2002) [hereinafter 1 HOVENKAMP ET AL., IP AND ANTITRUST].

[45] Nov. 6 Tr. at 133 (Ordover).

[46] 1 HOVENKAMP ET AL., IP AND ANTITRUST § 25.2, at 25-2 ("Nonexclusive grantback clauses are virtually always competitive.").

[47] ANTITRUST-IP GUIDELINES § 5.6.

[48] According to one panelist, grantbacks in the biomedical field aid in valuing a research tool, for example, by granting back an option to a license on the end product. Nov. 6 Tr. at 151-52 (McGarey).

[49] *See, e.g.*, *id.* at 128-29 (Rule) (stating that the same efficiencies are associated with non-assertion clauses).

[50] *Id.* at 135 (Farrell); *see also id.* at 133-34 (Ordover). The anticompetitive concerns associated with the use of grantbacks within a patent pool are discussed in Chapter 3, *Antitrust Analysis of Portfolio Cross-Licensing Agreements and Patent Pools*, and are essentially the same as those noted here. Broad grantback clauses that, for example, "cover entirely unrelated technology, [cover] future as well as present patents, [or] cover non-essential as well as essential patents," may deter innovation and should, according to panelists, engender antitrust scrutiny. M. Howard Morse, *Cross-Licensing and Patent Pools* (Apr. 17, 2002 Hr'g R.) at 14, http://www.ftc.gov/opp/intellect/020417mhowardmorse.pdf; *see* Apr. 17 Tr., Patent Pools and Cross-Licensing: When Do They Promote or Harm Competition? at 204-05 (Morse) (recognizing that Department of Justice business review letters had approved grantback provisions that were structured so as not to impede innovation), http://www.ftc.gov/opp/intellect/020417trans.pdf.

because the licensee will receive none of the benefits from any future improvements it might make.[51] One panelist stated that, as in the case of a non-assertion clause, the disincentive to innovate increases if the grantback provision "is larger in scope than the forward-going license or longer in duration than the . . . license [for which the grantback is conveyed]."[52] Some have argued that grantbacks also have the potential to extend improperly a patentee's market power because "numerous improvements made by different licensees all come back to the original patentee. The patentee can then use all the improvements, not merely to obtain control of the affected technology during the life of the original patent, but often for a subsequent time as well."[53]

These potential concerns, however, must be measured against the "but for" world; that is, the Agencies must consider the amount of innovation that might have occurred in the absence of the licensing restraint.[54] As noted earlier, grantback provisions can make follow-on innovation possible. Without the security of a grantback provision, a licensor may be hesitant to share its intellectual property with others, fearing that it might be prevented from accessing and benefitting from follow-on improvements to its own technology.[55]

IV. REACH-THROUGH LICENSING AGREEMENTS

Reach-through licensing agreements grant the owner of a patent on an upstream research tool[56] the right to receive consideration based on sales or usage of a subsequent downstream product created with that tool.[57] For example, a reach-through licensing agreement might allow a pharmaceutical company to use a patented research tool to identify components of what becomes a marketable drug without paying royalties to the tool owner before commercialization of the product.[58]

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[51] 1 HOVENKAMP ET AL., IP AND ANTITRUST § 25.3, at 25-6 to -7.

[52] Nov. 6 Tr. at 120 (Fromm); *see also id.* at 137 (Fromm) ("[T]here ought to be heightened scrutiny whenever there is . . . a significant difference in the grantback or the non-assertion provisions in the forward-going licenses.").

[53] 1 HOVENKAMP ET AL., IP AND ANTITRUST § 25.3, at 25-7; *see also* John H. Barton, *Patents and Antitrust: A Rethinking in Light of Patent Breadth and Sequential Innovation*, 65 ANTITRUST L.J. 449, 461-62 (1997).

[54] *See* ANTITRUST-IP GUIDELINES §§ 3.1, 3.3.

[55] *See* ANTITRUST-IP GUIDELINES § 5.6; *supra* Part III.A; *see also* Nov. 6 Tr. at 128-29 (Rule) (discussing how grantbacks and non-assertion clauses can promote cooperation and information exchange between licensor and licensee).

[56] Patented research tools, which have primarily arisen in the pharmaceutical and biotechnology fields, are technologies "used to find, refine, or otherwise design and identify a potential product." FTC INNOVATION REPORT ch. 3, at III(D)(1)(c); *see also* Nov. 6 Tr. at 159 (McGarey) ("[I]n the context of reach-through [licensing agreements] . . . we're talking about broad enabling tools that are not destined to be products themselves . . . .").

[57] FTC INNOVATION REPORT ch. 3, at III(E)(1). Although a research tool is used to develop a new product, the sale or use of the new product generally will not infringe the claims of the research tool patent. *See* Feb. 26, 2002 Hr'g Tr., Business Perspectives on Patents: Biotech and Pharmaceuticals (Afternoon Session) at 260 (Blackburn) ("[A research tool] is not a patent that covers the final product that is the subject of ongoing manufacture and sale."), http://www.ftc.gov/opp/intellect/020226trans.pdf [hereinafter Feb. 26 Tr.].

[58] Heller & Eisenberg, 280 SCIENCE at 699; *see also* Janice M. Mueller, *No "Dilettante Affair": Rethinking the Experimental Use Exception to Patent Infringement for*

Rather, the research tool owner would opt to "reach through" and receive a royalty based on a percentage of the drug's future sales.[59] This arrangement can be particularly valuable to the contracting parties in cases in which the creator of the downstream product has only limited ability to pay or borrow funds to cover up-front licensing costs.[60] Reach-through licensing agreements may also include the ability to use future patented inventions, including the option to license the final product created using an upstream research tool.[61]

A. Efficiencies of Reach-Through Licensing Agreements

According to panelists, reach-through licensing agreements can create efficiencies when they promote the dissemination of an upstream research tool, by, for example, creating a way to value the research tool or establish a reasonable royalty.[62] Some have reported that the initial fee for use of a patented research tool may be difficult to determine when there is no "commercial product in existence" and "the research tool owner and the tool user may have very different views about the proper economic valuation of the tool."[63] Panelists said that by allowing the research tool patent owner to accrue royalties on sales of downstream discoveries in lieu of up-front royalties, the parties are better able to assess the value of the research tool by taking into account the value of the product developed using the research tool.[64] Reach-through licensing agreements also permit the research tool owner and follow-on researchers to share innovation risks, with the research tool owner gambling that his tool will lead to the development of a commercially viable

Biomedical Research Tools, 76 WASH. L. REV. 1, 16 (2001); Nielsen, 32 FED. L. REV. at 171.

[59] Heller & Eisenberg, 280 SCIENCE at 699.

[60] *See* Mueller, 76 WASH. L. REV. at 16.

[61] Heller & Eisenberg, 280 SCIENCE at 699; Nielsen, 32 FED. L. REV. at 171; *see also* Nov. 6 Tr. at 151-52 (McGarey) (stating a reach-through licensing agreement may take the form of a grantback of an option to exclusively license the downstream innovation).

[62] Nov. 6 Tr. at 155 (Burtis) ("[If] whatever is commercialized never has a market, then the person who has bought the tool ends up paying a very little amount for the tool."); *id.* at 171 (Rule) (suggesting the Agencies should not be concerned with reach-through license agreements because the agreements "essentially captur[e] the value created by intellectual property" and allow for a broader dissemination of the technology); *see also* Nielsen, 32 FED. L. REV. at 171 ("Reach-through rights allow patent holders to license and reali[z]e value on their inventions even when that value is speculative. In this respect, they encourage the dissemination of patented inventions and are likely to have a positive effect on innovation."); Mueller, 76 WASH. L. REV. at 59 ("[Reach-through license agreements are] an expedient method of measuring the value of the use of the research tool rather than an unlawful leverage of the patent right."); Nov. 6 Tr. at 151-52 (McGarey) (acknowledging that a reach-through arrangement is a way to value the technology).

[63] Mueller, 76 WASH. L. REV. at 16.

[64] *See* Nov. 6 Tr. at 154-56 (Burtis) ("[P]eople [like] reach-through agreements because . . . [they are] a way to efficiently price . . . ."); Feb. 26 Tr. at 279 (Blackburn) ("I think that really reduces to a price negotiation, how much does the tool owner profit from the successful development of a product. So that allocation of risk I think is taken care of in the pricing."); *see also* Nielsen, 32 FED. L. REV. at 176 ("If an upstream invention is subsequently determined to be a foundational research tool, setting a value on it too early would deprive the patent holder of valuable income, and allow the licensee to reali[z]e a windfall gain. Reach-through rights allow the patent holder to defer decisions about the value of research tools and technologies.").

product.[65] In this way, reach-through licenses may facilitate an efficient allocation of risk when there is uncertainty regarding the value of the licensed technology.

B. Competitive Concerns About Reach-Through Licensing Agreements

Panelists were primarily concerned that reach-through licensing agreements could impair innovation in downstream markets[66] because of "royalty stacking" by multiple research tool owners.[67] Royalty stacking occurs when royalties are owed to multiple licensors. As one panelist noted, when "one company comes in and asks for five percent, another company comes in and asks for five percent, . . . all of a sudden you're . . . giving away a hundred and twenty percent, three hundred percent of your revenues to various patents."[68] Although no rational firm would knowingly agree to give up all its profits, some have expressed concern that the cumulative royalties of all upstream holders have the potential to stifle follow-on innovation if they reach a level at which commercialization of the improvement is no longer profitable from a business perspective.[69] Thus, some fear royalty stacking may result in a "tragedy of the anticommons" whereby "people under use scarce resources because too many owners can block each other."[70] At the Hearing, the Deputy Associate General Counsel of the National Institutes of Health ("NIH") explained that NIH adopted a policy discouraging the use of reach-through royalty agreements

[65] *See, e.g.*, Feb. 26 Tr. at 275 (Blackburn) ("Reach-through royalties are a way to lower the up-front costs for the smaller firms and to have a risk-sharing arrangement basically with the tool owner . . . ."). *But see id.* at 278 (Oehler) (questioning whether "risk is truly shared" when a tool may prove valuable in early stages of research and development but the end product fails in clinical trials).

[66] *See, e.g.*, Nov. 6 Tr. at 153 (McGarey) (arguing that reach-through agreements can result in a "pile-up" of royalties that impair innovation); July 10, 2002 Hr'g Tr., Trends in Federal Circuit Jurisprudence (Morning Session) at 56-57 (Scherer) (stating that numerous upstream patents can impede downstream innovation by, among other things, attempting to collect royalties individually), http://www.ftc.gov/opp/intellect/020710trans.pdf; Oct. 30, 2002 Hr'g Tr., Competition, Economic, and Business Perspectives on Substantive Patent Law Issues: Non-Obviousness and Other Patentability Criteria at 175 (Stoner) (asserting that when an upstream patent manages the downstream flow of innovations it could lead to less downstream commercialization), http://www.ftc.gov/opp/intellect/021030trans.pdf [hereinafter Oct. 30 Tr.].

[67] *See* Mueller, 76 WASH. L. REV. at 7 ("Innovation is impeded by the 'royalty stacking' problem imposed by the numerous upstream patents that must be practiced in order to make the new downstream product."); ORGANISATION FOR ECON. CO-OPERATION & DEV., GENETIC INVENTIONS, INTELLECTUAL PROPERTY RIGHTS AND LICENSING PRACTICES: EVIDENCE AND POLICIES 63 (2002) [hereinafter GENETIC INVENTIONS] ("The concerns evoked about reach-through royalties are that they increase royalty stacking, as multiple tests and assays are needed when developing a medicinal product[;] that they make project management more complex and the relationship to all collaborators more delicate[;] and that they are costly to negotiate.").

[68] Feb. 27, 2002 Hr'g Tr., Business Perspectives on Patents: Software and the Internet (Morning Session) at 415 (Kohn) (noting the high transaction costs stemming from proliferating patents), http://www.ftc.gov/opp/intellect/020227trans.pdf.

[69] *See, e.g.*, GENETIC INVENTIONS at 61-62 (describing the large number of license agreements pharmaceutical companies must enter).

[70] Heller & Eisenberg, 280 SCIENCE at 698; *see also* Feb. 26 Tr. at 310-11 (Kirschner) (explaining the potential for an anticommons problem in the biotechnology industry due to the proliferation of reach-through royalty agreements); FTC INNOVATION REPORT ch. 3, at III(D)(4)(a).

because they may impose restrictions on the IP developed using the tool, as well as create multiple royalty obligations associated with downstream discoveries.[71]

Some have argued that reach-through licensing does not allow a patentee to capture excessive royalties and does not pose a concrete harm to innovation. As one panelist explained: "If the licensor . . . is about to propose a royalty that's going to kill the product they're not going to make any money. And most of the players in this field are sophisticated enough to understand that."[72] In any event, the inefficiencies associated with royalty stacking can occur even without the use of reach-through licensing agreements.[73] Thus, some panelists opined that reach-through licensing agreements raise no real competitive concerns unless licensors adversely affect innovation by prohibiting entry or exploitation of the upstream research tool or downstream products.[74] In addition, another panelist reported that extensive interviews of people in the biomedical industry demonstrated that the "anticommons" had not developed.[75]

Panelists also suggested that reach-through agreements could reduce incentives to challenge a potentially invalid patent or the scope of protection claimed by the patent "by specifying that payments continue even if the patent were to be found invalid or the product [is] non-infringing."[76] Other panelists asserted that the collection of royalties on a patent that is beyond its statutory term or scope could amount to an antitrust violation or patent misuse.[77] These

[71] Nov. 6 Tr. at 152-53, 158 (McGarey) (discussing the problems reach-through agreements pose for the NIH); *see also* Principles and Guidelines for Recipients of NIH Research Grants and Contracts on Obtaining and Disseminating Biomedical Research Resources, 64 Fed. Reg. 72,090, 72,091 (Dec. 23, 1999), *available at* http://ott.od.nih.gov/pdfs/64FR72090.pdf; Mueller, 76 WASH. L. REV. at 7-8, 16 (discussing NIH's position). To foster access to protected research tools, for which a license on reasonable terms cannot be freely negotiated, the National Research Council of the National Academies recommends that federal research-sponsoring agencies assume liability for patent infringement arising from the use of a protected research tool by including an "authorization and consent" clause in research funding instruments. COMM. ON INTELLECTUAL PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., NAT'L ACADS., A PATENT SYSTEM FOR THE 21ST CENTURY 115-17 (Stephen A. Merrill et al. eds., 2004).

[72] Feb. 26 Tr. at 315 (Blackburn) ("[Most research tool owners are] fairly sophisticated and know that [they will] kill the goose if the stack is too high.").

[73] If numerous complementary patents are necessary to create a new innovation and these patents are valued independently by multiple licensors, then the total royalties paid generally will be greater than they would be if all patents were controlled by a single licensor. *See, e.g.*, Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, *in* 1 INNOVATION POLICY AND THE ECONOMY 121, 122-23 (Adam B. Jaffe et al. eds., 2000). In economics, this problem is known as "double marginalization" and can be mitigated with the use of a patent pool. *See supra* Chapter 3, *Antitrust Analysis of Portfolio Cross-Licensing Agreements and Patent Pools* Part III.D.1.b.

[74] *See* Nov. 6 Tr. at 169 (Ordover); *id.* at 171-72 (Rule); *id.* at 169-70 (McGarey) ("[NIH] certainly [does not] like reach through [licensing agreements] . . . but I don't think I can say that it's anticompetitive or it's something that the Federal Trade Commission or the Department of Justice needs to look at because . . . it's something that the marketplace takes care of, perhaps, very painfully.").

[75] *See* Oct. 30 Tr. at 149 (Cohen).

[76] Nov. 6 Tr. at 172-73 (Farrell).

[77] Feb. 26 Tr. at 269-70 (Earp) (stating that collecting royalties on noninfringing downstream products raises antitrust and misuse issues); Nov. 6 Tr. at 153 (McGarey) ("[A] patent owner is trying to get, by contract, what they could not get through their patent rights, because typically . . . the tool is not going to show up in the final product. And so, it's a way for a

panelists suggested that the patent misuse doctrine or antitrust law would not allow a "licensing company [to demand] royalties on the sale of a product that is not covered by [its] patent"[78] or to extend royalty payments beyond the enforceable life of the patent on the underlying research tool.[79] Other panelists disagreed. From an economics perspective, "spreading out royalties over a larger [base] and a lower rate could be better," one panelist opined, because that would suggest the licensee negotiated a lower rate.[80] From a legal perspective, another panelist remarked, reach-through royalties can be a mechanism for metering, which antitrust law has generally treated favorably because it "tends to disseminate technology [often more broadly] than a single price."[81] Indeed, in 2002 one federal trial court found no patent misuse when a reach-through licensing agreement provided for royalties based on products not covered by the patent and allowed for the collection of royalties beyond the term of the patent, because the agreement was structured for the convenience of the parties and was valued based on the patent's actual term.[82]

V. PERSPECTIVES ON ANTITRUST ANALYSIS OF LICENSING PRACTICES

Panelists debated several analytical approaches for evaluating competitive concerns raised by the licensing practices discussed in this Chapter, particularly with respect to non-assertion clauses and grantbacks. One panelist, for example, advocated an assessment of likely competitive effects in both the relevant product and innovation markets.[83]

patent owner to really extend rights that the patent system has not really given them."). *See generally infra* Chapter 6, *Competitive Issues Regarding Practices That Extend the Market Power Conferred by a Patent Beyond Its Statutory Term*.

[78] Feb. 26 Tr. at 270 (Earp) (citing *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 135 (1969) ("[C]onditioning the grant of a patent license upon payment of royalties on products which do not use the teaching of the patent does amount to patent misuse.")); *see also* Nov. 6 Tr. at 157 (Fromm) (advocating for heightened scrutiny of a reach-through agreement when a patentee receives royalties on an unpatented item).

[79] Nov. 6 Tr. at 163 (Fromm); *see also Brulotte v. Thys Co.*, 379 U.S. 29, 32 (1964) ("[A] patentee's use of a royalty agreement that projects beyond the expiration date of the patent is unlawful *per se*.").

[80] Nov. 6 Tr. at 162-63 (Shapiro); *cf. Scheiber v. Dolby Labs., Inc.*, 293 F.3d 1014, 1017 (7th Cir. 2002) ("The duration of the patent fixes the limit of the patentee's power to extract royalties; it is a detail whether he extracts them at a higher rate over a shorter period of time or a lower rate over a longer period of time."), *cert. denied*, 537 U.S. 1109 (2003); *see also* Richard Gilbert & Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties*, 1997 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS 283, 322 (permitting royalties to be paid over a longer period can reduce the deadweight loss from the patent monopoly); *infra* Chapter 6, *Competitive Issues Regarding Practices That Extend the Market Power Conferred by a Patent Beyond Its Statutory Term* Part I.

[81] Nov. 6 Tr. at 171 (Rule); *see also* Mueller, 76 WASH. L. REV. at 62 ("A reach-through license agreement merely time-shifts the royalty payments to the period when they are most accurately indicating the research tool's true value to the user.").

[82] *Bayer AG v. Housey Pharms., Inc.*, 228 F. Supp. 2d 467, 471-72 (D. Del. 2002). *But see* Robin C. Feldman, *The Insufficiency of Antitrust Analysis for Patent Misuse*, 55 HASTINGS L.J. 399, 448 (2003) ("Patent misuse rules based on whether the agreement is voluntary fail to recognize that an agreement may be in the interests of both parties and yet be adverse to the interests of the patent system as a whole.") (footnote omitted).

[83] Nov. 6 Tr. at 139 (McFalls) ("[T]he focus . . . has to return to what's the actual effect going to be on the grantor of a non-assert's incentive to innovate, and are they an important innovator in the product market in which that entry could occur, and are you

Although other participants agreed that such an analysis would be desirable, they questioned whether it would always be practical.[84] Another panelist proposed the use of a market power screen, asking "do the firms entering into this agreement jointly have market power?"[85] Consideration of market structure, market power, and complementarities can, according to the panelist, lead to a correct assessment of parties' incentives for efficient rather than anticompetitive conduct or vice-versa.[86]

Panelists suggested that market power is not always easy to determine, however.[87] One participant therefore advocated applying the ancillary restraints doctrine to assess a potentially anticompetitive provision as "a heuristic kind of approach" that "establishes certain rules that are administrable and somewhat easy to understand and apply at the time you're doing an agreement."[88] Another panelist found the doctrine to be unhelpful in some cases, when there are no restrictions on the use of the technology, as is the case for a mutual or one-way non-assertion agreement.[89] Other panelists desired more definite guidance, such as specific factors to consider when structuring a licensing agreement or practices that raise "red flags" or provide "green lights."[90] Using a grantback as an example, one panelist proposed several shortcuts, inquiring whether the grantback is "beyond the duration of the license" or "relating to products that are only marginally related to the initial licensed technology" or if it is exclusive.[91] This panelist conceded, however, that defining such shortcuts would be difficult because "at this stage [we are] still looking for answers."[92] Another panelist asserted that fixed rules are not the best answer, pointing to the abandonment of the "Nine No-Nos" by the Department of Justice.[93]

going to lose product differentiation or value to consumers at the end of this long road.").

[84] *Id.* at 140 (Farrell); *id.* at 141-42 (Rule); *id.* at 142-43 (Fromm).

[85] *Id.* at 131 (Farrell).

[86] *Id.* at 132 (Farrell).

[87] Nov. 6 Tr. at 136 (Fromm) (stating market power is difficult to measure); *see also id.* at 134-35 (Ordover) (focusing on the question of appropriate markets in which to measure market power).

[88] *Id.* at 141 (Rule).

[89] *Id.* at 138 (McFalls).

[90] *Id.* at 145 (Ordover); *see also id.* at 143 (Fromm) ("[I]s the grantback or . . . non-assert provision significantly more extensive than the forward-going [license]."); Jeffrey Fromm, *Patent Pools and Cross-Licensing* (Apr. 17, 2002 Hr'g R.) at 8-9 (proposing a rule of presumptive legality for portfolio cross licenses which could be overcome in certain circumstances), http://www.ftc.gov/opp/intellect/020417jefferyfromm.pdf.

[91] Nov. 6 Tr. at 145 (Ordover).

[92] *Id.*

[93] *Id.* at 147 (Rule); *see also* Bruce B. Wilson, Deputy Assistant Attorney Gen., U.S. Dep't of Justice, Patent and Know-How License Agreements: Field of Use, Territorial, Price and Quantity Restrictions, Remarks Before the Fourth New England Antitrust Conference (Nov. 6, 1970), *reprinted in* ANTITRUST PRIMER: PATENTS, FRANCHISING, TREBLE DAMAGE SUITS 11 (describing the patent licensing practices covered by the Nine No-Nos); Abbott B. Lipsky, Jr., Deputy Assistant Attorney Gen., U.S. Dep't of Justice, Current Antitrust Division Views on Patent Licensing Practices, Remarks Before the American Bar Association Antitrust Section (Nov. 5, 1981), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,129 (abandoning application of the Nine No-Nos).

VI. THE AGENCIES' COMPETITIVE CONCERNS AND ANALYSES

The Agencies generally agree with the panelists' conclusions that fixed antitrust rules in intellectual property licensing are often difficult to articulate[94] and are not necessarily desirable.[95] To evaluate whether a particular restraint is likely to have anticompetitive effects pursuant to the rule of reason, the Agencies ask whether the restraint is likely to diminish competition in a properly defined market "among entities that would have been actual or likely potential competitors" in the absence of that restraint.[96] Pursuant to a rule of reason analysis, the Agencies consider the anticompetitive concerns and the efficiencies of the particular arrangement.[97] In general, the Agencies expect that non-assertion agreements, grantbacks, and reach-through licenses either will not raise any competitive concerns or that the efficiencies of these types of agreements will be sufficient to alleviate competitive concerns. Several factors will be particularly relevant to the Agencies' examination of these licensing practices, including (1) whether the patent holder possesses market power in the relevant market, (2) whether the practice encourages unlawful coordination among competitors, (3) whether the practice inhibits entry of other firms through the licensing regime's exclusivity or exclusion, and (4) whether the practice reduces the incentive to innovate in the future.[98]

As a threshold matter, the Agencies do "not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner" because intellectual property rights are not necessarily associated with market power.[99] A patent, for example,

> *may* create a monopoly—just as an auto manufacturer *may* own all of the auto production facilities—but property and monopoly usually differ. That a patent covers an "entire" idea or product no more implies monopoly than the fact that USX Corporation owns the "entire" South Works in Chicago. Frequently, indeed almost always, different patented goods and processes compete with each other

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[94] *See* Nov. 6 Tr. at 145 (Ordover).

[95] *Id.* at 147, 187 (Rule); *see also id.* at 185 (Shapiro).

[96] *See* ANTITRUST-IP GUIDELINES § 3.1 & n.14 ("A firm will be treated as a likely potential competitor if there is evidence that entry by that firm is reasonably probable in the absence of the licensing agreement."); U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR COLLABORATIONS AMONG COMPETITORS § 3.1 (2000), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,161 ("Under the rule of reason, the central question is whether the relevant agreement likely harms competition by increasing the ability or incentive profitably to raise price above or reduce output, quality, service, or innovation below what likely would prevail in the absence of the relevant agreement."), *available at* http://www.ftc.gov/os/2000/04/ftcdojguidelines.pdf.

[97] ANTITRUST-IP GUIDELINES § 3.4.

[98] *See id.* § 3.2.3 (considering future innovation); *id.* § 4.1.2 (discussing licensing arrangements involving exclusivity); *id.* § 5.5 (considering portfolio cross licenses and patent-pooling arrangements); *id.* § 5.6 (discussing grantbacks). *See generally id.* § 3.1.

[99] *Id.* § 2.2; *see also Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1293 (2006) ("Congress, the antitrust enforcement agencies, and most economists have all reached the same conclusion that a patent does not necessarily confer market power upon the patentee.").

> and with unpatented goods and processes.[100]

For this reason, "the antitrust agencies determine whether a patent owner possesses market power by applying the same analysis that they apply to any other valuable asset, which requires the consideration of possible substitutes that might allow consumers to turn to other suppliers of a similar product or process."[101] Consistent with this approach, in *Illinois Tool*, the U.S. Supreme Court recently held that market power cannot be presumed based on the existence of a patent.[102] Equally important is the notion that, "[i]f a patent or other form of intellectual property does confer market power, that market power does not by itself offend the antitrust laws."[103] Market power that is "solely 'a consequence of . . . superior product, business acumen, or historic accident'" does not create competition concerns.[104] Efficiently exploiting the market power that might be associated with an intellectual property right is likely reasonable conduct under the Agencies' framework, provided that market power is legitimately obtained and maintained.[105]

Although efficient exploitation of the market power associated with an intellectual property right is likely reasonable and procompetitive activity, the licensing of intellectual property rights can involve coordination, especially if a license includes restrictions on the use of the intellectual property rights. Coordination between or among intellectual property holders on one aspect of competition may provide a means or opportunity for coordination on other aspects of competition, such as downstream price or output.[106] Sometimes competitive concerns arise not from the underlying arrangement itself, but rather from attendant restrictions that may facilitate coordination on price or other competitive variables.[107]

In addition, exclusivity could raise competitive concerns if, for example, firms agreed to limit their granting of non-assertion clauses to each other,

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[100] Frank H. Easterbrook, *Intellectual Property is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108, 109 (1990).

[101] Brief for the United States as Amicus Curiae Supporting Petitioners at 13-14, *Ill. Tool*, 126 S. Ct. 1281 (No. 04-1329), *available at* http://www.usdoj.gov/osg/briefs/2005/3mer/1ami/2004-1329.mer.ami.pdf; ANTITRUST-IP GUIDELINES §§ 2.1, 2.2. The existence of substitute inputs for the patented input that could be used as a work-around when producing the final product may also be relevant to the Agencies' analysis.

[102] *Ill. Tool*, 126 S. Ct. at 1293.

[103] ANTITRUST-IP GUIDELINES § 2.2.

[104] *Id.* (citing *United States v. Grinnell Corp.*, 384 U.S. 563, 571 (1966)).

[105] *See id.* §§ 2.2, 3.4.

[106] *See id.* § 5.5 ("Collective price or output restraints in pooling arrangements, such as the joint marketing of pooled intellectual property rights with collective price setting or coordinated output restrictions, may be deemed unlawful if they do not contribute to an efficiency-enhancing integration of economic activity among the participants."); *supra* Chapter 3, *Antitrust Analysis of Portfolio Cross-Licensing Agreements and Patent Pools* Part III.D.5.

[107] *See* ANTITRUST-IP GUIDELINES § 5.5; Nov. 6 Tr. at 116-17 (Rule) ("[P]otentially the big issue is—and this really goes to consumers in many ways—are the restrictions that come along with the cross- licensing and the pooling [agreements] . . . . [I]t is something that . . . lawyers, when they look at these problems, are particularly concerned about as opposed to the question of whether to enter into that agreement, per se.").

precluding other competitors from receiving such protection from infringement suits by the parties to the agreement. An exclusive reach-through licensing agreement might also raise competitive concerns if it has a substantial impact on the ability of other competitors to innovate.[108] Of course, the Agencies recognize that exclusivity can have desirable effects on competition and innovation, by, for example, encouraging investment in the research, development, and marketing of a product created with the licensed technology.[109] Thus, when analyzing a particular license requiring exclusivity, the Agencies weigh such efficiencies against any anticompetitive effects.[110]

Finally, certain licensing practices could impede innovation. If a license includes restrictions on patents that have yet to be issued or filed, competitive concerns could arise about the arrangement's likely effect on future innovation. Scholars have expressed concern about grantbacks that require the licensee to assign all rights to improvements to the grantor, thereby potentially reducing the licensee's incentives to improve the patented technology.[111] Non-assertion clauses that are the functional equivalent of broadly worded grantbacks could raise similar concerns.

In contrast, the Agencies may find that a situation such as the "royalty stacking" generated by multiple reach-through licensing agreements does not raise antitrust concerns even when it might impede innovation. In some cases, licenses on multiple patents, each requiring payment of a royalty, are legitimately required to innovate, develop, or commercialize a new product. However, assuming no anticompetitive conduct and that the patents at issue are legitimate, the mere fact that the cumulative cost of the licenses might impede innovation is not an antitrust issue. In this context, the antitrust laws permit a single IP holder with a desirable intellectual property asset to extract as much return as the market will bear for the use of that property.[112]

Moreover, according to panelists, it is often not clear that the cost of royalties arising from reach-through licensing agreements will be excessive, such that it impedes innovation or otherwise causes competitive harm. The royalty that an upstream firm may charge for use of a patented research tool will be

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[108] Sections 4.1.2 and 5.4 of the ANTITRUST-IP GUIDELINES outline the analysis relevant to both exclusivity and exclusion in the context of the types of arrangements discussed in this Chapter.

[109] ANTITRUST-IP GUIDELINES § 2.3.

[110] *Id.* §§ 3.4, 4.1.2.

[111] *See supra* notes 50-53 and accompanying text.

[112] *See, e.g.*, 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, Address Before the 2005 EU Competition Workshop 8-9 (June 3, 2005), *available at* http://www.usdoj.gov/atr/public/speeches/209359.pdf; Gerald F. Masoudi, Deputy Assistant Attorney Gen., U.S. Dep't of Justice, Intellectual Property and Competition: Four Principles for Encouraging Innovation, Address Before the Digital Americas 2006 Meeting 7-8 (April 11, 2006), *available at* http://www.usdoj.gov/atr/public/speeches/215645.pdf; *Schor v. Abbott Labs.*, 457 F.3d 608, 610 (7th Cir. 2006) (Easterbrook, J.) ("[Absent some exclusionary practice,] [t]he price of [a patented product] cannot violate the Sherman Act: a patent holder is entitled to charge whatever the traffic will bear."); *see also* ANTITRUST-IP GUIDELINES § 2.2.

limited by the downstream firm's willingness to pay. That willingness will reflect the value of the patent to the downstream firm, and includes considerations such as the probability that the patent would be found invalid or unenforceable, as well as the difficulty of detecting infringement. The Agencies' rule of reason analysis, applied to particular facts, may well indicate that anticompetitive harm would not arise from a reach-through licensing agreement,[113] in which case the Agencies would not challenge the agreement.[114]

VII. CONCLUSION

Panelists generally agreed that the various licensing practices discussed in this Chapter can provide great efficiencies to the contracting parties that would ultimately benefit consumers, but also that each licensing practice has the potential to stymie innovation and weaken competition among firms. These countervailing effects complicate an antitrust analysis, especially because procompetitive benefits and anticompetitive effects can be difficult to unravel, and may or may not be present in any individual case. Indeed, the competitive effects of certain licensing practices are not obvious—an example is the reach-through license, where the harm may not be apparent simply by examining the four corners of the agreement. Most panelists recognized that the Agencies are not in a position immediately to decipher possible procompetitive benefits and anticompetitive effects or to provide fixed rules that work efficiently in every case. Although "red flags" and "green lights" may be easy to apply, many panelists found them considerably less desirable than the Agencies' current approach based on principled economics.[115]

The Agencies will continue to apply the flexible framework set forth in the Antitrust-IP Guidelines and to evaluate each licensing practice individually with particular focus on whether it "harms competition among entities that would have been actual or likely potential competitors in a relevant market in the absence of the license."[116] The Agencies will analyze the agreements discussed in this Chapter pursuant to the rule of reason.[117]

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[113] *See supra* Part IV.

[114] ANTITRUST-IP GUIDELINES § 4.2.

[115] *See, e.g.*, Nov. 6 Tr. at 147, 187 (Rule); *id.* at 185 (Shapiro).

[116] ANTITRUST-IP GUIDELINES § 3.1; *see also id.* §§ 3.3, 3.4.

[117] *Id.* § 3.4. However, the Agencies may challenge a license restraint under the *per se* rule if "there is no efficiency-enhancing integration of economic activity and if the type of restraint is one that has been accorded per se treatment . . . ." *Id.*; *see also id.* § 3.4 ex.7 (explaining that the Agencies may challenge a licensing agreement under the *per se* rule when it is "a sham intended to cloak [the] true nature" of the arrangement).

CHAPTER 5

ANTITRUST ISSUES IN THE TYING AND BUNDLING OF INTELLECTUAL PROPERTY RIGHTS

I. INTRODUCTION

"Tying and bundling [are] so ubiquitous that we forget they are there . . . . Tying and bundling [are], roughly speaking, what the modern firm does. It's the rationale. It puts things together and offers them in packages to consumers."[1]

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.[2] The term "tying" is most often used by economists when the proportion in which the customer purchases the two products is not fixed or specified at the time of purchase, as in a "requirements tie-in" sale.[3] 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 the customers). Bundling may also be referred to as a "package tie-in."[4] Case law in the United States sometimes uses the terms "tying" and "bundling" interchangeably.[5]

In view of their potential efficiencies, many economists believe that, in general, tying and bundling are more likely to be procompetitive than anticompetitive.[6] Analysis of the

[1] Center for the New Europe, Edited Transcript of a CNE Market Insights Event: Tying and Bundling: From Economics to Competition Policy (Sept. 19, 2002) (Prof. Paul Seabright discussing tying and bundling), http://www.cne.org/pub_pdf/2002_09_19_tying_bundling.htm.

[2] DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 319 (4th ed. 2005).

[3] 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 charge customers different amounts depending on their product usage. *Id.* at 321-22.

[4] *Id.* "Pure bundling" occurs when consumers can purchase only the entire bundle (e.g., when customers are allowed to purchase only a fixed price meal that includes all courses). "Mixed bundling" occurs if the components also are sold separately, with a discount for purchasing the bundle (e.g., restaurant menus that include both à la carte items and complete meals). *See id.* at 324.

[5] *See, e.g., United States v. Loew's, Inc.*, 371 U.S. 38 (1962) (analyzing the licensing of feature films only in blocks (or bundles) as tying).

[6] *See, e.g.*, David Evans & Michael Salinger, *Why Do*

anticompetitive effects of tying and bundling by U.S. courts, by contrast, has evolved over time. Although courts long have expressed concern that tying or bundling might enable firms to use monopoly power in one market as leverage to curb competition, and thereby acquire monopoly power, in a second market,[7] judicial concern has eased as tying and bundling have become better understood. Once thought to be worthy of *per se* condemnation[8] without examination of any actual competitive effects, tying currently is deemed *per se* illegal under U.S. Supreme Court rulings only if specific conditions are met, including proof that the defendant has market power over the tying product.[9] Further, the Supreme Court has recently recognized that competitive markets and tying arrangements are not incompatible.[10] Indeed, some lower courts have required proof of likely or actual anticompetitive effects and efficiencies in tying cases.[11]

At the Hearings, one panel discussed how the Agencies and the courts could best analyze tying and bundling when two or more products are tied or bundled together and at least one of the products is protected by intellectual property rights. Panelists discussed how to reach the right answers in particular cases and how to give private parties a reasonable ability to predict how their intellectual property licensing practices will be treated under the antitrust laws.[12] As discussed below, panelists generally doubted that tying and bundling involving intellectual property are likely enough to harm consumer welfare to justify *per se* treatment, and therefore advocated a rule of reason approach that would require proof of likely or actual

Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law, 22 YALE J. ON REG. 37 (2005).

[7] *See, e.g.*, *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 5-6 (1958); *Int'l Salt Co. v. United States*, 332 U.S. 392, 396 (1947).

[8] Business practices merit treatment as *per se* illegal if "their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable." *N. Pac. Ry.*, 356 U.S. at 5.

[9] *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 9, 16-18 (1984) (retaining *per se* treatment for "certain tying arrangements" but requiring consideration of market power); *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1292 (2006); *id.* at 1291 (stating that an allegation of illegal tying must be supported by proof of market power, rather than a presumption of market power based on a patent).

[10] *Ill. Tool*, 126 S. Ct. at 1292; *see also infra* note 21 and accompanying text.

[11] *See infra* notes 40-43 and accompanying text (discussing *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) (applying the rule of reason to the bundling of operating systems and applications software)).

[12] Panelists addressing this topic at the May 14, 2002 Hearing were: Joseph Farrell, Professor of Economics and Chair of the Competition Policy Center, University of California, Berkeley; Jonathan M. Jacobson, Partner, Akin, Gump, Strauss, Hauer & Feld, LLP; Abbott B. Lipsky, Jr., Partner, Latham & Watkins; David S. Sibley, John Michael Stuart Professor of Economics, University of Texas at Austin; J. Gregory Sidak, F. K. Weyerhaeuser Fellow in Law and Economics Emeritus, American Enterprise Institute; and Gregory Vistnes, Vice President, Charles River Associates. The session was moderated by Michael Katz, then-Deputy Assistant Attorney General, and David L. Scheffman, then-Director, Bureau of Economics, Federal Trade Commission. They were joined by C. Edward Polk, Jr., then-Associate Solicitor, U.S. Patent and Trademark Office. May 14, 2002 Hr'g Tr., Antitrust Analysis of Specific Intellectual Property Licensing Practices: Bundling, Grantbacks and Temporal Extensions (Morning Session), http://www.ftc.gov/opp/intellect/020514trans.pdf [hereinafter May 14 Tr.].

anticompetitive effects and allow consideration of the efficiencies that such arrangements may generate.[13]

II. LEGAL ANALYSES OF TYING AND BUNDLING[14]

Ever since the late 1940s, when the Supreme Court stated in *International Salt Co. v. United States* that "it is unreasonable, per se, to foreclose competitors from any substantial market,"[15] and in *Standard Oil Co. v. United States* that "[t]ying agreements serve hardly any purpose beyond the suppression of competition,"[16] U.S. courts have found tying to be *per se* unlawful.[17] Although the Court's 1984 *Jefferson Parish* opinion confirmed the continued role of a *per se* analysis,[18] it emphasized that market power in the tying product was a requirement for *per se* illegality.[19] Later that same year, the Court explained that the application of the *per se* rule to tying had evolved to incorporate a market analysis:

> [T]here is often no bright line separating *per se* from Rule of Reason analysis. *Per se* rules may require considerable inquiry into market conditions before the evidence justifies a presumption of anticompetitive conduct. For example, while 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.[20]

Consistent with this approach, the Supreme Court recently acknowledged that "[m]any tying arrangements . . . are fully consistent with a free, competitive market."[21] Indeed, leading treatises have commented that the test lower courts use to determine whether to apply the *per se* rule to a particular alleged tie "increasingly resembles a rule of reason inquiry."[22] Although the elements of a *per se* tying violation have been articulated differently, courts generally require that:

> (1) two separate products or services are involved, (2) the sale

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[13] Panelists stated that such tying and bundling do not meet the standard for *per se* analysis of always or almost always being harmful to competition. *Id.* at 35-44 (Jacobson, Farrell, Sidak, Sibley, and Lipsky).

[14] More complete summaries of basic tying law are found in ABA SECTION OF ANTITRUST LAW, ANTITRUST LAW DEVELOPMENTS 175-214 (5th ed. 2002) [hereinafter ANTITRUST LAW DEVELOPMENTS] and 1 HERBERT HOVENKAMP, MARK D. JANIS & MARK A. LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW §§ 21.1, at 21-3 to -8, 21.5(d), at 21-113 to -16 (2002) [hereinafter 1 HOVENKAMP ET AL., IP AND ANTITRUST].

[15] 332 U.S. at 396.

[16] 337 U.S. 293, 305-06 (1949).

[17] ANTITRUST LAW DEVELOPMENTS at 177-79.

[18] "It is far too late in the history of our antitrust jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable '*per se*.'" 466 U.S. at 9.

[19] *Id.* at 9-18.

[20] *Nat'l Collegiate Athletic Ass'n v. Bd. of Regents of the Univ. of Okla.*, 468 U.S. 85, 104 n.26 (1984) (citation omitted).

[21] *Ill. Tool*, 126 S. Ct. at 1292.

[22] ANTITRUST LAW DEVELOPMENTS at 178; 1 HOVENKAMP ET AL., IP AND ANTITRUST § 21.5, at 21-113 to -15.

> or agreement to sell one is conditioned on the purchase of the other, (3) the seller has sufficient economic power in the market for the tying product to enable it to restrain trade in the market for the tied product, and (4) a not insubstantial amount of interstate commerce in the tied product is affected.[23]

For other *per se* violations, such as naked agreements to fix price, plaintiffs are not required to define the relevant product markets or show that the defendant has market power in a relevant market. In addition, some courts have shown a willingness to consider business justifications for the alleged tie,[24] and some courts have required proof that the tie has anticompetitive effects.[25]

Courts have sometimes analyzed bundling under the rubric of tying. In *United States v. Loew's, Inc.*,[26] for example, the Supreme Court found that the practice of licensing feature films to television stations only in blocks (or "bundles") containing films the stations did not want to license constituted unlawful tying in violation of section 1 of the Sherman Act.[27] Nonetheless, in explaining its tying analysis in *Jefferson Parish*, the Supreme Court noted the fact that "a purchaser is 'forced' to buy a product he would not have otherwise bought even from another seller" does not imply an "adverse impact on competition."[28] Thus, to prevail on an unlawful tying claim, a plaintiff would have to show an exclusionary effect on other sellers as a result of plaintiff's thwarted desire to purchase substitutes for one or more items in the bundle from other sources that harms competition.

III. TYING AND BUNDLING INVOLVING INTELLECTUAL PROPERTY

Linking intellectual property with products or other intellectual property can take many forms, such as offering licenses that cover multiple patents or copyrighted materials or tying the sale of two patented goods or one unpatented and one patented good. Such linkages carry various labels, depending on whether the linked product embodies intellectual property, whether one price

[23] ANTITRUST LAW DEVELOPMENTS at 179 & n.998 (citing cases).

[24] *United States v. Jerrold Elecs. Corp.*, 187 F. Supp. 545, 557-58 (E.D. Pa. 1960), *aff'd per curiam*, 365 U.S. 567 (1961) (concluding that a tie was justified for a limited time in a new industry to assure effective functioning of complex equipment); *Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348-51 (9th Cir. 1987) (upholding verdict for defendant because the tie may have been found to be the least expensive and most effective means of policing quality); *Dehydrating Process Co. v. A. O. Smith Corp.*, 292 F.2d 653, 655-57 (1st Cir. 1961) (affirming a judgment of a district court that directed a verdict in favor of the defendant because a tie was necessary to assure utility of two products when separate sales led to malfunctions and widespread customer dissatisfaction).

[25] *Wells Real Estate, Inc. v. Greater Lowell Bd. of Realtors*, 850 F.2d 803, 815 (1st Cir. 1988) ("The tying claim must fail absent any proof of anti-competitive effects in the market for the tied product."); *Fox Motors, Inc. v. Mazda Distribs. (Gulf), Inc.*, 806 F.2d 953, 958 (10th Cir. 1986) (declining to apply the *per se* rule to a tie that "simply does not imply a sufficiently great likelihood of anticompetitive effect").

[26] 371 U.S. 38 (1962).

[27] *Id.* at 41-43 (noting the blocks contained as many as 754 separate titles); *id.* at 44, 49-50 (treating block booking as tying).

[28] *Jefferson Parish*, 466 U.S. at 16.

or separate prices are charged, and whether the linkage is accomplished contractually or technologically. Classic "contractual" patent tying occurs when the tying product (such as a mimeograph machine) is patented, the tied product is an unpatented 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."[29] The government's tying claim against Microsoft involved both the contractual and technological bundling of the Internet Explorer web browser (the tied product) with its Windows operating system (the tying product).[30]

Multiple intellectual property rights may themselves be combined into bundles or packages. Mandatory package licensing occurs when a patent owner refuses to license a particular patent unless a licensee accepts an entire package (or where the patent owner's royalty scale has this effect).[31] It also includes "block booking" of motion pictures or television shows. Panelists explored the economic, legal, and practical issues raised by these various practices, all of which involve intellectual property tying or bundling.

A. The Economics of Bundling Involving Intellectual Property

Economists on the panel discussed features that may distinguish intellectual property from tangible property. One such feature is that the development and exploitation of intellectual property typically involves high fixed costs but low marginal costs, but the panel discussion did not make the relevance of this distinction to the analysis of bundling clear. One panelist suggested that predicting anticompetitive effects may be more difficult in cases involving intellectual property bundling than in cases involving the bundling of tangible property.[32] Another panelist stated that it is difficult to determine whether intellectual property bundling in a particular case is driven by efficiencies and, as a result, the analysis is ultimately fact-intensive.[33]

Two economists have considered the bundling of so-called information goods, such as copyrighted music, programming, and other online content on the Internet.[34] They observe that the

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[29] 1 HOVENKAMP ET AL., IP AND ANTITRUST § 21.5b2, at 21-104 to -05. An example would be a razor and razor blade cartridge.

[30] *Microsoft*, 253 F.3d at 45; *see also* Complaint paras. 18, 20, 103-23, *Microsoft*, 87 F. Supp. 2d 30 (D.D.C. 2000) (No. 98-1232), *aff'd in part, rev'd in part*, 253 F.3d 34, *available at* http://www.usdoj.gov/atr/cases/f1700/1763.pdf.

[31] Richard Gilbert & Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties*, 1997 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS 283, 317.

[32] May 14 Tr. at 41-42 (Sidak). This panelist also cited Microsoft's bundling of a browser with its operating system and suggested that the mechanism through which viable and independently-owned complementary products may facilitate competitive entry into each other's markets is imperfectly understood and deserving of more careful economic analysis. *Id.* at 45-47.

[33] *Id.* at 24-25 (Vistnes).

[34] *See* Yannis Bakos & Eric Brynjolfsson, *Bundling and*

marginal cost of adding additional units of an information good to a bundle of other information goods typically is very low. They also observe that demand for bundles of goods across customers can be more homogeneous than the demand for the individual components. In such circumstances, it can be more profitable to offer such goods only in a bundle. In their analysis, competition between two firms that each offer sufficiently large bundles can make consumers better off,[35] and bundling by a firm facing no competition can increase total welfare but increase or decrease consumer welfare.[36]

Another distinction between intellectual and tangible property is that the validity of patents can be challenged. It is widely believed that intellectual property bundling "is apt to affect private incentives to challenge the IP"[37]—most likely decreasing incentives to challenge it. Some find it difficult to assess the likely welfare effects of this decrease, however, because the optimal level of incentive to challenge intellectual property rights is not clearly known.[38]

B. Legal Issues Relevant to Intellectual Property Bundling

Courts have not taken a consistent analytical approach to tying and bundling cases involving intellectual property. In 1999, the U.S. Court of Appeals for the Eleventh Circuit applied the *per se* rule to a package license for television programming because the package at issue could not be distinguished from the block booking that the Supreme Court declared to be illegal *per se* in *Loew's*.[39]

By contrast, the U.S. Court of Appeals for the D.C. Circuit's 2001 decision in *United States v. Microsoft* rejected application of the *per se* rule to "platform software,"[40] thereby "carving

Competition on the Internet, 19 MARKETING SCI. 63 (2000); Yannis Bakos & Eric Brynjolfsson, *Bundling Information Goods: Prices, Profits, and Efficiency*, 45 MGMT. SCI. 1613 (1999).

[35] Bakos & Brynjolfsson, 19 MARKETING SCI. at 71-74 (showing that customers are able to purchase goods from competing firms selling large enough bundles at a lower effective per unit price than the price they would pay for each good if all goods are sold separately).

[36] *Id.* at 72. The intuition behind this result is that bundling allows the monopolist to sell more units to customers which increases total welfare, but also allows the monopolist to charge higher average prices which extracts surplus from customers. Depending on the parameters of the model, the latter effect could be either greater or less than the former effect.

[37] May 14 Tr. at 89-90 (Farrell).

[38] *Id.* at 90, 220-27 (Farrell) (describing the complexity of determining the efficient incentives to challenge intellectual property, but expressing his belief that "private incentives to challenge intellectual property may be badly inadequate"); *id.* at 295-300 (Miller) (discussing ideas for increasing incentives assuming they are too low); *see also id.* at 158 (Katz) ("[E]ven in the case where it's said that by having the package it's either diminishing the incentives to invent around or diminishing the incentives to challenge validity or enforceability . . . , work I've done and others have done suggests [that assessment] actually is very delicate."). For example, one panelist argued that a successful challenge both eliminates the mark-up attributable to intellectual property and also reduces potential innovators' expectations of how much they might earn on the basis of intellectual property in the future. *Id.* at 91 (Farrell).

[39] *MCA Television Ltd. v. Pub. Interest Corp.*, 171 F.3d 1265, 1277-78 (11th Cir. 1999) (citing *Loew's*, 371 U.S. at 50).

[40] 253 F.3d at 95. In deciding a tying patent misuse claim, the U.S. Court of Appeals for the Federal Circuit recently rejected a *per se* approach and applied tying case law to find that a package license combining alleged "essential" with "nonessential" patents did not constitute patent misuse because there

out what might be called a 'technology exception' to that rule,"[41] as one submission suggested. The court reasoned that application of traditional *per se* analysis in the "pervasively innovative" platform software industry risks condemning ties that may be welfare-enhancing and procompetitive.[42] According to one panelist, however, "the rationale [that the court] articulated for abandoning *per se* condemnation applies well beyond just the software industry," notwithstanding "the court's protestations to the contrary."[43] Although in *Illinois Tool Works Inc. v. Independent Ink, Inc.* the Supreme Court recognized that many tying arrangements, "even those involving patents and requirements ties," can be procompetitive,[44] that case did not present a vehicle for the Court to revisit its conclusion that some tying arrangements constitute *per se* violations.[45]

The Agencies' rule of reason approach to intellectual property bundling is reflected in the Antitrust Guidelines for the Licensing of Intellectual Property ("Antitrust-IP Guidelines"). The Antitrust-IP Guidelines recognize that "[c]onditioning the ability of a licensee to license one or more items of intellectual property on the licensee's purchase of another item of intellectual property or a good or a service has been held in some cases to constitute illegal tying,"[46] but also state that "[a]lthough tying arrangements may result in anticompetitive effects, such

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was no separate demand for the "nonessential" patents, and, thus, no separate product market in which competition could have been foreclosed. *U.S. Philips Corp. v. Int'l Trade Comm'n*, 424 F.3d 1179, 1193-97 (Fed. Cir. 2005). The court rejected a *per se* approach "[i]n light of the efficiencies of package patent licensing and the important differences between product-to-patent tying arrangements and arrangements involving group licensing of patents . . . ." *Id.* at 1193.

[41] Jonathan M. Jacobson & Abid Qureshi, *Did the Per Se Rule on Tying Survive* 'Microsoft'*?* (May 14, 2002 Hr'g R.) at 1, http://www.ftc.gov/opp/intellect/020514jacobson2.pdf [hereinafter Jacobson Submission]; *cf.* Warren S. Grimes, *The Antitrust Tying Law Schism: A Critique of* Microsoft III *and a Response to Hylton and Salinger*, 70 ANTITRUST L.J. 199, 202 (2002) ("[C]iting the novelty of the issues and the possibility of procompetitive effects, [the D.C. Circuit] imposed a rule of reason to measure Microsoft's software bundling practices."); William J. Kolasky, GE/Honeywell: *Continuing the Transatlantic Dialogue*, 23 U. PA. J. INT'L ECON. L. 513, 532 & n.66 (2002) (citing *Microsoft*, 253 F.3d at 84-97, to support a statement that technological ties "are generally evaluated under the rule of reason"); Edward G. Biester III, *An Overview of the IP-Antitrust Intersection: Reevaluating the 1995 Antitrust Guidelines for the Licensing of Intellectual Property*, ANTITRUST, Summer 2002, at 8, 10 [hereinafter Biester, *An Overview of the IP-Antitrust Intersection*].

[42] 253 F.3d at 93.

[43] Jacobson Submission at 1; Herbert Hovenkamp, *IP Ties and* Microsoft*'s Rule of Reason*, 47 ANTITRUST BULL. 369, 413 (2002) ("[W]hile developing a rule of reason for OS/application is laudable, the court's rationale for distinguishing such ties from the general run of tying arrangements cannot be supported."); *see also* Biester, *An Overview of the IP-Antitrust Intersection* at 10 ("Basic antitrust principles like the traditional per se rule against tying where there is market power in the tying product become complicated in markets that are difficult to define because of the moving target of constantly developing technology.").

[44] *Ill. Tool*, 126 S. Ct. at 1292 (recognizing that price discrimination occurs in fully competitive markets); *see also supra* note 21 and accompanying text.

[45] *See Jefferson Parish*, 466 U.S. at 9 (acknowledging that certain tying arrangements are *per se* illegal).

[46] U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 5.3 & n.34 (1995), *available at* http://www.usdoj.gov/atr/public/guidelines/0558.pdf [hereinafter ANTITRUST-IP GUIDELINES] (citing *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 156-58 (1948) (copyrights); *Int'l Salt*, 332 U.S. 392 (patent and related product)).

arrangements can . . . result in significant efficiencies and procompetitive benefits."[47] Pursuant to the Antitrust-IP Guidelines, the Agencies, as a matter of prosecutorial discretion, consider both the anticompetitive effects and the efficiencies attributable to a tie. The Agencies would be likely to challenge a tying arrangement if: "(1) the seller has market power in the tying product, [which the Agencies will not presume necessarily to be conferred by a patent, copyright, or trade secret]; (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 anticompetitive effects."[48] If a package license constitutes tying,[49] the Agencies will evaluate it pursuant to the same rule of reason principles they use to analyze other tying arrangements.

Whether the legal analysis applied to intellectual property bundling is some form of the *per se* rule or the more searching rule of reason, a plaintiff will have to establish that a defendant has market power in the tying product. Recognizing that "Congress, the antitrust enforcement agencies, and most economists have all reached the conclusion that a patent does not necessarily confer market power upon the patentee," the Supreme Court has held that "in all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product."[50] Thus, market power should not be presumed merely from the existence of a patent.[51] As the Court explained:

> [W]e conclude that tying arrangements involving patented products should be evaluated under the standards applied in cases like *Fortner II* and *Jefferson Parish* rather than under the *per se* rule applied in *Morton Salt* and *Loew's*. While some such arrangements are still unlawful, such as those that are the product of a true monopoly or a market wide conspiracy, that conclusion must be supported by proof of power in the relevant market rather than by a mere presumption thereof.[52]

The Agencies, as a matter of sound economics, had chosen not to rely on such a presumption prior to *Illinois Tool*.[53] As

[47] *Id.* § 5.3.

[48] *Id.* (footnotes omitted); *see also id.* § 2.2 ("[The] Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.").

[49] 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 . . . if the licensing of one product is conditioned upon the acceptance of a license for another, separate product." *Id.* § 5.3.

[50] *Ill. Tool*, 126 S. Ct. at 1293.

[51] *Id.*

[52] *Id.* at 1291 (citations omitted).

[53] The Solicitor General filed an amicus brief in *Illinois Tool* asserting that the market power presumption was contrary to modern tying jurisprudence and sound economics. Brief for the United States as Amicus Curiae Supporting Petitioners, *Ill. Tool*, 126 S. Ct. 1281 (No. 04-1329), *available at* http://www.usdoj.gov/osg/briefs/2005/3mer/1ami/2004-1329.mer.ami.pdf. The Solicitor General noted that "[a]s a matter of longstanding antitrust policy, both the Department of Justice and the Federal Trade Commission have rejected the presumption that patents confer market

the Antitrust-IP Guidelines explain, the Agencies "will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner. Although the intellectual property right confers the power to exclude with respect to the *specific* product, process, or work in question, there will often be sufficient actual or potential close substitutes . . . to prevent the exercise of market power."[54] The Agencies therefore investigate the relevant market to determine whether the intellectual property at issue grants any market power in the economic sense. If such market power is found, the Agencies further investigate whether the business practice under scrutiny is likely to be anticompetitive on balance.

C. Practical Issues Regarding Intellectual Property Bundling

Panelists addressed several issues that attorneys confront when counseling clients with regard to intellectual property bundling. One panelist noted that, in addition to the courts' inconsistent treatment of cases involving intellectual property bundling, courts have also differed in ordinary tying cases as to whether: (1) a plaintiff must show harm to competition in the tied product market; and (2) a defendant's evidence of business justification is admissible.[55] "The result of this is when the client asks you about what the rules are governing bundling of intellectual property . . . you cannot give a clear answer. [Lawyers have to give] the cautious advice . . . please, don't do it; the risk [of litigation] is too great."[56]

The panel also discussed the extent to which attorneys counseling their clients will consider the likelihood that an enforcement agency or private party will challenge intellectual property bundling.[57] Due in part to the rules on antitrust injury and standing, the probability of being sued may be small, but one panelist expressed the view that, "given the state of the law today you just can't advise a client that has an intellectual property right that it's okay to tie . . . . It's just too dangerous."[58] Counseling about potential antitrust liability also occurs when a client is about to bring an infringement suit, because such a suit may trigger an antitrust counterclaim even when an antitrust suit would otherwise be unlikely. One panelist expressed the view that "it's per se malpractice to fail to advise a client who is considering an intellectual property infringement suit that he must be prepared to litigate any manner of crazy antitrust or misuse

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power for the simple reason that the presumption is so demonstrably unsound." *Id.* at 13. The Solicitor General observed that "the Patent and Trademark Office has issued scores of patents for such items as bottle openers, toothbrushes, and paper clips . . . [but] [i]t would be implausible to presume that the owner of such a patent possesses market power merely by virtue of the patent." *Id.* at 12.

[54] ANTITRUST-IP GUIDELINES § 2.2.

[55] May 14 Tr. at 29-30 (Jacobson); *see also supra* notes 22-25, 50-52 and accompanying text (discussing types of proof required by some courts in tying cases including market definition, business justifications, and anticompetitive effects).

[56] May 14 Tr. at 30-31 (Jacobson). Such results can harm consumers. *Cf.* Hovenkamp, 47 ANTITRUST BULL. at 382 ([Socially costly rules include] "the enormous compliance costs of those who are denied a more efficient method of doing business for fear of breaching a senseless antitrust rule.").

[57] May 14 Tr. at 107-13 (Jacobson, Lipsky).

[58] *Id.* at 108 (Jacobson).

counterclaim – or misuse defense."[59]

Another panelist observed that firms that have been advised by counsel will often offer alternatives to a package license. He suggested that "one way to [offer] package licenses and not get immediately hauled into [f]ederal [d]istrict [c]ourt is to make sure there's an alternative available."[60] When another panelist questioned the wisdom of advising clients "that they are essentially home free on bundling pricing where intellectual property is involved,"[61] the other replied that, although this practice does not provide a complete safety zone, "the difficulty of proving that the pricing bundle is sufficiently coercive . . . given the expense of bringing an antitrust case . . . gives you a measure of comfort . . . ."[62]

Finally, one panelist argued that, although defendants in many cases could "devise ways of achieving the same efficiencies without tying,"[63] the *per se* rule creates "enormous cost in terms of firms without market power and with intellectual property rights trying to figure out the best way to exploit those rights," such as small firms trying to enter a market in which metering through tying may work best.[64] Another panelist suggested that "product combination decisions[,] like things that can be characterized as ties[,] ought to be presumptively lawful" and that the real problem with the *per se* rule against tying is that it is "potentially applicable to an enormous range of harmless commercial decisions which nevertheless tend to attract involvement with law enforcement and the civil justice system."[65]

D. Suggested Approaches to Improving the Law on Intellectual Property Bundling

The panel explored ways to improve the law on tying in general and with regard to intellectual property bundling in particular. One panelist highlighted three approaches.[66] First, he suggested that the courts, instead of carving out exceptions to the *per se* rule against tying (as the D.C. Circuit did for "platform software" products in *Microsoft*[67]), should follow the approach taken by the U.S. Court of Appeals for the Seventh Circuit in *Khan v. State Oil Co.*,[68]

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[59] *Id.* at 109 (Lipsky).

[60] *Id.* at 110-11 (Jacobson); *cf. Jefferson Parish*, 466 U.S. at 12 n.17 (quoting *N. Pac. Ry. Co.*, 356 U.S. at 6 n.4 ("Of course where the buyer is free to take either product by itself there is no tying problem even though the seller may also offer the two items as a unit at a single price.")). Where, however, a firm offers products A (the tying product) and B at a bundled price but also offers product A separately, a court may determine whether an unbundled price for product A may be so high as to demonstrate that no real alternative to the bundle of products A and B is being offered. May 14 Tr. at 46-52 (Sidak) (noting that courts may face such questions in fashioning relief in instances in which liability for tying has been found).

[61] May 14 Tr. at 112 (Lipsky).

[62] *Id.* at 113 (Jacobson).

[63] *Id.* at 36 (Jacobson).

[64] *Id.* at 40-41 (Jacobson); *cf.* Hovenkamp, 47 ANTITRUST BULL. at 382.

[65] May 14 Tr. at 42-44 (Lipsky).

[66] *See* Jonathan M. Jacobson, *Counseling in Uncertainty: The Law of Tying & Intellectual Property* (May 14, 2002 Hr'g R.) (slides), http://www.ftc.gov/opp/intellect/020514jacobson.pdf [hereinafter Jacobson Presentation].

[67] 253 F.3d at 95-96.

[68] 93 F.3d 1358, 1362-64 (7th Cir. 1996).

which applied the *per se* rule against vertical maximum price-fixing while carefully explaining the shortcomings of the approach and inviting the Supreme Court to overturn it, as the Court ultimately did.[69] Second, testifying prior to *Illinois Tool*, he suggested that Congress should consider legislation mandating that there shall be no presumption of market power from the mere possession of a patent or copyright in antitrust cases.[70] Third, he suggested that the Agencies should advocate improvements in the law through amicus participation in cases involving intellectual property bundling, both in the district courts and courts of appeals, with the hope that the decisions of these courts may eventually be reviewed by the Supreme Court.[71]

Panelists acknowledged that conducting a rule of reason analysis of intellectual property bundling or other practices results in a very fact-intensive inquiry, the outcome of which will likely be difficult to predict.[72] An economist on

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[69] *State Oil Co. v. Khan*, 522 U.S. 3, 7 (1997); *see also* Hovenkamp, 47 ANTITRUST BULL. at 383 n.33 (noting with approval Judge Posner's invitation for reversal). Such invitations, however, are not always accepted. After this Hearing took place, Judge Posner took a similar approach in applying the *per se* rule against post-expiration royalties, based on *Brulotte v. Thys Co.*, 379 U.S. 29, 32 (1964), while inviting the Supreme Court to reconsider the rule. *Scheiber v. Dolby Labs., Inc.*, 293 F.3d 1014, 1018-19 (7th Cir. 2002). The Court, however, denied certiorari. 537 U.S. 1109 (2003). By contrast, believing the court bound by Supreme Court precedent, Judge Dyk made a similar invitation in *Illinois Tool* which the Court accepted. *Indep. Ink, Inc. v. Ill. Tool Works, Inc.*, 396 F.3d 1342, 1351 (Fed. Cir. 2005), *rev'd*, 126 S. Ct. 1281 (2006).

[70] May 14 Tr. at 32-34 (Jacobson). Such legislation is now unnecessary in light of the Supreme Court's decision in *Illinois Tool* rejecting such a presumption. 126 S. Ct. 1281. *Cf.* Hovenkamp, 47 ANTITRUST BULL. at 373 ("We might be better off if Congress legislated prescriptions about the domain of intellectual property rights directly into the federal intellectual property statutes themselves and occasionally it has done so.").

[71] May 14 Tr. at 34-35 (Jacobson); Jacobson Presentation at 14. The Agencies have a long history of advising the courts on intellectual property issues relevant to competitive concerns. *See, e.g.*, Brief for the United States as Amicus Curiae Supporting Respondent, *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837 (2006) (No. 05-130), *available at* http://www.usdoj.gov/osg/briefs/2005/3mer/1ami/2005-0130.mer.ami.pdf; Brief for the United States as Amicus Curiae Supporting Petitioners, *Ill. Tool*, 126 S. Ct. 1281 (No. 04-1329); Brief for the United States as Amicus Curiae Supporting Respondent, *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55 (1998) (No. 97-1130), *available at* http://www.usdoj.gov/atr/ cases/f1800/1836.pdf; Brief Amicus Curiae of the United States of America Urging Reversal in Support of Appellant Kanebridge Corp., *Southco, Inc. v. Kanebridge Corp.* (*Southco I*), 258 F.3d 148 (3d Cir. 2001) (No. 00-1102), *available at* http://www.usdoj.gov/atr/cases/f4900/4953.pdf; Brief Amicus Curiae of the United States of America in Support of Appellee Kanebridge Corp., *Southco, Inc. v. Kanebridge Corp.* (*Southco II*), 390 F.3d 276 (3d Cir. 2004) (en banc) (No. 02-1243), *cert. denied*, 126 S. Ct. 336 (2005), *available at* http://www.usdoj.gov/atr/cases/f201000/201034.pdf; Brief for Amicus Curiae United States of America in Support of Appellees, *Matthew Bender & Co. v. West Publ'g Co.*, 158 F.3d 693 (2d Cir. 1998) (No. 97-7430), *available at* http://www.usdoj.gov/atr/cases/f1100/1191.pdf.

[72] One of the panelists discussed how, if the *per se* rule for tying is ultimately abandoned, courts can best deal with complex issues so as both to reach the right answers in individual cases and to provide some predictability as to how business practices will be analyzed. May 14 Tr. at 54-63 (Lipsky); Abbott B. Lipsky, *Amateurs in Black* (May 14, 2002 Hr'g R.) at 6-12, http://www.ftc.gov/opp/intellect/020514abbottblipskyjr.pdf [hereinafter Lipsky Submission]. Lipsky said that the Supreme Court, in a series of four cases beginning with *Daubert v. Merrell Dow Pharmaceuticals, Inc*, 509 U.S. 579 (1993), has mandated that the district courts assume the position of gatekeepers and make independent evaluations (subject to review for abuse of discretion) of the relevance, reliability, and fit of expert testimony. He suggested that this procedure has revolutionized the presentation of expert testimony and noted that in a number of antitrust cases expert testimony has been rejected. He maintained that, when courts evaluate particular patent licensing practices, they will need institutions superior to those currently available in order to generate improvements in the quality of economic analysis.

the panel suggested that, rather than attempting to categorize the conduct (e.g., as tying or not) or looking at cost standards, a better approach would be "to ask why are you doing this; what are the efficiencies, are there other ways to achieve the efficiencies; do you expect it to block competition[?]"[73]

IV. CONCLUSION

Legal and policy analysis of intellectual property bundling has evolved over time. Older case law, with its *per se* rule and presumption of market power, contends with the current analysis of the Agencies and some more recent lower court decisions that embody, in essence, a rule of reason approach. Moreover, the Supreme Court recently eliminated its rule presuming market power based on intellectual property. Panelists noted that, although intellectual property bundling may have anticompetitive potential in certain circumstances, there may also be significant efficiency justifications for such bundling in some cases. Thus, as a matter of their prosecutorial discretion, the Agencies will apply the rule of reason when evaluating intellectual property tying and bundling agreements.[74] Given the ubiquitous use of these arrangements by businesses lacking in market power and the efficiencies that such arrangements can often entail, these practices usually are not anticompetitive. When the Agencies do identify anticompetitive situations, however, they will pursue them.

Possible approaches that he described include certification by an expert body, such as the National Academy of Sciences or American Economic Association, appointment by the court of an expert under rule 706(a) of the Federal Rules of Evidence, or use of a law clerk particularly skilled in economics. May 14 Tr. at 54-63 (Lipsky); *see also* Lipsky Submission at 7-12.

[73] May 14 Tr. at 103 (Farrell).

[74] ANTITRUST-IP GUIDELINES § 5.3 (stating that, in exercising their prosecutorial discretion, the Agencies "consider both the anticompetitive effects and the efficiencies attributable to a tie-in").

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.[1] Such practices traditionally have been challenged under the doctrine of patent misuse.[2] By contrast, there have been few antitrust challenges to these practices, perhaps because they cause competitive concern only if the patent in question has conferred market power, i.e., the patent holder can profitably "maintain prices above, or output below, competitive levels for a significant period of time,"[3] and the practice unreasonably extends that market power beyond the patent's expiration.[4]

[1] Utility patents have a statutory term of twenty years from the date of filing. 35 U.S.C. § 154 (2000). A design patent has a term of fourteen years from the date of grant. 35 U.S.C. § 173 (2000). The value of a patent declines for one of two reasons: either its term expires or new noninfringing products or processes become available that "diminish any market power the [patent] may have commanded." May 14, 2002 Hr'g Tr., Antitrust Analysis of Specific Intellectual Property Licensing Practices: Bundling, Grantbacks and Temporal Extensions (Morning Session) at 119 (Dick), http://www.ftc.gov/opp/intellect/020514trans.pdf [hereinafter May 14 Tr.]; *see also* Richard C. Levin, Alvin K. Klevorick, Richard R. Nelson & Sidney G. Winter, *Appropriating the Returns from Industrial Research and Development*, 1987 BROOKINGS PAPERS ON ECON. ACTIVITY 783, 808, 810-11 (explaining that one to three years was the median estimate by industry respondents surveyed about the time required for imitators to duplicate a major patented new process or product and "to have a significant impact on the market") (internal quotation marks omitted). This Chapter does not address these and other complex issues that may arise when patent-conferred market power may decline due to the entry of noninfringing substitutes before patent expiration.

[2] *See* 1 HERBERT HOVENKAMP, MARK D. JANIS & MARK A. LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 3.2c, at 3-8 to -10 (2002 & Supp. 2005) [hereinafter 1 HOVENKAMP ET AL., IP AND ANTITRUST]; *see also infra* note 12 and accompanying text. *See generally* 1 HOVENKAMP ET AL., IP AND ANTITRUST § 3.3b, at 3-12 to -36 (Supp. 2005).

[3] "The Agencies will not presume that a patent . . . confers market power upon its owner." 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, *available at* http://www.usdoj.gov/atr/public/guidelines/0558.pdf [hereinafter ANTITRUST-IP GUIDELINES]. The U.S. Supreme Court recently confirmed that market power should not be presumed merely from the existence of a patent. *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1293 (2006) ("Congress, the antitrust enforcement agencies, and most economists have all reached the conclusion that a patent does not necessarily confer market power upon the patentee. Today, we reach the same conclusion . . . .").

[4] The Agencies have stated that "[i]f a patent or other form of intellectual property does confer market

This Chapter discusses certain practices that have been alleged to have the potential to harm competition by unreasonably extending market power conferred by a patent beyond the patent's expiration: 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.[5] Most of the practices discussed in the Chapter, such as exclusive dealing, are not unique to patent licenses. Moreover, although some of these practices may have the *potential* to extend the ability to exercise the market power conferred by a patent, most practices do not actually do so, and as many Hearings panelists[6] observed, many may, in fact, offer significant efficiencies.[7] 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 solely 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.[8]

I. COLLECTING ROYALTIES BEYOND THE STATUTORY TERM

Some have viewed a requirement that a licensee pay royalties beyond a patent's expiration as unreasonably extending the market power conferred by the patent. Panelists discussed whether such a requirement can actually extend a patent's market power.[9] One panelist

power, that market power does not by itself offend the antitrust laws." ANTITRUST-IP GUIDELINES § 2.2.

[5] Other practices might also extend the market power of a patent beyond the end of that patent's statutory term. *E.g.*, May 14 Tr. at 129-33 (Dick) (discussing a covenant not to compete that was entered in connection with a joint venture, but extended beyond the life of the joint venture and any intellectual property associated with the joint venture); *id.* at 138 (Dick) (noting that grantbacks may raise the question whether the acquisition of rights in improvement patents by the original patentee may enable that patentee to use its expired core patents as a means to obtain control over later-generation products); *id.* at 133-37 (Dick) (discussing a patent holder that includes unnecessary, but later-expiring patents in a pool, or that makes unwarranted modifications to a standard in order to justify inclusion of later-expiring patents); *id.* at 128-29 (Dick) (discussing rebate programs and incentive sales agreements that extend beyond the life of the patented technology and have the potential to extend the market power conferred by the patent).

[6] Panelists addressing this topic at the May 14, 2002 Hearing were: Rebecca P. Dick, Of Counsel, Swidler Berlin Shereff Friedman, LLP; Joseph Farrell, Professor of Economics and Chair of the Competition Policy Center, University of California, Berkeley; and David S. Sibley, John Michael Stuart Professor of Economics, University of Texas at Austin. The session was moderated by Michael L. Katz, then-Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice and David L. Scheffman, then-Director, Bureau of Economics, U.S. Federal Trade Commission. They were joined by C. Edward Polk, Jr., then-Associate Solicitor, U.S. Patent and Trademark Office.

[7] *See, e.g.*, *infra* notes 24-25 and accompanying text (discussing the efficiencies of contract provisions involving exclusivity).

[8] *See generally* Rebecca P. Dick, *Extending the Useful Life of Intellectual Property: Antitrust Risks and Safety Zones* (May 14, 2002 Hr'g R.) (slides), http://www.ftc.gov/opp/intellect/020514dick.pdf [hereinafter Dick Presentation]; May 14 Tr. at 119-45 (Dick); *id.* at 146-49 (Sibley).

[9] At the Hearings, panelists considered, for example, whether reach-through royalty agreements that continue beyond the life of a research tool patent raise antitrust concerns. *See, e.g.*, Nov. 6, 2002 Hr'g Tr., Relationships Among Competitors and Incentives to Compete: Cross-Licensing of Patent Portfolios, Grantbacks, Reach-Through Royalties, and Non-Assertion Clauses (Afternoon Session) at 157-58

suggested that agreements that seek "royalties that run past the lifetime of a patent" may pose an antitrust problem because a patent licensor with market power may be using the agreement to extend royalty payments beyond the patent term and get the same royalty "for 50 years instead of 20."[10] Over forty years ago, in *Brulotte v. Thys Co.*,[11] the U.S. Supreme Court condemned an agreement in which the licensor demanded royalties for practicing an invention beyond the life of its patents as *per se* patent misuse.[12] *Brulotte*, however, did not involve an antitrust claim,[13] and its holding reaches only agreements in which royalties actually *accrue* on post-expiration use.[14] Thus, courts tend to apply the opinion narrowly.[15] In addition, *Brulotte* has been strongly criticized on the ground that

(Fromm), http://www.ftc.gov/opp/intellect/021106ftctrans.pdf [hereinafter Nov. 6 Tr.]; *id.* at 162 (Shapiro); *id.* at 170-72 (Rule). In a reach-through royalty agreement, the royalty is based on downstream sales of a product that was created with the use of the research tool patent. *See supra* Chapter 4, *Variations on Intellectual Property Licensing Practices* Part IV. *See generally* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998). Questions related to the duration of market power conferred by the patent arise when the product continues to be sold, subject to royalties, beyond the expiration date of the research tool patent. *See* Robin C. Feldman, *The Insufficiency of Antitrust Analysis for Patent Misuse*, 55 HASTINGS L.J. 399, 443-47 (2003); Nov. 6 Tr. at 157-58, 163 (Fromm).

[10] Nov. 6 Tr. at 163 (Fromm); *see also supra* Chapter 4, *Variations on Intellectual Property Licensing Practices* Part IV.

[11] 379 U.S. 29 (1964).

[12] *Id.* at 30-32. "Patent misuse is an equitable defense to patent infringement" and is not a separate cause of action. *U.S. Philips Corp. v. Int'l Trade Comm'n*, 424 F.3d 1179, 1184 (Fed. Cir. 2005). Patent misuse is said to be broader than antitrust liability as it extends to "some sorts of conduct antitrust law would not reach." 1 HOVENKAMP ET AL., IP AND ANTITRUST § 3.2c, at 3-10. Over the years, however, patent misuse has become more "coextensive" with antitrust doctrine, *see id.*, and the United States Court of Appeals for the Federal Circuit applies antitrust principles in deciding cases involving allegations of patent misuse. *See id.* § 3.2a, at 3-6.

[13] In *Brulotte*, the patent owner sued the licensee to recover royalty payments. 379 U.S. at 29-30.

[14] *See Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 136-37 (1969) ("Recognizing that the patentee [in *Brulotte*] could lawfully charge a royalty for practicing a patented invention prior to its expiration date and that the payment of this royalty could be postponed beyond that time, we noted that the post-expiration royalties were not for prior use but for current use, and were nothing less than an effort by the patentee to extend the term of his monopoly beyond that granted by law. *Brulotte* thus articulated in a particularized context the principle that a patentee may not use the power of his patent to levy a charge for making, using, or selling products not within the reach of the monopoly granted by the Government.").

[15] *See Bayer AG v. Housey Pharms., Inc.*, 228 F. Supp. 2d 467, 472-73 (D. Del. 2002) (finding it permissible for a patentee to agree to postpone royalty payments when the payments were clearly in exchange for practicing the patented technology prior to the expiration of the patent); *see also Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 264-66 (1979) (permitting, consistent with *Brulotte*, enforcement of a royalty agreement that required payment for use of an invention for which a patent never issued because the agreement was "freely undertaken . . . with no fixed reliance on a patent or a probable patent grant"); *cf. Pitney Bowes, Inc. v. Mestre*, 701 F.2d 1365, 1373 (11th Cir. 1983) (holding that licensing rights and obligations applying in both the pre- and post-expiration period signaled that "at least some part of the post-expiration payment" compensated "for patent rights beyond the patent period"), *cert. denied*, 464 U.S. 893 (1983); *Meehan v. PPG Indus., Inc.*, 802 F.2d 881, 886 (7th Cir. 1986) (holding licensing terms unlawful *per se* because contract "fail[ed] to distinguish between pre-expiration and post-expiration royalties"), *cert. denied*, 479 U.S. 1091 (1987); *Boggild v. Kenner Prods.*, 776 F.2d 1315, 1321 (6th Cir. 1985), *cert. denied*, 477 U.S. 908 (1986) (same). *See generally* 1 HOVENKAMP ET AL., IP AND ANTITRUST §§ 23.2a-e, at 23-5 to 23-22.3 (2002 & Supp. 2005) (discussing, *inter alia*, the treatment of post-expiration royalties and royalties collected on unissued patents in light of *Brulotte*).

"post-expiration royalties merely amortize the price of using patented technology."[16] According to Judge Posner, writing for the court in *Scheiber v. Dolby Laboratories, Inc.*, "[f]or a licensee . . . to go on paying royalties after the patent expires does not extend the duration of the patent . . . because . . . if the licensee agrees to continue paying royalties after the patent expires the royalty rate will be lower."[17] Economists agree, contending that agreements that extend royalty payments beyond the patent term actually can "reduce the deadweight loss from a patent monopoly" because per-period royalties are low, and yet the licensor recoups the same present value rent from licensing the patent.[18] This point was reiterated at the Hearings.[19] It is generally better, one panelist asserted, to have a "long[,] small stream of royalties rather than a short[,] large stream" because the former collects the same intellectual property rent with the same incentives for innovation but with a lower deadweight loss.[20] Another panelist suggested that collecting royalty payments beyond the patent's enforceable life is not an antitrust concern because a patentee is entitled to appropriate value from its intellectual property and a licensee will not pay a royalty that exceeds the value of that intellectual property.[21] Because the purpose of patent protection is to provide incentives for innovation, measures that permit a patentee to capture more fully the value of its patent may lead to a more efficient level of innovation, this panelist opined.[22]

Another possibility is that agreements that require royalties to be

[16] 10 PHILLIP E. AREEDA, EINER ELHAUGE & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION § 1782c, at 492 (2004); Richard Gilbert & Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties*, 1997 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS 233, 322 ("Legal reasoning here . . . although rhetorically appealing, does not seem to reflect commercial reality or basic economics.").

[17] 293 F.3d 1014, 1017 (7th Cir. 2002). The *Scheiber* court strongly criticized the holding in *Brulotte*, but felt compelled to follow it and hold the patent license agreement at issue unenforceable. The U.S. Court of Appeals for the Seventh Circuit invited the Supreme Court to reconsider the matter. *Id.* at 1018 ("[W]e have no authority to overrule a Supreme Court decision no matter how dubious its reasoning strikes us, or even how out of touch with the Supreme Court's current thinking the decision seems."). But the Supreme Court declined to grant certiorari. *Scheiber v. Dolby Labs., Inc.*, 537 U.S. 1109 (2003).

[18] Gilbert & Shapiro, 1997 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS at 322. Once a patent expires, a licensee can use the patent for no charge. It is therefore unclear how a licensor could persuade a licensee to pay more than the amount the licensee would be willing to pay to use the patent during its term. *Scheiber*, 293 F.3d at 1017; Gilbert & Shapiro, 1997 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS at 322.

[19] *See, e.g.*, Nov. 6 Tr. at 162-64 (Shapiro) ("[S]preading out royalties over a larger brace and a lower rate could be better.").

[20] May 14 Tr. at 149-50 (Farrell) (discussing Gilbert & Shapiro's analysis); *see also* Stephen M. Law, *Inter-temporal Tie-ins: A Case for Tying Intellectual Property Through Licensing*, 11 INT'L J. ECON. BUS. 3, 15 (2004) ("The countervailing benefit to society from allowing the licensor greater freedom to contract is the reduction in royalty rate, and hence prices, during the patent period that occurs as the licensor adjusts the license to induce a licensee to accept the longer term."). Moreover, the antitrust laws are not concerned with agreements that allow a licensee to amortize royalty payments beyond the life of the licensed patent if the patent itself does not confer market power.

[21] Nov. 6 Tr. at 171-72 (Rule).

[22] *See, e.g.*, *id.* at 171 (Rule) (using metering to capture the value created by intellectual property "is a good thing" because "[i]t tends to disseminate technology broader oftentimes than a single price").

paid beyond the statutory term may enable a licensor to overcome incomplete contracting. Incomplete contracting occurs when imperfect contracting conditions prevent a licensor from negotiating a satisfactory royalty rate that reflects the patent's true value. To resolve this problem, there may be an incentive and ability to require the payment of royalties after the patent expires as a condition of licensing during the patent period, thus allowing a licensor to capture the patent's full value.[23]

II. LONG TERM CONTRACTS INVOLVING EXCLUSIVITY

An exclusive patent license can offer significant efficiencies. Such a license can, for example, encourage the exclusive licensee to commercialize and distribute the patented invention to consumers and make improvements without the threat of free-riding by the patent holder or its other licensees.[24] Exclusivity provisions, such as field-of-use or territorial restrictions, can ease the threat of misappropriation, which can mitigate competitive concerns over a potentially anticompetitive agreement.[25]

Panelists discussed how agreements involving exclusivity might be used instead to extend a patent's market power beyond the patent's statutory term. One panelist used the example of long-term contracts that extend past patent expiration to demonstrate that such activities can cause competitive harm.[26] The panelist explained that exclusive dealing can profitably deter entry if an incumbent firm can convince enough customers to carry its product exclusively, leaving too few customers for a new entrant to reach a minimum viable scale. For example, the panelist said that it might be in the interest of the incumbent seller to give hefty inducements to one or more buyers to sign long-term contracts instead of awaiting new entry. Once a critical mass of buyers has signed up, later buyers may be willing to sign contracts at higher prices. These buyers would not receive the price inducements from the incumbent seller nor enjoy the prospect of new entry because they know that their contracting decisions cannot attract new entrants who need to have a minimum number of buyers in order to enter.[27]

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[23] For example, if a licensee valued a patent at $100 during the patent period, but imperfect contracting conditions would allow the patent holder to extract only $70 during the patent period, the licensee would be willing *ex ante* to agree to pay up to $30 of royalties after the patent expired, even though the patent then could be used at no charge. An analogous incentive is well recognized, for example, in regulated industries in which a seller has an incentive to tie a regulated service, whose regulated price is below the maximum value a customer would pay, with an unregulated service to raise the price of that unregulated service and extract additional rents. *See* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 319-20 (4th ed. 2005).

[24] ANTITRUST-IP GUIDELINES § 2.3.

[25] *Id.* §§ 2.3, 4.1.2.

[26] May 14 Tr. at 146-49 (Sibley); *see also* George G. Gordon & James P. Denvir, III, Is There Life After a Patent?: Strategies to Maximize the Value of Product Life-Cycles After a Patent Expires, Presentation Before the American Bar Association, Antitrust Section 281-84 (May 3-4, 2001) (on file with the Department of Justice and Federal Trade Commission) [hereinafter Gordon & Denvir, Is There Life After a Patent?].

[27] May 14 Tr. at 146-49 (Sibley); *see also* David S. Sibley, *Long Term Contracts as a Barrier to Entry* (May 14, 2002 Hr'g R.) at 2-3, http://www.ftc.gov/opp/intellect/020514sibley.pdf.

Others have explored the conditions that would induce a consumer to sign a long-term contract with an incumbent monopolist.[28] If enough consumers sign such an agreement, the probability of entry may become very low, allowing the incumbent to continue charging higher prices. However, the *individual* buyer, in signing a long-term contract—perhaps in return for a discount—may ignore the resulting lower probability of entry that its contract causes. The reduced probability of entry gives the incumbent more scope to get buyers to accept higher prices for a long-term contract.[29] This activity could extend the market power conferred by the patent beyond patent expiration.

In addition, one panelist addressed how the discounts associated with incentive sales agreements or rebate programs could be used to extend the market power conferred by a patent beyond the patent's expiration.[30] In an incentive sales agreement or rebate program, the price a licensee pays over time can be based on the use of the patented technology both during the life of the patent and after the patent has expired. To illustrate how such programs might be used to extend the market power conferred by a patent beyond the patent's expiration, this panelist pointed to one district court case in which an aggrieved competitor argued that its rival's rebate program was an anticompetitive attempt to extend the monopoly conferred by a valuable patent beyond its expiration. According to the panelist, the program was designed so that a customer would forfeit rebates on prior purchases of the patented product if the customer's purchasing volume fell after the patent expired and generic alternatives were available;[31] the risk of forfeiture allegedly coerced the customer into using the branded product exclusively.[32] This panelist stated that in analyzing such practices antitrust enforcers should consider, *inter alia*, whether "calculating a total discount based on purchases both pre- and post-expiration improperly extends the term of the patent."[33]

III. BUNDLING PATENTS WITH TRADE SECRETS

The panel also discussed whether antitrust issues can arise if a patent holder tries to extend the market power conferred by a patent beyond its expiration by bundling the patent license with trade secrets or know-how.[34] Unlike

[28] *See, e.g.*, Philippe Aghion & Patrick Bolton, *Contracts as a Barrier to Entry*, 77 AM. ECON. REV. 388 (1987); Eric B. Rasmusen, J. Mark Ramseyer & John S. Wiley, Jr., *Naked Exclusion*, 81 AM. ECON. REV. 1137 (1991); Ilya R. Segal & Michael D. Whinston, *Naked Exclusion: Comment*, 90 AM. ECON. REV. 296 (2000); John Simpson & Abraham Wickelgren, *The Use of Exclusive Contracts to Deter Entry* (Bureau of Econ., Fed. Trade Comm'n, Working Paper No. 241, 2001), *available at* http://www.ftc.gov/be/workpapers/wp241.pdf.

[29] Aghion & Bolton, 77 AM. ECON. REV. at 396-97.

[30] *See* May 14 Tr. at 126-28 (Dick).

[31] *See id.* at 127-28 (Dick) (discussing private litigation against Monsanto involving its incentive sales agreements regarding its patented Roundup herbicide); *see also* Complaint and Jury Demand paras. 3, 24-27, *Chem. Prods. Techs., LLC v. Monsanto Co.*, No. 4:01-4384-12 (D.S.C. Nov. 13, 2001) (settled Nov. 2002).

[32] Complaint and Jury Demand paras. 25, 54-56, 69, 73-74, 83, *Chem. Prods. Techs.*, No. 4:01-4384-12.

[33] May 14 Tr. at 128-29 (Dick).

[34] *Id.* at 121-26 (Dick); *see also* Gilbert & Shapiro, 1997

patents, trade secrets enjoy perpetual protection provided the proprietary information remains secret.[35] If the patent in such a "hybrid agreement" expires, or if the trade secrets hold little or no value, the licensing of these rights may incorporate restrictions that effectively establish a cartel. That was the Department of Justice's allegation in *United States v. Pilkington plc*.[36] Pilkington had once held patents on a process for making flat glass. During the life of those patents, Pilkington set up a worldwide licensing regime with exclusive territories in which each licensee could practice the patent. By the early 1980s, the principal U.S. patents on the process had expired. Nevertheless, Pilkington continued to enforce a worldwide licensing scheme with exclusive territories based solely on the licensing of trade secrets. The Department challenged this scheme in 1994, alleging that any remaining trade secrets consisted of engineering solutions with no substantial value over equally efficacious engineering alternatives. The Department argued that the licensing of the know-how was a sham, and it had simply become a device for implementing a cartel.[37] Most intellectual property bundling agreements, in contrast, are not sham agreements, and they often serve as mechanisms for reducing transaction costs, alleviating blocking positions, or creating other efficiencies.[38]

BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS at 322 (stating such "hybrid" bundling agreements are a "common tactic" that is used to extend the term of the agreement beyond the patent's expiration); *Pitney Bowes*, 701 F.2d 1365 (involving a "hybrid" patent and a know-how license); *Indus. Promotion Co. v. Versa Prods., Inc.*, 467 N.W.2d 168, 169 (Wis. Ct. App. 1991) (same).

[35] Trade secrets can be licensed to others, much like patents and copyrights. As one panelist explained, trade secret protection offers the benefit of no expiration of the rights as long as the trade secrets are not disclosed in the public domain. Trade secrets have no fixed term and are governed by state law, operating entirely outside the federal patent or copyright regimes. (Although the Model Uniform Trade Secrets Act drafted by the National Conference of Commissioners on Uniform State Laws, provides some guidance about what constitutes know-how and how rights to it can be enforced, there are variations in the state schemes and some states have not adopted the Act in any form.) Trade secrets, however, usually leak out. Apart from Coca-Cola's close holding of its secret formula, few firms have been able to protect their trade secrets for long periods, the panelist stated. May 14 Tr. at 121-22 (Dick); *see also* Edwin Mansfield, *How Rapidly Does New Industrial Technology Leak Out?*, 34 J. INDUS. ECON. 217, 219-21 (1985) (explaining that information about the detailed nature and operations of a new product or process is in the hands of at least some rival firms within a year, on the average, after a new product is developed, and sometimes within six months).

[36] Complaint paras. 26-31, *United States v. Pilkington plc*, No. 94-345, 1994-2 Trade Cas. (CCH) ¶ 70,842, 1994 WL 750645 (D. Ariz. Dec. 22, 1994), *available at* http://www.usdoj.gov/atr/cases/f0000/0014.pdf; *see also* United States v. Pilkington plc and Pilkington Holdings Inc.; Proposed Final Judgment and Competitive Impact Statement, 59 Fed. Reg. 30,604, 30,508-10 (June 14, 1994), *available at* http://www.usdoj.gov/atr/cases/f220800/220860.pdf, http://www.usdoj.gov/atr/cases/f220800/220861.pdf.

[37] Dick Presentation at 4-5; May 14 Tr. at 122-24 (Dick). The consent decree eliminated all territorial and use limitations Pilkington imposed on U.S. licensees and allowed them to manufacture on their own or sublicense any third party to do so anywhere in the world, free of charge, using the float technology disclosed and licensed to those licensees. The decree also provided, in effect, a similar "safe harbor" for any other American individual or firm who was not a Pilkington float glass licensee to use any float technology in its possession without liability to Pilkington. *Pilkington*, 1994-2 Trade Cas. (CCH) ¶ 70,842, at 73,668-71, 1994 WL 750645, at *2-5.

[38] ANTITRUST-IP GUIDELINES § 5.3; *Philips*, 424 F.3d at 1192-93 (noting the efficiencies of package licensing); May 14 Tr. at 133 (Dick) (stating package licenses can be "a very efficient means for transferring IP rights"); *see also id.* at 19-20, 25 (Vistnes) (stating there are greater, or at least a greater potential for, efficiencies

IV. THE AGENCIES' ANALYSIS

The Agencies review most agreements that have the potential to extend the market power conferred by a valuable patent beyond that patent's expiration pursuant to the rule of reason.[39] The first step in the Agencies' analysis is to assess whether the patent at issue confers market power upon its holder, and if so, whether the patent holder's conduct unreasonably extends that market power beyond the patent's statutory term. In performing that inquiry, the Agencies consider, as panelists suggested, whether a firm is exercising such market power beyond the patent's statutory term so as to prevent expansion by those already in the market, or deter entry of substitute products or processes.[40]

Few antitrust cases involving the improper extension of patent rights have been brought in recent years. Panelists at the Hearings explained that this may be because few practices that could extend the market power conferred by a patent beyond the patent's expiration actually do so.[41] Moreover, many restrictions that have the potential to extend the market power conferred by a valuable patent beyond its term can have demonstrable efficiencies. The Agencies have recognized, for example, that contracts that require exclusive dealing may encourage a licensee to further develop the licensed technology. It is also possible that collecting royalties over a longer term than the patent grant will reduce the deadweight loss associated with a patent monopoly and allow the patent holder to recover the full value of the patent, thereby preserving innovation incentives. Although some agreements may have anticompetitive effects, patent licenses can often be "expected to contribute to an efficiency-enhancing integration of economic activity,"[42] and thus the Agencies generally analyze them pursuant to the rule of reason. Of course, with regard to any of these practices, *per se* treatment would be warranted if a particular practice is a sham—if, for

associated with intellectual property bundles); 1 HERBERT HOVENKAMP ET AL., IP AND ANTITRUST § 22.5, at 22-32 (making a similar observation); Evans & Salinger, 22 YALE J. ON REG. at 41 ("Bundling . . . can provide efficiencies such as marginal cost savings, quality improvements, and customer convenience.").

[39] ANTITRUST-IP GUIDELINES § 3.4 ("In the vast majority of cases, restraints in intellectual property licensing arrangements are evaluated under the rule of reason. . . . If there is no efficiency-enhancing integration of economic activity and if the type of restraint is one that has been accorded per se treatment, the Agencies will challenge the restraint under the per se rule. Otherwise, the Agencies will apply a rule of reason analysis.").

[40] *See supra* note 8 and accompanying text.

[41] *See, e.g.*, May 14 Tr. at 149-50 (Farrell); *id.* at 156 (Katz). In addition, legal doctrines may limit antitrust challenges in this area. For example, successful lobbying that leads to enactment of a legislative or regulatory regime with rules inhibiting entry might well extend the duration of patent-conferred market power. *See id.* at 145 (Dick) (noting copyright holders successful efforts to extend copyright protection for an additional number of years which resulted in the Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998)); *see also* Gordon & Denvir, Is There Life After a Patent? at 279-81 (discussing an antitrust challenge to a branded firm's activities and related publicity campaigns directed at excluding generic competition). The *Noerr-Pennington* doctrine exempts from antitrust enforcement certain bona fide petitioning conduct directed toward a governmental decision maker. *See United Mine Workers v. Pennington*, 381 U.S. 657 (1965); *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961).

[42] ANTITRUST-IP GUIDELINES § 3.4.

example, it is designed to implement a market division agreement among competitors.[43]

[43] *Id.*

APPENDIX A

HEARINGS PARTICIPANTS

Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy February 6 - November 6, 2002

Primary source: http://www.ftc.gov/opp/intellect/index.htm

Name	Affiliation (at time of Hearings)	
Aharonian, Greg	Publisher, Internet Patent News Service	Panel: 2/27/02 Submission: 2/27/02
Alderrucci, Dean	Chief Counsel of Intellectual Property, Walker Digital Management LLC	Panel: 4/9/02
Alexiadis, Peter	Partner, Squire, Sanders & Dempsey LLP, Brussels	Panel: 5/22/02
Allen, Gwilliym	Senior Economist and Strategic Policy Advisor, Competition Policy Branch, Canadian Competition Bureau	Panel: 5/22/02 Submission: 5/22/02
Alstadt, Lynn J.	Shareholder, Buchanan Ingersoll PC; Adjunct Professor, Duquesne University	Panel: 3/19/02
American Bar Association, Section of Antitrust Law		Public Comments
American Bar Association, Section of Intellectual Property Law		Public Comments
American Intellectual Property Law Association		Public Comments
American National Standards Institute		Public Comments
Anderman, Steven D.	Professor of Law, University of Essex, England	Submission: 5/22/02
Antalics, Michael	Partner, O'Melveny & Myers LLP	Panel: 4/18/02

Name	Affiliation (at time of Hearings)	
Armbrecht, F.M. Ross, Jr.	President, Industrial Research Institute	Panel: 3/19/02
Armitage, Robert A.	Vice President and General Patent Counsel, Eli Lilly and Company	Panel: 3/19/02
Arora, Ashish	Visiting Associate Professor of Economics, Stanford University; Associate Professor of Economics and Public Policy, Carnegie Mellon University	Panels: 2/25/02, 5/1/02 Submissions: 2/25/02, 5/01/02
Arrow, Kenneth J.	Nobel Memorial Prize and Joan Kenney Professor of Economics Emeritus, and Professor of Operations Research Emeritus, Stanford University	Panel: 2/25/02 Submission: 2/25/02
Arthur D. Little, Inc.		Public Comments
Aventis Pharmaceuticals, Inc.		Public Comments
Baker, Charles P.	Partner, Fitzpatrick, Cella, Harper & Scinto	Panel: 7/11/02 Submission: 7/11/02
Balto, David A. (with Daniel I. Prywes)	Partner, White & Case LLP	Public Comments
Banner, Mark T.	Banner & Witcoff, Ltd.; Chair, American Bar Association, Intellectual Property Law Section	Panel: 10/30/02
Barnes, E. Bruce		Public Comments
Barnett, Thomas O.	Partner, Covington & Burling	Panel: 5/02/02
Barr, Robert	Vice President and Worldwide Patent Counsel, Cisco Systems, Inc.	Panels: 2/28/02, 10/30/02 Submission: 2/28/02
Barton, John H.	George E. Osborne Professor of Law, Stanford University Law School	Panel: 2/26/02 Submission: 2/26/02 Public Comments
Beeney, Garrard R.	Partner, Sullivan & Cromwell	Panel: 4/17/02 Submission: 4/17/02

Name	Affiliation (at time of Hearings)	
Beier, David W.	Partner, Hogan & Hartson LLP; Counsel to Biotechnology Industry Organization; Senior Fellow, Wharton School of Business, University of Pennsylvania	Panel: 2/26/02 Submission: 2/26/02
Bendekgey, Lee	General Counsel and Executive Vice President, Incyte Genomics	Panel: 2/26/02
Besen, Stanley M.	Vice President, Charles River Associates	Panel: 4/18/02 Submission: 4/18/02
Bessen, James (with Eric Maskin)		Public Comments
Bhaskar, R.	Senior Research Fellow, Harvard Business School	Panels: 7/11/02, 10/25/02 Submission: 7/11/02
Black, Edward J.	President and CEO, Computer & Communications Industry Association	Panel: 3/20/02 Submission: 3/20/02
Blackburn, Robert	Vice President, Chief Patent Counsel, Chiron Corp.; Distinguished Scholar, Berkeley Center for Law and Technology	Panel: 2/26/02
Boast, Molly S.	Partner, Debevoise & Plimpton LLP	Panel: 5/14/02
Boulware, Margaret A.	Shareholder, Jenkens & Gilchrist PC	Panel: 10/30/02
Boyce, John R. (with Aidan Hollis)	Professor, Department of Economics, University of Calgary	Public Comments
Brodley, Joseph F.	Professor, Kennison Distinguished Scholar of Law, Boston University School of Law	Panel: 5/2/02 Submission: 5/2/02
Browder, Monte R.	Senior Intellectual Property Counsel, Ivax Corp.	Panel: 3/19/02
Brunt, George B.	Senior Vice President, General Counsel and Secretary, Alcatel USA	Panel: 3/20/02 Submission: 3/20/02
Buddington, Eric	Semi-Professional Programmer	Public Comments
Burchfiel, Kenneth J.	Partner, Sughrue Mion, PLLC	Panel: 4/11/02

Name	Affiliation (at time of Hearings)	
Burk, Dan L.	Julius E. Davis Professor of Law, University of Minnesota Law School	Panels: 3/20/02, 7/10/02 Submissions: 3/20/02, 7/10/02
Burtis, Michelle	Director, LECG, LLC	Panel: 11/6/02
Busey, Roxanne C.	Partner, Gardner Carton & Douglas; Chair, American Bar Association Section of Antitrust Law	Panel: 7/11/02 Submission: 7/11/02
Cargill, Carl	Director of Standards, Sun Microsystems, Inc.	Panel: 4/18/02 Submission: 4/18/02
Carlin, Fiona	Partner, European Law Center, Baker & McKenzie, Brussels	Panel: 5/22/02 Submission: 5/22/02
Carrier, Michael A.	Assistant Professor, Rutgers University School of Law–Camden	Public Comments
Cary, George S.	Partner, Cleary, Gottlieb, Steen & Hamilton	Panel: 5/2/02 Submission: 5/2/02
Casamento, Gregory John	Software Engineer	Public Comments
Casey, Timothy D.	Partner and Chairman of Intellectual Property and Technology Transactions Department, Fried, Frank, Harris, Shriver & Jacobsen	Panel: 4/9/02
Caulfield, Barbara A.	Executive Vice President and General Counsel, Affymetrix, Inc.	Panel: 3/19/02 Submission: 3/19/02
Chaikovsky, Yar R.	General Counsel, Zaplet, Inc.	Panel: 2/27/02
Chambers, Scott A. M.	Associate, Arnold and Porter; Adjunct Faculty Member at Georgetown Law Center and the George Washington University School of Law	Panels: 2/8/02, 10/25/02 Submission: 2/8/02
Chin, Yee Wah	Senior Counsel, Mintz, Levin Cohn, Ferris, Glovsky and Pompeo, PC	Panel: 5/22/02 Submission: 5/22/02
Coffin-Beach, David	President, Torpharm, Inc.	Panel: 3/19/02

Name	Affiliation (at time of Hearings)	
Cohen, Wesley M.	Professor of Economics and Social Science, Carnegie Mellon University; Professor of Economics and Management, Fuqua School of Business, Duke University; Research Associate, National Bureau of Economic Research	Panels: 2/20/02, 10/30/02 Submission: 2/20/02
Cook, Robert N.	Partner, Drinker, Biddle & Reath LLP	Panel: 5/2/02 Submission: 5/2/02
Craft, James A.	Gammage & Burnham	Public Comments
Crossman, Colin (with Thomas Griffin, David Silverstein, & Mark Webbink)	Student, Duke University School of Law	Public Comments
Delrahim, Makan	Republican Chief Counsel, Senate Committee on the Judiciary	Panel: 3/19/02
Detkin, Peter N.	Vice President, Legal and Government Affairs and Assistant General Counsel, Intel Corp.	Panel: 2/28/02 Submission: 2/28/02
Deutsch, Donald R.	Vice President, Standards Strategy and Architecture, Oracle Corp.	Panel: 4/18/02 Submission: 4/18/02
Dick, Rebecca P.	Of Counsel, Swidler Berlin Shereff Friedman, LLP	Panel: 5/14/02 Submission: 5/14/02
Dickinson, Q. Todd	Partner, Howrey, Simon, Arnold & White	Panels: 2/6/02, 10/25/02
Dolmans, Maurits	Partner, Cleary, Gottlieb, Steen & Hamilton, Brussels	Panel: 5/22/02 Submission: 5/22/02
Dreyfuss, Rochelle C.	Pauline Newman Professor of Law, New York University School of Law	Panels: 7/10/02, 7/11/02
Duffy, John F.	Associate Professor of Law, William & Mary Marshall-Wythe School of Law	Panels: 7/10/02, 10/30/02 Submission: 7/10/02
Earp, David J.	Vice President of Intellectual Property, Geron Corp.	Panel: 2/26/02

Name	Affiliation (at time of Hearings)	
Egan, James J.	Senior Vice President, Novirio Pharmaceuticals	Panel: 5/2/02
Ellis, Mark		Public Comments
Ellis, The Honorable T.S., III	Judge, U.S. District Court for the Eastern District of Virginia	Panel: 7/11/02
Ergas, Henry	Managing Director, Network Economics Consulting Group Pty Ltd, Australia	Panels: 5/22/02, 5/23/02 Submissions: 5/22/02, 5/23/02
Evenson, Robert E.	Professor of Economics, Yale University	Panel: 2/20/02 Submission: 2/20/02
Farrell, Joseph	Professor of Economics and Chair of the Competition Policy Center, University of California, Berkeley	Panels: 2/28/02, 5/14/02, 11/6/02 Submissions: 2/28/02 5/14/02
Feinstein, Richard A.	Partner, Boies, Schiller & Flexner LLP	Panel: 5/02/02 Submission: 5/02/02
Fine, Frank	Partner, DLA	Public Comments
Forrester, Ian S.	Executive Partner, White & Case LLP, Brussels; Visiting Professor, University of Glasgow	Panel: 5/22/02 Submission: 5/22/02
Fox, Stephen P.	Associate General Counsel and Director, Intellectual Property, Hewlett-Packard Company	Panel: 2/28/02 Submission: 2/28/02
Frankel, Kenneth M.	Partner, Finnegan, Henderson, Farabow, Garrett & Dunner LLP; Chairman, Antitrust Law Committee, Intellectual Property Law Association	Panel: 4/10/02 Submission: 4/10/02
Friedman, Bradford L.	Director of Intellectual Property, Candence Design Systems, Inc.	Panel: 2/27/02

Name	Affiliation (at time of Hearings)	
Fromm, Jeffery	Senior Managing Counsel, Hewlett-Packard Company	Panels: 4/17/02 11/6/02 Submission: 4/17/02
Futa, Baryn S.	Manager and Chief Executive Officer, MPEG LA, LLC	Panel: 4/17/02 Submission: 4/17/02
Gable, R. Lewis	Partner, Cowan, Liebowitz & Latman, P.C.	Panel: 3/20/02
Gambrell, James B.	Visiting Professor, The University of Texas School of Law	Panel: 10/25/02
Garner, Melvin C.	Partner, Darby & Darby; Second Vice President, American Intellectual Property Law Association	Panel: 10/25/02
Gellhorn, Ernest	Professor of Law, George Mason University School of Law	Panel: 4/18/02 Submission: 4/18/02
Gifford, Daniel J.	Robins, Kaplan, Miller & Ciresi Professor of Law, University of Minnesota School of Law	Panel: 4/18/02 Submission: 4/18/02
Gilbert, Richard J.	Professor of Economics, University of California, Berkeley	Panels: 2/6/02, 2/25/02 Submissions: 2/6/02, 2/25/02
Gleklen, Jonathan I.	Partner, Arnold & Porter	Panel: 5/1/02 Submission: 5/1/02
Glover, Gregory J.	Partner, Ropes & Gray, Counsel to Pharmaceutical Research & Manufacturers of America	Panel: 3/19/02 Submission: 3/19/02
Gordon, George G.	Partner, Dechert	Panel: 7/11/02 Submission: 7/11/02
Greenhall, R. Jordan	Co-founder and Chief Executive Officer, DivX Networks	Panel: 2/27/02

Name	Affiliation (at time of Hearings)	
Greenstein, Shane Mitchell	Elinor and Wendall Hobbs Professor, Kellogg School of Management, Northwestern University	Panel: 2/20/02 Submission: 2/20/02
Griffin, Thomas (with Colin Crossman, David Silverstein & Mark Webbink)	Student, Duke University School of Law	Public Comments
Grindley, Peter	Senior Managing Economist, LECG, Ltd., London	Panels: 4/17/02, 4/18/02 Submission: 4/17/02
Guerin-Calvert, Margaret E.	Principal, Economists, Inc.	Panel: 2/20/02 Submission: 2/20/02
Hall, Bronwyn H.	Professor of Economics, University of California, Berkeley	Panel: 2/26/02, 2/28/02 Submission: 2/26/02
Harris, H. Stephen, Jr.	Partner, Alston & Bird LLP	Panel: 5/23/02 Submission: 5/23/02
Hart, Leslie J.	Vice President of Intellectual Property, Harris Corp.	Panel: 4/9/02
Hayes-Rines, Joanne M.	Vice President, United Investors Association	Panel: 3/19/02
Hoerner, Robert J.	Former Partner, Jones, Day, Reavis & Pogue	Panel: 7/11/02 Submission: 7/11/02
Holleman, Richard J.	Industry Standards Consultant; Treasurer, IEEE Standards Association	Panel: 4/18/02 Submission: 4/18/02 Public Comments
Hollis, Aidan (with John R. Boyce)	Associate Professor, Department of Economics, University of Calgary	Public Comments
Horton, Thomas J.	Partner, Orrick, Herrington & Sutcliffe LLP	Public Comments

Name	Affiliation (at time of Hearings)	
Hughes, James W. (with Edward A. Snyder & Michael J. Moore)	Associate Professor, Economics Department, Bates College	Public Comments
Hughes, Justin	Visiting Professor of Law, University of California, Los Angeles	Panel: 2/28/06
Hull, David W.	Partner, Covington & Burling, Brussels	Panel: 5/22/02 Submission: 5/22/02
Hunt, Robert M.	Economist, Research Department, Federal Reserve Bank of Philadelphia	Public Comments
Institute of Electrical and Electronics Engineers, Inc.		Public Comments
Intellectual Property Owners Association		Public Comments
Jacobson, Jonathan M.	Partner, Akin, Gump, Strauss, Hauer & Feld, LLP	Panel: 5/14/02 Submission: 5/14/02
James, Charles	Assistant Attorney General for Antitrust, U.S. Department of Justice	Speech: 2/6/02 Submission: 2/6/02
Janis, Mark D.	Professor of Law, University of Iowa College of Law	Panels: 4/10/02, 4/11/02, 5/22/02
Japan Fair Trade Commission		Submission: 5/23/02
Jorda, Karl F.	David Rines Professor of Intellectual Property Law and Industrial Innovation, Franklin Pierce Law Center	Panel: 5/23/02
Kahin, Brian	Director, Center for Information Policy, Visiting Professor, College of Information Studies, University of Maryland	Panels: 3/19/02, 4/11/02, 10/25/02, 10/30/02 Submissions: 3/19/02, 4/11/02 Public Comments
Kantor, David A. (with Sal Racciardi)	President, Victory Wholesale Grocers	Public Comments

Name	Affiliation (at time of Hearings)	
Kaplan, Joshua	President and Chief Executive Officer, Founder Intouch Group, Inc.	Panel: 2/27/02
Katsh, Salem M.	Partner, Shearman & Sterling	Panels: 4/10/02, 5/14/02 Submissions: 4/10/02, 5/14/02
Kattan, Joseph	Partner, Gibson, Dunn & Crutcher	Panels: 5/14/02, 11/6/02 Submission: 5/14/02
Katz, Ronald S. (with Adam J. Safer)	Antitrust Litigator, Coudert Bros.	Public Comments
Kelly, Christopher J.	Special Counsel, Litigation Department, Kaye Scholer LLP	Panel: 4/17/02 Submission: 4/17/02
Kesan, Jay P.	Assistant Professor of Law, University of Illinois College of Law	Panels: 4/10/02, 10/25/02 Submission: 4/10/02
Kieff, F. Scott	John M. Olin Senior Research Fellow in Law, Economics and Business, Harvard Law School; Associate Professor of Law, Washington University School of Law	Panel: 4/10/02 Public Comments
Kim, Byungbae	Competition Policy Counselor and Director General, Korean Fair Trade Commission	Panel: 5/23/02 Submission: 5/23/02
Kirsch, Paul F.	Partner, Townsend and Townsend and Crew LLP	Panel: 5/1/02 Submission: 5/1/02
Kirschner, Michael K.	Vice President for Intellectual Property, Immunex Corp.	Panel: 2/26/02
Kitch, Edmund W.	Joseph M. Hatfield Professor of Law, University of Virginia School of Law; Visiting Professor, Georgetown University Law Center	Panels: 2/20/02, 10/30/02
Klein, Benjamin	Professor of Economics, University of California Los Angeles	Panel: 5/1/02 Submission: 5/1/02
Kobak, James B., Jr.	Partner, Hughes Hubbard & Reed LLP	Panel: 7/11/02

Name	Affiliation (at time of Hearings)	
Kohn, Robert H.	Vice Chairman and Director, Borland Software Corp.	Panel: 2/27/02
Konovalov, Zoe		Public Comments
Kovacic, William E.	General Counsel, Federal Trade Commission	Panel: 2/8/02 Submission: 2/8/02
Koyanagi, Masayuki	Director, Institute of Intellectual Property, JETRO	Panel: 5/23/02 Submission: 5/23/02
Kuester, Jeffrey R. (with Lawrence E. Thompson)	Partner, Thomas, Kayden, Horstemeyer & Risley, LLP	Panel: 4/11/02 Public Comments
Kulbaski, James J.	Partner, Oblon, Spivak, McClelland, Maier & Neustadt, P.C.	Panel: 4/17/02 Submission: 4/17/02 Public Comments
Kunin, Stephen G.	Deputy Commissioner for Patent Examination Policy, U.S. Patent and Trademark Office	Panels: 4/10/02, 7/10/02, 7/11/02
Kushan, Jeffrey P.	Partner, Powell, Goldstein, Frazer & Murphy, LLP; currently Partner, Sidley Austin Brown & Wood LLP	Panels: 4/11/02, 10/25/02 Submission: 4/11/02
Lang, John Temple	Counsel, Cleary, Gottlieb, Steen & Hamilton, Brussels; Visiting Professor, Trinity College; Senior Research Fellow, Oxford	Panel: 5/22/02 Submission: 5/22/02
Langenfeld, James A.	Director, LECG, LLC	Panel: 2/20/02 Submission: 2/20/02
League for Programming Freedom		Public Comments
Leavy, James	Member, Serra Leavy & Cazals	Panel: 5/22/02 Submission: 5/22/02
Lee, Rusty	Small Business Owner and Professional Software Developer	Public Comments

Name	Affiliation (at time of Hearings)	
Leggett, Nickolaus E.	Independent Inventor and U.S. patent holder	Public Comments
Lemley, Mark	Professor of Law and Director, Berkeley Center for Law & Technology, Boalt Hall School of Law, University of California, Berkeley; Of Counsel, Keker & Van Nest	Panels: 2/25/02, 4/18/02 Submission: 4/18/02
Lennros, Hans		Public Comments
Lerner, Josh	Jacob H. Schiff Professor of Investment Banking, Harvard Business School	Panels: 2/20/02, 4/17/02 Submissions: 2/20/02, 4/17/02 Public Comments
Levin, Jonathan D.	Assistant Professor of Economics, Stanford University; National Fellow, Hoover Institution	Panel: 10/25/02
Levin, Richard C.	President, Yale University	Panel: 2/6/02 Submission: 2/6/02 Public Comments
Liebowitz, Stan	Professor of Managerial Economics, School of Management, The University of Texas at Dallas	Panel: 2/20/02 Submission: 2/20/02
Linck, Nancy J.	Senior Vice President, General Counsel and Secretary, Guilford Pharmaceuticals	Panels: 4/9/02, 10/25/02
Lipsky, Abbott B., Jr.	Partner, Latham & Watkins	Panels: 5/14/02, 5/23/02 Submission: 5/14/02
Liu, Dr. Len-yu	Commissioner, Taiwan Fair Trade Commission	Panel: 5/23/02 Submission: 5/23/02
Lo, Allen M.	Director of Intellectual Property, Juniper Networks, Inc.	Panel: 4/18/02 Submission: 4/18/02
Love, James	Director, Consumer Project on Technology	Panel: 3/19/02 Submission: 3/19/02

Name	Affiliation (at time of Hearings)	
Love, John J.	Director, Technology Center 2100, U.S. Patent and Trademark Office	Panels: 2/27/02, 2/28/02 Submission: 2/27/02
Lunney, Glynn S., Jr.	Professor of Law, Tulane Law School	Panel: 7/10/02 Submission: 7/10/02
MacKie-Mason, Jeffrey K.	Arthur W. Burks Professor of Information and Computer Science, Professor of Economics and Public Policy, University of Michigan	Panel: 5/01/02 Submission: 5/01/02
Maebius, Stephen B.	Partner, Foley & Lardner	Panel: 4/11/02 Submission: 4/11/02
Marasco, Amy A.	Vice President and General Counsel, American National Standards Institute	Panel: 4/18/02 Submission: 4/18/02
Mar-Spinola, Julie	Chief Litigation and Intellectual Property Counsel, Atmel Corporation	Panel: 2/28/02
Maskin, Eric (with James Bessen)	Harvard University and Massachusetts Institute of Technology	Public Comments
McCurdy, Daniel	President and Chief Executive Officer, ThinkFire	Panel: 3/20/02
McFalls, Michael	Associate, Jones Day Reavis & Pogue	Panel: 11/06/02
McGarey, Barbara M.	Chief Counsel, National Institutes of Health	Panel: 11/06/02
McGowan, David	Associate Professor of Law, University of Minnesota Law School	Panel: 4/17/02 Submission: 4/17/02
Mehta, Kirtikumar	Director, Directorate General for Competition, European Commission	Panel: 5/22/02 Submission: 5/22/02
Mejia, Luis	Senior Associate, Office of Technology Licensing, Stanford University	Panel: 2/27/02
Melamed, A. Douglas	Partner, Wilmer, Cutler & Pickering	Panels: 5/01/02, 5/14/02 Submission: 5/1/02

Name	Affiliation (at time of Hearings)	
Merges, Robert P.	Wilson Sonsini Goodrich & Rosati Distinguished Professor of Law and Technology, Boalt Hall School of Law; Director, Berkeley Center for Law and Technology, University of California, Berkeley	Panels: 2/26/02, 2/28/02 Submissions: 2/26/02, 2/28/02
Merrill, Stephen A.	Executive Director, Board on Science Technology and Economic Policy, National Research Council/National Academy of Sciences	Panels: 10/25/02, 10/30/02
Microsoft Corporation		Public Comments
Miller, Joseph Scott	Assistant Professor, Lewis & Clark Law School	Panel: 5/14/02 Submission: 5/14/02
Misener, Paul	Vice President, Global Public Policy, Amazon.com	Panel: 2/27/02
Mitchell, John T.	Partner, Seyfarth Shaw LLP	Public Comments
Moltenbrey, M.J.	Partner, Freshfields Bruckhaus Deringer	Panel: 5/14/02
Moore, Michael J. (with Edward A. Snyder & James W. Hughes)	Bank of America Research Professor of Business Administration, Darden School, University of Virginia	Public Comments
Moree, Jeremiah T.	PC Xperience	Public Comments
Morgan, Paul F.		Public Comments
Morse, M. Howard	Partner, Drinker, Biddle & Reath, LLP	Panel: 4/17/02 Submission: 4/17/02
Mossinghoff, Gerald J.	Senior Counsel, Oblon Spivak, McClelland, Maier & Neustadt; Visiting Professor of Intellectual Property, The George Washington School of Law	Panels: 2/6/02, 10/30/02 Submission: 2/6/02 Public Comments
Mowery, David C.	Milton W. Terrill Professor of Business, and Director of the Haas School of Business Ph.D. Program, University of California, Berkeley	Panel: 2/27/02
Muris, Timothy	Chairman, Federal Trade Commission	Speech: 2/6/02

Name	Affiliation (at time of Hearings)	
Musacchia, Mary U.	Counsel to the President/CEO and Director, Government Relations & Public Policy, SAS Institute Inc.	Panel: 4/9/02 Submission: 4/9/02 Public Comments
Myrick, Ronald	Chief Patent Counsel, General Electric; President-Elect, American Intellectual Property Law Association; President, Monogram Licensing, Inc.	Panels: 3/19/02, 10/30/02 Submission: 3/19/02
Nelson, Philip B.	Principal, Economists, Inc.	Panel: 2/20/02 Submission: 2/20/02
Newberg, Joshua A.	Assistant Professor, Robert H. Smith School of Business, University of Maryland	Panels: 4/17/02, 5/23/02 Submission: 4/17/02
Newman, The Honorable Pauline	Judge, U.S. Court of Appeals for the Federal Circuit	Panel: 2/6/02
Nydegger, Rick D.	Shareholder, Workman, Nydegger & Seeley; First Vice President, American Intellectual Property Association	Panels: 2/27/02, 4/11/02 Submissions: 2/27/02, 4/11/02
O'Brien, Vincent E.	Director, LECG, LLC	Public Comments
Oehler, Ross	Vice President, U.S. Patent Operations, Aventis Pharmaceuticals, Inc.	Panel: 2/26/02
Olshove, DonPaul		Public Comments
Ordover, Janusz A.	Professor of Economics, New York University	Panels: 2/20/02, 11/6/02 Submission: 2/20/02
O'Rourke, Maureen A.	Professor of Law, Boston University School of Law	Panel: 2/20/02
Open GIS Consortium, Inc.		Public Comments
Parkhurst, Roger W.	Partner, Parkhurst & Wendel, LLP; President, American Intellectual Property Law Association	Panel: 4/10/02

Name	Affiliation (at time of Hearings)	
Patterson, Mark R.	Associate Professor of Law, Fordham University School of Law	Panel: 4/18/02 Submission: 4/18/02
Peterson, Scott K.	Corporate Counsel for Intellectual Property, Hewlett-Packard Company; Chair, American National Standards Institute Patent Committee	Panels: 4/18/02, 11/6/02 Submissions: 4/18/02, 11/6/02
Pharmaceutical Research and Manufacturers of America		Public Comments
Pitofsky, Robert	Professor of Law, Georgetown University Law Center; Member, Board of Directors, American Intellectual Property Association	Panel: 2/6/02 Public Comments
Place, John	Executive Director, Center for Internet and Society, Stanford University Law School	Panel: 2/27/02
Pooley, James	Partner, Milbank, Tweed, Hadley & McCoy	Panels: 2/27/02, 10/30/02
Poppen, Joel	Director, Patent Litigation and Licensing, Micron Technology, Inc.	Panel: 2/28/02
Potter, Robert	Chief, Legal Policy Section, Antitrust Division, U.S. Department of Justice	Speech: 4/17/02
Pritchard, Thomas, Sr.	Digital Video Yellow Pages	Public Comments
Proger, Phillip A.	Partner, Jones, Day, Reavis & Pogue	Panel: 5/2/02
Prywes, Daniel I. (with David A. Balto)	Partner, Pepper Hamilton LLP	Public Comments
Putnam, Jonathan D.	Assistant Professor of the Law and Economics of Intellectual Property, University of Toronto School of Law	Panel: 4/17/02 Submission: 4/17/02
Quillen, Cecil D., Jr.	Senior Advisor, Cornerstone Research Group	Panels: 3/19/02, 7/11/02 Submissions: 3/19/02, 7/11/02 Public Comments
Rai, Arti K.	Assistant Professor of Law, University of Pennsylvania Law School	Panel: 4/10/02

Name	Affiliation (at time of Hearings)	
Rapp, Richard T. (with Lauren J. Stiroh)	President, National Economic Research Associates	Panel: 4/18/02 Submission: 4/18/02 Public Comments
Rey, Patrick	Professor of Economics, University of Tolouse, France, and Research Director, Institut d'Economie Industrielle	Panel: 5/22/02 Submission: 5/22/02
Rhoden, Desi	President and Chief Executive Officer, Advanced Memory International, Inc.	Panel: 2/28/02
Ricciardi, Sal (with David Kantor)	President, Pharmaceutical Distributors Association; President, Purity Wholesale Grocers, Inc.	Public Comments
Riches, Robert M., Jr.		Public Comments
Rill, James	Partner and Co-Chair of the Antitrust Practice Group, Howrey, Simon, Arnold & White	Panel: 5/23/02
Rogan, James E.	Undersecretary of Commerce for Intellectual Property and Director of U.S. Patent and Trademark Office	Panel: 2/6/02 Submission: 2/6/02 Public Comments
Rubinfeld, Daniel L.	Robert L. Bridges Professor of Law, and Professor of Economics, University of California, Berkeley	Panel: 2/25/02
Rule, Charles F. (Rick)	Partner, Fried, Frank, Harris, Shriver & Jacobson	Panel: 11/6/02
Safer, Adam J. (with Ronald S. Katz)	Miller & Wrubel P.C.	Public Comments
Sander, Scott	President, Chief Executive Officer and Co-Founder, SightSound Technologies, Inc.	Panel: 3/20/02 Submission: 3/20/02
Saunders, Kurt M.	Assistant Professor of Business Law, California State University, Northridge	Public Comments
Scherer, F.M.	Roy E. Larson Professor of Public Policy and Management, Harvard University	Panel: 7/10/02

Name	Affiliation (at time of Hearings)	
Scotchmer, Suzanne	Professor of Economics and Public Policy, University of California, Berkeley	Panels: 2/26/02, 4/10/02 Submissions: 2/26/02, 4/10/02
Seide, Rochelle K.	Partner, Baker Botts, LLP	Panel: 3/19/02
Shapiro, Carl	Transamerica Professor of Business Strategy, Haas School of Business; Director and Professor of Economics, Institute of Business and Economic Research, University of California, Berkeley	Panels: 2/27/02, 5/01/02, 5/02/02, 11/06/02 Submissions: 5/1/02, 5/2/02
Shelanski, Howard	Acting Professor of Law, and Director, Berkeley Center for Law & Technology, University of California, Berkeley	Panel: 2/25/02
Sibley, David S.	John Michael Stuart Professor of Economics, University of Texas at Austin	Panel: 5/14/02 Submission: 5/14/02
Sidak, J. Gregory	F.K. Weyerhaeuser Fellow in Law and Economics Emeritus, American Enterprise Institute	Panel: 5/14/02
Silverstein, David (with Colin Crossman, Thomas Griffin, & Mark Webbink)	Student, Duke University School of Law	Public Comments
Snyder, Edward A. (with James W. Hughes & Michael J. Moore)	Dean and Professor of Economics, University of Chicago Graduate School of Business	Panel: 3/19/02 Submission: 3/19/02 Public Comments
Sobel, Gerald	Partner, Kaye Scholer LLP	Panel: 7/10/02 Public Comments
Sprigman, Christopher J.	Counsel, King & Spalding	Panel: 5/1/02 Submission: 5/1/02
Stack, Stephen A., Jr.	Partner, Dechert	Panel: 5/2/02 Submission: 5/2/02
Stallman, Richard	President, Free Software Corp.	Panel: 4/9/02 Public Comments

Name	Affiliation (at time of Hearings)	
Stiroh, Lauren J. (with Richard T. Rapp)	Vice President, National Economics Research Associates	Panel: 4/18/02 Submission: 4/18/02 Public Comments
Stoll, Robert L.	Administrator for External Affairs, U.S. Patent and Trademark Office	Panel: 4/11/02
Stoner, Robert D.	Senior Vice President, Economists, Inc.	Panels: 2/26/02, 10/30/02 Submission: 2/26/02
Sung, Lawrence M.	Assistant Professor, University of Maryland School of Law, Baltimore	Panels: 2/8/02, 4/17/02 Submissions: 2/8/02, 4/17/02
Swanson, Daniel G.	Partner, Gibson, Dunn & Crutcher LLP	Panel: 4/18/02 Submission: 4/18/02
Tada, Toshiaki	Senior Associate, Hibiya Sogo; International Legal Trainee, Weil, Gotshal & Manges LLP	Panel: 5/23/02
Taylor, Robert P.	Partner, Howrey Simon Arnold & White LLP	Panels: 2/27/02, 7/11/02, 10/25/02 Submissions: 2/27/02, 7/11/02
Teece, David J.	Mitsubishi Bank Professor of International Business and Finance, Haas School of Business, University of California, Berkeley	Panels: 2/26/02, 2/27/02, 4/18/02 Submissions: 2/26/02, 2/27/02
Telecky, Frederick J., Jr.	Senior Vice President and General Patent Counsel, Texas Instruments, Inc.	Panel: 2/28/02 Submission: 6/3/02 Public Comments
Thomas, John R.	Associate Professor of Law, The George Washington University School of Law; Professor of Law, Georgetown University Law Center; Visiting Researcher, Congressional Research Service; Instructor, U.S. Patent and Trademark Office, Patent Academy	Panels: 2/8/02, 4/10/02, 4/11/02, 10/25/02, 10/30/02 Submissions: 2/8/02, 4/11/02
Thompson, Earle	Intellectual Asset Manager and Senior Counsel, Texas Instruments, Inc.	Panel: 11/6/02

Name	Affiliation (at time of Hearings)	
Thompson, Lawrence E. (with Jeffery R. Kuester)	Associate, Thomas, Kayden, Horstemeyer & Risley, LLP	Public Comments
Thompson, Mozelle W.	Commissioner, Federal Trade Commission	Panel: 2/25/02 Submission: 2/25/02
Thurston, Richard L.	Vice President and General Counsel, Taiwan Semiconductor Manufacturing Company, Ltd.	Panel: 3/20/02 Submission: 3/20/02
Tom, Willard K.	Partner, Morgan, Lewis & Bockius, LLP	Panels: 2/8/02, 5/22/02 Submission: 2/8/02
Udell, Lawrence J.	Executive Director, California Invention Center, the Center for New Venture Alliance and Intellectual Property International	Panel: 2/28/02 Submission: 2/28/02
United States Council for International Business		Public Comments
Updegrove, Andrew	Partner, Lucash, Gesmer & Updegrove, LLP	Panel: 4/18/02 Submission: 4/18/02
Varian, Hal R.	Dean, School of Information Management and Systems; Professor, Haas School of Business and Department of Economics, University of California, Berkeley	Panel: 2/25/02 Submission: 2/25/02
Venit, James S.	Partner, Skadden, Arps, Slate, Meagher & Flom, LLP, Brussels	Panel: 5/22/02 Submission: 5/22/02
Vishny, Paul	Member, D'Ancona & Pflaum, LLC; General Counsel, Telecommunications Industry Association	Panel: 11/6/02
Vistnes, Gregory	Vice President, Charles River Associates	Panel: 5/14/02 Submission: 5/14/02
Wamsley, Herbert C.	Executive Director, Intellectual Property Owners Association	Panel: 7/10/02

Name	Affiliation (at time of Hearings)	
Webbink, Mark (with Colin Crossman, Thomas Griffin, & David Silverstein)	Senior Vice President, General Counsel and Secretary, Red Hat, Inc.	Panel: 3/20/02 Public Comments
Weil, Matthew F.	Partner, McDermott, Will & Emery	Panel: 7/11/02 Submission: 7/11/02
Weinstein, Les J.	Partner, Squire, Sanders & Dempsey	Panel: 2/27/02 Submission: 2/27/02
Weitzner, Daniel J.	Director of Technology and Society Activities, World Wide Web Consortium	Panel: 4/18/02 Submission: 4/18/02 Public Comments
Weller, Charles D.	Law Offices of Charles D. Weller	Public Comments
White, Lawrence J.	Arthur E. Imperatore Professor of Economics, Leonard N. Stern School of Business, New York University	Panel: 2/20/06 Submission: 2/20/06
Whitener, Mark D.	Antitrust and General Counsel, General Electric	Panel: 5/1/02 Submission: 5/1/02
Widge, Alik	Technology Researcher and Medical Professional	Public Comments
Wiley, John Shepard, Jr.	Professor of Law, University of California, Los Angeles	Panel: 5/1/02 Submission: 5/1/02
Willingmyre, George T.	President, GTW Associates	Public Comments
Wolin, Harry	Vice President of Intellectual Property, Advanced Micro Devices, Inc.	Panel: 3/20/02 Submission: 3/20/02
Yao, Dennis A.	Associate Professor of Business and Public Policy, The Wharton School, University of Pennsylvania	Panel: 4/18/02 Submission: 4/18/02
Young, Robert	Chairman, Center for Public Domain; Chairman, Red Hat, Inc.	Panel: 4/11/02
Zanfagna, Gary	Associate General Counsel for Antitrust, Honeywell International	Panel: 3/20/02

Name	**Affiliation (at time of Hearings)**	
Ziedonis, Rosemarie	Assistant Professor of Management, The Wharton School, University of Pennsylvania	Panel: 3/20/02 Submission: 3/20/02

APPENDIX B

HEARINGS SUBMISSIONS

Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy February 6 - November 6, 2002

Primary source: http://www.ftc.gov/opp/intellect/index.htm

Panelist	Title	Hearing Date
Aharonian, Greg	Statistics on Prior Art Citations for U.S. Computing Patents	2/27/02
Allen, Gwillym	Canadian Intellectual Property Enforcement Guidelines	5/22/02
Anderman, Steve	Microsoft in Europe	5/22/02
Arora, Ashish	Patents, R&D and Market for Technology Refusal to License: A Transaction Approach Refusal to License: A Transaction Based Perspective	2/25/02 5/1/02 5/1/02
Arrow, Kenneth J.	Untitled	2/25/02
Baker, Charles P.	Statement	7/11/02
Barr, Robert	Untitled	2/28/02
Barton, John H.	Patents and Antitrust Emerging Paradigms	2/26/02
Beeney, Garrard R.	Pro-Competitive Aspects of Intellectual Property Pools: A Proposal for Safe Harbor Provisions	4/17/02
Beier, David	Testimony of the Biotechnology Industry Organization	2/26/02
Besen, Stanley M.	Standard Setting and Intellectual Property: An Outline of the Issues	4/18/02

Panelist	Title	Hearing Date
Bhaskar, R.	Antitrust Law in the Federal Circuit: Conflict in the Public Purpose	7/11/02
Black, Edward J.	Testimony	3/20/02
Brodley, Joseph F.	Joseph F. Brodley & Maureen O'Rourke, Patent Settlement Agreements: Preliminary Thoughts Questions for FTC/DOJ IP and Antitrust Patent Settlement Hearing	5/2/02 5/2/02
Brunt, George B.	Alcatel Company Presentation	3/20/02
Burk, Dan L.	Dan L. Burk & Mark Lemley, Is Patent Law Technology Specific? Patent Disclosure Doctrines	3/20/02 7/10/02
Busey, Roxane C.	SECTION OF ANTITRUST LAW, AMERICAN BAR ASSOCIATION, REPORT ON THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT (2002). Untitled	7/11/02 7/11/02
Cargill, Carl	Intellectual Property Rights and Standards Setting Organizations: An Overview of Failed Evolution	4/18/02
Carlin, Fiona	The EU Committee, American Chamber of Commerce in Belgium, Position Paper on the Commission's Review of the Technology Transfer Block Exemption, Regulation 240/96 Review of the Block Exemption on Technology Transfer	5/22/02 5/22/02
Cary, George S.	Antitrust Implications of Patent Settlements	5/2/02
Caulfield, Barbara A.	Business Perspectives on Patents: Biotech and Pharmaceuticals	3/19/02
Chambers, Scott A. M.	Patenting Procedures	2/8/02

Panelist	Title	Hearing Date
Chin, Yee Wah	ABA Comments on EC Evaluation Report on TTBE	5/22/02
	Yee Wah Chin & Thomas G. Krattenmaker, *Antitrust Update*, MERGERS & ACQUISITIONS, December 2001, at 30.	5/22/02
	COMMISSION OF THE EUROPEAN COMMUNITIES, COMMISSION EVALUATION REPORT ON THE TRANSFER OF TECHNOLOGY BLOCK EXEMPTION REGULATION NO. 240/96: TECHNOLOGY TRANSFER AGREEMENTS UNDER ARTICLE 81	5/22/02
	Section of Antitrust Law, Section of International Law and Practice, Section of Intellectual Property Law, American Bar Association, Joint Comments on the Commission Evaluation Report on the Transfer of Technology Block Exemption Regulation No. 240/96 Technology Transfer Agreements Under Article 81	5/22/02
	Unilateral Technology Suppression: Appropriate Antitrust and Patent Law Remedies, 66 ANTITRUST L.J. 441 (1998).	5/22/02
Cohen, Wesley M.	Patents: Their Effectiveness and Role	2/20/02
Cook, Robert N.	A Competition View of Patent Settlements: Settling Patent Disputes by Merger: Some Antitrust Considerations	5/2/02
Detkin, Peter N.	A Semiconductor Patent Survey	2/28/02
Deutsch, Donald	Statement on Intellectual Property Strategy in Standards Activity	4/18/02
Dick, Rebecca	Extending the Useful Life of Intellectual Property: Antitrust Risks and Safety Zones	5/14/02

Panelist	Title	Hearing Date
Dolmans, Maurits	EU Standardization: IPR Policies and RAND Licensing	5/22/02
	Standards for Standards	5/22/02
Duffy, John F.	Nonobviousness: The Economics and Legal Process of the Doctrine	7/10/02
Ergas, Henry	Intellectual Property Rights & Competition Law	5/22/02
	Treatment of Unilateral Refusals to License and Compulsory Licensing in Australia	5/22/02
Evenson, Robert E.	IPRs and Innovation	2/20/02
Farrell, Joseph	Competition and IP	2/28/02
	Incentives to Challenge IP	5/14/02
	IP Bundling and Antitrust	5/14/02
Feinstein, Richard A.	Per Se Antitrust Risks in Hatch-Waxman Agreements	5/2/02
Forrester, Ian S.	Compulsory Licensing in Europe: A Rare Cure to Aberrant National Intellectual Property Rights?	5/22/02
Fox, Stephen P.	Opening Statement	2/28/02
Fromm, Jeffery	Patent Pools and Cross-Licensing	4/17/02
Futa, Baryn S.	Statement	4/17/02
Gellhorn, Ernest	Standard-Setting	4/18/02
Gifford, Daniel J.	Standards and Intellectual Property: Licensing Terms: Some Comments	4/18/02
Gilbert, Richard	The Evolution of Guidelines	2/6/02
	Should Innovation Have a Role in Merger Policy?	2/25/02

Panelist	Title	Hearing Date
Gleklen, Jonathan	Antitrust Liability for Unilateral Refusals to License Intellectual Property: *Xerox* and Its Critics	5/1/02
	Unilateral Refusals to License IP	5/1/02
Glover, Gregory J.	PhRMA Statement: Competition in the Pharmaceutical Marketplace	5/19/02
Gordon, George G.	The Implications of Federal Circuit Jurisdiction for the Development of Antitrust Law	7/11/02
Greenstein, Shane	Market Structure and Innovation: A Brief Synopsis	2/20/02
Grindley, Peter	IP, Cross-Licensing and Patent Pools: Similarities and Contrasts	4/17/02
Guerin-Calvert, Margaret E.	Competition and Innovation in the Context of Network Economics	2/20/02
Hall, Bronwyn H.	Patents and Innovation	2/26/02
	Testimony	2/26/02
Harris, H. Stephen, Jr.	Competition Law and Intellectual Property Protection in Japan: A Half-Century of Progress, a New Millennium of Challenges	5/23/02
	IP and Competition Law Developments in Japan	5/23/02
Hoerner, Robert J.	*The Decline (and Fall?) of the Patent Misuse Doctrine in the Federal Circuit*, 69 ANTITRUST L.J. 669 (2001).	7/11/02
	Is Activity Within the Subsections of 35 U.S.C. § 271(d) Protected from a Finding of Antitrust Violation?, 74 J. PATENT & TRADEMARK OFFICE SOCIETY 283 (1992).	7/11/02
	Patent Misuse	7/11/02
	Patent Misuse: Portents for the 1990s, 59 ANTITRUST L.J. 687 (1991).	7/11/02

Panelist	Title	Hearing Date
Holleman, Richard J.	A Response: Government Guidelines Should Not Be Issued in Connection with Standards Setting	4/18/02
	Comments on Standards Setting and Intellectual Property	4/18/02
Hull, David W.	The IMS Case: A Comparative Perspective	5/22/02
	David W. Hull, James R. Atwood & James B. Perrine, *Intellectual Property: Compulsory Licensing*, EUROPEAN ANTITRUST REV. (2002).	5/22/02
Jacobson, Jonathan M.	Counseling in Uncertainty: The Law of Tying & Intellectual Property	5/14/02
	Did the Per Se Rule on Tying Survive 'Microsoft'?, previously published as: Jonathan M. Jacobson & Abid Qureshi, *Did the Per Se Rule on Tying Survive* 'Microsoft'?, 226 N.Y.L.J. 1 (2001).	5/14/02
James, Charles	Opening Day Comments	2/6/02
Japan Fair Trade Commission 2002 Study Group on "Patents in New Areas and Competition Policy"	Untitled	5/23/02
Kahin, Brian	Presentation	3/19/02
	What are Business Methods?	4/11/02
Katsh, Salem M.	Presentation	4/10/02
	Presentation	5/14/02
Kattan, Joseph	Evaluating Patent Infringement and Validity in Antitrust Analysis	5/14/02
Kelly, Christopher J.	Patent Pools and Antitrust Enforcement – 1997-2001	4/17/02
Kesan, Jay P.	Toward a Better Informed Patent System	4/10/02

Panelist	Title	Hearing Date
Kim, Byungbae	Korean Competition Policy with Regard to Intellectual Property Rights	5/23/02
Kirsch, Paul F.	Refusals to License IP – The Perspective of the Private Plaintiff	5/1/02
Klein, Benjamin	Antitrust and IP: What the Feds Should Do About Refusals to Deal	5/1/02
Kovacic, William E.	Antitrust Law for Intellectual Property Attorneys	2/8/02
Koyanagi, Masayuki	Japanese Perspective on Relationship Between IP and Antitrust	5/23/02
Kulbaski, James J.	Comments on Patent Pools and Standards for Federal Trade Commission Hearings Regarding Competition & Intellectual Property	4/17/02
Kushan, Jeff	Examination Reforms as a Means of Improving Patent Quality	4/11/02
Lang, John Temple	Compulsory Licensing of Intellectual Property in European Community Antitrust Law	5/22/02
Langenfeld, James	Innovation, Competition, and Intellectual Property: Providing an Economic Framework	2/20/02
Leavy, James	LESI European Committee, Comments on the Commission Document: "Evaluation Report on the Transfer of Technology Block Exemption Regulation No. 240/96" The Technology Transfer Block Exemption	5/22/02 5/22/02
Lemley, Mark A.	Intellectual Property Rights and Standard Setting Organizations	4/18/02
Lerner, Josh	Into the Patent Thicket Patent Pools: Some Policy Considerations	2/20/02 4/17/02
Liebowitz, Stan	Untitled	2/20/02

Panelist	Title	Hearing Date
Lipsky, Abbott B., Jr.	"Amateurs in Black"	5/14/02
Liu, Len-yu	The CD Product Patent Licensing Practices in Taiwan Were in Violation of the Fair Trade Law	5/23/02
Lo, Allen M.	A Need For Intervention: Keeping Competition Alive in the Networking Industry in the Face of Increasing Patent Assertions Against Standards	4/18/02
Love, James	Perspectives on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy	3/19/02
Love, John J.	Steps Taken to Improve Patent Quality	2/27/02
Lunney, Glynn S., Jr.	Patents, the Federal Circuit, and the Simply Property Perspective	7/10/02
MacKie-Mason, Jeffrey K.	What to Do About Refusals to License? What to Do About Unilateral Refusals to License?	5/1/02 5/1/02
Maebius, Stephen	Opening Remarks	4/11/02
Marasco, Amy A.	Standards-Setting Practices: Competition, Innovation and Consumer Welfare	4/18/02
McGowan, David	Enforcement Issues Regarding Pooling and Cross-Licensing Enforcement Issues Regarding Pooling and Cross-Licensing (slides)	4/17/02 4/17/02
Mehta, Kirtikumar	Licensing of Intellectual Property Under EU Competition Rules: The Review of the Technology Transfer Block Exemption Regulation	5/22/02

Panelist	Title	Hearing Date
Melamed, A. Douglas	A. Douglas Melamed & Ali M. Stoeppelwerth, The CSU Case: Facts, Formalism and the Intersection of Antitrust and Intellectual Property Law (April 11, 2002), subsequently published as: A. Douglas Melamed & Ali M. Stoppelworth, *The* CSU *Case: Facts, Formalism and the Intersection of Antitrust and Intellectual Property Law*, 10 GEORGE MASON L. REV. 407 (2002).	5/1/02
Merges, Robert P.	Second Order Patent Scope Patent Standards and Procedures: Literature Summary and Discussion of Prospects	2/26/02 2/28/02
Miller, Joseph Scott	This Bitter Has Some Sweet: Antitrust Enforcement Benefits from Patent Law's Procedural Rules	5/14/02
Morse, M. Howard	Cross-Licensing and Patent Pools	4/17/02
Mossinghoff, Gerald J.	Statement	2/6/02
Musacchia, Mary U.	Prepared Remarks	4/9/02
Myrick, Ronald	Testimony	3/19/02
Nelson, Philip	Relationships Between Market Structure and Innovation	2/20/02
Newberg, Joshua A.	*Antitrust, Patent Pools, and the Management of Uncertainty*, 3 ATLANTIC L.J. 1 (2000).	4/17/02
Nydegger, Rick D.	Comments Comments	2/27/02 4/11/02
Ordover, Janusz A.	Antitrust for the New Economy or New Economics for Antitrust	2/20/02
Patterson, Mark R.	Inventions, Industry Standards, and Intellectual Property	4/18/02

Panelist	Title	Hearing Date
Peterson, Scott K.	Patents and Standard-Setting Processes	4/18/02
	Consideration of Patents During the Setting of Standards	11/6/02
Putnam, Jonathan D.	The Regulation of Patent Pools	4/17/02
Quillen, Cecil D., Jr.	Statement	3/19/02
	Testimony Notes	7/11/02
Rapp, Richard T.	Richard T. Rapp & Lauren J. Stiroh, Standard Setting and Market Power	4/18/02
Rey, Patrick	Economics of Compulsory Licensing	5/22/02
	Patrick Rey & Jean Tirole, A Primer on Foreclosure (February 21, 1997).	5/22/02
Rogan, James E.	Prepared Remarks	2/6/02
Sander, Scott	Prepared Remarks	3/20/02
Scotchmer, Suzanne	Competition Policy and Innovation: The Context of Cumulative Innovation	2/26/02
	Cumulative Innovation: Breadth and Standards for Protection	4/10/02
Shapiro, Carl	*Competition Policy and Innovation* (Organisation for Econ. Co-operation and Development, STI Working Paper No. 2002/11, 2002).	5/1/02
	Antitrust Limits to Patent Settlements	5/2/02
Sibley, David S.	Long Term Contracts as Barriers to Entry	5/14/02
Snyder, Edward A.	Untitled	3/19/02
Sprigman, Christopher J.	Unilateral Refusals to License IP: *Xerox* and the Right to Exclude	5/1/02

Panelist	Title	Hearing Date
Stack, Stephen A., Jr.	Abbott Laboratories and Geneva Pharmaceuticals, Inc., File No. 981-0395: Comment on Proposed Consent Order	5/2/02
	Patent Settlements	5/2/02
Stiroh, Lauren J.	Richard T. Rapp & Lauren J. Stiroh, Standard Setting and Market Power	4/18/02
Stoner, Robert	Intellectual Property and Innovation	2/26/02
Sung, Lawrence M.	Scope and Enforcement of Patent Rights	2/08/02
	Greater Predictability May Result in Patent Pools	4/17/02
	Patent Pools and Cross Licensing	4/17/02
	JEANNE CLARK, JOE PICCOLO, BRIAN STANTON & KARIN TYSON, U.S. PATENT & TRADEMARK OFFICE, PATENT POOLS: A SOLUTION TO THE PROBLEM OF ACCESS IN BIOTECHNOLOGY PATENTS? (2000).	4/17/02
Swanson, Daniel G.	Evaluating Market Power in Technology Markets when Standards Are Selected in Which Private Parties Own Intellectual Property Rights	4/18/02
Taylor, Robert P.	Presentation	2/27/02
	Statement	7/11/02
Teece, David J.	Intellectual Property, Valuation, and Licensing	2/26/02
	IP, Competition Policy, and Enforcement Issues	2/27/02
Telecky, Frederick J., Jr.	Statement	2/28/02

Panelist	Title	Hearing Date
Thomas, John R.	Patent Law and Policy: An Introduction	2/8/02
	Intellectual Property Rights in Computer Software and Business Methods: A Skeptical View	4/11/02
Thompson, Mozelle W.	Economic Perspectives on Intellectual Property, Competition, and Innovation	2/25/02
Thurston, Richard L.	Business and Other Perspectives on Real-World Experience with Patents	3/20/02
	Competition and Intellectual Property Law and Policy as It Relates to the Semiconductor Foundry Industry	3/20/02
Tom, Willard K.	Antitrust Law for IP Lawyers: Agreements Under § 1 of the Sherman Act	2/8/02
	Antitrust for IP Lawyers: Mergers	2/8/02
Udell, Lawrence J.	Untitled	2/28/02
Updegrove, Andrew	Is There a Need for Government Regulation of the Standard Setting Process?: An Analysis of Underlying Realities	4/18/02
	Observations on the Current Dynamics of Consortium Standard Setting	4/18/02
	Standard Setting and Consortium Structures	4/18/02
Varian, Hal R.	Intellectual Property, Competition and Innovation: Some Partially-Baked Ideas	2/25/02
Venit, James S.	Intellectual Property and EC Antitrust: Unilateral Refusals to License	5/22/02

Panelist	Title	Hearing Date
Vistnes, Gregory	Bundling and Tying: Antitrust Analysis in Markets with Intellectual Property	5/14/02
	Practical Issues in Intellectual Property Investigations: Balancing Rules Versus Discretion	5/14/02
Webbink, Mark	Mark Webbink, Colin Crossman, Thomas Griffin & David Silverstein, Red Hat's Comments to the Joint FTC/DOJ Hearing on Competition and Intellectual Property Law	3/20/02
Weil, Matthew F.	Statement	7/11/02
Weinstein, Les J.	Current Issues Involving the U.S. Patent System and Competition: Room for Improvement	2/27/02
	Room for Improvement in the Patent System: Enhancing Both Innovation and Competition	2/27/02
Weitzner, Daniel J.	Testimony	4/18/02
White, Lawrence J.	Network Industries and Innovation	2/20/02
Whitener, Mark D.	Statement	5/1/02
Wiley, John Shepard, Jr.	Antitrust and IP: What the Feds Should Do About Refusals to Deal	5/1/02
Wolin, Harry	Standard Setting in the Semiconductor Industry: Trends, Benefits and Anti-competitive Concerns	3/20/02
Yao, Dennis A.	Standard Setting Practices: Competition, Innovation, and Consumer Welfare	4/18/02
Ziedonis, Rosemarie	The Role of Patents in Semiconductors: Insights from Two Recent Studies	3/20/02

APPENDIX C

PUBLIC COMMENTS

Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy February 6 - November 6, 2002

Primary source: http://www.ftc.gov/opp/intellect/index.htm

Name	Title
American Bar Association, Section of Antitrust Law	Testimony (6/28/02) REPORT ON THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT (2002). THE ECONOMICS OF INNOVATION: A SURVEY (2002).
American Bar Association, Section of Intellectual Property Law	Statement of Robert P. Taylor (7/11/02)
American Intellectual Property Law Association (AIPLA)	AIPLA Testimony (4/10/02)
American National Standards Institute (ANSI)	FTC/DOJ Hearings on the Implications of Competition and Patent Law and Policy (11/14/02)
Arthur D. Little, Inc.	Arthur D. Little Bio-Pharmaceutical Study Finds Significant Link Between Innovation and Market-Based Drug Pricing (5/09/02) Executive Summary: Examining the Relationship Between Market-Based Pricing and Bio-Pharmaceutical Innovation (undated)
Aventis Pharmaceuticals, Inc.	Comments of Dr. Nahed Ahmed (7/15/02)
Balto, David A., and Daniel I. Prywes	Standard-Setting Disputes: The Need for Guidelines (undated)
Barnes, E. Bruce	Comments Regarding Competition & Intellectual Property (4/15/02)

Name	Title
Barton, John H.	Reforming the Patent System, previously published as: *Reforming the Patent System*, 287 SCIENCE 1933 (2000). International Patent-Antitrust Principles: The United States-European Balances (5/28/02)
Bessen, James, and Eric Maskin	Sequential Innovation, Patents, and Imitation (1/00)
Boyce, John R., and Aidan Hollis	Innovation, Imitation & Preliminary Injunctions in Patents (5/02)
Buddington, Eric	Comments Regarding Competition & Intellectual Property (11/29/02)
Carrier, Michael A.	*Unraveling the Patent-Antitrust Paradox*, 150 UNIVERSITY OF PENNSYLVANIA L. REV. 761 (2002). Resolving the Patent-Antitrust Paradox Through Tripartite Innovation (2002), subsequently published as: *Resolving the Patent-Antitrust Paradox Through Tripartite Innovation*, 56 VANDERBILT L. REV. 1047 (2003).
Casamento, Gregory John	FTC Hearings on Competition and Intellectual Property (2/20/02)
Craft, James A.	Comments Regarding Competition and Intellectual Property ("Patent Pools and Cross-Licensing: When Do They Promote or Harm Competition?") (4/25/02)
Ellis, Mark	Comments Regarding Competition & Intellectual Property (undated)
Fine, Frank	NDC/IMS: A Logical Application of Essential Facilities Doctrine (undated)
Holleman, Richard J.	A Response: Government Guidelines Should Not Be Issued in Connection with Standards Setting (undated)
Horton, Tom	Patenting Our Lives and Our Genes: Where Does Congress Stand in the Coming Clash? (undated)
Hughes, James W., Michael J. Moore, and Edward A. Snyder	"Napsterizing" Pharmaceuticals: Access, Innovation, and Consumer Welfare (undated)

Name	Title
Hunt, Robert M.	Nonobviousness and the Incentive to Innovate: An Economic Analysis of Intellectual Property Reform (3/99) *Patent Reform: A Mixed Blessing For the U.S. Economy?*, BUSINESS REV., Nov.-Dec. 1999, at 15. Patentability, Industry Structure, and Innovation (8/01) *You Can Patent That? Are Patents on Computer Programs and Business Methods Good for the New Economy?*, BUS. REV., First Quarter 2001, at 5.
Institute of Electrical and Electronics Engineers, Inc.	Comments Regarding Competition & Intellectual Property (4/17/02)
Intellectual Property Owners Association	Comments (11/15/02)
Kahin, Brian	The Expansion of the Patent System: Politics and Political Economy (12/31/00) Comments (undated) A Possible Higher Standard of Nonobviousness (undated)
Kantor, David A., and Sal Ricciardi	Comments Regarding Competition & Intellectual Property Law in the Knowledge-Based Economy (5/10/02)
Katz, Ronald S., and Adam J. Safer	Why is One Patent Court Deciding Antitrust Law for the Whole Country? (undated)
Kieff , F. Scott	Comments Regarding Competition & Intellectual Property: Summary of Proposed Testimony (12/20/01)
Konovalov, Zoe	The Economics of Open Source Software (11/04/02)
Kuester, Jeffrey R., and Lawrence E. Thompson	*Risks Associated with Restricting Business Method and E-Commerce Patents*, 17 GEORGIA STATE UNIVERSITY L. REV. 657 (2001).
Kulbaski, James J.	Comments on Patent Pools and Standards (1/02)
League for Programming Freedom	Against Software Patents (2/28/91)
Lee, Rusty	Comments Regarding Competition & Intellectual Property (3/24/02)

Name	Title
Leggett, Nickolaus E.	Comments Regarding Competition & Intellectual Property (2/13/02)
Lennros, Hans	Question Regarding Competition & Intellectual Property (1/12/02)
Lerner, Josh	The Patent System and Competition (undated)
Levin, Richard C.	Testimony (2/06/02)
Microsoft Corporation	Statement of Dan Crouse (undated)
Mitchell, John T.	Retailers of Intellectual Property: The Competitive Voice of Consumers (7/02)
Moree, Jeremiah T.	IP Law (1/28/02)
Morgan, Paul F.	Personal Comments (undated)
Mossinghoff, Gerald J.	Statement (2/06/02)
Musacchia, Mary U.	Prepared Remarks (4/09/02)
O'Brien, Vincent E.	*Economics and Key Patent Damage Cases*, 9 UNIVERSITY OF BALTIMORE INTELLECTUAL PROPERTY L.J. 1 (2000).
Olshove, DonPaul	Comments Regarding Competition & Intellectual Property (4/25/02)
Open GIS Consortium, Inc.	Intellectual Property Rights Policy of Open GIS Consortium, Inc. (5/09/02)
Pharmaceutical Research and Manufacturers of America	Delivering on the Promise of Pharmaceutical Innovation: The Need to Maintain Strong and Predictable Intellectual Property Rights (4/22/02)
Pitofsky, Robert	The Essential Facilities Doctrine Under United States Antitrust Law (undated)
Pritchard, Thomas, Sr.	Untitled (9/20/02)

Name	Title
Quillen, Cecil D., Jr.	Innovation and the U.S. Patent System Today (10/19/92) Proposal for the Simplification and Reform of the United States Patent System (1993), previously published as: *Proposal for the Simplification and Reform of the United States Patent System*, 21 AIPLA Q.J. 189 (1993). Testimony of Cecil D. Quillen, Jr. Presented at the Public Hearing on the Standard of Nonobviousness at the United States Patent and Trademark Office (7/20/94) Patent Standards and Innovation (2/2/00) The U.S. Patent System: Is it Broke? And Who Can Fix It if It Is? (5/11/01) Cecil D. Quillen, Jr. & Ogden H. Webster, *Continuing Patent Applications and Performance of the U.S. Patent and Trademark Office*, 11 FEDERAL CIRCUIT BAR J. 1 (2001). Innovators, Innovation, and the U.S. Patent System (10/17/02) Cecil D. Quillen, Jr., Ogden H. Webster & Richard Eichmann, *Continuing Patent Applications and Performance of the U.S. Patent Office – Extended*, 12 FEDERAL CIRCUIT BAR J. 35 (2002).
Rapp, Richard T., and Lauren J. Stiroh	Standard Setting and Market Power (4/18/02)
Ricciardi, Sal	Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Pharmaceutical Distributors Association (4/05/02)
Riches, Robert M., Jr.	Comments Regarding Competition & Intellectual Property (undated)
Rogan, James E.	Prepared Remarks (2/6/02)
Saunders, Kurt M.	*Patent Nonuse and the Role of Public Interest as a Deterrent to Technology Suppression*, 15 HARVARD J.L. & TECHNOLOGY, Spring 2002, at 1.
Sobel, Gerald	Patent Scope and Competition: Is the Federal Circuit's Approach Correct? (2001), subsequently published as: *Patent Scope and Competition: Is the Federal Circuit's Approach Correct?*, 7 VIRGINIA J.L. & TECHNOLOGY 3 (2002).
Stallman, Richard	The Danger of Software Patents (3/25/02)

Name	Title
Telecky, Frederick J., Jr.	Statement (6/3/02)
United States Council for International Business	Comments (7/12/02)
Webbink, Mark, Colin Crossman, Thomas Griffin, and David Silverstein	Red Hat's Comments to the Joint FTC/DOJ Hearing On Competition and Intellectual Property Law (3/20/02)
Weitzner, Daniel J.	Supplemental Comments (11/06/02) W3C Patent Policy (2/5/04)
Weller, Charles D.	*Daubert Sounds the Death Knell for Antitrust's Merger Presumption After Baby Foods*, 1 EXPERT EVIDENCE REP. 168 (2001). *Harmonizing Antitrust Worldwide by Evolving to Michael Porter's Dynamic Productivity Growth Analysis*, 46 ANTITRUST BULL. 879 (2001). *Patent Reform by Daubert Litigation*, 2 EXPERT EVIDENCE REP. 232 (2002).
Widge, Alik	Comments Regarding Competition & Intellectual Property (2/9/02)
Willingmyre, George T.	Intellectual Property Rights Policies of Selected Standards Developers (5/02) Approaches to Influence the IPR Policies and Practices in US and Global Standards Setting (6/14/02) Comments Regarding Competition & Intellectual Property (6/14/02) Considerations in Assessing a Standards Developing Organization's Intellectual Property Rights Policies in Advance of Participation (6/14/02)

APPENDIX D

HEARINGS TRANSCRIPTS

Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy February 6 - November 6, 2002

Primary source: http://www.ftc.gov/opp/intellect/index.htm

February 6, 2002
Welcome and Overview of Hearings

February 8, 2002
Patent Law for Antitrust Lawyers (Morning Session)
Antitrust Law for Patent Lawyers (Afternoon Session)

February 20, 2002
Intellectual Property and Innovation (Morning Session)
Competition and Innovation (Afternoon Session)

February 25, 2002
Economic Perspectives on Intellectual Property, Competition, and Innovation

February 26, 2002
Economic Perspectives on Intellectual Property, Competition, and Innovation (Morning Session)
Business Perspectives on Patents: Biotech and Pharmaceuticals (Afternoon Session)

February 27, 2002
Business Perspectives on Patents: Software and the Internet (Morning Session)
Diverse Perspectives on Patents (Afternoon Session)

February 28, 2002
Independent Inventor Perspective on Patents (Morning Session)
Economic and Other Perspectives on Patent Standards and Procedures (Morning Session)
Business Perspectives on Patents: Hardware and Semiconductors (Afternoon Session)

March 19, 2002
Diverse Perspectives on Patents (Morning Session)
Business Perspectives on Patents: Biotech and Pharmaceuticals (Afternoon Session)

March 20, 2002
Business Perspectives on Patents: Hardware and Semiconductors (Morning Session)
Business Perspectives on Patents: Software and the Internet (Afternoon Session)

April 9, 2002
Cross-Industry Perspectives on Patents

April 10, 2002
Substantive Standards of Patentability (Morning Session)
Patenting Procedures, Presumptions, and Uncertainties (Afternoon Session)

April 11, 2002
Patentable Subject Matter – Business Method and Software Patents (Morning Session)
Patent Criteria and Procedures – International Comparisons (Afternoon Session)

April 17, 2002
Patent Pools and Cross-Licensing: When Do They Promote or Harm Competition?

April 18, 2002
Intellectual Property Strategies in Standards Activities (Morning Session)
Licensing Terms in Standards Activities (Afternoon Session)

May 1, 2002
The Strategic Use of Licensing: Is There Cause for Concern About Unilateral Refusals to Deal?

May 2, 2002
A Competition View of Patent Settlements: Introductory Presentations (Morning Session)
A Competition View of Patent Settlements: Panel Discussion (Afternoon Session)

May 14, 2002
Antitrust Analysis of Specific Intellectual Property Licensing Practices: Bundling, Grantbacks and Temporal Extensions (Morning Session)
Practical Issues Encountered in Antitrust Analysis of Licensing Practices: The Problem of Dealing with Uncertain or Disputed Patent Rights (Afternoon Session)

May 22, 2002
Refusals to License and Compulsory Licensing in the European Union, Canada, and Australia (Morning Session)
Licensing in the European Union: The Technology Transfer Block Exemption and Agreements that Fall Outside Its Scope (Afternoon Session)

May 23, 2002
Asian Perspectives

July 10, 2002
Trends in Federal Circuit Jurisprudence (Morning Session)
Patent Law Analysis in Federal Circuit Jurisprudence (Afternoon Session)

July 11, 2002
Federal Circuit Jurisprudence: Jurisdiction, Choice of Law, and Competition Policy Perspectives

October 25, 2002
Competition, Economic, and Business Perspectives on Patent Quality and Institutional Issues: Competitive Concerns, Prior Art, Post-Grant Review, and Litigation

October 30, 2002
Competition, Economic, and Business Perspectives on Substantive Patent Law Issues: Non-Obviousness and Other Patentability Criteria

November 6, 2002
Standard Setting Organizations: Evaluating the Anticompetitive Risks of Negotiating IP Licensing Terms and Conditions Before a Standard Is Set (Morning Session)
Relationships Among Competitors and Incentives to Compete: Cross-Licensing of Patent Portfolios, Grantbacks, Reach-Through Royalties, and Non-Assertion Clauses (Afternoon Session)

APPENDIX E

UNITED STATES CODE

Sherman Act

- **15 U.S.C. § 1 (2000); Trusts, etc., in restraint of trade illegal; penalty**
- **15 U.S.C. § 2 (2000); Monopolizing trade a felony; penalty**

Clayton Act

- **Section 3, 15 U.S.C. § 14 (2000); Sale, etc., on agreement not to use goods of competitor**
- **Section 7, 15 U.S.C. § 18 (2000); Acquisition by one corporation of stock of another**

FTC Act

- **15 U.S.C. § 45 (a)(1) (2000); Unfair methods of competition unlawful; prevention by Commission**

U.S. Copyright Code

- **17 U.S.C. § 102 (2000); Subject matter of copyright: In general**
- **17 U.S.C. § 103 (2000); Subject matter of copyright: Compilations and derivative works**
- **17 U.S.C. § 106 (2000); Exclusive rights in copyrighted works**
- **17 U.S.C. § 302 (2000); Duration of copyright: Works created on or after January 1, 1978**

U.S. Patent Code

- **35 U.S.C. § 154; Contents and term of patent; provisional rights**
- **35 U.S.C. § 173 (2000); Term of design patent**
- **35 U.S.C. § 271(d)(4), (5) (2000); Infringement of patent**
- **35 U.S.C. § 282 (2000); Presumption of validity; defenses**

Sherman Act

Section 1, 15 U.S.C. § 1 (2000); Trusts, etc., in restraint of trade illegal; penalty

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $10,000,000 if a corporation, or, if any other person, $350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

Section 2, 15 U.S.C. § 2 (2000); Monopolizing trade a felony; penalty

Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $10,000,000 if a corporation, or, if any other person, $350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

Clayton Act

Section 3, 15 U.S.C. § 14 (2000); Sale, etc., on agreement not to use goods of competitor

It shall be unlawful for any person engaged in commerce, in the course of such commerce, to lease or make a sale or contract for sale of goods, wares, merchandise, machinery, supplies, or other commodities, whether patented or unpatented, for use, consumption, or resale within the United States or any Territory thereof or the District of Columbia or any insular possession or other place under the jurisdiction of the United States, or fix a price charged therefor, or discount from, or rebate upon, such price, on the condition, agreement, or understanding that the lessee or purchaser thereof shall not use or deal in the goods, wares, merchandise, machinery, supplies, or other commodities of a competitor or competitors of the lessor or seller, where the effect of such lease, sale, or contract for sale or such condition, agreement, or understanding may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

Section 7, 15 U.S.C. § 18 (2000); Acquisition by one corporation of stock of another

No person engaged in commerce or in any activity affecting commerce shall acquire, directly or indirectly, the whole or any part of the stock or other share capital and no person subject to the jurisdiction of the Federal Trade Commission shall acquire the whole or any part of the assets of another person engaged also in commerce or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.

No person shall acquire, directly or indirectly, the whole or any part of the stock or other share capital and no person subject to the jurisdiction of the Federal Trade Commission shall acquire the whole or any part of the assets of one or more persons engaged in commerce or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition, of such stocks or assets, or of the use of such stock by the voting or granting of proxies or otherwise, may be substantially to lessen competition, or to tend to create a monopoly.

This section shall not apply to persons purchasing such stock solely for investment and not using the same by voting or otherwise to bring about, or in attempting to bring about, the substantial lessening of competition. Nor shall anything contained in this section prevent a corporation engaged in commerce or in any activity affecting commerce from causing the formation of subsidiary corporations for the actual carrying on of their immediate lawful business, or the natural and legitimate branches or extensions thereof, or from owning and holding all or a part of the stock of such subsidiary corporations, when the effect of such formation is not to substantially lessen competition.

Nor shall anything herein contained be construed to prohibit any common carrier subject to the laws to regulate commerce from aiding in the construction of branches or short lines so located as to become feeders to the main line of the company so aiding in such construction or from acquiring or owning all or any part of the stock of such branch lines, nor to prevent any such common carrier from acquiring and owning all or any part of the stock of a branch or short line constructed by an independent company where there is no substantial competition between the company owning the branch line so constructed and the company owning the main line acquiring the property or an interest therein, nor to prevent such common carrier from extending any of its lines through the medium of the acquisition of stock or otherwise of any other common carrier where there is no substantial competition between the company extending its lines and the company whose stock, property, or an interest therein is so acquired.

Nothing contained in this section shall be held to affect or impair any right heretofore legally acquired: Provided, That nothing in this section shall be held or construed to authorize or make lawful anything heretofore prohibited or made illegal by the antitrust laws, nor to exempt any person from the penal provisions thereof or the civil remedies therein provided.

Nothing contained in this section shall apply to transactions duly consummated pursuant to authority given by the Secretary of Transportation, Federal Power Commission, Surface Transportation Board, the Securities and Exchange Commission in the exercise of its jurisdiction under section 79j of this title, the United States Maritime Commission, or the Secretary of Agriculture under any statutory provision vesting such power in such Commission, Board, or Secretary.

FTC Act

Section 5, 15 U.S.C. § 45 (a)(1) (2000); Unfair methods of competition unlawful; prevention by Commission

(a) Declaration of unlawfulness; power to prohibit unfair practices; inapplicability to foreign trade

> (1) Unfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are hereby declared unlawful.

U.S. Copyright Code

17 U.S.C. § 102 (2000); Subject matter of copyright: In general

(a) Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Works of authorship include the following categories:

> (1) literary works;
>
> (2) musical works, including any accompanying words;
>
> (3) dramatic works, including any accompanying music;
>
> (4) pantomimes and choreographic works;
>
> (5) pictorial, graphic, and sculptural works;
>
> (6) motion pictures and other audiovisual works;
>
> (7) sound recordings; and
>
> (8) architectural works.

(b) In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.

17 U.S.C. § 103 (2000); Subject matter of copyright: Compilations and derivative works

(a) The subject matter of copyright as specified by section 102 includes compilations and derivative works, but protection for a work employing preexisting material in which copyright subsists does not extend to any part of the work in which such material has been used unlawfully.

(b) The copyright in a compilation or derivative work extends only to the material contributed by the author of such work, as distinguished from the preexisting material employed in the work, and does not imply any exclusive right in the preexisting material. The copyright in such work is independent of, and does not affect or enlarge the scope, duration, ownership, or subsistence of, any copyright protection in the preexisting material.

17 U.S.C. § 106 (2000); Exclusive rights in copyrighted works

Subject to sections 107 through 122, the owner of copyright under this title has the exclusive rights to do and to authorize any of the following:

(1) to reproduce the copyrighted work in copies or phonorecords;

(2) to prepare derivative works based upon the copyrighted work;

(3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;

(4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly;

(5) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work, to display the copyrighted work publicly; and

(6) in the case of sound recordings, to perform the copyrighted work publicly by means of a digital audio transmission.

17 U.S.C. § 302 (2000); Duration of copyright: Works created on or after January 1, 1978

(a) In General.--Copyright in a work created on or after January 1, 1978, subsists from its creation and, except as provided by the following subsections, endures for a term consisting of the life of the author and 70 years after the author's death.

U.S. Patent Code

35 U.S.C. § 154; Contents and term of patent; provisional rights

(a) In General--

> (1) Contents.--Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.
>
> (2) Term.--Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365(c) of this title, from the date on which the earliest such application was filed.

35 U.S.C. § 173 (2000); Term of design patent

Patents for designs shall be granted for the term of fourteen years from the date of grant.

35 U.S.C. § 271(d)(4), (5) (2000); Infringement of patent

(d) No 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 done one or more of the following:

> . . . .
>
> (4) refused to license or use any rights to the patent; or
>
> (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.

35 U.S.C. § 282 (2000); Presumption of validity; defenses

A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though

dependent upon an invalid claim. Notwithstanding the preceding sentence, if a claim to a composition of matter is held invalid and that claim was the basis of a determination of nonobviousness under section 103(b)(1), the process shall no longer be considered nonobvious solely on the basis of section 103(b)(1). The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Noninfringement, absence of liability for infringement or unenforceability,

(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of sections 112 or 251 of this title,

(4) Any other fact or act made a defense by this title.

In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Court of Federal Claims, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires. Invalidity of the extension of a patent term or any portion thereof under section 154(b) or 156 of this title because of the material failure--

(1) by the applicant for the extension, or
(2) by the Director,

to comply with the requirements of such section shall be a defense in any action involving the infringement of a patent during the period of the extension of its term and shall be pleaded. A due diligence determination under section 156(d)(2) is not subject to review in such an action.

APPENDIX F

CITED CASES AND SUPPORTING DOCUMENTS IN REPORT

A

Addamax Corp. v. Open Software Foundation, Inc., 152 F.3d 48 (1st Cir. 1998).

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

American Society of Mechanical Engineers v. Hydrolevel Corp., 456 U.S. 556 (1982).

Andrx Pharmaceuticals Inc. v. Kroger Co., 543 U.S. 939 (2004), *denying cert. to In re* Cardizem CD Antitrust Litigation, 332 F.3d 896 (2003).

- Brief for the United States as Amicus Curiae, *Andrx*, 543 U.S. 939 (No. 03-779), *available at* http://www.usdoj.gov/osg/briefs/2004/2pet/6invit/2003-0779.pet.ami.inv.pdf.

Aronson v. Quick Point Pencil Co., 440 U.S. 257 (1979).

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

Atari Games Corp. v. Nintendo of America, Inc., 897 F.2d 1572, 1576 (Fed. Cir. 1990).

B

Baker-Cammack Hosiery Mills, Inc. v. Davis Co., 181 F.2d 550 (4th Cir. 1950).

Bayer AG v. Housey Pharmaceuticals, Inc., 228 F. Supp. 2d 467 (D. Del. 2002).

Bement v. National Harrow Co., 186 U.S. 70 (1902).

Blue Cross & Blue Shield United v. Marshfield Clinic, 65 F.3d 1406 (7th Cir. 1995).

Boggild v. Kenner Products, 776 F.2d 1315 (6th Cir. 1985), *cert. denied*, 477 U.S. 908 (1986).

Broadcast Music, Inc. v. Columbia Broadcasting System, Inc., 441 U.S. 1 (1979).

Broadcom Corp. v. Qualcomm Inc., No. CIV A 05-3350 MLC, 2006 WL 2528545 (D.N.J. Aug. 31, 2006), *appeal docketed*, No. 06-4292 (3d Cir. Oct. 4, 2006).

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