

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

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>

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

[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

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, LECC, 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.].

<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.

Portfolio cross-licensing agreements were also discussed at the afternoon session of the November 6, 2002 Hearing. The panelists included: Michelle Burtis, Director, LECC, 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

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*].

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

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 thicket⁹ 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

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

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

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 (Ordovery) ("[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 (Ordovery) (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"

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.

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

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

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 (Ordovery). 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. Ordovery, *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.)

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

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

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

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.*

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

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

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

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 litigation⁴⁴ 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

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 grantback⁴⁷ 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

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.

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

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 Justice⁵³ 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 companies⁶¹ 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[ar]rard 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 technologies⁸² 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

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.

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

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

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.

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

(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

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”:

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.

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

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>.

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

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

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

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.

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

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

Presentation at 12; *see also* Apr. 17 Tr. at 157 (Kelly); Beene 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

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).

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

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

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

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 Beeny Submission at 13; 3C DVD Business

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

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

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.

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

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.

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).