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THE ROLE OF ANTITRUST IN EVALUATING THE COMPETITIVE IMPACT OF PATENT POOLING ARRANGEMENTS

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I. INTRODUCTION

Patent pools solve specific problems, such as the clearing of blocking patents or protecting against "hold up" or "hold out" by individual patent holders, particularly in the context of the creation and implementation of technological standards. At the same time, pools may cause substantial harm in markets by raising the costs of developing new, competing technologies. Such pools can heighten infringement litigation risk for potential innovators, thereby deterring investment, as well as shield weaker patents in the pool from challenge. How competition laws and competition agencies deal with such collective arrangements is critical, especially in today's technologically complex world, with innovation at its core.

As patent pools can have both substantial procompetitive and anticompetitive effects, the proliferation of patent pools – containing thousands of separate and often competing patents – should raise alarms from an antitrust perspective, given the potential for substantial harm to competition and innovation. Indeed, such collective arrangements are only permissible under the antitrust laws when they enable participants to generate substantial efficiencies that could not be achieved absent the collective arrangement. In contrast, when such arrangements are merely vehicles to facilitate price fixing, collective output restrictions, bundling of competing patents, or other exclusionary conduct, they are forbidden under Section 1 of the Sherman Act.[2]

While, to date, antitrust enforcement actions concerning patent pooling arrangements have been somewhat limited, the change in the size, scope, breadth, and function of present-day pooling arrangements may spur renewed interest by the government agencies. Indeed, in 2011, the *Wall Street Journal* reported that the Department of Justice (DOJ) opened a formal investigation into MPEG-LA's patent pool relating to H.264, a

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Wilson Sonsini Goodrich & Rosati represents clients in connection with the MPEG-LA matter mentioned in this article and also represents Google in a variety of antitrust matters. Wilson Sonsini Goodrich & Rosati also represented VISX in connection with the FTC investigation described herein. The views expressed here, however, are the authors' alone and do not necessarily correspond with those of any of the firm's clients or the firm itself.

2 15 U.S.C. § 1 (2006).

widely used video codec standard, concerning its attempt to exclude competition from Google's royalty-free open-source video codec alternative.[3] Particularly in the wake of the *Princo Corp. v. International Trade Commission* (*Princo II*) decision,[4] which makes defending against infringement claims from patent pooling arrangements through the doctrine of patent misuse considerably more difficult, antitrust authorities can and should play a more active role in evaluating the competitive effects of particular pooling arrangements and pursue enforcement actions against those that tend to suppress (rather than enhance) competition and innovation.

To this end, this article first provides background on patent pools, focusing on how these arrangements can be both procompetitive and anticompetitive and how the likely competitive impact of these arrangements should be evaluated. Next, the article briefly reviews government enforcement actions and advisory opinions that provide guidance on the agencies' treatment of patent pooling arrangements. Finally, the article discusses how, in light of the Federal Circuit's opinion in *Princo II*, antitrust enforcement can and should take a more central role in the evaluation of the competitive effects of mass marketed patent pools containing thousands of separate and likely competing patents.

II. WHAT IS A PATENT POOL?

Patent pools are collective licensing arrangements in which two or more parties grant licenses to their respective intellectual property to each other or to a third party that sublicenses the pooled technology to others.[5] In its most basic form, a patent pool entails a straightforward cross-license between two parties. In more complex arrangements, multiple patent owners contribute intellectual property rights to a pool, which may be administered by a third party as a part of (or in place of) an industry standard-setting organization.

A. How can patent pools serve to enhance competition?

The antitrust authorities and the courts long have recognized the competitive benefits of patent pooling arrangements. By "integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation," patent pools can ease and expedite the full exploitation of technology and therefore advance procompetitive ends.[6]

First, patent pools can reduce transaction costs for licensees. Rather than requiring licensees to negotiate separate licenses with individual patent holders on a patent-by-patent basis, patent pools can offer licensees a bundle of patents providing a "one-stop

3 *See* Thomas Catan, *Web Video Rivalry Sparks U.S. Probe*, WALL ST. J., Mar. 4, 2011, *available at* http://online.wsj.com/article/SB10001424052748703752404576178833590548792.html. Companies like MPEG-LA – which claims to have "developed the patent pool market space" – do nothing but solicit intellectual property from patent holders in an effort to create and administer patent pooling arrangements. *See Turn your Patents into Profits*, MPEG-LA, http://www.mpegla.com/main/Pages/PoolBenefitsHolders.aspx (last visited Dec. 7, 2011). Indeed, MPEG-LA's primary function is to help patent holders turn their "patents into profits" by "packaging patents in order to give them *mass market appeal*." *Id.* (emphasis added). MPEG-LA itself has also taken a more direct approach in its efforts to suppress competition from alternative technologies by attempting to create a new pool around the open-source VP8 video codec, which competes with the H.264 technology covered by an existing MPEG-LA pool. *See* Press Release, MPEG-LA, MPEG LA Announces Call for Patents Essential to VP8 Video Codec (Feb. 11, 2011), *available at* http://www.mpegla.com/Lists/MPEG%20LA%20News%20List/Attachments/237/n_2_10_11.pdf.

4 616 F.3d 1318 (Fed. Cir. 2010).

5 U.S. DEP'T OF JUSTICE & FED'L TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 5.5 (1995) [hereinafter IP GUIDELINES], *available at* http://www.justice.gov/atr/public/guidelines/0558.htm.

6 *Id.*

shopping" alternative.[7] As a result, licensees are able to obtain the patent rights necessary to manufacture their respective products by way of a single licensing transaction.[8]

Second, patent pools can enhance competition by clearing "blocking patents." A blocking patent is a patent owned by someone else that prevents a patentee from exploiting its own patent (*i.e.*, the patentee cannot practice its patents without infringing other patents). If blocking patents are included in a pool, pooling may not only be procompetitive but is also "frequently necessary" for technical advancement.[9] Indeed, in some circumstances, the exchange of licenses to intellectual property that would otherwise prohibit commercialization of a technology is the "only reasonable method for making the invention available to the public."[10] In particular, because some products are highly integrated (*e.g.*, smartphones), there are dozens, if not hundreds of standards incorporated into a single product (*e.g.*, with regard to smartphones, the technology incorporates a variety of standards including UMTS, USB, WiFi, audio compression, video compression, among others). Thus, there is a potential for hold up on both an intra-standard and inter-standard basis, and this hold up can either delay the introduction of new and improved technologies or increase the costs of commercializing products that incorporate these technologies, leading to higher prices for consumers.

Third, patent pools can enable the widespread use of new technologies by promoting the dissemination of technology and facilitating the exchange of technical information among members of the patent pool as well as licensees to the pooled intellectual property.[11] Moreover, such exchange of information also encourages innovation by allowing pool members and licensees to tweak, modify, and develop new products and technologies based on the diffusion of existing technology.

Lastly, patent pools can mitigate potential "hold up" and "hold out" problems. For example, "hold up" can occur when buyers make "relationship-specific investments, after which they may face efforts by others to extract more of the surplus."[12] Similarly, "hold out" can arise when buyers need multiple complementary patent rights and sellers have an incentive to delay negotiation – until they are the last bidding seller – in order to increase leverage in negotiations with the buyer.[13] Patent pools that mandate licensing on reasonable and non-discriminatory (RAND) terms can mitigate potential hold up and hold out problems in the competitive bargaining process.

For some technologies, particularly those subject to positive network effects, a single dominant standard can benefit both consumers and producers by ensuring compatibility and interoperability among a diverse set of products. Once market participants agree on the relevant technology standard, "any patents (or copyrights) necessary to comply with that standard become truly essential."[14] Blocking patents, and

7 U.S. DEP'T OF JUSTICE & FED'L TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 65 (2007) [hereinafter ANTITRUST ENFORCEMENT AND IP RIGHTS REPORT], *available at* http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf.
8 *Id.*
9 *See Standard Oil Co. v. United States*, 283 U.S. 163, 171 (1931) ("An interchange of patent rights and a division of royalties according to the value attributed by the parties to their respective patent claims is frequently necessary if technical advancement is not to be blocked by threatened litigation.").
10 *Mfg. Co. v. Landon, Inc.*, 336 F.2d 723, 729 (9th Cir. 1964).
11 *See* IP GUIDELINES, *supra* note 5, § 5.5; *see also* ANTITRUST ENFORCEMENT AND IP RIGHTS REPORT, *supra* note 7, at 65.
12 ANTITRUST ENFORCEMENT AND IP RIGHTS REPORT, *supra* note 7, at 64.
13 *Id.*; *see also* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 68, 700 (1998).
14 Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, *in* 1 NAT'L BUREAU OF ECON. RESEARCH, INNOVATION POLICY AND THE ECONOMY 119, at 136 (Adam Jaffe et al. eds., 2001).

issues related to hold up and hold out, are therefore particularly prevalent in the standard-setting context. Consequently, pools organized around an industry-wide standard can have a very different competitive impact than pools in markets with multiple competing technologies.

Adopters of the standard – as well as the standard itself – are "subject to holdup if these patent holders are not somehow obligated to license their patents on reasonable terms."[15] In other words, standard setting requires "the creation of irreversible investments," which has the potential to result in hold up once that irreversible investment is made.[16] As a result of these potential issues, standard-setting bodies often require participants to disclose, *ex ante*, any patents that are essential to an adopted standard and to license such patents on RAND terms.[17] Thus, standard-setting organizations, and pools formed around them, can facilitate competition both by clearing blocking positions from multiple, essential patents and by ensuring that adoption of a technological standard is not undercut by deficiencies in the bargaining process.

B. How can patent pools serve to suppress competition?

While patent pools can be procompetitive, and indeed even necessary to advance a technology in some circumstances, such arrangements can also have serious potential anticompetitive consequences. Federal courts have long recognized that it would be improper for a single firm to attempt to obtain ownership of all the patents "relevant to an industry."[18] Patent pools often walk a fine line between the legitimate exercise of a patent monopoly and anticompetitive consolidation of intellectual property. Simply and eloquently put: patent pools can "harm the market *by bringing horizontal competitors into collusion*."[19]

i. Exclusionary conduct

First, pooling arrangements containing collective price and output restraints can have severe anticompetitive effects and may be found unlawful if they do not "contribute to an efficiency-enhancing integration of economic activity among the participants."[20] Moreover, patent pools designed simply to achieve naked price fixing or market allocation are subject to challenge under the *per se* rule.[21] For example, in 1998, the FTC challenged (and ultimately dissolved) a patent pool created by Summit Technologies, Inc. and VISX, Inc. that contained patents relating to the manufacture and use of lasers used in vision-correcting eye surgery.[22] While the parties claimed that the pooling arrangement was

15 *Id.* at 128, 136. In fact, the more reasonable most patentees are, the greater the rewards to hold-up by a few co-patentees, as the few can collect the rents not collected by the many.

16 Mark A. Lemley, *Ten Things To Do About Patent Holdup of Standards (and One* Not *To)*, 48 B.C. L. REV. 149, 154 (2007), *available at* http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=2349&context=bclr.

17 *See* Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1906 (2002); Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 10-45 (2005). Although a RAND licensing restriction helps to eliminate the most severe forms of anticompetitive abuse of a standards-setting process, it is hardly a panacea. It is far from clear that these restrictions could be applied to firms with essential patents granted after the standard was set – particularly since these firms may not be members of the standard-setting body. Firms already have some incentive to delay prosecution of patents to ensure that they read on a newly-forming standard. Placing RAND licensing requirements on early participants only strengthens the incentive to avoid aggressively prosecuting patents until a standard is set (and a pool is formed).

18 *See United States v. Westinghouse Elec. Corp.*, 648 F.2d 642, 647 (9th Cir. 1981) ("Nor may a patentee attempt to monopolize an industry by acquiring all present and future patents relevant to that industry."); *see also Kobe, Inc. v. Dempsey Pump Co.*, 198 F.2d 416, 422-24 (10th Cir. 1952).

19 Steve Carlson, Note, *Patent Pools and the Antitrust Dilemma*, 16 YALE. J. REG. 359, 388 (1999) (emphasis added).

20 IP GUIDELINES, *supra* note 5, § 5.5.

21 *Id.*

22 *See* Complaint, Summit Tech., Inc., No. 9286 (F.T.C. Mar. 24, 1998), *available at* http://www.ftc.gov/os/1998/03/summit.cmp.htm.

necessary to clear blocking positions (a premise with which the FTC disagreed), the FTC found that the competitive restraints on price and entry imposed by the pool were unnecessary to achieve this purpose.[23] Rather, the pool was merely a vehicle to achieve what the parties could not achieve absent the arrangement: to collectively set prices and to avoid competing against one another.

Second, patent pools can also have a significant anticompetitive impact when they restrict access to the pool's patents to only pool members, or where pool members are forbidden from licensing their individual patents outside of the pool license. In this case, the pool simply comprises an anticompetitive cartel.[24] One of the critical factors in the Supreme Court's decision concerning the copyright pooling arrangement in *Broadcast Music, Inc. v. Columbia Broadcasting Systems, Inc.* was that individual rights holders were allowed to negotiate directly with non-participating licensees.[25] This type of non-exclusive license allowed licensees to purchase less than the full portfolio of pooled technology, limiting the impact of the pool on the development of alternative technologies.

Finally, a patent pool can create and wield market power more effectively than its individual member firms. For example, in *Allied Tube & Conduit Corp. v. Indian Head, Inc.*,[26] the Supreme Court found that the members of a standard-setting organization had colluded to exclude from an industry standard a technology that competed with their own.[27] In the same way, patent pools can use the collective strength of their members to exclude competing technologies, further entrenching the pool and solidifying its market power. Further, where pool participants collectively possess market power, they can use their pooling arrangement to exclude firms that need the licensed technology to compete in a downstream market, thereby reducing competition and innovation in that market as well.[28]

ii. Suppressing innovation

Pooling arrangements can also have a substantial anticompetitive effect by deterring and/or discouraging participants from engaging in research and development, thereby stifling innovation.[29] In a comprehensive economic analysis on patent pools in 20 industries that formed from 1930 to 1938 – including Phillips screws, lecithin, variable condensers (used in radios), and stamped metal wheels (used in the production of automobiles) – Professors Ryan Lampe and Petra Moser found that patent pools discouraged innovation overall.[30] In studying these industries, that the authors determined that "[o]n average, technologies that are covered by 1 additional pool patent experience[d] a *16 percent* decline in patenting after the creation of a pool compared with technologies that patent examiners identify as closely related."[31] According to the authors, the decline in

23 Press Release, Fed'l Trade Comm'n, Summit and VISX Settle FTC Charges of Violating Antitrust Laws (Aug. 21, 1998), *available at* http://www.ftc.gov/opa/1998/08/sumvisx.shtm.

24 *See, e.g.*, *United States v. Associated Patents*, 134 F. Supp. 74 (E.D. Mich. 1955) (striking down an agreement among manufacturers which gave each exclusive rights to build particular types of machines and noting that pool members refused to license their patents outside the pool).

25 *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 24 (1971).

26 486 U.S. 492 (1988).

27 *Id.* at 500-02.

28 *See* IP GUIDELINES, *supra* note 5, § 5.5; Roger B. Andewelt, *Analysis of Patent Pools Under the Antitrust Laws*, 53 ANTITRUST L.J. 611, 629-32 (1985).

29 *See* IP GUIDELINES, *supra* note 5, § 5.5; *see also* Ryan Lampe & Petra Moser, *Do Patent Pools Encourage Innovation? Evidence from the 19th-Century Sewing Machine Industry*, 70 J. ECON. HIST. 898, 899 (2010) (finding evidence that a 19th-century sewing machine pool discouraged patenting and innovation, in particular for the members of the patent pool). One open question is whether empirical evidence would support the conclusion that the creation of a pool encourages innovation in complementary markets, where competitors can focus on continuing innovation in order to differentiate from the dominant standard.

30 Ryan Lampe & Petra Moser, *Do Patent Pools Encourage Innovation? Evidence from 20 Industries in the 1930s*, (Dec. 2, 2011) (unpublished manuscript) (on file with authors).

31 *Id.* at 23-24 (emphasis added).

patenting was driven by a "decline in the intensity of competition for specific technologies within the pool."[32] In other words, the pools had the effect of reducing (rather than enhancing) competition in the market for innovation among pool members.

In *United States v. Automobile Manufacturers Association*, the DOJ brought a complaint against the Automotive Manufacturers Association claiming that its members conspired to eliminate "competition in the research, development, manufacture and installation of air pollution control equipment, and . . . in the purchase of patents and patent rights from other parties covering such equipment."[33] Specifically, the DOJ alleged that the manufacturers had agreed (1) to undertake air pollution control equipment development "on a noncompetitive basis"; (2) "to seek joint appraisal of patents and patent rights submitted" to the manufacturers by third parties; and (3) "to install air pollution control equipment only upon a uniform date determined by agreement."[34] According to the DOJ, the parties' royalty-free cross-licensing of patents pertaining to emission control devices was designed to – and had the effect of – delaying technical advancement.[35] The parties entered into a consent decree with the DOJ that prohibited certain exchange of technical information among defendants and required them to issue royalty-free licenses to any applicant interested in developing air pollution technology for motor vehicles.

Grantbacks taking the form of agreements "under which a licensee agrees to extend to the licensor of intellectual property the right to use the licensee's improvements to the licensed technology"[36] can also dampen incentives to innovate. Pool licensees have less economic incentive to invest in the development of superior (*i.e.*, more competitive) technologies when they are required to share their rewards with the entire patent pool as a result of such obligations.[37] Despite these dangers, government regulators have relied on grantback provisions as an indicator of *procompetitive* impact in circumstances where the pooled patents are licensed freely on RAND terms.[38]

Finally, pools can also discourage research and development by firms outside of the pool. Not every company wants to be a part of a pool or to license its own patents to pool members; however, these are common conditions to obtaining a license from a pool.[39] A firm with no desire to join a pool will not invest its research and development efforts into technologies covered by pools. Moreover, patent pools can be a more formidable

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32 *Id.* at 24.
33 643 F.2d 644, 645 (9th Cir. 1981).
34 *Id.*
35 *Id.*
36 IP GUIDELINES, *supra* note 5, § 5.5.
37 *Id.* ("[A] pooling arrangement that requires members to grant licenses to each other for current future technology at minimal cost may reduce the incentives of its members to engage in research and development because members of the pool have to share their successful research and development and each of the members can free ride on the accomplishments of other pool members.").
38 For example, grantbacks encourage licensing ex ante, which has the effect of broadening the scope of the patent rights to be licensed under the pool. *See, e.g.*, Letter from Joel Klein, Acting Assistant Attorney Gen., Antitrust Div., Dep't of Justice, to Gerrald R. Beeney, Esq., at 13 (June 26, 1997) [hereinafter MPEG-2 Business Review Letter], *available at* http://www.justice.gov/atr/public/busreview/215742.pdf (the grantback provision is likely to "bring other Essential Patents into the Portfolio, thereby limiting holdouts' ability to exact a supracompetitive toll from Portfolio licensees and further lowering licensees' costs in assembling the patent rights essential to their compliance with the MPEG-2 standard.").
39 At least one company has gone so far as to put certain patents into a trust in order to avoid liabilities related to a pool license. *See Lucent Techs., Inc. v. Gateway, Inc.*, No. 03CV0699-B (CAB), 2007 WL 2900484, at *1-2 (S.D. Cal. Oct. 1, 2007). When Lucent, which was not a member of the MPEG-2 patent pool, entered into merger negotiations with Alcatel, which was a pool licensor, it created the "Multimedia Patent Trust" (MPT) and assigned the trust its essential patents for the MPEG-2 standard. *Id.* Gateway, as well as a number of co-defendants, argued (ultimately unsuccessfully) that this was an improper evasion of the merged entity's obligations under the MPEG-2 pool license. *Id.* at *2. Lucent had to structure the MPT as a trust to avoid the inclusion of all essential patents owned by affiliates of licensees in the pool license's grantback provision. An "affiliate" was loosely defined as an entity over which a licensee has de jure control. *See id.* at *7. Lucent had no control over the trust beyond selecting trustees and a right to veto license of the patents to third parties, but it was a 99 percent beneficiary of the trust's earnings. *Id.*

litigation opponent than their individual members.[40] Independently administered pools, such as MPEG-LA, may even be more litigious to the extent that they are not deterred by the threat of counterclaims.[41] Firms concerned about litigation risk may shy away from the area covered by the pool entirely, creating a penumbra around the pool in which innovation is reduced.

To illustrate how over-inclusive pools can dampen innovation by raising rivals' costs to acquire necessary intellectual property, consider a patent pool containing patents 1-1000 ("Pool 1-1,000"). Suppose Company X needed essential patents 1-10, but did not need (or want) non-essential patents 11-1,000. To the extent that Company X could not license the 10 essential patents outside of the patent pool, it would be forced to purchase the other 990 non-essential patents (as part of package deal with the 10 essential patents) and, in doing so, pay a higher price than it otherwise would absent the bundle. Suppose this time that Company X did not believe (from a preliminary review of the portfolio) that it needed to license *any* of the patents in Pool 1-1,000. It may, nonetheless, decide to take a license to Pool 1-1,000 simply because a thorough analysis of each patent would be prohibitively costly. Moreover, the risk of foregoing a license – thereby subjecting Company X to a potential infringement action by the patent aggregator (a party with both the incentives and resources to litigate an infringement action, particularly where it could allege infringement of multiple patents) – would be high, absent control of countervailing patent rights.[42]

Firms may face the same choice even where Pool 1-1,000 contains only essential patents. If Company X wanted to license only patents 1-10 to practice a technology related to, but not the same as, that covered by the pool, it may still take a license to the complete pool to ward of potential litigation under patents 11-1,000. This difficulty becomes more pronounced as patent pools grow and as the patents contained within them tend to cover a wider range of potential applications – both of which are characteristics of modern patent pools, which can contain hundreds or even thousands of patents that are applicable to a wide array of technologies.[43] The incentive to take a pool license even to practice technologies that merely overlap with the pool extends the anticompetitive effects of patent pools beyond the technologies that they cover directly and into adjacent markets, including potentially competing technologies.

Worse yet, the existence of Pool 1-1,000 could discourage Company X from innovating in the first place.[44] Indeed, this is precisely what Professors Lampe and Moser found in examining the effects of the Sewing Machine Combination – a patent pool in the

40 *See* Lampe & Moser, *supra* note 29, at 901. To be sure, the consolidation that makes a pool a more dangerous litigation opponent (by allowing pooled resources, a pre-litigation review of pool patents, etc.) also enables the key procompetitive benefit of patent pools: one-stop shopping for licenses to many, if not all, of the patents necessary to practice a given technology. Whether the risk of wasteful litigation or anticompetitive threats to litigate outweighs the benefits of consolidated licensing cannot be decided in a vacuum. As discussed further below, the market share, litigation history, and past licensing practices, among other factors, may bear on the determination of whether a pool is on balance pro- or anticompetitive.

41 *See* FED'L TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 31 (2003) ("Since [non-practicing entities] are not vulnerable to an infringement counter attack, [] strategies threatening infringement actions do little to constrain their willingness to seek high royalty rates from locked-in downstream actors. Thus, [non-practicing entiries] can threaten other firms with infringement actions, which, if successful could inflict substantial losses, without fear of retaliation.").

42 Consider also, the incentives of the aggregator, particularly one whose sole business is to license patents or litigate against those who will not take a license—such a party's primary objective is to extract royalties and maintain its reputation as an entity that will do so at any cost.

43 For example, the H.264 pool contains over 1,700 patents. It strains credulity to imagine that each of those patents is both essential to the implementation of H.264 and useful for no other purpose.

44 By inducing risk averse parties to pay for a license, even in circumstances where they do not need all the patents contained in the pool, pooling arrangements can have the effect of driving up the cost of the intellectual property needed to pursue a particularly technology.

sewing machine industry in the U.S. existing from 1856 to 1877 – on innovation on that market.[45] In that study, Lampe and Moser found that the data suggested that the sewing machine pool actually *decreased* innovation in the sewing machine industry, "by creating a more formidable opponent in court" thereby "intensif[ying] the threat of litigation for outside firms, which lowered expected profits and discouraged innovation."[46] In turn, decreased innovation levels from outside firms had the effect of reducing incentives for members of the sewing combination themselves to innovate. As a result, overall innovation slowed soon after the Sewing Machine Combination was established and did not recover until the pool was dissolved.[47]

Specifically, Lampe and Moser found that patenting activity by pool members spiked immediately prior to pool formation, but then became less intense while the pool was active. Similarly, patenting by non-members spiked immediately after pool formation but declined soon afterwards. Lampe and Moser, however, found that these spikes were likely the result of increased strategic patenting rather than true innovation. For example, the spike by nonmembers prior to pool formation suggests that "prospective members may have patented existing innovations more aggressively to strengthen their [pre-pool formation] bargaining position relative to other members." Conversely, "the spike in patenting for nonmember firms immediately after the creation of the pool may represent a strategic response by nonmembers to a heightened threat of litigation."[48]

Adam Mossoff cautions that Lampe and Moser's findings rely on only a single proxy for determining the pace of innovation: the stitching speed of newly released sewing machines.[49] Mossoff notes that a variety of other factors – including the introduction of advanced machine-tooled interchangeable parts to the manufacturing process, innovative new business models such as rent-to-own, and even a positive impact on the inclusion of women in the workforce – all evidence an efficiency-enhancing impact of the patent pool not accounted for by Lampe and Moser.[50] Without the pool, Mossoff argues, the sewing machine would not have been commercialized and these follow-on benefits would never have been realized.[51] Evaluating the relevance of these follow-on innovations, however, requires a difficult exercise in imagining a counterfactual world in which the pool never existed. Lampe and Moser's study shows at the very least that removing competition along one axis, in this case developments in sewing functionality itself, can have the effect of slowing further progress in that direction. As discussed further in the rest of this article, both the potential for innovation to be stunted in one area and the potential for follow-on innovation to occur in others are just factors in a holistic inquiry.

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45 Lampe & Moser, *supra* note 29, at 901.

46 *Id.* The outcomes of patent suits are often very uncertain. *See* Dan L. Burk & Mark A Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1791-92 (2009) ("It seems no exaggeration to say that no one reading the average patent claim can begin to guess what the claim may be held to cover . . . [until] the claims have been construed by a [district court judge] and, realistically, only after the Federal Circuit has reviewed the findings of the district court judge . . . .").

47 *Id.* at 901-02. For example, pool members "produc[ed] an average of three patents per year from 1857 to 1861 and only two patents per year from 1866 to 1870. Members continued to patent less until the pool dissolved in 1877, and quickly resumed patenting afterwards, producing five patents in 1878, nine in 1879, and eight in 1880." *Id.* at 909-10. Moreover, sewing speeds stayed roughly consistent for the duration of the pool and, similarly, began to advance only after the pool dissolved in 1877. *Id.* at 917; *see also* Ryan Lampe & Petra Moser, *Patent Pools and the Direction of Innovation – Evidence from the 19th Century Sewing Machine Industry* 2 (Oct. 30, 2011) (unpublished manuscript) [hereinafter Lampe & Moser, *Sewing II*], *available at* http://ssrn.com/abstract=1468062 ("Patenting declined after creation of the pool, both in absolute levels and relative to other industries. Patenting also declined relative to Britain, which did not have a pool.").

48 Lampe & Moser, *supra* note 29, at 915-16.

49 Adam Mossoff, *The Rise and Fall of the First American Patent Thicket: The Sewing Machine War of the 1850s*, 56 ARIZ. L. REV. 165, 210 n.239 (2011).

50 *Id.*

51 *Id.*

Lampe and Moser also found that the existence of the sewing machine combination that aggressively defended patents "may have shifted innovation by nonmembers towards substitute technologies [such as an inferior stitching mechanism] not covered by the pool."[52] In other words, by intensifying the threat of litigation, pooling arrangements can affect the behavior of rival firms to innovate (or raise the cost of that innovation through the extraction of licensing fees for non-essential patents), even in circumstances where the potential innovator does not believe he or she would actually infringe any of the patents in the pool.[53] Such increased litigation risks not only lowers expected profits and discouraged investment by outside firms, but also encourages them to "divert their research efforts away from improving key technologies that are covered by the pool towards substitutes that [were] still 'freely' available."[54]

C. How can patent pools that tend to enhance competition be distinguished from those that tend to suppress competition?

Given that patent pools have the potential for both promoting competition as well as seriously undermining it, depending on the circumstances, the key question is what distinguishes a procompetitive pooling arrangement from an anticompetitive one?

The DOJ has set forth one framework for evaluating the likely competitive impact of a patent pooling arrangement. Under the DOJ's approach, the relevant analysis considers (1) whether the proposed licensing program is likely to integrate complementary patent rights and (2) if so, whether the resulting competitive benefits are likely to be outweighed by competitive harm posed by other aspects of the program.[55]

The inquiry into whether the pool contains complementary patents (covering different aspects of the same technology, process, or product) or competing patents (claiming alternative non-infringing means of accomplishing the same end) is critical to assessing the competitive impact of the arrangement. Most importantly, when a patent pool contains patent rights that are substitutable for one another – or would otherwise compete against each other – that creates incentives for the patent holders to use the pool to eliminate competition among themselves[56] and/or serve as a vehicle to accomplish price

52 *Id.* at 916; *see also* Lampe & Moser, *Sewing II*, *supra* note 47, at 22 ("In the early years after the pool had formed, outside firms produced six times as many patents for substitutes relative to the pre-pool period.").

53 Indeed, litigation data showed that nonmembers were at a greater risk of being sued while the pool was active and that pool members acted as plaintiffs in most of these cases. Lampe & Moser, supra note 29, at 901.

54 *Id.* at 917. Patent pools may encourage innovation in technically inferior substitutes, "creat[ing] a market-niche for outside firms to enter [the market] with lower quality and less expensive substitutes, which increases the expected returns of R&D to improve substitutes." Lampe & Moser, *Sewing II*, *supra* note 47, at 3. Such a market niche is "particularly attractive relative to improving the pool technology, if the creation of a pool increases litigation risks for outside firms." *Id.* at 22.

55 *See* Letter from Charles A. James, Assistant Attorney Gen., Antitrust Div., Dep't of Justice, to Ky P. Ewing, Esq. (Nov. 5, 2002) [hereinafter 3G Business Review Letter], *available at* http://www.usdoj.gov/atr/public/busreview/200455.htm; Letter from Joel Klein, Acting Assistant Attorney Gen., Antitrust Div., Dep't of Justice, to Carey R. Ramos, Esq. (June 10, 1999) [hereinafter DVD-6 Business Review Letter], *available at* http://www.usdoj.gov/atr/public/busreview/2485.htm; Letter from Joel Klein, Acting Assistant Attorney Gen., Antitrust Div., Dep't of Justice, to Gerrald R. Beeney, Esq. (Dec 16, 1998) [hereinafter DVD-3 Business Review Letter], *available at* http://www.usdoj.gov/atr/public/busreview/2121.htm; MPEG-2 Business Review Letter *supra* note 38.

56 *See, e.g.*, *United States v. Hartford Empire Co.*, 46 F. Supp. 541 (1942), *modified*, 323 U.S. 386 (1945). The pool invalidated in *Hartford* contained patents covering two types of glass feeding machines, gob and suction feeders. The court evidence that the pool was intended to prevent competition between the two technologies to be persuasive. *Id.* at 561 (noting a letter between pool members that states, "We [pool members] recognize that there is a distinct field for each of these processes. It would seem then to be the proper thing to let the two processes go along side by side and each develop the proper field as the demand from the industry would naturally work it out. But, of course, we both also recognize that it would be unfortunate to have this parallel development of the two processes reach a stage where competition between the two became generally destructive and unstabilized.").

fixing.[57] On the other hand, the combination of complementary patents that cover separate aspects of a given technology, and do not compete with each other, tend to increase efficiencies and lower prices to consumers.[58]

To assess whether a pool contains only complementary patents, each patent is evaluated to determine whether it is "essential" to effectuate the underlying purpose of the patent pool (*e.g.*, implementation a technological standard). By definition essential patents have no substitutes, as "one needs licenses to each of them in order to comply with the standard."[59] In contrast, because competing patents are alternative means to achieve the same end, they would be considered "non-essential" patents, unless, as discussed above, they are blocking patents.[60] To reduce antitrust risk, patent pools often employ an independent expert to assess "essentiality" by reviewing the portfolio to ensure that the portfolio does not contain competing patents.[61]

If the pool is found to contain only complementary patents, the procompetitive benefits of the pooling arrangement will be evaluated against the potential anticompetitive harm. For example, antitrust regulators have often focused on whether or not pool members are permitted to individually license their patents, separate from the pool license, in determining whether or not a pool serves a procompetitive purpose.[62] Other relevant questions might include:

- What are the efficiencies generated by the pooling arrangement (*i.e.*, integrating essential patents into a bundle for dissemination to licensees in a single transaction)?

- What are likely impacts of the pooling arrangement on innovation and incentives to engage in research and development related to the licensed technology?

- What are the competitive restrictions imposed on the pool members and licensees and are these restrictions necessary to achieve the underlying purpose of the pool?

- Is the pooling arrangement likely to impede competition in any adjacent or downstream markets by foreclosing competing technologies?

The answers to these questions provide indications of whether or not the pooling arrangement is likely to impede competition and innovation. The remainder of this article will first explore how the antitrust agencies as well as the federal courts have approached these questions in the past and will conclude by highlighting some additional factors that may help to differentiate procompetitive from anticompetitive pools in the future.

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57 However, in circumstances where two patents are competitive *and* blocking, and the patents are licensed on RAND terms, a pool combining these potentially substitutable patents may not be anticompetitive.

58 ANTITRUST ENFORCEMENT AND IP RIGHTS REPORT, *supra* note 7, at 66; *see also* HERBERT HOVENKAMP, MARK JANIS & MARK LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW §34.4 (2010).

59 *See* 3G Business Review Letter, *supra* note 55, at 10.

60 *See supra* note 58 and accompanying text.

61 MPEG-2 Business Review Letter, *supra* note 38, at 10.

62 *See, e.g.*, *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 24 (1971); MPEG-2 Business Review Letter, *supra* note 38, at 11.

III RECENT GUIDANCE FROM THE AGENCIES AND THE COURTS CONCERNING PATENT POOLING ARRANGEMENTS

A. DOJ Business Review Letters

Between 1997 and 2002, the DOJ evaluated four separate patent pools in business review letters, announcing the DOJ's enforcement intentions with respect to the various pooling arrangements.[63] As described in more detail below, in each case the DOJ concluded that the "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."[64]

First, in 1997, the DOJ issued a business review letter concerning a pooling arrangement – among nine companies holding twenty-seven patents – related to the MPEG-2 video compression technology standard. The DOJ found that the MPEG-2 portfolio was likely a procompetitive aggregation of intellectual property because it limited the portfolio to patents that were "technically essential" to comply with the MPEG-2 standard. Moreover, the DOJ found significant that the assessment of "essentiality" was made by an independent expert who would have a continuing role whenever a legitimate question was raised regarding whether a particular patent belonged in the portfolio.[65] Finally, the DOJ noted that all the portfolio patents were available individually from their owners or assignees.[66]

Second, in 1998 and 1999, the DOJ issued two separate business review letters concerning pooling arrangements related to DVD-Video and DVD-ROM standards. The 3C DVD pool business review letter, issued in 2008, involved three firms licensing a total of 210 patents, while the 6C DVD business review letter, issued in 2009, involved six firms licensing a total of 51 patents.[67]

Notably, the DVD pools broadened the scope of the definition of essentiality. Whereas in the MPEG-2 pool essential patents were limited to those that were "technically essential," the DVD pools found essential patents that were "necessary (as a practical matter)" or for which there was no "realistic" alternative.[68] Moreover, essentiality for the DVD pools was determined by an expert that was retained directly by the patent pool participants.[69] Despite expressing some concern over a more subjective definition of essentiality, to be determined by a hired expert, the DOJ found that both arrangements were likely to combine complesmentary patent rights. Importantly, in determining that these arrangements were unlikely to impede competition, the DOJ relied on the parties' representations that the experts would remain independent from the pool licensors – even though they were hired by the licensors – because "the expert's compensation [would] not be affected by his or her determinations as to essentiality."[70]

63 *See* sources cited *supra* note 55.
64 ANTITRUST ENFORCEMENT AND IP RIGHTS REPORT, *supra* note 7, at 71.
65 MPEG-2 Business Review Letter, *supra* note 38, at 10.
66 *Id.*
67 *See* DVD-3 Business Review Letter, *supra* note 55; DVD-6 Business Review Letter, *supra* note 55.
68 DVD-3 Business Review Letter, *supra* note 55, at 11; DVD-6 Business Review Letter, *supra* note 55, at 12.
69 DVD-3 Business Review Letter, *supra* note 55, at 12; DVD-6 Business Review Letter, *supra* note 55, at 13.
70 DVD-6 Business Review Letter, *supra* note 55, at 13.

Finally, in 2002, the DOJ issued a fourth business review letter related to the Third-Generation Mobile Communications System (3G), a wireless communication technology.[71] The pool was formed by a nineteen-company partnership, which proposed to divide licensing functions among five separate and independent "platform" companies, one for each of the five 3G radio interface technologies. Again, the DOJ concluded that the pooling arrangements were likely to combine complementary patents because the separate platform companies were "structured to take into account substitutability between 3G technologies by creating an independent PlatformCo to handle all licensing matters, including setting of actual royalty rates, with respect to each individual 3G technology."[72] Moreover, while the essential patent rights for each technology were not integrated into a single bundle for dissemination to licensees in a single transaction, the pooling arrangements "create[d] the opportunity to reduce the cost of individual negotiation with each licensor and afford the ministerial service of issuing [standard] license forms."[73]

B. The FTC's decision in Summit Technologies

In addition to the DOJ's Business Review Letters, the FTC has also taken some enforcement action related to patent pooling arrangements. In *Summit Technologies*, the FTC challenged a patent pool that contained patents relating to the manufacture and use of lasers used in photo-refractive keratectomy (PRK), a form of vision-correcting eye surgery.[74] The pooling agreement included a cross-license between Summit and VISX and provided that each company would pay the pool a $250 royalty for each PRK procedure performed.

The Summit-VISX pool would arguably have achieved one of the key procompetitive benefits of collective licensing arrangements: the introduction of new technologies to the market. Both Summit and VISX were in the early stages of clinical trials for their respective PRK procedures. Further, each company had strong patents that potentially covered both PRK techniques,[75] and the uncertainty surrounding PRK technologies stemming from each company's patents made it difficult to secure funding to further develop the technology.[76] The pool's cross-license eliminated the risk of destructive patent litigation. Moreover, the royalty agreement would have allowed both companies to recoup the some of the research and development expenses embodied in their respective patents in the event that only one of the procedures made it out of clinical trials.

Despite these apparent benefits, the FTC obtained a consent order dissolving the patent pool arrangement.[77] Curiously, the FTC did not apply the rule of reason in

71 *See* 3G Business Review Letter, *supra* note 55.
72 *Id.* at 10.
73 *Id.* at 11.
74 Complaint, Summit Tech., Inc., No. 9286 (F.T.C. Mar. 24, 1998), *available at* http://www.ftc.gov/os/1998/03/summit.cmp.htm.
75 *See* Joshua A. Newberg, *Antitrust, Patent Pools, and the Management of Uncertainty*, 3 ATLANTIC L.J. 1, 25 (2000), *available at* http://www.ftc.gov/opp/intellect/020417joshuanewberg.pdf.
76 *Id.*
77 Press Release, Fed'l Trade Comm'n, Summit and VISX Settle FTC Charges of Violating Antitrust Laws (August 21, 1998), *available at* http://www.ftc.gov/opa/1998/08/sumvisx.shtm.

evaluating the pool. Both the case law[78] and agency guidelines[79] make is clear that rule of reason analysis should be employed whenever a licensing restriction contributes to efficiency enhancing activity. However, the FTC discounted the pool's procompetitive effects on bringing PRK technologies to market and chose to analyze only whether there was a less restrictive alternative than the pool. As the agency 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."[80] In other words, even if it were true that the pooling arrangement were necessary to clear blocking positions and bring PRK technologies to the market, and even if the benefits of the pool outweighed any negative effects, the competitive restraints imposed by the pool were unnecessary to achieve this purpose.

The FTC observed that the pool contained a number of anticompetitive features. Notably, while the pool provided a mechanism for Summit and VISX to license their patents to third parties, no such licenses were ever granted during the course of the six-year existence of the patent pool.[81] Moreover, the pool required Summit and VISX to pay a $250 fee to the pool for each PRK procedure performed, which had the effect of establishing a price floor and resulted in the companies charging identical prices to ophthalmologists utilizing their technology.[82] Nevertheless, although the FTC has in other contexts acknowledged that the rule of reason should have governed the decision,[83] it gave little consideration to any procompetitive effects that the pool might have had in its public comments at the time.

The invalidated Summit-VISX pool provides a stark contrast to a pool recently announced by MPEG-LA. Although the FTC was not ultimately persuaded, there is at least a colorable argument that the pool helped bring PRK technologies to the market. MPEG-LA, on the other hand, has attempted to create a burdensome pool around a technology already on the market – in other words the pool is not necessary to commercialize the technology because the technology already has been commercialized. The open-source VP8 video codec has been available since May 2010. Nevertheless, in February 2011 MPEG-LA solicited patent holders to submit patents they believe cover the technology, intending to create a licensing pool for VP8.[84] The VP8 pool clearly is not intended to help bring the technology to the market; instead, it appears that MPEG-LA is

78 *See, e.g.*, *Standard Oil Co. v. United States*, 283 U.S. 163 (1931) (applying rule of reason analysis); *Carpet Seaming Tape Licensing Corp. v. Best Seam, Inc.*, 616 F.2d 1133, 1142 (9th Cir. 1980) ("The accumulation of patents is not per se illegal. A patent pool may, however, be rendered unlawful if accompanied by an illegitimate purpose or anticompetitive consequences beyond those inherent in the grants of the patents in question."); *Wuxi Multimedia, Ltd. v. Koninklijke Philips Elecs.*, N.V., No. 04cv1136 DMS (BLM), 2006 WL 6667002, at *5 (S.D. Cal. Jan. 5, 2006); *Boston Scientific Corp. v. Schneider AG*, 983 F. Supp. 245, 271 (D. Mass. 1997); *see also Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 24 (1979) (holding that blanket licenses "should be subject to a more discriminating examination under the rule of reason.").

79 *See, e.g.*, IP GUIDELINES, *supra* note 5, § 3.4, 3G Business Review Letter, *supra* note 55, at 9 ("Accordingly, as with a patent pool, the following analysis addresses (1) whether the proposed Platform is likely to integrate complements and (2) if so, whether the resulting competitive benefits are likely to be outweighed by competitive harm posed by any other aspect of the Platform."); DVD-6 Business Review Letter, *supra* note 55, at 10 ("As with any aggregation of patent rights for the purpose of joint package licensing, commonly known as a patent pool, an antitrust analysis of this proposed licensing program must examine both the pool's expected competitive benefits and its potential restraints on competition."); DVD-3 Business Review Letter, *supra* note 55, at 9 ("As with any aggregation of patent rights for the purpose of joint package licensing, commonly known as a patent pool, an antitrust analysis of this proposed licensing program must examine both the pool's expected competitive benefits and its potential competitive hazards."); MPEG-2 Business Review Letter, *supra* note 38.

80 Analysis of Proposed Consent Order To Aid Public Comment, 63 Fed. Reg. 46,452, 46.454 (Sept. 1, 1998), *available at* http://www.ftc.gov/os/1998/08/d09286ana.htm .

81 *Id.* at 46,453.

82 *Id.*

83 *See* Sheila F. Anthony, *Antitrust and Intellectual Property Law: From Adversaries to Partners*, 28 AIPLA Q.J. 1 (2000).

84 *See* Press Release, *supra* note 4.

attempting to extract rents from firms already using the technology[85] and to encumber VP8 so as to protect the competing H.264 standard, which was already subject to an MPEG-LA pool.

C. The DOJ investigation into MPEG-LA

Most recently, in March 2011, the DOJ opened an investigation into MPEG-LA, which as discussed earlier, advertises itself as "world's leading packager of patent pools."[86] The investigation centers on MPEG-LA's patent pool for the high-definition video encoding standard known as H.264, in which MPEG-LA manages over 1,700 patents purportedly relating to the standard. According to a *Wall Street Journal* article, the DOJ and California State Attorney General's office are "investigating whether MPEG-LA, or its members, are trying to cripple an alternative format called VP8 that Google released last year – by creating legal uncertainty over whether users might violate patents by employing that technology."[87]

Indeed, in course of creating the H.264 patent pool, MPEG-LA formally solicited patents from "any party that believes it has patents that are essential to the VP8 video codec specification . . . for a determination of their essentiality by MPEG-LA's patent evaluators."[88] Notably, a short time before MPEG-LA made its call for any VP8-related patents, Google announced that it was open-sourcing its own video codec, based on VP8 technology, that would be subject a royalty-free, open license. This would enable software developers to use the technology to develop an alternative video format to the incumbent, dominant H.264 standard.[89] In that light, it perhaps is not surprising that MPEG-LA – the administrator of the competing royalty-bearing H.264 patent standard – issued a call for patents concerning the free, competitive alternative to the codec that supported its dominant video format.

D. The Federal Circuit's Decision in Princo II

In addition to the recent guidance from the antitrust authorities with respect to patent pooling arrangements, the Federal Circuit has also recently issued in an opinion concerning patent pooling arrangements in *Princo Corp. v. International Trade Commission* (*Princo II*).[90]

Princo involved two sets of patents – Philips's "Raaymakers" patents and Sony's "Lagadec" patents – designed to encode position information in a compact disc.[91] After reviewing each technology, Sony and Philips agreed to use Philips's encoding solution, rather than Sony's, and incorporated the Raaymakers technology into a technical standard for CD-Rs and CD-RWs known as the "Orange Book" standard.

85 *Cf.* FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (2011), *available at* http://www.ftc.gov/os/2011/03/110307patentreport.pdf (explaining that competition is harmed when patents are valued according to their potential for extracting rents from firms already practicing the covered technology).
86 *Revolutionizing Intellectual Property Rights Management*, MPEG-LA, http://www.mpegla.com/main/Pages/About.aspx (last visited Sept. 26, 2011).
87 *See* Catan, *supra* note 3.
88 Stephen Shankland, MPEG-LA Patent Move Blemishes Google's Web Video Plan, CNET.COM (Feb. 11, 2011), http://news.cnet.com/8301-30685_3-20031525-264.html.
89 *Id.*
90 *Princo Corp. v. Int'l Trade Comm'n* (*Princo II*), 616 F.3d 1318 (Fed. Cir. 2010).
91 *Id.* at 1322.

To commercialize the technology, the companies combined their patents into a patent pool. Philips administered a licensing program, which offered package licenses to the pooled patents (*i.e.*, the Raaymakers and Lagadec patents). Princo licensed the bundled patents, stopped paying for the license, and was sued by Philips for infringement of the Raaymakers patents, but not the Lagadec patents. Princo defended the patent infringement suit by claiming that Sony and Philips tied the essential Raaymakers patents to the non-essential Lagedec patents, and that Philips and Sony foreclosed potential competition between them by agreeing that the Lagadec patents would be available only through package licenses by way of the patent pool.

In its *en banc* opinion, the Federal Circuit addressed only one issue: whether an agreement between Sony and Philips to suppress the Lagadec technology – by making it available only through package licenses when the technology was unnecessary (from a technical standpoint) to manufacture Orange Book compliant discs – would constitute patent misuse. In rejecting Princo's misuse defense, the court first set forth an extremely narrow definition of patent misuse, stating that "the doctrine of patent misuse has largely been confined to a handful of specific practices by which the patentee seemed to be trying to 'extend' his patent grant beyond its statutory limits." [92] Elaborating on this narrow standard, the majority "emphasized that the defense of patent misuse is not available to a presumptive infringer simply because a patentee engages in some kind of wrongful commercial conduct, even conduct that may have anticompetitive effects."[93] In other words, even if a pooling arrangement facilitates anticompetitive conduct – such as, by including competing, non-essential patents – patent misuse will not be found unless the temporal scope of the pool (*i.e.*, the expiry date of the patents in the pool) is lengthened or extended by the inclusion of such non-essential technology.[94]

In addition, the court found that a key element of patent misuse is *patent leverage*, which requires that the asserted patents significantly contribute to the misconduct at issue.[95] Princo, however, had failed to establish the required connection between any misconduct and the enforced Raaymakers patents. Philips's licensing program did not restrict the availability of the Raaymakers patents and therefore did not use those patents for leverage. Moreover, any antitrust violation based on an alleged agreement between Philips and Sony to suppress the Lagadec technology was unrelated to the issue of misuse of the Raaymakers patents.[96]

Finally, applying rule of reason analysis, the court concluded that substantial evidence supported the Commission's factual finding that Philips and Sony did not suppress a potentially viable alternative to the Orange Book standard. The Commission had found that Lagadec technology was inferior and that Philips and Sony entered into their pooling arrangement for technical reasons, rather than a conspiracy to suppress the Lagedec technology. Moreover, the Commission found insufficient evidence that a potential licensee would have developed a disc based on the Lagadec technology and that this technology was likely to have competed against the Raaymakers technology absent the agreement between Sony and Philips.[97]

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92 *Id.* at 1329.
93 *Id.*
94 The narrow definition of patent misuse applied in *Princo II* echoes the approach used in *Princo I*. In fact, Judge Bryson, who wrote the majority opinion in *Princo II*, also drafted a concurring opinion in the *Princo I* case. In both instances, Bryson remains unresponsive to the potential costs and anticompetitve effects of inflating patent pools with non-essential patents; he writes "the profit-maximizing price for the license would be the same regardless of whether it included no unwanted patents or dozens of them, as long as it contained all the patents needed to make Orange Book compliant discs." *Princo Corp. v. Int'l Trade Comm'n* (*Princo I*), 563 F.3d 1301, 1322 (Fed. Cir. 2009).
95 *Id.* at 1331-33.
96 *Id.* at 1332.
97 *Id.* at 1340.

IV. THE ROLE OF ANTITRUST IN LIGHT OF *PRINCO II* AND AGENCY GUIDANCE ON PATENT POOLING ARRANGEMENTS

Given the Federal Circuit's decision in *Princo II*, as well as the guidance from the antitrust authorities on patent pooling arrangements, what is the proper (and likely) role of antitrust enforcement in this area going-forward? We argue that the impact is twofold. First, the *Princo II* decision, which set a very high bar to demonstrate patent misuse, will likely strengthen the need for antitrust enforcement with respect to suspect patent pooling arrangements. Second, the DOJ's Business Review Letters should not signal acquiescence by the agencies that patent pooling arrangements (without mandatory RAND licensing) are generally procompetitive. Indeed, the size, scope, breadth, and function of present-day patent pools vis-à-vis the patent pools evaluated in the DOJ's Business Review Letters have changed dramatically. As a result, several of the premises on which the DOJ based its decisions not to pursue enforcement actions may no longer hold true, and thus we may expect to see renewed interest by the agencies in the investigation and challenge of pooling arrangements.

A. Princo II's *effect on patent misuse defense in infringement cases brought by patent pool licensors*

As discussed above, the *Princo II* decision sets a very high burden to demonstrate patent misuse in the context of patent pooling arrangements. In *Princo II*, the Federal Circuit rejected a theory of patent misuse based on an agreement to pool patents in order to suppress potentially competing technologies. According to the court, the patent actually *asserted* had to significantly contribute to the misconduct at issue. Suppression of the Lagedec technology (the potentially competing technology bundled with the Raaymakers technology) did not relate to the Raaymakers patents (the patents actually asserted), and, therefore, such misconduct could not constitute patent misuse.[98]

This analysis, however, is flawed for multiple reasons. First, the Court explicitly contradicts the approach taken by the DOJ in its Business Review Letters to evaluate the competitive effects of patent pooling arrangement by evaluating essentiality.[99] Indeed, the court explicitly states that the doctrine of patent misuse is not available – *even if* the patent holder engages in wrongful conduct with anticompetitive effect – unless the temporal scope of the patents in the pool is increased. As a result, the addition of non-essential, competing patents to a pooling arrangement is outside the realm of the misuse doctrine unless such additions extend the expiration date of the pool.

Moreover, an agreement between Sony and Philips to bundle the Lagedec and Raaymakers patents together in an effort to exclude Lagedec technology should, in theory, constitute misuse of *both* sets of patents. In other words, since suppression of the Lagedec technology could not be achieved without bundling Lagadec patents together with the Raaymakers technology, the misconduct clearly relates to the Raaymakers patents. Again, but for the pooling arrangement combining the potentially competing Lagedec and Raaymakers technologies, Sony (or whoever held the rights to the Lagedec patents) would

98 *Id.* at 1331-33.

99 While the DOJ Review Letters evaluated patent pooling arrangements in the context of antitrust liability, whereas *Princo II* evaluated the same in the context of patent misuse, both are relevant to the essentiality test for patent pools. For the DOJ, essentiality was critical to a finding that a particular pooling arrangement did not harm competition. In contrast, the *Princo II* court found that essentiality was irrelevant to the affirmative defense of patent misuse. Indeed, under the Federal Circuit's analysis, the addition of non-essential patents to a patent pool simply does not implicate the misuse doctrine, unless the inclusion of such patents increases the temporal scope of the pool. *See id.* at 1329.

have an incentive to develop and commercialize the Lagedec technology as an alternative solution to encoding position information in a compact disc.

Lastly, the Federal Circuit also required Princo to show a reasonable probability that the Lagadec technology would have developed into a competitive technology in the market.[100] Considering that Princo alleged that Philips and Sony sought to suppress the Lagadec technology from the start by bundling it with the potentially competing Raaymakers patents, it is unclear what evidence, if any, could ever be sufficient to establish "reasonable probability" that the Lagadec technology would have developed into a competitive technology. The requirement to demonstrate reasonable probability ignores the dynamic quality of innovation. The actual development trajectory of Lagadec technology, which was cut short by the pooling agreement, is a very poor indicator of how the technology might have fared if the pool had not existed and Sony had economic incentives to develop the technology so that it *would* have been competitive (versus Sony's incentives once it had combined with Philips, which was to abandon such efforts and suppress any efforts by others).

Where a pool forms around an industry standard, the requirement that a plaintiff demonstrate with reasonable probability that other viable alternatives would have developed absent the chosen standard is particularly onerous and inevitably speculative. The path of nascent innovation is necessarily, and artificially, terminated when another technology is chosen as the standard. As such, it is difficult, but not impossible, to demonstrate whether such prematurely terminated technologies would have developed into a viable alternative to the technology that ultimately was declared the winner at the time the pool (or standard-setting body) was formed.

It is clear that *Princo II* marks a decisive win for proponents of Patent pools by providing patent holders with a blueprint to avoid misuse: Patent holders can bundle potentially competing patents in order to suppress one technology as long they do not assert infringement of the patent(s) allegedly suppressed by the pooling arrangement. Moreover, *Princo II* sanctions the additions of non-essential, competing patents to a pool without regard to the enormous transactions costs that these additions impose on potential licensees.[101] As discussed in more detail below, the proliferation of the size and scope of present day pooling arrangements makes it unrealistic for innovators to assess whether they infringe on a particular pool's patents. In many circumstances, simply taking a license to the pool is less expensive than investing the resources in evaluating non-infringement and/or invalidity of each of the pooled patents, especially if the pool has been packed with a large number of non-essential patents.[102]

By setting an extremely high (if not unobtainable) bar to demonstrate patent misuse by patent pools, the *Princo II* decision serves to further embolden patent holders to use patent pools aggressively. In other words, *Princo II* removes a key defense for patent infringement defendants asserting that plaintiffs acted anticompetitively in the procurement

100 *See id.* at 1338-39.

101 *See* Lampe & Moser, *supra* note 29, at 899 ("[P]ools that combine substitute patents can increase license fees for outside firms.").

102 *See supra* notes 39-54 and accompanying text. A patent pool is both a more formidable litigation opponent and likely to be more aggressive in asserting its patents. Moreover, independently administered pools cannot be deterred by the threat of an infringement counterclaim. Pools also limit the disincentives for patent holders with weak claims to pursue a lawsuit. It is significantly less expensive to add a claim to the pool's suit than to launch an individual suit. Moreover, the pool spreads the costs of litigation among the pool members, limiting the downside risk of aggressively asserting weak or potentially irrelevant patents. For these reasons, pool licensors collectively impose a greater risk and potential cost of litigation than they would if they each had to bring a separate claim. Taking a pool license, or joining the pool, is often less expensive than conducting the detailed review of the pool's patents necessitated by the increased threat of litigation that the pool poses.

and the selective enforcement of their "patent rights," in order to suppress technologies that compete with the pooled patents. As a result of this decision, it would be economically rational for patent pools to continue to aggregate many more patents than are required for essentiality. In the meantime, licensees will be forced to either take a licensee to the pool – or worse yet, may fail to innovate altogether – or spend considerable resources in evaluating and challenging pools containing non-essential patents. Both of these avenues waste resources and involve dead weight loss, serving neither consumers nor innovation. As a result of these harmful effects of the *Princo II* decision on competition and innovation, it will be even more critical for antitrust enforcement to play a substantial role in evaluating these types of agreements in the future.

B. Antitrust enforcement can and should play an active role in evaluating the competitive impact of patent pooling arrangements.

In addition to the likelihood that antitrust enforcement will *need* to play a stronger role in light of the *Princo II* decision, we also believe that it *can* and *should* do so.

The patent pools evaluated by the DOJ in its 1997-2002 Business Review Letters contained anywhere from 27 to 210 patents. Many patent pools in today's market are enormous by comparison. MPEG-LA's patent pool relating to the H.264 pool – which is currently being investigated by the DOJ – contains over 1,700 patents.[103] Moreover, patent pools can grow quickly after they are formed, particularly when they incorporate grantback clauses.[104] For example, the MPEG-2 patent pool, which contained just twenty-seven patents when reviewed by the DOJ, grew to encompass over eight hundred patents over its lifetime.[105] The growth of individual patent pools reflects the growing importance and value of intellectual property rights. As of 2005, three-quarters of the value of publicly traded firms was in intangible assets such as intellectual property rights, up from only forty percent two decades prior.[106] Even extremely large and well-established firms, such as Microsoft and Hewlett Packard, have experienced significant growth in revenue from intellectual property licensing in the past decade.[107] This trend shows no sign of abating, and we can likely expect to see patent pools continue to grow and proliferate in the years to come.[108]

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103 Charles Arthur, *US Justice Department Reportedly Investigating MPEG-LA over VP8 Threats*, GUARDIAN UK (Mar. 4, 2011), http://www.guardian.co.uk/technology/blog/2011/mar/04/justice-department-antitrust-mpeg-la-vp8.

104 The MPEG-2 pool license required licensees to offer every pool licensor a license to any patents necessary to implement the MPEG-2 standard (so-called "essential patents") at a fee determined by the licensor's per-patent share of pool royalties. In the alternative, a licensee with essential patents could join the pool. *See* Letter from Joel Klein, Acting Assistant Attorney Gen., Antitrust Div., Dep't of Justice, to Gerrald R. Beeney, Esq., at 7 (June 26, 1997) [hereinafter MPEG-2 Business Review Letter], *available at* http://www.justice.gov/atr/public/busreview/215742.pdf. Faced with the choice between a compulsory license to every pool licensor and obtaining a share of pool profits by joining, most firms would likely choose the latter. *See* 3G Business Review Letter, *supra* note 55, at 12 ("Although . . . membership is voluntary, [the pool contains] some significant requirements that tend to bring in additional licensors and patents, including the obligation upon licensors who participate in the [pool] at all to submit all of their essential patents for evaluation and certification rather than strategically withholding some patents, and the 'grant-back' obligation on licensees who accept a Standard or Interim License requiring them to also submit any essential patents they hold for certification.").

105 *Nero AG v. MPEG LA,* No. 10-cv-3672-MRP-RZ, 2010 WL 4366448 (C.D. Cal. Sept. 14, 2010) (internal citation omitted).

106 *See* Kenneth Cukier, *A Market for Ideas: A Survey of Patents and Technology*, THE ECONOMIST, Oct. 22, 2005, at 1.

107 *See id.* at 4, 8.

108 The proliferation of patent grants exacerbates the problem, and the fact that the Patent Office issues patents often when they should not be issued greatly contributes to this proliferation. This in turn increases the problem with some patent pools, as many likely include patents that should never have issued in the first place. *See* Paul R. Michel, *Enabling the Jury to Apply Patent Law Rationally*, 1 YALE SYMP. L & TECH. 1, ¶ 2 (1998) ("You can ask very good patent lawyers in this country whether a certain device infringes a given patent, and a lot of them will tell you, 'Well I'm not sure.' Some will say, 'I think yes,' and others will say, 'I think no.' Any system that routinely produces such a scattering of conclusions from competent, intelligent, and well-informed lawyers indicts itself in my view.").

Patent Pool Sizes (At Formation)

	1997-2002						Today	
Date	1997	1998	1998	1999	2002		2011	2011
Patent Pool	MPEG-2	DVD-3	Summit & VISX	DVD-6	3G		AVC/H.264 Pool	DVD-6
No. of Patents	27	210	25	51	N/A		1,700+	1,400+

Two overarching factors were critical to all of the DOJ's decisions in its Business Review Letters not to initiate enforcement actions. First, the DOJ assumed, based on the submitting parties' representations, that the pooling arrangement contained only complementary (*i.e.*, essential) patents.[109] Second, the DOJ assumed that this "essentiality" would be determined by an independent, nonbiased expert. When considering the sheer size, scope, and power of today's patent pooling arrangements, however, neither of these premises are likely to hold true.

First, with respect to complementarity, it is one thing to say that each of the twenty-seven patents in the MPEG-2 patent pool were "technically necessary" to implement to the MPEG-2 video compression technology standard; it is quite another thing, however, to say that each of the over 1,700 patents in MPEG-LA's H.264 pool are "technically necessary," or even "necessary (as a practical matter)" to the video codec standard. In such a vast patent pool it is highly unlikely – if not impossible – that every single patent contained in the pool is truly "essential" to the relevant technology. But it is *only* this essentiality that makes these types of collective arrangements permissible under the antitrust laws. Indeed, "the competitive relationship of the patents in the pool" is the paramount consideration in assessing whether a particular pool is likely to have procompetitive or anticompetive effects.[110]

Notably, in its Business Reviews Letters, the DOJ emphasizes that pools containing substitute patents that "could be licensed and used in competition with each other . . . raise serious competitive concerns."[111] Thus, if essentiality is unlikely or undeterminable in pools containing thousands of patents, there is no basis for permitting such collaboration among actual and potential competitors, at least absent a firm commitment to open RAND licensing. Nor can one reasonably assume the patent validity of thousands of patents contained in a massive pooling arrangement given that the patent office frequently approves "ridiculous, broad, meaningless patents."[112] Again, based on the parties' representations, the DOJ presumed patent validity in its Business Review Letters without any examination of the individual patents in the pool. The problem of patent pools containing invalid patents is only further exacerbated as the size, scope, and power of the pools in question continue to increase.

109 *See, e.g.*, DVD-3 Business Review Letter, *supra* note 55, at 11 ("Based on what you have told us, however, the definition of 'necessary (as a practical matter)' that the expert will be employing is sufficiently clear and demanding that the portfolio is unlikely to contain patents for which there are economically viable substitutes.").

110 Richard Gilbert, *Antitrust for Patent Pools: A Century of Policy Evolution*, 2004 STAN. TECH. L. REV. 3, ¶ 118, http://stlr.stanford.edu/pdf/gilbert-patent-pools.pdf.

111 DVD-6 Business Review Letter, *supra* note 55, at 10.

112 Mike Masnick, *When Patents Attack: How Patents Are Destroying Innovation in Silicon Valley*, TECHDIRT (July 25, 2011), http://techdirt.com/articles/20110724/22250715225/when-patents-attack-how-patents-are-destroying-innovation-silicon-valley.shtml.

Second, to what extent are the patent experts evaluating the pool – who are hired and compensated by the pooling organization – truly independent, nonbiased arbitrators of "essentiality"? For example, MPEG-LA, whose sole business is the formulation and maintenance of pooling arrangements, has a strong financial interest in the inclusion of as many patents as possible to maximize the pool's license, formation, and administration fees.[113] Even if patent experts focusing on the evaluation of patent pools are not technically compensated based on the number of patents they deem essential, clearly they have an incentive to align their interests with those of their client, or risk losing that client's business in the future (and, of course, the more patents in the pool, the more work – and total compensation – for the expert). Considering that MPEG-LA is the self-proclaimed world leader in the packaging of patents, retaining such a client is likely critical for patent experts with proficiency in the evaluation of patent pools.

To the extent that the expert tasked assessing essentiality in not truly independent, it is simply not realistic for potential licensees to serve as a watchdog for patents included in the pool, given the size and breadth of present day patent pooling arrangements. Again, hiring a patent attorney to provide a non-infringement opinion for a pool containing twenty-seven patents may be reasonable; however, few, if any, potential licensees have the resources at their disposal to procure non-infringement opinions – or an independent expert determination of essentiality – for a pool containing *thousands* of patents. Indeed, is far cheaper for a potential licensee to simply take a license to the pool, whether or not the patents in the pool are truly essential, because the alternatives – spending considerable time and money to conduct an independent assessment or not do so and run the risk of infringement liability – are prohibitively expensive. Given such incentives, mechanisms by which licensees can raise questions about whether a particular patent belongs in the portfolio are impractical.[114]

While there are no hard lines that can clearly separate procompetitive pools from anticompetitive pools, there are a number of relevant factors that antitrust authorities should carefully consider. First, the size of the patent pool is relevant. A large patent pool containing only complementary patents for a certain technology may well benefit competition by providing a "one stop shop" for acquiring patent rights. But, as discussed above, as a pool grows it becomes more likely to contain non-essential or substitute patents. Over the course of the past ten years, the size of a typical technology patent pool has grown considerably and this trend shows no sign of abating.[115] Evaluating the validity and coverage of the patents in today's pools is an impossible task for a new entrant (and a

113 MPEG-LA also has every incentive to induce the creation of new collective licensing arrangements. *See, e.g.*, *Librassay: Pathway to Precision*, MPEG-LA http://www.mpegla.com/ (last visited Dec. 8, 2011); *Want To Form a Pool?*, MPEG-LA http://www.mpegla.com/main/Pages/FormPool.aspx (last visited Dec. 8, 2011).

114 MPEG-2 Business Review Letter, *supra* note 38, at 11 (finding relevant procedure by which essentiality of pooled patents could be challenged).

115 In 1990 Zvi Griliches wrote that: "A well-established major firm does not depend as much on current patenting for its viability or the survival of its market position. Thus, even at equal underlying true inventiveness rates, the propensity to patent may be lower for large firms, at least relative to the successful new entrants in their field." Zvi Griliches, *Patent Statistics as Economic Indicators: A Survey*, 28 J. ECON. LITERATURE 1661, 1677 (1990). However, Griliches seems to have underestimated the growing role that a large, comprehensive patent portfolio would have in determining the negotiating strength of companies in high technology markets. The number of patent awards first topped 100,000 in 1994; in 2010 the PTO granted over 200,000 patents. Joe Wilcox, *IBM Received Nearly 23 Patents per Working Day in 2010—Will Big Companies Become Patent Trolls?*, BETANEWS (2011), http://betanews.com/2011/01/10/ibm-received-nearly-23-patents-per-working-day-in-2010-will-big-companies-become-patent-trolls/. The three most prolific patentees in 2010 were IBM (5,896 overall, or roughly 16 per day), Samsung (4,551 overall, or roughly 12 per day), and Microsoft (3,094 overall, or roughly 8.5 per day). *Id.* From these numbers it is clear that, even if lower relative to new entrants when adjusted for size or some other factor, the patenting rate of "well-established major firms" in technology industries is still extremely high. If the rate of patenting continues to increase, Adam Mossoff's somewhat hyperbolic prediction that in 150 years technologies may require a license to tens of millions of patents, seems not so hyperbolic. Mossoff, *supra* note 49, at 205.

difficult one for regulators as well). While there is no "magic number" of patents should be considered suspect, regulators should be more skeptical of the feasibility of self-regulation.[116]

The composition of the pool's membership is also relevant to assessing a pool's comperitive impact. The market power that the pool's members wield, both collectively and independently and both within and without the market for the technology covered by the pool, has a significant effect on the bargaining position of potential licensees vis-à-vis the pool. Beside market power, the past litigation practices of the pool's members (or the pool administrator) should be examined to determine whether the pool will engage in anticompetitive litigation. Similarly, the members' and administrator's past licensing practices bear on whether not a commitment to RAND licensing will be upheld.

Finally, the antitrust agencies should scrutinize the potential for pools that share members or are administered by the same entity to coordinate. As discussed at the outset of this paper, patent pooling arrangements in today's market, like MPEG-LA, that are designed to turn "patents into profits" by "packaging patents in order to give them mass market appeal" deserve antitrust scrutiny, like any other aggregation of potentially overlapping assets, held or managed by market competitors or patent aggregators.[117] When several pools covering related technologies are administered by the same entity, antitrust regulators should be especially vigilant. The suppressive effect of a single administrator governing two pools for competing technologies is similar to the effect of including two substitute technologies in a single pool. In the case of the 3G pool, the creation of five independent PlatformCos to manage the competing technologies covered by the pool was a critical factor in the DOJ's decision not to pursue an enforcement action. A single administrator for overlapping pools greatly increases the risk of anticompetitive coordination between pools or anticompetitive subordination of a particular pool technology.[118]

To date, the FTC and DOJ have rarely had the opportunity to evaluate pools that clearly present these difficulties, but by every indication technology patent pools will continue to grow larger and more complex. Antitrust authorities have already made encouraging progress in considering the impact of patent pools on competing technologies that, for various reasons, cannot be readily shielded by a defensive patent portfolio. In particular, as discussed more fully in the following section, antitrust authorizes have begun to recognize the distinct potential for patent pools to anticompetitively impede the development of open-source technologies. In addition, the agencies have begun to account for some of the factors listed here in the closely related context of patent portfolio acquisitions.

C. The competitive impact of patent pools depends on a broad collection of heterogeneous factors, and antitrust authorities must undertake a holistic inquiry.

In addition, the DOJ's evaluation of pooling arrangements in its Business Review Letters did not specifically take into account the effect such arrangements might have on

116 In its business review letters of patent pools, the DOJ has noted that pool members have an incentive to kick out invalid or non-essential patents from the pool so as to receive a greater share of the pool royalties. *See, e.g.*, DVD-6 Business Review Letter, *supra* note 55, at 13. However, as the number of patents grows, the incentive to examine each patent contributed by the other members is blunted. This same phenomenon explains the adoption of royalty-free cross licenses, rather than a patent-by-patent accounting, when the covered patents are particularly numerous or difficult to value. A royalty-free cross license may be an ideal outcome to a patent suit from a competition perspective under some circumstances. *See* Shapiro, *supra* note 14, at 123. However, a reduced incentive to police a pool license for non-essential patents certainly is not.

117 MPEG-LA, *supra* note 3.

118 *See supra* notes 71-73 and accompanying text.

open-source alternatives. According to the International Data Corporation (IDC), open-source revenues are growing at a 22.4 percent compound annual growth rate and will reach $8.1 billion by 2013.[119] However, the substantial innovation and market disruption spurred by open-source alternatives can be severely depressed when alternative technologies are not developed because of concerns of potential patent infringement. In essence, collaborators may be unlikely to engage in efforts to create, develop, and launch free open-source alternatives – which have immense procompetitive benefits – to the extent they are fearful of entering a patent mine field. Patent aggregation through patent pools can serve to exacerbate this problem by escalating potential litigation risk.[120] Open-source technologies are also less likely to be supported by a strong defensive patent portfolio owned or administered by a single, centralized entity.

To this end, it is encouraging that the DOJ's current investigation into MPEG-LA appears to focus, in part, on the effects of the H.264 pool on the royalty-free open-source VP8 alternative. Indeed, the H.264 pool has the potential to suppress competition in two distinct, yet complementary ways. Not only does it extract profits from innovators that are unable to challenge the essentiality of the pool due to its size and scope, but also it serves to stifle innovation by suppressing potentially competing alternatives like VP8. Indeed, MPEG-LA has attempted to create a patent pool around VP8 itself,[121] a technology that had been available to the industry for several years, and competes against MPEG-LA's dominant H.264 technology. While some patentees may be willing to join such a pool, others may be coerced into joining under the threat of litigation by the H.264 pool or its members implied by MPEG-LA's call for VP8-essential patents.

As noted above, pools covered substitute technologies administered by the same entity pose a particular risk of anticompetitive effect. Creating a pool around an already established technology is unlikely to have procompetitive effects (the central benefit of pools being to facilitate the *introduction* of new technology to a market) and appears instead to be intended to encumber VP8 with litigation uncertainty and license fees and protect the H.264 pool.[122] When assessing the overall competitive effect of such pools, the deterrence of competing technologies – and the corresponding competitive harm – is a critical variable in the equation. Moreover, by bringing the VP8 technology under its control, MPEG-LA will be able to extend its dominant position in the market for video decoding standards if key H.264 patents expire or VP8 supplants H.264 as the industry-favored technology.

In fact, a number of recent patent acquisitions (and accompanying antitrust investigations) clearly demonstrate the potential for patent portfolios jointly held by competitors to distort competition and suppress competing alternatives – related to cellular

119 *Open Source Software Market Accelerated by Economy and Increased Acceptance From Enterprise Buyers, IDC Finds*, BUSINESSWIRE (July 29, 2009, 8:00 AM), http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20090729005107&newsLang=en (citing MICHAEL FAUSCETTE, INT'L DATA GROUP, WORLDWIDE OPEN SOURCE SOFTWARE 2009–2013 FORECAST (2009)).

120 Again, an open source developer may believe that it does not infringe any of the patents in a particular pooling arrangement. Nonetheless, it could be deterred from development because it perceives the infringement litigation risk from the patent aggregator to be higher than that of individual patent holders if the patents were disaggregated. *See, e.g.*, *supra* notes 39-54 and accompanying text.

121 *See* Press Release, *supra* note 3. It should go without saying that if a pool organizer attempts to create pools with competing technology, that immediately should raise suspicion as to *why* that organizer would seek to create technology pools that compete against its established technology.

122 MPEG-LA has argued that, as an independent operator, it is indifferent as to which standard prevails. *See* Catan, *supra* note 3. It is far from clear that MPEG-LA is indeed indifferent. The company has invested considerable resources in evaluating and assembling patents for the H.264 pool. It is likely that MPEG-LA would benefit most from continuing to support its entrenched H.264 standard by simply encumbering VP8 with patents of uncertain application or validity, rather than investing in the detailed examination necessary to operate a viable VP8 pool. Even accepting MPEG-LA's argument, however, it is clear that a pool operator like MPEG-LA has an incentive to "capture" technologies that compete with those serviced by its pools. Competition between technologies both covered by pools operated by the same entity is weakened and may even be eliminated entirely.

telephone technology markets, an extremely lucrative industry subject to an extraordinary amount of patent litigation. The FTC has acknowledged that competition suffers when transferred patents are valued according to the ability to extract rents from firms that have already put covered products on the market.[123] This practice becomes even more troubling when competing firms join together to purchase patent portfolios in order to exclude an alternate technology or to raise rivals' costs. Patent aggregations of this sort can effectively function as private, unregulated patent pools created not to clear blocking positions, but to *create* them.

In September 2011, MOSAID reached an agreement to acquire (at no cost) two thousand Nokia patents. MOSAID would be responsible for asserting these patents against mobile device manufacturers and would split the resulting revenues with Nokia and Microsoft, essentially serving as the administrator of a Nokia-Microsoft pool.[124] Like MPEG-LA, MOSAID is a non-practicing entity and can therefore be more aggressive in extracting rents from practicing firms because it is not vulnerable to counterclaims. MOSAID is an aggressive licensor, boasting that achieved "complete saturation" of the DRAM memory chip market and at one point licensed "all DRAMs on the planet."[125] With Nokia's patents, MOSAID is targeting over $500 billion in "unlicensed" revenues for mobile devices over five years, estimating that it can extract over $1 billion in licensing fees for technologies already on the market.[126] Particularly troubling is the potential for Microsoft and Nokia to use MOSAID to increase the costs of competing mobile operating systems, such as Google's open-source Android operating system, while exempting themselves from licensing fees. Like an anticompetitive patent pool, MOSAID need only set a royalty rate less than the cost of evaluating and attacking its vast collection of patents to impose a tax on technologies that rival those of its partners.

Similarly, CPTN, a holding company owned equally by Microsoft, Oracle, Apple, and EMC, attempted to acquire nearly one thousand of Novell's patents in late 2010 in conjunction with Novell's merger with Attachmate; the DOJ opened an investigation into the acquisition and subsequently required it to be modified. As with a patent pool, placing the acquired patents in a holding company under joint control distributed and muted the downside risks of aggressively asserting the patents. Moreover, each of the owners of CPTN had a history of attacking competing open-source technologies, raising concerns that CPTN would attempt to use the increased litigation pressure of a pooled patent portfolio to suppress open-source software such as the Linux operating system. Consequently, the Department of Justice opened an investigation into the transaction, and in response to the DOJ's concerns, CPTN made a number of modifications to the acquisition agreement to limit the potential for anti-competitive assertion of Novell's patents by the consortium. In particular, all the acquired patents would be subject to the GNU General Public License and licensed to the Open Invention Network, which manages a collection of patents intended to help members defend Linux from patent attacks.[127]

123 *See* FED. TRADE COMM'N, *supra* note 85.

124 Chris Velazco, *Mosaid Acquires 2,000+ Nokia Patents, Will Handle Licensing & Litigation For a Cut*, TECHCRUNCH (Sept. 1, 2011), http://techcrunch.com/2011/09/01/mosaid-acquires-2000-nokia-patents-will-handle-licensing-litigation-for-a-cut/. Microsoft's inclusion in this arrangement is somewhat puzzling as it does not appear to have contributed anything to the collaboration's assets.

125 Interview with John Lindgren, CEO, MOSAID, *CEO of MOSAID talks magnitude of Nokia / Microsoft Deal*, Sept. 13, 2011, http://www.youtube.com/watch?v=37yzFT9xpys.

126 Press Release, MOSAID Updates Shareholders on Special Committee Process, Addresses Wi-LAN Mischaracterizations (Sept. 12, 2011), *available at* http://www.mosaid.com/corporate/news-events/releases-2011/110912.php.

127 Press Release, U.S. Dep't of Justice, CPTN Holdings LLC and Novell Inc. Change Deal in Order to Address Department of Justice's Open Source Concerns (Apr. 20, 2011), *available at* http:/www.justice.gov/opa/pr/2011/April/11-at-491.html.

Finally, in mid-2011, the Rockstar Bidco consortium, comprised of Microsoft, Apple, Research in Motion, and other leading mobile companies, acquired Nortel's patent portfolio, containing roughly six thousand patents covering communications technologies[128] with a final bid of $4.5 billion.[129] Like the MOSAID arrangement, Rockstar's acquisition of the Nortel patents allows established players to suppress competing open-source technologies by seeking excessive license fees for technologies that have already been incorporated into products on the market and even into industry standards.[130] This anticompetitive intent appears all the more evident as Microsoft, one of the principal backers of Rockstar, already had acquired a worldwide, perpetual license to the Nortel patents, calling into question why it needed to acquire the patents in the first place.[131]

These examples demonstrate the potential for collections of patents held by competing firms to be used to raise the cost of developing and deploying rival technologies, particularly those not backed by a strong defensive patent portfolio.[132] Clearing blocking positions and reducing transaction costs are the essential procompetitive justifications by which patent pools (and other similar patent aggregations) are valid under the antitrust laws. Antitrust regulators can and should take a stricter approach where competitors aggregate patents not to bring a new technology to the market but to create a blocking position in order to inhibit the development of alternative technologies.

V. CONCLUSION

The use of patents pools to facilitate anticompetitive conspiracies to set prices, restrict output, or thwart emerging technologies is precisely what the courts and the antitrust authorities have cautioned against in evaluating pooling arrangements.[133] Patent pools were designed to solve specific problems – such as the clearing of blocking patents or to protect against "hold up" or "hold out" in the implementation of a technological standard – in order to *enhance* competition. When pooling arrangements are instead used as a weapon to suppress and/or raise the costs of actual and potential competitors because (1) the pool members have an incentive to eliminate competition, and (2) the pool administrator has the incentive to maximize profits through the inclusion of non-essential, invalid patents, the precompetitive justification for collective licensing arrangements is undermined. Hopefully, the DOJ's recent investigation involving MPEG-LA demonstrates a renewed vigor to more carefully assess the competitive impact of these arrangements, including close scrutiny of the purposes behind their formation. Given that the *Princo II* decision has further encouraged the aggregation of patents – irrespective of essentiality – such scrutiny is (and will to continue to be) sorely needed.

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128 *Nortel Closes Patent Sale to Rockstar Bidco*, TECHFINANCE (July 29, 2011), http://news.techfinance.ca/nortel-closes-patent-sale-to-rockstar-bidco/.

129 The patents had a pre-auction estimated value of just $1 billion. David Drummond, *When Patents Attack Android*, GOOGLE BLOG (Aug. 3, 2011), http://googleblog.blogspot.com/2011/08/when-patents-attack-android.html.

130 *See* Letter from Am. Antitrust Inst. to U.S. Dep't of Justice (July 6, 2011), *available at* http://www.antitrustinstitute.org/sites/default/files/Nortel%20letter%20to%20DOJ.7.6.11.pdf.

131 Mary Jo Foley, *Will Microsoft Try To Outbid Google for Notel's Patents?*, ZDNET (Apr. 4, 2010, 10:03 AM), http://www.zdnet.com/blog/microsoft/will-microsoft-try-to-outbid-google-for-nortels-patents/9088.

132 In February 2012, the DOJ closed its investigation into both the CPTN and Rockstar acquisitions following assurances and voluntary modifications to the transactions by the acquiring parties. *See* Press Release, U.S. Dep't of Justice, Statement of the Department of Justice's Antitrust Division on its Decision to Close its Investigations of Google Inc.'s Acquisition of Motorola Mobility holdings Inc. and the Acquisitions of Certain Patents by Apple Inc., Microsoft Corp, and Research in Motion Ltd. (Feb. 13, 2012), *available at* http://www.justice.gov/atr/public/press_releases/2012/280190.htm. Without passing on the correctness of the DOJ's determination that none acquisitions, as modified, presented a significant risk of anticompetitive effect, it is encouraging to note that the agency has acknowledged the relevance of some of the factors identified above in evaluating patent acquisitions. The FTC and DOJ must carry this focus forward to the analysis of patent conglomerations as well.

133 Andewelt, *supra* note 28, at 618 ("When competitive patents owned by different members are pooled, the members should be viewed as horizontal competitors, since they are alternative suppliers of competitive products, i.e., licenses under patents which can be used to accomplish similar functions.").