

# Barriers to Competition on the Innovation Superhighway: How the Lack of Antitrust Scrutiny of Patent Pools Deters Competition

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## I. Overview

The patent rights necessary to commercialize a product are frequently controlled by multiple rights holders instead of one patentee. This fragmentation of rights can increase the costs of bringing products to market due to the transaction costs of negotiating multiple licenses and greater royalty payments. Patent pools – collective licensing arrangements – can help solve the problems created by these overlapping patent rights, i.e., patent thickets, by reducing transaction costs for licensees and licensors while preserving the financial incentives for inventors to commercialize their existing innovations and undertake new, patentable R&D.<sup>2</sup>

Patent pools may generate significant efficiencies and procompetitive benefits, including integrating complementary technologies, reducing transaction costs, reducing the risk of holdup and royalty stacking, clearing blocking positions, increasing transparency and predictability of IP costs, and avoiding costly infringement litigation.<sup>3</sup> Patent pools, like any arrangement involving groups of competitors, may also cause anticompetitive effects if they result in price fixing, due to the collective pricing of pooled patents, coordinated output restrictions among competitors or foreclosure of innovation.

The potential for anticompetitive effects triggers the need for antitrust scrutiny to ensure, first, that the pooling is not a pretext for naked price fixing or output restrictions, second, the pool does not deter innovation, and, third, that the collective arrangement generates substantial efficiencies that could not be achieved absent the arrangement and that procompetitive benefits outweigh anticompetitive effects.

Although patent pools are ostensibly designed with the intention of enhancing competition and promoting innovation, e.g., by clearing blocking patents and protecting against hold-up or hold-out in the implementation of technological standards, and thus to facilitate the introduction of new technology to the market, in some cases they may be used instead as a weapon to suppress, and/or raise the costs of, actual and potential

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<sup>2</sup> U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition (2007) ("IP2 Report"), *available at* <http://www.usdoj.gov/atgr/public/hearings/ip/222655.pdf>.

<sup>3</sup> *Id.*; U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property (1995) ("Antitrust-IP Guidelines"), § 5.5, *available at* <http://www.usdoj.gov/atr/public/guidelines/0558.pdf>.

competitors because: (1) the pool members may have an incentive to eliminate competition and (2) the pool may have the incentive and ability to exercise market power through the inclusion of non-essential and/or invalid patents.

Patent pools received considerable scrutiny during the 1990s, with the approval of several pools critical to the development of video, computer and other products. The standards articulated in Justice Department Business Review set forth a careful, searching scrutiny of patent pools that approved them subject to several conditions to protect competition.

Unfortunately, that approach has not been supported by continued careful enforcement over the past several years. Neither federal antitrust enforcer has challenged a patent pool in over 15 years. Not surprisingly, with the lack of attention by antitrust enforcers, some pools have begun to be vehicles to exercise market power by deterring innovation, raising barriers to entry, and dampening innovation. Two factors have contributed to the potential for patent pools to undermine rather than enhance competition and innovation. First, in just the past few years patent pools, especially in the high-tech (e.g., wireless) area, have rapidly increased in size, from tens to hundreds/even thousands of patents, making it far more difficult for independent experts to evaluate the quality and validity of patents and to ensure that they are complementary and not competing/substitute patents; in addition, in some instances the very independence of such experts is being called into question. Also, in recent years, some high-tech companies have acquired large patent portfolios subject to government antitrust conditions intended to ensure they do not suppress competition in their collaboration in the use and licensing of the intellectual property; many observers, however, remain skeptical that the parties' commitments will be fulfilled.

Second, there has been a change in the law – or at least a perceived change – toward a more permissive posture in the courts on the packaging of essential and non-essential patents. The law has traditionally treated the inclusion of non-essential – i.e., potentially competing, substitute – patents as warranting a defense of patent misuse based on a theory of tying in response to a claim of patent infringement. The lack of antitrust enforcement has contributed to the lax attitude by the courts.

With the increase in size and complexity of patent pools, and questions regarding the independence of experts evaluating the patents, and the perceived change in the law, there is an ever more urgent need to the antitrust agencies – the Federal Trade Commission and the Antitrust Division of the Department of Justice – to significantly ramp up scrutiny to ensure that the procompetitive, innovation-enhancing purposes of patent pools are not being undermined. In some cases this might mean more rigorous follow-up on existing pools that have received DOJ approval or new investigations of existing pools. Both agencies need to carefully evaluate the incentives of the firms contributing IP to pools, including vertically integrated firms in downstream markets. At the very least, these issues suggest the need for further empirical study by the Department of Justice, the Federal Trade Commission and scholars.

We begin our discussion by using the DOJ's investigation of MPEG LA, the administrator of a number of patent pools, to highlight many of the competitive problems arising from overinclusive pools. We then turn to the purpose, basic definitions, and the competitive analysis of patent pools, drawing from guidance from DOJ-FTC guidelines, a FTC report, DOJ Business Review Letters, an FTC enforcement action and a private case concerning patent misuse in the context of a patent pool; and return to the new and evolving landscape for present-day patent pools. We note that the competitive analysis of patent pooling does not lend itself to easy categorization or doctrine; it is important whenever possible to try to identify the disparate incentives of the parties in any given situation and at any given time, understanding that in high tech markets especially, such circumstances, and the parties' incentives, are often in flux.

## **II. Investigation of MPEG LA: Video Encoding Technology**

In March 2011, the DOJ Antitrust Division reportedly commenced an investigation of actions by patent licensing group MPEG LA<sup>4</sup> regarding web video encoding technology. This matter highlights some of the pitfalls of today's patent pools, especially in the high-tech area. MPEG LA, the self-described "world's leading packager of patent pools," created a pool for the high-definition video encoding standard known as H.264, which contains over 1,700 individual patents it claims relate to the standard. According to CNET News, a technology news source, H.264 is "widely used in everything from Blu-ray players to video cameras" on behalf of a number of companies; it is the video compression technology used in Microsoft and Apple devices; and it "may be used freely for video that's available [for free but] by contrast, royalties must be paid to MPEG LA if the content isn't free or if the codec is used in hardware or software products."<sup>5</sup>

The focus of the DOJ's investigation reportedly was whether MPEG LA's actions in support of the H.264 pool were stifling development of Google's VP8 rival video encoding technology.<sup>6</sup> Google's VP8 alternative, according to CNET, is "a video codec [--] technology designed to encode and decode video so it can be stored and sent over networks in compact form. Combined with an audio codec called Vorbis, it forms Google's patent-free, open-source WebM technology, which the Internet giant hopes will unencumber streaming video on the Web. [Using H.264] Google wants to lower the barriers to Web use in the hopes that WebM will help people build video directly into Web pages with HTML5 rather than relying on a plug-in such as Adobe Systems' Flash Player."<sup>7</sup>

In particular, the DOJ reportedly was investigating a MPEG LA request in February 2011 for organizations to tell it whether they had patents essential to the VP8 technology. This was not an innocent inquiry but appears to have been targeted to stifle a

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<sup>4</sup> The acronym "MPEG" stands for "Moving Pictures Experts Group."

<sup>5</sup> Id.

<sup>6</sup> See Stephen Shankland, "Justice Department investigates Web video group," *CNET News* (March 4, 2011).

<sup>7</sup> Id.

competing technology. Previously, in 2010, Google announced that it was open-sourcing its own video codec, based on VP8 technology, through a royalty-free open license, enabling software developers to use the technology to develop an alternative video format to the incumbent, dominant H.264 standards.<sup>8</sup> Shortly thereafter, MPEG LA asserted that Google's WebM product practiced on or infringed patents in the H.264 pool, and demanded that users of the WebM product pay royalties to the pool. It then 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 evaluators."<sup>9</sup> According to a Wall Street Journal article, the DOJ and the California Attorney General's Office were "investigating whether MPEG LA, or its members, [were] 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."<sup>10</sup> Indeed, the question arises not only whether MPEG LA's call for patents essential to the VP8 codec has had the effect of suppressing the VP8 alternative technology but also whether it was directed at creating a new pool around the open-source VP8.

The existence or not of any anticompetitive motive or intent on the part of MPEG LA or its members with respect to the H.264 pool and rival VP8 technology – about which we have no information in any case – is besides the point here. In fact, MPEG LA has asserted that it is independent and indifferent as to which standard prevails.<sup>11</sup> And the status of the government's by-now long-running investigation is not public. Instead, the reported facts and allegations suggest a number of questions of a more objective, systemic nature about possible anticompetitive pitfalls of patent pools, including the following:

- Given the accepted view that patent pools are likelier to violate the antitrust laws the greater the extent to which they include non-essential patents, how does an "independent" evaluator fairly and thoroughly determine the essentiality of 1,700 patents to the H.264 standard?
- As a corollary, will innovators as a practical matter summon the energy, time and resources to challenge the essentiality of patents in a pool of that size, or are they likelier simply to yield to the pool's demands for royalties, even if the patents might be weak or invalid, because of the uncertainty and expense of challenging the essentiality determination or litigation?
- It has been noted that open-source "collaborators may be unlikely to engage in efforts to create, develop, and launch free open-source

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<sup>8</sup> See Stephen Shankland, "MPEG-LA Patent Move Blemishes Google's Web Video Plan," CNET.com (Feb. 11, 2011), available at [http://news.cnet.com/8301-30685\\_3-20031525-264.html](http://news.cnet.com/8301-30685_3-20031525-264.html); see also S. Sher, J. Lutinski, B. Tennis, "The Role of Antitrust in Evaluating the Competitive Impact of Patent Pooling Arrangements," 13 Sedona Conf. J. 111 (Fall 2012).

<sup>9</sup> Id. (Shankland); see also 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%C20News%20List/Attachments/237/n\\_2\\_10\\_11.pdf](http://www.mpegla.com/Lists/MPEG%20LA%C20News%20List/Attachments/237/n_2_10_11.pdf).

<sup>10</sup> See Thomas Catan, "Web Video Rivalry Sparks U.S. Probe," *Wall St. J.* (Mar. 4, 2011).

<sup>11</sup> S. Sher, J. Lutinski and B. Tennis, "The Role of Antitrust in Evaluating the Competitive Impact of Patent Pooling Arrangements," 13 Sedona Conf. J. 111, 132 (2012).

alternatives – which have immense procompetitive benefits – to the extent they are fearful of entering a patent mine field [and] open-source technologies are . . . less likely to be supported by a strong defensive patent portfolio owned or administered by a single, centralized entity.”<sup>12</sup> Given the significant benefits to consumers and innovation generally of open-source technology, along with the leverage of proprietary pools vis-à-vis open-source, as illustrated by the H.264/VP8 issues, is the government sufficiently scrutinizing the potential for suppression of competing open-source technologies in this regard?

- As suggested and further explained below, one of the principal benefits of patent pooling is to facilitate the development and introduction of technology in commerce. Also, it is accepted that the more a pool includes substitute rather than complementary patents, the likelier it is to be anticompetitive and to violate the antitrust laws. If the inclusion in one pool of substitute patents is likelier to violate the antitrust laws, how does the administration of two pools consisting of substitute, competing patents by the same entity not inevitably compromise the alleged ‘indifference’ of that entity as to which standard prevails, leading to the suppression of one standard and technology in deference to the other?

To examine these and related questions, we turn to ‘first principles’ regarding the purpose and competitive analysis of patent pools.

### III. Setting the Stage: Basic Terms

Understanding the competitive analysis of patent pools requires familiarity with certain terms. To set the stage, we provide the following brief glossary:

- *Complementary patents* are patents covering separate aspects of a given technology that do not compete with each other. They are “patents covering technologies that perform different functions but are used collectively to produce the license product.”<sup>13</sup> According to the IP2 Report [define previously], a pool containing complementary patents “may have the pro-competitive effect of lowering the total royalty rate to licensees, thereby lowering the final product cost to consumers.”<sup>14</sup>
- *Substitutable patents* are patents covering technologies that compete with each other and that licensee producers would choose between – e.g., the patents supporting either the H.264 or the VP8 coding technologies. A pool including substitutable patents would be likelier than a pool containing only or primarily complementary patents to have the

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<sup>12</sup> Sher et al., *supra* at 132.

<sup>13</sup> U.S. Dep’t of Justice & Fed. Trade Comm’n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition (2007) (“IP2 Report”), available at <http://www.usdoj.gov/atgr/public/hearings/ip/222655.pdf>, at 77.

<sup>14</sup> *Id.*

anticompetitive effect of increasing the total royalty rate to licensees by foreclosing or preempting competing alternative technology.

- A *blocking patent* prohibits the practice of another patent but does not necessarily cover all design alternatives. For instance, where a patent covers a certain technology and a second inventor gets a patent that is an improvement on the first invention, the second inventor is blocked from using his technology unless he can obtain a license from the first inventor.
- *Essential patents*: “Essentiality” has been variously defined by different patent pools. Standards are critical to high technology products and often certain patents are “essential” to practice the standard. Essential patents are commonly understood to mean either or both of the following: (1) patents ‘necessarily essential’ to the standard, i.e., inevitably infringed by compliance with the standard, and (2) essential to the standard ‘as a practical matter’ because there are no economically viable substitutes for the patents (i.e., not reading on the standard itself but nonetheless required to manufacture a competitive product compliant with the standard, due to production or design costs, consumer preferences or other reasons). In other terms, an essential patent is a blocking patent that is so broad that it covers the technology necessary to enter the entire market: it prohibits the practice of another in the same field because the patent covers all commercially feasible design alternatives.
- *Grantback*: An agreement by which a licensee extends to the licensor the ‘right to use the licensee’s improvements to the licensed technology.’<sup>15</sup> Licensors may define a grantback’s scope more broadly to cover inventions which relate in any way to the subject of the licensed patent.
- *Royalty stacking*: This is a situation in which a single product infringes on patents held by multiple owners, each of which imposes a separate royalty burden – sometimes referred to as double marginalization. Royalty stacking may and often does result in higher fees than if a single owner licensed all of the patents. Royalty stacking and the related phenomenon of patent thickets are the principal problems that patent pools can resolve.
- A *patent thicket* is a “dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology,”<sup>16</sup> requiring innovators to reach licensing deals from multiple sources for multiple patents.
- *Hold-out and hold-up*: Hold-up occurs when a patent holder asserts its intellectual property rights only after another firm has made investments related to that patent (for example, after that firm has brought to market an infringing product). If that happens the patent holder can bargain for higher rents. Hold-out occurs when a patent holder strategically delays negotiation so as to garner the greatest surprise by becoming the last licensor.

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<sup>15</sup> IP Guidelines § 5.6

<sup>16</sup> Carl Shapiro, “Navigating the Patent Thicket, Cross Licenses, Patent Pools and Standard Setting,” in Adam Jaffe et al., *Innovation Policy and the Economy*, Cambridge: MIT Press (2001), at 119-150.

#### IV. Purpose, Definitions and Competitive Analysis of Patent Pools

When two or more patent owners form a separate entity to which they assign or license specified patent rights, the resulting arrangement is referred to as a patent pool. This pool then exploits the collective rights by licensing, manufacturing or both.<sup>17</sup> Patent pools are often formed when multiple patent technologies are needed to produce a standardized product and therefore are formed as a corollary to or following the selection of a standard by a standard setting organization, such as the IEEE<sup>18</sup> or ETSI<sup>19</sup> in the wireless technology domain. By these fundamental steps, patent pools and their members typically achieve their principal goal – to facilitate the introduction of new technology into the market.

As noted above, patent pools can solve the problems resulting from the fragmentation of overlapping intellectual property rights pertaining to the same aggregate technology by clearing blocking patents, without any one of which the product cannot be made, and patent thickets. In this sense, patent pools are intended to be and typically are welfare-enhancing and procompetitive.

The primary sources of contemporary guidance on evaluating patent pools are DOJ-FTC guidelines – the 1995 DOJ-FTC *Antitrust Guidelines for the Licensing of Intellectual Property* (“Antitrust-IP Guidelines”)<sup>20</sup>; a 2007 DOJ-FTC report – *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* (“IP2 Report”)<sup>21</sup>; DOJ Business Review Letters beginning in the late 1990s; and several recent cases.

In the Business Review Letters, the DOJ applies its competitive analysis to various prospective pools and states its present intention, based on the representations about the formation and terms of operation of the pool, whether or not to pursue antitrust enforcement. Since the first of the Business Review Letters in 1992 delineating the DOJ’s contemporary competitive analysis of patent pools, the DOJ has issued a handful of favorable letters – meaning that the DOJ indicated no present intention to pursue enforcement – regarding proposed pools, including the following:

- A proposal by the MPEG to pool and jointly license as a single package patents necessary to comply with the MPEG-2 digital video and audio

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<sup>17</sup> Hovenkamp, Janis and Lemley, *IP and Antitrust*, § 34.2 at 34-5 (2004 Supplement); R. Merges, “Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations,” 84 Cal. L. Rev. 1293, 1340 (1996).

<sup>18</sup> Institute of Electrical and Electronic Engineers.

<sup>19</sup> European Telecommunications Standards Institute.

<sup>20</sup> U.S. Dep’t of Justice & Fed. Trade Comm’n, *Antitrust Guidelines for the Licensing of Intellectual Property* (1995) (“Antitrust-IP Guidelines”), available at <http://www.usdoj.gov/atr/public/guidelines/0558.pdf>.

<sup>21</sup> U.S. Dep’t of Justice & Fed. Trade Comm’n, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* (2007) (“IP2 Report”), available at <http://www.usdoj.gov/atgr/public/hearings/ip/222655.pdf>.

compression standard, with the pool comprised of nine members (1997).<sup>22</sup>

- Two proposals to pool and offer package licenses for patents necessary to manufacture DVD (Digital Versatile Disc)s and DVD players in compliance with the DVD-ROM and DVD-video formats (1998 and 1999).<sup>23</sup>
- A proposal by the 3G Patent Platform Partnership to establish five licensing and patent evaluation structures – platforms – for licensing “Third Generation” (3G) wireless telecommunications technology (2002).<sup>24</sup>
- A proposal to pool and offer package licenses for patents essential to the implementation of certain ultra high frequency radio frequency (UHF RFID) identification standards for labels and readers (2008).<sup>25</sup>

The DOJ’s favorable responses are based on some or all of the following competitive safeguards, discussed at more length below:

- Limitation of the portfolio to patents determined by an independent expert to be essential, which, by definition, are not competitive with each other;
- A method to remove patents found to be invalid, unenforceable or not longer essential;
- Retention by pool members of the right to license their patents independently as well as in a package;
- The issuance of worldwide non-exclusive licenses to all interested parties on a non-discriminatory basis;
- License liability for royalties is conditioned on actual use of the patents;
- Licensees are free to develop and use alternative technologies; and
- Licensees are required to grant back non-exclusive, non-discriminatory license to use patents (e.g., improvements) that are essential to comply with the technology.<sup>26</sup>

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<sup>22</sup> Letter from Joel I. Klein, Assistant Attorney General, U.S. Department of Justice, to Garrard R. Beeney, Sullivan & Cromwell (June 26, 1997) (the “MPEG-2 Business Review Letter”), *available at* [www.usdoj.gov/atr/public/busreview/215742.pdf](http://www.usdoj.gov/atr/public/busreview/215742.pdf).

<sup>23</sup> Letter from Joel I. Klein, Assistant Attorney General, U.S. Department of Justice, to Garrard R. Beeney, Sullivan & Cromwell (Dec. 16, 1998) (the “3C DVD Business Review Letter”), *available at* <http://www.usdoj.gov/atr/public/busreview/2121.pdf> ; Letter from Joel I. Klein, Assistant Attorney General, U.S. Department of Justice, to Carey R. Ramos, Paul, Weiss, Rifkind, Wharton & Garrison (June 10, 1999) (the “6C DVD Business Review Letter”), *available at* [www.usdoj.gov/atr/public/busreview/2485.pdf](http://www.usdoj.gov/atr/public/busreview/2485.pdf).

<sup>24</sup> Letter from Charles A. James, Assistant Attorney General, U.S. Department of Justice, to Ky P. Ewing (Nov. 5, 2002) (“3G Business Review Letter”), *available at* <http://www.justice.gov/atr/public/busreview/200455.htm>.

<sup>25</sup> Letter from Thomas O. Barnett, Assistant Attorney General, U.S. Dept. of Justice, to William F. Dolan and Geoffrey Oliver, Jones Day (Oct. 21, 2008) (“UHF RFID Business Review Letter”), *available at* <http://www.justice.gov/atr/public/busreview/238429.htm>.

<sup>26</sup> For a discussion of these safeguards and the potential competitive effects of pools, see David A. Balto and Andrew Wolman, *Intellectual Property and Antitrust*, 43 *IDEA* 395, 445-51 (2003).

The Agencies summarize their competitive analysis of patent pools in the IP2 Report as follows:

- The Agencies evaluate the competitive effects of patent pools under the framework of the Antitrust-IP Guidelines and typically analyze the pool and any agreements under the rule of reason.
- Combining complementary patents within a pool is generally procompetitive.
- Including substitute patents in a pool does not make the pool presumptively anticompetitive; competitive effects will be ascertained on a case-by-case basis.
- The competitive significance of a pool's licensing terms will be analyzed on a case-by-case basis considering both their procompetitive benefits and anticompetitive effects.
- The Agencies will not generally assess the reasonableness of royalties set by a pool. The focus of the Agencies' analysis is on the pool's formation and whether its structure would likely enable pool participants to impair competition.<sup>27</sup>

In particular, the Antitrust-IP Guidelines state that intellectual property pooling is procompetitive when it

1. integrates complementary technologies,
2. reduces transaction costs,
3. clears blocking positions,
4. obviates the need for costly infringement litigation, and
5. promotes the dissemination of technology.

For instance, suppose several leading manufacturers of a consumer electronic product hold patents covering alternative circuit designs for the product. The manufacturers assign to a separate entity only their relevant patents which are blocking – that is, those patents without a license to which no potential manufacturer can practice any other patent needed to make the product; stated another way, none of the patents assigned to the entity can be used without infringing a patent owned by another firm contributing its IP to the pool. That pooling entity then licenses the right to use the circuit designs to other consumer product manufacturers and establishes the license royalties.<sup>28</sup>

-- *Reducing transaction costs*: Patent pools can reduce transaction costs in several ways. Obtaining a pool license may be less costly for both licensees and licensor

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<sup>27</sup> IP2 at 9.

<sup>28</sup> Example adapted from Example 10 of the Antitrust-IP Guidelines.

than negotiating separate licenses with each patent owner. By licensing their pooled patents on a group basis, through centralized licensing, pool members can offer ‘one-stop shopping’ to firms seeking to manufacture products using those patents, rather than those firms having to negotiate individually with each member of the pool, and this can enable more rapid, efficient development and adoption of new technologies.<sup>29</sup> Pools also thereby reduce costs by eliminating infringement litigation<sup>30</sup>: if patent licensing based on a given standard increases as a result of a pool license, infringement litigation and the potential for such litigation decreases.<sup>31</sup> Efforts by a pool to identify patents essential to the practice of a standard and then to disseminate this information offer savings in search costs to licensees and licensors alike, as individual licensors therefore do not have to search out manufacturers using or seeking to use their patents.<sup>32</sup>

On the other hand, the Antitrust-IP Guidelines also state that intellectual property pooling may be anticompetitive if:

1. the excluded firms cannot effectively compete in the relevant market for the good incorporating the licensed technologies,
2. the pool participants collectively possess market power in the relevant market, and
3. the limitations on participation are not reasonably related to the efficient development and exploitation of the pooled technologies.

In the IP2 Report the DOJ and FTC identified two primary competitive concerns. First,

horizontal coordination among the pool’s licensors could lead to a reduction in price competition among downstream products. In particular, a pool that includes patents for substitute technologies could lead to increased prices in the final goods market due to the absence of competition among those substitute technologies. In addition, participants in the pool might be able to use it to collude, for example, by exchanging competitively sensitive information, such as pricing, marketing, or R&D information through the mechanism of the pool.<sup>33</sup>

Second,

the Agencies are concerned that combining patent rights in a pool could discourage R&D, new product development, and cost-reducing process innovations. Licensors could be discouraged from making investments in

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<sup>29</sup> IP2 at 65.

<sup>30</sup> An historic example was the formation of the Manufacturers Aircraft Association, a government-enforced pool created in 1917 to end long-running infringement litigation between the Wright brothers and the Curtiss Company, which was blocking the manufacture of new airplanes needed by the U.S. for its participation in World War I.

<sup>31</sup> See, e.g., UHF RFID Business Review Letter.

<sup>32</sup> Id.

<sup>33</sup> IP2 Report at 67.

innovation if “a pooling arrangement . . . requires members to grant licenses to each other at minimal cost . . . because members of the pool have to share their successful research and development and each of the members can free ride on the accomplishments of other pool members.” Licensees could be discouraged from innovating if the licensors do not retain the right to license their patents independently or if licensees are not adequately rewarded for innovations that they grant back to the pool.<sup>34</sup>

The Agencies focus on various other competitive concerns in the IP2 Report, also raised in the Business Review Letters. These include, notably:

- the inclusion in pools of pure substitute patents rather than complementary patents, and the competitive consequences depending on the ratio between them in a given pool;
- whether the patents are essential to the standard or technology;
- whether the pool patents are valid;
- whether pool members retain the ability to license their patents outside of the pool – i.e., whether the pool is, in this sense, ‘exclusive’ or ‘non-exclusive’;
- whether grantback requirements reduce incentives on the part of licensees to innovate;
- whether access to competitively sensitive, proprietary business information should be limited;
- whether the Agencies should review pool royalty rates;
- and whether pools that refuse to offer licenses to subsets of the pool’s patents cause competitive harm.<sup>35</sup>

-- *Substitutes, not complements*: A major factor in the Agencies’ analysis, although not determinative in itself, as noted above, is the inclusion in a pool of substitute or instead complementary patents. First, the relationship of patents among themselves in a pool does not lend itself so easily in practice as it might in theory to a bright-line distinction between substitute and complementary patents. In many cases, patents in a pool are not pure complements or pure substitutes but instead display characteristic of both.<sup>36</sup> The responsibility for this determination rests on the independent evaluator. The DOJ, in its Business Review Letters, makes its assessment based on the representations of the applicant for the pool rather than on the basis of any independent investigation – and this limitation, however necessary, has increasingly acute implications for potential anticompetitive effects as pools grow in size and scope, such as suppressing innovation and competition by raising rivals’ costs, whether in upstream technology markets or downstream product markets..

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<sup>34</sup> Id., citing Antitrust-IP Guidelines at § 5.5.

<sup>35</sup> IP2 Report at 66.

<sup>36</sup> Id. at 74.

In the hearings on which the IP2 Report is based, some commentators noted that the requirement that a patent must contain a claim essential to implementing the relevant standard *ensures* that the included patents are not substitutes; but this of course is more descriptive than it is prescriptive for how to distinguish in actual practice between the two types of patent relative to a pool, and only reinforces the importance of the role of the evaluator. Furthermore, whether a patent is essential to a standard or technology also depends on when the determination is made. For instance, as the IP2 Report explains, “a patent may be essential when the pool is first formed, but as a result of innovations or changes in the standard, over time that same patent may no longer be essential.”<sup>37</sup> The onus for such a determination also rests on the independent expert evaluator. The DOJ has found in several Business Review Letters that the pool in question indeed established a mechanism for such continuing review<sup>38</sup> -- and today’s rapid technological change strongly suggests the need for such a safeguard for all high-tech pools.

In any case, assuming the distinction between substitute and complementary patents can be clear, the DOJ has stated that “a combination of complementary intellectual property rights, especially ones that block the application for which they are jointly licensed, can be an efficient and procompetitive method of disseminating those rights to would-be users.”<sup>39</sup> In contrast, a pool containing substitutable patents, i.e., patents covering technologies that compete with each other and that licensee producers would choose between, may have the anticompetitive effect of increasing the total royalty rate to licensees. One of the key risks of including substitute patents in a pool is that this might turn it into a price-fixing mechanism; however, the Agencies typically will not challenge the inclusion of substitute patents in a pool without taking into account whether such inclusion creates significant efficiencies.<sup>40</sup>

The potential for patent pools to suppress competition and innovation when they include substitute patents is illustrated by the FTC’s case against Summit Technology and VISX in the late ‘90s. These were the only two firms competing in the market for equipment and technology used in photorefractive keratectomy (“PRK”), a form of laser surgery to correct vision, to have received FDA marketing approval as of that time. The FTC filed a complaint and ultimately settled charges that the two companies eliminated competition between themselves by pooling most of their existing PRK patents.<sup>41</sup> These were, then, substitute rather than complementary patents for implementing PRK technology.

The FTC alleged that the companies were and would have continued to be actual or likely potential competitors in the markets for the licensing of PRK technology and for

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<sup>37</sup> Id. at n.137.

<sup>38</sup> See MPEG-2 Business Review Letter at 5 and 6C DVD Business Review Letter at 3-5.

<sup>39</sup> MPEG-2 Business Review Letter at 9; *see also* 3C DVD Business Review Letter at 8-9; 6C DVD Business Review Letter at 11.

<sup>40</sup> IP2 Report at 78; 6C DVD Business Review Letter at 11-12; 3C DVD Business Review Letter at 10.

<sup>41</sup> *In the Matter of Summit Tech., Inc.*, No. 9286, Complaint (F.T.C. Mar. 24, 1998), available at <http://ftc.gov/os/1998/03/summit.cmp.htm>, Decision and Order -- as to Summit (Feb. 23, 1999), available at <http://www.ftc.gov/os/1999/03/d09286summit.do.htm>, -- as to VISX (Feb. 23, 1999), available at <http://www.ftc.gov/os/1999/03/d09286visx.do.htm>.

the sale or lease of PRK equipment in the absence of the pool, and that the pool restricted both forms of competition. First, under the pooling agreement, each company was required to pay a fixed per procedure fee of \$250 to the pool for each PRK procedure performed with its machinery. The FTC alleged that this fee functioned as a price floor: because each company had to pay \$250 into the pool per use of its particular equipment, neither had any incentive to lower the usage charge below that level, thereby effectively increasing the cost to the doctors and ultimately their patients.

The FTC further charged that the pool had an anticompetitive effect in the market for PRK technology licensing: Summit and VISX each retained veto power over licensing of any patents in the pool, i.e., over the licensing of the other's patents. The Complaint alleged that in the six years since its formation, the pool had not once licensed its patent to any third-party manufacturers.

The FTC explained that under the IP Guidelines, if a pooling arrangement has an anticompetitive effect in the relevant markets, as the agency charged here, the Commission should consider whether the pool is "reasonably necessary to achieve procompetitive efficiencies."<sup>42</sup> The respondents asserted that the pool reduced the uncertainty and expense associated with patent litigation in the absence of a pool and that the pool allowed both parties to remain in the market when patent infringement might have precluded one or both from coming to market. In response, the Commission reasoned that Summit and VISX could have achieved the asserted 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" and, further, that patent infringement would not have precluded either firm from coming to market.<sup>43</sup> The consent order prohibited the respondents from: (a) agreeing to fix the prices they charge for the use of their PRK lasers and patents, including the 'per-procedure fee' charged to doctors each time they use one of the firms' PRK lasers, and (b) from agreeing to restrict each other's licensing rights and decisions for their PRK lasers and patents.

-- *Invalid or unenforceable patents*: An invalid or unenforceable patent is by definition not in a complementary relationship with other patents in the pools; however, in its Business Review Letters, the DOJ assumes that the licensed patents are valid, although some of the approved pooling proposals have included a process to eliminate patents held to be invalid or unenforceable by a court. One reason the Summit-VISX pooling arrangement raised competitive concerns for the FTC was that a key VISX pool patent was allegedly obtained by fraud on the PTO.<sup>44</sup> This, and the allegation that the Summit and VISX patents were substitutes, not complements, were key factors in the FTC's conclusion that the pool served as a price-fixing mechanism for the technology for photo-refractive keratectomy (PRK), a form of vision-correcting eye surgery.

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<sup>42</sup> *In re Summit Tech*, Analysis of Proposed Consent Order, 63 Fed. Reg. 46,454 (Sept. 1, 1998), available at <http://www.ftc.gov/os/1998/08/d09286ana.htm>.

<sup>43</sup> *Id.*

<sup>44</sup> *In re Summit Tech.*, Complaint.

-- *Exclusive vs. non-exclusive licensing*: Allowing independent licensing outside a pool permits innovators that invent around one or more pool patents to compete with the pool, thereby helping ensure that the pool does not necessarily dominate or preempt a relevant market. In pools addressed by the Business Review Letters, licensors have in all instances proposed granting a non-exclusive license to the pool and retaining the right to license their relevant essential patents outside the pool. They are thus free to grant separate licenses outside of the pool and, importantly, to set the royalty rates individually for any such licenses – in contrast of course to the rate(s) for the pool license itself.<sup>45</sup>

That the licensing is exclusive or non-exclusive, however, is a structural or systemic consideration which, while likely to influence the assessment by the Agencies whether the pool is on balance procompetitive, does not indicate the predilection or incentives of pool members in any given instance to license outside of the pool. Thus, as a practical matter, it has been suggested that both licensors and licensees have some resistance to licensing outside a pool; that the smaller the pool, the greater the incentive and opportunity to license outside the pool; and, inversely, that as the number of licensors in the pool increases, so also the transaction costs associated with separately acquiring individual patents in the pool will increase, thereby decreasing the incentive to license outside the pool.<sup>46</sup>

With this factor as with others in the evaluation of potential pro- and anticompetitive effects of patent pools, it is important to contrast the necessary limits and reach of the DOJ's Business Review Letters, which are prospective and based on the applicants' representations (e.g., regarding essentiality, complementarity, validity, independence of the evaluator, etc.), with the evaluation of an already functioning, extant pool, such as in *Summit/VISX*. The incentives of pool licensors and licensees of course vary with the circumstances, such as pool size and other structural factors, but there is a limit to the predictive power of the DOJ in reviewing a prospective pool in a Business Review Letter, inasmuch as the pool is not likely to be fully functioning yet as of the time of review. This is clearly insufficient. With the changing nature of technology and the growth of the size and scope of these pools continued scrutiny by DOJ is needed.

-- *Grantbacks*: Broadly written grantbacks – agreements by which a licensee extends to the licensor the right to use the licensee's improvements to the licensed technology – can deter innovation by reducing the returns available to the follow-on innovator. The issue centers on the scope of the rights to be granted back to the licensor and whether the innovator retains the right to license to others. In general, pooling proposals reviewed by the DOJ have included mechanisms to narrow grantbacks: they are limited to innovations within the scope of the existing patents in the pool, limited to include only essential patents, and they are non-exclusive, so that licensees may freely

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<sup>45</sup> Similarly, it has been held that the opportunity to acquire a pool of rights does not restrain trade if an alternative opportunity to acquire individual rights is full available. *Auto. Radio Manuf. Co. v. Hazeltine Research, Inc.*, 229 U.S. 827 (1950); *Standard Oil Co. v. U.S.*, 283 U.S. 163 (1931).

<sup>46</sup> IP2 Report at 78-79.

use their own inventions and license them to third parties. Such narrowly tailored grantbacks are unlikely to raise competitive concerns, according to the Agencies.<sup>47</sup>

-- *Access to Information*: In the DVD pools reviewed by the DOJ, many vertically integrated licensors compete(d) with each other and with licensees in DVD disc and player manufacturing markets and also in content markets, such as record music, films, etc. Pools can provide an opportunity and serve as a mechanism for exchanging sensitive information among competitors, leading, for instance, to price coordination. The pools proposed to the DOJ typically have limited licensors' access to each others' competitively sensitive proprietary information, for instance by hiring an independent licensing administrator or, in the absence of such an administrator, other means to prevent such information exchange.

-- *Royalties*: In general, the Agencies do not evaluate the reasonableness of royalties set by patent pools. There is general agreement that similarly situated licensees should be treated similarly, and some pools have committed to license on nondiscriminatory terms, but "the Agencies do not presume that two different licensees (e.g., insiders and outsiders) are anticompetitive."<sup>48</sup>

-- *Partial-Pool Licenses*: The Agencies take the view that a refusal to license less than all of a pool's patents will not raise competitive concerns, provided the licensors retain the ability to license their patents individually and the pool's design is otherwise procompetitive. In this way, they explain, licensees are not required to purchase access to more technology than they need.

-- *Independence of Evaluator*: The Agencies view the use of an independent expert to be critical, in particular to determine the essentiality and validity and enforceability of pooled patents. In this way, the use of an independent expert "reduces the likelihood that the licensors might act concertedly to keep invalid or non-essential patents in the Portfolio or to exclude other essential patents from admission to the Portfolio."<sup>49</sup>

## **V. Effect of *Princo II* on Competitive Analysis of Pools Including Non-Essential Patents**

A recent decision by the Court of Appeals for the Federal Circuit appears to work at cross-purposes with assurances provided in pooling proposals, endorsed by the federal antitrust agencies, that the pools would not, in the main, include – and therefore effectively suppress – and alternative, substitute technology. In *Princo Corp. v. International Trade Commission*<sup>50</sup> (*Princo II*), the Court of Appeals addressed the

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<sup>47</sup> IP2 Report at 80.

<sup>48</sup> IP2 Report at 83.

<sup>49</sup> MPEG-2 Business Review Letter. The letter stated that over 800 patents owned by over 100 patent owners were reviewed, no submissions for review were refused, and no entity that was identified as having an essential patent was in any way excluded from the proposed joint licensing program.

<sup>50</sup> 616 F.3d 1318 (Fed. Cir. 2010).

legality of an agreement between Philips and Sony, two developer-patentees of encoding technology for CD-Rs (Compact Disc-Recordable) and CD-RWs (Compact Disc-ReWritable) which combined their patents into a patent pool, to suppress Sony's competing technology included in the pool. Sony and Philips agreed to use Philips' "Raaymakers" patents rather than Sony's "Lagadec" patents for encoding position information on compact discs and incorporated Philips' encoding solution into a standard known as the "Orange Book" standard. Philips itself – not an independent administrator – administered the pool and offered package licenses to the Philips and Sony pooled patents.

Princo took a license, stopped paying for the license, and Philips sued it for infringement of its patents (but not Sony's). Princo defended on the grounds that Sony and Philips committed patent misuse (rendering the asserted patents unenforceable) by tying essential Raaymakers patents to Lagadec patents which were not technologically necessary to implementing the Orange Book standard, and foreclosing potential competition between themselves by agreeing to make the Lagadec patents available only through the package licenses licensed by the pool. At bottom, this was an agreement between competing technology developers-patentees to forego separate licensing of their separate technologies in favor of only one – Philips' encoding solution.

In an *en banc* decision, the Federal Circuit held that the agreement to make the Lagadec patent available only through the package license did not constitute misuse. The convoluted history of the Princo litigation and the issues exceed the scope of this presentation. Our comments here cannot do justice to the complexity of the questions presented. On the narrow question before the *en banc* Court, however, the 'take-away' is that including nonessential patents was not patent misuse. This has created the danger that *Princo II* might be over-interpreted by other courts and licensors alike to call into question the need to exclude substitute patents from pools as one important means to ensure that they are procompetitive and will not run afoul of the antitrust laws. We believe that it is therefore important to 'cabin' the Federal Circuit's ruling to make sure that its interpretation of patent misuse in this single case is not applied more generally to the applicability of antitrust on similar facts.

We agree that the Federal Circuit took an overly narrow view of patent misuse and, significantly, that *Princo II* appears to have removed patent misuse as a key defense in the arsenal of "patent infringement defendants asserting that plaintiffs acted anticompetitively in the procurement and the selective enforcement of their 'patent rights' in order to suppress technologies that compete with the pooled patents."<sup>51</sup> Also, the Federal Circuit set up an arguably unattainable standard in requiring that Princo show a "reasonable probability" that the Lagadec technology would have developed into a competitive technology absent the agreement, given that Philips and Sony sought to suppress it by bundling it with the potentially competing Raaymakers patents. As has been noted, this requirement by the Court "ignores the dynamic quality of innovation."<sup>52</sup>

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<sup>51</sup> Id. at 127-28.

<sup>52</sup> Id. at 127.

More importantly, though, the Court plainly stated that in rejecting the patent misuse argument it was *not* ruling on a broader antitrust attack on the conduct and the agreement, stating that they “might be vulnerable to challenge under the antitrust laws;” that “[i]f the purported agreement between Philips and Sony not to license the Lagadec technology is unlawful, that can only be under antitrust law, not patent misuse law . . . [because] nothing about that agreement, if it exists, constitutes an exploitation of the Raaymakers patents against Philips’s licensees;” and that in any case “[a]n accused infringer can raise a Sherman Act claim as a counterclaim in an infringement action or as an affirmative claim, and is eligible for treble damages and attorney’s fees.”<sup>53</sup>

It would therefore be unwarranted for pool members to conclude from *Princo II* that they may with impunity from antitrust enforcement bundle non-essential with essential patents in a pool in order to suppress the non-essential patents and potential technology based on them. Nonetheless, considerable confusion surrounds *Princo II*, not least because of longstanding confusion over the doctrine of patent misuse itself, and the extent to which it incorporates broader antitrust principles or instead should be read in the rather narrow, technical manner in which it was interpreted by the Federal Circuit in the case. Such confusion over the breadth of the holding of the case may give rise to over-reliance on it by patent pool members in ways that may undercut the federal agencies’ guidance for ensuring that any given pool is and remains procompetitive. Vigilance is therefore needed by private litigants and the agencies themselves to ensure that this does not happen.

## **VI. The Evolving Landscape of Patent Pools**

It is not only cases like *Princo II* or allegations relating to MPEG LA’s H.264 pool that suggest the need for heightened vigilance of patent pooling to ensure that it continues to fulfill its ostensible procompetitive goal of facilitating the introduction of new technology into the market without at the same time suppressing alternative technology. As suggested, patent pooling in recent years has also undergone certain structural and dynamic changes, commensurate with the speed of technological development and the increasing importance of intellectual property to the economy.<sup>54</sup> These factors call for further empirical research and careful scrutiny of patent pools as they actually function, and not only as proposed.

First, as mentioned, pools have grown substantially in size, i.e, the number of patents they contain, since the last round of antitrust guidance on pools beginning in the mid- to late 1990s with the Business Review Letters, the IP Guidelines and the Antitrust-IP Report. This is not a matter of theoretical complexity but a plain, simple fact with significant implications for whether any given pool in fact should pass muster under antitrust law. For instance, the pools evaluated by the DOJ in its 1997-2002 Business Review Letters contained between 27 and 210 patents. But unlike these earlier pools, at

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<sup>53</sup> *Princo II* at 1333 n.5.

<sup>54</sup> See, e.g., Kenneth Cukier, “A Market for Ideas: A survey of Patents and Technology,” *The Economist*, Oct. 22, 2005, at 1 (noting that as of 2005, 75% of the value of publicly traded firms was in intangible assets such as intellectual property rights, an increase of 35% from two decades earlier).

formation the H.264 pool contained over 1,700 patents (2011) and the DVD-6 pool contained over 1,400 patents, to cite just two examples.

The MPEG-2 pool, approved by a Business Review Letter in 1997, is a clear case in point. The pool began with 27 patents owned by eight licensors. It now consists of 1,048 patents, of which 582 expired before March 2013 and an additional 50 will expire by the end of 2013. Beginning in 2014, only 40 percent, or 416 of the 1,048 patents, will be current. Not only did the number of patents increase many-fold, but then, when the number of valid patents began to diminish dramatically, the royalty rate for the package did not drop commensurately, raising the question whether the pool continues to meet its commitment to the DOJ to license on reasonable (and nondiscriminatory) terms. Thus, in 2010, when 895 patents were current, the package royalty rates were \$2 per unit. In 2014, when less than half of that number, or 416, will be current, the pool rate will still be \$2 per unit. It is true that an accurate assessment of the value of the package licensed as a whole may well not turn strictly on the number of current patents, but also on the value of each of them. Nonetheless, if \$2 per unit was considered a reasonable rate for a pool of 895 patents in 2010, it would seem facially implausible that the same \$2 per unit remains a reasonable rate on the 417 current patents as of 2014. A package license can be used as a means to extract (or at least have the effect of extracting) unreasonable royalties – where previous royalties provide a logical benchmark for “reasonableness” – when the pool fails to reduce the royalty rate commensurately with a reduction in the percentage of current patents, as may arguably be the case with MPEG-2.

Following the MPEG-2 pool formed around the MPEG video compression standard for manufacturing a DVD player came the 3C DVD (1998) and 6C DVD (1999) pools, pertaining to DVD-ROM and DVD video formats, and each approved through DOJ Business Review Letters. These offer a further, compelling example of how patent pools may ultimately diverge from assurances to the DOJ regarding foreclosure of competition and reasonable royalties, on which, in these letters and the others, the DOJ has principally relied in providing comfort. In particular, for instance, in the 3C DVD Business Review Letter, the DOJ noted that the licensors are competitors of the pool members in markets vertically related to the licensed technology, including downstream manufacturing markets for DVD discs and players. The DOJ took comfort that the proposed licensing program did not appear likely to impede competition between the licensors and licensees as competitors in downstream markets for two principal reasons, among others:

First, the agreed royalty is sufficiently small relative to the total costs of manufacture that it is unlikely to enable collusion among sellers of DVD players or discs. Second, the proposed program should enhance rather than limit access to the Licensors’ ‘essential’ patents. Because Philips [the pool administrator] must license on a non-discriminating basis to all interested parties, it cannot

impose disadvantageous terms on competitors, let alone refuse to license them altogether.<sup>55</sup>

History seems to have proven the DOJ's hopeful caution on the modest licensing fees misplaced. As suggested in a recent paper by Kenneth Flamm,<sup>56</sup> neither of these predicates for the DOJ's letter of non-enforcement has been satisfied, both because of the market itself, which has seen fixed royalties reach parity with or even exceed ever-declining manufacturing costs, and because of royalty-free cross-licensing among pool members and associated entities, such as manufacturing joint venture partners. As a consequence, the pools have indeed arguably impeded competition, maintained unreasonably high royalties as a proportion of manufacturing cost and also been paralleled by an increase in concentration in the relevant markets, even as sales have grown, and a decrease in innovation, as measured by various empirical indicial.<sup>57</sup>

As the paper observes, the DOJ's language about non-discrimination "was not very meaningful." "Philips had a long established policy of discriminating among its competitors when fixing royalty rates, depending on whether or not they were fellow patent pool members or held cross licenses with Philips" and the "available evidence suggests that this same policy was followed in the DVD patent pools. As a result, contrary to the DOJ's analysis and the pools' assurances, they did in fact impose "economically 'disadvantageous terms' on potential new market entrants who need access to the essential patents to do business."<sup>58</sup> More specifically, "[f]or a pool member (or a third party cross-licensed to the pool member), the marginal cost per unit of using other pool members' patents under the . . . pool rules was zero, quite different from the steadily rising share of royalties in product cost that was faced by an outsider who did not belong to this club."<sup>59</sup> The appraisal of the limits of the DVD Business Review Letters, faced with perhaps unknowable (although predictable) future market conditions (declining manufacturing costs) but known discriminatory licensing practices in the form of royalty-free cross licensing, given the potential effects on downstream licensor-licensee competition, is stark: "A patent is in fact a legally granted right to exclude controlled by the patent holder, but the Justice letter to some extent buries this cold reality beneath noble rhetorical flourishes about non-discriminatory licensing."<sup>60</sup>

It is worth tracking the evolution in DVD pricing, to show the relative increase in the fixed royalties as a proportion of the total manufacturing cost. As the paper goes on to show, within a few short years of the creation of the 3C and 6C pools, "the royalties charged by the DVD patent pools evolved into truly significant sums relative to the total cost of manufacturing optical disk drives – indeed they now account for the majority of manufacturing cost for a potential entrant [. . . –] a very different reality from that

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<sup>55</sup> 3C DVD Business Review Letter at 13.

<sup>56</sup> Kenneth Flamm, "A Tale of Two Standards: Patent Pools and Innovation in the Optical Disk Drive Industry," Working Paper 18931, available at <http://www.nber.org/papers/w18931> (National Bureau of Economic Research).

<sup>57</sup> Id..

<sup>58</sup> Id. at 19.

<sup>59</sup> Id.

<sup>60</sup> Id. (referring to the 3C DVD Business Review Letter).

considered by Justice back in 1999, when a \$15-20 royalty was a relatively small portion of the cost of a recordable DVD drive that typically might sell for many hundreds of dollars.”<sup>61</sup> For instance, it has been noted that the average worldwide price for a DVD burner, on an if-sold-OEM basis, was \$30 in 2007, \$25 in 2008, and \$23 in 2009. At the same time, to put these prices in perspective, royalty payable to four principal patent pools holding IP relating to a DVD recorder has been estimated to be \$17, of which \$14 goes to the 6C and 3C DVD pools, or 68% of the average selling price of a DVD recorder in 2008 and, as the article notes, presumably an even larger share of its cost.<sup>62</sup>

Prompting further question about any unmitigated procompetitive effects of the DVD pools is a record of notable consolidation within the ODD industry concurrent with the pools, even as the overall ODD market itself has experienced continuing growth in sales.<sup>63</sup> Also, empirical evidence suggests a declining rate of innovation in such features as DVD read and write speeds and in the introduction of qualitatively new products, with the industry reportedly seeing an absence of major new innovations since 2002 as contrasted with a clustering of major innovations prior to this time.<sup>64</sup> If the causal relationship is not certain between the structural (royalty system) and market factors described immediately above and the increased consolidation and reduced innovation in the relevant markets, it is arguably strongly suggestive and certainly worthy of continued analysis.

As noted by other commentators,<sup>65</sup> the DOJ’s Business Review Letters of 1997-2008, in which the DOJ stated its present intention not to pursue antitrust enforcement with respect to the proposed pools, have turned substantially on two commitments, among others – that the pools would contain only complementary (i.e., essential) patents and that this determination of essentiality would be made by an independent, unbiased expert. Indeed, the MPEG-2 Business Review Letter mentions the independent expert no less than 16 times. Given the paramount importance of the essentiality of patents to ensuring that a pool is not likely on balance to be anticompetitive, the question arises how any expert, even one assumed to be independent, can make a thorough and accurate evaluation of, say, 1,700+ patents in a pool to ensure that they are all complementary to each other – and this especially because, as noted, many patents defy such black-and-white characterization, having claims that may be substitutes for claims in other patents. The answer inevitably is that complete accuracy may be out of reach – which is not to condemn the effort or say it should not be undertaken, for of course it should and at present there is no better alternative that has been proposed. But this fact calls for frank acknowledgement that the competitive landscape of patent pools has changed. No less is true of the difficulty of an independent expert to evaluate the validity and enforceability of such large numbers of patents in a pool.

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<sup>61</sup> Id. at 20.

<sup>62</sup> Id. (citing IDC’s Worldwide Blu-Ray, DVD, CD, and Other Optical Storage Drive 2009 – 2013 Forecast and Analysis, Table 20, p. 22, and Hisashi Kato, “Current status and issues such as patent pools in the area of electronics,”) available at <http://www.jisc.go.jp/policy/kenkyuukai/ipr/sympo.html>.

<sup>63</sup> Id. at 28.

<sup>64</sup> Id. at 43.

<sup>65</sup> See, e.g., Sher et al., *supra*, at 129.

In these circumstances, the savings on transaction costs to a potential licensee in having the pool's expert evaluate its patents for infringement or essentiality may be illusory: as astutely noted, "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, it 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."<sup>66</sup>

These issues need to be 'called out' so that the agencies and private parties can more effectively help stem the inevitable tide of patent pools encompassing more and more substitute patents by virtue of their sheer size alone, if not also as a result of any corollary deliberate effort to suppress competing technology.

Of course, if in a given instance the independence of an expert evaluator is compromised, the potential for anticompetitive effects from the pool looms larger. This assessment must be case by case, but given that it is the pool itself, or its administrator, which hires the expert evaluator, the "independence" of the expert should be approached with a certain healthy skepticism – to ensure that the expert is not somehow abetting a process of capture of potentially competing technology by the pool, as suggested perhaps by MPEG LA's conduct with respect to the open-source VP8 video encoding alternative to the H.264 standard and technology.<sup>67</sup>

The growth in size of recent pools is a structural change. Of a more dynamic nature, recent acquisitions of large patent portfolios by groups of firms that compete among themselves – in effect, building large agglomerations, or pools, of patents – also challenge certain assumptions about the ostensible procompetitive character of patent pools: whereas pools are intended to bring new technology to the market for commercialization, these latest acquisitions – again, somewhat like MPEG LA's alleged conduct vis-à-vis the VP8 technology – arguably seem more directed at creating blocking positions to protect already commercialized products and inhibit the development of alternative technologies.

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<sup>66</sup> Sher et al, *supra*, at 130 (emphasis in original).

<sup>67</sup> See, e.g., *Nero AG v. MPEG LA*, 2010 WL 4366448, \*2 (C.D. Cal. 2010) (noting plaintiff-licensor's allegations of expert evaluator's lack of independence from MPEG LA and dismissing on other grounds plaintiff's Sherman Act Section 2 claim). The independence of a pool's expert evaluator is not the only example of a potential conflict that may compromise the procompetitive objective of patent pools. For instance, Larry Horn, the president of MPEG LA, is also the president of MobileMedia Ideas, a known patent assertion entity jointly owned by MPEG LA, Sony and Nokia. The firm controls patents for technologies used in mobile phones, computers, tablets, cameras and videogame consoles, among other devices. MobileMedia Ideas has engaged in a significant amount of successful litigation, and continues a business model of leveraging these patents against numerous operating companies, including those that have business relationships with MPEG LA.

For instance:

- *CPTN-Novell*: In April 2011, CPTN, a special purpose consortium jointly and equally controlled by Microsoft, Oracle, Apple and EMC and formed to acquire some 882 Novell patents and patent applications, modified the terms of its acquisition to satisfy antitrust concerns of the DOJ and German Federal Cartel Office over the transfer of Novell's intellectual property. The DOJ said that as originally proposed the deal would "jeopardize the ability of open source software, such as Linux, to continue to innovate and compete in the development and distribution of server, desktop, and mobile operating systems, middleware, and virtualization products."<sup>68</sup> The acquisition was linked to Novell's merger with Attachmate.

The Open Source Initiative (OSI) and Free Software Foundation (FSF) had submitted a joint position statement to the DOJ contending that CPTN might use the patents "to attack free, libre, and open source (FLOSS) software" and that its founders and leaders "have a long history of opposing and misrepresenting the value of FLOSS, which is at the heart of Web infrastructure and of many of the most widely used software products and services."<sup>69</sup> According to the OSI and FSF, "CPTN Principals have acknowledged that the GNU/Linux operating system specifically, and FLOSS in general, represents the major competitive force to their business. Microsoft and Oracle both call out FLOSS as a competitive threat in their most recent 10-K filings."<sup>70</sup> Noting that "CPTN principals have substantial market power in operating systems (Microsoft, Apple, Oracle), middleware (Microsoft, Oracle), and virtualization and network storage (Microsoft, Oracle, EMC)," and that "FLOSS is a substantial competitor in operating systems (GNU/Linux and Android), middleware (Apache, JBoss), and virtualization and network storage (KVM, Xen hypervisor)," OSI and FSF asserted that "CPTN represents a major disruption to the competitive landscape."<sup>71</sup> OSI and FSF further explain why the Novell patents in hands CPTN, acting analogously to a patent pool, would pose a competitive threat to open-source across a broad spectrum of software, focusing on the contrasting incentives of Novell and CPTN with respect to the intellectual property:

Whereas Novell was sincere in promoting and participating in FLOSS development and had an incentive to maintain their patent assets as a defensive portfolio, CPTN has all the motives and opportunity to do the opposite. That is, they have no incentive to support FLOSS as a competitive alternative to proprietary software. CPTN creates a cover to launch the patent attacks against companies delivering solutions based on FLOSS while creating for each principal

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<sup>68</sup> Press Release, U.S. Dep't of Justice, CTTN 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>.

<sup>69</sup> Joint OSI and FSF Position Statement on CPTN Transaction, *available at* <http://fsf.org/news/osi-fsf-joint-position-cptn>.

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

a measure of plausible deniability that the patent attack was not their idea.<sup>72</sup>

CPTN agreed to make its acquisition subject to the following conditions, requested by the DOJ, in order to protect competition and innovation in the open source software community: (1) Microsoft to sell back to Attachmate all of the Novell patents it would have acquired, while taking a license to those and any other patents retained by Novell; (2) EMC not to acquire 33 Novell patents and patent applications identified as related to virtualization software; (3) all of the Novell patents to be acquired subject to the GNU General Public License, Version 2, a widely adopted open-source license, and the Open Invention Network (OIN) License, a significant license for the Linux System; (4) CPTN to have no right to limit which of the patents, if any, are available under the OIN license, and (5) neither CPTN nor its owners to make any statement or take any action with the purpose of influencing or encouraging either Novell or Attachmate to modify which of the patents are available under the OIN license. In short, these are stringent conditions that reflect the DOJ's appreciation of the CPTN leaders' market power in relevant software markets where open-source poses a competitive threat and a sensitivity to OSI and FSF's pronounced concerns over possible collusion among the CPTN leaders and potential harm to competition from open-source software.

- *MOSAID-Nokia*: In September 2011 MOSAID Technologies, a patent licensing entity – aka “patent assertion entity” – agreed to acquire 2,000 patents, originally belonging to Nokia, from another licensing firm, for a shared cut with Nokia and Microsoft of the licensing royalties and any patent infringement settlements. MOSAID said that these “cover technologies used in a wide range of mobile communications devices and services” including “1,200 patents and applications . . . declared essential to second, third and fourth-generation communications standards, including GSM (Global Systems for Mobile communications), UMTS / WCDMA (Universal Mobile Telecommunications Service / Wide-Band Code Division Multiple Access) and LTE (Long Term Evolution).”<sup>73</sup>

Microsoft explained that it had obtained a license to the Nokia patents at issue, in return for which it obtained “a passive economic interest in the revenue generated from the licensing of those patents to third parties” – i.e., presumably its share of the cut with Nokia and MOSAID.<sup>74</sup> 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 \$1B in licensing fees for technologies already on the market.<sup>75</sup> “Particularly troubling” with this scenario, it has been observed, “is the potential for Microsoft and

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<sup>72</sup> Id. The “plausible deniability” would appear to refer to the possibility, also raised by OSI and FSF, that CPTN might later seek to transfer the patents to a patent assertion entity “which can create havoc for FLOSS without risking the adverse reaction of the market if a practicing entity were to sue directly.” Id.

<sup>73</sup> M.J. Foley, “Microsoft Weighs in On Mosaid-Nokia Patent Deal, ZD Net” (Sept. 2, 2011), *available at* <http://www.zdnet.com/blog/microsoft/microsoft-weighs-in-on-mosaid-nokia-patent-deal/10523>.

<sup>74</sup> Id. (quoting Microsoft's Deputy General Counsel).

<sup>75</sup> See 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>.

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.”<sup>76</sup>

- *Rockstar Bidco*: In early 2012, Microsoft, Apple, Research in Motion, Sony, Ericsson and EMC, comprising the Rockstar Bidco consortium, obtained DOJ approval to acquire Nortel’s patent portfolio, containing roughly 6,000 patents covering communications technologies, pursuant to Nortel bankruptcy proceedings. Many of these patents and the corresponding technology were already incorporated into products on the market and/or standard essential wireless patents (SEPs). Microsoft, Apple and RIM were (and are) the three main commercial rivals to Android, Google’s open-source operating system.

The American Antitrust Institute, for one, called on the DOJ to investigate and noted, first, that Microsoft, Apple and RIM already possessed a large portfolio of wireless technology patents and that each would be capable of bidding on its own for a significant part of the portfolio.<sup>77</sup> The AAI added that “[t]heir concerted control over the entire Nortel portfolio [– for \$4.5 B, five times the amount bid by Google – ] would seem to create a much-enhanced collective ability and incentive” to enforce the patents to suppress mobile device competition generally and open source competition in that field in particular.<sup>78</sup> The AAI warned that without meaningful commitments to license on reasonable terms, the acquisition created a “substantial risk of exclusionary patent holdup conduct that can subvert open standards initiatives and thereby suppress competition and innovation opportunities throughout the mobile device space.”<sup>79</sup> It was also noted that Microsoft already had a worldwide perpetual license to the Nortel patents, raising the question why it wanted to acquire the patents at all.<sup>80</sup>

The DOJ concluded that the transaction was unlikely to substantially lessen competition for wireless devices because of the relevant market positions of the parties and/or commitments that made to license pertinent intellectual property. As to Microsoft and RIM, the DOJ stated that their “low market shares in mobile platforms would likely make a strategy to harm rivals either through injunctions or supracompetitive royalties based on the acquired Nortel SEPs unprofitable. Because of their low market shares, they are unlikely to attract a sufficient number of new customers to their mobile platforms to compensate for the lost patent royalty revenues. Moreover, Microsoft has cross-license agreements in place with the majority of its Android-based OEM competitors, making

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<sup>76</sup> Sher et al., *supra*, at 133.

<sup>77</sup> Letter to AAG Christine Varney from Bert Foer, American Antitrust Institute, July 6, 2011, available at <http://www.antitrustinstitute.org/~antitrust/sites/default/files/Nortel%20letter%20to%20DOJ.7.6.11.pdf>.

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

<sup>80</sup> Mary Jo Foley, “Will Microsoft Try To Outbid Google for Nortel’s Patents?”, *ZDNET*, (Apr. 4, 2010), <http://www.zdnet.com/blog/microsoft/will-microsoft-try-to-outbid-google-for-nortels-patents/9088>.

such a strategy even less plausible for it.”<sup>81</sup> The DOJ further noted that Apple, as a counterweight to its high relevant market share, and Microsoft committed not to seek to or prevent or exclude rivals’ products from the market in exercising their SEP rights and Apple also stated that it viewed this commitment as consonant with any FRAND licensing obligation on its part.<sup>82</sup>

## **VII. Conclusion**

For all the procompetitive benefits and efficiencies that patent pooling is intended to achieve and often does achieve, there is reasonable evidence to support the conclusion that in recent years structural, behavioral and market forces, especially in high-tech markets, are putting significant, perhaps unanticipated pressures on the competitive model of pooling and collective licensing set forth in the Agencies’ guidance and in the DOJ Business Review Letters. We have seen geometric growth in the size of patent pools, from tens/hundreds to thousands of patents, pertinent changes in the law, and a trend toward acquisitions of large patent portfolios comprising standard essential patents by consortia of competitor firms. These developments call for increased vigilance and enforcement by the antitrust agencies to ensure that pools and similar collective pooling and IP licensing arrangements properly fulfill their procompetitive purposes for the benefit of licensors, licensees and consumers alike, and do not devolve either by internal structural forces or anticompetitive intent on the part of pool members into mechanisms for suppressing competition and innovation.

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<sup>81</sup> U.S. Dept. 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, *available at* <http://www.justice.gov/opa/pr/2012/February/12-at-210.html>.

<sup>82</sup> *Id.*