

Glory Days: Do the Anticompetitive Risks of Standards-Essential Patent Pools Outweigh Their Procompetitive Benefits?

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I. INTRODUCTION

*Glory days well they'll pass you by
Glory days in the wink of a young girl's eye
Glory days, glory days*

Bruce Springsteen, *Glory Days* (1984)

Patent pools—licensing arrangements in which multiple patent owners agree to license their intellectual property to each other, third parties, or both²—have existed in some form for nearly two centuries.³ During that time, courts and competition agencies have noted both the benefits and risks associated with pools. On the one hand, patent pools can reduce transaction costs, clear blocking positions, and enable parties to avoid costly infringement litigation.⁴ On the other hand, patent pools can serve as a vehicle for collusion, charge for unnecessary patents, and include exclusionary licensing terms.⁵ Nonetheless, the consensus for more than twenty years has been that the procompetitive benefits of patent pools outweigh their anticompetitive effects.⁶

But the current assessment of patent pools may be influenced by the nostalgia of events long past. Developments over the past two decades warrant revisiting some of the assumptions regarding the procompetitive

2. WORLD INTELL. PROP. ORG., PATENT POOLS AND ANTITRUST – A COMPARATIVE ANALYSIS 3 (2014) [hereinafter WIPO, PATENT POOLS], https://www.wipo.int/export/sites/www/ip-competition/en/studies/patent_pools_report.pdf [<https://perma.cc/35DU-6YGB>].

3. See generally Adam Mossoff, *The Rise and Fall of the First American Patent Thicket: The Sewing Machine War of the 1850s*, 53 ARIZ. L. REV. 165 (2011).

4. See WIPO, PATENT POOLS, *supra* note 2, at 3.

5. See *id.*

6. *Id.*

nature of patent pools. Creativity and increasingly aggressive licensing behavior also are amplifying the anticompetitive effects of certain pools. As a result, the promise of using certain types of patent pools to resolve licensing issues for standards-essential patents (SEPs) may be as yet another unrealized dream from glory days gone by.

This Article proceeds as follows. First, it provides an overview of necessary background principles to understand the interaction between patent pools, commitments to license SEPs on terms that are fair, reasonable, and nondiscriminatory (FRAND), and competition law. Second, it explores how competition law principles traditionally have been applied to SEP patent pools and explores business review letters issued by the U.S. Department of Justice (DOJ) addressing patent pools. Third, it critically examines how some of the assumptions underlying the procompetitive nature of patent pools no longer are true in today's SEP assertion environment. Fourth, it assesses how the anticompetitive risks of certain SEP pools likely eclipse their alleged procompetitive justifications. Finally, this Article concludes by providing specific recommendations to restore SEP patent pools to a position where an appropriate balance is struck between competition risks and benefits.

II. BACKGROUND

A. Patent Pools & Similar Arrangements

A patent pool is an agreement between two or more patent holders to license certain patents to each other, to third parties, or to both.⁷ The number of patents involved can range from quite small to as many as several thousand patents for some of the larger pools covering technology implicating large numbers of patents. The earliest patent pools date back to the mid nineteenth century when a group of sewing machine manufacturers decided to cross-license their patents to each other after being embroiled in infringement litigation.⁸ Today, patent pools are big business; revenues derived from

7. WIPO, PATENT POOLS, *supra* note 2, at 3; *see, e.g.*, U.S. DEP'T OF JUST. & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 5.5 (2017) [hereinafter DOJ/FTC GUIDELINES], https://www.ftc.gov/system/files/documents/publicstatements/1049793/ip_guidelines_2017.pdf [<https://perma.cc/482A-C6Y2>].

8. *See generally* Mossoff, *supra* note 3 (chronicling the details of the so-called Sewing Machine War).

sales of devices based partially or wholly on technologies covered by patent pools are at least \$100 billion U.S. annually.⁹

Patent pools exist in many forms. The most conventional type of patent pool is a licensing pool, also known as an “offensive” pool. These pools generally are characterized by two common features. First, licensing pools create an entity separate from the pool members—the patent holders—that actively seeks to license members’ patents to third parties, often on a single, portfolio basis.¹⁰ Second, the licensing pools establish a mechanism to allocate revenues generated through licensing activities amongst the members.¹¹ The MPEG LA patent pool is an example of such a licensing pool.¹² It offers several licenses on a portfolio basis for various standards and other technology platforms. The members, whose patents are licensed in the portfolio, vary depending on the specific technology, as do the royalty rates charged.¹³ The bulk of this Article will focus on these types of patent pools.

Distinguished from traditional patent licensing pools are defensive patent aggregators. Such entities purchase patents to keep them out of the hands of entities that would likely assert them—generally patent assertion entities (PAEs).¹⁴ Those purchases are financed through subscription fees from members who elect to join the defensive pool, which also are granted licenses through the patent aggregator.¹⁵ As their name suggests, defensive patent pools do not actively seek to license their portfolios or assert them in litigation, unless as a counterclaim. RPX Corporation is an example.¹⁶

Another form of a patent pooling arrangement is cross-licensing. Here, there is no independent entity that licenses patents amongst members to third parties; instead, at least two patent holders agree to cross-license their patents to each other.¹⁷ Some of the competition law concerns present with offensive licensing pools arise with cross-licensing,¹⁸ but offensive licensing

9. Gavin Clarkson & Joshua Newberg, *Blunt Machetes in the Patent Thicket: Modern Lessons from the History of Patent Pool Litigation in the United States Between 1900 and 1970*, J. TECH. L. & POL’Y, Fall 2018, at 1, 13.

10. Steven C. Carlson, Note, *Patent Pools and the Antitrust Dilemma*, 16 YALE J. ON REGUL. 359, 368 (1999).

11. *Id.*

12. MPEG LA, <https://www.mpegla.com> [<https://perma.cc/GN8E-WF8P>].

13. *See id.*

14. *See, e.g.*, James M. Rice, *The Defensive Patent Playbook*, 30 BERKELEY TECH. L.J. 725, 757 (2015).

15. *See, e.g.*, *Cascades Comput. Innovation LLC v. RPX Corp.*, No. 12-cv-01143-YGR, 2016 WL 705982, at *2 (N.D. Cal. Feb. 23, 2016), *aff’d*, 719 F. App’x 553 (9th Cir. 2017).

16. More information about RPX can be found at RPX RATIONAL PATENT, <https://www.rpxcorp.com/> [<https://perma.cc/D64D-8CDR>].

17. *See, e.g.*, Carlson, *supra* note 10, at 369.

18. *See id.*; *see also* DOJ/FTC GUIDELINES, *supra* note 7, § 5.5.

pools warrant greater antitrust scrutiny because of the larger number of players involved and increased possibility for collusion.¹⁹

B. SEPs, FRAND, and Competition Law

Formal industry standards are vital to the modern economy. They enable seamless interoperability across multiple technological products, software, and services provided by different companies. An example of formal industry standards is wireless communications for cellular phones and other connected devices. With the advent of 5G and attendant upsurge in Internet of Things (IoT) devices, standardized technology will become an even more common feature of everyday life.

Despite the benefits of standardization, technical standards also pose certain risks. One such risk is the inability to obtain access to proprietary technology that is incorporated in the standard.²⁰ A related risk is a patent owner conditioning access to that technology on terms and conditions in excess of the value of the underlying patent.

To minimize those risks, the intellectual property rights policies of most standard-setting organizations (SSOs) require a patent holder to make a commitment that it will license any patents that turn out to be essential on FRAND terms.²¹ Such self-declared patents are referred to as SEPs.²² If the patent holder declines to make a FRAND commitment, the SSO generally will not include that patentee's technology in the relevant standard.²³ The FRAND commitment thus constitutes a voluntary agreement by the patent holder to curtail the full scope of its statutory patent grant in exchange for

19. THOMPSON REUTERS, CORPORATE COUNSEL'S GUIDE TO LICENSING § 23:30 (2020).

20. See generally Jorge L. Contreras, *A Brief History of FRAND: Analyzing Current Debates in Standard Setting and Antitrust Through a Historical Lens*, 80 ANTITRUST L.J. 39 (2015) (discussing the history of antitrust patenting orders and their relation to modern FRAND commitments and standard-setting).

21. See, e.g., EUR. TELECOMMS. STANDARDS INST., ETSI DIRECTIVES 39–40 (2020), <https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf> [<https://perma.cc/69SN-NHNL>]. ETSI also requires patent holders to disclose patents or patent applications that are or may be essential. *Id.* at 39. Other SSOs do not require such disclosure of individual patents but still require a FRAND assurance.

22. As described *infra* Section V.C, SSOs rely on members to declare patents that are or may be essential to the standard but otherwise do not independently verify essentiality. Whether a patent is truly essential to a standard can only be determined definitively by a court.

23. See, e.g., *Common Patent Policy for ITU-T/ITU-R/ISO/IEC*, INT'L TELECOMM. UNION, <https://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx> [<https://perma.cc/VL9Z-QJ2B>].

the benefit of being included in the standard. That commitment is irrevocable and enforceable by third parties, such as companies making devices that practice the standard.²⁴

The FRAND commitment is necessary because inclusion of a technology in a standard confers significant “after the fact” bargaining power upon the SEP-holder vis-à-vis potential licensees. Once a standard is adopted, companies wanting to make devices that practice the standard have no choice but to use the technology covered by those SEPs. Standardization eliminates potential competitors for alternative technologies that are not selected for the standard.²⁵

The FRAND commitment is thus designed to cap the market power of SEP-holders after standardization, decreasing the risk of hold-up and unreasonable royalty stacking. Hold-up occurs when SEP-holders attempt to leverage their enhanced bargaining power over licensees to extract royalties that exceed the incremental value of the technology.²⁶ Royalty stacking is when a standard or group of standards involves multiple patents; the royalties that individual SEP owners seek do not account for the aggregate royalties created by those various licensing demands.²⁷

Of course, if a patent holder does not wish to be bound by the FRAND commitment, it may choose not to contribute its technology to the standardization process. While that patent holder would be deprived of the benefit of more potential licensees due to widespread adoption of the standard, the patent holder could pursue higher, non-FRAND rates, or decline to license its patented technology altogether.²⁸

24. See, e.g., *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 884 (9th Cir. 2012).

25. See *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 317 (3d Cir. 2007).

26. See, e.g., *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014).

27. See, e.g., *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031 (9th Cir. 2015); see also Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2010–13 (2007).

28. In some situations, the patented technology could be included in the standard absent a FRAND commitment if, for example, the SSO and its members decide the technology is needed absent a FRAND commitment. See *Broadcom Corp.*, 501 F.3d at 315–16. This only is likely to be the case if the patent holder has market power before the standard is set, in which case the patent holder under those circumstances would not forgo the benefits of widespread adoption. See *id.*

III. PATENT POOLS AND COMPETITION LAW

A. Overview

Though the competition law treatment of patent pools has evolved substantially over time,²⁹ the modern view generally is illustrated by the *Antitrust Guidelines for the Licensing of Intellectual Property* jointly promulgated by the DOJ and Federal Trade Commission in 1995 and updated in 2017 (the Guidelines).³⁰ The Guidelines recognize that patent pools implicate both procompetitive justifications and anticompetitive risks.³¹

Specifically, patent pools can result in efficiency gains by providing a “one-stop shop” for licensing.³² By doing so, pools can reduce the transaction costs associated with bilateral negotiations amongst multiple patent holders and potential licensees.³³ Additionally, patent pools can clear blocking positions.³⁴ A blocking position arises when a patent owned by someone else “prevents a patentee from exploiting its own patent”; by including blocking patents in a pool, other patentees can gain the benefits of commercialization of their technology that otherwise would have been prohibited.³⁵ Another procompetitive feature is that patent pools, like any other patent license agreement, avoid infringement litigation.³⁶ This frees up resources that otherwise would have been diverted to costly litigation to spend on productive activities such as research and development. It also conserves judicial resources. Finally, though not mentioned in the Guidelines, some have noted how patent pools can promote competition

29. See generally Richard J. Gilbert, *Antitrust for Patent Pools: A Century of Policy Evolution*, 2004 STAN. TECH. L. REV. 3 (2004) (discussing the history of courts’ interpretations of patent pooling and cross-licensing as they relate to antitrust laws).

30. See *id.*; DOJ/FTC GUIDELINES, *supra* note 7, § 1.0.

31. See DOJ/FTC GUIDELINES, *supra* note 7, §§ 2.0 & 2.1.

32. See INNOVATION POL’Y PLATFORM, PATENT POOLS AND ANTITRUST 1 (2015), https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/printpdf/innovation_policy_platform_patent_pools_and_antitrust_-_2015-10-01/index.pdf [https://perma.cc/9SSM-4D4T].

33. DOJ/FTC GUIDELINES, *supra* note 7, § 5.5.

34. *Id.*

35. Scott Sher, Jonathan Lutinski & Bradley Tennis, *The Role of Antitrust in Evaluating the Competitive Impact of Patent Pooling Arrangements*, 13 SEDONA CONF. J. 111, 113 (2012).

36. DOJ/FTC GUIDELINES, *supra* note 7, § 5.5.

through the encouragement of network externalities, especially in communications-related technologies.³⁷

Pools also pose anticompetitive risks. Like any cooperative agreement amongst competitors, patent pools can provide a vehicle for collusion to engage in naked price fixing or market allocation; the Guidelines make clear that such behavior is subject to per se condemnation.³⁸ Less egregious behavior may also be challenged as anticompetitive where the pool does not “contribute to an efficiency-enhancing integration of economic activity among the participants.”³⁹ To the extent a pool includes patents that are substitutes for each other—non-blocking patents that cover alternative technologies—as opposed to complementary patents—patents which must be used together⁴⁰—the pool is more likely to harm competition.⁴¹ Patent pools additionally can subject licensees to exclusionary licensing terms like excessive grantbacks, which can deter incentives for licensees to invest in research and development.⁴² Further, patent pools can shield weak, or even invalid, patents from litigation when those patents are included in a portfolio alongside strong and valid patents.⁴³

Relatedly, patent pools can undermine competition by seeking portfolio-wide royalties on patents that are not necessary for a particular licensee. It is well recognized that a substantial number of patents alleged to be SEPs neither are valid nor essential, as further described in Section V.C below.⁴⁴ Pools also may seek portfolio-wide licenses on patents that, while truly SEPs, nonetheless are not necessary for a particular licensee whose products practice only a subset of what the standard specifies. Stuffing large numbers of unnecessary patents into SEP licensing pools enables the pool owners to argue that the underlying pool is far more valuable than it

37. See, e.g., Carlson, *supra* note 10, at 380.

38. DOJ/FTC GUIDELINES, *supra* note 7, § 5.5.

39. *Id.*

40. WIPO, PATENT POOLS, *supra* note 2, at 4.

41. Sher, Lutinski & Tennis, *supra* note 35, at 119.

42. See DOJ/FTC GUIDELINES, *supra* note 7, § 5.5.

43. See, e.g., Richard J. Gilbert, *Ties That Bind: Policies to Promote (Good) Patent Pools*, 77 ANTITRUST L.J. 1, 14 (2010).

44. See, e.g., Lorenz Brachtendorf, Fabian Gaessler & Dietmar Harhoff, *Approximating the Standard Essentiality of Patents – A Semantics-Based Analysis* (June 4, 2019) (unpublished manuscript) (on file with Northwestern School of Law), http://www.law.northwestern.edu/research-faculty/clbe/events/innovation/documents/gaessler_approximating_standard_essentiality.pdf [<https://perma.cc/Y3Z8-W32E>].

is.⁴⁵ When demand is elastic, which often is the case with consumer goods,⁴⁶ the increased royalties are passed through to consumers as an input cost for the finished end products and thus decrease overall output.⁴⁷

B. Historical DOJ Business Review Letters on Patent Pools

With respect to patent pools of SEPs, the DOJ articulated antitrust guidance through a series of business review letters issued in the late 1990s and early 2000s, as well as a very recent letter on the Avanci 5G pool, discussed in the next section.⁴⁸ The business review process enables persons to formally inquire about the DOJ's enforcement intentions concerning specific proposed conduct.⁴⁹ These letters are noteworthy because, although traditional patent law principles obviously apply to SEPs, application of those principles also considers the consequences of standardization and the significance of the FRAND commitment. The DOJ analyzed the following SEP patent pool proposals through business review letters: (1) the MPEG

45. This risk is highest when pools do not adequately utilize an independent technical expert, along with competent and independent legal consultants, to screen for the validity, essentiality, and enforceability of the underlying patents.

46. See, e.g., DON HOFSTRAND, IOWA ST. UNIV., FILE NO. C5-207, ELASTICITY OF DEMAND 1 (2007), <https://www.extension.iastate.edu/agdm/wholefarm/pdf/c5-207.pdf> [<https://perma.cc/57LK-SS7A>].

47. As discussed in Section V.C, *infra*, the One-Monopoly-Rent-Theorem does not affect this reality.

48. See Letter from Joel I. Klein, Assistant Att'y Gen., U.S. Dep't of Just., to Garrard R. Beene, Sullivan & Cromwell 1 (June 26, 1997) (on file with U.S. Dep't of Just.) [hereinafter MPEG LA DOJ Business Review Letter], <http://www.justice.gov/atr/public/busreview/215742.pdf> [<https://perma.cc/LPV6-H53Q>]; Letter from Joel I. Klein, Assistant Att'y Gen., U.S. Dep't of Just., to Garrard R. Beene, Sullivan & Cromwell 1 (Dec. 16, 1998) (on file with U.S. Dep't of Just.) [hereinafter 1998 DVD DOJ Business Review Letter], <https://www.justice.gov/archive/atr/public/busreview/2121.htm> [<https://perma.cc/96JH-59DH>]; Letter from Joel I. Klein, Assistant Att'y Gen., U.S. Dep't of Just., to Carey R. Ramos, Paul, Weiss, Rifkind, Wharton & Garrison 1 (June 10, 1999) (on file with U.S. Dep't of Just.) [hereinafter 1999 DVD DOJ Business Review Letter], <https://www.justice.gov/sites/default/files/atr/legacy/2012/08/01/2485.pdf> [<https://perma.cc/7Y96-EFM8>]; Letter from Charles A. James, Assistant Att'y Gen., U.S. Dep't of Just., to Ky P. Ewing, Vinson & Elkins L.L.P. 1 (Nov. 12, 2002) (on file with U.S. Dep't of Just.) [hereinafter 3G DOJ Business Review Letter], <https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/200455.pdf> [<https://perma.cc/4AR2-TLZ7>]; Letter from Makan Delrahim, Assistant Att'y Gen., U.S. Dep't of Just., to Mark H. Hamer, Baker & McKenzie 1 (July 28, 2020) (on file with U.S. Dep't of Just.) [hereinafter Avanci 5G DOJ Business Review Letter], <https://www.justice.gov/atr/page/file/1298626/download> [<https://perma.cc/6FGS-W6A4>].

49. 28 C.F.R. § 50.6 (2019).

LA group patents necessary to comply with the MPEG-2 video compression standard,⁵⁰ (2) two pools related to standardized technology for DVD-ROM and DVD-video formats,⁵¹ and (3) a partnership amongst several companies to create licensing “platforms” for each of the five 3G radio interface technologies,⁵² (collectively, the DOJ Business Review Letters).

In each of the DOJ Business Review Letters, the DOJ noted that the SEP pools involved had both anticompetitive risks and procompetitive benefits.⁵³ That is not surprising given the history of enforcement actions against certain offensive pools.⁵⁴ Nonetheless, the DOJ ultimately concluded that, on balance, the justifications of the proposed pools outweighed their risks. Those conclusions were based, in part, on the fact that the pools at issue were structured as follows:

- the portfolio was limited to technically essential patents, which, by definition, are not in competition with each other;
- an independent expert assessed whether the patents were technically essential;
- the patents included in the pooled portfolio licenses also remained available for licensing outside of the pool;⁵⁵
- the patents included in the pool were not expired;
- licensing was available on a nonexclusive, worldwide basis; and
- grantbacks were limited to essential patents for the same standard.⁵⁶

The consensus flowing from both the DOJ Business Review Letters and the Guidelines⁵⁷ is that patent pools—absent cartel-like collusive behavior—are neither per se legal nor illegal under U.S. antitrust law. Instead, they

50. See MPEG LA DOJ Business Review Letter, *supra* note 48, at 1.

51. See 1998 DVD DOJ Business Review Letter, *supra* note 48; 1999 DVD DOJ Business Review Letter, *supra* note 48, at 1.

52. See 3G DOJ Business Review Letter, *supra* note 48, at 1.

53. See MPEG LA DOJ Business Review Letter *supra* note 48, at 15; 1998 DVD DOJ Business Review Letter, *supra* note 48, at 9–14; 1999 DVD DOJ Business Review Letter, *supra* note 48, at 14–16.

54. See, e.g., Summit Tech., Inc., 127 F.T.C. 208, 240 (1999) (settlement in which two companies that were alleged to have formed a patent pool to fix prices agreed to abandon the pool).

55. See Josh Lerner & Jean Tirole, *Efficient Patent Pools*, 94 AM. ECON. REV. 691, 691, 698 (2004).

56. See generally Gilbert, *supra* note 43 (discussing grantbacks and non-exclusive licenses); see also WIPO, PATENT POOLS, *supra* note 2, at 6–7.

57. When the DOJ and Federal Trade Commission updated the Guidelines in 2017, the agencies did not include any new guidance specifically addressing FRAND-encumbered SEPs. See generally DOJ/FTC GUIDELINES, *supra* note 7 (providing updated guidance on cross-licensing and pooling arrangements and their potential anticompetitive effects).

are analyzed under the rule of reason where the procompetitive justifications and anticompetitive risks are both carefully examined to determine whether one outweighs the other.

It also is worth noting that the patent pools at issue in the DOJ Business Review Letters were relatively simple in terms of the number of patents that were to be licensed, which itself demonstrates transparency. The MPEG LA pool held twenty-seven patents among nine companies.⁵⁸ Of the two DVD pools, one held 210 patents among three companies, and the other held fifty-one patents among six companies.⁵⁹ The 3G pool was a partnership among nineteen companies to divide licensing functions amongst five platforms.⁶⁰

C. DOJ Avanci 5G Business Review Letter

In addition to the historical letters discussed above, the DOJ recently issued a business review letter addressing the Avanci pool's licensing program for 5G technologies in the automotive industry.⁶¹ The Avanci pool was formed in 2016 by several prominent cellular SEP-holders—including Nokia, Ericsson, and Qualcomm—to license wireless communications SEPs specifically for use in connected vehicles.⁶²

The Avanci 5G DOJ Business Review Letter did not address whether Avanci's licensing terms complied with its members contractual FRAND obligations. Nonetheless, as with the prior DOJ Business Review Letters, the DOJ concluded in its July 28, 2020 letter that the Avanci 5G licensing program was unlikely to harm competition.⁶³ In doing so, the Avanci 5G

58. See MPEG LA DOJ Business Review Letter, *supra* note 48, at 3.

59. See Sher, Lutinski & Tennis, *supra* note 35, at 121.

60. See 3G DOJ Business Review Letter, *supra* note 48, at 1 n.2, 2.

61. See Avanci 5G DOJ Business Review Letter, *supra* note 48, at 1.

62. See *id.* at 3.

63. *Id.* at 2. Even though Avanci has been licensing its members' 2G, 3G, and 4G wireless SEPs for the past few years, the DOJ concluded that Avanci's 5G program constituted "proposed business conduct" appropriate for the business review letter process because "no licensees are able to license 5G patents through the current 4G Platform and [because] Avanci has represented that there are other differences in the licensing terms between the two programs that relate to royalty distribution and royalty reduction incentives for potential licensees." *Id.* at 1 n.2. However, throughout the letter, the DOJ frequently referred to Avanci's existing 4G pool to support its conclusions. See *id.* at 1–3, 16. Avanci also relied upon the 5G Business Review Letter in defending itself against antitrust claims concerning its 4G pool, further undermining the future nature of the conduct in question. See Notice of Supplemental Authority for Defendant at 1, Cont'l

DOJ Business Review Letter failed to account for dramatic changes in the SEP licensing and assertion landscape.

When the prior DOJ Business Review Letters were issued around two decades ago, there was little guidance concerning how FRAND commitments limit the ways that SEP owners can seek to license and enforce their intellectual property. Since then, courts have held that, under certain circumstances, a SEP-holder's refusal to comply with its FRAND obligation may give rise to contract liability and distort the competitive process.⁶⁴

SEPs also are asserted on a much more frequent basis than at the time the original letters were issued. According to a 2017 study, SEPs are over four times as likely to be litigated as compared to non-SEPs.⁶⁵ Moreover, because standardized technology has increasingly become prevalent in recent years, the number of patents in SEP pools has increased exponentially. Whereas the original MPEG LA proposal for the MPEG-2 video compression standard, analyzed in the Department's 1997 business review letter, was for twenty-seven patents, by about decade later, the same pool had 800 patents.⁶⁶ Today, it has over a thousand patents.⁶⁷ And the Avanci 5G pool is estimated to cover potentially over 30,000 patents.⁶⁸

The DOJ failed to take account of these important distinctions from the prior DOJ Business Review Letters in the Avanci 5G DOJ Business Review Letter. A simple chart below illustrates some of the key differences from the MPEG LA pool and the Avanci 5G pool:

Auto. Sys., Inc. v. Avanci LLC, No. 3:19-cv-02933-M (N.D. Tex. July 29, 2020), ECF No. 302. For a further discussion of this case, see *infra* Section V.A.

64. See, e.g., *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 313–14 (3d Cir. 2007); *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1046–47; Case C-170/13, *Huawei Tech. Co. v. ZTE Corp.*, ECLI:EU:C:2015:477, ¶ 3 (July 16, 2015). Despite these well-reasoned opinions, starting in November 2017, the Antitrust Division of the U.S. Department of Justice reversed course and began a campaign questioning the role of antitrust in addressing FRAND violations. See John “Jay” Jurata, Jr. & Emily Luken, *Out of Sync?: DOJ’s Policy Reversal Towards SEPs Lacks Legal Support*, GLOB. COMPETITION REV. (June 6, 2018), <https://globalcompetitionreview.com/gcr-usa/out-of-sync-doj-policy-reversal-towards-seps-lacks-legal-support> [<https://perma.cc/N9WV-SR77>]. The DOJ’s policy reversal is contrary to well-established precedent. See *id.*

65. Rudi Bekkers et al., *Disclosure Rules and Declared Essential Patents* 21, 43 (Nat’l Bureau of Econ. Rsch., Working Paper No. 23627, 2017), <http://people.bu.edu/tsimcoe/documents/working/dSEP7.pdf> [<https://perma.cc/AQ45-UAH4>].

66. U.S. DEP’T OF JUST. & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 68 n.62 (2007) [hereinafter FTC & DOJ 2007 REPORT], <https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf> [<https://perma.cc/JB6E-XYV8>].

67. See generally MPEG LA, MPEG-2 ATTACHMENT 1 (2020), <https://www.mpegla.com/wp-content/uploads/m2-att1.pdf> [<https://perma.cc/D5KP-76F5>].

68. Avanci 5G DOJ Business Review Letter, *supra* note 48, at 3.

	MPEG LA BUSINESS REVIEW LETTER	AVANCI 5G BUSINESS REVIEW LETTER
NUMBER OF LICENSED PATENTS	Identified	No (only estimate of over 30,000 patents)
IDENTIFICATION OF LICENSED PATENTS	Patent list is available	No patent list available
ESSENTIALITY EVALUATION	All licensed patents have been evaluated essential.	One evaluated patent is enough to join the platform as licensor.
DISCLOSURE OF ROYALTY	Royalty identified	No
OTHER TERMS OF ROYALTY	Most favored nation guaranteed	None

Additionally, the Avanci pool—and the DOJ’s Business Review Letter—also departed from the earlier examples in that it expressly is limited to licensing only at the original equipment manufacturer level (OEM), i.e., automobiles.⁶⁹ The DOJ acknowledged that Avanci’s license, by its own terms, is limited to vehicles but concluded that this was unlikely to harm competition because, among other things, the license offers “have made” rights.⁷⁰ However, the DOJ did not separately consider whether the refusal to license other willing licensees in the supply chain, such as component manufacturers, complied with the Avanci members’ obligation to license their patents on FRAND terms. In fact, the DOJ conceded that its analysis would be different if certain facts arose; it observed that “[c]ompetitive concerns could arise if pool licensors collectively agreed not to license outside the pool despite this safeguard, which would negate the benefits of independent licensing.”⁷¹ The DOJ also failed to consider how forcing licenses at the vehicle level deprives many of the efficiencies of the vertically disintegrated auto supply chain.

69. *See id.* at 16.

70. *Id.* at 16–17, 19.

71. *Id.* at 17.

IV. SOME OF THE PROCOMPETITIVE ASSUMPTIONS FOR PATENT POOLS ARE NO LONGER TRUE WHEN APPLIED TO FRAND-ENCUMBERED SEPS

The historical DOJ Business Review Letters remain instructive on the application of antitrust law to patent pools composed of FRAND-encumbered SEPs but, as discussed above, they were the product of a different era in SEP licensing. The time has come to reassess the assumptions underlying the procompetitive nature of patent pools. This is both because (1) the changed market circumstances call into question the assumptions of the original DOJ Business Review Letters, and (2) the Avanci 5G DOJ Business Review Letter applied those assumptions without critically examining them. Upon further examination, some of those assumptions no longer are true when applied to pools of SEPs subject to a FRAND commitment.

A. Market Power

The Guidelines and the historical DOJ Business Review Letters endorse the view that, provided a screening method for essentiality is in place, pools of complementary patents generally are procompetitive because complementary patents do not lead to enhanced market power. With the passage of time, at least four problems with that assumption have emerged, none of which were considered in the Avanci 5G Business Review Letter.

First, the screening methods put into place by many pools do not appear to be effective. As explained in Section V.C below, the vast majority of SEPs that have been tested in court have been found to be either nonessential or invalid. Such a high level of error strongly undermines the assumption that pools are limited to complementary patents and do not include substitute patents. Nonetheless, the Avanci 5G Business Review Letter repeatedly emphasized how aggregating complementary patents is procompetitive and touted Avanci's "evaluation" process without critical evaluation of how the patents owned by Avanci members fared when tested in court.⁷²

Second, even if limited to complementary patents, not all SEPs are necessary to practice a particular technical standard. Many standards have optional portions that are not always implemented.⁷³ Alternatively, some standards have required portions that can be satisfied using alternative

72. *See id.* at 8–9.

73. *See, e.g.*, Sacha Kavanagh, *What Is Narrowband IoT?*, 5G (Nov. 13, 2018), <https://5g.co.uk/guides/what-is-narrowband-iot> [<https://perma.cc/CMT3-MLA3>]. For example, Narrowband Internet of Things (NB-IoT) is a Low Power Wide Area Network (LPWAN) radio technology standard that is a subset of the LTE standard because it only uses a single narrow-band of 200kHz. *See id.*

options.⁷⁴ Finally, the patented technology underlying a standard may be specific to only a subset of devices that interoperate with the standard.⁷⁵

Third, the fact that SEPs are complementary does *not* mean that a pool does not have increased market power relative to each of the SEP owners individually. SEP owners confer positive externalities on one another when raising prices. This is because when calculating reasonable royalties for patent infringement, significant weight often is placed on comparable licenses for similar patented technology—other licenses covering the same standard.⁷⁶ As a result, pools can allow SEP owners to internalize these “comparable externalities” by raising prices and *collectively* committing to a tough bargaining posture. Whereas individual licensing arrangements help constrain the prices other SEP owners can charge, pool licensing arrangements can sidestep that constraint.

At the time the historical DOJ Business Review Letters were published, the importance of comparable licenses in determining reasonable royalty patent damages was far less than it is today. At that time, licenses for similar technologies were just two of the fifteen factors for a *Georgia-Pacific* reasonable royalty analysis.⁷⁷ But over the past twenty years, the relative role of comparable licenses in determining reasonable royalty patent damages has increased substantially: “As [the Federal Circuit] ha[s] held many times, using sufficiently comparable licenses is a generally reliable method of estimating the value of a patent.”⁷⁸ Although the Avanci 5G DOJ Business Review Letter acknowledged the importance of comparable

74. See, e.g., COMM. ON TECH. STANDARDIZATION, AMERICAN BAR ASS’N, STANDARDS DEVELOPMENT PATENT POLICY MANUAL 16–17 (Jorge L. Contreras, ed., 2007).

75. See, e.g., Cellular System, U.S. Patent No. 10,498,029 col. 18 (filed July 15, 2019) (issued Dec. 3, 2019). For example, some cellular SEPs describe functionality that is implemented in cellular base stations, as opposed to handsets or similar devices. See, e.g., *id.*

76. See *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1325 (Fed. Cir. 2014).

77. See *Ga.–Pac. Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) (setting forth the fifteen factors).

78. *Apple, Inc.*, 757 F.3d at 1325; see also *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1227 (Fed. Cir. 2014). In more recent years, courts have noted correctly that such licenses must not have been entered under duress, such as threat of injunction. See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *67 (W.D. Wash., Apr. 25, 2013); *In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11 C 9308, 2013 WL 5593609, at *33 (N.D. Ill., Oct. 3, 2013).

licenses,⁷⁹ it did not consider how this dynamic impacts the market power of SEPs relative to each other. The increasing reliance on comparable licenses shows how royalties charged for a subset of SEPs affect the royalties that can be charged by other SEP-holders.

Courts outside of the United States also place great weight on similar license-based evidence when determining FRAND royalties. For example, in *Unwired Planet v. Huawei*, the U.K. High Court of Justice (Patents) examined comparable licenses to adjudicate a FRAND royalty on a worldwide basis, while also performing a “top-down” methodology as a cross-check.⁸⁰ Thus, even though no two SEPs may be substitutable to each other, royalties charged by one SEP owner affect the amount of royalties other SEP owners for the same standard are able to collect.

Fourth, concerns over royalty stacking also create a competitive link between the licenses for multiple SEP owners within the same standard. Under the top-down methodology, the maximum aggregate royalty burden for a particular standard is calculated and then allocated to a specific SEP-holder’s proportional share of patents in the standard.⁸¹ This methodology directly demonstrates how royalties charged by one SEP-holder may limit the ability of other SEP-holders to collect royalties in connection with the same standard.

Court cases adjudicating FRAND rates also confirm that concerns over the aggregate royalty stack serve as a competitive restraint on what individual SEP owners can charge. For example, in *TCL v. Ericsson*, the district court examined public statements made by Ericsson and other SEP-holders in press releases prior to the adoption of the relevant standards.⁸² Ericsson and others publicly expressed that they expected the aggregate maximum royalty to be in the single digits, around 5% for 2G and 3G, and between 6%–8%—or at least not higher than 10%—for 4G.⁸³ The court “applie[d] the 5% figure to 2G/3G, and applie[d] both 6% and 10% to 4G” as part of the top-down analysis.⁸⁴

79. Avanci 5G DOJ Business Review Letter, *supra* note 48, at 10 n.71 (quoting Brief for the United States as Amicus Curiae at 12, *HTC Corp. v. Telefonaktiebolaget LM Ericsson*, No. 19–40566 (5th Cir. Oct. 30, 2019).

80. *Unwired Planet Int’l Ltd v. Huawei Tech. Co.* [2017] EWHC (Pat) 711 [178] (Eng.), *aff’d*, [2020] UKSC 37 [171].

81. *See In re Innovatio IP Ventures, LLC*, 2013 WL 5593609, at *38–44.

82. *TCL Commc’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635, at *11–14 (C.D. Cal. Dec. 21, 2017), *vacated on other grounds*, 943 F.3d 1360 (Fed. Cir. 2019).

83. *Id.*

84. *Id.* at *14.

B. Reduced Transaction Costs

While patent pools can reduce transaction costs, that benefit is reduced where multiple SEP pools arise from a single standard.⁸⁵ Again, the historical DOJ Business Review Letters were the product of a time when few SEP pools existed.⁸⁶ Now, there are standards for which several pools exist, increasing the risk of an excessive royalty stack.

Multiple pools can lead to an excessive royalty stack because potential licensees making products that practice the standard may feel compelled to obtain a license from each individual pool, as well as those SEP-holders that do not offer their patents through pools. Under this scenario, SEP-holders also may make duplicative royalty demands that fail to consider the aggregate royalty burden for a standard.⁸⁷ More troubling, some of those pools for the same standard have been alleged to contain overlapping patents, leading to “double-dipping” by SEP-holders.⁸⁸ The DOJ noted with approval in the MPEG LA DOJ Business Review Letter how “[t]he list of Portfolio patents attached to the Portfolio license will provide licensees with information they need to assess the merits of the Portfolio license.”⁸⁹ But now, with SEP-holders establishing multiple pools for overlapping standards, the efficiencies achieved in terms of purportedly reducing transaction costs are lessened, and licensees are at a greater risk of having to pay aggregate royalties in excess of FRAND.

A classic example of this problem can be seen with the H.265/High Efficiency Video Coding (HEVC) standard. Unlike many other standards, HEVC has three different patent pools: (1) the MPEG LA pool; (2) the HEVC Advance pool; and (3) the Velos Media pool. The three pools differ as follows:

85. 1999 DVD DOJ Business Review Letter, *supra* note 48, at 10–12.

86. See Michael Mattioli, *Power and Governance in Patent Pools*, 27 HARV. J.L. & TECH. 421, 439–40 (2014).

87. FAIR STANDARDS ALL., PATENT POOLS AND LICENSING PLATFORMS IN SEP LICENSING 2 (2019) [hereinafter FSA PAPER], https://fair-standards.org/wp-content/uploads/2019/11/191104_FSA_Position_Patent_Pools.pdf [<https://perma.cc/SS2G-J5ZP>].

88. As described *infra* in this section, there have been allegations that the HEVC Advance pool contains patents that are also already included in the MPEG LA pool for the same H.265/HEVC standard. See *infra* note 104 and accompanying text.

89. MPEG LA DOJ Business Review Letter, *supra* note 48, at 11.

- The MPEG LA pool came into existence in 2014.⁹⁰ It generally follows the structure of MPEG LA’s earlier video codec pools.⁹¹ MPEG LA’s royalty rate is \$0.20 per unit—royalty free for the first 100,000 units—with an annual cap of \$25 million.⁹² It has over forty licensors⁹³ and over 300 licensees.⁹⁴
- The HEVC Advance pool was formed in 2015.⁹⁵ HEVC Advance’s rates range from \$0.20 per unit to \$1.60 per unit depending on the country, profile, and device, and there are also annual caps that differ according to various criteria.⁹⁶ It has over thirty licensors⁹⁷ and over 180 licensees.⁹⁸
- The Velos Media pool was formed in 2017.⁹⁹ Velos Media has not disclosed publicly its royalty rates, but there have been reports that the rates are over \$1.00 per unit with no

90. Press Release, MPEG LA, MPEG LA Offers HEVC Patent Portfolio License 1 (Sept. 29, 2014), <https://www.mpegla.com/wp-content/uploads/n-14-09-29.pdf> [<https://perma.cc/GS6S-UPF7>].

91. See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *82 (W.D. Wash. Apr. 25, 2013) (“[T]he evidence before the court is clear: the MPEG LA H.264 patent pool has achieved widespread adoption of the H.264 Standard.”).

92. MPEG LA, HEVC PATENT PORTFOLIO LICENSE BRIEFING 7 (2020), <https://www.mpegla.com/wp-content/uploads/HEVCweb.pdf> [<https://perma.cc/Y8CH-QQ6Z>].

93. See *HEVC: Licensors*, MPEG LA, <https://www.mpegla.com/programs/hevc/licensors/> [<https://perma.cc/K8C5-8G6V>].

94. *HEVC: Licensees and Affiliates in Good Standing*, MPEG LA, <https://www.mpegla.com/programs/hevc/licensees/> [<https://perma.cc/JCF7-JCDA>].

95. Press Release, HEVC Advance, HEVC Advance Launches to Rally Critical Mass of Stakeholders to Deliver Next Generation Video Experiences 1 (Mar. 26, 2015), <https://accessadvance.com/hevc-advance-launches-to-rally-critical-mass-of-stakeholders-to-deliver-next-generation-video-experiences/> [<https://perma.cc/Z55L-DRU5>].

96. See HEVC ADVANCE, ROYALTY RATE STRUCTURE FOR HEVC ADVANCE LICENSEES 2–4 (2020), <https://www.hevcadvance.com/pdfnew/RoyaltyRatesSummary.pdf> [<https://perma.cc/Z5D5-BEXS>].

97. See HEVC ADVANCE, LICENSOR LIST 2–4 (2020), <https://www.hevcadvance.com/pdfnew/LicensorList.pdf> [<https://perma.cc/4BNN-BMG8>].

98. HEVC ADVANCE, LICENSEE LIST 2–10 (2020), <https://accessadvance.com/pdfnew/LicenseeList.pdf> [<https://perma.cc/39YY-TE62>].

99. *Velos Media Launches New Licensing Platform to Drive Adoption of Latest Video Technologies, Improve Consumer Viewing Experiences*, VELOS MEDIA (Mar. 31, 2017), <http://velosmedia.com/2017/03/> [<https://perma.cc/3XSR-TGS2>].

caps.¹⁰⁰ It has six licensors¹⁰¹ and an unknown number of licensees—unlike the other two pools, Velos Media does not make this information publicly available.

An entity making devices that practice the H.265 standard, such as smartphones, laptops, or televisions, therefore would need to pay royalty fees up to over \$2.70 per unit for all three pools—and that is before accounting for SEP licenses for patent holders who license outside of those pools, such as Nokia and InterDigital.¹⁰² In contrast, an independent study estimated that the total per unit royalty for the *entire* H.265 standard should be no more than \$0.28 per unit, based on, among other things, the diminishing value of storage and bandwidth.¹⁰³ Even worse, there have been allegations that the HEVC Advance pool contains patents that are also already included in the MPEG LA pool, and that HEVC Advance does not provide for discounts or rebates to offset these overlapping patents.¹⁰⁴

The presence of multiple pools for a single standard, like with H.265, strips away some of the benefits from reducing transaction costs and contributes to a high royalty stack. To be fair, from a logistical and time-management perspective, it is still easier for licensees to negotiate with multiple pools than all the individual patent holders. But because the administrative benefits are fewer than negotiating with a single pool, there is an increased chance that the anticompetitive effects resulting from certain practices of each pool will outweigh their procompetitive benefits.

100. *Independent Economic Study Suggests HEVC Royalties Should Be Comparable to or Less than Rates for AVC*, UNIFIED PATENTS (Jan. 9, 2019), <https://www.unifiedpatents.com/insights/2019/1/9/independent-economic-study-suggests-hevc-royalties-should-be-comparable-to-or-less-than-rates-for-avc> [<https://perma.cc/AJ4T-SSAK>] [hereinafter *Study*, UNIFIED PATENTS].

101. *A Holistic Approach to Licensing*, VELOS MEDIA, <http://velosmedia.com/licensing/> [<https://perma.cc/4A95-L76P>].

102. *See Study*, UNIFIED PATENTS, *supra* note 100.

103. *See id.*

104. *See* Sophie Lawrance & Matthew Hunt, *FRAND in the UK (March 2019 Edition): PanOptis Takes on Apple; Vestel Issues Antitrust Litigation Against HEVC Patent Pool; Injunction Granted Against ZyXEL*, LEXOLOGY (Apr. 3, 2019), <https://www.lexology.com/library/detail.aspx?g=5d58b000-ce85-4553-b99d-fbb0b145bb4b> [<https://perma.cc/HX6L-66LS>].

V. ANTICOMPETITIVE RISKS OF CERTAIN SEP POOLS ARE HIGHER TODAY COMPARED TO THE POOLS REVIEWED BY THE DOJ IN HISTORICAL BUSINESS REVIEW LETTERS

Because the SEP licensing and assertion landscape is quite different today than it was when the prior DOJ Business Review Letters were issued—which the Avanci 5G DOJ Business Review Letter did not consider—the anticompetitive risks of certain SEP pools are greater than previously realized. In particular, more aggressive pool licensing practices that have come about in recent years fall into this category, such as (a) licensing agents refusing to comply with FRAND commitments made by the pool’s members; (b) mechanisms designed to deter adhering to FRAND commitments, such as restricting the entities that can be licensed within an industry, or structuring the pool in a way that deters individual licensing by pool members; (c) including non-SEPs to collect supra-FRAND royalties; and (d) the now widespread practice of unbundling SEP portfolios and transferring parts of the portfolio to multiple entities, who then collectively seek a higher royalty than before.

A. *Licensing Agents Refusing to Comply with FRAND*

A commitment to license on FRAND terms is not limited to the original patent holder who participated in the SSO’s standard-making process. It also extends to subsequent owners of the patent as well as other entities who license on behalf of the SEP-holder, such as a pool licensing agent.¹⁰⁵ Indeed, any other rule would simply allow SEP-holders to circumvent the FRAND commitments required by the SSO’s IPR policies by transferring their SEPs to another entity after standardization.¹⁰⁶

105. See, e.g., *Negotiated Data Solutions, LLC*, No. C-4234, 2008 WL 4407246, at *9–10 (F.T.C. Sept. 22, 2008); see also Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1158–59 (2013).

106. As a result, many SEP pools state that they comply with the FRAND commitment. See, e.g., *How We Work*, SISVEL, <https://www.sisvel.com/about-us/how-we-work> [<https://perma.cc/F8MY-2CKV>] (“Sisvel is committed to treating all companies fairly and as equals by licensing standard-essential patents on FRAND terms and conditions.”); *Q&A*, VELOS MEDIA, <http://velosmedia.com/technology/q-and-a/> [<https://perma.cc/53C7-48HC>] (“We will license on reasonable and non-discriminatory (RAND) terms”); *About*, VIA LICENSING, <https://www.via-corp.com/about/#overview> [<https://perma.cc/3GG3-W59Z>] (“Via’s flexible solutions build upon the traditional patent pool model to provide private, multi-polar IP licensing solutions that address today’s complex IP market. Some benefits of these fair, reasonable and transparent offerings include . . . [omitted listed items.]”); *FAQs – We’re Doing Things in a New Way*, AVANCI, <https://www.avanci.com/marketplace/#li-faqs> [<https://perma.cc/8U6W-JWU4>] (responding to the question “Is Avanci licensing on FRAND terms?” with “Absolutely. Avanci shares a commitment with the IoT ecosystem to

When push comes to shove and potential licensees seek to hold licensing agents to the FRAND promises of their members, some SEP pools have taken the position that, as long as the individual members make SEPs available for license individually, there is no obligation for the pool to do so. In other words, they claim the pool is offered for convenience, and entities unhappy with the pool's rates are free to negotiate with individual members.

For example, Continental Automotive Systems, a leading supplier of automotive components, filed a 2019 lawsuit against the Avanci pool and several of its members in connection with 2G, 3G, and 4G SEPs—which the DOJ asserted was not the licensing program that was the subject of the Avanci 5G DOJ Business Review Letter.¹⁰⁷ In its complaint, Continental alleged, among other things, that Avanci licenses only automotive manufacturers and refuses to license upstream suppliers like Continental.¹⁰⁸ In seeking to dismiss Continental's complaint, Avanci claimed that “Continental . . . [c]annot [p]lead [f]acts to [e]stablish that Avanci [i]s [c]ontractually [o]bligated to [o]ffer FRAND [r]ates to [t]hird-[p]arty [b]eneficiaries.”¹⁰⁹ Avanci further claimed that Continental's breach of contract claims must fail because they “are based on alleged FRAND commitments that the SEP owners—not Avanci—made to various SSOs.”¹¹⁰ Similar statements were made by Avanci during a status conference in early 2020.¹¹¹ Although the district court dismissed Continental's antitrust claims in September

make the latest technology available in a way that is fair, reasonable and non-discriminatory (FRAND).”); *see also* Avanci 5G DOJ Business Review Letter, *supra* note 48, at 20 (“Avanci represents that its current rates for the 4G Platform are FRAND and reflect input from both licensors and licensees, and that Avanci intends its 5G rates also to be FRAND.”). However, as described further in this section, Avanci otherwise claimed it cannot be held legally accountable for alleged breaches of FRAND.

107. As discussed *supra*, this did not stop Avanci from pointing to the DOJ 5G Business Review Letter as “supplemental authority” for its motion to dismiss Continental's antitrust claims. *See* Notice of Supplemental Authority for Defendant, *supra* note 63, at 1.

108. Complaint at 29, *Cont'l Auto. Sys., Inc. v. Avanci LLC*, No. 3:19-cv-02933-M (N.D. Tex. May 10, 2019), ECF No. 1.

109. Defendants' Notice of Motion and Motion to Dismiss First Amended Complaint at 27, *Cont'l Auto. Sys., Inc. v. Avanci, LLC*, Case No. 3:19-cv-02933-M (N.D. Tex. Feb. 12, 2020), ECF No. 270.

110. *Id.*

111. *See* Transcript of Rule 16 Conference at 32–33, *Cont'l Auto. Sys., Inc. v. Avanci, LLC*, Case No. 3:19-cv-02933-M (N.D. Tex. Jan. 23, 2020).

2020 for lack of standing, the court did not consider whether Avanci was legally obligated to comply with FRAND.¹¹²

These statements disavowing a FRAND obligation are troubling. Without the ability to enforce the FRAND commitments of the pool’s membership against the pool itself, there is no way for potential licensees to test the “FRAND-lyness” of the pool’s royalties.¹¹³ This would allow the pool to charge aggregate royalties in excess of FRAND—effectively evading its members’ individual obligations to license on FRAND terms—and then coordinate with its members to deter bilateral licensing on FRAND terms. More on how this can occur is addressed below.

B. Structural Mechanisms Designed to Deter Adherence to FRAND Commitments

In addition to licensing agents refusing to comply with the FRAND commitments of their members—including the original owners of those patents—the governing documents for some pools increasingly are placing restrictions that deter the pool and individual members from licensing those SEPs on FRAND terms.

First, some SEP pools contractually are prohibited by their members from licensing different levels of the supply chain and instead must license only manufacturers of end-user devices. Most end-user devices practicing standardized technologies are the product of a multi-step supply chain. Often the component that first practices the standardized technology is much further upstream than the consumer-facing end product. By limiting licensing exclusively to the end-user device level, pool members collectively agree to try to charge royalties against the most expensive product in the value chain—automobiles; refrigerators—even though the SEPs first are practiced in components further upstream—chipsets. Such behavior is a collective agreement to circumvent the IPR policies of certain SSOs¹¹⁴ and could violate both the reasonable and nondiscriminatory prongs of

112. *Cont’l Auto. Sys., Inc. v. Avanci, LLC*, No. 3:19-cv-02933-M, 2020 WL 5627224 (N.D. Tex. Sep. 10, 2020).

113. For example, even though Avanci represents on its website that it “shares a commitment . . . to make the latest standard wireless technology available in a way that is fair, reasonable, and nondiscriminatory,” *FAQs*, *supra* note 106, Avanci otherwise publicly disavows that it can be held to the FRAND commitment originally made by its SEP-holder members, or that its compliance with that commitment can be tested in a court of law. *See supra* notes 106–10 and accompanying text.

114. *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 876 (9th Cir. 2012) (“SSOs . . . require[e] members who hold IP rights in standard-essential patents to agree to license those patents to *all comers* on terms that are ‘reasonable and nondiscriminatory,’ or ‘RAND.’” (emphasis added)).

FRAND.¹¹⁵ Indeed, the 1997 MPEG LA DOJ Business Review letter approvingly found that the pool did not appear to “disadvantage particular licensees” because of the commitment to “nondiscriminatory Portfolio licensing.”¹¹⁶

For example, the Avanci platform mentioned above charges its royalties on a per vehicle basis.¹¹⁷ Additionally, the Avanci membership agreement specifically restricts the licensing of upstream products by Avanci—the components that enable the practice of the SEPs in the vehicle.¹¹⁸ But there is nothing different about the underlying licensed standardized wireless communications technology—2G, 3G, 4G—when it is used in a vehicle as opposed to the upstream components that actually implement that technology. The same is true with respect to other connected IoT devices that will soon be the targets of 5G licensing demands from SEP pools.

It is particularly curious that the DOJ’s Avanci 5G Business Review Letter did not find this aspect objectionable. Like the existing Avanci wireless SEP program, Avanci intends to license 5G SEPs only to car

115. *See id.* at 874, 884 (A FRAND promise to “grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions to use the patented material necessary . . . admits of no limitations as to who or how many applicants could receive a license . . .”); *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031 (9th Cir. 2015) (“To mitigate the risk that a SEP holder will extract more than the fair value of its patented technology, many SDOs require SEP holders to agree to license their patents on ‘reasonable and non-discriminatory’ or ‘RAND’ terms. Under these agreements, an SEP holder cannot refuse a license to a manufacturer who commits to paying the RAND rate.”).

116. MPEG LA DOJ Business Review Letter, *supra* note 48, at 10.

117. *Pricing, AVANCI*, <https://www.avanci.com/marketplace/#li-pricing> [<https://perma.cc/FRQ4-8S5L>].

118. According to the IoT Platform Master License Management Agreement, Avanci is granted “limited authority (i.e., in respect of certain field of use restrictions), to act as [an] agent to license” 2G, 3G, and 4G SEPs on behalf of the member licensors. *See Internet of Things (“IoT”) Platform Master License Management Agreement at 4, Fed. Trade Comm’n v. Qualcomm, No. 5:17-cv-00220-LHK (N.D. Cal. Jan. 14, 2019), ECF No. 1306* [hereinafter *Avanci Management Agreement*] (pinpoint citation is to the ECF page number). This “limited authority” is further illustrated by the template patent licenses incorporated in the main Agreement, which expressly limit “Licensed Products”—the only products subject to the License Grant—to “Vehicles” (as defined in the agreement). *See id.* at 33 (definition of “Licensed Products” under the 2G/3G patent license); *id.* at 33–34 (definition of “Vehicles” under the 2G/3G patent license); *id.* at 35 (2G/3G License Grant); *id.* at 58 (definition of “Licensed Products” under the 2G/3G/4G patent license); *id.* at 58–59 (definition of “Vehicles” under the 2G/3G/4G patent license); *id.* at 60 (2G/3G/4G License Grant).

manufacturers.¹¹⁹ The DOJ acknowledged that this was a “different approach” for patent licensing in the automotive sector where “vehicle manufacturers are often indemnified by their suppliers for intellectual property infringement.”¹²⁰ However, the DOJ failed to consider how Avanci’s refusal to license further upstream results in numerous inefficiencies that harm competition. For example, OEMs are forced to retain or otherwise occupy engineering resources duplicative of their suppliers to properly evaluate and value the SEPs at issue. Upstream licensing would also be more efficient in light of the number of smaller suppliers upstream and better understanding of the value of the technology at issue. Refusing licenses to non-OEMs thus forces the entire auto supply chain “to take on unnecessary transaction costs in order to obtain a license[.]” which consumers ultimately pay.¹²¹ And coercing non-OEMs to rely on indirect “have-made” rights further harms innovation by increasing costs for component manufacturers, fracturing their economies of scale.¹²²

Second, and relatedly, the governing documents for some SEP pools are structured in a manner that deters, if not renders impracticable, individual licensing. Those documents—which again represent a collective agreement amongst the pool’s members—sometimes contain “carrots and sticks” regarding individual infringement litigation initiated by pool members. Such provisions encourage individual members to pursue infringement litigation with the goal of settling that litigation with a license to the entire pool, such as agreeing to reimburse litigation costs when individual infringement actions result in a license to the pool. Under this scenario, an individual pool member can seek an injunction based on a handful, or even one, strong patent(s) to coerce the infringement defendant to take a license to the entire pool of much weaker patents, and then be reimbursed for its litigation costs as plaintiff.¹²³ Pools also may require that any individual licenses entered outside of the pool do not decrease the rates

119. See *5G Licensing for Connected Vehicles*, AVANCI, <https://www.avanci.com/5g> [<https://perma.cc/C2KZ-PV3V>].

120. Avanci 5G DOJ Business Review Letter, *supra* note 48, at 21.

121. Brief of Amici Curiae Continental Automotive Systems, Inc. et al. in Support of the Petition for Rehearing En Banc at 16, Fed. Trade Comm’n v. Qualcomm, Inc., 969 F.3d 974 (9th Cir. 2020) (No. 19-16122), ECF No. 263.

122. See Press Release, Fair Standards All., Fair Standard Alliance Statement re U.S. Department of Justice Business Review Letter on Avanci’s 5G Patent Pool 5 (Sept. 1, 2020), <https://fair-standards.org/wp-content/uploads/2020/09/200901-FSA-Statement-re-Avanci-BRL.pdf> [<https://perma.cc/C35D-2W2M>].

123. See, e.g., *Via Announces Settlement with Vestel*, BUS. WIRE (Jul. 18, 2016, 9:00 AM), <https://www.businesswire.com/news/home/20160718005222/en/Announces-Settlement-Vestel> [<https://perma.cc/CE2F-73CW>] (describing how Vestel signed a patent license with the Via pool for its advanced audio coding pool after four separate pool members sued a Vestel subsidiary for infringement and sought injunctions in Germany).

the pools charge, again decreasing the incentive of members to enter into individual licenses—especially those that would effectively compete with the royalty rates being charged by the pool. In both cases, the procompetitive safeguard noted in the DOJ Business Review Letters—that patents remain available for licensing outside of the pool—is eroded.¹²⁴

Again, the Avanci membership agreement is instructive. According to the IoT Platform Master License Management Agreement for 2G, 3G, and 4G, Avanci as the licensing agent can exercise its own discretion to notify the member licensors that a particular company is an “Unwilling Licensee.”¹²⁵ If a member licensor, or a group of member licensors, brings an infringement action against a company that Avanci has designated an “Unwilling Licensee,” Avanci may reimburse the member licensor’s litigation costs.¹²⁶ However, repayment is contingent upon the member licensor settling the litigation by convincing the “Unwilling Licensee” to enter into the Avanci pool-wide license, as opposed to a bilateral agreement, in which case the litigation costs will not be reimbursed.¹²⁷ Avanci also will reimburse the litigation costs of *multiple* members against a single OEM, provided at least one of those litigations result in a pool license.¹²⁸

The Avanci 5G program will function similarly in that “licensors that sue for patent infringement of an essential patent may request reimbursement of costs if the litigation results in a Platform license.”¹²⁹ The DOJ’s approval of this structure was predicated on the absence of evidence suggesting that “pool licensors collectively agreed not to license outside the pool despite this safeguard.”¹³⁰

But real world events show how such structural incentives play out in practice, which are consistent with an agreement to limit licensing outside of the pool. Between April 2019 and October 2019, three Avanci members—Conversant, Nokia and Sharp—filed nineteen separate infringement

124. See FTC & DOJ 2007 REPORT, *supra* note 66, at 80 (“A competitive concern would arise, however, if decisions on licensing outside a pool were part of a concerted attempt by the pool’s licensors to hinder the ability of others (outside the pool) to offer a competitive product or process.”).

125. See Avanci Management Agreement, *supra* note 118, at 13.

126. See *id.* at 14.

127. See *id.*

128. See *id.* at 14–15.

129. Avanci 5G DOJ Business Review Letter, *supra* note 48, at 6.

130. See *id.* at 17.

actions against the same automotive manufacturer, Daimler, in Germany.¹³¹ At least one of those members informed Daimler in writing that, to resolve its lawsuits, Daimler needs to enter a license with Avanci.¹³²

A similar coordinated attack by Avanci appears to have succeeded against Tesla. Between December 2019 and September 2020, five Avanci members launched infringement actions against Tesla around the world. These include two actions brought by Sisvel in federal court in Delaware,¹³³ an action brought by Sharp in Tokyo District court in Japan,¹³⁴ two actions brought by Conversant in federal court in Texas;¹³⁵ one action brought by Conversant in the Mannheim Regional Court in Germany,¹³⁶ and one action brought by Unwired Planet and Optis in federal court in Texas.¹³⁷ In March 2021, all of the actions in federal court had been stipulated by the parties to be dismissed.¹³⁸ Although there has been no public announcement, the simultaneous dismissal of those actions strongly suggests that Tesla has entered into a license with Avanci.

In the absence of a coordinated campaign—which even the Avanci 5G DOJ Business Review Letter noted would trigger competitive concerns—these serial attacks likely would not occur. The apparent Tesla settlement is the quintessential example of how competitors in an IP licensing market are now coordinating litigation strategy to pressure potential licensees to coerce pool licensing.

131. See Florian Mueller, *Munich Court Schedules First Hearings in Two Sharp v. Daimler Patent Cases for Late November, Another Anti-Antisuit Hearing for Early October*, FOSS PATENTS (Sept. 12, 2019), <http://www.fo SSPATENTS.COM/2019/09/munich-court-schedules-first-hearings.html> [<https://perma.cc/F3KU-43RE>]; Florian Mueller, *Conversant Joins Fellow Avanci Contributors Nokia and Sharp in Suing Daimler, Asserting Former Nokia Patent in Munich*, FOSS PATENTS (Oct. 8, 2019), <http://www.fo SSPATENTS.COM/2019/10/conversant-joins-fellow-avanci.html> [<https://perma.cc/6SK4-MHDF>].

132. First Amended Complaint at 45, *Cont'l Auto. Sys., Inc. v. Avanci LLC*, Case No. 3:19-cv-02933-M (N.D. Tex. July 23, 2019).

133. Case Nos. 1:19-cv-02288 and 1:20-cv-00655, see Florian Mueller, *Patent Troll Sisvel Files Second Case Against Tesla in Delaware, Asserting Nine Standard-essential Patents from Nokia, LG, and BlackBerry*, FOSS PATENTS (May 18, 2020), <http://www.fo SSPATENTS.COM/2020/05/patent-troll-sisvel-files-second-case.html> [<https://perma.cc/S6C5-YE8B>].

134. Florian Mueller, *Avanci Conflict With Tesla Escalates as Nokia-Fed Patent Troll Conversant Sues Tesla in Texas and Germany*, FOSS PATENTS (Apr. 29, 2020), http://www.fo SSPATENTS.COM/2020/04/avanci-conflict-with-tesla-escalates-as.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+fo SSPATENTS%2FzboT+%28FOSS+Patents%29 [<https://perma.cc/6W9M-NUNF>].

135. Case Nos. 6:20-cv-00323 and 6:20-cv-00324, W.D. Tex.

136. Mueller, *supra* note 134.

137. Case No. 2:20-cv-310 in E.D. Tex.

138. Florian Mueller, *Three Fateful Decisions Will Drive Up Tesla's Patent Licensing Costs: Avanci License, Austin Factory, and German Gigafactory*, FOSS PATENTS (Mar. 22, 2021), <http://www.fo SSPATENTS.COM/2021/03/three-fateful-decisions-will-drive-up.html> [<https://perma.cc/CCL7-AA2V>].

The restraints described above either require or incentivize behavior that is inconsistent with the FRAND commitment attached to the SEPs in the pool. This failure to adhere to FRAND can and does lead to anticompetitive harm¹³⁹ in the form of royalty prices untethered to the value of technology, which, in turn, threatens to cause companies making innovative devices—and their suppliers—to invest substantially fewer resources in research and development, among other things.¹⁴⁰

C. Including Non-SEPs to Collect Supra-FRAND Royalties

Another prominent problem is the inclusion of large numbers of nonessential patents in SEP pools. The DOJ Business Review Letters emphasized how the portfolios at issue were limited to technically essential patents, which mitigates against anticompetitive risk.¹⁴¹ The Department also relied on the statutory presumption that issued patents are valid.¹⁴² However, the practice of including invalid and nonessential patents in SEP pools is far more widespread than previously thought. SSOs do not independently verify whether a declared SEP is in fact essential to a standard. Instead, SSOs simply ask that patent holders unilaterally declare patents they believe to be essential, or that may become essential, before the standard is finalized. SEP-holders are therefore incentivized to over-declare patents,¹⁴³ both to maximize royalties and to err on the side of caution because of the potential penalties associated with not declaring a patent later found to be essential.

The overwhelming majority of SEPs, when tested in court, are found to be invalid, not essential, or not infringed. A 2013 study by one of this

139. See, e.g., *Broadcom Corp. v. Qualcomm, Inc.*, 501 F.3d 297, 313–14 (3d Cir. 2007); *U-blox AG v. InterDigital, Inc.*, No. 3:19-cv-001-CAB-(BLM), 2019 WL 1574322, at *3–4 (S.D. Cal. Apr. 11, 2019); *Microsoft Mobile Inc. v. Interdigital, Inc.*, No. 15-723-RGA, 2016 WL 1464545, at *3 (D. Del. Apr. 13, 2016).

140. For example, Continental and Denso, automotive suppliers who seek wireless communications SEPs for inclusion of devices they make in vehicles, have had to forgo innovations because of the inability to obtain FRAND licenses from SEP-holders. See Brief of Amici Curiae Continental Automotive Systems, Inc. and Denso Corporation in Support of Appellee Federal Trade Commission at 10, 12, *Fed. Trade Comm'n v. Qualcomm, Inc.*, 969 F.3d 974 (9th Cir. 2020) (No. 19-16122), ECF No. 162, <http://cdn.ca9.uscourts.gov/datastore/general/2020/02/27/19-16122-Continental%20Automotive%20Systems%20amicus%20brief.pdf> [<https://perma.cc/S99Q-WB5K>].

141. See MPEG LA DOJ Business Review Letter, *supra* note 48, at 10, 15; Avanci 5G DOJ Business Review Letter, *supra* note 48, at 15.

142. FTC & DOJ 2007 REPORT, *supra* note 66, at 71 (citing 35 U.S.C. § 282).

143. Bekkers et al., *supra* note 65, at 21.

Article's authors examined eighty-five adjudicated SEPs asserted by the three most litigious SEP owners between 2009 and 2013.¹⁴⁴ Revealingly, that study found that only one out of every eight SEPs tested in court was found valid and technically essential to practice the standard.¹⁴⁵ In other words, only *twelve percent* of the supposedly “crown jewel” SEPs that were hand-selected by litigation counsel succeeded when tested in court. A later study by this Article's authors from 2013 to 2017 included a similar analysis and likewise found that just eleven percent of SEPs originally asserted during that period were found valid and infringed.¹⁴⁶ This success rate is far less than the litigation success rate for non-SEPs.¹⁴⁷

The failure rate for alleged SEPs is alarming. If most of the patents in SEP pools are not necessary to practice the standard, it increases the likelihood that the pool contains substitute patents.¹⁴⁸ The primary concern regarding pools, set forth in the DOJ's Business Review Letters, is the elimination of competition between substitute technologies.¹⁴⁹

Additionally, including substantial numbers of nonessential patents in SEP pools allows SEP owners to extract supra-FRAND royalties from licensees. When justifying the royalties charged by their pools, many licensing agents tout the large number of SEPs contained therein. A recent press release from one major pool illustrates this point:

We are also extremely proud to now have 29 Licensors in our program, *with collectively over 10,700 patents* Our successful and continuing efforts to consolidate a substantial majority of the HEVC/H.265 patent landscape provides

144. JOHN (“JAY”) JURATA, JR. & DAVID B. SMITH, COMPETITION POL’Y INT’L, TURNING THE PAGE: THE NEXT CHAPTER OF DISPUTES INVOLVING STANDARD-ESSENTIAL PATENTS 5 (2013), <http://s3.amazonaws.com/cdn.orrick.com/files/CPI.October2013JurataSmith.pdf> [<https://perma.cc/QNN4-PWTT>].

145. *Id.*

146. MATTHEW G. ROSE, JAY JURATA & EMILY LUKE, E-COMPETITIONS, No. 84684, “BETWEEN A ROCK AND A HARD PLACE”: *UNWIRED PLANET V. HUAWEI* AND THE DANGEROUS IMPLICATIONS OF WORLDWIDE FRAND LICENSES 5–6 (2017), <http://s3.amazonaws.com/cdn.orrick.com/files/eCompetitionsAugust2017.pdf> [<https://perma.cc/GE8C-EVD2>].

147. Mark A. Lemley & Timothy Simcoe, *How Essential Are Standard-Essential Patents?*, 104 CORNELL L. REV. 607, 608 (2019).

148. In addition to problems with essentiality and validity, patents in pools may also be unenforceable due to implied waiver. Implied waiver occurs when the patentee's “conduct was so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such right has been relinquished.” *Hynix Semiconductor Inc. v. Rambus, Inc.*, 645 F.3d 1336, 1348 (Fed. Cir. 2011) (quoting *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1020 (Fed. Cir. 2008)). In a recent decision, the Federal Circuit endorsed the idea that breach of duty of disclosure to a SSO may constitute implied waiver, while leaving it to the district court to determine whether the doctrine applied. *Core Wireless Licensing S.A.R.L. v. Apple Inc.*, 899 F.3d 1356, 1368 (Fed. Cir. 2018).

149. See MPEG LA DOJ Business Review Letter, *supra* note 48, at 10 (“The continuing role of an independent expert to assess essentiality is an especially effective guarantor that the Portfolio patents are complements, not substitutes.”).

unmatched and *unprecedented value* to both our licensors and licensees, and we look forward to delivering *even greater value* by collaborating with additional patent owners who are still considering their options regarding their HEVC essential patents.¹⁵⁰

But if most of those patents are not necessary to practice the standard, then SEP pool owners are able to evade their FRAND commitments by using large numbers of unnecessary patents to collect royalties in excess of FRAND.

The One-Monopoly-Rent-Theorem does not affect this reality. That theorem states that, when certain conditions are met,¹⁵¹ a monopolist is unable to increase overall prices by tying a monopolized product with a second, more competitive product.¹⁵² This is because increasing the price of the otherwise competitive product would reduce the demand for the combined bundle.¹⁵³ Implicitly relying on this theory, the Federal Circuit, in *U.S. Philips Corp. v. International Trade Commission*, noted that a patent owner is not capable of increasing the royalties it collects by bundling essential and nonessential patents.¹⁵⁴ But a critical assumption underlying the One-Monopoly-Rent-Theorem is that one of the products is being supplied at a *monopoly price*.¹⁵⁵ Indeed, the essential patents at issue in the *Philips* case did not arise from a formal standards-setting process and were not subject to FRAND promises by their owners.¹⁵⁶ But the vast majority of SEPs, which are encumbered by FRAND commitments, are prohibited from being supplied at a monopoly price. The FRAND promise is designed precisely to avoid this outcome, reassuring potential adopters of the standard that they need not assume this risk.¹⁵⁷ In other words, the FRAND promise is designed to place limits on “charg[ing] what the market will bear,” and

150. *HEVC Advance Passes 10,000 Patent Milestone – Announces Toshiba Corp. Joins as Licensor*, YAHOO! FIN. (Mar. 30, 2020) (emphasis added), <https://finance.yahoo.com/news/hevc-advance-passes-10-000-043200988.html> [<https://perma.cc/MYS6-D5DU>].

151. Those conditions are (1) the two goods are consumed in fixed proportions; (2) the one good is supplied by a monopolist; and (3) the other good is in a competitive market. See, e.g., Brett Frischmann & Spencer Weber Waller, *Revitalizing Essential Facilities*, 75 ANTITRUST L.J. 1, 31 (2008); see generally Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397 (2009) (discussing the assumptions required for the single monopoly profit theory).

152. See Elhauge, *supra* note 151, at 403.

153. See *id.*

154. 424 F.3d 1179, 1191–92 (Fed. Cir. 2005).

155. See Frischmann & Waller, *supra* note 151, at 31.

156. See *U.S. Philips Corp.*, 424 F.3d at 1184, 1188.

157. See Contreras, *supra* note 20, at 42.

“whatever maximum amount a willing licensee is able to pay,”¹⁵⁸ in favor of fair, reasonable, and nondiscriminatory royalties.¹⁵⁹ As a result, and similar to other examples where the One-Monopoly-Rent-Theorem does not apply,¹⁶⁰ SEP pools are able to charge for unnecessary non-SEPs to obtain supra-FRAND royalties on their necessary SEPs.¹⁶¹

D. Using Pools to Exploit Unbundled SEP Portfolios

Unbundling is the act of breaking up a previously intact SEP-portfolio and distributing portions of it to other entities, such as pools, PAEs, or both, while retaining an interest in revenues generated by those other entities through assertion and licensing activities.¹⁶² Unbundling can be used as a mechanism to evade the FRAND commitment because, once a portfolio is unbundled, the resulting SEP-holders collectively can charge more in royalties than likely would have been possible absent the unbundling, or if the amount is greater than what a single licensor could have charged.

For example, when Nokia decided to exit the mobile phone business following slumping sales, it decided to monetize its patent portfolio by transferring some of its SEPs to two PAEs that went on an aggressive campaign to extract exorbitant royalties from companies making devices implementing cellular standards.¹⁶³ Nokia and the PAEs, allegedly acting at Nokia’s behest, could collectively seek more royalties in the aggregate than Nokia could have done with its unbundled portfolio. In another example, the PAE IP Edge acquired thirty patents from Siemens in 2018 and then asserted the portfolio through a series of lawsuits by plaintiff Q3

158. *U.S. Philips Corp.*, 424 F.3d at 1191–92.

159. The presence of the FRAND commitment also addresses the *Philips* court’s concern that patents that are not presently essential may become essential. *See id.* Under the applicable IPR policies of most SSOs, patent holders are required to submit FRAND declarations for any patents that *may become* essential. *See, e.g.*, NAT’L RSCH. COUNCIL, PATENT CHALLENGES FOR STANDARD-SETTING IN THE GLOBAL ECONOMY: LESSONS FROM INFORMATION AND COMMUNICATIONS TECHNOLOGY 38 (Keith Maskus & Stephen A. Merrill eds., 2013).

160. *See* Elhauge, *supra* note 153, at 400–02, 404, 419.

161. For this reason, *Saint Lawrence Communications LLC v. Motorola Mobility LLC*, which applied *Philips* and subsequent cases to reject a misuse defense on a SEP-holder’s insistence of worldwide licenses of FRAND-encumbered SEPs, was decided incorrectly. No. 2:15-CV-351-JRG, 2018 WL 915125 (E.D. Tex. Feb. 15, 2018).

162. *See generally* Fiona M. Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463 (2014) (discussing the advantages of different types of patent acquisitions).

163. *See, e.g.*, Amended Complaint at 2–3, *Apple, Inc. v. Acacia Rsch. Corp.*, No. 5:16-cv-07266 (N.D. Cal. Dec. 21, 2016), 2016 WL 7403907.

Networking LLC in both federal court and the International Trade Commission.¹⁶⁴

A simple illustration demonstrates how unbundling can lead to higher royalties. As part of its antitrust consent decree with the DOJ, IBM agreed to license any patents necessary to interoperate with its mainframe computers on a reasonable and nondiscriminatory basis.¹⁶⁵ Five years later, after expiration of those provisions, IBM voluntarily continued those patent licensing practices.¹⁶⁶ Under that voluntary program, IBM charged royalty rates of one percent of the selling price for each patent used, up to a maximum of five percent of the selling price, for each licensed product.¹⁶⁷ Under this framework, IBM offered a portfolio of thousands of patents for the same price it charged for licensing five patents.¹⁶⁸ Why? The answer is obvious: IBM recognized that once a certain royalty threshold was met, companies would not pay more to obtain a license to the additional patents in its portfolio.

Now consider what would have happened had IBM broken that same portfolio into multiple sub-parts. Each of the entities licensing those subsets of patents would be incentivized to obtain the maximum amount of royalties for each subset of patents, without adequately accounting for the aggregate royalty. Likewise, unlike the scenario where potential licensees were negotiating with IBM, the licensees would not have insight into the ultimate number of patents they need to license and thus would not benefit from assessing the value of the full unaggregated portfolio.¹⁶⁹ This risk is even greater when there is a lack of transparency in such unbundling efforts.¹⁷⁰

164. *IP Edge Files ITC Complaint, Breaking Form in Latest Campaign Over Portfolio of Former Siemens Patents*, RPX INSIGHT (Sept. 27, 2020), <https://insight.rpxcorp.com/news/63866-ip-edge-files-itc-complaint-breaking-form-in-latest-campaign-over-portfolio-of-former-siemens-patents> [<https://perma.cc/C5CG-C22X>].

165. Consent Decree, *United States v. Int'l Bus. Machs. Corp.*, No. 72-344 (S.D.N.Y. 1956), <http://www.cptech.org/at/ibm/ibm1956cd.html> [<https://perma.cc/2JRX-6G4V>].

166. See Peter C. Grindley and David J. Teece, *Managing Intellectual Capital: Licensing and Cross-Licensing in Semiconductors and Electronics*, 39 CAL. MGMT. REV. 8, 14, 37 n.28 (1997).

167. David J. Teece & Edward F. Sherry, *Standards Setting and Antitrust*, 87 MINN. L. REV. 1913, 1962 n.163 (2003); *IBM Policies & Principles*, IBM, <https://www.ibm.org/responsibility/policies> [<https://perma.cc/Q6HV-3VW6>].

168. See Teece & Sherry, *supra* note 167, at 1962.

169. See generally Mark S. Popofsky & Michael D. Laufert, *Antitrust Attacks on Patent Assertion Entities*, 79 ANTITRUST L.J. 445 (2014) (discussing the antitrust advantages and disadvantages to aggregated patent portfolios).

170. See Morton & Shapiro, *supra* note 162, at 476.

Unbundling can also take the form of a SEP-holder joining a pool to license some of its SEPs through the pool as an agent, while also transferring ownership of other SEPs to the pool's licensing agent. For example, at least some of the SEPs in the Velos Media H.265/HEVC pool are owned by Velos Media itself—and were transferred to Velos by members of that pool.¹⁷¹ A pool structured in this manner is designed to discourage licensing with individual pool members because the potential licensee would have to negotiate with two entities, including the pool administrator, if it wishes to license the prebundled portfolio of any particularly strong pool member. Not only does the unbundling require a separate transaction to obtain a license to the preunbundled portfolio of any individual member, but the licensing agent has a strong incentive to hold out for a license to all of the SEPs transferred to it—as opposed to limiting the license to only patents transferred by that one individual member. Again, the DOJ Business Review Letters emphasized the importance of the patents in the pool being available for licensing outside of the pool, which is increasingly difficult when a portfolio is unbundled this way.¹⁷²

Unbundling presents anticompetitive risks because it can result in licensees paying for pool licenses they otherwise would not need or desire. Given the fact, discussed above, that most alleged SEPs are neither essential nor valid,¹⁷³ some licensees would accordingly prefer to negotiate with individual members rather than take a pool license. Unbundling thus effectively runs the risk of coercing licensees to take a pool license that likely contains unnecessary patents¹⁷⁴—or worse, a pool license that contains substitutes that would otherwise compete on price.¹⁷⁵

171. See, e.g., *Unified Files IPR Against US 9,338,449 Owned by Velos Media, LLC*, UNIFIED PATENTS (Nov. 8, 2018), <https://www.unifiedpatents.com/insights/2018/11/8/unified-files-ipr-against-us-9338449-owned-by-velos-media-llc> [https://perma.cc/94SR-XXTA] (noting that a patent assigned to Velos was previously owned by Velos member Qualcomm).

172. See Anne Layne-Farrar & Michael Salinger, *The Policy Implications of Licensing Standard Essential FRAND-Committed Patents in Bundles*, in *COMPLICATIONS AND QUANDARIES IN THE ICT SECTOR* 37, 52 (Ashish Bharadwaj, Vishwas H. Devaiah, & Indranath Gupta eds., 2018).

173. See *supra* Section V.C.

174. As discussed above in Section V.C, to the extent the Federal Circuit has otherwise approved of bundling SEPs and non-SEPs in *Philips*, that decision is distinguishable because it was premised on the One-Monopoly-Rent-Theorem's assumption that one of the products is being supplied at a monopoly price. See *supra* Section V.C.

175. In addition to the risks addressed in this section, some pools use later-granted SEPs of trivial value to continue to extract royalties long after other, more valuable SEPs expire. This practice, referred to as “evergreening,” allows SEP-holders to continue collecting royalties for expired foundational patents because the standard has been updated to include patented, less important functionality. See, e.g., JOHN R. THOMAS, CONG. RSCH. SERV., R40917, PATENT “EVERGREENING”: ISSUES IN INNOVATION AND COMPETITION 1, 4 (2009).

VI. RECOMMENDATIONS

We conclude by considering recommendations for the legal analysis of pools, as well as precautions patent pools and their members should implement to mitigate against the anticompetitive risks discussed above. The recommendations below are not exhaustive, but instead form the baseline for a fair assessment of the state of SEP pool licensing today.

A. Legal and Economic Analysis

First, courts and competition law enforcement authorities should abandon the presumption that SEP pools do not increase market power relative to each of the SEP owners individually. As discussed in Section IV.A, SEP licenses impose competitive restraints on what other SEP-holders for the same standard can seek in royalties. Acknowledging how pooling SEPs can lead to augmented market power would help courts and agencies better understand other anticompetitive risks that SEP pools may engender.

Second, the burden of proof should be shifted when a SEP pool license contains any provision that prima facie creates incentives not to engage in individual licensing. Under that framework, the pool would have to show that the presence of such a provision does not mean the pool is otherwise anticompetitive. This approach is appropriate and necessary because many pools are structured or operate in a way that strongly disincentivizes individual licensing—the importance of which the historical DOJ Business Review Letters rightly emphasized to limit the ability of a pool’s licensors to shield the pool from competitive alternatives. Had the DOJ employed such an approach in the Avanci 5G Business Review Letter, it would have more seriously considered the potential anticompetitive effects of the litigation reimbursement provisions.

B. Precautions Pools Should Implement

SEP licensors participating in pools as well as their licensing agents should also consider implementing the structural and organizational changes described below to protect against anticompetitive harm.

First, SEP owners should require their licensing agents to expressly commit to abide by the FRAND encumbrances on the SEP owner’s patents, and that such commitments are reflected in the licenses the pool offers. An unequivocal statement along these lines would make it harder for

licensing agents to later retract such positions and claim no obligation to license under FRAND terms, as discussed in Section V.A above.

Second, SEP pools should provide a detailed explanation of how they interpret the FRAND commitments of their members, as well as how they ensure the valuation methodology applied to their portfolios yields an aggregate FRAND rate. The resulting transparency would reduce the competitive harms set forth in Sections V.B and V.D above.

Third, SEP pools should provide more information about the size of their portfolios, the number and identity of licensees, whether the rates charged vary according to licensees, and other historical licensing information.¹⁷⁶ Licensees and potential licensees should have full access to the historical rate and licensing information for the members' patents in the pool, such that the pool may provide complete information to potential and current licensees.¹⁷⁷ Augmented transparency measures should also mitigate against the potential double-dipping problem described in Section IV.B above where multiple pools cover the same patent(s).

Fourth, because of the vast over-declaration of SEPs described in Section V.C above, pools should implement a more vigorous process to ensure that *all* of the patents in the pool are valid and essential. For example, patent pools should conduct regular essentiality and validity audits and provide a mechanism for rates to be reduced in the event patents are found nonessential or invalid,¹⁷⁸ or if the licensee already is licensed to some portion of the pool's portfolio separately.¹⁷⁹ Additionally, such screening should be done by technical experts who truly are independent from the pool itself and compensated in a way that does not bias towards findings of essentiality. Even the Avanci 5G DOJ Business Review Letter acknowledged the importance of the independence of the evaluators, highlighting how Avanci's evaluators are paid "fixed fee regardless of the outcome of the evaluation."¹⁸⁰

Fifth, and finally, SEP pools should not be restricted from licensing at any level in a vertical supply chain.¹⁸¹ This requires not only making a

176. See FSA PAPER, *supra* note 87, at 7.

177. Even if pools do not provide historical rate and licensing information, pool administrators could require disclosures from licensors to the pool administrators and offer a commitment to pool licensees that the rates comply with FRAND.

178. See *id.* at 5.

179. Patent pools should also consider screening for enforceability to account for implied waiver.

180. Avanci 5G DOJ Business Review Letter, *supra* note 48, at 14 (citing Letter from Mark H. Hamer, Partner, Baker & McKenzie LLP, to Makan Delrahim, Assistant Att'y Gen., U.S. Dep't of Just. (Nov. 1, 2019), <https://www.justice.gov/atr/page/file/1298631/download> [<https://perma.cc/PQV6-D8VL>]).

181. See FSA PAPER, *supra* note 87, at 6.

license functionally available but also ensuring that the license offered is truly fair, reasonable, and nondiscriminatory—and in particular does not simply seek to capture value added by virtue of the higher price of the end-user device practicing the technology. This precaution would reduce the risk of harm described in Section V.B above. Again, the DOJ Avanci 5G Business Review Letter failed to consider this harm.

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The SEP licensing and assertion landscape has undergone dramatic changes in the time since the historical DOJ Business Review Letters were released, and the one business review letter issued since that time ignored these important developments. While it remains the case that SEP pools, like any other patent pool or cross-licensing arrangement, can produce some procompetitive benefits, those benefits often are diminished in practice. This is because (a) SEP pools can increase market power because SEPs effectively compete with other SEPs in a broader technology licensing market; and (b) SEP pools do not reduce transaction costs to the same extent when multiple pools for the same standard arise.

Moreover, whatever procompetitive benefits remain must be weighed against the serious risk of anticompetitive harm that now is apparent given the increasingly aggressive actions by some SEP owners and licensing agents acting on their behalf. Collectively, SEP-holders and licensing agents can and do engage in behavior that hinders licensees from obtaining SEP licenses on FRAND terms and conditions, despite the SEP-holder's original FRAND promise. This includes (a) the licensing agent expressly disavowing any FRAND obligation; (b) restrictions in pool governance documents regarding (i) entities' eligibility for a license based on their position in the supply chain and (ii) the incentives to forego bilateral negotiations; (c) including non-SEPs to collect supra-FRAND royalties; and (d) unbundling SEP portfolios.

Considering these real-world risks, courts and competition enforcement authorities should reconsider the traditional framework for evaluating SEP pools. In addition, SEP pools and licensing agents should implement changes to restore an appropriate balance between licensees and SEP-holders, which is in keeping with the intent of the FRAND commitment in the first place. Only when these necessary revisions are made will SEP pools return to the glory days of the past.

