

FRAND Wars and Section 2

BY JOSEPH KATTAN

THE PROPER ANTITRUST TREATMENT of patentees' breaches of licensing commitments to standard-setting organizations (SSOs) is now at the forefront of intellectual property antitrust law. Claims that patentees have breached commitments to license standard-essential patents (SEPs) on fair, reasonable, and nondiscriminatory or on reasonable and nondiscriminatory (collectively F/RAND) terms have been the subject of both government enforcement actions and private litigation. Among the participants in these legal battles are some of the biggest technology companies in the world, including Microsoft, Apple, Google, and Samsung. They have waged their battles in the courts and before the antitrust enforcement agencies in both the United States and Europe, and before the International Trade Commission, where owners of F/RAND-encumbered SEPs have sought exclusion orders to bar the importation of standard-compliant products. As SEP owners have increasingly sought to block the sale of standard-compliant products—typically in support of outsized royalty demands—standard implementers have responded by invoking F/RAND commitments as the basis for legal defenses, counterclaims, and affirmative claims.

The recent influx of cases involving F/RAND commitments reflects the critical importance of interoperability standards to the computing, networking, and communications industries, in which compliance with standards is a prerequisite for market participation. The criticality of SEPs in these industries has created opportunities for SEP owners to block rivals in downstream product markets, raise rivals' costs, or monetize the patent portfolios of businesses that are no longer competitive.

This article explains the framework within which SSOs require standard-setting participants to make F/RAND commitments and the nature of the bargain that patent owners make by encumbering their patents with such commitments. It then addresses the antitrust implications of F/RAND commitments. In particular, while courts have held that breach-

es of F/RAND commitments made deceptively with the intent to breach may violate Section 2 of the Sherman Act,¹ they have not reached the question whether a breach may violate Section 2 in the absence of evidence that the SEP owner made the commitment with the intent to breach. The Federal Trade Commission has taken the position that such breaches may violate Section 5 of the FTC Act,² but has suggested that they might be outside the reach of Section 2.³ This article shows that absence of deception at the SSO level is not an impediment to Section 2 liability.

The Hold-up Problem and F/RAND Commitments

The importance of interoperability standards is well known. Standards play a critical role in the computing, networking, communications, and electronics industries, among others, by enabling different manufacturers' products to exchange information with and work alongside each other. As one court has noted, standards "facilitate the sharing of information among purchasers of products from competing manufacturers, thereby enhancing the utility of all products and enlarging the overall consumer market."⁴ Standards also "lower costs by increasing product manufacturing volume" and "increase price competition by eliminating 'switching costs' for consumers who desire to switch from products manufactured by one firm to those manufactured by another."⁵ The adoption of standards may also accelerate the adoption of new technologies by reducing the risk for both technology companies and their customers that new technologies in which they invest may become obsolete.⁶

SSOs play a central role in facilitating the development and adoption of new standards by bringing together diverse stakeholders to develop standards cooperatively. It is commonly recognized, however, that the system of cooperative standard setting, which is fundamentally procompetitive, is vulnerable to abuse. An early generation of antitrust cases in the standards area involved incumbent firms' capture of the standard-setting process to exclude emerging technologies by making them noncompliant with industry standards.⁷ A more recent generation of cases has centered on allegations that SSO participants breached obligations to disclose their ownership of and intention to enforce SEPs against standard implementers.⁸ More recently still, the focus has shifted to F/RAND commitments, which most SSOs require as a condition of participation in standard development.

Joseph Kattan is a Partner at Gibson, Dunn & Crutcher LLP in Washington, DC. Ann Armstrong, Tom Hungar, Angelique Kaounis, Jim Murray, Dan Swanson, and the editors of ANTI TRUST magazine provided helpful comments on an earlier draft of this article. The author represents Intel Corporation in matters involving issues addressed in this article. The views expressed in this article are solely those of the author.

F/RAND commitments reflect a calculated trade-off on the part of patentees. Through the F/RAND commitment, a patentee contractually surrenders important legal rights, including the rights to refuse to license, to enjoin any willing licensee, and to charge supracompetitive royalties. In return, the patentee gains the ability to promote the use of its patented technologies within a standard and thereby compel every standard implementer to practice its patents, which empowers it to collect royalties from every standard implementer.⁹

A broad consensus exists today that standard setting is vulnerable to hold-up by SEP owners, a view that is shared by the Justice Department, FTC, and European Commission.¹⁰ Before a patent is incorporated into a standard, its owner realistically can expect to obtain only a royalty that reflects the incremental value of its patent over the next best technology.¹¹ If it seeks a higher royalty, potential licensees will turn to the alternative technology. And alternative technologies are usually available. As several important SSOs have noted, “There certainly can be and usually are competing technologies before the standard is adopted—and thus competition for inclusion in the standard.”¹²

After a standard is adopted, these alternatives are no longer available. Once firms develop standard-compliant products, a SEP owner that is unconstrained by a F/RAND commitment can extract higher royalties that capture standard implementers’ sunk investments in standard-compliant products.¹³ Such hold-up behavior can result in royalties that are “far in excess of the patent holder’s true economic contribution” and “act as a tax on new products incorporating the patented technology.”¹⁴

Further exacerbating this hold-up problem is the fact that standards typically incorporate numerous SEPs, often numbering in the thousands.¹⁵ Moreover, many complex products incorporate hundreds of standards. For example, according to one conservative estimate, a notebook computer incorporates at least 251 standards.¹⁶ When the number of SEPs that may read on complex products is combined with the numerous non-standard-essential patents that potentially may read on such products, the total number of patents that read on an individual product is staggering. According to a widely cited estimate, more than 250,000 patents may read on a typical smartphone.¹⁷ The multiplicity of standards and SEPs, in conjunction with the threat of hold-up, leads to the further problem of royalty stacking, whereby numerous patent owners demand unreasonably high royalties on the same product.¹⁸

This “Cournot complements” problem is aggravated by the ability of an owner of an insignificant patent that reads on one component of a complex multi-component product to seek an injunction against the manufacture and sale of the entire product. As a result, “even a very weak patent could command a high royalty in settlement from defendants afraid of gambling their entire product on a jury’s decision.”¹⁹ This can be seen in reported demands by some SEP holders for royalties exceeding 2 percent of the price of a finished prod-

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uct based on a small fraction of the SEPs reading on just one or two components of the product.²⁰ Indeed, in the only judicial decision to date to establish a F/RAND royalty rate, the SEP owner sought a F/RAND rate that was 100 times the F/RAND rate that the court ultimately established for patents related to the Wi-Fi standard.²¹

SSOs have devised the F/RAND commitment as a mechanism for curbing the monopoly power that otherwise would be created by the incorporation of a patent into a standard. As Judge Posner observed, “The purpose of the FRAND requirements . . . is to confine the patentee’s royalty demand to the value conferred by the patent itself as distinct from the additional value—the hold-up value—conferred by the patent’s being designated as standard-essential.”²² This *ex ante* value of the patent is generally viewed as the incremental value of the patented technology over alternatives that were available to the SSO.²³ For example, the IEEE-SA, a leading technology industry SSO, states that it “use[s] [] licensing commitments [a]s part of an effort to preserve the competitive benefits of *ex ante* technology competition.”²⁴ Because of this feature of F/RAND commitments, courts have concluded that these commitments provide “important safeguards against monopoly power”²⁵ or “a ‘bulwark’ against the unlawful accumulation of monopoly power that antitrust laws are designed to prevent.”²⁶

Patent Hold-Up and Monopoly Power

Unless constrained by F/RAND commitments, owners of SEPs for widely implemented standards possess monopoly power in markets for the technologies on which their SEPs read.²⁷ This is because it is impossible to design around SEPs and maintain standard compliance, and because the ability to shift to another technology is normally impeded by high switching costs, which produce a lock-in effect.²⁸ Thus, although “a patent does not necessarily confer market power upon the patentee,”²⁹ a standard’s foreclosure of substitute technologies confers such power when a SEP owner either is not bound by a F/RAND commitment or breaches a F/RAND commitment.

Owners of F/RAND-encumbered SEPs may find it profitable to breach their F/RAND commitments by making demands (backed up by implicit or explicit threats of an injunction) for the monopoly rents that they had agreed to forgo when they made the commitment. Whereas a F/RAND commitment is an agreement to accept a royalty that is reasonable in light of the available *ex ante* technological alternatives, a breaching firm seeks royalties that reflect the absence of *ex post* alternatives.³⁰ Moreover, whereas a F/RAND commitment embodies a requirement to license to any licensee that is willing to pay a F/RAND-compliant royalty,³¹ a breaching firm may refuse to license component suppliers, typically to secure higher royalties from downstream customers by taxing a larger royalty base on patents that would be exhausted by the component suppliers' sales to the downstream customers.³² And whereas the commitment to license on F/RAND terms entails acceptance of monetary compensation, and typically a license back under the licensee's own SEPs, as adequate compensation for F/RAND-encumbered SEPs,³³ a breaching firm may seek injunctive relief as a lever to extract royalties far in excess of the *ex ante* value.³⁴

Courts have held that SEP owners engage in exclusionary conduct reachable by Section 2 of the Sherman Act when they make F/RAND commitments that they do not intend to honor and subsequently breach those commitments.³⁵ The theory, as the Third Circuit articulated it in *Broadcom v. Qualcomm*, is that “[d]eception in a consensus-driven private standard-setting environment harms the competitive process by obscuring the costs of including proprietary technology in a standard and increasing the likelihood that patent rights will confer monopoly power on the patent holder.”³⁶ In this respect, F/RAND deception cases are similar to an earlier generation of standards cases that alleged that SEP owners gained monopoly power by misrepresenting to SSOs that they did not possess patents reading on a proposed standard but then asserted such patent rights after adoption of the relevant standard. In both types of cases, the SEP owner is alleged to have attained its monopoly power through the deception.

Wrongful hold-up behavior may occur, however, even when a SEP owner does not commit SSO deception. For example, a SEP owner may make a F/RAND commitment when its product business is thriving, when it expects to be both a SEP licensee and a SEP licensor, but then renege on that promise after its product business declines, at which point the opportunity to extract substantial royalties from locked-in standard implementers is no longer counterbalanced by the SEP holder's position as a SEP licensee in the product market.

In addressing breaches of F/RAND commitments that were not preceded by SSO deception, the FTC relied on an “unfair methods of competition” theory under Section 5 of the FTC Act rather than a monopolization theory under Section 2 of the Sherman Act. Furthermore, the Commission suggested that breaches of F/RAND commitments that are

not preceded by SSO deception might not be reached by Section 2. In an analysis to aid public comment of its consent order with Google, the FTC stated that courts “have found that patent holders may injure competition by breaching F/RAND commitments” in cases “involv[ing] allegations of bad faith or deceptive conduct by the patent holder before the standard was adopted,” but that “opportunistic conduct that takes place after a standard is adopted” is reached by Section 5 and, by implication, perhaps not by the Sherman Act.³⁷

Patent Hold-Up and Section 2

May a Breach Constitute Exclusionary Conduct? Modern antitrust is concerned with competitive effects and not with intent. And breaches of F/RAND commitments have the same competitive effect whether or not they are preceded by SSO deception. If the breach is so material that it would have caused the SSO (acting through standard-setting participants) to choose a different technology had the SSO anticipated it, the resulting competitive harm is the same whether or not the SEP owner originally intended to honor its commitment. That harm is the exclusion of the alternative technology that the SSO would have chosen had it anticipated the breach and the consequent imposition of supracompetitive royalties on standard implementers. Moreover, even a firm that makes a F/RAND commitment deceptively harms competition only if it later reneges. Deception by a firm that makes a F/RAND commitment with the intent to breach that commitment but then does not do so has no competitive significance. If the deceiving firm honors its F/RAND commitment, no anticompetitive exclusion occurs because the standard reflects the SSO's choice of technologies on the merits of their price and quality. This would suggest that, absent some doctrinal impediment, all breaches of F/RAND commitments should be subject to the same antitrust standard.

Given that a breach of a F/RAND commitment is a necessary element of a Section 2 violation for SEP abuse even in cases involving SSO deception, the breach itself must constitute exclusionary conduct. A breach of a F/RAND commitment thus is distinguishable from an ordinary tort, which normally would not give rise to an antitrust violation. It is also distinguishable from evasion of regulatory price controls that is unaccompanied by exclusion. As the Supreme Court held in *Discon*, such conduct does not give rise to cognizable injury because the alleged “consumer injury naturally flow[s] not so much from a less competitive market . . . as from the exercise of market power that is lawfully in the hands of a monopolist.”³⁸ Where the breached commitment results in the exclusion of another technology from the standard, consumer injury flows from competitive exclusion—a less competitive technology market in which SEP owners compete during the standard setting. Consequently, where a competing technology was excluded because of the breached commitment, the post-contractual opportunism represented by the breach is cognizable as exclusionary conduct.

This is the import of *Rambus, Inc. v. FTC*, where the D.C. Circuit rejected the FTC's theory of liability because the FTC did not require the exclusion of another technology at the SSO, but indicated that "lur[ing] the SSO away from non-proprietary technology"—something that the FTC had not established—may result in Section 2 liability.³⁹ In addition, beginning with *Eastman Kodak Co. v. Image Technical Services*,⁴⁰ courts have held that breach of implicit contracts could constitute exclusionary conduct. Subsequent case law appropriately limited liability under *Kodak* to cases in which the exercise of monopoly power after lock-in was not a foreseeable part of the bargain with customers.⁴¹ F/RAND breaches, of course, are breaches of express contracts with an industry-wide or broader than industry-wide scope, and thus are more appropriate for antitrust condemnation than the kind of post-contractual opportunism addressed in the *Kodak* line of cases. Moreover, because of the express nature of F/RAND commitments, these commitments create reasonable reliance interests that preclude a claim that implementers should have foreseen the breach.

Given that a breach is a necessary condition for a Section 2 violation, if a breach is insufficient absent *ex ante* deception, it must be because the breach is believed not to give rise to the acquisition of monopoly power, which under this theory is acquired much earlier, when the SSO incorporates a patent into a standard. Under this reasoning, breaching a F/RAND commitment may be anticompetitive but, standing alone, would not give rise to the wrongful acquisition of monopoly power. As shown below, however, this line of reasoning is unpersuasive.

When Is Monopoly Power Acquired? The essence of a F/RAND commitment is a promise to forgo the ability to control price and exclude competition that otherwise would be created by a patent's incorporation into a standard.⁴² In making the commitment, the SEP owner contractually agrees to divest itself of this monopoly power by giving up the ability to control price and exclude willing licensees. As discussed earlier, courts have described F/RAND commitments as "important safeguards against monopoly power"⁴³ or as "a 'bulwark' against the unlawful accumulation of monopoly power."⁴⁴ The F/RAND commitment is a safeguard against monopoly power because it divests the SEP owner of the unearned monopoly power that it would otherwise acquire from the incorporation of its patents into a standard.

The divestment of the monopoly power that a SEP owner would hold absent the F/RAND commitment has two important elements. The first is relinquishment of an unbridled right to exclude others from practicing the SEP. As Judge Posner observed, a firm that makes a F/RAND commitment "implicitly acknowledge[s] that a [FRAND] royalty is adequate compensation for a license to use that patent."⁴⁵ Although the circumstances under which the owner of a F/RAND-encumbered SEP may obtain an injunction are not completely settled, a broad consensus exists that an injunction should not issue against a prospective licensee

that is willing and able to pay a F/RAND-compliant royalty and to license back its own SEPs.⁴⁶ This represents a significant curtailment of the legal right that the SEP owner would possess absent its F/RAND commitment.

The second element is the relinquishment of the SEP owner's right to charge a supracompetitive royalty. This relinquishment is inherent in the broadly accepted *ex ante* standard for determining the appropriate F/RAND royalty. Under this approach, the reasonable royalty is measured by "the value of the patent *qua* patent," and not by the power that a SEP owner gains from the incorporation of the patent into a standard.⁴⁷ Most patents *qua* patents do not confer monopoly power, and this is particularly true in the context of SSOs that consider numerous competing technological alternatives in the process of developing a standard. As one SEP owner recently stated, SSO participants "typically" reach a consensus-based decision after considering "multiple proposed solutions to the same technical problem."⁴⁸ Where *ex ante* alternatives exist, the level of royalties that a SEP owner could obtain *ex ante* reflects the existence of technology competition, and the F/RAND commitment, unless breached, constrains the *ex post* royalty to the competitive level.⁴⁹ If *ex ante* alternatives did not exist, the SEP owner did not exclude a competing technology, and Section 2 is not violated.⁵⁰

Because the owner of a F/RAND-encumbered SEP that faces *ex ante* competition is contractually constrained to license its SEPs as if it still faces the competitive alternatives that existed before the standard's promulgation, it does not possess monopoly power so long as it honors its F/RAND commitment. This is a straightforward application of the *General Dynamics* doctrine, which recognizes that contractual commitments may obviate market power.⁵¹ Courts have ruled that firms bound by contractual commitments that prevent the exercise of monopoly power may lack monopoly power even if no substitutes exist for their products or technologies.⁵² Because a firm that adheres to its F/RAND commitment is constrained from exercising monopoly power by the commitment, it is only through a breach of the commitment that the breaching party may acquire, or dangerously threaten to acquire, monopoly power.

One objection to this analysis may be that the competitive exclusion that is essential for a Section 2 violation occurs when the SSO elects to use a SEP owner's patents, long before the breach. It might be argued, therefore, that the exclusionary conduct that brings this about must occur during the standard setting, and that Section 2 therefore is not violated absent SSO deception. But this argument is incomplete. It is true that competitive exclusion occurs when the SSO promulgates a standard, but that exclusion is not anticompetitive; it represents competition on the merits so long as the SEP owner adheres to its F/RAND commitment. This is because the SSO selected the SEP owner's patent based on its merits, taking into account price (F/RAND-compliant licensing terms) and quality. It is only when the SEP owner breaches its F/RAND commitment that the exclusion

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becomes anticompetitive because it is only at that point that the SEP owner's technology no longer excludes other available technologies on the basis of its merits. Thus, the exclusion has competitive significance only at the time of the breach.⁵³

This kind of time lag between conduct that is an indispensable element of the cause of action and the accrual of the cause of action may be found in other types of Section 2 cases. For example, in predatory pricing cases, purchasers' cause of action does not accrue until the recoupment phase, "[a]nd if the monopolist never consummates its scheme by taking this final step, the purchaser has no cause of action."⁵⁴ Another analogous type of case involves sham litigation based on lawfully obtained but invalid patents. Patentees may be held liable for initiating patent infringement actions "with knowledge that the patents, though lawfully-obtained, were invalid."⁵⁵ Similarly, the cause of action for *Walker Process* fraud requires assertion of the fraudulently obtained patents, which normally occurs years after the fraud.⁵⁶

Conclusion

Breaches of F/RAND commitments present a serious challenge to the system of cooperative standard setting. The threats to competition that they present are not dependent upon, or even related to, breaching parties' states of mind during the standard development. Modern antitrust is concerned with anticompetitive effects and not with intent. As shown in the foregoing discussion, antitrust liability for breaches of F/RAND commitments also depends on effects and not on intent. ■

¹ 15 U.S.C. § 2.

² 15 U.S.C. § 45.

³ Analysis of Proposed Consent Order to Aid Public Comment at 4, Motorola Mobility LLC, available at <http://ftc.gov/os/caselist/1210120/130103/googlemotorolaanalysis.pdf> [hereinafter FTC Motorola Analysis].

⁴ Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 308 (3d Cir. 2007).

⁵ Apple, Inc. v. Motorola Mobility, Inc., No. 11-cv-178bbc, 2011 WL 7324582, at *1 (W.D. Wis. June 7, 2011).

⁶ See Carl Shapiro, *Competition Policy in the Information Economy*, in COMPETITION POLICY ANALYSIS 109, 120 (Einar Hope, ed. 2000).

⁷ See, e.g., Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492 (1988); Am. Soc'y of Mech. Eng'rs, Inc. v. Hydrolevel Corp., 456 U.S. 556 (1982); Radiant Burners, Inc. v. Peoples Gas Light & Coke Co., 364 U.S. 656 (1961).

⁸ See Rambus Inc. v. FTC, 522 F.3d 456 (D.C. Cir. 2008); Dell Computer Corp., 121 F.T.C. 616 (1996) (consent order).

⁹ Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents* 5 (Mar. 30, 2013), available at <http://faculty.haas.berkeley.edu/shapiro/frand.pdf>.

¹⁰ See U.S. Dep't of Justice and U.S. Patent & Trademark Office, Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments 4 (Jan. 8, 2013), available at <http://www.justice.gov/atr/public/guidelines/290994.pdf> [hereinafter DOJ/PTO Statement]; FTC Motorola Analysis, *supra* note 3, at 2; Case No. COMP/M6381, Google/Motorola Mobility ¶¶ 105–108 (Feb. 13, 2012).

¹¹ See Joseph Farrell, John Hayes, Carl Shapiro & Theresa Sullivan, *Standard Setting, Patents, and Hold-Up*, 74 ANTITRUST L.J. 603, 613 (2007).

¹² Amicus Curiae Br. of the IEEE, VITA, OASIS Open, The Open Group, and PC Indus. Computer Mfrs. Group in Support of Neither Party, Broadcom Corp. v. Qualcomm Inc. at 22, No. 06-4292 (3d Cir. Dec. 19, 2006) [hereinafter SSO Amicus Br.] (emphasis omitted).

¹³ See, e.g., Farrell et al., *supra* note 11, at 613.

¹⁴ Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1993 (2007). For a contrary view, see Roger G. Brooks, *Patent "Hold-Up," Standard-Setting Organizations, and the FTC's Campaign Against Innovators*, 39 AIPLA Q.J. 435 (2011). Brooks argues, among other things, that patentees themselves are subject to hold-up because their technology development costs are sunk, and that the hold-up of standard implementers by SEP owners may be avoided if it is foreseeable. The existence of sunk costs, however, does not mean that SEP owners are subject to hold-up by implementers; every technological competition involves sunk research and development costs, and the potential for the loss of sunk costs. And while SEP owners forgo the right to earn monopoly rents when they make F/RAND commitments, they gain the ability to tax an entire industry for the use of patents that otherwise might not have been used by anyone. The foreseeability argument applies to "later entrants into markets," *id.* at 443–44, and assumes that "because foreseeable hold-up will result in sub-optimal investment by the potential victim," it is likely to be disadvantageous for the SEP owner. But Brooks offers neither evidence nor an economic model showing that charging a royalty rate that reflects the locked-in status of standard implementers is likely to be unprofitable because of its potential to reduce new entrants' investment in a standardized technology.

¹⁵ Lemley & Shapiro, *supra* note 14, at 1992.

¹⁶ Brad Biddle et al., *How Many Standards in a Laptop? (And Other Empirical Questions)* (2010), available at http://www.standardslaw.org/How_Many_Standards.pdf.

¹⁷ See, e.g., RPX Corp., Amendment No. 3 to Form S-1, Apr. 11, 2011, at 59, available at <http://www.sec.gov/Archives/edgar/data/1509432/000119312511101007/ds1a.htm>.

¹⁸ Lemley & Shapiro, *supra* note 14, at 1993.

¹⁹ Colleen V. Chien & Mark A. Lemley, *Patent Holdup, The ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 8 (2012).

²⁰ See, e.g., Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 877 (9th Cir. 2012) (2.25% for two standards); *Apple Winds Up Patent Case*, WALL ST. J., Aug. 17, 2012, available at <http://online.wsj.com/article/SB10000872396390444508504577595562396907388.html> (2.4% for 3G telephony standards).

²¹ Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233 (W.D. Wash., Apr. 25, 2013) (*Microsoft F/RAND Rate Decision*). There Motorola sought a royalty of \$3.00–\$4.50 per unit, *id.* at *212, but the court determined that the F/RAND rate was \$0.03471 per unit, *id.* at *303.

²² Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 913 (N.D. Ill. June 22, 2012), *appeal pending*, Nos. 2012-1548, 2012-1549 (Fed. Cir.). See Daniel

- G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1 (2005).
- ²³ See Farrell et al., *supra* note 11; see also Swanson & Baumol, *supra* note 22 (arguing that a reasonable royalty should also include licensors' recurring costs, such as the costs of administering a licensing program).
- ²⁴ SSO Amicus Br., *supra* note 12, at 10.
- ²⁵ *Broadcom*, 501 F.3d at 314.
- ²⁶ *Research In Motion Ltd. v. Motorola, Inc.*, 644 F. Supp. 2d 788, 795–96 (N.D. Tex. 2008).
- ²⁷ See *Broadcom*, 501 F.3d at 315; *Research In Motion Ltd.*, 644 F. Supp. 2d at 793; *Hynix Semiconductor Inc. v. Rambus Inc.*, No. CV-00-20905, 2008 WL 73689, at *9 (N.D. Cal. 2008); *Apple, Inc.*, 2011 WL 7324582, at *13; *Potter Instr. Co. v. Storage Technology Corp.*, 1980 U.S. Dist. LEXIS 14348 (E.D. Va. 1980).
- ²⁸ See U.S. DEP'T OF JUSTICE AND FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 38 (2007), available at <http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf>; see also *Broadcom*, 501 F.3d at 314.
- ²⁹ *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 45 (2006). See U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property § 2.2 (1995) [hereinafter IP Guidelines], available at <http://www.justice.gov/atr/public/guidelines/0558.pdf>.
- ³⁰ Under the prevailing *Georgia-Pacific* standard, patent damages are determined based on a hypothetical negotiation at the time of infringement. See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970). In the *Microsoft F/RAND Rate Decision*, 2013 U.S. Dist. *57–61, the court applied a modified version of *Georgia-Pacific*, under which the incremental value of the SEPs at issue over *ex ante* alternatives is only one of the factors analyzed.
- ³¹ See *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 884 (9th Cir. 2012) (commitment to International Telecommunications Union “to ‘grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions’” “admits of no limitations as to who or how many applicants could receive a license (‘unrestricted number of applicants’)”). F/RAND commitments to IEEE-SA use virtually identical language. See IEEE-SA Standards Board Bylaws § 6.2, available at https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf.
- ³² Despite a series of Federal Circuit decisions culminating in *Laser Dynamics v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2013), which held that patent license royalties typically must be based on the “smallest salable patent-practicing unit,” SEP holders continue to seek royalties based on the value of entire complex systems, such as an entire computer.
- ³³ According to Judge Posner, a firm that makes a F/RAND commitment generally waives the right to seek an injunction because “[b]y committing to license its patents on FRAND terms, [the SEP holder] committed to license . . . to anyone willing to pay a FRAND royalty and thus implicitly acknowledged that a royalty is adequate compensation for a license to use that patent.” *Apple, Inc.*, 869 F. Supp. 2d at 914. See also *Microsoft*, 696 F.3d at 877 (“By committing to license its patents on FRAND terms, Motorola committed to license the [patent] to anyone willing to pay a FRAND royalty and thus implicitly acknowledged that a royalty is adequate compensation for a license to use that patent”) (alteration in original).
- ³⁴ *Lemley & Shapiro*, *supra* note 14, at 1993. See also Carl Shapiro, *Injunctions, Hold-Up, and Patent Royalties*, 12 AM. L. & ECON. REV. 280 (2010).
- ³⁵ 15 U.S.C § 2. See, e.g., *Broadcom*, 501 F.3d 297; *Apple, Inc. v. Motorola Mobility, Inc.*, 2011 WL 7324582, at *13; *Apple Inc. v. Samsung Elecs. Co.*, No. 11-CV-01846-LHK, 2011 WL 4948567 (N.D. Cal. Oct. 18, 2011); *Research in Motion, Ltd.*, 644 F. Supp. 2d at 788.
- ³⁶ 501 F.3d at 314.
- ³⁷ FTC Motorola Analysis, *supra* note 3, at 4.
- ³⁸ *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 136 (1998). Strictly speaking, the Court held that the conduct in question could not constitute a per se violation of Section 1 of the Sherman Act.
- ³⁹ 522 F.3d 456, 466 (D.C. Cir. 2008).
- ⁴⁰ 504 U.S. 451 (1992).
- ⁴¹ See, e.g., *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430 (3d Cir. 1997). *Kodak* is distinguished from cases in which courts have rejected antitrust liability by the fact that “Kodak customers did not knowingly enter a contract that gave Kodak the exclusive right to provide parts and services for the life of the equipment.” *Newcal Indus., Inc. v. Ikon Office Solution*, 513 F.3d 1038, 1048 (9th Cir. 2008).
- ⁴² Monopoly power is often defined as “the power to control prices or exclude competition.” See, e.g., *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956).
- ⁴³ *Broadcom*, 501 F.3d at 314.
- ⁴⁴ *Research In Motion Ltd. v. Motorola, Inc.*, 644 F. Supp. 2d 788, 795–96 (N.D. Tex. 2008).
- ⁴⁵ *Apple*, 869 F. Supp. at 914; see also *Microsoft*, 696 F.3d at 884.
- ⁴⁶ See, e.g., DOJ/PTO Statement, *supra* note 10, at 7 (injunctive relief may be appropriate in limited circumstances “where the putative licensee is unable or refuses to take a F/RAND license and is acting outside the scope of the patent holder’s commitment to license on F/RAND terms”).
- ⁴⁷ *Apple*, 869 F. Supp. at 913. See also FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 23 (2011) (“Courts should cap the royalty at the incremental value of the patented technology over alternatives available at the time the standard was chosen.”), available at <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>.
- ⁴⁸ *Ericsson on FRAND and SEP Litigation*, submission to the International Telecommunications Union at 1 (Oct. 10, 2012), available at http://www.itu.int/dms_pub/itu-t/oth/06/5B/T065B0000340007MSWE.docx.
- ⁴⁹ If a standard without the feature covered by the SEP was a viable alternative *ex ante*, that alternative should be taken into account as well.
- ⁵⁰ See *Rambus*, 522 F.3d at 442; *Goldwasser v. Ameritech Corp.*, 222 F.3d 390, 397 (7th Cir. 2000) (for Section 2 to be violated “there must be some ‘exclusion’ of competitors”) (quoting *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 429 (2d Cir. 1945)).
- ⁵¹ See *United States v. Gen. Dynamics Corp.*, 415 U.S. 486, 502–03 (1974).
- ⁵² See, e.g., *Nat'l Reporting Co. v. Alderson Reporting Co.*, 763 F.2d 1020, 1024–25 (8th Cir. 1985) (possession of a contract granting firm 100 percent of the relevant market held insufficient to establish monopoly power where a contract provision required the contract to be rebid if the firm attempted to raise prices); *Alabama Ambulance Serv. v. City of Phenix City*, 71 F. Supp. 2d 1188, 1195 (M.D. Ala. 1999) (defendant lacked monopoly power because exclusive services contract prevented it from unilaterally raising prices); *Kirk-Mayer, Inc. v. Pac Ord, Inc.*, 626 F. Supp. 1168, 1171 (C.D. Cal. 1986).
- ⁵³ Cf. IP Guidelines, *supra* note 29, § 4.3 (implementation of a licensing restraint may give rise to antitrust violation “based on the factual circumstances prevailing at the time of the conduct at issue” even if licensing arrangement qualified for “safety zone” treatment when entered into).
- ⁵⁴ *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 295 (2d Cir. 1979). This is admittedly an imperfect analogy because competitors’ cause of action may accrue during the predation phase (*id.*), and typically does accrue during that phase.
- ⁵⁵ *Handgards, Inc. v. Ethicon, Inc.*, 601 F. 2d 986, 994 (9th Cir. 1979). See *Argus Chem. Corp. v. Fibre Glass-Evercoat Co.*, 812 F. 2d 1381, 1385 (Fed. Cir. 1987).
- ⁵⁶ *Walker Process Equip. Inc. v. Food Mach. and Chem. Corp.*, 382 U.S. 172 (1965).