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Standard Essential Patents, Trolls, and the Smartphone Wars: Triangulating the End Game

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Articles

Standard Essential Patents, Trolls, and the Smartphone Wars: Triangulating the End Game

Daryl Lim*

ABSTRACT

Few legal issues in recent years have captured the public's attention more powerfully than litigation over standard essential patents ("SEPs"). This Article explains how SEP litigation overlaps with two other major centers of patent litigation—litigation involving smartphones and patent assertion entities ("PAEs"). It observes that attempting to pre-empt patent hold-ups by imposing blanket *ex ante* disclosure obligations and royalty caps on standard setting organizations ("SSOs") is misdirected

*Assistant Professor, The John Marshall Law School. I am grateful to Logan Breed, Mike Carrier, Jorge Contreras, Tom Cotter, Sean Gates, Llew Gibbons, Allen Kamp, Josh Sarnoff, Greg Vetter as well as the participants of the AIPLA Computer and Electronic Summit, the McAndrews, Held & Malloy LLC Comprehensive IP Litigation Update, the IP Scholars' Roundtable, the IP on the Edge Conference, and the Faculty Work in Progress Workshop for their helpful comments and suggestions. I am also grateful to Dean Ralph Ruebner for the summer research grant awarded in support of this Article and to Judge Jim Holderman of the U.S. District Court for the Northern District of Illinois for his encouragement to take this article further. Many thanks also to Susanna Bagdasarova and her team at the *Penn State Law Review*, including Beth Robinson, Alexandra Cumings, and Emma Snyder, for their outstanding work in bringing this Article to print. All errors and omissions remain my own.

and counterproductive. Instead, the solution lies in clear and balanced rules to determine "fair, reasonable and non-discriminatory" (FRAND) royalties and injunctive relief. This solution will help parties make more realistic assessments of their options and help adjudicators resolve SEP disputes.

Correctly framed, implementers bear the burden of proving the breach of a FRAND commitment. FRAND royalties should, in the absence of comparable licenses, focus on apportioning the profits based on the relative importance of the patented technology in the covered product. Royalties should be measured at the time the standard is set but generally should not be discounted for the possibility of invalidity and non-infringement. Discriminatory licenses can be hard to detect, but targeted initiatives and improved transparency would make the task easier. Injunctions should be granted based the wording and intent of the relevant FRAND commitment, conduct of the parties, and proof that the technology drove the sales of the component or product on which the relief is sought. More broadly, courts must understand both the limits and opportunities of the antitrust and patent laws. While useful in arresting *ex ante* misconduct and attempts to elide FRAND commitments through patent assignments, antitrust is largely irrelevant in addressing patent hold-ups; patent law has a role in both improving patent quality and deterring vexatious litigation.

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INTRODUCTION

Modern society depends on standards, but we are often oblivious to them.[1] Standards allow us to switch seamlessly as our smartphones and tablet PCs connect to Wi-Fi over different hot spots.[2] Computer hardware standards like USB ensure that our flash drives work across different devices that march to a common drumbeat drawn up by standard setting organizations ("SSOs").[3] Standards also foster competition between compliant products, driving innovation and consumer choice.[4]

However, these benefits come with the risk of hold-ups.[5] Implementers invest in making their devices comply with a standard, which in turn makes it expensive to switch out of a standard. Owners of patents essential to using the standard—standard essential patents or "SEPs"—may opportunistically target non-licensed implementers with patent infringement suits and reinforce their royalty demands with

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1. *See* Jorge L. Contreras, *Implementing Procedural Safeguards for the Development of Bioinformatics Interoperability Standards*, 39 N. KY. L. REV. 87, 87 (2012) [hereinafter Contreras, *Implementing*] (describing Wi-Fi, USB, CD, DVD, PDF and HTML, which "have become household terms, and thousands of others ensure that a vast array of products and services connect and communicate seamlessly in a manner that is largely invisible to the consumer").

2. The Institute of Electrical and Electronics Engineers ("IEEE") established these standards. *See IEEE 802.3: Ethernet*, IEEE STANDARDS ASS'N, http://standards.ieee.org/about/get/802/802.3.html (last visited June 28, 2014).

3. *See, e.g.*, Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof, Inv. No. 337-TA-868, 2014 WL 2965327, at *74 (USITC June 13, 2014) (Final) (Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond) ("[European Telecommunication Standards Institute (ETSI)]" is an organization that creates globally applicable standards in the information and communication technology industry.").

4. U.S. DEP'T OF JUSTICE & U.S. PATENT & TRADEMARK OFFICE, POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS 3–4 (2013) [hereinafter POLICY STATEMENT], *available at* http://www.justice.gov/atr/public/guidelines/290994.pdf (describing how "voluntary consensus standards, whether mechanical, electrical, computer-related, or communications-related, have incorporated important technical advances that are fundamental to the interoperability of many of the products on which consumers have come to rely").

5. I use "hold-up" to mean a higher rate than what would normally accrue to the SEP owner. *See* Microsoft Corp. v. Motorola, Inc., C10-1823JLR, 2013 WL 2111217, at *10 (W.D. Wash. Apr. 25, 2013) ("The ability of a holder of an SEP to demand more than the value of its patented technology and to attempt to capture the value of the standard itself is referred to as patent 'hold-up.'").

injunctions that would expel the implementers' devices from the marketplace if they fail to comply.[6]

When a standard becomes ubiquitous, such as the 4G LTE (Long-Term Evolution) standard, using an alternative standard may not be an option.[7] The market power gained as a result of standardization allows SEP owners to demand a bounty from locked-in implementers in excess of the value of their patented technology—as much as 100 times the adjudicated value of the technology.[8] Hold-ups raise prices for consumers and harm implementers by reducing overall demand for standard compliant products.[9] They also jeopardize the benefits of collective standard setting as the incentive to participate becomes diminished.[10]

SSOs are aware of the risk of hold-ups. They require commitments from SEP owners to disclose patents "essential" to the standard and to license their technology on "fair, reasonable and non-discriminatory" ("FRAND") terms.[11] Often, this private ordering works well. SEP owners realize that they are trading higher per-unit prices for higher sales

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6. *See* Timo Ruikka, *"FRAND" Undertakings in Standardization—A Business Perspective*, 43 LES NOUVELLES 188, 192 (2008) ("An implementer faced with the threat of ceasing its business utilizing the standard is prepared to absorb a higher patent royalty cost than would have been the case if negotiations were conducted ex ante of implementer investment.").

7. *See* Damien Geradin, *Moving Away from High-Level Theories: A Market-Driven Analysis of FRAND*, 59 ANTITRUST BULL. 327, 354 (2014) (describing how the 4G LTE standard "increases the capacity and speed of wireless data networks, hence allowing users to use their devices for a larger set of capacity-hungry applications, such as video calls and mobile TV").

8. *See, e.g.*, *Microsoft Corp.*, 2013 WL 2111217, at *65, *100 (holding that, despite Motorola's request for a royalty of $3.00–$4.50 per unit, the F/RAND rate was $0.03471 per unit).

9. *Id.* at *10 ("In addition to harming firms that are forced to pay higher royalties, hold-up also harms consumers to the extent that those excess costs are passed onto them.").

10. *See* POLICY STATEMENT, *supra* note 4, at 4 (explaining that "it may induce prospective implementers to postpone or avoid making commitments to a standardized technology"); *see also Microsoft Corp.*, 2013 WL 2111217, at *11 ("Hold-up by one SEP holder also harms other firms that hold SEPs relating to the same standard because it jeopardizes further adoption of the standard and limits the ability of those other holders to obtain appropriate royalties on their technology.").

11. *See* Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 313 (3d Cir. 2007) ("To guard against anticompetitive patent hold-up, most [SSOs] require firms supplying essential technologies for inclusion in a prospective standard to commit to licensing their technologies on FRAND terms."). FRAND issues also arise in the context of non-SEP disputes. They fall outside of the discussion of this Article. *See, e.g.*, Einer Elhauge, *Treating RAND Commitments Neutrally*, J. COMPETITION L. & ECON. (forthcoming 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2398579 (arguing that lock-ins occur both in de facto standards set by SSOs and de jure ones set by independent private parties and should be treated similarly).

volumes. They charge just a few cents, and sometimes nothing at all, on the products that carry their technology.[12]

If an implementer wishes to use the standard, the SEP owner must be willing to negotiate a fair and reasonable rate. If the implementer refuses to pay that rate, the SEP owner can seek damages in an infringement suit.

When disputes occur, they reveal a stark disparity of views on the meaning of FRAND obligations.[13] Closely convoyed to the issue of FRAND royalties is whether and when SEP owners should be allowed to obtain injunctions or exclusion orders against implementers.[14]

The threat of hold-ups has become significant enough to warrant recognition by the judicial and executive branches of government and has elicited Congressional testimony by industry representatives, as well as a plethora of academic commentary.[15] Others, however, have warned

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12. *See* Robert D. Keeler, *Why Can't We Be (F)RANDS?: The Effect of Reasonable and Non-Discriminatory Commitments on Standard-Essential Patent Licensing*, 32 CARDOZO ARTS & ENT. L.J. 317, 328 (2013).

13. Jorge Contreras, *Guest Post: The February of FRAND*, PATENTLY-O (Mar. 6, 2012), http://www.patentlyo.com/patent/2012/03/february-of-frand.html (noting that the commitment to license a standard essential patent (SEP) on FRAND terms has "led to an increasing number of litigation claims alleging that one party or another . . . has failed to comply with its FRAND obligations."); *see* RICHARD T. RAPP & LAUREN J. STIROH, NERA, STANDARD SETTING AND MARKET POWER 9 (2002) (stating that, even though SEP owners commit to license SEPs on FRAND terms, the "typical SSO patent policy mandating that a royalty be 'fair, reasonable and non-discriminatory' gives little guidance for royalty determination because 'reasonable' can mean different things to a technology owner and a technology buyer").

14. Mark. A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV, 1991, 1993 (2007) ("Injunction threats often involve a strong element of holdup [when] . . . the defendant has already invested heavily to design, manufacture, market, and sell the product with the allegedly infringing feature.").

15. *See, e.g.*, *In re* Innovatio IP Ventures, LLC Patent Litig., No. 2303, 2013 WL 5593609, at *8 (N.D. Ill. Oct. 3, 2013). The court reasoned:

> Following that investment, switching to an alternative technology would be prohibitively expensive, and in any case would take the implementer out of compliance with the standard. In that situation, the patent holder can demand excessive royalties far beyond the fair value of its technological contribution to the standard, merely because the implementer has no choice but to pay.

Id.; *see, e.g.*, DONALD S. CLARK, U.S. FED. TRADE COMM'N, THIRD PARTY UNITED STATES FEDERAL TRADE COMMISSION'S STATEMENT ON THE PUBLIC INTEREST 3 (2012), *available at* http://www.ftc.gov/policy/policy-actions/advocacy-filings/2012/06/ftc-comment-united-states-international-trade. The statement read:

> Hold-up and the threat of hold-up can deter innovation by increasing costs and uncertainty for other industry participants, including those engaged in inventive activity. It can also distort investment and harm consumers by breaking the connection between the value of an invention and its reward – a connection that is the cornerstone of the patent system. The threat of hold-up may reduce the value of standard-setting, leading firms to rely less on the standard setting process and depriving consumers of the substantial procompetitive benefits of standard setting.

against "alarmist" conclusions of hold-ups and note that *ex ante* licensing and cross-licensing make hold-ups rare.[16]

The Article accepts that both views are plausible. Hold-ups stem from real FRAND disputes over SEPs, even if few disputes are actually adjudicated and fewer still result in injunctive relief. For example, a recent empirical study on operating companies in the smartphone industry revealed that less than a third of the patents involved in litigation are related to SEPs.[17] The same study also revealed that no injunctions had been granted to SEPs owned by operating companies.[18] This is a significant finding. However, what the study does not reveal is even more significant.

Id. See generally, e.g., Standard Essential Patent Disputes and Antitrust Law: Hearing before the Subcomm. on Antitrust, Competition Policy, and Consumer Rights of the S. Comm. on the Judiciary, 113th Cong. (2013) (statement of A. Douglas Melamed, Senior Vice-President & Gen. Counsel, Intel Corp.) [hereinafter Melamed], *available at* http://www.judiciary.senate.gov/imo/media/doc/7-30-13MelamedTestimony.pdf; POLICY STATEMENT, *supra* note 4; Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, 1 INNOVATION POL'Y AND THE ECON. 119, 120 (2001) (citing the risks to standardization because of a defective FRAND regime); Ashby Jones & Jessica Vascellaro, *Smartphone Patents: The Never-Ending War*, WALL ST. J., Apr. 12, 2012, at B.1.

16. *See* Geradin, *supra* note 7, at 334; *see, e.g.*, Joshua D. Wright, *SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts*, 21 GEO. MASON L. REV. 791, 801–802 (2014) ("Despite the amount of attention patent holdup has drawn from policymakers and academics, there have been relatively few instances of litigated patent holdup among the thousands of standards adopted."); Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof, Inv. No. 337-TA-868, 2014 WL 2965327, at *81 (USITC June 13, 2014) (Final) (Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond) ("While there may be a hypothetical risk of holdup, we have evidence that it is not a threat in this case, or in this industry."); Letter from Thomas E. Goode, Gen. Counsel, Alliance for Telecomm. Indus. Solutions, to Donald S. Clark, Sec'y, Fed. Trade Comm'n 1 (June 14, 2011), *available at* http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00015%C2%A0/00015-60529.pdf (noting it "has not experienced the holdup problem, nor has any such problem impeded in any way ATIS' standards development efforts"); AM. NAT'L STANDARDS INST., ANSI RESPONSE TO REQUEST FOR INFORMATION RE: FEDERAL AGENCIES' PARTICIPATION IN STANDARDS AND CONFORMITY ASSESSMENT ACTIVITIES 12 (2011), *available at* http://www.ftc.gov/policy/public-comments/comment-00006-33 (noting that "for only a relatively small number [of standards] have questions ever been formally raised regarding the ANSI Patent Policy, including issues relating to improper 'hold up'"); Letter from Professor Jay P. Kesan, Univ. of Ill. at Urbana-Champaign, Coll. of Law, to Patrick J. Roach, Fed. Trade Comm. 2 (June 14, 2011), *available at* http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00022%C2%A0/00022-60546.pdf (finding "there is little or no empirical evidence indicating that there is a significant problem with patent 'hold-up'").

17. Kirti Gupta & Mark Snyder, *Smart Phone Litigation and Standard Essential Patents* 4 (Hoover Institution, Working Paper No. 14006, 2014), *available at* http://hoohila.stanford.edu/ip2/wp14006.html.

18. *Id.*

Operating companies make up a diminishing share of the plaintiff profile, falling sharply from 70 percent to 33 percent between 2010 and 2013,[19] with the rise of non-practicing entities ("NPEs") accounting for the decrease. Between 65 and 90 percent of all patent cases settle, which means that the data from the study may grossly underestimate the severity of the problem as defendants negotiate their settlements under the threat of patent hold-ups.[20] Indeed, courts may have refrained from granting injunctions on SEPs precisely because of concerns raised about hold-ups.[21]

The continuing wave of cases and commentary also indicates that while substantial progress has been made, the law has yet to provide a satisfactory framework for resolving these disputes. This Article fills the gap by offering a framework to understand and resolve SEP disputes more effectively. As will be seen, many of these disputes have involved smartphones and some have involved NPEs.

The Article begins by explaining how standard setting works and why FRAND disputes are particularly prevalent in the smartphone realm. It also explains the rise of a type of NPE, patent assertion entities ("PAEs"), and the role they play in smartphone and SEP litigation. In Part II, the Article observes that conventional wisdom urging blanket reform of SSO intellectual property ("IP") policies is misdirected and counterproductive. The legal and technical characteristics of SSOs make SSOs an inappropriate venue to prevent hold-ups through mandatory disclosure obligations and royalty-caps. FRAND disputes are more similar to disputes that routinely take place in patent litigation over patent validity. Only a small percentage of bilateral negotiations result in litigation. Rather than attempt to preempt every contingency with complex SSO rules, it is more efficient to place the burden of

19. *See* Fiona M. Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463, 465–66 (2014) (stating that from 2010 to 2013, the share of all patent lawsuits brought by PAEs more than doubled, from 30% to 67%); *see also* Sara Jeruss, Robin Feldman, & Tom Ewing, *The AIA 500 Expanded: The Effects of Patent Monetization Entities* 9 (Univ. of Cal. Hastings, Research Paper No. 45, 2013), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2247195 (finding that PAEs filed 58.7% of all patent cases in 2012, up from 24.6% in 2007).

20. *See* John R. Allison, Mark A. Lemley & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, TEX. L. REV. 16 (forthcoming 2015), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2442451; *see also* Jay Kesan & Gwendolyn Ball, *How Are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 WASH. U. L. REV. 237, 264 (2006) (finding that "approximately 80% of patent cases settle").

21. To put it differently, countries make their decisions based on the possibility that the risk of nuclear war might manifest itself, thereby giving countries holding those weapons leverage in negotiations, even if such a war has not occurred. I am grateful to Jorge Contreras for this insight.

determining rights and liabilities on those most interested—the parties in dispute. SSOs may then clarify their FRAND obligations based on guidance from the courts.

In Part III, the Article proceeds to present a framework to navigate the FRAND inquiry. Under an improved framework, implementers bear the burden of proving a FRAND breach. Those royalties should, in the absence of comparable licenses, focus on apportioning the profits based on the relative importance of the patented technology in product covered by the standard. Royalties should be measured at the time the standard is set but generally should not be discounted for the possibility of invalidity and non-infringement. Discriminatory licenses can be hard to detect, but that task can be made easier with targeted initiatives to improve transparency.

Turning to injunctions, Part IV explains why FRAND commitments should not prevent SEP owners from getting injunctions. Injunctions should be granted based on the wording and intent of the relevant FRAND commitment, conduct of the parties, and proof that the technology drove the sales of the component or product on which the relief is sought.

Finally, in Part V, the Article completes the discussion by considering the complementary roles that antitrust laws and patent laws can play in SEP litigation. It explains why antitrust laws are generally appropriate in policing anticompetitive conduct taking place before the standard is set and attempts to elide FRAND obligations through patent assignments. It also explains why it is unwise to use antitrust laws afterwards in addressing patent hold-ups. The Article also identifies two problem areas best targeted by patent law: improving patent quality and deterring vexatious litigation, with particular reference to nuisance suits by PAEs.

I. STANDARDS, SMARTPHONES, AND PATENT ASSERTION ENTITIES

Technology standards are set in two main ways. Under one approach, some companies release a technology that becomes a de facto standard through market adoption.[22] An example of this standard is Adobe's Portable Document Format (".PDF").[23]

22. *See* Anne Layne-Farrar, *Moving Past the SEP RAND Obsession: Some Thoughts on the Economic Implications of Unilateral Commitments and the Complexities of Patent Licensing*, 21 GEO. MASON L. REV. 1093, 1095 (2014) (discussing patent hold-ups in the context of *de facto* SEPs).

23. *See* Nadia Soboleva & Lawrence Wu, *Standard Setting: Should There Be a Level Playing Field for All FRAND Commitments?*, CPI ANTITRUST CHRONICLE, Oct. 2013, at 1, 3.

Standards may also be set by a group of companies and institutes, or SSOs, who collaborate through consortia on sets of technical specifications or an individual product. For example, the European Telecommunications Standards Institute ("ETSI") develops global standards for information communications technologies ("ICT"), which include e-commerce, mobile devices, networking, media content and distribution.[24] Another example is the Institute of Electrical and Electronic Engineers ("IEEE") that develops standards, including those for wireless local area networks ("W-LAN" or "Wi-Fi").[25]

In recent years, courts have increasingly been called upon to decide what a FRAND commitment means in the context of SEP litigation.[26] FRAND disputes typically arise from a SEP owner suing a vendor or manufacturer of a standard-compliant product who may or may not be an SSO member.[27] This section explains how standard setting works, and why SEP litigation has become intertwined with litigation involving PAEs and smartphones.

A. Standard Setting and the FRAND Commitment

SSOs are voluntary membership groups. Participants often hold patents that cover one or more aspects of the standard and meet to discuss and adopt mutually acceptable standards to ensure interoperability. SSOs have IP policies that encourage SEP owners to

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24. *About ETSI*, ETSI, http://www.etsi.org/about (last visited July 21, 2014). Standardized technologies include Global Systems for Mobile Communications (GSM), Wideband Code Division Multiple Access (WCDMA), and Long-Term Evolution (LTE) technologies. *Mobile Communications*, ETSI, http://www.etsi.org/technologies-clusters/technologies/mobile (last visited July 21, 2014). ETSI and five other SSOs develop globally applicable technical specifications for mobile systems, such as 3G (third generation) and 4G (fourth generation). *See About 3GPP Home*, 3GPP, http://www.3gpp.org/about-3gpp/about-3gpp (last visited July 21, 2014).

25. *IEEE at a Glance*, IEEE, http://www.ieee.org/about/today/at_a_glance.html (last visited July 21, 2014).

26. *See, e.g.*, Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 875 (9th Cir. 2012); Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 303 (3d Cir. 2007); *In re* Innovatio IP Ventures, LLC Patent Litig., No. 2303, 2013 WL 5593609, at *1 (N.D. Ill. Oct. 3, 2013); Apple, Inc. v. Motorola Mobility, Inc., No. 11-cv-178-bbc, 2012 WL 5416941, at *2 (W.D. Wisc. Oct. 29, 2012); Apple, Inc. v. Samsung Elecs. Co., No. 11-CV-01846-LHK, 2012 WL 2571719, at *1 (N.D. Cal. June 30, 2012); Microsoft Corp. v. Motorola, Inc., 864 F. Supp. 2d 1023, 1030 (W.D. Wash. 2012); Apple, Inc. v. Motorola Inc., No. 1:11-cv-08540, 2012 WL 1959560, at *11 (N.D. Ill. May 22, 2012). For a table listing FRAND litigation, *see* Jorge Contreras, *Fixing FRAND: A Pseudo-Pool Approach To Standards-Based Patent Licensing*, 79 ANTITRUST L.J. 47, app. 1 (2013).

27. Jorge L. Contreras, *A Market Reliance Theory for FRAND Commitments and Other Patent Pledges*, 2014 UTAH L. REV. (forthcoming 2015) (manuscript at 20), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2309023 [hereinafter Contreras, *Market Reliance Theory*].

disclose patents they consider essential before the standard is adopted.[28] Given their heterogeneous membership, and more importantly, the fact that they serve both technology owners and implementers, SSOs also have the incentive to stay neutral in disputes.[29]

SSOs require SEP owners to agree to license their patents on FRAND terms to SSO members, and sometimes, to outside implementers.[30] Implementers, such as smartphone manufacturers like Samsung, must obtain permission from all SEP owners in order to use the relevant standard legally, offering a cash payment, running royalties, or cross-licensing.[31] The FRAND commitment is intended to facilitate widespread adoption of the technology by protecting implementers against hold-ups by SEP owners after an industry has adopted a standard. The FRAND commitment also provides reasonable rewards to those who invested in the research, development, and commercialization of technologies used in the standard.[32]

From the perspective of patentees, the ability to infuse an industry-wide standard with patented technology encourages them to risk developing the costly technology and make their standards available on FRAND terms.[33] Standards greatly multiply the number of potential

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28. *See, e.g.*, AM. NAT'L STANDARDS INST., GUIDELINES FOR IMPLEMENTATION OF THE ANSI PATENT POLICY 5 (2012), *available at* http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/ANSI%20Patent%20Policy%20Guidelines%202012%20final.pdf (noting that early disclosure of patents "is likely to enhance the efficiency of the process used to finalize and approve standards" and "permits notice of the patent to the standards developer . . . in a timely manner, provides participants the greatest opportunity to evaluate the propriety of standardizing the patented technology, and allows patent holders and prospective licensees ample time to negotiate the terms and conditions of licenses . . . .").

29. *Id.*

30. *See, e.g.*, ETSI RULES OF PROCEDURE, Annex 6: ETSI Intellectual Property Rights Policy § 6.1 (Mar. 20, 2013) [hereinafter ETSI IPR Policy], *available at* http://portal.etsi.org/directives/32_directives_oct_2013r.pdf. Section 6.1 requires:

> When an ESSENTIAL IPR relating to a particular STANDARD or TECHNICAL SPECIFICATION is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner to give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licences on fair, reasonable and non-discriminatory terms and conditions under such IPR . . . .

Id.; *see also* IEEE-SA STANDARDS BOARD BYLAWS § 6.1 (Dec. 2012), *available at* http://standards.ieee.org/develop/policies/bylaws/sect6-7.html (requiring the SEP owner to submit "a "Letter of Assurance" stating "that a license for a compliant implementation of the standard will be made available to an unrestricted number of applicants on a worldwide basis without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination").

31. *See* Geradin, *supra* note 7, at 329.

32. *See, e.g.*, POLICY STATEMENT, *supra* note 4, at 5.

33. *See* Melamed, *supra* note 15, at 9. Melamed explained:

customers for both SEP owners and implementers.[34] Thus SSOs function like beekeepers and fruit farmers who provide an environment for insects and plants to interact, pollinate, and produce a harvest of fruit and honey.[35]

Despite the participation of sophisticated patent owners and implementers, key contractual terms are usually mere guidelines, if that.[36] Most are silent as to disclosure obligations.[37] SSO policies also do not provide guidance on how to identify essential patents or divide

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> When a standard is widely used, its technologies are widely used; and the SEP holders thus have vast commercial opportunities to license their patents, which otherwise might never be used by anyone. Wi-Fi SEP holders, for example, can collect royalties on billions of Wi-Fi chips, which are used in a variety of products, including notebook PCs, smartphones, printers, cameras, televisions, medical devices, home appliances, and a host of others.

Id.

34. Peter Strand, *RAND Royalties Refreshed: A Primer for a Modified Georgia-Pacific Patent Royalties Test? (Part I),* IPQ (Shook, Hardy & Bacon, LLP, Washington, D.C.), May 2013, at 2 ("SSOs promote widespread adoption of their standards by incorporating technology that is attractive and cost-effective for companies adopting their standard.").

35. *See, e.g.*, Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217, at *12 (W.D. Wash. Apr. 25, 2013) ("[T]o induce the creation of valuable standards, the RAND commitment must guarantee that holders of valuable intellectual property will receive reasonable royalties on that property."); ETSI IPR Policy, *supra* note 30, § 3.1. Section 3.1 states:

> It is ETSI's objective to create STANDARDS and TECHNICAL SPECIFICATIONS that are based on solutions which best meet the technical objectives of the European telecommunications sector, as defined by the General Assembly. In order to further this objective the ETSI IPR POLICY seeks to reduce the risk to ETSI, MEMBERS, and others applying ETSI STANDARDS and TECHNICAL SPECIFICATIONS, that investment in the preparation, adoption and application of STANDARDS could be wasted as a result of an ESSENTIAL IPR for a STANDARD or TECHNICAL SPECIFICATION being unavailable. In achieving this objective, the ETSI IPR POLICY seeks a balance between the needs of standardization for public use in the field of telecommunications and the rights of the owners of IPRs.

Id.

36. Currently one SSO, Versa Module Europa bus International Trade Association (VITA), requires patentees to disclose terms or maximum royalties *ex ante* or risk forgoing royalties later. *See Disclosure and Licensing of Patents in Standards*, VITA, http://www.vita.com/disclosure/VITA%20Patent%C20Policy%C20section%C2010%20draft.pdf (last visited July 4, 2014); *see generally* Anne Layne-Farrar, Proactive or Reactive? An Empirical Assessment of IPR Policy Revisions in the Wake of Antitrust Actions (2014) (unpublished manuscript) (on file with author). But that requirement is controversial. Commentators have raised concerns that implementers will tacitly collude to drive down prices through a group boycott. Michele K. Herman, *How the Deal Is Done Part 1: Negotiating Standards-Related Patent Licenses*, 3 LANDSLIDE 35, 38 (2010) ("While the mere disclosure of license terms to a group of prospective licensees and other interested parties is unlikely to raise antitrust concerns, the subsequent conduct of those parties in evaluating, discussing, and making decisions based on the disclosure will likely raise antitrust concerns.").

37. *See* Herman, *supra* note 36, at 38.

economic rents.[38] Some even allow SEP owners to couch FRAND commitments on their own terms[39] or explicitly disclaim responsibility for identifying SEPs, their validity, or any role in policing compliance with FRAND obligations.[40] Other SSOs like the IEEE allow voluntary disclosure of terms pre-standardization.[41] SSOs are generally small non-profits, and they are not a party to the FRAND disputes.[42]

The tendency of SEP owners to over-disclose their patents, thereby distorting FRAND royalty rates, exacerbates the risk of hold-ups due to incomplete contracting.[43] Definitions of what is "essential" vary among SSOs. Some SSOs subject more patents to FRAND, while others like the Bluetooth standard[44] subject only a few patents to the standard.[45] Studies have shown that only 21 to 27 percent of declared SEPs are actually essential.[46]

The tendency towards over-disclosure stems from several factors. First, SEP owners are worried about the risk of antitrust liability if they

38. *See* Ruikka, *supra* note 6, at 191 ("Within standards body rules, there is no authoritative definition of what 'fair and reasonable' means in actual fact and in concrete circumstances. Such definition or elaboration is not found in a licensing undertaking, in the IPR policies or in related SDO documents.").

39. *See* Contreras, *Implementing*, *supra* note 1, at 89 (noting the lack of clear written policies and how this "minimalist approach not only invites abuse and opportunistic behavior, but also leaves aggrieved participants with little legal recourse after abusive behavior has occurred").

40. *See, e.g.*, IEEE-SA STANDARDS BOARD BYLAWS § 6.2 (Dec. 2012), *available at* http://standards.ieee.org/develop/policies/bylaws/sect6-7.html (disclaiming responsibility "for determining whether any licensing terms or conditions provided in connection with submission of a Letter of Assurance, if any, or in any licensing agreements are reasonable or non-discriminatory"). "The IEEE is not responsible for identifying Essential Patent Claims for which a license may be required, [or] for conducting inquiries into the legal validity or scope of those Patent Claims." *Id.*

41. Press Release, Karen McCabe, IEEE Standards Ass'n, IEEE Enhances Standards Patent Policy to Permit Fuller Disclosure on Licensing (Apr. 30, 2007), *available at* http://www.businesswire.com/news/home/20070430006298/en/IEEE-Enhances-Standards-Patent-Policy-Permit-Fuller#.U7msxxYeVuY.

42. *Id.*

43. *See* Contreras, *Market Reliance Theory*, *supra* note 27, at 60–61.

44. *See Fast Facts*, BLUETOOTH, http://www.bluetooth.com/Pages/Fast-Facts.aspx (last visited July 22, 2014) ("Bluetooth technology is the global wireless standard enabling . . . exchanges of data over short distances using radio transmissions . . . in the unlicensed industrial, scientific and medical (ISM) band at 2.4 to 2.485 GHz . . . .).

45. BLUETOOTH, BLUETOOTH PATENT/COPYRIGHT LICENSE AGREEMENT § 5(a)–(b) (2014).

46. *See* David J. Goodman & Robert A. Myers, *3G Cellular Standards and Patents*, *in* 2005 INTERNATIONAL CONFERENCE ON WIRELESS NETWORKS, COMMUNICATIONS AND MOBILE COMPUTING 415, 415 (2005), *available at* http://eeweb.poly.edu/dgoodman/wirelesscom2005.pdf; FAIRFIELD RES. INT'L, ANALYSIS OF PATENTS DECLARED AS ESSENTIAL TO GSM AS OF JUNE 6, 2007, at 8 (2007), *available at* http://frlicense.com/GSM_FINAL.pdf.

attempt to sue on patents not disclosed before the standard was set.[47] Second, royalties are based on the number of patents licensed, and SEP owners may believe that they will obtain better leverage during negotiations for cross-licensing.[48] Third, SEP owners may also want to display a large patent portfolio as a posture of dominance to its rivals and shareholders.[49]

It is tempting to assume that accurate disclosure is important because the value of standard setting is about picking the best technology. In reality, just like plugs and sockets in different countries, the declared standard is one among several functional standards chosen based on a cost-benefit analysis of factors that may depend only partly on technological merit.[50] Thus, the consensus-based disclosure and FRAND rules are not the result of arbitrary choice, historical accident, or the subjugation of one group by another. Rather, consensus-based disclosure and FRAND rules are the result of conscious choice on the part of most or all of the SSO's participants.[51]

The real value of a standard lies instead in the reduction in design and implementation costs that consensus brings. For example, wireless devices need to interact with each other to allow users to communicate through a variety of different applications. Standards facilitate these positive network externalities through intra-standard competition while trading-off inter-platform competition.

The ICT industry stands as a quintessential example of the benefits of standardization.[52] Thousands of FRAND agreements have been

47. The Federal Trade Commission (FTC) in *Rambus*, *Dell*, and *Unocal* found misrepresentations or intentional concealment to amount to an unfair method of competition under §5 of the FTC Act. *See infra* Part V.A.

48. *See* Contreras, *Market Reliance Theory*, *supra* note 27, at 61.

49. *See* J. Gregory Sidak, *The Meaning of FRAND, Part I: Royalties*, 9(4) J. COMPETITION L. & ECON. 931, 958 (2013), *available at* http://idei.fr/doc/conf/sic/seppapers2013/sidakmay2013dec4.pdf (explaining that the patent holder may believe that the sheer number of its declared-essential patents will signal to important constituencies the patent holder's technological prowess). This signal may, for example, help the patent holder to attract customers, investors, or skilled workers. *Id.*

50. Thomas F. Cotter, *TIPLJ Session 3: In House Perspectives on FRAND (Moderated by Professor David Taylor, SMU)*, COMPARATIVE PATENT REMEDIES (Feb. 21, 2014), http://comparativepatentremedies.blogspot.com/2014/02/tiplj-session-3-in-house-perspectives.html ("One misconception: standard setting isn't necessarily about picking the 'best' technology. It's more a question of 'just pick one.' Think about plugs and sockets in different countries; one is not necessarily better than another.").

51. *See* Roger G. Brooks, *Patent "Hold-Up," Standards-Setting Organizations and the FTC's Campaign Against Innovators*, 39 AIPLA Q.J. 435, 454–55 (2011).

52. Geradin, *supra* note 7, at 330 (describing the evolution from GSM through WCDMA to LTE with "thousands" of agreements between SEP owners and implementers).

concluded and billions of standard-compliant devices have been sold.[53] However, the ICT industry has also been the area where vocal calls for reforms of the FRAND regime are heard.[54]

B. The Smartphone Wars and Patent Assertion Entities

Where multiple inputs are priced independently, each patent owner acts independently to maximize profit by taking the full value represented by all holders of patents needed,[55] resulting in royalty stacking.[56] Where standards have many SEPs and products that comply with those standards, the risk of a hold-up is compounded by the number of potential SEP owners and can result in cumulative royalty payments that may undermine the standards.[57]

Participants in early telecommunications standards shared a common interest in setting balanced royalty rates because they shared a common business model.[58] To avoid royalty stacking, implementers

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53. *Id.*

54. *See* Shapiro, *supra* note 15, at 119 ("The need to navigate the patent thicket and holdup is especially pronounced in industries such as *telecommunications* and computing in which formal standard setting is a core part of bringing new technologies to market.") (emphasis added); Geradin, *supra* note 7, at 336 (noting reforms at ETSI to redefine FRAND "in a manner that is favorable to implementers").

55. AUGUSTIN COURNOT, RESEARCHES INTO THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH 99–116 (Nathaniel T. Bacon trans., Augustus M. Kelley Publishers 1971) (1838) (describing what is known today as the "Cournot complements" problem); *see also* Ronald A. Cass, *Patent Litigants, Patent Quality, and Software: Lessons from the Smartphone Wars*, 16 MINN. J.L., SCI. & TECH., (forthcoming 2015) (manuscript at 29–30), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2431285 (noting that "[i]n the patent context, this hold-up risk rises sharply with the number of patents and patent holders").

56. *See generally* Ann Armstrong, Joseph J. Mueller & Timothy D. Syrett, *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones* (Working Paper, 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2443848 (describing royalty stacking as a situation where the "cumulative demands of patent holders across the relevant technology or the device threaten to make it economically unviable to offer the product.")

57. *In re* Innovatio IP Ventures, LLC Patent Litig., No. 2303, 2013 WL 5593609, at *9 (N.D. Ill. Oct. 3, 2013) (noting that royalty-stacking "concern arises because most standards implicate hundreds, if not thousands of patents, and the cumulative royalty payments to all standard-essential patent holders can quickly become excessive and discourage adoption of the standard").

58. John D. Harkrider, *Seeing the Forest through the SEPs*, 27 ANTITRUST 22, 25 (2013), *available at* http://awards.concurrences.com/IMG/pdf/seeing_the_forest_through_seps-harkrider.pdf. Harkrider explains:

> If they set a rate on their 3G patents that was too high, that rate would become precedent for a firm that was trying to charge them a high rate. If they argued for too low a rate, that rate would become precedent for those who wanted to pay them that low rate. . . . As a result of this dynamic, most telecommunication firms charge very similar prices for their portfolio of SEPs.

paid one royalty that covered every standard applicable to a device.[59] These rates would be what the same participants both paid and received and would be between two and four percent of the price of the device.[60]

In the mid-2000s, the entry of Apple, Google, and Microsoft into the mobile telecommunications space catalyzed the transformation of simple mobile phones into smartphones, disrupting the royalty equilibrium.[61] This smartphone revolution shook the technology world. One billion smartphones were sold in 2013 alone—one user for every seven people on the planet, with revenues of $340 billion.[62]

As new entrants in the smartphone space, Google, Apple, and Microsoft did not have network protocol SEP portfolios and could not cross-license as their predecessors had done.[63] To beef up their stockpile

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Id.; *see also* Kai-Uwe Kühn, *Justifying Antitrust Intervention in ICT Sector Patent Disputes: How to Address the Hold-Up Problem*, 9 COMPETITION POL'Y INT'L 100, 105 (2013) ("In the information technology sector such agreements have worked for a long time and allowed firms to innovate without having regard to potentially infringing patents of their main competitors.").

59. *See* Harkrider, *supra* note 58, at 25.

60. Eric Stasik, *Royalty Rates and Licensing Strategies for Essential Patents on LTE (4G) Telecommunication Standards*, LES NOUVELLES, Sept. 2010, at 114–19, *available at* http://www.investorvillage.com/uploads/82827/files/LESI-Royalty-Rates.pdf. For example in 2002, a number of telecommunications companies such as Nokia, Siemens, and Ericsson capped their aggregate royalty burden below 5%. *See* Press Release, Nokia, Nokia Advocates Industry-Wide Commitment to 5% Cumulative IPR Royalty for WCDMA (May 8, 2002), *available at* http://company.nokia.com/en/news/press-releases/2002/05/08/nokia-advocates-industry-wide-commitment-to-5-cumulative-ipr-royalty-for-wcdma ("Under this proposal no manufacturer should pay more than 5% royalties covering all essential WCDMA patents from all patent holders.").

61. *See* Harkrider, *supra* note 58, at 25; *see also* Alison Jones, *Standard-Essential Patents: FRAND Commitments, Injunctions and the Smartphone Wars*, 10 EUROPEAN COMPETITION J. 1, 9 (2014). Jones attributes the litigation to:

> (i) the entry into the market of implementers, such as Apple (with iPhone), Google (with its open source Android operating system) and Microsoft (with Windows Mobile), which did not have the networks of patents essential to ETSI standards as their competitors (although Apple and Microsoft, for example, hold a significant portfolio of design and software patents which are not standard-essential (non-SEPs)); and (ii) when some of the original players either sold off their patent portfolios to patent assertion entities (PAEs) and/or their position in the final product market changed or began to decline.

Id. (citations omitted).

62. Press Release, IDC, Worldwide Smartphone Shipments Top One Billion Units for the First Time, According to IDC (Jan. 27, 2014), *available at* http://www.idc.com/getdoc.jsp?containerId=prUS24645514; *see also* Press Release, HIS, Combined Smartphone and Tablet Factory Revenue to Exceed Entire Consumer Electronics Market This Year (Oct. 25, 2013), *available at* http://press.ihs.com/press-release/design-supply-chain-media/combined-smartphone-and-tablet-factory-revenue-exceed-entire; Joel Rosenblatt, *Samsung Calls One of its Own at $2 Billion Apple Patent Trial*, BLOOMBERG (Apr. 14, 2014, 12:01 AM), http://www.bloomberg.com/news/2014-04-14/samsung-calls-one-of-its-own-at-2-billion-apple-patent-trial.html.

63. *Id.* (describing how while Apple and Microsoft had 4500 patents and 18,000 patents, "Apple had declared only 23 U.S. patents as essential to ETSI and Microsoft had

of telecommunications patents, Apple and Microsoft, along with other companies, paid $4.5 billion for 6000 patents from Nortel in 2011, a deal Wall Street Journal described as "the largest intellectual property portfolio ever sold."[64]

Many of those patents covered core wireless communications technologies such as LTE and 3G.[65] In 2012, Google acquired Motorola Mobility Inc., which had 17,000 patents, including a significant number of SEPs, for $12.5 billion.[66] A writer for Wired Magazine observed that "few companies have been loading up on patents as aggressively as Apple and Google, two companies that had nothing to do with the smartphone market 10 or 15 years ago[.]"[67]

Both sets of transactions were approved by the Justice Department because (1) Motorola Mobility's litigation history against Apple, Microsoft, and others made it unlikely that Google's acquisition would dampen Motorola Mobility's aggression; (2) Apple and Microsoft had pledged publicly not to seek injunctive relief on their SEPs, acknowledging that this would be contrary to their FRAND commitments; and (3) Google committed to refrain from seeking injunctions for disputes involving future revenues and to allow patent validity challenges.[68]

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declared only one," but that "Google had an even more significant problem—it lacked a significant portfolio of *both* SEPs and non-SEPs") (citation omitted).

64. Peg Brickley, *Nortel $4.5-Billion Patent Sale to Apple, Microsoft, Others Approved*, WALL ST. J. (July 11, 2011, 3:14 PM ET), http://online.wsj.com/news/articles/SB10001424052702303812104576440161959082234.

65. *See* Harkrider, *supra* note 58, at 26.

66. *See* Timothy Cornell, *Apple, Google, and Motorola as Barometer of Patent/Antitrust Tension*, BLOOMBERG BNA (June 29, 2012), http://antitrust.bna.com.ezaccess.libraries.psu.edu/atrc/7032/split_display.adp?fedfid=27183589&vname=atrnotallissues&jd=a0d3g8h1e5&split=0. Cornell reports:

> Motorola Mobility holds a trove of standard essential patents relating to mobile devices. The acquisition put in the hands of the market's mobile operating system leader, Google, a significant portfolio of standard-essential blocking patents. And those patents have been the source of litigation between Apple and Motorola Mobility for more than two years.
>
> Motorola Mobility's patent portfolio consists of more than 7,000 patents, most of which are U.S. patents, but more than 500 of which are EU patents. Of these, many are standard-essential patents, especially in the areas of LTE, 3G, and 2G as well as WCDMA-UMTS, GSMGPRS, CDMA, WiFi, WiMAX, MPEG-4 Visual, HDTV, and mobile batteries.

Id.

67. Robert McMillan, *How Apple and Microsoft Armed 4,000 Patent Warheads*, WIRED (May 21, 2012, 6:30 AM), http://www.wired.com/wiredenterprise/2012/05/rockstar/.

68. Press release, U.S. Dep't of Justice, Statement of the Department of Justice's Antitrust Division on Its Decision to Close Its Investigations of Google Inc.'s Acquisition of Motorola Mobility Holdings Inc. and the Acquisitions of Certain Patents by Apple Inc., Microsoft Corp. and Research in Motion Ltd. (Feb. 13, 2012), *available at*

Each tech company had a different business strategy. Apple targeted high-end users with its iPhone and sought to keep its operating system, iOS, a closed technological platform synced to its ecosystem.[69] Microsoft banked on licensing its Windows Mobile operating to original equipment manufacturers ("OEMs"), just as it had done with its Windows operating system for personal computers.[70] Google distributed its Android operating system for free, banking more on revenue from its suite of Internet services,[71] which it estimated would be worth ten dollars per Android device per year at the rate of 850,000 new Android devices activated a day.[72] Google's strategy, however, threatened to significantly undercut Microsoft and Apple's revenue models in both the mobile and desktop space.[73] Apple and Microsoft sued OEMs that used Android devices, such as Samsung, Motorola, and HTC.[74] Apple wanted to eliminate Android; founder Steve Jobs regarded Android as Apple's property and was "willing to go thermonuclear war on this."[75] In some cases, Apple demanded up to ten percent of the price of Android smartphones as royalties.[76]

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http://www.justice.gov/opa/pr/2012/February/12-at-210.html; *see also Microsoft's Support for Industry Standards*, MICROSOFT (Feb. 8, 2012), http://www.microsoft.com/en-us/legal/intellectualproperty/IPLicensing/ip2.aspx.

Google promised that it would not increase the rate charged for SEPs beyond Motorola's published 2.25% of the end device price. *See* Press Release, U.S. Dep't of Justice, *supra*. Google also promised that it would not seek injunctions against willing licensees. *See id.* In the end, the DOJ concluded that Google would not have a greater incentive than Motorola Mobility to use these patents aggressively against Microsoft and Apple and cleared the transaction. *See id.*

69. Harkrider, *supra* note 58, at 25.

70. *Id.*; *see also* Malarie Gokey, *Chinese Government Reveals List of Patents Microsoft holds over Android*, DIGITAL TRENDS (June 16, 2014), http://www.digitaltrends.com/mobile/microsoft-android-patents-china/#!bj6yYX (estimating that Microsoft makes $2 billion annually off simply through royalties collected on Android devices that use licensed technology, more than its Windows phone licensing agreements).

71. Harkrider, *supra* note 58, at 25.

72. Seth Weintrub, *Schmidt: A Billion Android Devices?*, FORTUNE (July 28, 2010, 7:36 PM), http://fortune.com/2010/07/28/schmidt-a-billion-android-devices/; *see also* Andy Rubin, *Android@Mobile World Congress: It's All About the Ecosystem.*, GOOGLE MOBILE BLOG (Feb. 27, 2012, 12:43 AM), http://googlemobile.blogspot.com/2012/02/androidmobile-world-congress-its-all.html.

73. Harkrider, *supra* note 58, at 25.

74. *See, e.g.*, Certain Pers. Data & Mobile Commc'ns Devices & Related Software, Inv. No. 337-TA-710, USITC Pub. 4331 (Dec. 19, 2011) (Final) (Notice of the Commission's Final Determination Finding a Violation of Section 337, Issuance of a Limited Exclusion Order, Termination of Investigation); Harkrider, *supra* note 58, at 25.

75. Larry Dignan, *Steve Jobs: Android a 'Stolen Product'*, ZDNET (Oct. 11, 2011, 18:17 GMT), http://www.zdnet.com/blog/btl/steve-jobs-android-a-stolen-product/61504.

76. *See* Chris Ziegler, *Apple Asked Samsung to Pay as Much as $30 Per Android Phone, $40 Per Tablet for Patent Licenses*, THE VERGE (Aug. 10, 2008, 9:41 PM),

Apple, Microsoft, Research in Motion ("RIM"), Sony, and Ericsson formed Rockstar Bidco, later known as Rockstar Consortium ("Rockstar"), to hold 4000 of the 6000 Nortel patents.[77] Rockstar was a PAE, a species of non-practicing entity whose purpose is to acquire, aggregate, and assert patent portfolios.[78]

PAEs, pejoratively known as "patent trolls," are a modern byproduct of a post-colonial effort to democratize patent ownership and facilitate a market for the licensing of technology.[79] It is worth noting that some PAEs perform the laudatory tasks of connecting innovators and implementing licensees,[80] as well as lowering transactions costs.[81] Also, the line between PAEs and operating companies may not always be clear,[82] and their continued existence may be more "a symptom of the success of the high-tech patent economy, [rather] than a sign of its vulnerabilities."[83]

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http://www.theverge.com/2012/8/10/3234909/apple-samsung-patent-royalty-rates; *see also* Jessica E. Vascellaro, *Apple and Google Expand Their Battle to Mobile Maps*, WALL ST. J., June 5, 2012, at A1.

77. *See* McMillan, *supra* note 67.

78. *See* Joshua D. Wright & Douglas H. Ginsburg, *Patent Assertion Entities and Antitrust: A Competition Cure for a Litigation Disease?*, 79 ANTITRUST L.J. 501, 501 (2014). Wright and Ginsburg summarize:

> In brief, a PAE acquires patents—sometimes a large portfolio of patents—from research companies, operating companies, or individual inventors and monetizes those patents by collecting royalties from anyone it finds practicing one of the patents without a license. The PAE compensates the patentee through the acquisition price, a share of the royalties, or some combination of the two.

Id.; s*ee generally* David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 CORNELL L. REV. 425 (2014).

79. *See* EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 1 (2013), *available at* http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf; *see also* David Kline & Bernard J. Cassidy, *Are Non-Practicing Entities The Problem?*, IPWATCHDOG (Apr. 9, 2014, 10:00 AM), http://www.ipwatchdog.com/2014/04/09/myths-of-the-patent-wars-are-non-practicing-entities-the-problem/id=48984/ ("Patent licensing, in fact, was the principal means by which new inventions were commercialized during the decades before in-house corporate R&D departments emerged in the early 20th century.").

80. SCOTT W. BURT, MOSAID TECHS. INC., COMMENTS OF MOSAID TECHNOLOGIES ON PATENT ASSERTION ENTITY ACTIVITIES WORKSHOP 2 (2013), *available at* www.justice.gov/atr/public/workshops/pae/comments/paew-0044.pdf.

81. Erica S. Mintzer & Suzanne Munck, *The Joint U.S. Department of Justice and Federal Trade Commission Workshop on Patent Assertion Entity Activities-"Follow the Money"*, 79 ANTITRUST L.J. 423, 429 (2014) ("Other possible efficiencies identified included lowering transaction costs by assembling bundles of complementary patents and thereby reducing search, negotiation, and licensing costs. In addition, PAEs may be more efficient at evaluating patents, negotiating deals, or managing litigation.").

82. *Id.* at 426 ("Line drawing can be difficult, and an entity's form is not determinative.").

83. Yaniv Heled, Op. Ed., *Patent Trolls as Parasites*, JURIST (Apr. 28, 2014, 6:00 PM ET), http://jurist.org/forum/2014/04/patent-trolls-as-parasites.php.

At the same time, because PAEs are immune to countersuit and injunctions, they are more likely to exploit SEPs aggressively. In addition, PAEs have no incentive to cross-license their patents since they have no products which might also infringe on their adversaries' patents.[84] In theory, PAEs could offset the negative effect on innovation if they created value for original innovators, their targeted implementers, or consumers. However, empirical evidence suggests that only a small fraction of patent infringers actually copied from the patentees.[85]

The number of lawsuits brought by NPEs has more than doubled between 2010 and 2013, with more than 90 percent of those cases brought by PAEs.[86] In the first half of 2013, PAEs sued 70 percent of defendants.[87] About two-thirds of the defendants were in the ICT sector.[88] One of the earliest and most notorious PAE lawsuits was filed by NTP, Inc. against RIM.[89] Under the threat of an injunction, RIM settled for over $600 million, or 20 times the reasonable royalties ordered, a sum which commentators note reflected the hold-up value of shutting down RIM's Blackberry service rather than the value of NTP's technology.[90]

The entry of Microsoft, Apple, and Google into the smartphone space and the rise of PAEs are two important reasons for SEP litigation, but they are not the only ones. Three other features of the smartphone space fuel its SEP litigation.

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84. *See* Harkrider, *supra* note 58, at 28 ("[T]he continued transfer of patents (including SEPs) to patent assertion entities—which are immune to countersuit and therefore are more likely to use these patents aggressively rather than to negotiate broad cross-licenses . . . ."); *see also* Kühn, *supra* note 58, at 105 ("The relative hold-up values of these portfolios are apparently much less clear across different previously non-integrated industries so that cross-licensing solutions become much harder.").

85. *See* Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1422, 1424 (2009) (finding copying established in only 1.76% of the cases studied).

86. *See* Morton & Shapiro, *supra* note 19, at 465–66.

87. *See id.* at 466.

88. *See id* at 468.

89. James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. 387, 420 (2014) ("We believe that the NTP suit is a poster child for the problem of patent notice failure and harmful patent assertion by NPEs."); *see also NTP, Inc.*, WIKIPEDIA, http://en.wikipedia.org/wiki/NTP,_Inc. (describing NTP Inc. as a "patent troll" whose "primary asset is a portfolio of 50 US patents" covering "wireless email and RF Antenna design"). The court "issued an injunction ordering RIM to cease and desist infringing the patents. . . . [which] would have shut down the BlackBerry systems in the US." *Id.*

90. Kühn, *supra* note 58, at 102 ("Note that the market value of a patent in such circumstances does not reflect the intrinsic increase in value of the product that the patent generates but instead the value of the potential *costs* that can be induced through an injunction."); *see also* Cass, *supra* note 55 (manuscript at 41–42).

First, standards-compliant devices such as smartphones integrate telecommunications, computing, video, and photographic functions. The number of potentially relevant patents is vast, estimated to be in the order of 250,000 patents in a single smartphone.[91] The need for interoperability across various functions requires standardization and hence, SEPs.[92] The large number of standardized products, together with the tendency to over-disclose patents, leads to patent thickets, increasing the likelihood of infringement.[93]

The vast number of patents also increases the risk of royalty stacking.[94] In the context of SEP litigation, the cumulative demands of owners of patents covering the relevant technology threaten the economic viability of the products complying with the standard.[95] A recent empirical study estimates that royalty payments make up about a quarter of the price of a smartphone, almost equal to the cost of the components.[96] Royalty stacking, the study concluded, may thus be "undermining industry profitability—and, in turn, diminishing incentives to invest and compete."[97]

Second, many of those patents are software patents and generally of poor quality.[98] Ownership is often unclear.[99] Unlike real property, there

91. RPX Corporation, Registration Statement (Form S-1) (Sep. 2, 2011), http://www.sec.gov/Archives/edgar/data/1509432/000119312511240287/ds1.htm.

92. JOHN GLADSTONE MILLS III ET AL., 5 PATENT LAW FUNDAMENTALS § 19:29.70. (2d ed. Westlaw).

93. Kühn, *supra* note 58, at 103–04 ("A modern smart phone contains parts covered by thousands of patents—most of them uncertain in their scope and validity. Many potentially relevant patents will not be known to the designer of the new product.").

94. *See In re* Innovatio IP Ventures, LLC Patent Litig., No. 2303, 2013 WL 5593609, at *9 (N.D. Ill. Oct. 3, 2013) ("Another concern of the RAND obligation is to prevent 'royalty stacking.' This concern arises because most standards implicate hundreds, if not thousands of patents, and the cumulative royalty payments to all standard-essential patent holders can quickly become excessive and discourage adoption of the standard."); *see also id.* at *10 (concluding that "the court should consider royalty stacking as a way of checking the accuracy of a proposed RAND royalty's correspondence to the technical value of the patented invention").

95. *See* U.S. DEP'T OF JUSTICE & U.S. FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 76–84 (2007), *available at* http://www.justice.gov/atr/public/hearings/ip/222655.pdf.

96. Armstrong, Mueller & Syrett, *supra* note 56, at 2.

97. *Id.*

98. *See, e.g.*, ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS 34–35 (2004) ("[T]he PTO has become so overtaxed, and its incentives have become so skewed towards granting patents, that the tests . . . that are supposed to ensure that the patent monopoly is granted only to true inventors have become largely non-operative.").

99. Justin R. Orr, *Patent Aggregation: Models, Harms, and the Limited Role of Antitrust*, 28 BERKELEY TECH. L.J. 525, 525–26 (2013) ("Although practicing technology companies like the household names listed above own some of the world's largest patent portfolios, large non-practicing entities ('NPEs') like Intellectual Ventures, Acacia

is no requirement for recording SEP ownership assignments. Despite the best efforts of companies to avoid infringement, history has shown that even the best efforts can be futile.[100]

Third, ICT companies develop and commercialize devices quickly. Firms commonly invent technologies claimed by earlier, unpublished applications.[101] This simultaneous invention and ubiquitous infringement results in 97 percent of suits filed against independent inventors.[102] Even when patents have been published, engineers do not consult them because knowledge of the patent attracts increased damages for willful infringement.[103] Thus, implementers run a calculated risk of infringing SEPs if they did not obtain licenses from the patent owners.[104]

Faced with a seemingly overwhelming risk of infringement, the need for a clearer picture of FRAND obligations becomes critical. There are a number of ways one might achieve clarity. The most straightforward method is for all SSOs to impose mandatory disclosure of only patents that are truly "essential" to the standard, as well as any relevant licensing terms and rates.[105] In theory, this method could allow SSO members to make an informed choice about what they are committing themselves to, much like restaurant diners expect to know

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Technologies, Round Rock Research, and RPX Corporation have become active purchasers from patent producers as well as at open auction.").

100. Kühn, *supra* note 58, at 104. Kühn writes:

> With the current innovation cycle in the ICT industry such careful and time consuming patent search and assessment would not be possible if one would want to compete with any product in the market. As a result, firms will have to invest in new products and develop them, knowing that there will likely be some infringement but that they cannot tell beforehand which part of the product is likely to infringe a patent and who holds the relevant intellectual property. This means that hold-up issues (i.e. investment before the negotiation over a license) are endemic to the ICT industry.

Id.

101. Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2148–49 (2013) ("In a world in which everyone can patent every little thing, royalty stacking is a fact of life.").

102. *Id.* at 2149.

103. Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 21 (2008).

104. *See* Lemley & Shapiro, *supra* note 14, at 1193.

105. *See, e.g.*, Kai-Uwe Kühn et al., *Standard Setting Organizations Can Help Solve the Standard Essential Patents Licensing Problem*, CPI ANTITRUST CHRONICLE, Mar. 2013, at 1, 3, *available at* https://www.competitionpolicyinternational.com/assets/Free/ScottMortonetalMar-13Special.pdf ("SSOs can substantially reduce the problem of hold-up and litigation in this sector by reforming their IPR policies."); *see also* Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patent*, BERKELEY TECH. L.J. 1135, 1137–38 (2013) ("This litigation is largely a function of ambiguities and omissions in the FRAND system used by most SSOs. The effectiveness of the FRAND commitment has been undermined by these ambiguities and omissions . . . ."); Ruikka, *supra* note 6, at 189 ("These gaps should be better addressed by SDOs.").

what they are ordering and how much they will be charged.[106] But, as will be seen in the next section, that is precisely the wrong thing to do.

II. WHY SSO POLICY REFORM IS NOT THE SOLUTION

The impulse to fix contractual incompleteness in FRAND commitments must be held in check; the inquiry should be allowed to proceed only if there is a reliable indication that the system is somehow broken.[107] Despite numerous changes SSOs have made to their IP policies, participants generally have no obligation to define FRAND.[108] Few SSOs have adopted policies facilitating *ex ante* disclosure of licensing terms, leaving parties to define the scope of FRAND post-standardization.[109]

A. Four Reasons Why Not

First, as to the disclosure of only "essential" patents, determining whether a pending application or patent is essential is difficult, even for patentees themselves.[110] Software and telecommunications standards are

106. *See* Jorge L. Contreras, *Technical Standards and Ex Ante Disclosure: Results and Analysis of an Empirical Study*, 53 JURIMETRICS J. 163, 164 (2013) [hereinafter Contreras, *Technical Standards*]; *see also* Mark A. Lemley & Nathan Myhrvold, *How to Make a Patent Market*, 36 HOFSTRA L. REV. 257, 259 (2007) ("The only people who stand to lose from mandatory licensing of licenses are those who are taking advantage of the current state of ignorance . . . .").

107. Wright, *supra* note 16, at 801 ("[T]he relevant question is not whether SSOs, contributors, and adopters face tradeoffs in terms of balancing IPR policy completeness and precision—they certainly do—but whether there is reason to believe the sophisticated parties get the balance systematically wrong as the result of some market failure.").

108. *See id.* (arguing that "[t]he persistence of these terms in competitive markets over time suggests . . . that this imprecision is a feature and not a bug of the SSO contracting process").

109. *See* RUDI BEKKERS & ANDREW UPDEGROVE, A STUDY OF IPR POLICIES AND PRACTICES OF A REPRESENTATIVE GROUP OF STANDARDS SETTING ORGANIZATIONS WORLDWIDE 102–03 (2012), *available at* http://sites.nationalacademies.org/pga/cs/groups/pgasite/documents/webpage/pga_072197.pdf. Bekkers and Updegrove assert:

> [N]one of the policies attempts to even define what "fair" or "reasonable" fees are intended to mean in context. Nor do they state that at minimum, such fees must bear a reasonable relationship to the economic value of the IPR, despite the fact that this benchmark is stated explicitly by the FTC in its report on evolving [sic] IP marketplace, as well as in the European Commission's relevant Guidelines on horizontal cooperation agreements.

Id. (citations omitted); *see also* Contreras, *Market Reliance Theory*, *supra* note 27, at 59 ("As it turns out, *very few* such licenses are negotiated prior to the adoption of a standard.").

110. *See* Lemley & Shapiro, *supra* note 105, at 1155 ("Inventors can keep patent applications pending in the PTO for years or even decades and can even seek additional new patents from old applications, and the PTO takes years to issue a patent.") (citations omitted).

typically covered by thousands of patents potentially essential for successful implementation.[111] Patent claims covering telecommunications and software patents use non-standard nomenclature in their claims, making searches difficult and time consuming. This nomenclature also makes it difficult for both prospective SEP owners and implementers to review claims.

Ex ante disclosure or pre-implementation review would almost certainly omit a significant number of patents. Omissions stem from the number of patents, the secrecy of the patent application, and the complexity of the standard.[112] In *Ericsson Inc. v. D-Link Systems, Inc.*,[113] the U.S. District Court for the Eastern District of Texas declared that "[t]here is no way to determine the exact number of standard-essential patents," and that neither side attempted to do so.[114]

Further, few seek out licenses because bilateral negotiations are costly. When SSO participants are simultaneously involved with more than a hundred SSOs, each developing multiple standards—a common occurrence—the cost of negotiation becomes prohibitive.[115] For example, the 4G LTE standard involved more than 30 participants

111. Contreras, *supra* note 27, at 68 ("But most important is the fact that ex ante policies, while theoretically capable of promoting efficiency-enhancing benefits, are insufficient when hundreds or thousands of patents may be essential to the implementation of a single standard.").

112. *See* Brooks, *supra* note 51, at 456 ("SSOs recognize that it is difficult to identify all potentially essential patents with respect to complex standards, and impossible to do so with perfect precision."); *see, e.g.*, DEANNE E. MAYNARD, SEAN P. GATES, JOHN THORNE & GAIL F. LEVINE, VERIZON COMMC'NS INC., WRITTEN COMMENTS OF VERIZON COMMUNICATIONS INC. FOR FEDERAL TRADE COMMISSION WORKSHOP ON STANDARD-SETTING ISSUES 4 (2011), *available at* http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00051%C2%A0/00051-80236.pdf ("The number of patents, combined with the secrecy of patent applications, prevents SSOs or their members from knowing of all potential patent rights that may cover standardized technologies."); TIMOTHY SIMCOE, CAN STANDARD SETTING ORGANIZATIONS ADDRESS PATENT HOLD-UP? COMMENTS FOR THE FEDERAL TRADE COMMISSION 3 (2011), *available at* http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00040%C2%A0/00040-80169.pdf (noting that the difficultly in determining relevant patents because "a modern laptop or smart-phone will implement hundreds of standards and infringe thousands of patents").

113. Ericsson Inc. v. D-Link Sys., Inc., No. 6:10-CV-473, 2013 WL 4046225 (E.D. Tex. Aug. 6, 2013).

114. *Id.* at *24.

115. *See* Jorge Contreras, *Rethinking RAND: SDO-Based Approaches to Patent Licensing Commitments* 14–15 (Am. Univ. Wash. Coll. of Law, Working Paper, 2012), *available at* http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1030&context=fac_works_papers [hereinafter Contreras, *Rethinking RAND*].

disclosing over 3000 patent families.[116] Understanding the full size and scope of the patent portfolio license needed to avoid infringement in making and using the standard is even more difficult for implementers. Because the cost of searching for patents could be prohibitive, the effort and inconvenience of compliance makes mandatory disclosure of "essential" patents unattractive.[117]

Any reputational smear from hold-ups by SEP owners seems to be a weak deterrent at best. Commentators note that implementers exploited in an earlier round may find themselves allied with the SEP owner in the next round.[118] As a result, SSOs simply require that disclosures be made in good faith.[119] In turn, implementers assume, before they make standard-specific investments, that some licensing demands will be made despite best efforts at evaluating patents potentially relevant to the standard.[120]

Second, some have argued for the disclosure of licensing terms and royalty caps. A recent study involving VITA, an SSO, revealed a number of interesting findings, most notably, that VITA's *ex ante* licensing disclosure policies achieved overall openness and transparency without depression of royalty rates or measurable negative effects on the number of standards produced, duration of time required, or quality of the standards.[121]

The depression of royalty rates is significant because SSO participants include rival technology owners and rival implementers. The very act of coming together to agree on terms raises the possibility of antitrust liability for collusion. Sharply defined FRAND licensing terms suggest coordinated pricing and provide possible proof of a

116. *See* Brooks, *supra* note 51, at 457 n.75 ("A 'patent family' refers to a set of patents and applications derived from a single initial application and the specification contained in that application.").

117. *See* Ruikka, *supra* note 6, at 191 ("Investment prior to obtaining a license may be viewed as less risky regarding patent costs when the SDO has a track record of consistently procuring FRAND undertakings.").

118. *See* 2 ECKSTROM'S LICENSING IN FOREIGN AND DOMESTIC OPERATIONS chap. 8E app. Y (2012) (noting the limits to reputational arguments against FRAND abuse).

119. Letter from Steve Mills, Pres., Inst. of Elec. & Elecs. Eng'rs ("IEEE"), to Donald S. Clark, Sec'y, Fed. Trade Comm'n 2 (Aug. 5, 2011) [hereinafter IEEE Comments to FTC Report], *available at* http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00046%C2%A0/00046-80184.pdf (expecting that its members will act in "good faith" to disclose any known patents that might prove essential), *cited in* Brooks, *supra* note 51, at 456–57 n.74.

120. I am grateful to Josh Sarnoff for this insight.

121. *See* Contreras, *Technical Standards*, *supra* note 106, at 208.

buyer's cartel under antitrust law.[122] Such cartels are dangerous because they may force royalty rates down, under-compensating SEP owners.[123] Even if owners and implementers could coordinate without fear of antitrust enforcement, the sheer heterogeneity of the group would make the transaction costs formidable.[124] SSO participants are therefore comfortable negotiating under the shadow of a FRAND commitment and relying on tribunals to adjudicate occasional disputes.[125]

The study on VITA shows that *ex ante* license disclosures can work in some cases, particularly if tailored to suit the needs and limitations of the relevant industries. For instance, the study noted that "the technologies on which VITA focuses are not as heavily covered by patents as technologies in other ICT markets such as wireless telecommunications, computer networking, and semiconductors."[126]

At the same time, the VITA study also candidly acknowledged its limitations, recognizing that "*ex ante* policies have not achieved significant support" among SSOs.[127] The study suggests that lack of support for *ex ante* policies could be due to a variety of factors, including

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122. *See* Wright, *supra* note 16, at 796 ("[[F]ear of antitrust liability imposes some costs, as specificity with respect to prices, marketing, and distribution terms may be construed as unlawful price fixing."); *see also* Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1964–65 (2002). Lemley notes:

> Virtually no SSO specifies the terms on which licenses must be granted beyond the vague requirement that they be "reasonable" and ""nondiscriminatory." Indeed, some SSOs expressly forbid discussion of such issues when a standard is under consideration, presumably for fear of antitrust liability. Further, private licenses are normally confidential. The result is uncertainty over the cost and scope of patent licenses that may not prove much better than having no policy at all.

Id. (citations omitted).

123. Richard J. Gilbert, *Deal or No Deal? Licensing Negotiations in Standard-Setting Organizations*, 77 ANTITRUST L.J. 855, 856 (2011) ("[J]oint negotiation may create opportunities for potential licensees to exercise buyer market power, and suppress royalty terms ex ante, but after rights holders have made irreversible research and development investments necessary to create and patent technologies that are essential to a standard.") (citations omitted). *But see id.* at 858 ("The tolerance for coordinated conduct by members of an SSO that may exercise buyer market power should depend on the likelihood and magnitude of the ex post holdup.").

124. Kühn, *supra* note 58, at 109 ("Furthermore, in the standard setting process different players have systematically different incentives, which appears to be one factor that has prevented agreements on a sharper definition of FRAND and of a dispute process over FRAND in standard setting organizations like ETSI.").

125. *See* Ruikka, *supra* note 6, at 191 ("The standards context is one where ex ante licensing is truly the exception rather than the norm.").

126. Contreras, *Technical Standards*, *supra* note 106, at 208.

127. *Id.* at 211.

patent owners pursuing a "patent monetization strategy;"[128] other participants fearing compliance costs[129] as well as the possibility of provoking "otherwise passive" SEP owners to seek additional royalties;[130] and the dampening effect of royalty-stacking in SSOs where multiple owners hold vast numbers of SEPs, as is the case in the smartphone industry.[131] More broadly, the anticompetitive effects from possible collusions warrant skepticism of such disclosure requirements.

Third, *ex ante* disclosures will do little for various groups of implementers; even the window for determining essentiality is extended to a time following the implementation of the standard.[132] Some implementers may not have participated in the standards-development process because the adoption of the standard was unexpected.[133] For others, licensing negotiations arise only after the commercialization of standard-compliant devices and services.[134] One reason for these delayed negotiations, as Professor Doug Lichtman explained, is that "intricate negotiations over patent validity and patent value would take an enormous amount of time," and implementing firms want to "wait for additional information before they commit to a specific royalty

128. *Id.*; *see also id.* at 206 ("[M]aintaining the secrecy of royalty rates (constrained only by an ill-defined commitment to license on FRAND terms) might enable Patent-Centric Developers to extract higher royalties.").

129. *See id.* at 207 ("It is easy to make a FRAND commitment with respect to one's standards-essential patents. It requires much more work to determine the numerical royalty rate that one might charge on particular standards-essential patents. In some cases, making this determination might also require labor-intensive searches of large corporate patent portfolios.").

130. *See id.* at 208 ("[B]y forcing them to identify and place a price tag on their standards-essential patents, these Product-Centric Developers might be induced to seek royalties on patents that they otherwise would not have thought to assert.").

131. *See* Contreras, *Technical Standards*, *supra* note 106, at 208–10; *see also id.* at 208 ("When multiple patents cover a single standard (patent stacking), the independent disclosure of maximum royalty rates by individual patent holders becomes less meaningful.") (citation omitted).

132. *See* Ruikka, *supra* note 6, at 192 ("The total time span between a technical selection (producing the Essential status of patents) and actual patent license agreements emerging can easily be from 5 to 10 years.").

133. *See* Contreras, *Market Reliance Theory*, *supra* note 27, at 59 n.47 (describing the USB standard, "which was originally developed to improve the connection between personal computers and stand-alone printers and similar peripheral devices). "At the time it was developed, very few expected that USB would become a broadly adopted standard used in a wide range of computer memory and other products." *Id.*

134. *See* Ruikka, *supra* note 6, at 192. Ruikka notes:

> Licensing negotiations are typically lengthy and their commencement may be substantially deferred beyond standard approval and beyond initial deployment due to various reasons including unpredictability of market success of the standard, lack of visibility of which firms become the major implementers of the standard, the poor quality of information about Essential patents etc.

Id.

structure."[135] Decisions regarding which technologies to incorporate into the standard are made much earlier than the negotiation of licenses.[136] Disclosing SEPs and licensing terms before the standard is set would therefore be of no help to these groups of implementers.

Fourth, economic theory teaches that incomplete contracts can be efficient.[137] There would be no way to tell how important some patents are until they are commercialized, imperiling arguments in favor of royalty caps.[138] The costs of complying with SSO policies are significant factors in participation in SSOs, and those with large patent portfolios are particularly sensitive.[139] To arrest every factual permutation that could lead to hold-ups would be impractical and, frankly, impossible.[140] The cost of ensuring every SSO contract complete could tax society more than the cumulative cost of hold-ups. Rather than a being static event, standards development is a continuous process and evolves over time.[141] During this process, new SEPs are revealed, and the relative incremental values of existing SEPs fluctuate.[142] Thus, SSOs leave FRAND

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135. *See* Doug Lichtman, *Understanding the RAND Commitment*, 47 HOUS. L. REV. 1023, 1028 (2010).

136. *See* Lemley & Shapiro, *supra* note 105, at 1155–56. Lemley and Shapiro explain:

> For an invention to be essential to a technical standard, it presumably must have been made at the time that standard is adopted. With limited exceptions, an inventor with an idea essential to a technical standard must file an application within one year after adoption of the standard or lose rights to the invention under the statutory bars. Accordingly, we suggest that SSOs specify that the FRAND commitment applies not only to existing patents and applications but also—at the very least—to those applications filed within one year after the SSO adopts the standard.

Id. (citations omitted).

137. *See, e.g.*, Benjamin Klein, *Why Hold-Ups Occur: The Self-Enforcing Range of Contractual Relationships*, 34 ECON. INQUIRY 444, 447 (1996).

138. Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-in: Rand Licensing and the Theory of the Firm*, 40 IND. L. REV. 351, 369 (2007) ("[B]efore the standard is established, it is unclear which if any of the participants will own standard-essential patents.").

139. *See generally* Josh Lerner & Jean Tirole, *A Model of Forum Shopping*, 96 AM. ECON. REV. 1091 (2006) (demonstrating that forum shopping technology contributors respond to "sponsor friendly," less rigid, IPR policies, resulting in higher quality standards).

140. *See* Miller, *supra* note 138, at 381 ("No contract can ever fully anticipate, and make provision for, all possible circumstances and outcomes in a complex relationship. Indeed, this limiting condition is built into the very fabric of a transaction cost perspective: a fully detailed contract would be infinitely costly; therefore, no one writes them.").

141. *See* Sidak, *supra* note 49, at 994 ("Inventors produce patentable innovations on a recurring basis. Similarly, a standard evolves over time. Patents that are essential to the standard are revealed over time. As technology changes, the marginal contributions of different patents to the value of the downstream product also change.").

142. *Id.*

negotiations to the parties, who are better situated to reach optimal negotiated solutions.[143] A commentator remarked that "[i]t is folly to expect, much less insist upon, *ex ante* negotiation of detailed, tailored license terms much beyond the royalty-free and RAND options."[144]

Indeed, SSO members have stated that transparency compliance may require them to "completely overhaul" their participation in SSOs.[145] For instance, discussions by technical experts could require the participation of lawyers, business, and marketing representatives.[146] SSO participants are usually engineers "unschooled in business considerations and unequipped to address the costs and related competitive implications of their technical specification-writing exercises."[147] Consumers will likely bear the costs of including these additional participants, both in terms of higher product prices and a delayed standardization timeline.[148]

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143. *See, e.g.*, ETSI IPR Policy, *supra* note 30, § 6.1 (including FRAND commitment but not defining FRAND terms); AM. NAT'L STANDARDS INST., GUIDELINES FOR IMPLEMENTATION OF THE ANSI PATENT POLICY 7 (2012), *available at* http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/ANSI%20Patent%20Policy%20Guidelines%202012%20final.pdf ("[T]he determination of specific license terms and conditions, and the evaluation of whether such license terms and conditions are reasonable and demonstrably free of unfair discrimination . . . should be determined only by the prospective parties to each license . . . .").

144. *See* Miller, *supra* note 138, at 370.

145. 2 ECKSTROM'S LICENSING IN FOREIGN AND DOMESTIC OPERATIONS chap. 8E app. Y (2012) ("At the Hearings, panelists also noted the potential costs associated with disclosure requirements, including slowing the adoption of a standard and deterring widespread participation in the SSO.").

146. FED. TRADE COMM'N & DEP'T OF JUSTICE ANTITRUST DIV., ANTITRUST DIVISION ROUNDTABLES: COMPETITION AND INTELLECTUAL PROPERTY LAW AND POLICY IN THE KNOWLEDGE-BASED ECONOMY 33 (Nov. 6, 2002) [hereinafter ANTITRUST DIVISION ROUNDTABLES] (Earle Thompson, Intellectual Asset Manager and Senior Counsel at Texas Instruments), *available at* http://www.ftc.gov/sites/default/files/documents/public_events/competition-ip-law-policy-knowledge-based-economy-hearings/021106ftctrans.pdf (asserting that Texas Instruments does not have enough "rare breed" licensing attorney/engineers to engage in ex ante negotiations with all of the standards bodies in which Texas Instruments participates).

147. Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 734 (2004).

148. ANTITRUST DIVISION ROUNDTABLES, *supra* note 146, at 87. Earle Thompson asserted:

> At some point [*ex ante* discussions are] either going to add to my cost, which, by the way, gets passed on to the consumer at some point, or it's going to be we don't participate in certain groups. To me, it's a major longer term concern and I'm not sure if the thing that we're trying to fix, which doesn't seem to be a real problem, is worth presenting another problem down the road.

Id.; *see* Brooks, *supra* note 51, at 455 (noting that pressuring SSOs to change their rules or governmental intervention that trumps those rules "would damage the standards

In short, FRAND commitments function as a residual property right to protect the implementers of standard-specific investments.[149] These commitments help induce implementers to adopt SEP encrusted standards despite the possibility of hold-ups. In economic terms, implementers participate because the payoffs for participating are greater or equal to not participating.

SSO IP policies are diverse, suggesting choice and competitive forces at work.[150] The obligations ultimately reflect the work of sophisticated parties who are conscious of the need for contractual flexibility, potential antitrust liability for price-fixing, and costs of participation. Vague FRAND commitments are thus a feature, rather than a failing, of the system.[151] SSO participants are aware of the risk of hold-ups but find the cost of preempting every element that could lead to a hold-up prohibitive.[152]

B. A Better Way

A FRAND commitment is not an actual license, but merely a basis for private negotiations without the intervention of SSOs.[153] A more

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development and licensing processes to the grave disadvantage of downstream entities, and ultimately consumers").

149. *See* Paul L. Joskow, *Asset Specificity and Vertical Integration*, *in* 1 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 107, 111 (Peter Newman ed., 1998) ("[W]hen specific investments are involved, ownership of the specific assets allocates the residual rights of control to the party that makes the specific investment.").

150. Wright, *supra* note 16, at 799–800. Wright explains:

> For the SSOs with IPR policies, the requirements imposed by those policies vary significantly. There is also rich variation in SSO rules governing the scope of disclosure, licensing arrangements, and whether members' ownership of IPRs within a standard is prohibited. Some SSOs require royalty-free licensing before incorporating the IP into a standard, while others require "reasonable and nondiscriminatory licensing."

Id.

151. *See* Wright, *supra* note 16, at 801 (noting that "contractual incompleteness and ambiguity in SSOs' IPR policies is an intended and key design feature of SSOs"); *see also* Damien Gerardin, *Standardization and Technological Innovation: Some Reflections on Ex Ante Licensing, FRAND, and the Proper Means to Reward Innovators* 4–5 (Tilburg Univ., Discussion Paper No. 2006-17, 2006), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=909011 (arguing that that any license terms agreed by parties in bilateral market-driven, arms-length negotiations should, by definition, be considered reasonable and thereby compliant with RAND commitments).

152. *See, e.g.*, Klein *supra* note 137, at 447.

153. *See* Herman, *supra* note 36, at 35. Herman notes:

> It is important to note that a willingness or commitment to offer a license on RAND terms and conditions is not an actual license. Negotiations in the market, the primary mechanism intended to establish RAND terms and conditions, are generally left to individual patentees and implementers, and are not conducted within or aided by the SSO. Importantly, by committing to offer

effective way to deal with incomplete FRAND contracting is to place the burden of resolving the inherent uncertainties in the FRAND commitment on the parties themselves.[154] SSOs can implement thousands of standards in a wide range of areas, many of which are never widely adopted. Identifying SEPs and determining the scope of FRAND obligations during litigation—when obligations are valuable enough to litigate—is more cost-effective.[155] Post-implementation bargaining allows a diverse group of participants to reach more flexible outcomes.[156]

The interests of implementers and SEP owners are generally not aligned and are of equal bargaining power, with large and small entities on both sides. Hence, the perpetuation of the status quo may indicate that this is the most efficient arrangement. SSO participants are comfortable negotiating under the shadow of FRAND, relying on tribunals to adjudicate disputes when they sporadically arise.[157]

Cajoling SSOs to straighten out their disclosure rules and focusing on the precise scope of FRAND obligations may be precisely the wrong thing to do, particularly in the smartphone industry. The former calcifies the very suppleness participants need to negotiate custom solutions while imposing hefty compliance costs on SSO participation.[158] The latter fails to confine the costs of sporadic disputes between financially well-endowed companies to the parties with the greatest interest in the outcome—the companies themselves. Instead, these initiatives impose a wide-reaching reform on the vast majority of stakeholders who may never face a hold-up and must bear the assured compliance cost of well-

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a RAND license, a patentee cannot refuse to negotiate in good faith with implementers of the standard.

Id.

154. *See* Wright, *supra* note 16, at 798 n.25 ("The additional negotiation costs to attempt to cover all contingencies are wasteful and inefficient because they involve only wealth transfers between the parties and because most future events can be accommodated at lower cost after the relevant information is revealed.").

155. *See* Contreras, *Rethinking RAND*, *supra* note 115, at 20. Contreras asserts:

> Many SDO standards are never widely-adopted or have limited application, making such a massive investment of resources a highly dubious proposition. In contrast, relatively little up-front investment is required in SDO-based standardization: patents are voluntarily declared as essential by patent holders, and the actual essentiality of such patents is not tested unless and until litigation ensues.

Id.

156. *See* Wright, *supra* note 16, at 800 ("[T]the significant variation we observe in SSOs' IPR policies is what one expects to see in competitive contracting process in a diverse ecosystem of technologies and SSOs.").

157. *See* Ruikka, *supra* note 6, at 191 ("The standards context is one where ex ante licensing is truly the exception rather than the norm.").

158. *See* Wright, *supra* note 16, at 804–05 (noting feedback from SSO participants who expressed that "proposals for the federal government to promote a mandatory *ex ante* IPR policy are likely to be costly and cumbersome, with little benefit").

intentioned, but misplaced, efforts.[159] That is not to say that SSOs should simply take a passive role.

One way in which SSOs can make a positive difference is to require SEP owners and implementers who join the SSO to agree to adjudicate disputes through a court or arbitrator.[160] Such an agreement on dispute resolution provides parties who want to dispute royalties the flexibility to attempt a negotiated settlement with a view that failure to achieve it would mean the certainty of an adjudicated result which fails to take into account the more nuanced outcomes desired by the parties. An adjudicated outcome also brings with it the monetary costs of adjudication.

Competition agencies recognize the value of mandatory adjudication and have incorporated it as part of their response to alleged SEP abuses. The Federal Trade Commission (FTC) entered into a consent decree with Google over its subsidiary, Motorola's, attempt to obtain injunctions on its FRAND-encumbered patents.[161] The order also contained a provision allowing implementers to seek to have contested SEPs "resolved through a request for a FRAND [court] determination or binding arbitration."[162] The decree also precluded Google from seeking injunctive relief unless implementers refused to accept the adjudicated result.[163]

The most developed protocol to date comes from Europe. In April 2014, the European Commission accepted Samsung's commitment not to seek injunctions against unauthorized implementers within the European

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159. *See* Bernhard Ganglmair, Luke M. Froeb & Gregory J. Werden, *Patent Hold-Up and Antitrust: How a Well-Intentioned Rule Could Retard Innovation*, 60 J. INDUS. ECON. 249, 250 (2012) (noting that a legal regime allowing for damages for excessive licensing fees might solve the patent hold-up problem at the cost of retarding innovation and SSO participation).

160. *See* Miller, *supra* note 138, at 392 (suggesting arbitration under the American Arbitration Association's Supplementary Rules for the Resolution of Patent Disputes); *see also* George T. Willingmyre, *Patent Policies and Standards Setting: The Issues. What is Going On? Why should I Care?* 33 STANDARDS ENGINEERING (2014). Willingmyre found:

> [T]here is no evidence to date that an arbitration process has actually addressed a standards related patent dispute. One SDO56 is considering adding text to state that nothing in its patent policy prohibits parties from pursuing arbitration. Such an approach encourages dispute resolution through alternatives to litigation but does not require it.

Id. (manuscript at 10), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2435313.

161. *See* Motorola Mobility LLC, No. C-4410, at 9–10 (F.T.C. July 24, 2013), *available at* http://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724googlemotorolado.pdf.

162. *Id.* at 8–9.

163. *Id.* at 9, 12.

Economic Area for five years if the implementers agreed to a protocol.[164] With the oversight of an independent monitoring trustee, parties were to attempt negotiations for up to 12 months. If they could not agree, one party could submit the dispute to a court or both parties could submit it to an arbitrator. Recognizing the fact-specific nature of a determination of a "willing licensee," the Commission instead offered implementers a "no fault" alternative—the protocol's "safe harbor."[165]

The "safe harbor" approach imposes no stain of fault on the belligerent parties. Further, this approach allows flexibility to reach a negotiated outcome within a fixed timeframe and shepherds the parties towards a tribunal that resolves the dispute if the parties fail to do so. Although this Article disagrees that antitrust law is the appropriate forum to resolve FRAND disputes,[166] it acknowledges that this protocol has much to commend itself.

Motions to compel arbitration are routinely granted and can complement injunctive threats while reducing the need for SEP owners to rely on such threats.[167] Where appropriate, courts normally stay proceedings in favor of arbitration.[168] If a SEP owner can show that implementers are likely to elide royalties, the arbitrator could require

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164. Press Release, European Comm'n, Antitrust: Commission Accepts Legally Binding Commitments by Samsung Electronics on Standard Essential Patent Injunctions (Apr. 29, 2014), *available at* http://europa.eu/rapid/press-release_IP-14-490_en.htm.

165. Memo, European Comm'n, Antitrust Decisions on Standard Essential Patents (SEPs) – Motorola Mobility and Samsung Electronics – Frequently Asked Questions (Apr. 29, 2014), *available at* http://europa.eu/rapid/press-release_MEMO-14-322_en.htm. The European Commission explains:

> Whether a company can be considered a "willing licensee" needs to be determined on a case by case basis taking into account the specific facts. Today's decisions provide a "safe harbour" for willing licensees who want to avoid the risk of being the subject of an injunction on the basis of SEPs . . . . The decisions do not make findings on the willingness of licensees outside this "safe harbor."

Id.

166. *See infra* Part V.

167. *See* Federal Arbitration Act, 9 U.S.C.A. §§ 1–13, 16 (West Supp. 2014); 9 U.S.C.A. §§ 14–15 (West 2009).

168. *See In re* Pharmacy Benefit Managers Antitrust Litig., 700 F.3d 109, 116 (2d Cir. 2012) ("[A] party to a valid and enforceable arbitration agreement is entitled to a stay of federal court proceedings pending arbitration as well as an order compelling such arbitration.") (quoting Alexander v. Anthony Int'l, 341 F.3d 256, 263 (3d Cir. 2003)); *see generally* Jorge L. Contreras & David L. Newman, *Developing a Framework for Arbitrating Standards-Essential Patent Disputes*, 2014 J. DISP. RESOL. (forthcoming 2014). At the same time, compelling arbitration has its costs. *See* Willingmyre, *supra* note 160 (manuscript at 10) ("Adding requirements that SEP owners must use arbitration in resolving license disputes would significantly expand most current SDO patent policies. Arbitration is difficult to setup and if incorrectly setup can be prejudicial. Also not all disputes are amenable to being arbitrated.").

implementers to make payments into escrow or post a bond.[169] Some SSOs, such as ETSI, already have a mediated dispute resolution process. This process can complement arbitration as alternatives to litigation.[170]

SSOs can also encourage transparency by partnering with the U.S. Patent and Trademark Office ("USPTO") to improve the quality of prior art searches. These complement other initiatives to increase transparency and detect breaches of the "non-discriminatory" requirement in FRAND, and are discussed in Part III. Unlike the disclosures and royalty caps discouraged by this Article, these initiatives retain the benefits of an inchoate FRAND commitment and shift the focus toward developing a legal framework for resolving disputes in the two areas they matter most—refining royalty calculations and clarifying the rules on injunctive relief. The Article focuses on these issues in the next two sections.

III. A FRAMEWORK FOR FRAND COMMITMENTS

FRAND commitments are made in the context of particular IP policies of a particular SSO and have the characteristics of contractual relationships.[171] In interpreting FRAND commitments, tribunals have therefore attempted to determine the SSO's goals in setting the standard,[172] the express terms of the agreements, and other indicia of the parties' intentions.[173]

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169. *See* Lemley & Shapiro, *supra* note 105, at 1153.

170. *See* EUROPEAN TELECOMMS. STANDARDS INST., ETSI GUIDE ON INTELLECTUAL PROPERTY RIGHTS (IPRS) § 4.3 (2013) (encouraging members who cannot resolve disputes in a "friendly" manner to consult the organization "in case a friendly mediation can be offered by other [members] and/or the ETSI Secretariat."), *available at* http://www.etsi.org/images/files/IPR/etsi-guide-on-ipr.pdf.

171. *See, e.g.*, Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 878 (9th Cir. 2012).

172. *See, e.g.*, Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof, Inv. No. 337-TA-868, at 110 (June 13, 2014) (Final) (Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond) ("The first goal of the policy is that the IPR owner be 'adequately and fairly rewarded for the use of their IPRs in the implementation of STANDARDS and TECHNICAL SPECIFICATIONS.'"); *cf.* Microsoft Corp. v. Motorola, Inc., C10-1823JLR, 2013 WL 2111217, at *12 (W.D. Wash. Apr. 25, 2013) ("A RAND royalty should be set at a level consistent with the SSOs' goal of promoting widespread adoption of their standards.").

173. *See* Apple, Inc. v. Motorola Mobility, Inc. 886 F. Supp. 2d 1061, 1081–82 (W.D. Wis. 2012); Apple, Inc. v. Motorola Mobility, Inc., No. 11-cv-178-bbc, 2012 WL 5416941, at *4 (W.D. Wis. Oct. 29, 2012); *see also* Thomas F. Cotter, *The Comparative Law and Economics of Standard-Essential Patents and FRAND Royalties*, TEX. INTELL. PROP. L.J. (forthcoming). Cotter suggests:

> As far as contract law is concerned, the relevant doctrinal questions are whether a FRAND commitment constitutes a binding contract, if so what it obligates the patentee and would-be licensee to do, and whether third parties (such as other SSO members) have a right to seek enforcement of those obligations. The

Although FRAND commitments are not licenses in themselves, they are more than merely unilateral offers "to engage in bilateral, good faith negotiations" but rather commitments to grant licenses.[174] Both court decisions and SSO policies also make it clear that FRAND commitments may continue to bind transferees after they have acquired their SEPs from predecessors who originally made those commitments, even though there is no contractual privity.[175]

Given the chimeric combination of patent and contractual features, it is perhaps unsurprising that cases are divided on whether the basis for enforcing FRAND commitments are grounded in contract law or are merely "rules to guide parties in their interactions with the organization, other members and third parties."[176] This section presents a framework to navigate the FRAND inquiry.

> answers to these questions depend upon the language of the SSO IPR policies to which the SEP owner consents, and applicable contract law principles.

Id. (manuscript at 4), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2318050&download=yes.

174. Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2012 WL 4827743, at *6 (W.D. Wash. Oct. 10, 2012). *But see* Cotter, *supra* note 173 (manuscript at 7). Cotter reports:

> Courts in other countries, by contrast, so far have reached very different results. The German cases, for example, have held that an SEP owner's FRAND commitment does not invest third parties with a right to obtain a license, or constitute a waiver of the right to obtain an injunction. Rather, a FRAND commitment merely amounts to an invitation for third parties to make offers. Similarly, in a dispute between Samsung and Apple, a Dutch court last year concluded that the ETSI IPR Policy did not of its own force create a license between Samsung and Apple (though it did not state whether Samsung had a contractual duty to conclude such a contract, or whether the FRAND commitment is merely an invitation for offers).

Id.

175. *See Motorola, Inc.*, 696 F.3d at 884–85 (finding that "Motorola's RAND declarations to the ITU created a contract enforceable by Microsoft as a third-party beneficiary"); Renata Hesse, Deputy Assistant Att'y Gen., Antitrust Div., The Art of Persuasion: Competition Advocacy at the Intersection of Antitrust and Intellectual Property 10 (Nov. 8, 2013), *available at* http://www.justice.gov/atr/public/speeches/301596.pdf ("Recent court decisions have also helpfully recognized that a F/RAND commitment to an SSO is a binding contract and implementers of the standard are third-party beneficiaries of that commitment."); *see, e.g.*, *In re* Innovatio IP Ventures, LLC Patent Litig., 921 F. Supp. 2d 903, 923 (N.D. Ill. 2013) ("The longstanding rule in Illinois, and elsewhere, is that 'the promisee of a third-party-beneficiary contract may bring suit for a breach of that contract and recover damages therefor.'"); *id.* at 922 (finding that parties to the dispute agreed that the FRAND commitment bound the successor in title); Rembrandt Data Technologies, LP v. AOL, LLC, 641 F.3d 1331, 1332 (Fed. Cir. 2011) (finding that a current patent owner was bound by prior license agreements); IEEE Comments to FTC Report, *supra* note 119, at 3 n.8 (noting that SSO rules include a requirement that contractually binds transferees).

176. *See, e.g.*, Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof, Inv. No. 337-TA-868, 2014 WL 2965327, at *75 (USITC June 13,

A. Who Bears the Burden of Proof?

The remedy for a breach of FRAND commitments is specific performance of the contract. Because FRAND does not specify a precise numerical value, the initial determination of a reasonable offer value rests initially with the SEP owner.[177] The implementer then has the burden of proving that the patentee's initial offer and attempts to negotiate were "unfair, unreasonable or discriminatory."[178]

In *Microsoft v. Motorola*,[179] the burden was placed on Microsoft, the implementer, who alleged that Motorola, the SEP owner, breached its FRAND obligation.[180] In *Apple, Inc. v. Motorola Mobility, Inc.*,[181] the court dismissed the implementer's breach of contract action because the implementer could not satisfy the "exceptional requirements" of specific performance when the implementer sought a non-binding court determination as a starting point for future negotiations.[182]

In *In re Innovatio IP Ventures, LLC Patent Litigation*,[183] the court explained that the implementers bore the burden because alleging a FRAND breach was "like an affirmative defense,"[184] thus intermingling patent law concepts into the inquiry. The court reasoned that the

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2014) (Final) (Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond) ("It is important to note the ETSI Rules of Procedure is not a contract, but it contains rules to guide the parties in their interactions with the organization, other members and third parties."); *cf. Microsoft Corp.*, 2013 WL 2111217, at *2 (W.D. Wash. Apr. 25, 2013) (acknowledging that FRAND commitments created enforceable contracts between the SEP owner and SSO, and that also held that the implementer could enforce these contracts as a third-party beneficiary).

177. *See Microsoft Corp.*, 2013 WL 2111217, at *2 (noting that "initial offers do not have to be on RAND terms so long as a RAND license eventually issues").

178. *Apple, Inc.*, 886 F. Supp. 2d at 1081–82; *see also Apple, Inc.*, 2012 WL 5416941, at *4.

179. Microsoft Corp. v. Motorola, Inc., C10-1823JLR, 2013 WL 2111217, at *1 (W.D. Wash. Apr. 25, 2013).

180. *Id. But see* Jorge L. Contreras, *A Brief History of FRAND*, 80 ANTITRUST L.J. (forthcoming 2014) (manuscript at 37), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2374983 [hereinafter Contreras, *Brief History*]. Contreras advises:

> Courts and parties considering this critical issue today would be well-advised to bear in mind the long history of placing the burden of proof of reasonableness on the patent holder, as established by courts, the DOJ and private firms over the course of more than twenty-five years of patent licensing decrees.

Id.

181. Apple, Inc. v. Motorola Mobility, Inc., No. 11-cv-178-bbc, 2012 WL 5416931 (W.D. Wis. Nov. 2, 2012).

182. *Id.* at *1–3 (expressing skepticism that specific performance would resolve any of the litigation if plaintiff "refuses to be bound by the rate determined by the court").

183. *In re* Innovatio IP Ventures, LLC Patent Litig., 956 F. Supp. 2d 925 (N.D. Ill. 2013).

184. *Id.* at 936.

FRAND obligation was like a license which would limit the defendant's liability. "The alternative," the court stated, "would be to assume in patent litigation that every potentially standard-essential claim is subject to [F]RAND until the patent owner demonstrates otherwise, a rule that would be overly burdensome for patent owners."[185]

The International Trade Commission ("ITC") takes a similar approach. In *In the Matter of Certain Wireless Devices with 3G and/or 4G Capabilities and Components Thereof*,[186] Administrative Law Judge Essex made a number of important observations regarding the obligations of implementers under a FRAND commitment. First, the implementer had to prove that the patents at issue were SEPs, explaining that patents initially declared to be essential may not turn out to be so.[187] Second, even if the patents were essential, they would only be subject to FRAND commitments if the implementers met the conditions imposed upon them as a quid pro quo for using the technology.[188] On the facts, the SSO IP policy required implementers to try to negotiate a license as a condition precedent to requiring SEP owners to honor their side of the FRAND bargain and to seek the assistance of the SSO to determine whether there was a breach of the FRAND commitment.[189]

The foregoing cases show that the implementer carries the burden of proving that the various ingredients of a FRAND breach have been met. Once met, the tribunal must determine the value of the royalty rate. As seen from the earlier discussion, the FRAND commitment creates a general obligation for both SEPs and implementers to negotiate without mandating a specific royalty figure.[190]

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185. *Id.*

186. Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof, Inv. No. 337-TA-868, 2014 WL 2965327 (USITC June 13, 2014) (Final) (Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond).

187. *Id.* at *76 ("Establishing standards involves input from hundreds of companies over multiple years. It is [therefore] not surprising that some declarations prove to be mistaken."). See discussion in Part I on the tendency for SEP owners to over-declare their patents.

188. *Id.* at *78.

189. *Id.* Judge Essex reasoned:

> These Respondents chose take the actions that led to the allegation of infringement rather than follow ETSI policy for obtaining a license. . . . The ETSI IPR policy requires companies that wish to use the IPR covered by the agreements to contact the owner of the IP, and take a license. By skipping this step, the companies that use the IPR in violation of the policy are able to exert a pressure on the negotiations with the IPR holder to try to make the agreement in the lower range of FRAND, or perhaps even lower than a reasonable FRAND rate.

Id.

190. Herbert J. Hovenkamp, *Competition in Information Technologies: Standards-Essential Patents, Non-Practicing Entities, and FRAND Bidding* 12 (Univ. of Iowa Coll.

B. *Royalty Valuation*

Microsoft v. Motorola was the first decision to identify principles for assessing FRAND royalty rates.[191] Motorola had declared to the International Telecommunication Union ("ITU") and IEEE that it was willing to negotiate a license for using its patents embodying video coding and wireless local network standards on FRAND terms.[192] Motorola offered to license its SEPs to Microsoft, who rejected the offer and sued Motorola for breaching its FRAND commitments; Motorola countersued Microsoft for patent infringement.[193]

Judge Robart drew upon the factors *in Georgia–Pacific Corp. v. U.S. Plywood Corp*[194] to calculate reasonable royalty damages for patent infringement and modified the factors to take into account Motorola's FRAND commitments.[195] He found that while the *Georgia-Pacific* factors simulated a hypothetical negotiation between the parties at the time of infringement, the negotiation in a FRAND dispute was between SSO members when the standards was being promulgated.[196] This conclusion results in a number of implications.

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of Law, Research Paper No. 12-32, 2012) ("The FRAND process permits SSOs to select a standard based upon performance characteristics on the assumption that all of the standards will be reasonably priced, without worrying too much about exactly what that price will be.").

191. Microsoft Corp. v. Motorola, Inc., C10-1823JLR, 2013 WL 2111217, at *12 (W.D. Wash. Apr. 25, 2013) (holding that (1) the royalty should be "consistent with the SSOs' goal of promoting widespread adoption of their standards[,]" (2) the need to "recognize and seek to mitigate the risk of patent hold-up that RAND commitments are intended to avoid[,]" (3) "address the risk of royalty stacking by considering the aggregate royalties that would apply if other SEP holders made royalty demands of the implementer[,]" (4) guarantee SEP owners "reasonable royalties," to "include technology intended to create valuable standards[,]" and (5) limit the royalty to "the economic value of its patented technology itself, apart from the value associated with incorporation of the patented technology into the standard"); *see also* David N. Makous, *Compulsory IP Licensing And Standards-Setting, Standard-Essential Patents and F/RAND, in* INTELLECTUAL PROPERTY LICENSING STRATEGIES 95, 119 (2014 ed. 2014), *available at* 2014 WL 1234517 (calling Judge Robart's principles "[p]erhaps the most serious and complete evaluation by a United States court").

192. Microsoft Corp. v. Motorola, Inc., 564 F. App'x 586, 587 (Fed. Cir. 2014) (setting out the procedural history of the case and concluding that the Ninth Circuit was the correct venue to hear the appeal).

193. *Id.* at 587.

194. Georgia–Pacific Corp. v. U.S. Plywood Corp., 318 F. Supp. 1116 (S.D.N.Y. 1970).

195. *Id.* at 1120 (listing the factors, which deal with the type and term of the license, comparisons with the rates and policies used in other licenses, the costs to the licensor in granting the license, the benefits to the licensee, expert opinion and the result of a hypothetical negotiation); *Microsoft Corp.*, 2013 WL 2111217, at *3.

196. *Microsoft Corp.*, 2013 WL 2111217, at *19 ("[T]he parties to a hypothetical negotiation under a RAND commitment would consider alternatives that could have been

First, while *Georgia-Pacific* compared the expected profitability for the infringer, FRAND rates would be based on the SSO's evaluation of alternatives for the patented technology and the goal of promoting widespread adoption.[197] Judge Robart held that the FRAND rate was not based on the incremental value of the technology compared to alternatives that could have been written into the standard, but rather the incremental value of the technology compared with comparable licenses used in patent pools covering those standards.[198] Second, he held that the relevant time frame within which to judge the value of the SEPs was the time of adoption rather than the time of infringement.[199] Third, Judge Robart analyzed the relative importance of the standards and SEPs as a portfolio to the products at issue rather than as a single patent.[200]

Ultimately, Judge Robart determined upper and lower bounds for a FRAND royalty range and selected a rate for each standard by looking to comparable patent pool licenses. He rejected licenses proposed by Motorola, which were reached during settlement of active or threatened litigation, included cross-licenses and patents related to SEPs at issue, or were lump sum rather than a running royalty rate.[201] The court determined that the SEPs were of minimal *ex ante* value. Judge Robart's methodology has been accepted in subsequent cases.[202]

Judge Robart correctly valuated SEPs as a patent portfolio rather than as individual patents, as most licensing takes place on a portfolio basis.[203] Portfolio valuation should be used even when only a portion of

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written into the standard instead of the patented technology. The focus is on the period before the standard was adopted and implemented (i.e., *ex ante*).").

197. *Id.* at *20.

198. Even though some adjustment had to be made because "patent pools tend to produce lower rates than those that could be achieved through bilateral negotiations." *Id.* at *80.

199. *Id.* at *19.

200. *Id.* at *3.

201. *See, e.g.*, *Microsoft Corp.*, 2013 WL 2111217, at *67.

202. *See, e.g.*, Realtek Semiconductor Corp. v. LSI Corp., No. C-12-03451-RMW, 2014 WL 46997, at *2 (N.D. Cal. Jan. 6, 2014) (finding that reliance on *Microsoft*'s method of calculating FRAND royalties was "not arbitrary"); *In re* Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609, at *4 (N.D. Ill. Oct. 3, 2013) ("The parties agree that Judge Robart's methodology is appropriate for the court to use here to set a RAND rate in this case.").

203. *See* Ruikka, *supra* note 6, at 194. Ruikka reasons:

> An implementer's investment decision is, after all, not dependent on the cost of any single license but upon the aggregate cost of all of the licenses put together. In the presence of up to several hundred Essential patents the cost of a single license may be almost meaningless for the investment case if it is taken in isolation.

Id.; Anne Layne-Farrar, Vice President, Compass Lexecon, Roundtable Discussion at the FTC Workshop: Tools to Prevent Patent "Hold-Up" 203 (June 21, 2011) (transcript

the portfolio is being asserted and reflects the approach that courts have taken.[204] Rather than complicating the analysis, valuing the relevant patents using the portfolio simplifies the FRAND negotiation and reduces the need to parse through and calculate the value of individual patents.[205]

As discussed in Part II, the value of a patent included in a standard depends on the patent's interaction with other patents included in the standard. The patents' complementary nature means that "eliminat[ing] . . . one particular patent from the standard can[not easily] be cured by substituting some other patent with identical functionality in its place."[206] The portfolio approach includes all patents needed for making, using, or selling products that comply with the standard. Portfolio valuation also gives implementers and SEP owners more room to negotiate and reach an agreement closer to their particular needs.[207]

Where portfolios involve cross-licenses, they can provide a useful benchmark for discerning the appropriate FRAND royalty.[208] To properly determine the FRAND royalty, the net payment for each side to the agreement should first be clearly identifiable.[209] Licenses resulting

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available at http://www.ftc.gov/sites/default/files/documents/public_events/tools-prevent-patent-hold-ip-rights-standard-setting/transcript.pdf). Layne-Farrar stated:

> I think one of the reasons why we've gotten to the place where lots of portfolios are licensed [as] a package is precisely because it can be so difficult to value these things. It's not like this patent is clearly on X and this patent is clearly on Y and we can give the economic value to X and Y and give you a la carte prices.

Id.

204. *See, e.g.*, Microsoft Corp. v. Motorola, Inc., 963 F. Supp. 2d 1176, 1181 (W.D. Wash. 2013); Ericsson Inc. v. D-Link Sys., Inc., No. 6:10-CV-473, 2013 WL 4046225, at *15 (E.D. Tex. Aug., 6 2013) (taking into account licenses covering the patentee's entire 802.11 portfolio).

205. *See* Brooks, *supra* note 51, at 446.

206. Richard A. Epstein & David J. Kappos, *Legal Remedies for Patent Infringement: From General Principles To FRAND Obligations For Standard Essential Patents*, 9 COMPETITION POL'Y INT'L 69, 77–78 (2013).

207. *See* Lemley & Shapiro, *supra* note 105, at 1151 (describing the difficulty in determining FRAND based on a patent-by-patent basis and advocating pricing for the entire SEP portfolio for the standard because it is simpler and matches more closely to real world practices while giving parties freedom to operate); *see generally* Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217 (determining the appropriate FRAND royalty rates and ranges for the patent portfolios Microsoft was seeking to license from Motorola).

208. *See, e.g.*, Sidak, *supra* note 49, at 1004 ("In short, cross licenses may contain helpful information, but they should receive heavy weighting in the determination of the FRAND royalty only when they resemble the negotiation at issue.").

209. DAVID J. TEECE, PETER C. GRINDLEY & EDWARD F. SHERRY, SDO IP POLICIES IN DYNAMIC INDUSTRIES 9–10 (2012) (explaining that in cross licenses, "[r]oyalties are typically determined based on the relative value of each company's technology portfolio" and that "[t]he parties will calculate a balancing payment based on the relative values of the portfolios and each party's expected volume of sales of licensed products").

from settlement agreements should be disregarded because their reliability is compromised by the fact that the royalty figure might be higher than if it were determined by the court.[210]

Judge Robart's decision to use an *ex ante* approach has proven more controversial. Commentators have criticized the *ex ante* approach on three principal grounds. First, critics note that the *ex ante* measure would encourage implementers to hold-out on negotiations because implementers would only be liable for what they would have paid as licensees.[211] Second, SEP owners would be undercompensated since the rate would not take into account the cost of the owners' sunk investments.[212] Third, SEP owners would hesitate to allow their technology to be incorporated into the standard if they anticipated that their technology would be better than the one eventually accepted, allowing them to negotiate for a better price *ex post*.[213] This means that

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210. *See* Sidak, *supra* note 49, at 1005. Sidak explains:

> Unobserved factors could bias the royalty rate upward or downward. Without additional evidence, it may be impossible to determine reliably which outcome will be more likely. Indeed, it may even be impossible to determine whether the net flow of consideration is to the licensor or the licensee. That latter could be the case if the licensee is the first of multiple defendants to settle and is being offered ancillary inducements from the licensor to negotiate a high royalty rate, which the licensor then intends to cite as evidence relevant to the FRAND royalty rate that the remaining defendants should be ordered to pay.

Id.; *see, e.g.*, Brandeis Univ. v. Keebler Co., No. 1:12-cv-01508, 1:12-cv-01509 1:12-cv-01511, 1:12-cv-01513, 2013 WL 5911233, at *7 (N.D. Ill. Jan. 18, 2013) (Posner, J.) (noting, in a non-FRAND case, that this licensing strategy motivated the benchmark royalty proposed by the patent holder's expert economic witness on damages).

211. Epstein & Kappos, *supra* note 206, at 78. Epstein and Kappos explain:

> If the value of the standard depreciates over time, the price will fall and the latecomer can reap the rewards of delaying. But by the same token if the standard increases in value, the holdout has in effect an option to sign on at the original price, given his credible threat to go without the license if the patent holder does not acquiesce in the original (lower) price. That free option to the putative licensee thus reduces the return to parties who set the standard as well as early good-faith adopters who pay for licensees, so the reward goes to parties who game the system, and not to those who contribute to its overall long term value.

Id.

212. Damien Geradin, *The Meaning of "Fair and Reasonable" in the Context of Third-Party Determination of FRAND Terms*, 21 GEO. MASON L. REV. 919, 948 (2014). Geradin explains:

> This unsatisfactory outcome arises because, contrary to the way it is labeled, the ex ante incremental value rule is not a true ex ante method. It is ex ante with regard to the adoption of the standard in question and the sunk investments made by standards implementers, but ex post with regard to the investments made by the SEP holders.

Id.

213. Anne Layne-Farrar et al., Payments and Participation: The Incentives to Join Cooperative Standard Setting Efforts 6 (July 29, 2011) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1904959.

the *ex ante* rate may insufficiently incentivize SEP owners to monetize their patents through participation in SSOs rather than through private standardization.[214]

For FRAND to be "fair and reasonable," the rate must take into account both the interests of those seeking access to the patented technology as well as the risks associated with technical failure, non-inclusion into the standard, and failure to detect or obtain compensation from infringers.[215] However, the shortcomings of the *ex ante* approach may be overstated.

First, implementers who wait until they are detected and successfully sued will be liable not just for FRAND royalty and possible attorney fees.[216] Further, the fact that they had not sought a license prior to implementing the standard may weigh against them if FRAND obligations require them to do otherwise.

Second, SEP owners who complain that they are undercompensated may find it difficult to explain why they had accepted the rate offered at the time the standard was implemented, only to find that royalty figure inconveniently binding after its value had been inflated by network effects owing to the standardization process. SEP owners had done their sums, and there is no reason for implementers to bear the burden of a SEP owner's "seller's remorse."

Third, any technology owner of the "best" technology who considers refraining from having its technology implemented so that it might reap higher per unit *ex post* royalties also loses potentially greater gains from higher volume sales and network effects. Further, history is replete with examples of consumers adopting technologically "inferior" standards such as the QWERTY keyboard and VHS video-recorder. Consistent with the discussion in Part II, the longevity and success of these standards show that the benefits of standardization are quite capable of offsetting what seemed to be suboptimal technology choices at that time.

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214. *See* Sidak, *supra* note 49, at 976. ("In effect, the *ex ante* incremental value method assumes that the inventor has no outside option for monetizing his patent."); *see also id.* at 983 (noting that a pure *ex ante* approach "is selective, asymmetric, and therefore inherently biased; it sets a FRAND rate so as to restore the implementer—but not the inventor—to the original position. The buyer in the hypothetical negotiation would still have substitute opportunities, but the inventor would not").

215. *See* Brooks, *supra* note 51, at 440.

216. *See, e.g.*, Thomas F. Cotter, *Müller and Henke on the European Commission's Decisions in Samsung and Motorola*, COMPARATIVE PATENT REMEDIES (July 16, 2014), http://comparativepatentremedies.blogspot.com/2014/07/muller-and-henke-on-european.html ("[I]f the defendant *is* an infringer and ultimately has to pay a FRAND royalty, it will also have to pay interest . . ., its own attorneys' fees, and at least some portion of the patentee's attorneys' fees.").

As a matter of precedent, the *ex ante* approach has also been cited with approval by courts and commentators.[217] Judge Robart's concept of placing the implementer in the position it would have been in at the time the standard was set also puts it in *pari materia* with all other implementers past, present, and future. Having all implementers take reference from a single point in time provides both greater commercial certainty and fits more comfortably with notions of a "fair" and "non-discriminatory" rate.

As Professor Thomas Cotter explained, it is better to trust that patent law struck the correct balance between incentives and access rather than believe that creating a special bump in the case of SEP royalties will translate into greater social benefits through greater invention or disclosure.[218] In other words, the goal is to operationalize a policy that rewards the patentee for the contribution to the state of the art without inflating the royalty rate with switching costs the implementer must incur because it is locked-in by its standard-specific investments.

The discussion has thus far described a framework for determining FRAND royalties using an approach that values the SEP owner's patent at the time the standard was adopted in the context of the portfolio of other patents within the standard. The third piece of the framework involves a "top down" approach. In *In re Innovatio*, Judge Holderman of the Northern District of Illinois faced the task of setting the FRAND rate for a portfolio of 19 SEPs covering the Wi-Fi standard.[219] Innovatio had sued a wide variety of defendants—electronics manufacturers, coffee shops, hotels, restaurants, and other end-users of the standard.[220] Unlike

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217. *See, e.g.*, Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 913 (N.D. Ill. 2012). The court explained:

> The proper method of computing a FRAND royalty starts with what the cost to the licensee would have been of obtaining, just before the patented invention was declared essential to compliance with the industry standard, a license for the function performed by the patent. That cost would be a measure of the value of the patent qua patent.

Id.; *see also* Cotter, *supra* note 173 (manuscript at 45). Cotter reasons:

> [C]ourts should calculate the royalty based on the amount willing parties would have negotiated prior to the adoption of the standard, because a large part of a royalty negotiated after that date will reflect not the inherent value of the technology itself in comparison with other possible alternatives, but rather the difficulty of avoiding use of a technology for which ex post there may be no feasible alternatives.

Id.

218. *See* Thomas F. Cotter, *Reflections on Holdup and Royalty Stacking, Part 1*, COMPARATIVE PATENT REMEDIES (June 11, 2014), http://comparativepatentremedies.blogspot.com/2014/06/reflections-on-holdup-and-royalty.html.

219. *In re* Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609, at *1–2 (N.D. Ill. Oct. 3, 2013).

220. *Id* at *2.

the *Motorola* court, the *Innovatio* court lacked a suitable license to compare and turned to the "top down" approach, which concentrates on the profit from sales of products using the standard.[221]

The court first determined that all the patents asserted were essential to the standard and therefore FRAND encumbered.[222] The court then held that the FRAND rate should reflect the technical value of the patents rather than the hold-up value of standardization.[223] The court adopted a "top down" approach to avoiding royalty stacking.[224] The "top down" approach derived the chipmaker's profit from the average price of a Wi-Fi chip, the smallest component embodying the technology.[225]

Using this "smallest salable patent-practicing unit" approach avoided over-compensating the SEP owner for non-infringing components of the product. The smallest salable unit approach resulted in a difference of between 0.72 and 3.09 cents per chip compared to between $5 and $37 per device.[226]

The profit figure was then multiplied by the fraction of the SEP owner's patents over the total number of SEPs covering the standard.[227] The total royalty stack allowed other chipmakers to remain in the business and avoided the need to rely on other licenses since FRAND licenses are rarely available for comparison. The analysis led the court to award 9.56 cents per Wi-Fi chip,[228] which was consistent with rates determined in other SEP litigation.[229]

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221. *Id.* at *37–38.

222. *Id.* at *2.

223. *Id.* at *9.

224. *Innovatio IP Ventures*, 2013 WL 5593609, at *38.

225. *Id.* at *23 (noting that the court must calculate the FRAND royalty "on the smallest salable patent-practicing unit"); *see also* LaserDynamics, Inc. v. Quanta Computer, Inc., 694 F.3d 51, 67–68 (Fed. Cir. 2012) ("[I]n any case involving multi-component products, patentees may not calculate damages based on sales of the entire product, as opposed to the smallest salable patent-practicing unit, without showing that the demand for the entire product is attributable to the patented feature.").

226. *Innovatio IP Ventures*, 2013 WL 5593609, at *40. The EU Competition Commission in Rambus also favored the view that royalties should be based on the price of the individually sold chip rather than the price of the end product into which the chip was incorporated. European Commission Decision of 9.12.2009, Case COMP/38.636—Rambus; Press Release, European Comm'n, Antitrust: Commission Accepts Commitments from Rambus Lowering Memory Chip Royalty Rates – Frequently Asked Questions (Dec. 9, 2009), *available at* http://europa.eu/rapid/press-release_MEMO-09-544_en.htm?locale=en; *see also* Grazynarazyna Piesiewicz & Ruben Schellingerhout, *Intellectual Property Rights in Standard Setting from a Competition Law Perspective*, 3 COMPETITION POL'Y NEWSL. (European Comm'n, Belgium), no. 3, 2007, at 36.

227. *Innovatio IP Ventures*, 2013 WL 5593609, at *40.

228. In determining the average price of a Wi-Fi chip, Judge Holderman relied on a report from a market research company. *Id.* A hypothetical negotiation through the life of Innovatio's patents put the figure at $14.85. *Id.* at *41. The profit margin was 12.1% and there were approximately 33,000 802.11 SEPs. *Id.* at *41, *43. Innovatio's patents, "all of moderate to moderate-high importance," fell in the top 10% of all 802.11 SEPs.

Consistent with the position advocated in Part II.B, *Innovatio*'s "top down" approach allows tribunals to reach the initial FRAND determination with much less information. It also shifts the burden of determining FRAND to the most interested parties—the SEP owner and implementer in litigation—rather than to all FRAND participants, to most of whom FRAND never became an issue.

The court twice recognized that a valuation of the SEP owner's contribution to the standard requires both the value of non-infringing alternatives as well as the cost of lawfully acquiring the use of those alternatives.[230] First, it rejected the argument that when two equally effective alternatives were possible, the royalty rate would be zero.[231] Second, like Judge Robart, Judge Holderman rejected the "bottom up" approach, which was based on the cost of implementing reasonable alternatives.[232] The court noted that the "bottom-up" approach did not take into account the cost of implementing the next-best non-infringing alternatives.[233]

The "top down" approach may be used to establish a single rate for all licensees or to derive any number of distinct rates for differently situated licensees. The approach is relatively simple and its methodology is robust.[234]

Id. at *43. The judge multiplied $14.85 by 12.1% to arrive at an average profit of $1.80 per chip. *Id.* This represented the profit available for pay royalties and was then multiplied by 84% to reflect a position in the top 10% of 802.11 SEPs, to obtain$1.51. *Id.* He multiplied it by Innovatio's 19/300 share of the top 10% of 802.11 patents, giving a FRAND rate of 9.56 cents per Wi-Fi chip. *Id.*

229. *See, e.g.*, Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217, at *4 (W.D. Wash. Apr. 25, 2013) (setting a rate of 3.471 cents per unit and a range of 0.8 to 19.5 cents per unit for Motorola's SEPs). Judge Holderman's figure fell comfortably within the range and was triple the rate of the Motorola patents because Motorola's patents "were only of minimal value to the standard" while Innovatio's patents were of "moderate to moderate-high importance." *Innovatio IP Ventures*, 2013 WL 5593609, at *44.

230. *See* Sidak, *supra* note 49, at 988.

231. *Innovatio IP Ventures*, 2013 WL 5593609, at *37 (noting that "it is implausible that in the real world, patent holders would accept effectively nothing to license their technology . . . such a low [rate] . . . would discourage future innovators form investing in new technology and from contributing their technology to future standards").

232. *Id.* at *72; *see also* Microsoft, 2013 WL 2111217, at *13 (rejecting the "incremental value" approach, which is based on the theory that a hypothetical licensee would not pay more for the patents than the amount necessary to adopt an alternative on the ground that an accurate analysis is too complicated for courts to perform "because when you take one patent out of a standard and put another one in you may make other changes, the performance of the standard is multidimensional, different people value different aspects").

233. *Id.* at *73; *see also* Sidak, *supra* note 49, at 988.

234. RICHARD B. TROXEL & WILLIAM O. KERR, CALCULATING INTELLECTUAL PROPERTY DAMAGES § 5:50 (2014 ed. 2014) ("[I]ts results derive from division of the pool of profits available to producers who exploit the standard's technology. As a result,

A final piece of the framework requires that the royalty rate be premised on the assumption that the patent was valid and infringed, unless proven otherwise.[235] This approach is supported by law and should be encouraged as a matter of policy.

As a matter of law, patent law confers to the presumption of validity to an issued patent.[236] In *Innovatio*, Judge Holderman pointed out that in reconstructing a hypothetical negotiation under the *Georgia-Pacific* framework and prior to an infringement determination, parties do not know whether the patents asserted are valid or infringed.[237] Within the *Georgia-Pacific* framework, the hypothetical negotiation assumes that the asserted patent claims are valid and infringed, since "no hypothetical negotiation would have taken place if it were otherwise."[238] Hence, "[t]he patent infringer gets no discount on its licensing fee because of uncertainty about its liability that has since been cleared up by litigation."[239]

Likewise once the court has found the patent claims "essential," "it would be inappropriate to adjust the [F]RAND rate based upon pre-litigation uncertainty about the essentiality of a given patent."[240] This is because "the patent owner cannot leave the hypothetical negotiation on the ground that it will contest essentiality in court. . . .[and t]he [F]RAND obligation requires that it grant a license."[241]

As a matter of policy, knowing the higher point in the royalty range either owed or owing at the end of the litigation process will help parties make a more sober decision on whether to litigate to the end and incur the additional attorney fees, monetary costs, and work hours diverted

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the incremental layers of compensation for patent rights and other inputs should not rise to a level that destroys the value to a licensed producer of participating in the market."); *see also id.* ("The approach also has the advantage of simplicity.").

235. *See also* Cotter, *supra* note 173 (manuscript at 45) ("As noted above, this assumption is sensible in infringement cases and therefore should apply whenever an SEP sues for infringement.") (citation omitted).

236. 35 U.S.C.A. § 282 (West 2014); Microsoft Corp. v. i4i Ltd., 131 S. Ct. 2238, 2245 (2011).

237. *In re* Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609, at *7 (N.D. Ill. Oct. 3, 2013).

238. *Id.* Judge Holderman reasoned:

> At the time of the hypothetical negotiation, the parties in actuality would not have known whether a given patent is valid or infringed, and the alleged infringer would have had the option of contesting these issues in court. Nonetheless, by the time the damages phase of an infringement suit arrives, the court has determined infringement and validity, thus foreclosing the hypothetical negotiator from benefiting from any uncertainty as to future court rulings.

Id.

239. *Id.*

240. *Id.*

241. *Id.*

toward the litigation. In *Innovatio*, Judge Holderman noted that addressing damages before validity and infringement would aid settlement of the dispute.[242] He also noted that in a breach of contract case, a discount might be made for the possibility of invalidity and non-infringement as in *Microsoft*.[243]

The rationale for Judge Holderman's discounting may have stemmed from the notion that patents are probabilistic rights and allowing patentees to bargain based on the presumptions of validity and infringement would allow them to "extract far more in expectation than in a process in which validity and infringement could be determined instantaneously."[244] Since issues of validity and infringement can only be determined upon adjudication, discounting means the more the outcome of settlement bargaining can be tied to the actual final decision of a court or arbitrator, the more accurately the expected return reflects the actual social value of the patent.[245]

However, the Article recommends against discounting the royalty rate by an arbitrary factor because it will only add further uncertainty into an already complex determination, an example of pursuit of the perfect becoming the enemy of the good. As Judge Holderman acknowledged, "no approach for calculating a [F]RAND rate is [perfect] in light of the inherent uncertainty in calculating a reasonable royalty."[246] This uncertainty is heightened in SEP litigation because "the court must reconstruct a hypothetical negotiation under a variety of assumptions and inferences about the influence of the [F]RAND obligation on hypothetical parties negotiating at a hypothetical time under hypothetical circumstances."[247]

Where there are comparable license agreements, as was the case in *Microsoft*, the adjudicator may choose a lower rate. In the absence of

242. *In re Innovatio IP Ventures*, 2013 WL 5593609, at *1 ("[P]arties will be better able to evaluate the potential risks and benefits of expending additional resources in the litigation.").

243. Cotter, *supra* note 1743 (manuscript at 45) ("If a court is trying to estimate the hypothetical royalty *outside* this context, however, as in the Microsoft v. Motorola breach of contract action, it is correct to consider (as Judge Robart did) the probability of validity and infringement as relevant factors in determining the licensing rate.") (citation omitted).

244. Kühn, *supra* note 58, at 105 ("To understand such biases against potential infringers, it is important to emphasize that patents in the ICT industry (and others) are probabilistic by nature.").

245. *See also* Cotter, *supra* note 1743 (manuscript at 45) ("The result, though it sounds a bit paradoxical, is that a FRAND rate decided pre-patent infringement litigation should be lower than a FRAND rate involving the same patent decided during the course of infringement litigation.").

246. *In re Innovatio IP Ventures*, 2013 WL 5593609, at *37.

247. *Id.*

comparable license agreements, the court should first determine essentiality and then presume validity and infringement, as was the case in *Innovatio*. But injecting further arbitrariness in the pursuit of precision may upend the accuracy of the inquiry in a complex and dynamic industry.[248] Here, one could argue that while an *ex ante* frame of reference for calculating royalties may favor the implementer, the presumption of validity and infringement acts as a counterbalance favoring the SEP owner. This result helps achieve a measure of fairness between the parties while giving clarity and certainty as to how FRAND royalties are to be calculated.

Ultimately however, many implementers in a FRAND royalty dispute and SSOs may be less concerned about the actual rate charged and more concerned about how that fee looks when compared to what others are paying. Professor David Teece and Edward Sherry explain that while firms would rather not pay royalties, "the cost of the royalties can be built into the price of the product being sold, just as the cost of the raw materials and labor needed to make and sell the product is likewise built into the price."[249] Since implementers compete on price, "prospective licensees may rationally be far more concerned about the 'non-discriminatory' aspect of the [F]RAND requirement than they are about the 'reasonable' aspect."[250] The Article next turns to this issue.

C. The "Non-Discriminatory" Requirement

The non-discriminatory requirement in FRAND originated from antitrust decrees that favored open licensing policies.[251] The requirements promoted competition by diluting the concentration of market power in the hands of SEP owners.[252] Put simply, non-discrimination essentially requires SEP owners to license similarly situated implementers on the same terms.[253] Thus, if a SEP owner offers one implementer a royalty rate that declines with increasing output, it must offer a similar declining rate to another similarly situated

248. *See* Brooks, *supra* note 51, at 464 ("[C]ourts and regulators are ill-equipped to set prices for complex IP in ever-shifting markets.").

249. David J. Teece & Edward F. Sherry, *Standards Setting and Antitrust*, 87 MINN. L. REV. 1913, 1956 n.149 (2003).

250. *Id.*

251. Contreras, *Brief History*, *supra* note 180 (manuscript at 10–11).

252. *Id.*

253. *See* Miller, *supra* note 138, at 355; Roger G. Brooks & Damien Geradin, *Interpreting and Enforcing the Voluntary FRAND Commitment*, 9 INT'L J. IT STANDARDS & STANDARDIZATION RES. 1, 16 (2011) (arguing that "non-discriminatory" allows SEP owners latitude in adjusting according to the specific situation facing parties).

implementer; however, the rate may ultimately be different from what the patent owner charges another implementer.[254]

The scope of that the non-discriminatory requirement depends on the IP policy in question. In *Microsoft Corp. v. Motorola, Inc.*,[255] the Ninth Circuit found that Motorola had promised 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" to practice the standards.[256] The court read the contract as admitting "no limitations as to who or how many applicants could receive a license ('unrestricted number of applicants') or as to which country's patents would be included ('worldwide,' 'the patented material necessary.')"[257] The court concluded, "it is clear that there is a contract, that it is enforceable by Microsoft, and that it encompasses not just U.S. patents but also the patents at issue in the German suit."[258]

Licensing terms that cover non-price aspects are also part of the SEP owner's non-discrimination obligation. As Professor Richard Gilbert notes, "[t]he value of a license depends on the restrictions that attach to the use of the licensed property," such as the fields of use or geographic areas in which licensed technologies can be used.[259] Should a disagreement arise as to the scope of the "non-discrimination" requirement, a court or arbitrator can be called upon to adjudicate the issue within the broader context of the FRAND dispute, as advocated in Part II. Since FRAND terms are a fallback if private negotiations fail, calling upon courts and arbitrators should be the exception rather than the norm.

It is less obvious whether "non-discrimination" also should require SEP owners to license implementers who are not SSO members at the same rate as SSO members.[260] Some SSOs expressly include non-

254. Sidak, *supra* note 49, at 997; *see* Epstein & Kappos, *supra* note 206, at 83. Epstein and Kappos assert:

> [T]he gains of a particular device will be dependent at least in part on the extent it can be resold to downstream users. If parties attach different values to the device, price discrimination is a perfectly respectable form of behavior by which to capture those downstream rents so long as there is no horizontal collusion.

Id.

255. Microsoft Corp. v. Motorola, Inc., 696 F.3d 872 (9th Cir. 2012).

256. *Id.* at 876.

257. *Id.* at 884.

258. *Id.* at 885.

259. Gilbert, *supra* note 123, at 877; *see also* Geradin, *supra* note 212, at 928 (listing as examples "volume of licensed products, scope of license (e.g., products, territory, 'have made' rights, etc.), exhaustion of patent rights, cross-licenses, other technology transfer, technical support, possible product purchases, the formation of broader business relationships and cooperation, and any other business value exchange").

260. Sidak, *supra* note 49, at 999.

members as beneficiaries and allow for specific performance as an option for enforcing a FRAND commitment.[261] There may not be express provisions within SSO IP policies providing for third party beneficiaries. But there need not be.

FRAND undertakings are encumbrances on the right to exclude.[262] Patent rights are treated as a form of personal property under the Patent Act.[263] Like a servitude, the promise of access continues as a burden on the patent.[264] The assignment of SEPs does not alter the rights and responsibilities under the license. Professors Mark Lemley and Carl Shapiro explain that

> Just as a mendacious patentee can't whitewash inequitable conduct by selling the patent to someone who didn't lie to the patent office, a patentee that has promised that a patent will not be enforced by means of an injunction can't wipe away that commitment by finding a buyer who didn't make that promise.[265]

Indeed, they warn that SEP owners attempting to do an end-run around these obligations would face claims under both the antitrust and patent laws.[266] Complications may arise when the SEP owner competes with the implementer in the downstream product market. In these circumstances, SEP owners should still be obliged to license rival implementers on the same terms SEP owners enjoy.[267] However, when a patent portfolio consists of multiple complementary patents, as is often the case, measuring the incremental value of an individual patent to the standard is difficult.[268] In such situations, it may be impractical to require absolute precision, and adjudicators should require only that the

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261. *See, e.g.*, ESS Tech., Inc. v. PC-TEL, Inc., No. C-99-20292 RMW, 1999 WL 33520483, at *4 (N.D. Cal. Nov. 4, 1999).

262. *See* De Forest Radio Tel. & Tel. Co. v. United States, 273 U.S. 236, 242 (1927) (characterizing licenses as a covenant not to sue).

263. 35 U.S.C.A. § 261 (West 2014) ("Subject to the provisions of this title, patents shall have the attributes of personal property.").

264. *See* Miller, *supra* note 138, at 391.

265. *See* Lemley & Shapiro, *supra* note 105, at 1159 (citation omitted).

266. *Id.* at 1159 n.81 (suggesting that "[i]mplied license or equitable estoppel doctrines might limit enforcement of such a patent", or that "[a]lternatively, the Federal Trade Commission has shown a willingness to rely on Section 5 of the FTC Act to prevent fraudulent conveyances like this").

267. Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 29 (2005) (arguing that a vertically integrated SEP owner must charge its downstream rivals the same royalty rate as it charges its own downstream unit at a level that leaves the SEP owner indifferent between licensing and not licensing those rivals).

268. Anne Layne-Farrar, A. Jorge Padilla & Richard Schmalensee, *Pricing Patents for Licensing in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 ANTITRUST L.J. 671, 693 (2007).

terms are not unjustifiably different, with some allowance for the implementer's risk preferences and the value of the patents.[269]

Successful negotiations create their own problem as licensing terms tend to be confidential.[270] Lack of transparency makes it difficult for implementers to determine whether a patent owner has complied with its non-discrimination obligation.[271] To facilitate non-discriminatory licensing, SSOs can require SEP owners to disclose to willing prospective licensees the terms on preexisting licenses subject to an appropriate mechanism to protect confidential non-price information.[272] Professor Gilbert has suggested that posting licensing terms can avoid discriminatory outcomes.[273] In this regard, an SSO can elect to keep a record of FRAND commitments it receives and make them available to willing licensees. However, ETSI is one of the few SSOs who keeps such a record.[274]

The ETSI IP database normalizes data with the European Patent Office's database, providing transparency with patents and their patent families.[275] It allows users to search by FRAND declaration and by data instances contained within each declaration. These records will reduce the universe of potentially infringing and undiscovered patents without requiring disclosure of specific licensing terms.

The USPTO does not have a similar initiative but should consider something similar to complement its current initiatives. The USPTO published a draft rule to ensure patentees "accurately record and

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269. *See* Sidak, *supra* note 49, at 1000. Sidak explains:

> As technology changes, the marginal contributions of different patents to the value of the downstream product also change. For example, the development of complementary products may make a touch screen more important to the commercial value of a smartphone than members of the SSO might have expected when they adopted the standard.

Id.

270. *See Standard Essential Patent Disputes and Antitrust Law*, *supra* note 15, at 12 ("The financial terms of license agreements are seldom publicly disclosed.").

271. JASON ALBERT, MICROSOFT CORP., COMMENTS OF MICROSOFT CORPORATION ON THE IMPACT OF PATENT ASSERTION ENTITY ACTIVITIES ON INNOVATION AND COMPETITION 3 (2013), *available at* www.justice.gov/atr/public/workshops/pae/comments/paew-0042.pdf ("[W]ithout transparency around patent ownership, it is virtually impossible to assess companies' compliance with patent encumbrances such as commitments to license standards-essential patents on reasonable and non-discriminatory terms or pledges not to assert patents against particular products or companies.").

272. *See* Lemley & Shapiro, *supra* note 105, at 1141–42.

273. Gilbert, *supra* note 123, at 876.

274. ETSI IPR POLICY, *supra* note 30 §§ 4.1–4.2.

275. Dirk Weiler, Chairman of ETSI Gen. Assembly & IPR Special Comm., Symposium on Management of IP In Standards-Setting Processes: SDO-Patent Office Cooperation and Information-Sharing (Oct. 4, 2012), *available at* http://sites.nationalacademies.org/PGA/cs/groups/pgasite/documents/webpage/pga_072720.pdf.

regularly update ownership information" so as to "improv[e] the quality of patents issued, enhancing competition, facilitating technology transfer, and making it harder to hide abusive litigation tactics behind shell companies."[276] Accessible ownership information could be complemented by a record of patent assignments that would enable a willing licensee to more easily determine the identities of SEP owners and the scope of the licenses.[277]

In general, such initiatives to enhance transparency are a good idea. It helps expose weak and overbroad patents, making it easier for licensees to know what they are paying for.[278] Transparency allows potential licensees to identify not only patents that are declared to be SEPs, but perhaps more importantly, patents that were not declared to be SEPs (and therefore not subject to FRAND commitments) but through the evolution of the standardization process later turn out to be SEPs. Transparency allows licensees to avoid paying multiple times for licenses hidden in sub-portfolios owned by shell companies.[279] Achieving greater transparency in FRAND license data is critical so that putative negotiating parties are able to detect and be deterred from opportunistic conduct.

Two other sources of data are worth mentioning. First, court decisions and arbitral awards provide valuable, objective data points resulting from consideration after both sides have been given the opportunity to present their best case.[280] Court decisions are public documents. However, arbitral awards often are not.[281] Professor Jorge Contreras and David Newman advocate requiring SSOs to make records of the arbitration available to the public, and as in a judicial proceeding,

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276. *Fact Sheet - Executive Actions: Answering the President's Call to Strengthen Our Patent System and Foster Innovation*, THE WHITE HOUSE (Feb. 20, 2014), http://www.whitehouse.gov/the-press-office/2014/02/20/fact-sheet-executive-actions-answering-president-s-call-strengthen-our-p.

277. *See* Lemley & Shapiro, *supra* note 105, at 1158–59.

278. ELEC. FRONTIER FOUND., PUBLIC COMMENTS OF THE ELECTRONIC FRONTIER FOUNDATION REGARDING PATENT ASSERTION ENTITY ACTIVITIES 7 (2013), *available at* www.justice.gov/atr/public/workshops/pae/comments/paew-0064.pdf (quoting Michael A. Carrier, *Patent Assertion Entities: Six Actions the Antitrust Agencies Can Take*, CPI ANTITRUST CHRONICLE (Jan. 2013)).

279. Letter from Steven M. Geiszler, Partner, Dentons US LLP & Garreth A. Sarosi, Deputy Gen. Counsel, MetroPCS Commc'n, Inc., to William J. Baer, Assistant Att'y Gen., Antitrust Div. & Edith Ramirez, Chairwoman, Fed. Trade Comm'n 5 (Apr. 5, 2013), *available at* www.justice.gov/atr/public/workshops/pae/comments/paew-0063.pdf.

280. Contreras & Newman, *supra* note 168 (manuscript at 17) (arguing that releasing the results of arbitral awards would "begin to eliminate much of the uncertainty that currently exists in the market").

281. Lemley & Shapiro, *supra* note 105, at 1145 ("In any given arbitration, the standard-essential patent owner and the licensee may well prefer to keep the arbitration outcome secret.").

to redact sensitive portions of the record.[282] They argue that "[s]uch improved transparency could help parties negotiate more appropriate FRAND royalties and make verification of patent holders' compliance with the non-discrimination prong of the FRAND requirement easier."[283]

Courts may oblige SEP owners to make arbitral awards available to interested prospective licensees based on FRAND's "non-discriminatory" provision.[284] More data points will help build a comprehensive record of what constitutes a FRAND royalty rate, making the boundaries of what constitutes "reasonableness" clearer to both sides. Such transparency may eventually reduce the need for duplicative arbitrations and litigation and allow parties to avoid wasting time and resources in negotiating bilateral agreements from the start.[285]

Second, Intellectual Property Exchange International ("IPXI"), the world's first financial exchange for licensing and trading IP, promises to further increase transparency, offering license rights with standard terms at market-based prices.[286] IPXI obtains exclusive patent licenses from patentees and sublicenses them through the sale of tradable instruments. Investors, including the Chicago Board Options Exchange, the world's largest options exchange, fund the licenses.[287] The Chicago Board Options Exchange includes more than 50 members, including major IP owners such as Philips, Ford, Hewlett-Packard, Panasonic, Columbia Technology Ventures, Sony, the Regents of the University of California, and JPMorgan Chase Bank, N.A.[288]

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282. Contreras & Newman, *supra* note 168 (manuscript at 17–18) ("Such summaries could provide only the commercial terms necessary to aid potential licensees in determining whether the patent holder complied with its non-discrimination obligation, and the reasons for the arbitrator's determination.").

283. Id. (manuscript at 17).

284. *See* Lemley & Shapiro, *supra* note 105, at 1145 n.28 ("Willing licensees also should have access to the terms on which these same standard-essential patents have been licensed to others, subject to suitable protections of confidential business information.").

285. *See id.* at 1145.

286. *See* Ian McClure, *IPXI to Launch First Offering on Exchange*, IPWATCHDOG (May 29, 2013), http://www.ipwatchdog.com/2013/05/29/ipxi-to-launch-first-offering-on-exchange/id=40982/. On IPXI's request, the Justice Department issued a review letter which acknowledged the efficiencies IPXI's business model could generate but stop short of blessing it. *See* Letter from William J. Baer, Assistant Att'y Gen., Antitrust Div., to Garrard R. Beeney, Sullivan & Cromwell LLP 1, 6–7 (Mar. 26, 2013), *available at* http://www.justice.gov/atr/public/busreview/295151.htm; *see also* Press Release, IPXI, IPXI Launches First Offering (June 5, 2013), *available at* https://www.ipxi.com/news-events/news/press-releases/105-ipxi-launches-first-offering.html.

287. McClure, *supra* note 286.

288. *Id.*; *see also* Chase Means, *IPXI: Creating an Efficient Patent License Marketplace*, TIMELY TECH (Mar. 16, 2013), http://illinoisjltp.com/timelytech/ipxi-creating-an-efficient-patent-license-marketplace/. Means claims:

> The transparency and efficiency with which IPXI operates will offer corporate management the opportunity to make better business decisions regarding their

This system of trading promises to provide more complete information and independent analysis on the value of the technology.[289] IPXI will facilitate this goal with market-based pricing and quality benchmarks for IP which it will create.[290] Under this system, patent experts conduct due diligence to determine if the patents will withstand validity challenges and then determine whether the patents are something the market wants.[291] The patent experts conduct about 95 percent of the due diligence a licensee would require.[292] Then, implementers, or anyone with credentials, may look at that analysis.[293]

In addition to encouraging partnerships between the USPTO and SSOs, disclosing court and arbitral awards, and using exchanges like the IPXI, SEP owners can use a patent pooling system. A pooling system sets a single rate for all SEPs in the pool, which provided a convenient point of reference for the court in *Microsoft* in determining the appropriate FRAND rate. One disadvantage is that patent pools are costly. Unlike SSOs, which operate on a system of voluntary disclosure of patents that patent owners subjectively determine to be essential, patent pool participants engage in a lengthy and costly process of vetting each patent to ensure that they are not substitutes of one another.[294] This vetting process is necessary to avoid antitrust liability for price-fixing.[295] However, the vetting process also limits the viability of patent pools to discrete standards in well-defined product categories.[296]

The limits of initiatives to encourage transparency described above should be acknowledged. Although each initiative aims to provide a

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> IP. IPXI will offer license rights with standard terms at market-based prices. . . . IPXI could help remedy some of the larger issues plaguing the United States patent system. These include patent trolls, the "patent thicket," and rising costs of patent litigation.

Id.

289. Means, *supra* note 288; *see also* Tom Groenfeldt, *New IP Exchange Promises Transparency In Patent Pricing,* FORBES (Dec. 6, 2013) http://www.forbes.com/sites/tomgroenfeldt/2013/12/06/new-ip-exchange-promises-transparency-in-patent-pricing/ ("IPXI creates Unit License Right contracts (ULR) for patents, measuring them by numbered units, kilograms or square feet depending on the patent. The exchange performs legal analysis of the patent, conducts price discovery and develops standardized terms. Buyers can purchase licenses as needed.").

290. *See* Groenfeldt, *supra* note 289.

291. *See* Means, *supra* note 288.

292. Groenfeldt, *supra* note 289.

293. *See id.*

294. *See* Contreras, *supra* note 115, at 16 ("When a patent pool relating to a standardized technology is formed, the parties expend significant resources to ensure that *only* SEPs are included in the pool.").

295. *See* U.S. DEPT. OF JUSTICE & U.S. FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 76–78 (2007).

296. *See* Contreras, *supra* note 115, at 20.

greater number of data points for comparison, the highly relationship-specific nature of licensing agreements means that the points will still be hard to compare.[297] Practical difficulties may also arise in comparing "hold-up free" licenses covering multiple standards, particularly where the portfolio covers both SEPs and non-SEPS or where the benchmark licenses are cross-licenses.[298] Nonetheless, as long as those differences are considered, there is no reason the initiatives should be anything other than an important step forward.[299]

A clear and robust framework for FRAND imposes on the implementer the burden of showing breach of the SEP owner's commitments. It provides balanced rules for determining the royalty rate and for determining whether the rate proposed by the SEP unfairly discriminates against the implementer. The success of such a framework will reduce the likelihood that SEP owners seeking to inflate the royalties they receive through injunctive relief will succeed. Like the FRAND framework, the framework for injunctive relief has been the source of much controversy in patent litigation involving SEPs, smartphones, and PAEs.

IV. INJUNCTIONS

Generally speaking, there are two views on injunctive relief for SEPs. Those adopting the first view believe that the SEP owner "is, by definition, willing to license rather than exclude, and benefits from the widespread adoption of its technology resulting from standardization."[300] SEP owners therefore should not be able to leverage on injunctions in negotiations.[301] High switching costs from standardization and the risk

297. Geradin, *supra* note 212, at 951–52 (noting that this to be "true whether comparisons are made between agreements covering different standards (e.g., 2G versus 3G, or Wi-Fi versus 3G), or between agreements covering a similar standard" and suggesting that "econometric analysis can be used to properly control for differences between licensing agreements").

298. Dennis W. Carlton & Allan L. Shampine, *Identifying Benchmarks for Applying Non-Discrimination in FRAND* 5 (SSRN, Working Draft, July 3, 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2462234.

299. *Id.* (noting for example that SEP/non-SEP portfolio licenses may still prove to be useful benchmarks as long as the licensee had the option to obtain a SEP-only license).

300. Thomas F. Cotter, *Lex Machina's Patent Litigation Damages Report*, COMPARATIVE PATENT REMEDIES (June 30, 2014), http://comparativepatentremedies.blogspot.com/2014_06_01_archive.html.

301. *See, e.g.*, Michael J. Schallop, *The IPR Paradox: Leveraging Intellectual Property Rights to Encourage Interoperability in the Network Computing Age*, 28 AIPLA Q.J. 195, 227 (2000) ("[FRAND] at a minimum, requires that essential IPR owners not chill the adoption and proliferation of the . . . standard through the enforcement of their essential patent rights by enjoining competitors from practicing the standard."); *see also* Lemley & Shapiro, *supra* note 105, at 1140 ("[T]he FRAND commitment is at its base an agreement not to exercise the full scope of the patentee's rights in exchange for having its

of royalty stacking further militates against the grant of injunctive relief.[302] Proponents of this view point out that, under this framework, implementers would not be tempted to risk infringement; if a court should find against the implementer, the implementer would be required to pay not only the FRAND royalty, but also the penalty of interest and attorney fees.[303]

Those adopting the second view are concerned that without injunctive relief, implementers have little incentive to pay royalties until sued for patent infringement or hold-out from negotiations.[304] Proponents of this view believe that hold-ups are rare and that singling out SEP owners could harm innovation.[305] Those in the second group

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technology adopted as an industry standard, likely resulting in increased licensing opportunities.").

302. *See, e.g.*, Joseph Kattan, *FRAND Wars and Section 2*, ANTITRUST MAG., Summer 2013 at 18–19. Kattan explains:

> 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.' This can be seen in reported demands by some SEP-holders for royalties exceeding 2 percent of the price of a finished product based on a small fraction of the SEPs reading on just one or two components of the product.

Id.

303. *See* Cotter, *supra* note 2168.

304. *See* MOTOROLA MOBILITY LLC'S SUBMISSION IN RESPONSE TO THE COMMISSION'S REQUEST FOR SUBMISSIONS ON THE PUBLIC INTEREST 15 (2012), *available at http://www.essentialpatentblog.com/wp-content/uploads/sites/234/2013/01/Motorola-Mobility-Public-Interest-Comments-337-TA-794.pdf* ("Depriving innovators of an established remedy against an unwilling licensee who may engage in a successful 'hold out' creates a disincentive to participate and contribute in the future."); *see also* Lemley & Shapiro, *supra* note 105, at 1153. Lemley and Shapiro assert:

> A commitment to license on reasonable terms is not a commitment to be whipsawed by a potential licensee. AnA implementer who agrees to participate only if it gets a result it likes is no different than a patentee who agrees to license on reasonable terms only if it gets to decide what is reasonable. Neither party is acting in good faith.

Id.

305. *See, e.g.*, Brief of Amicus Curiae Qualcomm Inc. in Support of Reversal at 13–14, Apple, Inc. v. Motorola, Inc., Nos. 2012-1548, 2012-1549 (Fed. Cir. Mar. 20, 2013). The brief stated:

> [T]here is a decided lack of evidence that any 'hold up' problem actually exists. . . . Indeed, no one has identified a single instance in which the adoption or implementation of a standard has been defeated or delayed as a result of a patent reading on the standard. Moreover, SSOs have on many occasions told the FTC that there is no "hold up" problem.

Id. (citations omitted); Complainant Samsung's Initial Submission in Response to Comm'n Notice of Review at 15, Certain Elec. Devices, Including Wireless Comm'n Devices, Portable Music & Data Processing Devices, & Tablet Computers, Inv. No. 337-TA-794 (USITC Dec. 13, 2012) ("[D]espite a number of recent litigations involving

also point out that SSO policies do not forbid injunctions.[306] Solutions targeted at resolving FRAND disputes post-standardization are preferable to a blanket withdrawal of the right to injunctive relief.

The discussion that follows explains why SEP owners should be allowed to show why they deserve injunctions or exclusion orders. Enjoining implementers should happen rarely, such as when implementers are unwilling to negotiate or refuse to be bound by an adjudicated royalty rate, or where they fail to meet a precondition to the FRAND commitment, such as by failing to seek out the SEP owner prior to using the standard. The following subsections also outline the dispute resolution mechanism that can shepherd parties toward an adjudicated outcome within a fixed time frame.

A. Life After eBay

Patent law allows SEP owners to prevent unauthorized making, selling, using, offering to sell, and importing of devices containing its patented technology through injunctions.[307] The Supreme Court in *eBay Inc. v. MercExchange, LLC*[308] required patentees seeking a permanent injunction to show that they had suffered irreparable injury not compensable by damages and that hardship and public interest factors favored them.[309] Subsequent courts have held that the thresholds are similar for preliminary injunctions.[310]

Foreshadowing hold-ups in SEP litigation, Justice Kennedy in his concurrence in *eBay* warned that granting injunctions on whole devices

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FRAND-committed patents, there has never been any evidence of 'patent hold-up' inhibiting the implementation of standards as far as Samsung is aware.").

306. *See* Letter from David Heiner, Vice President & Deputy Gen. Counsel, Microsoft Corp., to the Fed. Trade Comm'n 3–5 (June 14, 2011), *available at* http://www.ftc.gov//os/comments/patentstandardsworkshop/00009-60523.pdf; *see also* Wright, *supra* note 16, at 806–07 ("[N]o SSO appears to uniformly disallow injunctions. To the contrary, some appear to expressly consider and reject such rules.").

307. 35 U.S.C.A. § 283 (West 2014) (providing that in cases of patent infringement a court "may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable").

308. eBay Inc. v. MercExchange, LLC, 547 U.S. 388 (2006).

309. *Id.* at 391. The Court held that the patentee must show:

> (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.

Id.

310. See Amoco Prod. Co. v. Vill. of Gambell, AK, 480 U.S. 531, 546 n.12 (1987) ("The standard for a preliminary injunction is essentially the same as for a permanent injunction with the exception that the plaintiff must show a likelihood of success on the merits rather than actual success.").

for patents covering small component parts would facilitate "undue leverage in negotiations," particularly when sought by NPEs.[311] Notwithstanding the fact that the Supreme Court explicitly stated that even NPEs may be granted injunctions if they satisfy the requirements for an injunction, 77 percent of practicing entities continue to obtain injunctions; non-practicing entities, however, had a much harder time post-*eBay*, with requests for injunctions denied up to 90 percent of the time.[312]

In the years following the decision, the ITC offered patentees a convenient end-run around tighter injunction rules that district courts had to follow under *eBay*, despite the Justice Department and FTC urging the ITC to exercise greater restraint.[313] The ITC thus became a venue of choice for patentees seeking to exclude alleged infringers.[314] The ITC must grant an exclusion order when it finds a patent infringement but has broad discretion to deny an exclusion order when it would harm the public interest.[315]

On behalf of President Obama, the U.S. Trade Representative ("USTR") Michael Froman disapproved an exclusion order by the Commission based on a FRAND encumbered SEP, effectively moving the analysis of exclusion orders closer to those of post-*eBay* injunctions.[316] Ambassador Froman's disapproval was an extraordinarily rare occurrence.[317]

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311. *eBay Inc.*, 547 U.S. at 396–97 (Kennedy, J., concurring) (noting that "[a]n industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees"). Justice Kennedy reasoned:

> For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent. When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.

Id.

312. Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 9–10 (2012); *see* also Daryl Lim, *Post eBay: A Brave New World?*, 3 EUR. INTELL. PROP. REV. 483, 484–85 (2010).

313. *See* Morton & Shapiro, *supra* note 19, at 473 ("The DOJ, the PTO, and the FTC have all urged the ITC to consider this aspect of consumer welfare. However, the ITC has not accepted that advice.") (citation omitted).

314. *See* Chien & Lemley, *supra* note 213, at 2 ("In the past five years, both PAEs and product-producing companies have flocked to this once-obscure trade agency in search of injunctions or the credible threat of injunctions.").

315. 19 U.S.C.A. § 1337(d)(1) (West 1999). In determining that harm, the ITC must evaluate its effect on "the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers." *Id.*

316. *See* Letter from Michael B.G. Froman, Ambassador, U.S. Trade Rep., to Hon. Irving A. Williamson, Chairman, U.S. Int'l Trade Comm'n 3 (Aug. 3, 2013) [hereinafter

The ITC has previously found that public interest trumped exclusion in three cases.[318] Unlike those decisions, Ambassador Froman premised the disapproval on legal policy considerations and not on a public need to have those products. In particular, Ambassador Froman was concerned about "potential harms that can result from owners of [SEPs] who have made a voluntary commitment to offer to license SEPs on [FRAND] terms . . . gaining undue leverage and engaging in 'patent hold-up.'"[319] Froman directed the ITC to "examine thoroughly and carefully on its own initiative the public interest issues . . . when determining whether a particular remedy is in the public interest" and to make "explicit findings" as to "the presence or absence of patent hold-up or reverse hold-up."[320]

Professor Cotter observed that "[a]lthough it may be too early to state with confidence the impact of the disapproval, the decision may encourage the ITC to deny exclusion orders in other cases involving SEPs, and thus to discourage patent owners from filing in the ITC to avoid *eBay*."[321] Shortly after Ambassador Froman's disapproval, the White House issued a statement that the U.S. Intellectual Property Enforcement Coordinator would be conducting an interagency review to make the enforcement of exclusion orders issued by the ITC "more transparent, effective, and efficient."[322]

The ITC has since been active with its reform efforts. For example, on January 9, 2014, the ITC further tightened the requirements for obtaining an exclusion order.[323] Ruling against a PAE that accused Hewlett-Packard and others of infringing on patents covering flash

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Froman Letter], *available at* http://www.ustr.gov/sites/default/files/08032013%20Letter_1.PDF ("Licensing SEPs on FRAND terms is an important element of the Administration's policy of promoting innovation and economic progress and reflects the positive linkages between patent rights and standards setting.").

317. J. Preston (J.P.) Long & Doris Johnson Hines, *Un-FRAND-ly Behavior*, 87 PAT., TRADEMARK & COPYRIGHT J. 572 (2014) (noting that "[t]his was the first time since 1984—and only the fourth time ever—that the USTR has taken such action" and describing the veto as "virtually unheard of").

318. Chien & Lemley, *supra* note 3142, at 20 (these cases covered "car parts necessary for improved fuel efficiency, scientific equipment for nuclear physics research, and hospital burn recovery beds").

319. *See* Froman Letter, *supra* note 316, at 2.

320. *See id.* at 3; *see also* Long & Hines, *supra* note 317 ("[W]hat is unique about the USTR's recent decision is that, unlike the three previous decisions, the public interest was premised solely on legal policy considerations and not public necessity for the particular products.").

321. Cotter, *supra* note 173 (manuscript at 11).

322. THE WHITE HOUSE, *supra* note 276.

323. *See generally* Certain Computer & Computer Peripheral Devices & Components Thereof & Products Containing the Same, Inv. No. 337-TA-841 (USITC Jan. 9, 2014).

memory card readers, the ITC held that the PAEs had failed to show "substantial investment in exploiting the patent though engineering, research and development, or licensing."[324] In other words, patentees must show that there are licensed devices that practice the patent, which is often difficult for a SEP owner who is a PAE to prove. The holding signals a departure from the ITC's earlier standard where licensing alone could satisfy the requirement, whether or not the licensees actually used the patents.[325] The tightening up of exclusion orders has diminished the threat of patent hold-ups at the ITC.[326]

B. The Case for Injunctive Relief

For FRAND litigation in a post-*eBay* world, the question arises as to which of the two views—those warning against hold-ups or those warning against hold-outs—should prevail. The answer depends on the facts of the case.

In *Microsoft Corp. v. Motorola Inc.*, the Ninth Circuit found that implicit in a FRAND commitment is the SEP owner's waiver of injunctive relief.[327] Since the SEP owner was willing to license its technology to SSO participants, damages asserted must be sufficient to compensate for infringement.[328] The disgruntled implementer may either seek to be licensed on FRAND terms on the basis of specific performance of the SEP's contractual undertaking to the SSO or elect to join a class of pre-existing licensees to a license implied in law.[329] On

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324. *Id.* at 27.

325. Ryan Davis, *'Patent Troll' Suits Face New Obstacles at ITC*, LAW 360 (Feb. 11, 2014, 7:21 PM), *available at* http://www.law360.com/articles/509094/patent-troll-suits-face-new-obstacles-at-itc.

326. *See* Sidak, *supra* note 49, at 1008. Sidak concludes:

> President Obama's veto in August 2013 of the ITC's exclusion order against Apple's infringing products in Investigation 337-TA-794193 lowered the expected value of an SEP holder's threat to attempt patent holdup, thereby reducing the probability that any royalties negotiated in bilateral, voluntary agreements are subject to holdup.

Id. (citation omitted).

327. Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 884 (9th Cir. 2012) ("Implicit in such a sweeping promise is . . . a guarantee that the patent-holder will not take steps to keep would-be users from using the patented material, such as seeking an injunction, but will instead proffer licenses consistent with the commitment made."); *see also* Cotter, *supra* note 173 (manuscript at 9) ("[W]hile *eBay* counsels against the use of 'broad classifications' and 'categorical' rules for or against the entry of injunctive relief, one might safely conclude that the application of the *eBay* factors in the typical case involving an SEP generally would militate against the use of permanent injunctions.") (citation omitted).

328. *Motorola, Inc.*, 696 F.3d at 885 ("[H]owever the RAND rate is to be determined under the ITU standards, injunctive relief against infringement is arguably a remedy inconsistent with the licensing commitment.").

329. *See* Lemley, *supra* note 122, at 1925.

the facts, the wording of the SSO's IP policy warranted the Ninth Circuit's interpretation, but the idea that the right to injunctive relief is extinguished every time a SEP is at issue is a step too far.

A per se rule prohibiting injunctive relief for SEPs provides an alluring simplicity. Judge Robart in *Microsoft* hinted at this simplicity when he reasoned that "easily measurable litigation costs to enforce one's rights cannot constitute irreparable harm."[330] Despite acknowledging the lack of price increases or diminishing innovation in the smartphone space, those concerned about hold-ups maintain that things could be even better.[331] They concede that implementers may "abuse their lack of susceptibility to injunctions to negotiate a license that is too low to sustain a healthy rate of innovation," but nonetheless prefer to invoke enhanced damages and attorney fees should SEP owners attempt to use injunctions to hold-up implementers.[332]

Yet taken to its logical conclusion, this view fails to acknowledge that, as with injunctions, enhanced damages and attorney fees carry the same risk of overdeterrence. The question is one of kind, not one of degree. Since overdeterrence is not easily quantifiable, it boils down to a matter of judgment of whether an injunction is a more appropriate remedy than damages in the form of reasonable royalties. Those appointed for precisely those skills—judges—should be left to weigh the equities as mandated by Congress, rather than be fettered by artificial presumptions one way or the other.

In *Walgreen Co. v. Sara Creek Property Co*,[333] Judge Posner explained how judges make such decisions when deciding to grant injunctive relief.[334] Consistent with Part II.B's discussion of placing the burden on the warring parties, Judge Posner noted that injunctions "shift[] the burden of determining the cost of the defendant's conduct

330. Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2012 WL 5993202, at *6 n.9 (W.D. Wash. 2012); *see also id.* at *6. Judge Robart concluded:

> Because Microsoft will pay royalties under any license agreement from the time of infringement within the statute of limitations, this license agreement will constitute Motorola's remedy for Microsoft's use of Motorola's H.264 standard essential patent portfolio to include the Motorola Asserted Patents. Accordingly, Motorola cannot demonstrate that it has been irreparably harmed.

Id.

331. Cotter, *supra* note 2168. Cotter writes:

> It seems to me that this is still a social cost, potentially a substantial one in the case of SEPs, even if at the same time technological progress is, fortunately, mitigating some portion of that cost. . . . We can[no]t just assume that conditions are optimal because prices are falling.

Id.

332. *Id.*

333. Walgreen Co. v. Sara Creek Prop. Co., 966 F.2d 273 (7th Cir. 1992).

334. *Id.* at 275.

from the court to the parties."[335] Further, "a premise of our free-market system, and the lesson of experience here and abroad as well, is that prices and costs are more accurately determined by the market than by government."[336]

In the context of SEP litigation, if a SEP owner's damages are smaller than its gain from preventing the implementer from using the technology, then "there must be a price for dissolving the injunction that will make both parties better off."[337] If an injunction is granted, the parties have the opportunity to decide what that price point is where a proper construction of the FRAND obligation warrants it.

Judge Posner also noted that a "battle of experts" over damages less reliably determines the actual cost of entry than negotiations between the parties over the price at which the incumbent "would feel adequately compensated for having to face that competition."[338] In other words, "the effect of upholding the injunction would be to substitute for the costly processes of forensic fact determination the less costly processes of private negotiation."[339] Further, while injunctions require continuing supervision by the court, Judge Posner noted that the same was true for awarding damages.[340]

A motion for injunctive relief could be simply a means to bring a belligerent implementer to the negotiating table.[341] After all, hornbook contract law teaches that a party cannot obtain a court order compelling specific performance from the offending party if it is unable or unwilling to perform under the contract itself. Similarly contract law should not require the SEP owner to grant access if the implementer refuses to license the technology on an adjudicated FRAND rate.[342]

FRAND represents a commitment by SEP owners to grant implementers access to their technology on reasonable and non-

335. *Id.*
336. *Id.* at 275–76.
337. *Id.* at 275.
338. *Walgreen*, 966 F.2d at 276.
339. *Id.* at 275.
340. *Id.* at 276. Judge Posner explained:

> The costs and benefits of the damages remedy are the mirror of those of the injunctive remedy. The damages remedy avoids the cost of continuing supervision and third-party effects, and the cost of bilateral monopoly as well. It imposes costs of its own, however, in the form of diminished accuracy in the determination of value, on the one hand, and of the parties' expenditures on preparing and presenting evidence of damages, and the time of the court in evaluating the evidence, on the other.

Id.
341. *See* Wright, *supra* note 16, at 807 ("Although the rate negotiated with the injunction threat is likely greater than the rate negotiated without the threat of injunction, it does not follow that the former is above F/RAND.").
342. 81A C.J.S. *Specific Performance* § 79 (2014).

discriminatory terms, thereby encouraging implementers to participate. Implementers compelling a SEP owner to grant a license must show that the SEP owner acted unreasonably or in a discriminatory fashion. Injunctions are the corollary of the same general obligation to deal in good faith. They serve as a safeguard against opportunistic implementers, encouraging SEP owners to participate.

The hostility toward injunctions may be in part due to the unproven assumption that the extracted royalties will be greater than FRAND, rather than greater than the rate desired by implementers, but still *within* a FRAND range.[343] If the implementer accuses the SEP owner of breaching its FRAND promise, the earlier discussion shows that the implementer must prove that breach. While injunctions should not be granted to SEP owners seeking to leverage the injunction to hold-up implementers, they should be granted to allow SEP owners to protect themselves from a hold-out by implementers.

C. A Framework for Assessing Injunctive Relief

In *Apple Inc. v. Motorola, Inc.*,[344] the Federal Circuit held that there is no per se denial of injunctions for FRAND-encumbered SEPs.[345] Instead, the *eBay* framework "provides ample strength and flexibility for addressing the unique aspects of FRAND committed patents and industry standards in general."[346]

As an initial matter, courts should be guided by the wording of the FRAND commitment itself to determine its nature and scope. FRAND obligations do not necessarily apply merely because a SEP is at issue. For example, FRAND obligations may not apply where the patents were declared to be essential but later found not to be so, or where the implementer did not meet a condition precedent, or where the claims at issue were not subject to the FRAND commitment.[347]

Significantly, the ITC has been less disapproving of negotiating under the shadow of injunctive relief, noting that SEP owners threatening exclusion orders are par for the course in negotiations unless SSO IP

343. *See* Wright, *supra* note 16, at 808 (noting the importance of the threat of injunction to the bargaining process and "likely part of the benefit of the bargain conceived by the contributing member of the SSO at the time it decided to participate in the standard").

344. Apple Inc. v. Motorola, Inc., Nos. 2012-1548, 2012-1549, 2014 WL 1646435, (Fed. Cir. Apr. 25, 2014).

345. *Id.* at *35.

346. *Id.*

347. For example, see *Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof*, Inv. No. 337-TA-868, 2014 WL 2965327 (USITC June 13, 2014) (Final), where the facts furnished dismissal based on all three grounds.

policies expressly prohibit this behavior.[348] In a recent case, Administrative Law Judge Essex ruled against Nokia and ZTE's argument that InterDigital, a PAE, had breached its FRAND obligations because it failed to seek a license before practicing the standard as provided for under IEEE's rules.[349]

Judge Essex held that Nokia and ZTE took a calculated risk.[350] In doing so, Nokia and ZTE shifted the loss entirely to InterDigital, which, as a PAE, was particularly vulnerable to hold-outs since it was "not engaged in manufacturing handsets or any cell phone equipment."[351] Judge Essex explained that while "InterDigital must attempt to make certain all of its licenses are granted on FRAND terms. . . . [i]f InterDigital failed and was no longer in business, each respondent would be able to continue at least as profitably as before, and perhaps more so."[352] Judge Essex concluded that "holding out meets the interest of the respondents, but if [InterDigital] should 'hold up' the respondents, they will suffer losses along with the licensee."[353]

In contrast, the Ninth Circuit in *Microsoft Corp v. Motorola, Inc.* found that Motorola had made a "sweeping promise" to license without restrictions as to the number of applications, the patents included, or the identity of the applicants.[354] The court thus reached a conclusion by implication that "injunctive relief against infringement is arguably a remedy inconsistent with the licensing commitment."[355] Thus the FRAND commitment created the presumption that the SEP owner had agreed to allow access to its technology on "fair, reasonable and non-discriminatory" terms.

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348. *Id.* at *81 ("There is no guidance as to what can be done in negotiations but that InterDigital must deal with proposed licensees in good faith. There is nothing in any of the evidence presented that they cannot use the ITC and an exclusion order to obtain an FRAND contract with respondents.").

349. *Id.* at *74 (finding the patents neither infringed nor essential).

350. *Id.* at *78.

351. *Id.* at *80.

352. *Certain Wireless Devices with 3G and/or 4G Capabilities & Components Thereof*, 2014 WL 2965327, at *80.

353. *Id.*

354. Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 884 (9th Cir. 2012). Judge Berzon reasoned:

> This language admits of no limitations as to who or how many applicants could receive a license ("unrestricted number of applicants") or as to which country's patents would be included ("worldwide," "the patented material necessary"). Implicit in such a sweeping promise is, at least arguably, a guarantee that the patent-holder will not take steps to keep would-be users from using the patented material, such as seeking an injunction, but will instead proffer licenses consistent with the commitment made.

Id.

355. *Id.* at 885.

Assuming that the implementer can show that it has satisfied its own obligations under FRAND and that the claims at issue fall within its scope, the court should next look to the factual record to examine the conduct of the parties and determine which side equity should favor. The fact that a party's good faith plays a central role in the inquiry should not be surprising. After all, injunctions are remedies that courts issue according to the equities of the case.

In the context of FRAND negotiations, injunctions may create hold-ups and are generally frowned upon unless the SEP owner can show that the implementer was an "unwilling licensee" attempting to "hold-out" the SEP owner, in which case an injunction against the implementer is warranted. Thus, practitioners have advised that "patent owners should ensure that their pre-suit activities were thorough and in good faith."[356]

The Apple-Samsung dispute at the ITC also highlighted the importance of building a record of good faith.[357] In particular, parties should avoid conduct that may be construed as being unwilling to offer a license and should be proactive in having IP valuation done early in the process. Thus, negotiations will be supported by royalty rates substantiated by methodologies approved by earlier decisions such as the "top down" approach discussed in Part III.[358] Just as a SEP owner's injunction request may be denied when the license offered was not on FRAND terms,[359] an implementer may be vulnerable to an injunction if the implementer refused to pay a FRAND royalty.[360]

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356. Long & Hines, *supra* note 317.

357. Froman Letter, *supra* note 316, at 3 (noting the importance of parties developing "a comprehensive factual record").

358. Long & Hines, *supra* note 317 ("If a patent owner comes to the negotiating table with royalty rates substantiated by the methodologies endorsed by Judges Robart and Holderman, that party's offers are far less likely to be controversial during any future litigations."); Apple Inc. v. Motorola, Inc., Nos. 2012-1548, 2012-1549, 2014 WL 1646435, at *36 (Fed. Cir. Apr. 25, 2014) (noting that "an injunction may be justified where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect").

359. *Id.*; *see also* Ericsson Inc. v. D-Link Sys., Inc., No. 6:10-CV-473, 2013 WL 4046225, at *25 (E.D. Tex. Aug. 6, 2013) (noting that there was a mutual obligation to negotiate in good faith and refusing to construe a FRAND rate because the defendant intended to use that figure as a means of leveraging FRAND as a negotiating tool rather than agreeing to be bound by it).

360. Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 914 (N.D. Ill. 2012); *see also* Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217, at *6 n.9 (W.D. Wash., Apr. 25, 2013) (order granting preliminary injunction). The court reasoned:

> The court's prior rulings have made clear that Microsoft, as an implementer of the H.264 Standard, must accept a RAND license to Motorola's standard essential patents. Indeed, Microsoft, or any other implementer, is not free to infringe Motorola's standard essential patents, and were that to occur, this court's ruling with respect to injunctive relief may be different.

In *In the Matter of Google Inc.*,[361] the FTC indicated that attempting to obtain injunctions on SEPs would put Google and Motorola in breach of §5 of the FTC Act.[362] At the same time, the FTC acknowledged that if implementers refused to license the patents, Google and Motorola could seek an injunction.[363] The Justice Department and U.S. Patent and Trademark Office have also suggested that an implementer could be deemed "unwilling" where it refused to negotiate; refused, or was unable, to pay the adjudicated FRAND rate; or when it was not subject to the jurisdiction of a U.S. court.[364]

In *Realtek Semiconductor Corp. v. LSI*,[365] the U.S. District Court for the Northern District of California found that injunctive relief was a pretext to royalty inflation.[366] The patentee had filed an ITC action against the alleged infringer before offering the alleged infringer a license to the patent.[367] The court found this to be a violation of the SEP owner's FRAND commitment.[368] At the same time, the court was prepared to accept that an injunction may be appropriate in cases where the implementer "outright refuses to accept a [F]RAND license."[369]

These decisions establish that although both parties are mutually obliged to negotiate in good faith, courts frown upon parties concurrently seeking injunctive relief. When a SEP owner insists, using an injunctive threat, that implementers waive their right to challenge validity or infringement of the SEPs, the position is less clear. Abroad, the

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Id.

361. Analysis of Proposed Consent Order to Aid Public Comment, Motorola Mobility LLC and Google Inc., No. 121-0120 (F.T.C. Jan. 3, 2013), *available at* http://www.ftc.gov/sites/default/files/documents/cases/2013/01/130103googlemotorolaanalysis.pdf.

362. *Id.* at 7.

363. *Id.*; *see* Analysis of Agreement Containing Consent Orders to Aid Public Comment, Robert Bosch GmbH, No. C-437, at 5 (F.T.C. Nov. 26, 2012), *available at* http://www.ftc.gov/sites/default/files/documents/cases/2013/04/121126boschanalysis.pdf (reaching the same conclusion).

364. *See, e.g.*, POLICY STATEMENT, *supra* note 4, at 7; *see also* Froman Letter, *supra* note 316, at 2 (citing that the joint DOJ/PTO Policy Statement raised concerns that he "strongly share[d] about the potential harms that can result from owners of standards-essential patents [] who have made a voluntary commitment to offer to license SEPs on . . . F/RAND [terms], gaining undue leverage and engaging in 'patent hold-up'").

365. Realtek Semiconductor Corp. v. LSI Corp., 946 F. Supp. 2d 998 (N.D. Cal. 2013), *cert. denied*, No. C-12-03451-RMW, 2013 WL 3568314 (N.D. Cal. July 12, 2013), *appeal dismissed*, 565 F. App'x 602 (9th Cir. 2014).

366. *See id.* at 1007–08.

367. *Id.* at 1002.

368. *Id.* at 1005.

369. *Id.* at 1007.

European Commission has been willing to find that Motorola Mobility violated EU competition law by doing so.[370]

While the wording of the FRAND commitment and the conduct of the parties are highly relevant to the inquiry of whether to grant an injunction, *eBay* provides the framework for the inquiry. A Federal Circuit decision applying *eBay* provides a glimpse of the difficulty of obtaining an injunction for complex technology products based on a single feature.

In *Apple Inc. v. Samsung Electronics Co.*,[371] Apple sought a permanent injunction against Samsung for infringing several design and utility patents.[372] The case did not involve SEPs but is instructive on how injunctive relief in SEP litigation overlays with royalty claims.[373] Similar to hold-ups, a central issue in the case was whether, "the patentee seeks to leverage its patent for competitive gain beyond that which the inventive contribution and value of the patent warrant."[374]

With respect to the irreparable harm factor, the Federal Circuit required the patentee to show "some causal nexus" between infringement and harm to the patentee.[375] The patentee need not show that the patented feature was the sole reason consumers bought the accused infringing devices as long as there is a nexus with consumer demand, for example, through survey evidence that consumers were willing to pay more than a nominal premium for the product.[376] Commentators have

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370. Press Release, European Comm'n, Antitrust: Commission finds that Motorola Mobility Infringed EU Competition Rules by Misusing Standard Essential Patents (Apr. 29, 2014), *available at* http://europa.eu/rapid/press-release_IP-14-489_en.htm. According to the European Commission's press release:

> The Commission also found it anticompetitive that Motorola insisted, under the threat of the enforcement of an injunction, that Apple give up its rights to challenge the validity or infringement by Apple's mobile devices of Motorola SEPs. Implementers of standards and ultimately consumers should not have to pay for invalid or non-infringed patents. Implementers should therefore be able to ascertain the validity of patents and contest alleged infringements.

Id.

371. Apple Inc. v. Samsung Elecs. Co., 735 F.3d 1352, 1355 (Fed. Cir. 2013).

372. *Id.* at 1355–56.

373. David Long, *Patent Case Alert: Federal Circuit Provides more Guidance on Injunctive Relief Involving Multi-Component Devices IRIMCD in* Apple v. Samsung, ESSENTIAL PATENT BLOG (Nov. 18, 2013), http://www.essentialpatentblog.com/2013/11/patent-case-alert-federal-circuit-provides-more-guidance-on-injunctive-relief-involving-multi-component-devices-in-apple-v-samsung/ (noting the relevance of the case to SEP litigation analysis).

374. *Samsung*, 735 F.3d at 1361.

375. *Id.* at 1360.

376. *Id.* at 1364. The court illustrated:

> There might be a variety of ways to make this required showing, for example, with evidence that a patented feature is one of several features that cause consumers to make their purchasing decisions. It might also be shown with evidence that the inclusion of a patented feature makes a product significantly

noted that "[b]ecause SEPs often cover only a single feature of any downstream device, the requirement of proving a 'causal nexus' may make injunctions more difficult to obtain in Federal District Court."[377]

Consistent with the earlier discussion on FRAND valuation in Part III, the Federal Circuit accepted that it may be "logical and equitable to" view the patents as a portfolio or "aggregate" rather than on a "patent-by-patent" basis.[378] This approach is appropriate when the patents "all relate to the same technology or where they combine to make a product significantly more valuable." The Federal Circuit was concerned about preventing "perverse situations" where patentees would be "unable to obtain an injunction against the infringement of multiple patents covering different—but when combined, all—aspects of the same technology, even though the technology as a whole drives demand for the infringing product."[379]

In *Motorola*, a later case, the Federal Circuit noted that "[i]nfringement of multiple patents by a single device may strengthen a patentee's argument for an injunction by, for example, supporting its argument that the infringed features drive consumer demand or are causing irreparable harm."[380] However, the court noted that it is also appropriate for courts to consider the harm to the public "of an injunction on a product with many non-infringing features."[381] On the facts, Motorola had "agreed to add as many market participants as [were] willing to pay a FRAND royalty," and "negotiations [with Apple] have been ongoing." Under *eBay*, the lack of irreparable harm to Motorola controlled, and the court denied Motorola's request for an injunction.[382]

With respect to inadequate legal remedies, the Federal Circuit held that no categorical rule precluded injunctions simply because patentees were willing to license their patents to some licensees and the implementer was financially capable of paying any damages that might be ordered against it.[383] On the facts, Apple had been willing to license

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more desirable. Conversely, it might be shown with evidence that the absence of a patented feature would make a product significantly less desirable.

Id.

377. Tony V. Pezzano & Jeffrey M. Telep, *Latest Developments on Injunctive Relief for Infringement of FRAND-Encumbered SEPS—Part I*, 26 INTELL. PROP. & TECH. L.J. 14, 19 (2014).

378. *Samsung*, 735 F.3d at 1365.

379. *Id.*

380. Apple Inc. v. Motorola, Inc., 757 F.3d 1286, 1331 (Fed. Cir. 2014).

381. *Id.*

382. *Id.* at 1332. *But see id.* at 1333 (Rader, C.J., dissenting-in-part) (concluding that because his reading of the record "shows evidence that Apple may have been a hold out," the issue should be remanded to allow Motorola to prove Apple's hold out).

383. *Samsung*, 735 F.3d at 1369.

some patents to Samsung in the past.[384] Apple had also been willing to license the asserted patents to non-rivals as well as to rivals to settle litigation that excluded "clone" versions of its product.[385] However, it had never offered to license the asserted patents to Samsung, its primary competitor.[386] In reaching its conclusion, the Federal Circuit stressed that focusing on past licensing practices "without exploring any relevant differences from the current situation, hints at a categorical rule that . . . cannot be squared with the principles of equity adopted by Congress."[387] Where the licensing history shows the SEP owner honoring its FRAND obligations to similar licensees similarly situated to the implementer-in-suit, an injunction would likely be inappropriate.[388]

With respect to the balance of hardships factor, Apple argued that Samsung would not be harmed because it had designed around Apple's patents.[389] In contrast, Apple would be harmed by the risk of Samsung's continued infringement. Samsung responded that since it no longer sold the infringing products, Apple would not benefit from an injunction.[390] On the other hand, Samsung would be harmed by an injunction because it would "create fear, doubt and uncertainty in the market as to what *other* products Apple might *later* claim are covered by its sweeping injunction."[391] The Federal Circuit ruled that the balance of hardships

384. *Id.* at 1370.

385. *Id.*

386. *Id.* The court reasoned:

> The district court's exclusive focus on whether Apple's patents are "priceless" and whether Samsung is "off limits" led it to disregard Apple's evidence that *Samsung's* use of *these patents* is different. Apple points to numerous factors that the district court failed to consider in determining the relevance of Apple's past licensing behavior. For example, Apple notes that IBM is not a competitor in the smartphone market, and that the license was entered into five years before Apple launched the iPhone. Apple further notes that it entered into the HTC and Nokia agreements to settle pending litigation. In addition, the Nokia agreement was a "provisional license" for a limited "standstill" period, and the HTC agreement excluded HTC products that were "clones" of Apple's products. Moreover, although the evidence shows that Apple offered Samsung a license to some of its patents, Apple is adamant that it never offered to license the asserted patents to Samsung, its primary competitor.

Id. (citations omitted).

387. *Id.* at 1370 (citation omitted).

388. Apple Inc. v. Motorola, Inc., 757 F.3d 1286, 1331–1332 (Fed. Cir. 2014) (finding that a history of licensing the asserted patent to rivals and honoring FRAND obligations "to as many market participants as are willing to pay a FRAND royalty" suggest that damages would likely be sufficient, and that "a patentee subject to FRAND commitments may have difficulty establishing irreparable harm").

389. *Samsung*, 735 F.3d at 1371.

390. *Id.* at 1371.

391. *Id.* (quoting Corrected Brief for Defendants-Appellees at 45, Apple Inc. v. Samsung Elecs. Co., 735 F.3d 1352 (Fed. Cir. 2013) (No. 2013-1129)).

factor was neutral,[392] which suggests that courts will likely take a narrow view of the parties' hardships flowing from risks of further infringement and injunctions.

With respect to the public interest factor, the Federal Circuit defined the concern as "not that a large number of products would be enjoined, but rather that entire products would be enjoined based on 'limited non-core features'" and "that an injunction [may] depriv[e] the public of access to a large number of non-infringing features."[393] The court ruled that the public's interest in enforcing patent rights was "outweighed by other considerations" in this case, such as "removing phones from the market when the infringing components constitute such limited parts of complex, multi-featured products."[394] This view is consistent with the view taken by the U.S. Patent & Trademark Office, the antitrust agencies, and the U.S. Trade Representative on SEPs as described in Part IV.B.

In sum, *Apple* demonstrates that it will be difficult to obtain an injunction covering multicomponent standards-compliant devices like smartphones based on the *eBay* decision. To obtain an injunction, SEP owners will first need to show a causal nexus between consumer demand and the patent portfolio at issue, a possibly higher and different kind of bar than legal or technical "essentiality." The public interest factor and "inadequate remedies at law" factor are weighted in favor of access to the SEP owners' FRAND-encumbered technology. The balance of hardships factor determination will likely be fact specific.

Rather than making sweeping proclamations for or against injunctions, the better view is that parties understand that bilateral negotiations are not conducted under the shadow of an injunction but with the understanding that an adjudicated FRAND rate helps determine whether an implementer is unreasonably holding out and should be enjoined as a step toward reaching a negotiated solution.[395] At the same time, FRAND also assumes that SEP owners have generally waived rights to an injunction in exchange for increased licensing opportunities

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392. *Id.*

393. *Samsung*, 735 F.3d at 1372–73.

394. *Id.* at 1372.

395. *See, e.g.*, James Ratliff & Daniel L. Rubinfeld, *The Use and Threat of Injunctions in the RAND Context*, 1 J. COMPETITION L. & ECON. 1, 9 (2013). Ratliff & Rubinfeld explains:

> [T]he existence of that threat does not lead to holdup as feared by those who propose that a RAND pledge implies (or should embody) a waiver of seeking injunctive relief. If RAND terms are reached by negotiation, the negotiation is not conducted in the shadow of an injunctive threat but rather in the shadow of knowledge that the court will impose a set of terms if the parties do not reach agreement themselves.

Id.

by having its technology adopted within the standard.[396] Because each case is decided on its own merits, later implementers that are sued are not stuck with the first implementer's failure to put on a good case at trial.

D. The End Game

SEP owners realize that obtaining injunctive relief for FRAND-encumbered patents is an uphill task. SEP owners also realize that courts will demand rigorous proof of a nexus between the patented invention and the implementers' sales, as well as any alleged uncooperativeness in reaching a negotiated compromise. On the other side, implementers realize that they will be vulnerable to injunctions and exclusion orders if they are perceived as being "unwilling" licensees. Both sides understand that courts are increasingly intolerant of hold-ups and hold-outs. That realization has accelerated the onset of the end of the smartphone wars.

SEP litigation in the smartphone industry will end with settlements for all ongoing litigation regarding global patent cross-licensing for all SEPs.[397] Recent months have seen a significant cessation of hostilities. In a joint statement, Apple and Google announced that they agreed to dismiss all the current lawsuits existing directly between them.[398] More recently, Apple and Samsung agreed to end all patent-related disputes outside of the United States.[399] A number of other major players such as Motorola Mobility, Nokia, Microsoft, and HTC have also reached a truce.[400]

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396. *See* Lemley & Shapiro, *supra* note 105, at 1140.

397. *See* Rachel Swan, *Preliminary Ruling Invalidating Key Apple Patent Could Reshape Smartphone War*, DAILY JOURNAL (Dec. 24, 2012), http://news.jmls.edu/wp-content/uploads/2013/01/Lim-Dec.24.pdf.

398. Dan Levine, *Apple, Google Settle Smartphone Patent Litigation*, REUTERS (May 16, 2014, 7:43 PM), http://www.reuters.com/article/2014/05/16/us-apple-google-settlement-idUSBREA4F0S020140516.

399. Philip Elmer-DeWitt, *Apple and Samsung Drop All Non-US Lawsuits*, (Aug. 5, 2014, 11:55 PM EDT), http://fortune.com/2014/08/05/apple-and-samsung-drop-all-non-u-s-lawsuits/.

400. Simon Johnson, *Samsung to Pay Ericsson $650 Million Plus Rroyalties to End Patent Spat*, REUTERS (Jan. 27, 2014, 7:51 AM), http://www.reuters.com/article/2014/01/27/us-ericsson-samsung-patents-idUSBREA0Q0A120140127; *see* Press Release, Ericsson, Ericsson and Samsung Reach Agreement on Licensing Terms (Jan. 27, 2014), *available at* http://www.ericsson.com/news/1757163 (announcing that Samsung would pay Ericsson $650 million together with ongoing royalties in settlements covering GSM, UMTS, LTE standards for networks and handsets based FRAND commitments); *id.* (reporting that Samsung also entered into a cross-license agreement with Google and Nokia recently); Nick Gray, *HTC Settles Patent Dispute with Nokia, Signs Cross-licensing Agreement*, ANDROID AND ME (Feb. 7, 2014, 5:43 PM), http://androidandme.com/2014/02/news/htc-settles-patent-dispute-with-nokia-signs-cross-licensing-agreement/ (reporting that Nokia and HTC have agreed to cross-license their patents); *Microsoft's Support for Industry Standards*, MICROSOFT (Feb. 8, 2012),

Like its European counterpart, the U.S. Justice Department closed its antitrust investigation into Samsung's use of SEPs to obtain exclusion orders at the ITC against Apple. It explained that with Ambassador Froman's disapproval of the ITC's exclusion order against Apple, further investigation was unnecessary.[401]

Patent wars, particularly those involving SEPs, are lengthy and expensive. As parties battle over claims of infringements of one generation of devices, technology has moved the market ahead.[402] Apple, which entered the war in pursuit of an ideological vendetta against its rival Google, realized that its arsenal of patents was not as solid as its founder Steve Jobs might have envisioned.[403] In the end, the reality of Digital Darwinism rather than the wisdom of the courts may close this memorable chapter of patent history.

It would be a mistake, however, to assume that such technological evolution renders the FRAND debate moot. The slew of settlements represents a transition *into* the end game phase; the game itself is not over. Each party retains a vested interest in maintaining its leverage over

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http://www.microsoft.com/about/legal/en/us/IntellectualProperty/iplicensing/ip2.aspx (announcing that Microsoft would not seek an injunction for SEPs); Brandon Russell, *Apple and Motorola Mobility Agree to Throw Out Patent Lawsuit*, TECHNOBUFFALO (May 16, 2014), http://www.technobuffalo.com/2014/05/16/apple-and-motorola-mobility-agree-to-throw-out-patent-lawsuit/; Joe Weisenthal, *Apple and HTC Reach Patent Deal — All Lawsuits Dropped*, BUSINESS INSIDER (Nov. 10, 2012, 10:17 PM), http://www.businessinsider.com/apple-and-htc-reach-patent-deal--all-lawsuits-dropped-2012-11 (reporting that Motorola Mobility and HTC have also agreed to settle their disputes with Apple, agreeing to cross-license each other's mobile industry patents).

401. Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of Samsung's Use of Its Standards-Essential Patents (Feb. 7, 2014), *available at* http://www.justice.gov/opa/pr/2014/February/14-at-129.html.

402. Lori Zimmer, *Are We Headed for a Smartwatch War?*, (Mar. 27, 2013), ECOUTERRE.COM, http://www.ecouterre.com/are-we-on-the-verge-of-a-smartwatch-war/; *see also* Jon Phillips, *How Samsung Can Still Win the Looming Smartwatch Wars in an Android Wear World*, TECHHIVE (Mar. 19, 2014, 3:00 AM), http://www.techhive.com/article/2109544/how-samsung-can-still-win-the-looming-smartwatch-wars-in-an-android-wear-world.html ("[T]he fact of the matter is Samsung is the dominant player in smartphones, and where smartphones go, smartwatches follow.").

403. Florian Mueller, *Apple and Samsung Drop All Non-U.S. Patent Suits Against Each Other, Keep Suing in U.S.*, (Aug. 6, 2014) http://www.fosspatents.com/2014/08/apple-and-samsung-drop-all-non-us.html. Mueller argues:

> [I]f Apple has now recognized that it can't gain leverage over its fiercest rival anywhere else, it will have to come up with something else than the thermonuclear patent war envisioned by Steve Jobs if it wants to stop Android from further marginalizing iOS outside the U.S.
>
> Even in the U.S., Apple's ability to regain market share through patent litigation is very doubtful. Its U.S. patents so far haven't been strong enough either.

Id.

its opponent. Each victory on FRAND royalties or injunctions adds a chip that can be used at the bargaining table in future negotiations.

V. ANTITRUST AND PATENT SOLUTIONS

The final section completes the discussion by considering the complementary roles that the antitrust laws and patent laws can play. It explains why antitrust laws are generally more appropriate in policing anticompetitive conduct taking place before the standard is set, and why it is unwise to use these laws to resolve disputes afterwards. This section also explains why patent law is up to that task. Recent court decisions promise better quality patents and fairer play in litigation, but more can be done. The equitable defense of patent misuse has been a largely untapped tool which offers a useful way of targeting vexatious litigation.

A. The Role of Antitrust Law

Section 2 of the Sherman Act prohibits monopolization and attempted monopolization.[404] Antitrust plaintiffs must prove that the defendant has power in the relevant market and willfully sought, acquired, or maintained that power unlawfully.[405] The FTC may also bring these claims under § 5 of the FTC Act as an unfair method of competition or as a deceptive act or practice.[406]

Thus far, antitrust law has intervened in three categories of conduct where patents cover standards. First, antitrust law condemns conduct that results in implementers becoming locked-in through the SEP owner's deception. Cases involving owner deception could be due to the owner concealing a SEP at the point the standard was adopted, or when the owner lies about its willingness to license on FRAND terms.[407] Such

404. 15 U.S.C.A. § 2 (West Supp. 2014).

405. *See* United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966) (requiring proof of "(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident").

406. 15 U.S.C.A. § 45 (West Supp. 2014); *see* Contreras, *Market Reliance Theory*, *supra* note 27 (manuscript at 35) ("While monopolization and attempted monopolization are actionable under Section 5, Section 5 also encompasses conduct beyond monopolization."); *see also* Bruce H. Kobayashi & Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. COMPETITION L. & ECON. 469, 495 (2009) (noting that the FTC may prefer Section 5 due to the difficulty of meeting more stringent Section 2 liability standards or a desire to achieve a broad reading of Section 5).

407. *See, e.g.*, United States v. Microsoft Corp., 253 F.3d 34, 76–77 (D.C. Cir. 2001) (finding Microsoft liable for deceiving Java developers to adopt Windows-specific software development tools); Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 304 (3d Cir. 2007); Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456, 464–66 (D.C. Cir. 2008); Dell Computer Corp., 121 F.T.C. 616, 616–18 (1996), *available at*

violations may be brought under § 2 of the Sherman Act, which condemns the acquisition or maintenance of monopoly power.[408] It is important to note that claims of deception relate to conduct taking place before the standard was set and are wholly distinct from claims where the dispute focuses on the scope of FRAND commitment after the standard was adopted.[409] No party in a FRAND dispute has been accused of the sort of bait-and-switch[410] or "patent ambush" attempted in earlier cases.[411]

Second, both the assignor and assignee of a patent may be guilty of collusion if the assignment was undertaken to allow the assignee to elide FRAND obligations previously undertaken by the assignor. In *Visio, Inc. v. Funai Elec. Co.*,[412] the assignor and assignee conspired to charge royalty rates in excess of the FRAND obligations and split the profits.[413] The U.S. District Court for the Central District of California found this relationship to be sufficient to provide for an antitrust claim against the assignor.[414] In light of *Visio*, patentees who sell their standard-essential patents should exercise caution in situations where they continue to be involved with the new patent owner on issues involving royalty rates.

SEP owners tempted to push the envelope would do well to realize that antitrust agencies take a dim view of using transfers as a means of circumventing the FRAND commitment. In *Negotiated Data Solutions LLC*,[415] the FTC entered into a consent decree with Negotiated Data Solutions, preventing it from enforcing SEPs until it had offered to license them on terms set by the FTC.[416] N-Data had obtained the

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http://www.ftc.gov/os/decisions/vol121.htm (resolving the complaint by consent order and finding liability for lying that it had no IP relevant to the standard and suing after adoption of standard); *see also* Elhauge, *supra* note 11, at 18 ("Such monopoly power is not obtained through competition on the merits because it is obtained by breaching a commitment that had persuaded firms to give up their competitive options."); Jeffery M. Cross, *Standard Setting And Antitrust: SSOs, SEPs, F/RAND and Patent Holdup*, ANTITRUST LAW DAILY (Mar. 14, 2014) (on file with author).

408. Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 595–96, 605 n.32 (1985).

409. Contreras, *Market Reliance Theory*, *supra* note 27 (manuscript at 33–34) (noting that such conduct "is generally viewed as deserving sanction . . . [but] does not appear to be common, or even the focus of most litigation over FRAND commitments today").

410. Negotiated Data Solutions LLC, No. C-4234, 2008 WL 4407246 (F.T.C. Sep. 22, 2008).

411. *Rambus Inc.*, 522 F.3d at 459.

412. Visio, Inc. v. Funai Elec. Co., No. CV 09-0174 AHM (RCx), 2010 WL 7762624 (C.D. Cal. Feb. 3, 2010).

413. *Id.* at *2.

414. *Id.* at *6.

415. Negotiated Data Solutions LLC, No. C-4234, 2008 WL 4407246 (F.T.C. Sep. 22, 2008).

416. *See* David Balto, *A Dozen Times to Call Your Antitrust Lawyer*, 5 LANDSLIDE 42 (2012).

patents knowing they were FRAND encumbered and exploited switching costs to charge higher royalties.

Third, the FTC invoked § 5 of the FTC Act to limit a SEP owner's ability to seek injunctions as an "unfair method of competition."[417] In *In the Matter of Motorola Mobility LLC and Google Inc.*,[418] the FTC launched its own investigation into Google/Motorola Mobility's conduct with regard to SEPs shortly after the Justice Department approved Google's acquisition of Motorola Mobility.[419] The FTC alleged that seeking injunctive relief violated § 5. The FTC entered a consent order where the parties committed not to seek injunctive relief subject to some exceptions.[420]

In *In the Matter of Robert Bosch GmbH*,[421] the FTC entered a consent order requiring the SEP owner to license some patents on a royalty-free basis, license others on FRAND terms, and refrain from seeking injunctive relief on any of them.[422] The FTC explained that the threat of injunctions could "cause substantial harm to U.S. competition, consumers, and innovation" because royalties would "reflect the investments firms make to develop and implement the standard, rather than the economic value of the technology itself," harming "incentives to develop standard-compliant products" and leading "to excessive royalties that can be passed along to consumers in the form of higher prices."[423]

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417. *See* 15 U.S.C.A. § 45(a), (n) (West Supp. 2014); Complaint at 1, Union Oil Co. of Cal., No. 9305, 2003 WL 1190102 (F.T.C. Mar. 4, 2003) [hereinafter Unocal Complaint], *available at* http://www.ftc.gov/sites/default/files/documents/cases/2003/03/030304unocaladmincmplt.pdf, resolved by consent order, 140140 F.T.C 123, 125–26 (2005) (finding liability for misrepresenting that proposed standards were nonproprietary); *see also* Elhauge, *supra* note 11, at 20. Elhauge asserts:

> [A]pplied to RAND breaches, the FTC Act does not change the essential structure of the inquiry, but simply lowers the monopoly power requirement to a market power requirement. This lowered power requirement is consistent with the fact that the FTC Act creates lower overdeterrence concerns because it is enforceable only by a financially-disinterested, politically accountable FTC that is limited to seeking prospective remedies.

Id.

418. *See* Motorola Mobility LLC, No. C-4410, 2013 WL 3944149 (F.T.C. July 23, 2013).

419. *Id.* at *5.

420. *Id.* at *5–6.

421. *See* Robert Bosch GmbH, No. C-4377, 2013 WL 1911293 (F.T.C. Apr. 24, 2013).

422. *Id.* at *9, *11–12.

423. Statement of the Fed. Trade Comm'n, Robert Bosch GmbH, No. 121-0081, at 1–2, (F.T.C. Apr. 24, 2013), *available at* http://www.ftc.gov/sites/default/files/documents/cases/2013/04/121126boschcommissionstatement.pdf.

This threat would amount to an "unfair method of competition," under § 5 of the FTC Act.[424]

In her dissent, Commissioner Ohlhausen indicated her skepticism that § 5 was an appropriate avenue for redress without the FTC first "fully articulating its views on what constitutes an unfair method of competition, including the general parameters of unfair conduct and where Section 5 overlaps and does not overlap with the antitrust laws, and how the Commission will exercise its enforcement discretion under Section 5."[425] Otherwise, she warned, "the Commission runs a serious risk of failure in the courts and a possible hostile legislative reaction, both of which have accompanied previous FTC attempts to use Section 5 more expansively."[426]

Professor Contreras has cautioned against relying on § 5 for two reasons:

> [First r]elying on such an uncertain and judicially untested standard as the principal mechanism for enforcing patent pledges could make the enforcement of such pledges less predictable and thus lessen their value as market-wide assurances. Second, even if the parameters of Section 5 were clarified to cover breaches of patent pledges with greater reliability, an action under Section 5 can only be brought by the FTC in its enforcement capacity, and not by private litigants. Thus, such actions depend on the enforcement priorities and resources of the FTC and as such cannot provide a reliable means for enforcing patent pledges across the board.[427]

Employing antitrust law to address *ex ante* misconduct and attempts to elide FRAND commitments are fairly uncontroversial. However, the Article agrees that employing § 5 of the FTC Act to address breaches of

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424. *Id.* at 2–3.

425. *See* Statement of Comm'r Maureen K. Ohlhausen, Robert Bosch GmbH, No. 121-0081, at 1 (F.T.C. Nov. 26, 2012), *available at* http://www.ftc.gov/sites/default/files/documents/public_statements/statement-commissioner-maureen-ohlhausen/121126boschohlhausenstatement.pdf. Commissioner Ohlhausen argues:

> Even if all of the SEP-related allegations in the complaint were proved . . . I would not view such conduct as violating Section 5 of the FTC Act. Simply seeking injunctive relief on a patent subject to a fair, reasonable, and non-discriminatory ("FRAND") license, without more, even if seeking such relief could be construed as a breach of a licensing commitment, should not be deemed either an unfair method of competition or an unfair act or practice under Section 5.

Id.

426. *Id.* at 3–4.

427. Contreras, *Market Reliance Theory*, *supra* note 27 (manuscript at 38) (citation omitted).

FRAND commitments is problematic for the reasons articulated by Professor Contreras.

What about § 2 of the Sherman Act? Some commentators have suggested that antitrust liability could hinge on two theories. First, one might posit that patent owners obtain power over price because of the high switching costs involved. In the familiar narrative, patent owners threaten injunctions and obtain "hold-up" royalties. The problem confronting this theory is that antitrust law does not regulate prices.[428] One U.S. Circuit Court of Appeals has unequivocally required evidence of anticompetitive effects, even when the patent owner obtained higher prices through deception.[429]

Second, one might also posit that by refusing to grant access to SEPs at a FRAND rate, SEP owners are denying rivals and downstream implementers access to a resource they need to compete.[430] Such a refusal could also provide the basis for invoking the essential facilities doctrine, which mandates access to "a facility that cannot reasonably be duplicated and to which access is necessary if one wishes to compete."[431] The theory of liability rests on the SEP owner's leveraging of exclusive

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428. *See* Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP. 540 U.S. 398, 407–10 (2004); *see also* Cotter, *supra* note 173 (manuscript at 40). Cotter advises:

> I am concerned . . . [with] . . . the difficulties of requiring courts or antitrust enforcers to determine what a fair return is, in the manner of public utility regulators. The inherent subjectivity of the task, along with risks of erroneous decisions (that then may have precedential value, with potentially wide-ranging effect, in future cases) and of bending competition law to protect competitors instead of the competitive process, all seem to me to counsel against deploying doctrines such as essential facilities or abuse of dominant position in all but the most extreme cases.

Id.; *c.f.* Press Release, European Comm'n, Antitrust: Commission Sends Statement of Objections to Motorola Mobility on Potential Misuse of Mobile Phone Standard-Essential Patents (May 6, 2013), *available at* http://europa.eu/rapid/press-release_IP-13-406_en.htm (finding that it was an abuse of a dominant position under EU competition law to exclude a willing licensee from the market or negotiate under an injunctive threat, which could lead to "[anticompetitive] licensing terms that the licensee of the SEP would not have accepted absent [the seeking of the injunction]").

429. Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456, 464 (D.C. Cir. 2008) (finding insufficient evidence that the patent owner unlawfully monopolized the relevant markets).

430. *See, e.g.*, Image Technical Servs. v. Eastman Kodak, 125 F.3d 1195 (9th Cir. 1997).

431. Fishman v. Estate of Wirtz, 807 F.2d 520, 539 (7th Cir. 1986); *see* Krista S. Jacobsen, *Intellectual Property in Standards: Does Antitrust Law Impose A Duty to Disclose (Even If the Standards-Setting Organization Does Not)?*, 26 SANTA CLARA COMPUTER & HIGH TECH. L.J. 459, 485 (2010) ("When a standard incorporates a patented invention as an essential component of the standard, the patent becomes, in effect, an essential facility because one wishing to implement the standard cannot do so without having access to the patented invention."); *see also* Daryl Lim, *Patent Misuse and Antitrust: Rebirth or False Dawn?*, 20 MICH. TELECOMM. & TECH. L. REV. 299.

rights in the technology market for standards compliant products.[432] When designing around the patented standard or developing a new standard is "expensive and unreasonable," "the essential facilities doctrine appears to be a well-suited remedy[.]"[433]

Some commentators have warned that greater forays by antitrust law could erode SEP owner confidence and willingness to participate in SSOs, resulting in an overall decline in innovation.[434] Others, while more optimistic that patent owners' enthusiasm may continue unabated, caution against the risk of condemning the innocents.[435] Despite the arguments of a few commentators,[436] both the Federal and D.C. Circuits have exonerated SEP owners of antitrust violations because the SSO disclosure policy did not specify with sufficient particularity what patents needed to be disclosed.[437] As a general matter, antitrust law frowns upon the notion that rivals have a duty to assist each other in the absence of predatory behavior.[438] Where the issue is access to patented technology, courts have been even more reluctant to grant what would

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432. Jacobsen, *supra* note 431, at 484–85.

433. Jacobsen, *supra* note 431, at 485–86. In its latest Draft Rules on the Prohibition of Abuses of Intellectual Property Rights for the Purpose of Eliminating or Restricting Competition, China is exploring making FRAND violations a breach of competition law. *See* Koren Wong-Ervin, *FRAND Ambush?*, LAW360 (July 9, 2014, 10:29 AM ET), http://www.ftc.gov/system/files/attachments/key-speeches-presentations/wong-ervin_-_frand_ambush_-_july_2014.pdf ("In contrast with the approach taken in the United States and Europe, recent developments in China suggest that patent holders may be required to license SEPs on FRAND terms even in the absence of a voluntary commitment to do so.").

434. Teece & Sherry, *supra* note 249, at 1986. *But see* George S. Cary et al., *The Case for Antitrust Law to Police the Patent Holdup Problem in Standard Setting*, 77 ANTITRUST L.J. 913, 923–24 (2011) (arguing that there is little evidence supporting this view).

435. Kobayashi & Wright, *supra* note 406, at 486.

436. *See* Skitol, *supra* note 147, at 728–29 (arguing that vague FRAND promises are a "tool for misuse" and that SSOs should thus be held to have violated the antitrust laws when they fail "to require, or at least affirmatively encourage, 'ex ante' disclosure of intended license terms prior to voting [to adopt a standard], with a related mechanism for collective negotiation of the license agreement").

437. Rambus Inc. v. Infineon Technologies AG, 318 F.3d 1081, 1102 (Fed. Cir. 2003). The court reasoned:

> A policy that does not define clearly what, when, how, and to whom the members must disclose does not provide a firm basis for the disclosure duty necessary for a fraud verdict. Without a clear policy, members form vaguely defined expectations as to what they believe the policy requires——whether the policy in fact so requires or not.

Id.

438. Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP. 540 U.S. 398, 411–16 (2004) (warning that forced sharing may reduce incentives to innovate; that courts are ill-equipped to regulate price and output; and that it may encourage collusion between rivals).

amount to a compulsory license as long as the patentee can offer some legitimate justification for the refusal.[439]

With respect to SEPs, it is difficult to substantiate the facial claim that the SEP owner is a monopolist when there are hundreds of standards covering the 250,000 patents in a smartphone, and only between 21 percent and 27 percent of patents declared essential really are essential. Implementers must show that the patents were indeed relevant to practicing the standard.

But even if market power is shown, pinning an antitrust violation on a SEP owner who refuses to license at rates it believes to be too low or who seeks an injunction to facilitate the negotiation is inherently problematic.[440] While SSOs in theory bear a responsibility for constraining the market power of SEP owners, given the heterogeneity of participants, it is unrealistic to expect SSOs to straightjacket participants into boilerplate terms. The endemic inability of SSOs to define FRAND places any theory pinning blame on SEP owners for simply refusing to license on shaky ground.

Equally, a patent owner's access to the courts is a right jealously guarded, as Apple discovered when it attempted to prevent Motorola Mobility from enforcing its patents.[441] The District Court for the Western District of Wisconsin found that there was no evidence of antitrust injury resulting from Motorola's license demand.[442] Neither could Apple prove that Motorola engaged in sham litigation.[443] Instead, Apple was required to show that Motorola had contractually violated its

439. *See* Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1187 & n.64, 1188 (1st Cir. 1994) (quoting Olympia Equip. Leasing Co. v. Western Union Tel. Co., 797 F.2d 370, 379 (7th Cir. 1986) (allowing access where cooperation is "indispensable to effective competition")). *But see* Cotter, *supra* note 173 (manuscript at 22) ("That condition seems unlikely to be present in the SEP context, because the market for the patented technology is not, ex post, competitive."). Courts have also allowed access where the justification was a "pretext." *See, e.g.*, Image Technical Servs. v. Eastman Kodak Co., 125 F.3d 1195, 1218–20 (9th Cir. 1997). *But see* Cotter, *supra* note 173 (manuscript at 22) ("[T]he pretext rationale seems unlikely to be applicable as long as the litigation is not a sham and (unlike in *Image Technical*) the assertion of patent infringement is not a mere afterthought.").

440. Cotter, *supra* note 173 (manuscript at 21) (noting that "an SEP owner's refusal to license on terms that the user believes to be FRAND may not be so unreasonable as to constitute a practical refusal to deal. After all, the typical SEP owner is probably not seeking exclusion, but rather licensing fees.") (citation omitted).

441. Apple, Inc. v. Motorola Mobility, Inc., 886 F. Supp. 2d 1061, 1075–79 (W.D. Wis. 2012) (finding Apple's antitrust claims based on abuse of the standard setting process and refusal to license on FRAND terms barred by *Noerr-Pennington* immunity).

442. *Id.* at 1076 (finding that Apple refused to pay the 2.25% royalty that Motorola demanded and continued to make and sell its products without release relays, increased costs, or customer loss).

443. *Id.* at 1077.

commitment not to enforce its SEPs without first offering a license on FRAND terms.[444]

SEP owners may be guilty of illegal tying if implementers are forced to take SEPs with non-SEPs.[445] However, given the murky boundaries within the hodgepodge of SEPs and non-SEPs, implementers may find it difficult to prove that a patent was not essential. Accordingly, antitrust law should not be used unless there is clear evidence of anticompetitive harm.

Consistent with the tenor of the earlier discussion in Part II, antitrust laws should not interfere with SSO policies because this could "reduce clarity of [SSO] rules thereby making participation in SSOs more risky and reducing the willingness of firms with valuable IP to participate," leading to a decrease in innovation.[446] With the threshold of antitrust intervention set to protecting competition rather than competitors, disgruntled implementers face an uphill task to successfully mount an antitrust challenge against SEP owners, even if they were willing and able to amass the considerable amount of evidence required to prove the other elements of an antitrust violation.[447]

Finally, it may be argued that PAEs attempting to extract the nuisance value of suits against rivals should be sanctioned under § 2, particularly when they assert SEPs.[448] However, the Supreme Court has also warned against using antitrust law to "provide remedies for various 'competitive practices thought to be offensive to proper standards of business morality.'"[449]

Employing antitrust law to address alleged patent abuses by PAEs is also problematic. Even a circuit judge known for his antitrust expertise and two FTC Commissioners have expressed skepticism about the appropriateness of antitrust remedies for PAE litigation. Judge Ginsburg and Commissioner Wright have warned that targeting PAEs with antitrust law because they have a greater propensity to engage in patent hold-ups "departs from standard analysis."[450] They warn that "there are

444. *Id.* at 1078.

445. *See generally, e.g.*, Alden F. Abbott & Joshua D. Wright, *Antitrust Analysis of Tying Arrangements and Exclusive Dealing*, *in* 4 ENCYCLOPEDIA OF LAW AND ECONOMICS: ANTITRUST LAW AND ECONOMICS 183 (Keith N. Hylton ed., 2d ed. 2010).

446. Teece & Sherry, *supra* note 249, at 1986.

447. Kühn, *supra* note 58, at 112 ("An antitrust proceeding tends to be far too long and the informational problems so severe that determining FRAND seems outside the scope of antitrust authorities.").

448. Mark S. Popofsky & Michael D. Laufert, *Antitrust Attacks on Patent Assertion Entities*, 79 ANTITRUST L.J. 445, 456–457 (2014).

449. NYNEX Corp. v. Discon, Inc., 525 U.S. 128, 137 (1998) (citation omitted) (quoting PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 78 (1996)).

450. Wright & Ginsburg, *supra* note 78, at 508; *see also id.* 508–09. Wright and Ginsburg explain:

many reasons for which a research firm's costs may increase, and its rate of innovation commensurately decrease, but that does not make every increase in the cost of inputs 'anticompetitive' in any sense known to antitrust law or economics."[451]

Writing separately, Commissioner Wright expressed concern that "[t]he risk of imposing antitrust remedies in pure contract disputes can have harmful effects in terms of dampening incentives to participate in standard-setting bodies and to commercialize innovation."[452] Instead, antitrust law should focus on "cases of true anticompetitive price fixing or deceptive manipulation of standards."[453]

Ultimately, PAE litigation is a patent law problem, as Commissioner Maureen Ohlhausen pointed out—one of "adequately defin[ing] strong patents in terms of their nonobviousness, novelty, or other characteristics, which may not necessarily be a competition law problem."[454] Antitrust doctrines are not crafted to govern contractual disputes between parties or govern SSO policies. Contract law and patent law provide better tools to do this.[455] Treble damages and the risk

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> This rationale entails a misguided departure from the conventional role of antitrust, which is to protect consumers from conduct or transactions that would evade one particular constraint upon firm behavior, viz., that of competition. The alternative view envisions an entirely novel and much broader role for antitrust, that is, to police transactions or conduct that alter the incentives of marketplace participants by relaxing constraints unrelated to competition—which could equally well extend, for example, to the transfer of assets to a firm with less reputational capital, less able management, or different litigation incentives, any of which might be thought to foretell a decrease in consumer welfare.

Id.

451. *Id.*

452. Wright, *supra* note 16, at 809.

453. *Id.*

454. Maureen K. Ohlhausen, Comm'r, Fed. Trade Comm'n, Remarks at George Washington University Law School: Recent Developments in Intellectual Property and Antitrust Laws in the United States 11 (June 17, 2013), *available at* http://www.ftc.gov/sites/default/files/documents/public_statements/recent-developments-intellectual-property-and-antitrust-laws-united-states/130617intellectualpropertyantitrust.pdf.

455. Benjamin Klein, *Market Power in Antitrust: Economic Analysis after* Kodak, 3 SUP. CT. ECON. REV. 43, 62 (1993). For example, Klein argues:

> Antitrust law should not be used to prevent transactors from voluntarily making specific investments and writing contracts by which they knowingly put themselves in a position where they may face a 'hold-up' in the future . . . [C]ontract law inherently recognizes the pervasiveness of transactor-specific investments and generally deals with 'hold-up' problems in a subtle way, not by attempting to eliminate every perceived 'hold-up' that may arise.

Id. (citations omitted); *see also* Bruce H. Kobayashi & Joshua D. Wright, *The Limits of Antitrust and Patent Holdup: A Reply to Cary et al.*, 78 ANTITRUST L.J. 505, 510–11 (2012) ("Because multiple damages are not required to generate optimal deterrence, remedies for breach of contract, or preventing the enforcement of the patent through

of private litigation flowing from antitrust enforcement could easily cause more harm than good.[456]

The best thing antitrust agencies can do on the SEP issue is not enforce the law but instead be its advocate. The U.S. Justice Department has recognized this fact. Deputy Assistant Attorney General of the Antitrust Division Renata Hesse noted in a speech that "[b]y working with SSOs on the front end, we hope to minimize the potential for anticompetitive conduct in this context and reduce the need for investigations and enforcement actions."[457] In particular, she described the Justice Department's advocacy work with the ITU, ETSI, and ANSI in crafting IP policies that encourage negotiated settlements without the need to resort to injunctions and exclusion orders.[458]

B. The Role of Patent Law

Where SEP owners attempt to overreach beyond their rights, a prudent triage points first toward patent law. To the extent that injunctions cause hold-ups, the discussion in Part IV has shown how the *eBay* framework allows courts to deny injunctions without engaging in costly and complex inquiries into market definition, market power, or anticompetitive effects.[459] Part III has also shown that courts can reach a FRAND royalty determination in a relatively simple, just, and accurate way.

Where there is bad faith litigation, such as those brought by PAEs, courts have a number of devices at their disposal. The Supreme Court, in *Highmark Inc. v. Allcare Health Management*[460] and *Octane Fitness LLC v. Icon Health & Fitness Inc.*,[461] has given district courts greater

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estoppel, waiver, or other equitable doctrines, can serve to optimally deter undesirable patent holdup if they impose approximately single damages.").

456. Wright, *supra* note 16, at 809. Wright asserts:

> In the absence of robust empirical evidence to suggest that SSOs' adaptation of their IPR policies over time have been inadequate in minimizing the probability of holdup, there is little reason to bring to bear the blunt weaponry of antitrust rules and remedies to micromanage the competitive process in the name of improving SSO contracts.

Id.

457. *See* Hesse, *supra* note 175, at 5–6

458. *Id.*

459. *See* Cotter, *supra* note 173 (manuscript at 41) ("Replacing a right to injunctive relief with a right to an ongoing royalty, in appropriate cases, is yet another example of trying to solve an intellectual property problem with the use of intellectual property tools, without all the cumbersome machinery—and risk of overextension—inherent to the competition law approach."); *see also id.* (manuscript at 34) ("In addition, I see no reason why courts could not take into account an infringement defendant's (mis)behavior in deciding whether an injunction is appropriate in a given case.").

460. Highmark Inc. v. Allcare Health Mgmt. Sys., Inc., 134 S. Ct. 1744 (2014).

461. Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749 (2014).

discretion in awarding attorneys' fees in cases of abusive litigation and has made such an award harder to overturn on appeal.[462] In *Alice Corp v. CLS Bank*,[463] the Court further addressed the concern over abusive patent litigation by imposing heighted requirements to obtain a patent for software and business methods. The Court ruled that finding a way to implement an abstract idea through a computer application, a type of claim commonly asserted by PAEs, was not patent eligible subject matter.[464]

But more can be done.

Recently some PAEs have engaged in "patent privateering," where operating companies monetize their patents by selling or licensing the patents to third parties who assert them and split the bounty.[465] One such privateer is Rockstar.[466] Several cable operators have sued Rockstar for breaching FRAND obligations that Nortel, its predecessor in title, undertook. The complaint accused Rockstar of achieving patent hold-ups through (1) refusing to identify the patent sought to enforce and instead broadly accusing implementers of infringing the portfolio as a whole; (2) requiring all potential licensees to sign non-disclosure agreements as a precondition to license negotiations; (3) refusing to identify licensed patents to avoid patent exhaustion challenges and thereby extract multiple royalties; and (4) transferring SEPs to third parties to avoid FRAND obligations.[467]

PAEs have also targeted end users such as retailers using Wi-Fi equipment instead of implementers who make the equipment. Earlier in 2011, one PAE, Innovatio, sent more than 8000 letters to hotels, coffee

462. *Highmark*, 134 S. Ct. at 1748–49; *Octane Fitness*, 134 S. Ct. at 1756.

463. Alice Corp. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014).

464. Tony Mauro, *Patent Ruling's Effect of 'Trolls' Debated*, THE NAT'L LAW JOURNAL (June 19, 2014), http://www.nationallawjournal.com/supremecourtbrief/id=1202660127710/Patent-Rulings-Effect-on-Trolls-Debated.

465. Armstrong, Mueller & Syrett, *supra* note 96, at 11 ("MobileMediaIdeas, LLC is exemplary of this trend. MobileMedia is owned by Sony, Nokia, and an MPEG LA subsidiary and holds more than 300 patents. MobileMedia won an infringement verdict against Apple and settled litigation with HTC with a license.").

466. Joe Mullin, *Patent War Goes Nuclear: Microsoft, Apple-Owned "Rockstar" Sues Google*, ARSTECHNICA (Oct 31, 2013, 11:10 PM EDT), http://arstechnica.com/tech-policy/2013/10/patent-war-goes-nuclear-microsoft-apple-owned-rockstar-sues-google/ ("The Rockstar Consortium may be the ultimate example of patent 'privateering'—when big companies hand off their patents to small shell companies to do the dirty work of suing their competitors. Essentially, it's patent trolling gone corporate.").

467. Complaint, Charter Commc'ns, Inc., v. Rockstar Consortium US LP (D. Del. Jan. 17, 2014) (No. 1:14-cv-00055-UNA); *see* David W. Long, *Rockstar Sued by Cable Operators for Breaching Standard Setting Obligations*, ESSENTIAL PATENT BLOG (Jan. 21, 2014), http://www.essentialpatentblog.com/2014/01/rockstar-sued-by-cable-operators-for-breaching-standard-setting-obligations/.

shops, and restaurants who used technology by Cisco and Motorola, alleging patent infringement.[468] Such defendants are particularly vulnerable because they have limited access to legal advice on patent validity and infringement, as well as costs related to designing around the asserted patents and settling the lawsuits against them.[469] Smaller companies pay relatively more to PAEs in connection with assertions that do not go to court.[470] Nationwide, defendants quelled by the cost of litigation submit and have paid $29 billion defending against such suits.[471] Once defendants are corralled into settlement, PAEs impose strict non-disclosure obligations to prevent comparison of settlement terms.[472] PAEs can use non-disclosure obligations to maintain obscurity and make for difficult FRAND determinations.

Some PAEs shroud their suits under different corporate aliases to inflate the number of antagonists letter recipients must face.[473] The

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468. *See* Ashby Jones, *Cisco's Patent Counterattack Fails*, WALL ST. J., (Feb 6, 2013) http://online.wsj.com/news/articles/SB10001424127887324906004578288370005621206 (dismissing Cisco's claims that Innovatio's tactics were "misleading, fraudulent and unlawful," effectively amounting to an extortion scheme and therefore violated federal antiracketeering laws.) The court found that Innovatio's actions were protected by a First Amendment principle that allowed it to the courts. *See id.* "Congress and the federal courts have largely failed to stem a wave of patent lawsuits that has roiled the technology industry." *Id.*; *see also* discussion in Part II.B, *supra*.

469. *See* Morton & Shapiro, *supra* note 19, at 469.

470. Bessen & Meurer, *supra* note 89, at 422–23. Bessen and Meurer explain:

> Only about 5% goes to independent inventors and roughly half of that goes to large firms. If one adds the R&D spending of some of the NPE companies, that share rises to 20%. Nevertheless, most of the out-of-pocket costs—roughly 70%—go to socially wasteful legal fees or to the NPEs' operating expenses.

Id.

471. *Id.* at 389. Bessen and Meurer further explain:

> Not much of this payment goes to inventors or innovators; rather, most of the payment is dissipated by transfers to the NPEs' owners, investors, and personnel, and to the lawyers representing both the NPEs and the defendants. Most importantly, the direct costs from NPE disputes are borne by firms because they chose to innovate and thereby exposed themselves to the largely unavoidable risk of an NPE lawsuit. Unfortunately, this tax on innovation for defendant firms is not counterbalanced by significant transfers from NPEs to other inventors or innovators. Hence, patent assertion by NPEs constitutes a tax on innovation.

Id. at 416–17. *But see* Schwartz & Kesan, *supra* note 78, at 438–39 (arguing that most of what defendants pay is merely a transfer to "meritorious" patent owners, noting that defendants' payments to outside counsel are less than one-quarter of the total direct cost).

472. *See* Morton & Shapiro, *supra* note 19, at 470.

473. *See* Morton & Shapiro *supra* note 19, at 464 n.1. Morton and Shapiro illustrate:

> PAEs[] are known to engage in many complex transactions, including transactions involving shell companies, that appear designed to make it difficult to track certain PAE activities. For example, rights are licensed to some and sold to others, a portfolio is divided up among funds held by different shell companies but controlled by the same entity, or one party controls the patents but has a contract calling for it to share royalties with another party. We do not

labyrinth of shell companies makes it difficult to determine patent ownership and whether implementers had already licensed the technology.[474] For example, patent attorney Steve Moore recently observed in a study that a substantially similar demand letter claiming infringement of the same patents was sent under the letterhead of eight different companies.[475] This "fog of war" also makes it difficult for defendants to form a joint defense group.[476]

Intellectual Ventures ("IV") is a mass aggregator which holds as many as 80,000 patents.[477] It buys and asserts thousands of patents, making it difficult for defendants to identify and challenge weak patents.[478] As with hold-ups, PAEs can drive up royalty rates by making patent litigation unattractive to defendants.

In 2013, IV sued Capital One for patent infringement, creating 2000 shell companies to ring-fence Capital One with a portfolio of 3500 patents.[479] The suit cut off any viable option of designing around the

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focus on these distinctions below, but rather subsume the beneficiaries of the PAE's activities into the role of "owner."

Id.

474. Lemley & Melamed, *supra* note 101, at 2153.

475. *See* Steve Moore, *Identifying the Real Patent Extortionists: A Review of the Extortionist Demand Letter*, IPWATCHDOG (Apr. 9, 2013, 8:00 AM), http://www.ipwatchdog.com/2014/04/09/identifying-the-real-patent-extortionists-a-review-demand-letters/id=48955/; *see also* Jason M. Schwent, *Patent Troll Roll Call: The Threatening Letter-Writer*, THOMAS COLBURN LLP (Mar. 17, 2014), http://www.thompsoncoburn.com/news-and-information/patent-billy-goat-blog/blog/14-03-17/patent-troll-roll-call-the-threatening-letter-writer.aspx. Schwent asserts:

> [I]n egregious cases, the asserted patents may already be subject to administrative review for being invalid. But the PAE will never share that information. Instead, the PAE bets that with enough pressure, the accused infringer will pay the licensing fee. The PAE also anticipates that even if one accused infringer resists, by sending the letter to hundreds and hundreds of accused infringers, the PAE will have enough success to turn a tidy profit.

Id.

476. Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1, 3–5 (2012).

477. *See, e.g.*, Jeff John Roberts, *How Chicago Is Beating Silicon Valley at the Patent Game*, GIGAOM (Mar. 25, 2012, 11:05 PM PDT), http://gigaom.com/2012/03/25/419-how-chicago-is-beating-silicon-valley-at-the-patent-game/ (referring to Intellectual Ventures as "super-troll").

478. Lemley & Melamed, *supra* note 101, at 2153. Lemley and Melamed explain:

> A common complaint about trolls, especially about aggressive pioneers like Intellectual Ventures, is that they aggregate large numbers of patents and that the aggregation of large numbers of patents in the hands of a single entity overwhelms alleged infringers by giving them little choice but to pay for a license for the bundle of patents even if they think the individual patents at issue are invalid or not infringed.

Id.

479. Intellectual Ventures I LLC v. Capital One Fin. Corp., 1:13-CV-00740 AJT, 2013 WL 6682981, at *1 (E.D. Va. Dec. 18, 2013); *see also* Popofsky & Laufert, *supra* note 448, at 449. Popofsky and Laufert explain:

minefield of patents.[480] The case is instructive for SEP litigation because it illustrates the same concerns as post-standardization hold-ups discussed in the Article.[481]

Capital One counterclaimed for monopolization, attempted monopolization, and unlawful asset acquisition under antitrust laws.[482] It also invoked the equitable defense of patent misuse based on impermissible collection of royalties from invalid patents.[483] Echoing the discussion on hold-ups, Capital One alleged that through vexatious litigation, IV forced it and other U.S. commercial banks to license vast patent portfolios with doubtful validity and enforceability.[484]

IV's conduct had the alleged effect of (1) eliminating the economic incentive of coerced defendants to challenge validity of the myriad patents asserted; (2) reducing the incentive of companies to innovate,

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> PAEs frequently assert patents in waves . . . . The PAE may disclose only a certain number of patents to a potential enforcement target. The PAE, according to this parable, then threatens the enforcement target: If you do not take a broad license (including to undisclosed patents), we will sue you not only on this initial wave, but, if we lose, sue you again on yet another set of patents.

Id.

480. *Intellectual Ventures I*, 2013 WL 6682981, at *2. Capital One alleged:

> Overall, [Intellectual Ventures ("IV")] "knows or should reasonably know that many if not most of the 3,500 patents in its financial services patent portfolio are irrelevant, invalid, not infringed, and/or unenforceable," and "due to their probable invalidity, and the risk of countersuit to those who might enforce them, such patents provide their owners with no market power." Nevertheless, "the possible irrelevance, invalidity, and unenforceability of the patents in [IV]'s financial services portfolio is not an impediment to [IV's] strategy because, unlike a bona fide portfolio licensing, [IV]'s business model is not based on the licensing of valuable patent rights, rather on the threat of asserting thousands of patents in a never-ending series of costly and disruptive patent infringement lawsuits—pummeling its victims into submission." These threats of litigation are made more credible because IV "is not itself subject to such infringement allegations from members of the financial services industry whom it attacks.

Id. (citations omitted) (quoting Amend. Answer & Counterclaims, *Intellectual Ventures I*, 2013 WL 6682981).

481. *Id.* Capital One further alleged:

> By this [ex post] stage, companies have sunk large investments (many of them long length, fixed capital assets, often without any significant alternative use) into their product lines, meaning they can no longer cheaply abandon their chosen product designs." For these reasons, "[e]x post, makers and buyers of technological products, are to a significant degree, locked-in, which makes them attractive targets for [IV]'s litigation scheme for extracting supracompetitive licensing fees through coercion and deception.

Id. (citations omitted) (quoting Amend. Answer & Counterclaims, *Intellectual Ventures I*, 2013 WL 6682981).

482. *Id.*

483. *Id.*

484. *Id.*

since any revenues they earn will make them targets for PAEs; and (3) consistently charging royalties "reflecting the 'hold-up' value of the patents rather than their economic worth," increasing prices to consumers.[485]

The U.S. District Court for the Eastern District of Virginia found that IV did not monopolize the *ex post* market for commercial banking services technology, as it did not recognize this as a relevant antitrust market.[486] The court held that even if the *ex post* market were an accepted relevant market, Capital One did not show that IV had market power because it could not provide examples of other licenses that IV charged other defendants or that by charging those prices, IV extended its market power beyond what was permissible under patent law.[487] IV's illegal extension of power highlights the problem caused by lack of transparency, as discussed in Part III.C.

The court found that Capital One's attempted monopolization claim hinged on the same elements as actual monopolization and thus rejected the claim.[488] The court also rejected Capital One's allegation that IV's accumulation of patents enabled its litigation threats.[489] It reasoned that § 7 of the Clayton Act applied to pre-merger conduct and did not reach allegations of post-merger abuse.[490]

Finally, the court rejected Capital One's patent misuse defense. Capital One alleged that IV engaged in misuse by "attempting to enforce, in the aggregate, patents that individually or in limited numbers, would not likely be asserted or licensed."[491] The court refused to expand the categories of misuse beyond the narrow confines mandated by Federal Circuit jurisprudence, even in the face of "ulterior or bad motives."[492] In short, the court refused to find the hold-up by IV to constitute patent misuse.

Capital One highlights the difficulty of antitrust law in regulating post-standardization misconduct. The lack of transparency makes it difficult for implementers like Capital One to show that the royalties demanded by IV were inconsistent with those it charged other implementers. Accordingly, antitrust plaintiffs face an uphill battle to show wrongful monopolization. Claims based on attempted

485. *Intellectual Ventures I*, 2013 WL 6682981, at *5–8.
486. *Id.*
487. *Id.*
488. *Id.* at *8.
489. *Id.* at *9.
490. *Intellectual Ventures I*, 2013 WL 6682981, at *9–10.
491. *Id.* at *10.
492. *Id.*

monopolization and unlawful acquisitions of assets will fail for the reasons articulated by the *Capital One* court.

However, the court's reasoning on the patent misuse issue is suspect. The sort of "cornering to hold-up" tactic that IV displayed is precisely the type of conduct which patent misuse should arrest. Patent misuse finds its origins in the equitable doctrine of unclean hands, whereby a court of equity will not lend its support to enforcement of a patent that has been misused.[493] A judge finding patent misuse has the discretion to withhold damages or injunctive reliefeven if the patents themselves have not yet been enforced.[494] The patents in question are rendered unenforceable until the effects of the misuse have been purged.[495] Purging requires patentees to show that they have completely abandoned the misconduct and that their "baleful effects" have dissipated.[496]

Examples of patent misuse including tying, package licensing, and horizontal price-fixing or territorial allocations under the guise of sham patent licenses.[497] But the categories of patent misuse are not closed.

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493. U.S. Gypsum Co. v. National Gypsum Co., 352 U.S. 457, 465 (1957). The Court reasoned:

> It is now, of course, familiar law that the courts will not aid a patent owner who has misused his patents to recover any of their emoluments accruing during the period of misuse or thereafter until the effects of such misuse have been dissipated, or "purged" as the conventional saying goes. The rule is an extension of the equitable doctrine of "unclean hands" to the patent field.

Id. (citations omitted); *see generally*, DARYL LIM, PATENT MISUSE AND ANTITRUST: EMPIRICAL, DOCTRINAL AND POLICY PERSPECTIVES (2013); Daryl Lim, *Misconduct in Standard Setting: The Case for Patent Misuse*, 51 IDEA 559 (2011); Greg R. Vetter, *Open Source Licensing and Scattering Opportunism in Software Standards*, 48 B.C. L. REV. 225, 232–33 (2007) ("Unless some defense such as unclean hands is available, this chills development of the standard or makes it more expensive to implement.").

494. *See, e.g.*, United Shoe Mach. Corp. v. United States, 258 U.S. 451, 458 (1922).

495. Morton Salt Co. v. G. S. Suppiger Co., 314 U.S. 488, 492 (1942).

496. United States v. U.S. Gypsum Co., 124 F. Supp. 573, 594–95 (D.D.C. 1954) ("This rule is applicable where the owner of patent rights seeks to extend those rights beyond the limits of his patent monopoly."). What amounts to a successful dissipation depends on the nature and extent of the misuse. Cancellation of an offending licensing clause may be sufficient. Where the conduct involves a price-fixing conspiracy, the violation is presumed to continue until some affirmative act of termination or withdrawal is shown. *See* United States v. Consolidated Laundries Corp., 291 F.2d 563, 573 (2d Cir. 1961). Where the misuse consists of "extensive and aggravated misconduct over several years," which "substantially rigidified the price structure of an entire market and suppressed competition over a wide area, affirmative action may be essential to effectively dispel the consequences of the unlawful conduct." *See* Ansul Co. v. Uniroyal, Inc., 306 F. Supp. 541, 560 (S.D.N.Y. 1969).

497. *See, e.g.*, Zenith Radio Corp. v. Hazeltine Research, Inc., 395 U.S. 100, 105 (1969) (regarding coercion of licensees to pay royalties on unpatented and patented products); Transparent-Wrap Mach. Corp. v. Stokes & Smith Co. 329 U.S. 637, 641 (1947) (holding grantback clauses to be judged under the rule of reason); United States v.

Patent misuse or misuse-like concepts have been invoked in both pre- and post-standardization cases. In *Openwave Systems, Inc. v. 724 Solutions (US) Inc.*,[498] the U.S. District Court for the Northern District of California recognized that failure to disclose relevant SEPs in breach of SSO IP policies could render the patent unenforceable as a form of patent misuse.[499] In *Fujitsu v. Tellabs*,[500] the court ordered Fujitsu to "show cause why the [SEP in suit] should not be held by the court in the exercise of the court's equitable powers to be unenforceable."[501] The jury had found that the Fujitsu willfully breached its FRAND license by suing Tellabs for infringement and seeking an injunction and damages rather than offering Tellabs a license on FRAND terms.[502]

In *Morton Salt Co. v. Suppiger Co.*,[503] Chief Justice Stone wrote for a unanimous court and framed the question as "whether a court of equity [would] lend its aid to protect the patent monopoly when [the patentee] [was] using it as the effective means of restraining competition . . . ."[504] Significantly, the Supreme Court found it "unnecessary to decide whether [the patentee] ha[d] violated the Clayton act, for [it] conclude[d] that in any event the maintenance of the present suit . . . [was] contrary to public policy . . . ."[505] Chief Justice Stone explained that:

> The grant to the inventor of the special privilege of a patent monopoly carries a public policy adopted by the Constitution and laws of the United States, 'to promote the Progress of Science and the

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U.S. Gypsum Co., 333 U.S. 364, 389–90 (1948) (holding patentees were not entitled to use licenses to control pricing of the end products).

498. Openwave Sys., Inc. v. 724 Solutions (US) Inc., No. C 09-3511 RS, 2010 WL 890249 (N.D. Cal. 2010).

499. *Id.* at *1–2. Judge Seeborg noted:

> [While] patent misuse may not be the most appropriate label or framework that should be applied to an alleged breach of a duty to disclose to an SSO. . . . [T]he scope of an unenforceability remedy must be 'fashioned to give a fair, just, and equitable response reflective of the offending conduct.' Notably, in reaching this conclusion, the [Federal Circuit] even analogized to the limitations on the scope of the remedy in patent misuse cases. Thus . . . patent misuse concepts could be *at least* relevant in evaluating the appropriate scope of any remedy to be imposed.

Id. (emphasis added).

500. Fujitsu Ltd. v. Tellabs Operations, Inc., 821 F. Supp. 2d 1009 (N.D. Ill. 2011).

501. Order to Fujitsu Limited to Show Cause Why the '737 Patent Should not be Held Unenforceable as to Tellabs, No. 09 C 4530 (N.D. Ill. July 23, 2014); *see* David Long & Stephen R. Freeland, *Fujitsu Breached RAND Obligation and Must Show Cause Why Patent not Unenforceable against Tellabs (Fujitsu v. Tellabs)*, ESSENTIAL PATENT BLOG (July 24, 2014), http://www.essentialpatentblog.com/?s=tellabs.

502. Long & Freeland, *supra* note 501.

503. Morton Salt Co. v. G. S. Suppiger Co., 314 U.S. 488 (1942).

504. *Id.* at 490.

505. *Id.* at 494. The Clayton Act is an antitrust statute. 15 U.S.C.A. §§ 12–19, 21–22, 25–26 (West Supp. 2014); 15 U.S.C.A. §§ 20, 23–24, 27 (West 2009).

> useful Arts, by securing for limited Times to . . . Inventors, the exclusive Right . . .' But the public policy which includes inventions within the granted monopoly excludes from it all that is not embraced in the invention.[506]

To fulfill this mandate, Congress empowers patentees to exclude others, earn royalties, and set the terms of access for those benefitting from the use of patented technologies.[507] A limited monopoly rewards innovators who take risks and invest in the innovation and commercialization of their inventions, incentivizing them to disclose, develop, and market inventions that may not have been realized otherwise.[508]

At the same time, the law's desire to keep patentees acting justly toward others while gaining a fair reward for their investment is at the heart of the equitable doctrine of misuse. The need to do justice allows courts to look beyond the form of a misuse to its effects. It serves as an insurance policy against unanticipated roguish behavior from patentees. The ingenuity of patentees to devise ways of abusing their patent rights is matched only by the potential malleability of patent misuse.

Unlike antitrust law, patent misuse was specifically conceived to take into account anticompetitive conduct that runs counter to patent policy. Allowing SEP owners to secure rewards beyond their true value through meritless claims that penalize patent challenges harms innovation. So does the hold-up of implementers after the standard has been implemented.

Of course, patent misuse should be applied only in exceptional circumstances. These include circumstances where patentees engage in vexatious litigation or refusals to license without any cognizable pro-competitive or pro-innovation justification. One possible scenario may be where entry into the downstream market for goods and services offered under the standard is choked off by the refusal to deal in the upstream market for the technology, stunting the development of new products and services compliant with that standard that are not offered by the SEP owner or its licensees. This sort of obstructive behavior is particularly repugnant when the hold-ups involve PAEs. By definition, PAEs do not offer the very goods or services of which they seek to

506. *Morton*, 314 U.S. at 492.

507. 35 U.S.C.A. §§ 283–285 (West 2014) (providing for patent infringement remedies such as injunctions and damages).

508. Kevin J. Arquit, *Patent Abuse and the Antitrust Laws*, 59 ANTITRUST L.J. 739, 740 (1991) ("An often-neglected point, though critical, is that a patent monopoly does not invariably translate into a monopoly in what an antitrust lawyer would describe as a relevant market.").

deprive consumers when they enjoin defendants who are manufacturers or service providers.[509]

Putting it differently, two rights lie at the core of the patent misuse inquiry. The first is the patent owner's right to have a risk-adjusted return on its investment, an inquiry guided by the scope of the FRAND commitment. The second right is the interest of all entities at every level of the value chain who have relied on that FRAND commitment in supporting the implementation of the standardized technology. Defendants facing a potential patent hold-up may be able to show an actual or constructive reneging of the FRAND commitment in bad faith, such as where SEP owners refuse to have the decision adjudicated or where it hinders implementers from offering a new product for which there is unmet consumer demand. In these circumstances, courts can draw upon the policy lever of patent misuse to stem the misconduct and shepherd parties back to the bargaining table with a more realistic view of the scope of their rights.

CONCLUSION

The patent wars involving SEPs, trolls, and smartphones stem from companies having different economic incentives. Companies whose products rely on standardized technologies seek to cut costs to increase their profits but reduce the royalties they must pay to companies profiting from royalties by licensing those technologies.[510]

While patent hold-ups are a real and present problem, they do not stem from a systemic failure of SSO IP policies, arbitrary choice, or historic accident. Consensus-based disclosure and FRAND rules are the result of conscious choice on the part of SSO constituents. Rather than

509. Compared with antitrust law, European competition law has been more willing to condemn refusals to license IP rights, and has required IP owners to grant access. *See, e.g.*, Case T-201/04, Microsoft Corp. v Comm'n of the European Cmtys, 2007 E.C.R. II-3601, ¶ 5 (holding that "in the public interest in maintaining effective competition on the market, to encroach upon the exclusive right of the holder of the intellectual property right by requiring him to grant licences to third parties seeking to enter or remain on the market"); AstraZeneca AB v. European Comm'n, No. C-457/10 P, ECLI:EU:2012:770, ¶ 112 (European Ct. of Justice, Dec. 6, 2012), http://curia.europa.eu/juris/document/document.jsf?text=&docid=131490&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=157403 (requiring an anti-competitive effect on the market, although "such an effect does not necessarily have to be concrete, and it is sufficient to demonstrate that there is a potential anti-competitive effect").

510. Joseph Schuman, *Inside Intel's Intellectually Dubious Patent Study*, IPWATCHDOG (July 23, 2014, 8:00 AM), http://www.ipwatchdog.com/2014/07/23/inside-intels-intellectually-dubious-patent-study/id=50511/ ("[P]olicy conflicts over standard essential patents (SEPs) tend to pit implementing companies against inventing-and-licensing companies, one business model against another.").

derail SSO policies, the real solution lies in shifting the focus post-implementation and refining the framework for determining FRAND royalties and injunctive relief to reach clear and balanced outcomes while understanding both the potential and the limits of the antitrust and patent laws in the debate.

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