Transatlantic (F)RANDs and Converging Standards: Finding Balance Between Jurisdictions in International Standard Setting

The Microsoft v. Motorola cases in U.S. federal court and transformative developments in enforcement activity by the European Commission antitrust authorities have created a new dynamic intersection between competition and intellectual property law. This legal juncture focuses on a patent holder’s “reasonable and non-discriminatory,” or RAND, commitments to standard setting organizations. These organizations play a vital role as global platforms for innovation, partnerships, creation of efficiencies, and reduction of costs through agreement on standards across borders. How courts, scholars, and regulators interpret RAND language and enforce the agreements influences the distribution of liability between parties, the commercial incentives to develop technologies and participate in collaborative standards, and ultimately the continued viability of international standard setting regimes. This Note analyzes emerging quantitative and qualitative understandings of RAND and makes two connected, resulting contentions. First, it argues that any legal framework consistent across judicial and regulatory spaces must promote a flexible model for licensing negotiation that properly considers the incentives of standard essential patent holders as it binds them to license at fair rates. Second, it considers opportunities for reconciliation between the developing regimes for license negotiations in the United States and the European Union and asserts that convergence in practice should motivate further evolution of this crucial cross-border intersection of market regulation, law, and technological innovation.
INTRODUCTION

Over the past five years, a nascent body of law has disrupted the operation and regulation of the market for patented intellectual property rights. Several cases and decisions have marked this emerging trend, arguably none more than the Microsoft cases and their progeny. In 2012, after decades of legal conflict with competitors over its alleged abuses of intellectual property, Microsoft concluded a number of private and administrative proceedings on both sides of
the Atlantic.\footnote{See Microsoft Corp. v. Motorola, Inc., 854 F. Supp. 2d 993, 995 (W.D. Wash. 2012); Microsoft Corp. v. Motorola, Inc., 864 F. Supp. 2d 1023 (W.D. Wash. 2012); Case T-201/04, Microsoft Corp. v. Comm’n, 2007 E.C.R. II-3601; Case T-167/08, Microsoft v. Comm’n, 2012 E.C.R. 243.} That year was arguably a high-water mark for patent litigation and enforcement in the United States and the European Union as courts and regulators attempted to clarify their positions on a number of highly unsettled areas of the law of standard essential patents. Rather than chilling the pace or volume of litigation or easing the pressure on the international standards system,\footnote{See generally Kassandra Maldonado, Breaching RAND and Reaching for Reasonable: Microsoft v. Motorola and Standard-Essential Patent Litigation, 29 BERKELEY TECH. L.J. 419 (2014); Decision of the European Commission, 2012 O.J. (C 75) 1.} these decisions have fueled an expansion in claims for enforcement of exclusive intellectual property rights.\footnote{See generally Steven M. Amundson, Recent Decisions Provide Some Clarity on How Courts and Government Agencies Will Likely Resolve Issues Involving Standard-Essential Patents, 13 CHI.-KENT J. INTELL. PROP. 91 (2014).} More than ever, scholars and parties seek a concrete and convergent standards policy to ensure active participation in the international organizations that drive dynamic innovation in a globalized information technology sphere. Microsoft, an important example as a prominent industry leader, is merely one player within an ever-diversifying field of litigants, judges, prosecutors, bureaucrats, and policymakers faced with the complex task of identifying consistent legal interpretations while providing efficient incentives for involvement in international collaborative technology regimes.

In the wake of Microsoft Corp. v. Motorola, Inc., the legal field has devoted increased attention to the reasonable and non-discriminatory (RAND)\footnote{In Europe, the common nomenclature “FRAND,” or fair, reasonable, and non-discriminatory, corresponds to RAND. In this Note, the two terms are used interchangeably to the extent that they reference identical obligations to the same standard setting bodies, while respecting that traditionally RAND and FRAND remain subject to distinct legal regimes. For equivalence of nomenclature and comparison, see generally 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 (2013).} commitments that standard essential patent (SEP) holders make toward the supranational organizations that create and regulate standards.\footnote{See generally Amundson, supra note 3.} This scholarship ranges from detailed discussions of the evolution of the “contract method” jurisprudence\footnote{See generally Maldonado, supra note 2.} to preliminary examinations of what constitutes “reasonableness” and
the appropriate analytical tools for defining RAND. However, this literature has primarily centered on updates for U.S. patent law, U.S. regulatory agencies, or antitrust policy, without a broader comparative and interdisciplinary scope. By contrast, transfers of proprietary technology are inherently transnational as they draw companies and industries into numerous jurisdictions. This Note evaluates the relative efficiencies and institutional consequences of prominent interpretations of RAND, while considering opportunities for these interpretations to converge into a uniform transatlantic approach. It also stresses the importance of locating a RAND framework that will provide proper incentives for the creation and implementation of commercially valuable standards regimes and successful downstream products—the ex ante and ex post efficiencies of a RAND royalty. As a result, the analysis suggests that the system should provide sufficient leverage and flexibility to the negotiating position of the SEP holder, on whose effective and voluntary participation in standard setting many industries and billions of consumers rely.

Part I of this Note provides background for the economics and structure of standard setting organizations and SEP licensing obligations in the United States and Europe. Part II investigates the specific legal issues and ambiguities plaguing the patent system and competition law in recent litigation. Part III offers a comparative review of the current major approaches to defining RAND and how they resolve the ripe legal questions or continental divergences in the context of the institutional role of adjudicative, administrative, and international bodies. This Note concludes that maintaining an effective balance of incentives for SEP portfolios to promote international standard setting can direct the character of any ultimate convergence of the two major systems of RAND enforcement.

I. STANDARD SETTING ORGANIZATIONS AND THE ECONOMICS OF SEPs

This Part begins by formally introducing the international standard setting system for patent law. It explains its importance, defines its key proprietary components, and provides a discussion of the economic and strategic tension animating the rules for industry par-
ticipation in standards. Next, it examines the evolution of U.S. judicial and academic commentary on RAND from the early 2000s to Microsoft. Finally, this Part concludes with an overview of recent developments in E.U. patent law, opening the question of how European courts tackle their own RAND enforcement for further elaboration in Part II.

A. Structural Framework of Standard Setting

Standard setting organizations (SSOs), otherwise known as standard-developing organizations (SDOs), provide a global platform for establishing partnerships, ensuring compatible systems and interoperable products across borders, and agreeing on common technological standards and guidelines. Their primary role is to establish standards, defined by Professor Mark Lemley as “any set of technical specifications that either provides or is intended to provide a common design for a product or process.” Once an organization such as the International Telecommunications Union (ITU), the United Nations’ “specialized agency for information and communication technologies,” creates a standard for a particular technology, that technology becomes the uniform product across its membership. In addition, SSOs encourage strategic cooperation between members, whose ranks include industry leaders, government officials, and other stakeholders. Such cooperation results in rapid adoption of new technologies and cost reduction for consumers who benefit from efficiency gains. Standards also strengthen competition by enabling consumers to switch more easily between products incorporating

13. For example, a large company can operate in many countries with the same or similar machinery or equipment when all the jurisdictions apply the same technical standards; similarly, a consumer tourist or businessperson’s cell phone, radio, batteries, and other electronics remain compatible with systems abroad when traveling. See, e.g., Thomas H. Chia, Fighting the Smartphone Patent War with RAND-Encumbered Patents, 27 BERKELEY TECH. L.J. 209, 211 (2012).
substantially similar technologies from different manufacturers.\textsuperscript{14}

Standard setting organizations have, since their origins, been transnational in nature, and the most prominent organizations today are global in scope. The ITU stipulates a common patent policy laying out a code of practice for “standard essential” patents that spans complex intellectual property law regimes in multiple jurisdictions.\textsuperscript{15} Similarly, the Institute of Electrical and Electronics Engineers (IEEE) sets standards for the electrical engineering industry across borders.\textsuperscript{16} The European Union recognizes three SSOs as “European” standardization bodies, each of which produces standards supporting E.U. policies and developing the internal market for industries such as telecommunications.\textsuperscript{17}

To develop new technological standards, SSOs offer membership to patent-holding corporations, who can then participate in and influence the introduction of technical standards in exchange for certain assurances.\textsuperscript{18} When an SSO includes a technology in one of its technical standards that a member company has asserted in the claims of its patent, the member must inform the organization and make declarations to that effect; that patent then becomes an SEP.\textsuperscript{19} The commanding market power of an SEP holder carries the potential for abuse and poses the risk of inadvertent stifling of economically beneficial competition when parties seek to enforce intellectual property rights.\textsuperscript{20} This abuse is referred to in the patent context as “holdup,” specifically, “the ability of a holder of an SEP to demand more than the value of its patented technology and to attempt to capture the val-


\textsuperscript{15} About ITU, supra note 11.


\textsuperscript{17} Commission Regulation 1025/2012, 2012 O.J. (L 316) 28.

\textsuperscript{18} Apple, Inc. v. Motorola Mobility, Inc., 886 F. Supp. 2d 1061, 1084 (W.D. Wis. 2012).

\textsuperscript{19} See id. (stating the policies of European Telecommunications Standards Institute (ETSI) and IEEE that “members shall use ‘reasonable endeavors’ to inform the organization of essential patents” and send “declarations” and “letters of assurance” for the patents in question); see also Microsoft Corp. v. Motorola, Inc., 854 F. Supp. 2d 993, 995 (W.D. Wash. 2012); Chia, supra note 13, at 210 n.2.

\textsuperscript{20} Maldonado, supra note 2, at 419; Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217, at *12 (W.D. Wash. Apr. 25, 2013) (“A proper methodology for determining a RAND royalty would mitigate the risk of patent holdup.”).
ue of the standard itself.”

Inefficient market holdup occurs most acutely when certain conditions exist: for example, where a single patent derives its only utility from an invention composed of a bundle of multiple distinct patent rights and the holder of any one such patent can enforce its right to exclude via injunction. SEP s therefore present particularly treacherous territory for holdup due to the prevalence of this bundling phenomenon, known as royalty stacking. The stacked royalty rate includes the sum of each SEP in the standard, with inflated rates above economic value due to their compounded value in multi-patent devices.

SSOs recognize the risk of holdup and have developed policies seeking to prevent it. By encouraging or requiring patent holder members to agree to license their “standard essential” patents on RAND (reasonable and non-discriminatory) or FRAND (fair, reasonable, and non-discriminatory) terms, SSOs seek to mitigate the risks of royalty stacking. Such agreements allow competitors to bring their products into the market affordably without facing infringement suits while still providing a profit incentive to patent holders.

From the demand side, RAND agreements are principally designed to “ensure widespread availability [of] standard essential patents to all implementers” and thereby discourage exclusion injurious to innovation and the economy.

Members therefore strike a balance in an agreement with a standard setting organization:

Both [members] and the organization benefit[] from

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23. See id.
24. See id.; see also Maldonado, supra note 2, at 429.
26. See, e.g., Common Patent Policy for ITU-T, ¶¶ 2.1–2.2., http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx; see also Maldonado, supra note 2, at 420; Chia, supra note 13, at 212 (“RAND terms are intended to prevent owners of essential patents from extorting their competitors and from erecting barriers to entry into the marketplace.”).
this arrangement . . . [the patent holder] receive[s] the benefit of participating in the standards development process and influencing the choice of technology for the standards. The organizations benefited from Motorola’s commitments by knowing that their technical standards would be available for use by third parties.28

Conversely, member patent holders’ decisions to enter the regime and make a formal declaration29 depend largely upon the economic value of the patent and the comparative expense of legal services and the generation of independent valuations of a patent.30 For example, a member may be motivated to pledge her patents to participate in the standard and accrue a wider licensee base.31 Alternatively, she may wish to “signal a strong position in the market” to attract customers, suppliers, and skilled workers by pledging a larger than necessary number of SEPs.32

However, strenuous and unfavorable enforcement of SSO provisions could discourage patent holders from submitting to the standards, and courts must weigh the risk of holdup, the rights of SEP holders, and fairness to licensee and licensor.33 “Most SSOs require their members to disclose any patents or pending patent applications that might be relevant to the standard prior to adoption,” and therefore the expansion of standards and the effectiveness of the institutional framework depend upon patent holders continuing to receive sufficient incentives to commit their patents.34 Commercially, this implies a commitment to end-product efficiency, a stable profit margin for the SEP owner, and stimulation of demand for products implementing the technology essential to the standard.35 However, it

29. While it varies from organization to organization, generally once a patent has been included in a standard, the patent holder will submit a Letter of Agreement to the standard setting body detailing which patents it agrees to license on RAND terms. See Common Patent Policy, supra note 26.
30. See generally Doug Lichtman, Understanding the RAND Commitment, 47 HOUS. L. REV. 1023 (2010).
31. Id.
32. Sidak, supra note 8, at 959.
33. See Maldonado, supra note 2, at 425 (“The RAND commitment was created to overcome the risks implementers face in adopting the standard and balance the loss of the patent holder’s rights to exclude with reasonable royalty rates.”).
34. Id.
35. Sidak, supra note 8, at 958.
invokes choices in political economy as well. SSOs are gaining global prominence as the “shift from standard setting being done by governmental figures to private-sector SSOs” continues to accelerate. These technological standards regimes and the market participants within them have gained significant attention in U.S. and European courts, regulatory agencies, and political bodies. Meanwhile, SSOs have been cited as a key component to global economic growth in the technology sector, while parties seek to enforce their status as beneficiaries to these international agreements with potential multi-billion dollar valuation in licensing fees.

In surveying the relevant interpretations of RAND terms, including contract principles, economic theory underlying contemporary interpretations, and elemental theory of political economy, this Note evaluates how the evolution of the legal framework retains coherence and solicits continued participation in international standard setting regimes. This analysis includes, crucially, how various quantitative and qualitative understandings of RAND influence the distribution of liability between parties.

B. RAND in the United States: From Theory to Practice

Recent decisions in the United States have induced dramatic changes in the essential international patent process, forcing patent holders and licensees alike to adjust their relationship to SSOs and their patent portfolios. Several decades ago, it seemed unlikely that a U.S. court would treat a statement to the ITU declaring that a patent contains a technical standard as a binding contract to license to any third-party beneficiary at an economically disadvantageous rate.

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36. Maldonado, supra note 2, at 423.
37. William J. Clinton & Albert Gore, Jr., A Framework for Global Electronic Commerce (July 1, 1997), https://www.w3.org/TR/NOTE-framework-970706 (“To ensure the growth of global electronic commerce over the Internet, standards will be needed to assure reliability, interoperability, ease of use and scalability . . . .”).
40. For further discussion, see Sidak, supra note 8, at 1010. See generally Daniel F. Spulber, Innovation Economics: The Interplay Among Technology Standards, Competitive Conduct, and Economics Performance, 9 J. COMPETITION L. & ECON. 777 (2013).
41. See generally Keeler, supra note 4.
42. See Lemley, supra note 10, at 1909.
Whether an agreement to abide by SSO bylaws as a condition for membership would constitute a contractual surrender of rights or merely a waiver remained an open question.\(^{43}\) U.S. courts were not interested in taking on RAND litigation,\(^{44}\) and when disputes over SSO policy did arise, they were settled under a different posture.\(^{45}\)

However, within the past eight years, courts have begun to allow claims related to SSO standards and grounded in contract law to survive motions to dismiss. In \textit{Microsoft v. Motorola}, the U.S. District Court for the Western District of Washington held that a patent holder’s declaration to an international SSO such as the ITU-T qualified as an enforceable contract with an obligation to license the stipulated patents on RAND terms.\(^{46}\) Additionally, competitors seeking to implement standard technology were considered by the court to be third-party beneficiaries to the SEP holder’s SSO agreement.\(^{47}\) The court went further than past orders by asserting that not only did Motorola’s agreements with the ITU and IEEE “require it to negotiate in good faith toward[] RAND terms, but those commitments . . . require Motorola to eventually grant a license on RAND terms.”\(^{48}\) However, in contrast to his previous conclusions, Judge Robart did not specify that the SEP holder must initially offer a RAND term, only that negotiations lead to RAND terms.\(^{49}\) The requirement arising from this ruling appears to be at odds with holdings suggesting that the licensor’s obligation ends with a fair RAND offer.\(^{50}\) Judge Robart mobilized the full force of contract to promote his vision of the key purpose of commitments to SSOs, ensuring widespread

\(^{43}\) Id. at 1910.

\(^{44}\) Id. (commenting on RAND and SSO private ordering, stating, “Unfortunately, there is virtually no case law on this subject”).

\(^{45}\) Pre-2008 cases involving a RAND obligation were resolved on antitrust, fraud, and other grounds, but not contract. \textit{See}, e.g., Rambus, Inc. v. Infineon Techs. AG, 164 F. Supp. 2d 743 (E.D. Va. 2001) (bringing claims against Defendant for failure to abide by SSO rules sounding in fraud).

\(^{46}\) \textit{See} Microsoft Corp. v. Motorola, Inc., 854 F. Supp. 2d 993, 999 (W.D. Wash. 2012) (“The court agrees with Microsoft that through Motorola’s letters to . . . the ITU, Motorola has entered into binding contractual commitments to license its essential patents on RAND terms.”); \textit{see also} Research in Motion Ltd. v. Motorola, Inc., 644 F. Supp. 2d 788, 797 (N.D. Tex. 2008).


\(^{49}\) Id.

\(^{50}\) \textit{See infra} Part II; Realtek Semiconductor Corp. v. LSI Corp., 946 F. Supp. 2d 998, 1001–07 (N.D. Cal. 2013).
availability of SEPs to all implementers. This decision gave these patent licensing agreements teeth. It altered the nature of international commitments to standard setting bodies by attaching different forms of legal obligation to the decision to pledge proprietary technology to an SSO.51

Nonetheless, as the leading case on RAND, the Microsoft v. Motorola saga52 still left a number of pivotal contractual and economic interpretation questions unresolved.53 In the wake of the Microsoft answer to the contractual nature of a RAND commitment, other district courts have explored SEP licensing in an explosion of litigation. These additional cases, such as Ericsson, Inc. v. D-Link Sys. Inc. and In re Innovatio, discussed in Part II, help to draw contours of the field and shape the negotiating stance of SEP-bearing parties.54 Judge Robart’s novel analysis and determination of a RAND rate by a federal court has therefore been examined and refined by subsequent decisions.55 Parts III and IV discuss these results and their impact on standards participation and licensing negotiations.

C. E.U. Patent Law

E.U. law encourages innovation and competition across technology markets in the pursuit of dynamic growth and harmonization throughout the common market.56 Among the E.U. Member States, patent law is commonly viewed as providing key incentives for innovation and invention in business activity.57 However, while the European Commission (Commission) and European Court of Justice (ECJ) have developed a sophisticated antitrust jurisprudence and bu-

51. See Keeler, supra note 4.
52. See supra note 1.
55. Maldonado, supra note 2, at 425.
reaucracy, they lack comprehensive intellectual property regimes, particularly in the area of patent law. The Treaty on the Functioning of the European Union (TFEU) grants the European Union exclusive competence over competition and the internal market but does not explicitly do so for technology and intellectual property. As the European Council acknowledges, “cooperation amongst the Member States . . . in the field of patents contributes significantly to the integration process in Europe,” but “the fragmented market for patents” across the many national court systems is “detrimental for innovation.” Even though the various European bodies have discussed the creation of a patent system for decades, the European Union has only recently taken firm steps toward establishing its own fledging patent regime.

Patent law in continental Europe breaks down into three institutionally distinct layers of legal structure: (1) national patents, such as the U.K. Patents Act of 1977; (2) the European Patent Convention, signed in 1973 and creating the European Patent Office (EPO); and (3) the nascent supranational unitary patent, created in 2012 with ratification of a European patent court currently pending. The EPO recognizes “European” patent rights, but the term is something of a misnomer since patents granted by the EPO do not create a uniform protection right in the European Union. Rather, these rights are derivative of the bundle of national patent rights and are

58. See generally GEORGE BERMANN, CASES AND MATERIALS ON EUROPEAN UNION LAW 810–1086 (3d ed. 2011).
60. As an added nuance, the “internal market” arguably comprises intellectual property as well as more traditional forms of commerce. See Opinion 1/94, 1994 ECR I-5267, Opinion Pursuant to Article 228(6) of the EC Treaty (Competence of the Community to Conclude International Agreements Concerning Services and the Protection of Intellectual Property—Article 228(6) of the EC Treaty); BERMANN, supra note 58, at 1169–76.
64. Patents Act of 1977, c. 37 (UK).
65. See BERMANN, supra note 58, at 803–04.
only enforceable in national courts: the European Patent grants the patentee the same rights in each of the thirty-eight signatory states to the European Patent Court (EPC) as those conferred by a national patent. As a result, the EPO does not harmonize patent rights.

Recognizing the importance of intellectual property rights for the internal market and the free movement of goods and services, the European Union has taken legislative and administrative action to harmonize the recognition of unitary patent protection in all Member States and develop more fundamental E.U. patent rights. For example, Regulation No. 1257/2012 permits patent holders to request unitary effect for national patents in Member States participating in “enhanced cooperation.” Directive 2004/48 of the European Parliament aims to ensure “a high, equivalent and homogeneous level of protection” of patents in the internal market. Known as the “Enforcement Directive,” Directive 2004/48 provides a punitive and preventative remedy for infringement, including seizure of property, permanent injunctions, and damages. As for broader policy, the Council of the European Union prepared an agreement to create a “Community patent” with “equal effect throughout the European Union.” However, the creation of an institutional and judicial framework for such a right has faltered, with the ECJ issuing an opinion that an EPC, at least in the form proposed by the European Council, would not be compatible with E.U. law. The revised agreement developing the EPC has yet to receive the requisite ratifications and has therefore not entered into force, leaving only authorities on the national or EPO level competent to decide on the infringement and validity of European patents.

Nonetheless, SEP disputes and regulation play a prominent

68. Case COMP/M.6381—Google/Motorola Mobility, 2012 O.J. (C 75/1) 7 (deciding pursuant to Article 6(1)(b) of Council Regulation No 139/2004).


72. Id. at arts. 10(1), 11, 16.

73. Intellectual Property Regimes in Europe, supra note 59, § 45.2.

74. European Court of Justice Press Release 17/11, Opinion 1/09, The Draft Agreement on the Creation of a European and Community Patent Court Is Not Compatible with European Union Law (Mar. 8, 2011) (“The creation of [the European Patent] court would deprive national courts and tribunals of the power, or, as the case may be, the obligation, to refer questions to the Court for a preliminary ruling in the field of patents . . . .”).

75. Intellectual Property Regimes in Europe, supra note 59, § 45.2.
role at the E.U. level. The European Union has promoted standardization as a tool for European competitiveness and as a means of establishing an internal market for intellectual property. As such, a pressing legal and economic concern in Europe relates to the licensing of SEPs and the ability or desirability of SEP holders to enforce their exclusive rights via injunction. Tensions remain particularly high with regard to the market intensive presence or dominance of U.S. companies such as Google and Microsoft, which European citizens tend to view as monopolistic, anti-competitive, and injurious to European consumers. In Europe, for example, WiFi, LTE, and other household cellular technologies are all controlled by standards, many of them held by U.S. companies. Market participants seeking to develop products within a standard must obtain access to licenses for the essential technology. Consumers and European regulatory authorities fear that, where left unregulated, a firm holding SEPs could cause market distortions wherein it prevents competitors from entering the market by extracting exorbitant royalty rates for licenses to standardized technology.


81. Council Regulation 1/2003, supra note 76, at 14 (“Once, however, a standard is
Therefore, patent holders, especially those who count patents as essential to international standards within their portfolio, play a crucial role in controlling the market for the product incorporating their protected technology and create the potential for abuse of a dominant position, among other threats. The ECJ does not presently provide the equivalent protection for a Microsoft-style private enforcement of a fair licensing rate on the European level. Rather, to address this legal vacuum and its attendant risks, the Commission has adopted the principles and treaty obligations of competition law as a mechanism for enforcing commitments between market dominant licensors and potential licensees. The collective ambiguity arising from the unratified unitary patent court, the divergence in jurisprudence with the United States, and recent challenges to the Orange Book standard highlight the vital and visible importance of the administrative enforcement activity of the Commission in the FRAND sphere. The specific legal structure for this approach and its consequences are discussed in Part II below.

II. COMPARATIVE RAND LEGAL STANDARD FOR LICENSING NEGOTIATION

This Part opens with a dialogue surrounding challenges posed in establishing a consistent legal structure for RAND litigation that promotes participation in commercially valuable SSO. It problematizes Judge Robart’s contract model and its variations from the qualitative standpoint of how parties situate themselves in a hypothetical licensing negotiation and evaluates key inputs to the bargaining power of licensors and licensees, such as the threat of injunctions. By way of comparison, this is followed by an analysis of the Commission’s recent creative harnessing of its sophisticated competition law to combat the same market power abuses confronted by U.S. courts, such as holdup via exclusionary activity. In the context of potential future convergences between the two regimes, this Part ends by rais-

84. See Allekotte, supra note 77; infra Part III.
ing several challenging distinctions between the European and U.S. systems of antitrust enforcement in patent law.

A. Post-Microsoft Legal Developments and Challenges

The trend toward enforcement of licensing agreements, the risk of royalty stacking, holdup, and subsequent high valuation of SEPs on the market, and the central importance of the negotiation process for both infringement and contractual liability raise two related questions: (1) what behavior qualifies as “RAND” and (2) how should we quantify it? The latter is left for Part III, while elements of the former are grappled with here as the question of judicially accepted procedural maneuvers and negotiation efforts in the RAND context dictate the direction that the technology space and international standard patent regime will take.

To illustrate a possible multidimensional RAND conflict, a non-U.S. member of the ITU may have licensing agreements in place for a patent that comprises elements of a particular technical standard. Another international company, a third-party beneficiary to the member’s Swiss agreement, seeks to use the technology implicated in the SEP. The patent holder approaches the rival to negotiate on reasonable terms for a license, but the parties fail to conclude a satisfactory arrangement. This often results from competing discrepant conceptions of what the royalty rate should be, since subsequent terms will fall into place once parties have agreed on the critical rate.85 When the competitor willfully infringes and uses the technology without a license, the patent holder will traditionally sue in federal court for equitable relief (in addition to damages)—an injunction on the illegal use of its proprietary technology.86 However, the judge must determine liability, both for the infringement and the breach of agreement to license, and which party bears legal responsibility for the failure to negotiate for a RAND license. Stated in broad terms, the competitor, an alleged infringer on a standard patent, mounts a “RAND defense”—or by European comparison, a varietal of Orange Book87—when they show the patent holder has not upheld its commitment to the international standards body to offer a license on RAND terms. Part III further explores these defenses. However,

85. See Maldonado, supra note 2; see also Fujitsu v. Tellabs, No. 12-C-3229, 2014 WL 1527777 (N.D. Ill. Apr. 18, 2014).


87. See Allekotte, supra note 77.
both the technical and legal framework will bear heavily on which party upheld their obligation to offer a license and which party did not.

Before reaching the computational conclusions, which are addressed in the next Part, it is instructive to review the influential and important variations federal courts have adopted to the legal structure of the Microsoft judgment. Major case law includes In re Innovatio, Apple v. Motorola, and Ericsson v. D-Link Systems, among others. In the Northern District of Illinois, Judge Holderman modified Judge Robart’s analysis in a few ways. In re Innovatio arose with the procedural posture of a patent infringement action, not a breach of contract suit in which the court considers questions such as whether the patentee acted in good faith. The court in In re Innovatio sought an infringement determination and not a contractual remedy, so the parties did not require a rubric for future negotiations or the opportunity to arrive mutually via out-of-court settlement at an appropriate rate. Thus, Judge Holderman sought to “determine a single RAND rate for the purpose of calculating damages, rather than a range.” Decisions of this nature grant even less discretion to the parties to reach a private accord.

The Microsoft case made a decisive impact on the negotiating stance of patent holders and potential licensees by instructing the parties on their good-faith duties. However, the nature of contract formation on RAND terms continues to elude a universal judicial rule. Judge Robart asserts that a patent holder’s duty to negotiate licenses on RAND terms with a third-party beneficiary requires good-faith effort in negotiation and the eventual execution of a RAND license between the parties—“interminable good faith negotiation” will not uphold a patent owner’s end of the bargain. However, significant trends in current jurisprudence suggest that a patent holder may discharge this duty toward a third-party beneficiary by making an offer without actually concluding a license. For example, in Ericsson v.

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89. Id. at *6.
90. Id.
91. Kassandra Maldonado makes several suggestions for preferred alternatives for negotiating parties to the Microsoft and Innovatio contract structure. These include Arbitration and the Copyright Licensing Model. See Maldonado, supra note 2. One additional alternative, the auction theory of licensing, is discussed infra Part III.
93. See Realtek Semiconductor Corp. v. LSI Corp., 946 F. Supp. 2d 998, 1007 (N.D.
D-Link Systems, the court considered and discarded a licensee-infringer’s attempt to circumvent its own responsibility to conduct meaningful licensing negotiations, holding that the potential licensee “cannot rely on its failure to negotiate to prove Ericsson’s failure to make a legitimate offer.”\footnote{Ericsson, Inc. v. D-Link Sys. Inc., No. 6:10-CV-473, 2013 WL 4046225, at *16 (E.D. Tex. Aug. 6, 2013), aff’d in part and rev’d in part by Ericsson, Inc. v. D-Link Sys., Inc., 773 F.3d 1201 (Fed. Cir. 2014).} Ultimately, where plaintiff had submitted a Letter of Assurance to the IEEE to offer fair and reasonable licenses to its SEPs, the court rejected D-Link’s argument that plaintiff breached its obligations when the other party to the license, Intel, had refused to cooperate in licensing negotiations.\footnote{Id.} It follows that a third-party beneficiary cannot mount a RAND contract breach defense against an infringement suit for the licensee-defendant’s own failure to cooperate.

Thus, in a challenging negotiation lacking mutual cooperation, the question of availability of injunctive relief has a powerful incentive-related impact on the bargaining positions of the parties. On the one hand, acting in tandem with holdup and royalty stacking concerns, the “threat of injunctions grants an SEP holder significant leverage to set royalty rates” even where “the SEP covers only one small component of a multi-component, profitab[le] product.”\footnote{Maldonado, supra note 2, at 429.} Applying game theoretic principles to a licensing negotiation, the threat of injunction has been shown to grant substantial bargaining power to the SEP holder over the third-party beneficiary—more than would damages for infringement alone.\footnote{For a detailed economic and game theory analysis of patent licensing, see generally Lemley & Shapiro, supra note 22.} Judge Richard Posner, sitting for the U.S. District Court for the Northern District of Illinois, expressed paradigmatic distrust of injunctions in the RAND context in Apple v. Motorola:

I don’t see how, given FRAND, I would be justified in enjoining Apple from infringing the ‘898 unless Apple refuses to pay a royalty that meets the FRAND requirement. By committing to license its patents on FRAND terms, Motorola committed to license the ‘898 to anyone willing to pay a FRAND royalty and thus implicitly acknowledged that a royalty is adequate compensation for a license to use that patent.

Cal. 2013) (admitting that “an injunction may be warranted where an accused infringer of a standard-essential patent outright refuses to accept a RAND license”).
How could it do otherwise? How could it be permitted to enjoin Apple from using an invention that it contends Apple must use if it wants to make a cell phone with UMTS [universal mobile telecommunications system] telecommunications capability—without which it would not be a cell phone.\textsuperscript{98}

In that case, Motorola requested an injunction while it had an agreement with an SSO to license its UMTS telecommunications technology on RAND terms, so Judge Posner granted Apple’s motion to dismiss.\textsuperscript{99}

The Federal Circuit revisited the case on appeal and weighed in on the question of failed negotiations, unreasonable conduct, and injunctive relief.\textsuperscript{100} The court explicitly rejected a per se rule against granting injunctive relief to “FRAND-encumbered” patent holders, on the grounds that where “[an] infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to same effect,” the patent holder no longer bears singular responsibility for concluding a contract and subsequently should receive appropriate relief for infringement.\textsuperscript{101} Furthermore, the court found the existing strict standard for permanent injunctions “provides ample strength and flexibility for addressing the unique aspects of FRAND committed patents and industry standards.”\textsuperscript{102} This reasoning accords with the holding in \textit{Ericsson} v. \textit{D-Link Systems} and \textit{Realtek Semiconductor Corp. v. LSI Corp.} by granting the SEP holder a degree of flexibility.\textsuperscript{103} However, it may also erode legal certainty. The rule essentially advises SEP holders to attempt initial RAND offers to strengthen their eligibility for injunctive relief, an uncertain proposition in light of the multitude of available methodologies and a result possibly in

\begin{footnotes}
99. Id. at 914.
101. Id. (“To the extent that the district court applied a \textit{per se} rule that injunctions are unavailable for SEPs, it erred . . . [A]n injunction may be justified where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect.”). \textit{See generally} Tony V. Pezzano & Jeffrey M. Telep, \textit{Latest Developments on Injunctive Relief for Infringement of FRAND-Encumbered SEPs—Part II}, 26 INTELL. PROP. & TECH. L.J. 18 (2013).
\end{footnotes}
tension with Microsoft. Moreover, the Federal Circuit’s refusal to establish a separate framework for RAND leaves open the question of compatibility and convergence between the system of private litigants in the United States and the injunctions or enforcement available to the same set of industry players in the European Union.

B. E.U. Commission Enforcement Proceedings and Legal Challenges

The Treaty of Lisbon (2009) adopted the TFEU as the active primary law of the European institutions.104 This Treaty operates in tandem with the Treaty on European Union, signed in Maastricht (1992), and updates and replaces the now-superseded European Community Treaties, including the Treaty of Rome (1957), Single European Act (1986), Treaty of Amsterdam (1999), and Treaty of Nice (2001).105 Many provisions of the previous official treaties continued in their present form in the TFEU. For example, Article 3 of the TFEU grants the supranational European bodies exclusive competence for the “establish[ment] of the competition rules necessary for the functioning of the internal market.”106 Furthermore, Article 102, formerly EC Article 82, provides that “any abuse by one or more undertakings of a dominant position . . . shall be prohibited,” granting the Commission the power to regulate the activity of firms in a dominant position in the marketplace.107 These treaty articles adopted a jurisprudential and regulatory legacy tracing back to the earliest entry of the Commission into competition law with the adoption of the European Coal and Steel Community after World War II.108

Article 102 aims to ensure healthy competition among firms

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106. TFEU, supra note 61, at art. 3.

107. Id. at art. 102.

to protect consumers and increase incentives to develop better and more affordable products.\textsuperscript{109} The Commission has specified that abuse of dominance enforcement should be conducted so as to target activities liable to harm consumers through both an economic and effects-based approach.\textsuperscript{110} This involves disrupting the activities of a firm that can act independently of any competition and “directly or indirectly impos[e] unfair purchase or selling prices” or apply “dis-similar conditions to equivalent transactions with other trading parties.”\textsuperscript{111}

Since one cannot meet a standard without a license to the SEP, patent holdup essentially constitutes an unfair purchase price for the technology or standard in question, subsequently limiting technical development to the prejudice of consumers in violation of Article 102. The Commission, recognizing the value in standardization agreements and how commitments to license on RAND terms can prevent the more severe competition concerns,\textsuperscript{112} has creatively employed these treaty articles to prevent abuses by patent holders who fail to abide by their FRAND obligations.\textsuperscript{113} Parties agree to license on FRAND terms when they join an international SSO, and these commitments are referred to in Europe as “[h]orizontal agreements.”\textsuperscript{114} The Commission receives complaints from potential licensees who have not been offered licenses or received supposedly unfair licensing terms and then pursues patent holders through their regulatory enforcement powers by equating the patent holder’s failure to abide by FRAND obligations with the abuse of a dominant market position.\textsuperscript{115}

Interestingly, the two types of prohibited conduct carved out by the provisions of Article 102, exclusionary and exploitative, meet the needs of enforcing FRAND commitments quite effectively.\textsuperscript{116}


\textsuperscript{110} Press Release IP/08/1877, supra note 109.

\textsuperscript{111} TFEU, supra note 61, at art. 102.

\textsuperscript{112} Communication, supra note 76 (“[T]he IPR policies of the ESOs should contain a fair balance between the interests of technology owners and those of technology users, to avoid restrictive effects on competition.”).


\textsuperscript{114} Council Regulation 1/2003, supra note 76, at 14.

\textsuperscript{115} See, e.g., id. at 12–14; TFEU, supra note 61, at art. 102 (prohibiting abuse of a dominant market position).

\textsuperscript{116} See generally Christopher B. Hockett & Rosanna G. Lipscomb, Best FRANDS
Entirely excluding a competitor from the market or standard by refusing to license violates a FRAND obligation.\(^1\) For example, Rambus, a semiconductor and IP inventor company, was accused by the Commission of concealing the existence of certain patents in 2007, thereby altogether preventing competitors from gaining access.\(^2\) However, a firm may also offer its SEPs on unfair or discriminatory terms, thus violating the excessive pricing provision without technically excluding competitors. This interpretation of competition law provides much-needed flexibility to enforce all elements of the FRAND obligations and combat monopolistic behavior in all its forms. Several outstanding issues related to Commission enforcement of FRAND obligations are described here.

A preliminary issue the Commission faced in converting abuse of dominance to patent law relates to defining the contours of “market” and “dominant.” Patents present a unique form of recognized property ownership. The market can thus be described in the most limited sense as the individual patent itself, or as broadly as all products sold that employ similar technology. The breadth of the definition that the Commission employs informs the applicability of Article 102. The “dominant position” analysis traditionally centers on market share—the percentage of the market occupied in monetary terms by one firm in relation to its competitors.\(^3\) However, the nature and power of SEPs obscure this analysis. Any entity that seeks to make use of a standard must obtain the permission of the rights holder, who therefore wields considerable market power. It follows that holders of patents essential to a standard become dominant in the market. It has been suggested that the Commission also takes this analytic approach.\(^4\) The rationale remains that an SEP holder could effectively block entities from entering into the entire market, where the market is defined narrowly as that individual proprietary technology, regardless of the competitor’s abstract market share in a larger product space. However, this diverges from other areas of competition law, such as product sales and mergers, and may create legal un-

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\(^1\) Id.


\(^3\) See Case 85/76, Hoffmann-La Roche v. Comm’n, 1979 E.C.R. 461 (“The existence of a dominant position may derive from several factors which, taken separately, are not necessarily determinative but among these factors a highly important one is the existence of very large market shares.”).

\(^4\) See generally Allekotte, supra note 77.
certainty where the differing judicial tests for dominance stem from the same treaty article.

Second, this style of enforcement by the Commission stands in tension with the treatment of RAND licensing obligations in the United States, including both private actions for contract breach in federal court and the practices of the Federal Trade Commission (FTC). The Commissioner of the FTC has noted that a “convergence” of competition law jurisprudence in the area of patent law is “impossible in the immediate future.” Whether Europe can or should decrease its reliance on Commission administrative enforcement via the harmonization of private FRAND litigation to converge toward the U.S. model will depend on a number of factors, including the creation and operation of the European Union’s Patent Court. Regardless, with many common plaintiffs and defendants within and without Europe in industries such as cellular technology, it remains an active question how to align standard essential patent licensing expectations globally.

Third, Article 102 provides only a general outline for activities that abuse a dominant position and violate competition law and does not specify at what point parties breach their obligation to offer or provide a license on FRAND terms. For example, licensor and licensee may both be willing to negotiate, but they may disagree substantially on the terms and the character of the negotiation. How far do negotiations have to proceed for a patent holder to avoid liability for abuse of dominance? The ECJ has not always taken an active role in determining FRAND rates or the shape of negotiations that satisfy an Article 102 inquiry, but recent opinions handed down by the court have ruled on the steps an SEP holder and potential licensee may take in patent licensing negotiations to avoid infringing the rules against abuse of a dominant position.

Lastly, competition law addresses both singularly dominant firms and collective dominance. Abuse of a jointly dominant position could take several forms in the context of licensing standard es-

121. Hockett & Lipscomb, supra note 116.
sentential patents to some parties but not others. TFEU Article 102 forbids in clear language discriminating between licensees by “applying dissimilar conditions” to equivalent transactions, but multiple firms could collectively hold a critical mass of patents that create holdup. Since this type of antitrust violation does not exist under U.S. law, convergence in this area will pose practical and jurisprudential challenges. However, it is important for companies operating on an international scope to be able to execute consistent policy, especially in the area of joining SSOs and coordinating SEP licensing without the risk of confronting a Commission inquiry in a heated political climate.

The constellation of legal issues actively debated between U.S. courts and the Commission points to the crucial importance of reaching a globally accepted and efficient measure of RAND. Additionally, many of these considerations inform the bargaining power of the RAND-encumbered patent holder in negotiations, as discussed below.

III. EVOLUTION OF THE QUANTITATIVE DISCOURSE AND AN OPENING FOR EFFICIENT CONVERGENCE

This final Part provides an analysis of the shifting state of play of reasonable and non-discriminatory royalty rate calculations and how these methods impact the ability of SEP holders and licensees to preserve their position in the market. It begins by comparing the role of different parties and institutions in setting RAND royalties and then explores technical methodologies proposed for this task with special attention to the decisions in Microsoft and In re Innovation. This Note engages in a structural critique of the evolving U.S. “contract model” espoused by these cases, reviewing its quantitative methodology and the incentives it provides for SEP holders to remain committed to international standards. Lastly, this model is compared to the dominant European practices and a theoretical alternative in the form of an auction process. This comparison highlights potentially dramatic changes in European (F)RAND law—especially in the wake of the ECJ’s decision in Huawei Technologies Co. Ltd. v. ZTE Corp.—and the opportunity now available for efficient convergence of the legal treatment of commitments to SSOs.

125. BERMANN, supra note 58, at 868–71.
A. Who Determines RAND?

SSOs disclaim any role as adjudicative bodies: ITU and IEEE policies do not permit the respective organizations to assist the parties in determining a RAND range, resolving disputes, or weighing in on an individual royalty rate or licensing term.126 The European Union specifically excuses SSOs from a duty to verify the fairness or reasonableness of licensing terms.127 Rather, decisions and responsibility for the implications of a RAND commitment are left “to the parties.”128 However, as several U.S. courts grappling with RAND litigants have noted, when disputes become acrimonious or unresolvable privately, courts and administrative agencies are tasked with deciding on the appropriate royalty range and other terms: “The court is left with the inescapable conclusion that a forum must exist to resolve honest disputes between the patent holder and implementer as to what in fact constitutes a [reasonable and non-discriminatory] license agreement. Here, the courthouse may be the only such forum.”129 Courts and scholars have subsequently developed a number of potential approaches to calculating RAND. This Note considers both quantitative options, such as the proportional contribution or so-called “Top-Down” method, and legal-mechanical options, such as Judge Robart’s “contract method” in Microsoft, the so-called Dutch auction method, and the Orange Book process.130

In the European Union, the task of determining whether par-
ties have satisfied their FRAND obligations is similarly left to national courts and supranational administrative agencies. However, unlike in the United States where patent law operates on the federal level, each Member State is responsible for adjudicating its own SEP systems and disputes. This task thus presents glaring inconsistencies due to the lack of harmonization of judicial standards in the European Union, meaning that parties face different requirements for mounting a FRAND defense in different jurisdictions. German courts, which have proven most active in standard essential patent litigation, follow the *Orange Book* process, wherein a defendant may seek to apply the Commission’s abuse of dominance test to prevent an SEP holder from seeking an injunction, after which the court may review the licensor or licensee’s offers and royalty rates to determine whether they fall within the FRAND range.

This past year has witnessed additional significant developments in the abuse of dominance analysis for an SEP holder. A German court referred a case to the ECJ for further clarification on SEP holder compliance with E.U. competition law: specifically, Huawei Technologies sought an injunction to prevent ZTE’s use of proprietary technology, while ZTE defended that Huawei’s request for enforcement despite a RAND agreement abused a dominant position in violation of Article 102. In July of 2015, the ECJ issued its opinion, which further unsettled the legitimacy of the *Orange Book* procedure and the terrain of European standard essential patent law. The Commission also applies its own enforcement procedures, which present key advantages for the harmonizing of SEP-related competition law. Part III discusses *Orange Book*, the Commission’s approach, and potential consequences of the ECJ’s ruling in *Huawei v. ZTE*.

Lastly, in normative and practical terms, courts continue to assign the bulk of the responsibility for setting a rate to the parties, either directly or implicitly. Essentially, they seek to strike a balance between the obligations of negotiating parties and the delegated task of courts. *Realtek Semiconductor Corp. v. LSI* echoed the reasoning in *Microsoft* that parties must conduct themselves with the implied duty of good faith and fair dealing, and urged the parties to

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132. *Orange Book Case*, supra note 130.
133. For example, most models for reasonable royalty rates model the ex ante negotiating positions of the parties as though they had concluded a license in the contemporaneous market setting. *See generally* Apple Inc. v. Samsung Electronics Co., Ltd., 920 F. Supp. 2d 1116 (N.D. Cal. 2012); Apple Inc. v. Motorola Mobility, Inc., No. 11-cv-178-bbc, 2012 WL 7989412, at *6 (W.D. Wis. 2012).
continue the licensing negotiation process without applying undue legal pressure. A judge-made rate, while conclusive, may not always have the same practical “utility” as a private agreement on rate. While it provides a useful data point, such an example does not directly lead to enforcement of the ruling as a result of appeals, delays, or refusal to sign, or to a resolution of a multitude of additional terms including warranties, indemnification, trademarks, and insurance.

A private binding arbitration to resolve licensing disputes and agree on RAND terms confers additional benefits that place the responsibility for setting a rate back on the parties and the market. For example, such a resolution maintains privacy, frees the parties from their pleadings, permits negotiation of any and all aspects of the licensing agreement, and concludes an agreement with a final rate. Courts recognize, however, that where one party has lost bargaining power in private negotiations as a result of the threat of injunction or one party has indicated limited willingness to pursue further voluntary negotiation, the law gains an advantageous position for determining a RAND rate or range.

B. Locating RAND: International Comparisons and Methodology

As a starting place, it seems appropriate to consider the language of the arrangements that parties have entered into directly with the SSOs. The institutional definitions articulate the raw framework from which judiciaries and lawmakers have proceeded to form independent interpretations. The ITU policy provides that the “patent holder is willing to negotiate licenses with other parties on a non-discriminatory basis on reasonable terms and conditions.” Similarly, the IEEE patent policy requires that a license for Essential Patent Claims be made available “to an unrestricted number of Applicants on a worldwide basis without compensation or under Reasonable Rates, with other reasonable terms and conditions that are demon-

134. Realtek Semiconductor Corp. v. LSI Corp., No. C-12-03451 RMW, 2012 WL 4845628 (N.D. Cal. Oct. 10, 2012); see also supra Part II.


136. See Apple, 2012 WL 7989412, at *6 (“In the end, [a private arbitration agreement] seems to be the best way, if not the only way, for the parties to negotiate a rate that takes into account the many elements of a licensing fee that are not part of this case but are critical to the determination of a fair, reasonable and non-discriminatory rate.”).


Note that courts tend to treat the language of these requirements varying from SSO to SSO as effectively synonymous. Regardless, these definitions leave open to judicial interpretation the reasonableness of the terms. The two pieces of this subsection highlight the quantitative background and economic theory underpinning RAND law and recent judicial decisions.

1. Quantitative Methods and Models

SEPs cannot be valuated in an identical manner to non-essential patented technology. As described above, RAND royalties differ economically from licenses attached to non-SEPs as a result of the composite value of standardized technology. First, it is important to recognize that an SEP used exclusively as part of an international standard “holds zero incremental value without all other SEPs.” Rather, an SEP has “combinatorial” value related to its operation with the other proprietary technology in the standard; its value is practically zero until it operates in combination with all other SEPs, as opposed to “incremental” additions of each non-SEP to the end product outside the standard. The SEPs complement each other, but they cannot be substituted within the patent, substantially reducing the analytic utility of comparison to the “next-best” technology. On the other hand, no SEP holder could accept a zero face value for any individually protected technology, since each patent still carries incremental cost burdens to the owner: innovators must be compensated for their investment in research and development. As such, it is suggested that to reach an efficient result, fair royalty rates must consider both the “incremental” value of the SEP holder investment and the “combinatorial” value of the end product. Simply put, this unique valuation dictated by the standards framework informs a RAND analysis and the factors selected to color such an analysis.

141. Id. at 953.
142. Id. at 994.
143. Id. (“By rewarding the patent holder based on the value that the SEP contributes to the standard and to the downstream product implementing the standard, patent holders will have the incentive to invest in valuable inventions for the next generation of standards.”).
144. Id. See discussion of the Georgia-Pacific factors infra Part III.B.2.
What is fair, reasonable, and efficient in the context of SEP valuation? From a technical and legal perspective, the terms “fair,” “reasonable,” and “non-discriminatory” are “inherently ambiguous.” Furthermore, the tremendous divergence in expert-witness testimony and judicial commentary over what “reasonable” rates implies illustrates the field’s lack of consensus on how to evaluate RAND. This precarious position requires judges to make essentially economic decisions on a case-by-case basis. As established both in Commission inquiries and U.S. case law, RAND must be bounded on the upper end so as to guarantee access to the standard. To encourage a competitive market, licensees must have access as beneficiaries of international standards agreements; thus, the royalty rate has a natural upper bound set such that licensees may compete with products implementing those standards for a profit. The lower bound must provide a non-zero profit margin to the SEP holder that still provides a positive incentive to participate in the SSO, given the level of investment in the patented technology, the cost of participation in the SSO, and the transaction costs of the licensing negotiation. The threat of abuse of dominance proceedings by the Commission, for example, is a potential cost input. Economists have suggested that the “individual-rationality constraint provides a bargaining range” between these two bounds. How narrowly to set this range depends on the variables and formula chosen for RAND, the effects of SEPs on the market price of end products and commercial value of standards, and the incentives that institutions seek to provide companies owning significant proprietary technology.

Following in the footsteps of Microsoft, In re Innovatio pro-


147. Expert testimony provides radically different interpretations of a reasonable royalty and how to compute it. See, for example, the arguments made by the respective parties and the court in In re Innovatio. Infra note 153 and accompanying paragraph.


150. See generally Sidak, supra note 8, at 988–92.

151. See id.

152. Id. at 990.
vides a detailed opinion evaluating two competing technical approaches to a RAND royalty. These methodologies illuminate the thrust of efforts to calculate RAND royalty rates according to the principles established earlier in this section. Judge Holderman considers the proportional contribution methodology used by the SEP holder and the Top-Down methodology applied by the court. Both computations rely on several variables and terminology that are useful to define before presenting the equations, since the variables employed inform the economic behavior that RAND commitments aim to target.

The proportional contribution method begins with the price of the “end user” product. The patent constitutes part of a standard, which in turn typically forms part of a package of standards necessary to develop and manufacture a commercial product. The market price a firm can charge, comprised of considerations of distribution, overhead, sales costs, and other incidentals, informs the value of the product to the licensee. Let this price be $P_E$. However, an individual SEP is naturally only a fraction of the total value of a complex standard that includes thousands of individual patents; similarly, a single standard is only a fraction of the value of an end product, which consists of both intellectual property and tangible property, manufacturing, and other value adds. Therefore, the court must assign the proportion of the contribution of the patent to the standard, $p_s$, to the value of the standard, $v_s$, and subsequently of the standard to the value of the end product ($C$). Assessing the value of the patent to the standard embeds an answer to the risk of holdup within the RAND royalty; an SEP holder’s increased leverage over a competitor by virtue of its patent’s inclusion in the necessary standard is diluted, at least in theory, by limiting its value to its contribution to the standard. This so-called proportional contribution method calculates the RAND royalty, $T$, as the product of three factors: the market-determined price of the “end user” or “downstream” product ($P_E$), the ratio of patent to standard ($r_p$), and the ratio of standard to product ($r_s$):

\[ T = P_E \times r_p \times r_s \]

Deriving the value of an SEP from the price of the end product comes with challenges. Consider how an expert witness might

153. See id. at 1009; In re Innovatio, 956 F. Supp. 2d at 925.
154. The ratio is $r_p = \frac{p_s}{v_s}$.
155. The ratio is $r_s = \frac{v_s}{C}$.
156. Sidak, supra note 8, at 1011.
157. Id. at 1010.
situate \( r_s \) in a combinatorial model of SEP value. In effect, it is difficult to practically guarantee or demonstrate that the commercial value of a complete product, composed of many standards and non-standard technologies, mirrors the value of the patented technology, or even reflects it in a fixed proportion. The Federal Circuit noted this quandary in LaserDynamics, stating, “in any case involving multi-component products, patentees may not calculate damages based on sales of the entire product . . . without showing that the demand for the entire product is attributable to the patented feature.”\(^{158}\) This showing raises hefty statistical and administrative problems. The contribution of the standard to the product is “unobservable” and “difficult to estimate,” in part because parties do not have complete information.\(^{159}\) Judge Holderman, in his detailed calculation of a RAND royalty rate for In re Innovatio, ultimately rejected the uncertainty of a so-called “Bottom Up” approach that incorporated some of the uncertainty embedded in the proportional contribution model.\(^{160}\)

In locating an alternative, the court sought to retain the \( r_p \) term’s limitation on the risk of extracting an excessive holdup value. It also pursued a methodology that struck a balance between licensee and licensor within the international SSO context and landed, in effect, within the range suggested by the individual economic rationality of the parties. The expert witness for the alleged infringers promoted the Top-Down methodology, which produced a more licensee-friendly royalty by setting a stricter ceiling for aggregate royalties.\(^{161}\) The formula proceeds by identifying the market price of the smallest salable component of the product, rather than the complete end user product itself, a common metric used in traditional patent litigation.\(^{162}\) In theory, the smallest salable component will correlate most closely with the SEP in question and, as a result, the price of such component matches the added value of the SEP most closely. This variable has the advantage of providing the lowest margin of uncer-

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159. Sidak, supra note 8, at 1012.

160. The opinion shared Judge Robart’s commentary that evidence in support of an “incremental value” variable (such as the ratio \( r_p \)) is often speculative and unreliable. In re Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609, at *37 (N.D. Ill. Oct. 3, 2013) (“In practice, approaches linking the value of a patent to its incremental contribution to a standard are hard to implement . . . . [F]or all these reasons, the court rejects [the] Bottom Up approach as an appropriate method for calculating a RAND royalty.”).

161. See Sidak, supra note 8, at 1011.

162. See, e.g., In re Innovatio, 2013 WL 5593609 at *73; LaserDynamics, 694 F.3d at 68.
tainty, especially when compared to the proportional contribution approach. To provide for the rational lower bound for the aggregate royalty, the expert witness for the infringing party then incorporates the profit margin that the SEP holder receives per smallest salable component, $\pi$.

Let $\pi$ then be the average profit margin per component. The formula for RAND royalty rate follows as:

$$ T = P_s \times \pi \times r_p $$

Judge Holderman found that the price per component, a WiFi chip, was $14.85; the profit margin was 12.1%; and the contribution was 19 of approximately 3,000 SEPs. Accounting for the percentage of value of In re Innovatio’s patents to the total number of electronics patents in the 802.11 standard, the Top-Down formula generated a net royalty of 9.56 cents per WiFi chip.

Both methodologies address holdup and royalty-stacking concerns endogenously via $r_p$, while the Top-Down method, by declining to find a percentage of the end product price, provides a less favorable lower bound for the SEP holder. This discussion provides quantitative rigor to the discussion and criticisms of the Microsoft v. Motorola and In re Innovatio methods for providing proper negotiation incentives below.

2. The Georgia-Pacific Factors

The royalty rate serves as the central piece of the patent license and the most important element of a RAND obligation. While other terms remain crucial to the conclusion of a successful license, once a firm, reasonable rate or range has been set, the parties may pursue the outstanding issues in a RAND framework. In the United States, federal courts since the 1970s have determined such rates

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163. Let $\pi = \frac{dR - dC}{dC}$, where $dR$ and $dC$ are defined as marginal revenue and marginal cost, respectively. Then $ndR - nC = \text{average } \pi = \pi$, where $n$ is the number of component margins.

164. Sidak, supra note 8, at 1011.

165. The expert witness chose to adjust Innovatio’s contribution to reflect the higher relative value of Innovatio’s patents. The expert witness relied upon literature in the field suggesting the top 10% of electronic patents make up 84% of the entire value of all the patents. Thus, the contribution is 19 of 10% of 3000 patents, or 300 patents, multiplied by 0.84, the 84% of contributed value. In re Innovatio, 2013 WL 5593609 at *43.

166. The formula provides: $(14.85)(0.121)(19/300)(0.84) = 0.0956$ dollars, or 9.56 cents, per chip.

167. Id.
in patent cases by referencing the Georgia-Pacific factors. These factors serve as a “comprehensive list of evidentiary facts relevant, in general, to the determination of the amount of a reasonable royalty for a patent license.” The case law and prior analysis available from these infringement cases help guide any inquiry on RAND, although, as will be shown, courts must adapt these factors to the contemporary RAND patent licensing context. Moreover, the variables necessary to locate a quantitatively rigorous RAND license, such as the value of the SEP relative to the standard and the end product ($r_p$ and $r_s$), require judicially pragmatic and available factors. Georgia-Pacific summarized a number of useful elements of this analysis. As a result, when they encounter litigation over RAND-encumbered patents, U.S. courts have successfully applied Georgia-Pacific as a baseline across a number of methodologies.

The Georgia-Pacific factors, “based on all the reasonable-royalty decisions in [the Federal] Circuit and the most pertinent decisions elsewhere,” constitute “the reasonable-royalty case law analysis,” and have “furnished general guidelines in the form of the applicable criteria of legal principles and operative fact.” The fifteen factors establish a basis for the value to the parties of the infringed...
patent via comparative, stochastic inductive, and empiric analysis. Judge Tenney expanded upon and qualified the nascent concept of a “reasonable” royalty by applying an ex ante licensing analysis in the context of an ex post infringement. Judge Tenney expanded upon and qualified the nascent concept of a “reasonable” royalty by applying an ex ante licensing analysis in the context of an ex post infringement. Framed as a negotiation, reasonableness hinges upon both the amount that a “willing licensee would have paid for the patent license [and] . . . the amount that a willing licensor would have accepted.” The “very definition” of such willingness assumes that the infringer-licensee will be left with a profit after making the payment. Parties may “marshal[] . . . all of the pertinent facts” with an optimal degree of informational symmetry to provide a transparent forum. Proponents of an auction method, for example, emphasize the inherent “transparency” of the

licensee for the use of other patents comparable to the patent in suit. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold. 4. The licensor’s established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly. 5. The commercial relationship between licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter. 6. The effect of selling the patented specialty in promoting sales of other products of the licensee; that existing value of the invention of the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales. 7. The duration of the patent and the term of the license. 8. The established profitability of the product made under the patent; its commercial success; and its current popularity. 9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results. 10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention. 11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use. 12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions. 13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer. 14. The opinion testimony of qualified experts. 15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.

Id. at 1120.
175. Id.
176. Id. at 1121.
177. Id. at 1122.
178. Id.
process, in alignment with the \textit{Georgia-Pacific} paradigm.\textsuperscript{179} Additionally, the profitability metric of the analysis takes into account contemporary market conditions.\textsuperscript{180} The court does not consider the parties’ quantitative evidence uncritically, but rather engages in a probative inquiry into the value of expert witness testimony and other numerical conclusions.\textsuperscript{181} As shown below, it is argued that these factors, grounded in a reasonableness inquiry, are instructive in identifying the quantitative value and normative goals of fair, reasonable, and non-discriminatory royalty rates.

The utility and economic accuracy of the \textit{Georgia-Pacific} factors in the RAND context have also been questioned.\textsuperscript{182} As a preliminary matter, the method raises administrability and institutional competence questions that skeptics fear may promote arbitrary, court-by-court results: applying the \textit{Georgia-Pacific} format “dumps into the jury’s lap the chore of evaluating fifteen factors that are neither mutually exclusive nor exhaustive . . . all with no guidance as to the relative importance or weight to assign any particular factor.”\textsuperscript{183} In a field dominated by highly technical disputes, courts strive to avoid arbitrary results and to ground their decisions on coherent principles.

Concerns also emanate from economic theory and substantive law. The institutional nature of RAND licensing suggests that parties are sophisticated repeat players, consistently exchanging proprietary technology rights with each other, not single litigants seeking an eternal judgment on a unique set of facts. \textit{Georgia-Pacific} arose in the patent holder and infringer context, legally analogous to an injured party and tortfeasor,\textsuperscript{184} and distinct from mutual and continual contracting partners. This distinction motivates some of the challenges that recent federal judges, such as Judge Robart in Washington, have faced in deciding which factors to adopt or disregard in a RAND analysis.

\textsuperscript{179} Newman, \textit{supra} note 7, at 147–48.
\textsuperscript{180} \textit{Georgia-Pacific}, 318 F. Supp. at 1127–28.
\textsuperscript{181} \textit{Id}. at 1140.
\textsuperscript{182} \textit{See, e.g.}, Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 911 (N.D. Ill. 2012), \textit{aff’d in part and rev’d in part by} Apple Inc. v. Motorola, Inc., 757 F.3d 1286 (Fed. Cir. 2014); Sidak, \textit{supra} note 8, at 968–71.
\textsuperscript{183} Sidak, \textit{supra} note 8, at 968–69.
\textsuperscript{184} \textit{See Georgia-Pacific}, 318 F. Supp. at 1116.
C. Current Models and Alternatives

1. The “Contract Law” Model and Perspectives on Microsoft

In 2013, in the findings of fact and conclusions of law for Microsoft v. Motorola over the 802.11 and H.264 WiFi technology standards, Judge Robart, arguably for the first time, adopted and executed the task of reaching a court-determined reasonable royalty rate. Recent scholarship has hailed the court’s opinion in Microsoft and the method articulated within as the most effective judicial approach to RAND commitments to date. By treating the RAND obligation as a contract a year earlier, the court adopted an extensive set of legal and analytic principles to deploy in pursuit of a reasonable term. More pointedly, however, Judge Robart set a judicial example by applying these legal-contractual principles to the economic arrangements framing the parties’ licensing negotiations and developing a royalty rate.

Prior to this litigation, Motorola offered a 2.25% royalty rate to its SEP patents in both Europe and the United States. Borrowing from the common practice in patent infringement suits, the court took a comparative approach to locate an alternative, appropriate RAND figure for the patents in suit. Judge Robart sought, as a preliminary matter, to “mitigate patent holdup and royalty stacking” and to provide the SEP holder with “a reasonable return on its investment,” thus deciding to limit the royalty to the value of the patented technology independent and apart from its incorporation into the standard. His legal framework sought to incorporate the “economic guideposts into a hypothetical bilateral negotiation” between licensor and licensee. To model this scenario, at least one court identified relevant SEP and non-standard patent license royalty rates by reviewing a number of quantitative and qualitative indicators, with the “widely accepted” fifteen Georgia-Pacific factors discussed above, which theoretically situate the parties in an ex ante licensing

186. See Maldonado, supra note 2.
188. Microsoft, 2013 WL 2111217.
189. Sidak, supra note 8, at 968.
190. Maldonado, supra note 2, at 442.
191. Id. at 443.
negotiation, serving as “a natural place to begin.”

Judge Robart applied the Georgia-Pacific factors within the contract negotiation model, making alterations for the RAND-specific context. These pieces of the analytical rubric have been termed the “Microsoft factors.” Judge Robart adopted and considered primarily: (1) the rates received by the licensor in a patent pool; (2) the rates paid by the licensee for the use of other patents comparable to the patent in suit; (3) the nature and scope of the license; (4) the contribution of the patent to the standard (“Microsoft factor 6”) and the contribution of the standard to the product; (5) alternatives to the current patented technology; (6) evidence of the benefit and value of the patent to the owner and implementer; (7) the customary practices of business licensing RAND-encumbered patents, which exclude non-RAND patents; and (8) the impact of the SEP holder’s obligation to license its SEPs on RAND terms to avoid holdup and royalty stacking on what a licensor and licensee would typically have agreed upon in reaching an agreement voluntarily. He employed these metrics to determine what an SEP owner and standard-implementer would consider relevant during a hypothetical negotiation over a reasonable royalty. Conversely, the specific legal and institutional framework of SEP holders within the standard setting network excludes the licensor’s established policy and marketing program or his patent monopoly, the pre-existing commercial relationship between licensee and licensor, and the utility and advantages of the patent over old modes from proper consideration. Reasonable and non-discriminatory clauses seek to combat precisely the type of business arrangements that would steer licensors toward abuse of dominance or monopolistic proprietary regimes, making those elements of the Georgia-Pacific analysis inappropriate. The Microsoft factors have since been considered and partially

192. Id.


194. See supra Part III(B)(1).


196. Microsoft, 2013 WL 2111217 at *16 (“In using a hypothetical bilateral negotiation, courts should modify the Georgia-Pacific framework to take RAND obligation into account.”).

197. See Georgia-Pacific, 318 F. Supp. at 1120 (factor 4).

198. See id. (factor 5).

199. See id. (factor 9).

Judge Robart stated in *Microsoft* that he adopted the premise that RAND terms should be designed so as to encourage participation in the standard, admitting that “A RAND royalty should be set at a level consistent with the SSO’s goals of promoting widespread adoption of their standards” and appropriating the principles of infringement analysis for that purpose. However, recent scholarship raises concerns over the Robart method’s substantive fidelity to the interests of SEP holders: one critic has gone as far as to suggest Judge Robart’s “economic assumptions consistently bias the estimate of the RAND royalty in favor of the infringer.”

Specifically, Professor Gregory Sidak argues that, by adopting several of the *Georgia-Pacific* factors that describe comparative added value to alternative non-SEPs, Judge Robart misrepresented the economic premise of a standard. This allegation follows naturally from the existing concerns over whether *Georgia-Pacific* continues to function as a useful benchmark for twenty-first century patent litigation. It also suggests that, rather than view RAND disputes as subject to a retrofitted *Georgia-Pacific*, courts could alternatively treat SEP holders entering into agreements with SSOs as contracting out of the *Georgia-Pacific* approach. More broadly, however, these analyses strike at the heart of the tension between avoiding the dangerous, inefficient consequences of holdup and royalty stacking on the one hand, and promoting participation in commercially and politically valuable international standards on the other. For these reasons, despite its traceable adoption of *Georgia-Pacific* as a known rubric and the workable contract framework, this model raises interpretative challenges in the context of good-faith offers by SEP holders as well as pegs an appropriate RAND royalty.

It poses further problems for the convergence of enforcement of RAND obligations in Europe and the United States. First, the field

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203. Sidak refers to this treatment of royalty computation as the “ex ante incremental value approach.” Sidak, *supra* note 8, at 968.

204. *See generally id. at 968–86.*


206. Sidak, *supra* note 8, at 971.
continues to evolve, as demonstrated by the eagerness of district courts in Illinois, Texas, California, and Washington to apply their own related but distinct methodologies to approach the RAND question. Until the Federal Circuit or the Supreme Court definitively rule on the posture of the SEP holder in response to a court-established royalty term, a convergence question continues to drive the evolution of domestic law. Moreover, as discussed, the E.U. institutions lack the requisite uniform patent law to provide an amenable forum for enforcement of all RAND claims through contractual private party mechanisms. The recent activity of the Commission in competition policy demonstrates a willingness to apply a dynamic Top-Down enforcement mechanism that, as a question of institutional competence, may favor a different form of analysis from the private party contract-beneficiary approach taken by Judge Robart in *Microsoft*.  

2. The German *Orange Book* Procedure, E.U. Enforcement, and Google

The *Orange Book* decision issued on May 6, 2009, by the German Bundesgerichtshof brought the Commission’s antitrust enforcement under then EC Article 82 (now TFEU Article 102) to bear in adversarial litigation between two private parties. Philips, the patent owner, sued several CD manufacturers alleging infringement of proprietary information and seeking an injunction and money damages. The defendants pleaded that Philips was abusing a dominant position in the CD market in violation of E.U. law, and that, as a result, the erstwhile-infringers should not be penalized for their actions.  

The court responded by articulating the now-famous *Orange Book* defense, which operates when a defendant facing a demand for injunctive relief pleads that the plaintiff abuses a dominant position in the market. Specifically:

[A] defendant sued on the basis of a patent is able to defend himself against the claim for injunctive relief asserted by the patent proprietor filing the action, by pleading that the latter abuses a dominant position on

208. *Orange Book Case*, supra note 130.
209. *Id.* at 3–4.
210. *Id.* at 4–5.
211. *Id.*
the market if he refuses to conclude a patent license agreement with the defendant on non-discriminatory and non-restrictive terms and conditions. 212

To invoke the defense, the defendant must behave like a licensee, that is: (1) the defendant must have made the patent owner “an unconditional offer to conclude a license agreement . . . which the patent proprietor must not reject without violating the prohibition of discrimination or anti-competitive behavior,” and (2) the defendant must have “complie[d] with the obligations that the license agreement yet to be concluded imposes,” or, in other words, payed the reasonable royalty. 213

Notably, both of these requirements are addressed to the defendant accused of infringement, not the plaintiff seeking injunctive relief. For this reason, the German Bundesgerichtshof ultimately sided with the plaintiffs and upheld the award of damages, since the defendants would have had to offer to pay more than a de minimis amount for a license on reasonable terms. For the defendant to mount an Orange Book or competition defense, it must first demonstrate awareness of the RAND obligation and its implications and then act on it. Thus, while the process feels similar to the legal standard imposed by U.S. federal courts, it belies significant procedural distinctions that impact how the parties situate themselves in licensing negotiations and the incentive structure for SEP holders to pledge their intellectual property to international standards. 214

U.S. courts have noted the importance of German patent litigation and the evolution of the Orange Book process to companies operating on RAND terms in the United States. The Microsoft litigation was initiated as a response to patent infringement and injunction proceedings in German courts pursuant to an Orange Book analysis. 215 Microsoft asked the court to determine a RAND rate in light of what the company construed to be unreasonable demands by Motorola that threatened royalty stacking with inflated holdup prices,

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212. Id. at 1 (emphasis added).
213. Id.
215. Microsoft Corp. v. Motorola, Inc., 871 F. Supp. 2d 1089, 1098 (W.D. Wash. 2012) (“Here, the parties admit that . . . the parties are the same. Indeed, the action before this court involves Microsoft as a plaintiff and Motorola . . . as defendants; whereas, the German Action involves General Instrument Corporation, an affiliate of Motorola, as the plaintiff and Microsoft . . . as defendant[.].”)

backed by the threat of injunction.\textsuperscript{216} The lower standard for injunctive relief under \textit{Orange Book}, when compared to the contract method or the full weight of the Commission’s Article 102 enforcement mechanisms, permitted this pressure on the potential licensee. A convergence of judicial and administrative practice with regard to RAND/FRAND computations and the granting of injunctions would simplify the parties’ inter-jurisdictional maneuverings.

In rejecting Motorola’s suggestion that the court adopt the \textit{Orange Book} procedure, Judge Robart declined the opportunity to adopt a convergent legal standard. He contrasts Motorola’s firm contractual obligation with the \textit{Orange Book} procedure, which as shown sets a higher bar for the licensee to defend its infringing activity on a RAND basis.\textsuperscript{217} The opinion in \textit{Microsoft v. Motorola} interprets the \textit{Orange Book} result as follows:

\begin{quote}
  The German Orange Book process allows a court to review a patentee’s or alleged infringer’s offer regarding royalty rate to determine whether the offer is reasonably within the RAND range. In other words, so long as Motorola’s offer is reasonably within a RAND range, that offer will constitute the RAND royalty rate.\textsuperscript{218} \\
  The court rejects the ex post oversight of Motorola’s offer, which in its view grants a stronger negotiating position to the SEP holder, who has the first-mover advantage as to what constitutes “reasonable.”\textsuperscript{219} Judge Robart views his approach, which emphasizes the duty of the SEP holder to conclude an offer in contrast to European practice, as more faithful to the aim of SSO policy.\textsuperscript{220} In light of the technical criticisms of his method articulated above, however, one might question whether pushing SEP holders into unfavorable negotiating positions will truly strengthen SSO participation or allow for any future convergence with E.U. law.
\end{quote}

As discussed in Part I, the ECJ issued its final decision in \textit{Huawei v. ZTE}, a case interpreting the application of the German \textit{Or-
ange Book system to E.U. law, in July of 2015.221 This case concerned licensing negotiations between SEPs that constituted part of the LTE fourth generation mobile network communication standard (4G). In the classic parable of a FRAND competition dispute, the alleged infringer, ZTE, entered into negotiations with a patent holder, Huawei, over SEPs that Huawei had committed to license on FRAND terms. While ZTE expressed a willingness to conclude a licensing agreement on FRAND terms, negotiations failed to result in a license: Huawei sued in German courts to obtain an injunction against the use of its proprietary technology, and ZTE raised a competition law defense (in other words, an Orange Book defense), arguing that Huawei abused its dominant position in the market for LTE wireless technology in violation of Article 102.

The ECJ, adopting the objectives and suggestions of the Advocate General’s (AG) opinion,222 stressed the importance of the balance of interests between the proprietary rights of the patent holder on the one hand, and the integrity of the SSO collaborative structure and the competition laws on the other. In the AG’s words, the negotiating posture must “strike a balance between the right of intellectual property and the SEP holder’s right of access to the courts . . . and the freedom” of other companies to enter the market, create competition, and defeat holdup.223 How the AG and the court sought to establish this balance suggests one possible trajectory toward convergence of RAND. The court provided an instructive guide to steps in a negotiation that the SEP holder must take to preserve their right to injunctive relief as a remedy for infringement of their FRAND-encumbered intellectual property without violating the competition laws.

As predicted by the AG’s opinion, the court distinguished Huawei v. ZTE from Orange Book and the German case law, noting that the Orange Book case did not involve a FRAND commitment.224 Rather, the SEP holder must make the first move by “alert[ing] the offending company to the infringement at issue in writing, giving reasons and specifying the SEP concerned” and “present[ing] the allegedly offending company with a written offer of a license on FRAND terms and that offer must contain all the terms normally in-


223. Id.

cluded in the sector in question."225 These terms include the specific amount of the royalty and how it is calculated.226 Pursuant to this offer, the alleged infringer or implementer must “diligently” respond in “good faith” and without delay.227 The patent owner may then propose a counteroffer within the bounds of FRAND, or have a reasonable royalty determined by an independent third party. Since the case was referred by the ECJ back to German national courts, it remains to be seen how Huawei and ZTE will conclude their specific licensing dispute, but all commercial players interacting with FRAND technologies should take note of the ECJ’s advice for negotiating procedure.

Boiled down to its essence, this method preserves the power of a defendant to call upon the full force of Commission competition law to defeat an injunction. This opinion and the legal and normative conclusions it reaches bring European law closer to rulings in the United States, which recently have been said to favor the infringer in RAND analyses and emphasize the SEP holder’s obligations to make offers.228 The court made another move towards the alleged infringer by withdrawing the “unconditional offer” requirement provided in the Orange Book model.229 Yet while the court made important modifications to the Orange Book model for FRAND-encumbered patent cases, the court left several important questions unresolved. First, the court did not provide a workable structure for the independent evalu-


227. Id.


229. While outside the scope of this Note, this part of the ruling preserves the right of the alleged infringer to challenge the substantive legitimacy of the SEP with invalidity or essentiality challenges in an alternate proceeding while conducting FRAND licensing negotiations. Alert Memorandum, Enforcing Standard-Essential Patents—The European Court of Justice’s Judgment in Huawei v. ZTE, CLEARY GOTTLIEB STEEN & HAMILTON 11 (Aug. 3, 2015), http://www.cgsh.com/files/News/d23034e9-186e-4b11-a120-b3acfb065e45/Presentation/NewsAttachment/cb6c8d2-4f4a-418c-a0ad-b54908830217/Alert%20Memo%20(PDF%20Version)%202015-62.pdf.
ation of licensing terms when bilateral negotiations proved fruitless. This may place pressure on SSOs, which traditionally have refused to determine the reasonableness of licensing terms or conditions, or to provide alternative dispute resolution or arbitration-related services for FRAND royalties or institutional guidance on crucial questions such as venue. Second, the ECJ assumed, but did not specifically answer, whether Huawei’s SEPs conferred a dominant position in violation of Article 102. Lastly, given that the court only need answer the questions referred by the national court, it did not rule or provide guidance on what would constitute “FRAND” terms.

Finally, the Commission has advanced its FRAND competition law policy through the Google and Motorola antitrust investigations. In Google, the Commission found no abuse of dominance or violation of TFEU 102, whereas in Motorola it found the reverse and ordered Motorola to eliminate all anti-competitive effects resulting from infringement. Interestingly, however, the Commission declined to fine Motorola due to the notable lack of E.U. decisional practice or case law regarding “whether a[n] SEP holder, which has given a commitment to license that patent on FRAND terms and conditions, abuses a dominant position when it seeks and enforces an injunction on the basis of that SEP against a potential licensee that is not unwilling to enter into a licence agreement.” Comparing these two Commission inquiries in a further study may yield insight into the details of another interpretation of FRAND and the sophisticated negotiation machinery for an SEP license to meet the requisite reasonable and anti-competitive criteria.

3. The “Dutch Auction” Royalty Rate

The auction process provides another pedagogically interesting alternative for SEPs licensing. In Microsoft, Judge Robart considered but declined to adopt an auction procedure. However, “[a]
huge volume of economic transactions is conducted through auctions,” including U.S. Treasury bidding, foreign currency exchanges, awarding of government and E.U. contracts through explicit auctions, and takeover battles as de facto market auctions. Auction theory has been additionally applied to suggest alternative procedures “for items ranging from oil leases” to “logging rights” to “telecommunications . . . licenses.”

Despite the recent judicial resistance, scholars such as David Newman advocate for a return of an auction method for distributing RAND patent licenses. He describes how the action proceeds via an arbitrary market force: bidders make decisions by vying to receive the maximum number of licenses at the lowest possible rate, but of course they will not receive as many licenses if they bid too low. “Fairness” and “reasonableness,” the literal hallmarks of a “FRAND” agreement, thus flow from the forces of the market.

To determine the original ex ante royalty rate under a Dutch Auction, Newman “propose[s] an online auctioning method that provides for an intermediary body to engage independent experts to provide opinions regarding potential [RAND] terms.” Newman ultimately approves of the traditional Georgia-Pacific factors for establishing the initial royalty rate pre-auction. However, the license-auction process derived from this rate optimizes pricing while motivating a reasonable and non-discriminatory result. Benefits of the auction method include transparency and a reduction in transaction costs: the institutional rules of the game are publicly known with true value available. For example, such informational advantages serve as an important incentive for the U.S. Treasury and


237. Newman, supra note 7, at 139.

238. Id. at 144–45.

239. Id. at 139.

240. Id. at 153.

241. Id. at 156–57.

242. Id. at 151 (“License auctions provide superior results compared to more traditional licensing strategies.”).

243. Id. at 151, 154–55.
the Federal Reserve to use different methods of auction.244

Furthermore, an efficiently managed auction process conveniently avoids the perilous antitrust issues that have brought many U.S. companies before both the FTC and the Commission. The patent holder accomplishes this via anonymous bidding, which de facto nearly eliminates the risk of collusion or price-setting, both of which are major antitrust concerns on both sides of the Atlantic. It also satisfies the separate arms of Article 102, including exclusion (102(b), (d)), exploitation (102(a)), and discrimination (102(c)). An auction permits no exclusion and fosters a pro-competitive environment.245

Additionally, an alternative dispute resolution process develops mechanisms to avoid holdup or the “possibility of opportunistic behavior by patentees.”246

Situated in the RAND setting, auctions therefore qualify as “non-discriminatory.” In other words, they ensure that all potential licensees, or “bidders,” have access to the patent license without vertical or horizontal constraints.247 Indeed, the “discrimination” targeted in this context would be against a set of licensees. The bidding process by default provides “identical terms” in an open manner by which, Newman argues, “the nondiscrimination prong of RAND will have been met.”248

Lastly and crucially, auctions are efficient. A huge number of economic transactions take place through auctions, which have simple and well-defined economic environments.249 The efficiency of a variety of auction processes may be demonstrated rigorously by the Revenue Equivalence Theorem, which holds that any auction mechanism with rational actors and certain reasonable game theoretic assumptions produces the same expected revenue.250 This procedural

244. Id. at 145–46; Klemperer, supra note 235, at 228.

245. Newman, supra note 7, at 151 (“The purpose of the proposed auction process is to harness market forces in order to establish license terms in a pro-competitive environment.”).

246. Id. at 157.

247. Id. at 154.


250. The theorem stated reads as follows:

Assume each of \( n \) risk-neutral potential buyers has a privately-known value independently drawn from a common distribution \( F(v) \) that is strictly increasing and atomless on a range from \( v_1 \) to \( v_2 \). Suppose that no buyer wants more than one of the \( k \) available identical indivisible objects. Then any auction mechanism in which (i) the objects always go to the \( k \) buyers with the highest values,
flexibility would benefit implementers of rules according to national practice on an international level.

CONCLUSION

In 2012, there was a potential breakthrough in establishing a common international western practice in standard essential patent licensing: litigation enforcement. While no alignment took place either within the United States, Europe, or between the two, the key actors—U.S. courts, the FTC, the Commission, European Member States, and supranational courts—continue to develop increasingly sophisticated legal and technical machinery. In reviewing the current landscape, this Note has sought to explore whether the next few years may see another opportunity. A convergence discourse in patent law continues to rage between Europe and the United States, and questions and considerations over SSO participation, holdup, and fairness to the rational incentives of licensors and licensees should inform its trajectory.251

Ultimately, standard setting organizations with a broad and sophisticated membership provide for product interoperability, efficiency and cost savings to consumers, increased competition, and improvements to innovation. The marketplace demands flexibility in our standard for negotiating licenses and computing RAND, in addition to consistency across jurisdictions. The ECJ’s ruling in *Huawei v. ZTE* and the resolution of outstanding questions from the Commission’s Motorola inquiry play a significant role in the evolution of patent policy, and may ultimately signal momentum towards convergence. This momentum develops through international judicial dialogue with U.S. courts, but may also profit from the direct interaction of administrative agencies and policy-makers to outline a trans-Atlantic model for analyzing the RAND licensing process at the negotiation, offer, and relief stages.

In an effort to proscribe such a convergence and efficient po-

and (ii) any bidder with value \( v_1 \) expects zero surplus, yields the same expected revenue, and results in a buyer with value \( v \) making the same expected payment.

*Id.* at 250. The proof of this result lies outside the scope of this Note, but for reference, Klemperer includes a complete proof of the Revenue Equivalence Theorem. *Id.* at 248–51. Additional scholarship has tested the Theorem in a variety of contexts, such as eBay Internet bidding wars. See Hossain & Morgan, *supra* note 236.

tion for SEP holders, this Note reviewed the contract theory developed out of the *Microsoft v. Motorola* series and related case law; the *Orange Book* method as applied in German courts and elsewhere in continental Europe; auction theory, largely through the lens of theoretical application; and the administrative models derived from practice at the Commission. The contract model provides a powerful mechanism for private resolution and has been successfully adapted by many courts, but it continues to generate problems and controversy in both its technical application and legal framework. Alternatives, such as an efficient auction model or arbitrations, may obviate some of the difficulties while increasing market competition for licenses.

Courts and Commission agents adjudicate the same parties over the same technology, invoke the same principles, and grapple with very similar political and economic policy concerns. Disputes spill over jurisdictional lines, standard setting occurs on an international plane, and the law for standards requires international consensus. Parties seek not only legal certainty but also efficiency gains, increased participation in standards, and increased access to technology. These will be best advanced by internationally consistent use of RAND to mitigate the risk of holdup while promoting incentives for SEP holders to favor pledging their technology to standards. Though U.S. federal courts will always feature as a central venue of patent litigation, the Commission wields significant power globally through its sophisticated competition law and bureaucracy and has embraced the application of this power to ensure that patent holders do not abuse their control over crucial technological standards. How and whether these regulatory mechanisms converge with and adapt to the shifting patent landscape on both sides of the Atlantic will influence the strategic decisions of industry leaders and the direction of RAND commitments, and motivate further evolution in the law.

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