

VIRGINIA JOURNAL OF LAW & TECHNOLOGY

SUMMER 2014 UNIVERSITY OF VIRGINIA VOL. 18, No. 03

How to Fix FRAND? An Analysis of Transnational Enforcement and Legal Legitimacy

AMANDA CRAIG

© 2014 Virginia Journal of Law & Technology Association, at
<http://www.vjolt.net>.

¹ Shylah R. Alfonso & Kevin A. Zeck, *Chinese Court Issues Landmark Decision Determining A FRAND Royalty Rate*, 2013 A.B.A INTELL. PROP.

ABSTRACT

In 2013, Chinese and U.S. courts issued unprecedented decisions limiting the amount that companies should pay for standard-essential patents. Never before has any judicial authority determined the royalty rate for a patent considered essential to a standard and encumbered by fair, reasonable, and nondiscriminatory (FRAND) licensing terms. But in doing so, the judges filled a void: Despite requiring members to adhere to FRAND terms, standards-setting organizations (SSOs) have rarely defined what constitutes “fair,” “reasonable,” or “nondiscriminatory.” Moreover, like other industry self-regulation, enforcement mechanisms have remained an open question. Still, whether national judiciaries are the best venue for determining the meaning of FRAND terms is unclear. To better understand the benefits and challenges of a jurisdictional approach, this Article evaluates alternative enforcement options. Ultimately, it asks who typically are and who *should* be the regulatory beneficiaries of SSOs’ intellectual property policies and acknowledges difficulty in defining the public interest.

TABLE OF CONTENTS

I. Introduction	583
II. The SSO-Created Private Regulatory Regime	587
III. The Making of Industry Self-Regulation: SSOs and FRAND Contractual Terms	593
IV. Judicial Determination of FRAND Royalty Rates.....	605
V. Alternative Methods for Resolving FRAND Disputes	615
VI. Transnational Legal Lessons: Understanding Impacts on Regulatory Beneficiaries.....	624
VII. Conclusion.....	633



I. INTRODUCTION

In March and April 2013, a Chinese and a U.S. court respectively issued groundbreaking decisions. In Shenzhen, China, a court limited the amount of damages that Huawei, a leading Chinese telecom company, owed to InterDigital Inc., a U.S.-based company, in royalties for 2G, 3G, and 4G standard-essential patents.¹ Likewise, in the state of Washington, a judge decided² how much Microsoft should pay Google³ in royalties for its standard-essential patents, including patents embedded in a leading Wi-Fi standard.⁴ While patent litigation among high tech companies like Apple, Google, Microsoft, and Samsung has become common in recent years,⁵ the decisions

¹ Shylah R. Alfonso & Kevin A. Zeck, *Chinese Court Issues Landmark Decision Determining A FRAND Royalty Rate*, 2013 A.B.A INTELL. PROP. COMM. TIDBITS 1, available at http://www.americanbar.org/content/dam/aba/publications/antitrust_law/at315000_tidbits_20130405.authcheckdam.pdf.

² *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *1 (W.D. Wash. Apr. 25, 2013).

³ The patents at issue were originally owned by Motorola Mobility, which Google acquired in 2012. Notably, Google sold Motorola Mobility to Lenovo in 2012 but retained most of the Motorola Mobility patents. See, e.g., James O'Toole, *Google to Sell Motorola Mobility Unit to Lenovo*, CNN MONEY (Jan. 30, 2014, 9:22 AM), <http://money.cnn.com/2014/01/29/technology/mobile/motorola-lenovo/index.html>.

⁴ The standards in which the patents are embedded include the H.264 video codec standard and the IEEE 802.11 Wi-Fi standard, which are “used in thousands of consumer electronic products, including Microsoft’s Xbox gaming console, computing running the Windows operating system, and Microsoft’s line of smartphones.” *Landmark Decision Regarding Fair, Reasonable, and Nondiscriminatory (“FRAND”) Royalty Rates for Patents Essential to Industry Standards*, ARENT FOX (Apr. 30, 2013), <http://www.arentfox.com/newsroom/alerts/landmark-decision-regarding-fair-reasonable-and-nondiscriminatory-frand-royalty#.UpQB4eL3Prg>.

⁵ See, e.g., Charles Duhigg & Steve Lohr, *The Patent, Used as a Sword*, N.Y. TIMES, Oct. 7, 2012, available at <http://www.nytimes.com/2012/>

of the Shenzhen Intermediate People's Court and Judge James Roberts of the U.S. District Court for the Western District of Washington⁶ have been considered "landmark"⁷ and "unprecedented."⁸ Although many standards-setting organizations (SSOs) have required patent owners to agree to FRAND licensing terms for decades, before 2013, judges had never determined the appropriate royalty rate for a patent considered essential to a standard and encumbered by fair, reasonable, and nondiscriminatory (FRAND)⁹ licensing terms.¹⁰

SSOs often set voluntary, technical standards for information and communication technologies (ICTs). Such standards are not legally binding, but they are essential to the

[10/08/technology/patent-wars-among-tech-giants-can-stifle-competition.html?pagewanted=all&_r=1](http://www.eweek.com/mobile/slideshows/apple-vs.-samsung-patent-litigation-why-there-is-no-end-in-sight.html); Don Reisinger, *Apple vs. Samsung Patent Litigation: Why There is No End in Sight*, EWEEK (Nov. 25, 2013), <http://www.eweek.com/mobile/slideshows/apple-vs.-samsung-patent-litigation-why-there-is-no-end-in-sight.html>.

⁶ In addition to being significant because of the FRAND rate determination, the Microsoft–Google decision was also noteworthy because of the dramatic difference between the desired and achieved payout: Google was asking for \$4 billion but will receive less than \$2 million. Florian Mueller, *A Closer Look at the 207-Page, Landmark FRAND Rate-Setting Decision in Microsoft v. Motorola*, FOSS PATENTS (Apr. 28, 2013), <http://www.fosspatents.com/2013/04/a-closer-look-at-207-page-landmark.html>.

⁷ Alfonso & Zeck, *supra* note 1, at 1; Mueller, *supra* note 6.

⁸ *Landmark Decision*, *supra* note 4.

⁹ FRAND ("fair, reasonable, and non-discriminatory"), which is often used in Europe, may be used interchangeably with RAND (reasonable and non-discriminatory), which is often used in the United States. See, e.g., Laura Beth Miller, *United States: Will Standard Essential Patents Change the U.S. Patent Litigation Landscape?*, MONDAQ (Oct. 3, 2013), <http://www.mondaq.com/unitedstates/x/266912/Patent/Will+Standard+Essential+Patents+Change+the+US+Patent+Litigation+Landscape>.

¹⁰ See Alfonso & Zeck, *supra* note 1; Mueller, *supra* note 6.

interoperability of technology on phones, computers, and other devices. Voluntary, technical standards have a long history of development and adoption by private sector actors through SSOs, but the inclusion of patents in these standards is a relatively recent phenomenon.¹¹ To prevent private sector actors from manipulating the standards development process and charging excessive royalty rates for their patents or otherwise delaying or obstructing the implementation of new technology, most SSOs require their members to commit to licensing standard-essential patents on FRAND terms.¹² However, what constitutes “fair,” “reasonable,” and “nondiscriminatory” licensing terms is virtually never defined by SSOs.¹³

Among others, the U.S. Federal Trade Commission has attempted to fill this gap by defining the terms,¹⁴ but “a consistent, practical, and readily enforceable definition of FRAND has proven difficult to achieve.”¹⁵ As a consequence, FRAND commitments have often provoked patent litigation involving the reasonableness of non-royalty terms (e.g., whether reciprocity between patent holders should be required), the scope of FRAND obligations, and damages for

¹¹ See Knut Blind et al., *Study on the Interplay Between Standards and Intellectual Property Rights (IPRs)*, FRAUNHOFER INST. FOR COMM. SYS. & DIALOGIC 17 (2011).

¹² See Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1136–37 (2013).

¹³ See Jorge L. Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 ANTITRUST L.J. 47, 52 (2013).

¹⁴ See *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, FED. TRADE COMM’N 22–23 (2011), <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>.

¹⁵ Contreras, *supra* note 13, at 51.

past infringement of a standard-essential patent.¹⁶ But significantly, a judicial definition of a FRAND-consistent royalty rate did not arise from such litigation until 2013. This may have been due, in part, to numerous commentators cautioning courts against becoming intellectual property (IP) rights “price regulators.”¹⁷ Nonetheless, even now, ambiguity reigns; although Judge Roberts issued a 207-page opinion describing in detail his approach to interpreting FRAND terms, the Shenzhen Intermediate People’s Court “did not explain” how it determined the royalty payment owed by Huawei.¹⁸

In developing and insisting on FRAND licensing terms, SSOs contribute to the recent trend of industry self-regulation.¹⁹ In conjunction with litigation regarding such licensing terms in national courts, SSO IP rights rulemaking represents an important example of the benefits and challenges of transnational law. To better understand these benefits and challenges, this Article evaluates SSO rulemaking and enforcement options. Part II discusses the role of SSOs as private regulators and how their rulemaking fits into broader trends of industry self-regulation. Part III discusses the SSO-led development of FRAND terms, the various meanings that have been ascribed to such terms, and the issues resulting from the terms’ vagueness. In doing so, Part III focuses on *ex ante*

¹⁶ See *id.* at 52; Florian Mueller, *Court-Determined FRAND Rate for Motorola’s Standards-Essential Patents is a Blow to Google*, FOSS PATENTS (Apr. 25, 2013), <http://www.fosspatents.com/2013/04/court-determined-frand-rate-for.html>.

¹⁷ See, e.g., Roger G. Brooks & Damien Geradin, *Interpreting and Enforcing the Voluntary FRAND Commitment*, 9 INT’L J. IT STANDARDS & STANDARDIZATION RES. 1, 1 (2011).

¹⁸ Alfonso & Zeck, *supra* note 1.

¹⁹ See, e.g., ALFRED C. AMAN, ADMINISTRATIVE LAW IN A GLOBAL ERA (1st ed. 1992); VIRGINIA HAUFLE, A PUBLIC ROLE FOR THE PRIVATE SECTOR: INDUSTRY SELF-REGULATION IN A GLOBAL ECONOMY (2000).

disclosure of patent licensing terms. Part IV evaluates national-level enforcement of FRAND terms, focusing on patent pricing and highlighting judicial enforcement and differences across jurisdictions, while Part V considers alternative methods for resolving FRAND disputes or enforcing FRAND terms, emphasizing transnational or international law. Part VI proposes transnational legal lessons by evaluating how various methods of resolution or enforcement affect beneficiaries. This Article concludes in Part VII that in determining the appropriate FRAND terms, the interests of the public must be included as among the intended beneficiaries of a FRAND regime.

II. THE SSO-CREATED PRIVATE REGULATORY REGIME

Private sector-based ICT standards development represents a unique facet of ever-evolving transnational law and “[n]ew [g]overnance.”²⁰ Although SSOs,²¹ many of which

²⁰ See, e.g., Kenneth W. Abbott & Duncan Snidal, *Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit*, 42 VAND. J. TRANSNAT’L L. 501, 501 (2009) (defining “new governance” as a new kind of international regulatory system arising out of the failure of “[o]ld [g]overnance” (i.e., treaties and intergovernmental organizations)).

²¹ Standard setting organizations (SSOs), often called Standard Development Organizations, or SDOs, are private-sector based organizations or public-private partnerships that exist to develop technical standards that define how products or technologies will work or interoperate. In the ICT context, well-known examples include the International Telecommunication Union, Internet Engineering Task Force, the European Telecommunications Standards Institute, and the Institute of Electrical and Electronics Engineers. This Article will also consider the impact of less high-profile SSOs like the Trusted Computing Group. See, e.g., Tim Simcoe, *Open Standards and Intellectual Property Rights*, in OPEN INNOVATION: RESEARCHING A NEW PARADIGM 161–83 (Henry

are registered as nonprofits and composed of private sector members, would seem to be an archetypal regulatory body in the context of transnational new governance,²² SSOs predate such governance trends. Moreover, while the functioning of SSOs helped to reinforce globalization and technological change, in turn, globalization and technological change have also altered the way in which SSOs function and the extent of their impact. As a result, SSOs have emerged as important private regulators that will likely influence how transnational law and new governance norms continue to develop.

The growth of industry self-regulation has been well documented.²³ Globalization and advanced technology have encouraged businesses to spread their operations across continents, led to governments privatizing or de-regulating industries,²⁴ and forced private sector actors to attempt to fill governance gaps through self-regulation.²⁵ Virginia Haufler describes two types of industry self-regulation: (1) the

Chesbrough, Wim Vanhaverbeke & Joel West eds., 2006); Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1898–901 (2002).

²² Fabrizio Cafaggi defines transnational private regulation as “a new body of rules, practices and processes, created primarily by private actors, firms, NGOs, independent experts like technical standard-setters and epistemic communities” Fabrizio Cafaggi, *New Foundations of Transnational Private Regulation 1* (Eur. Univ. Inst., Florence and Robert Schuman Ctr. for Advanced Studies, EUI Working Papers: RSCAS 2010/53: Private Regulations Series-04, 2010), available at http://cadmus.eui.eu/bitstream/handle/1814/15284/RSCAS_2010_53.pdf?sequence=1. Likewise, Abbott and Snidal highlight the roles of nonprofits and businesses in creating institutions and norms that define transnational new governance. Abbott & Snidal, *supra* note 20, at 516–19.

²³ See, e.g., AMAN, *supra* note 19; HAUFLE, *supra* note 19.

²⁴ Alfred C. Aman, *Globalization, Democracy, and the Need for a New Administrative Law*, 49 UCLA L. REV. 1687, 1693–700 (2002).

²⁵ See, e.g., HAUFLE, *supra* note 19.

development of standards for technical advances (e.g., Internet protocols) or market promotion (e.g., non-GMO food labeling); and (2) the development of standards based on social and political demands from outside the business community (e.g., environmental or labor demands).²⁶ The technical standards developed by SSOs fall squarely into the former category, although the normative impact of such standards may make them increasingly subject to social and political demands as well.²⁷ However, IP rules developed by SSOs may be considered as either type. A well-functioning IP system boosts the ICT market, enabling cooperation among ICT companies²⁸ and resulting in improved products for consumers. Furthermore, as Haufler writes, industry associations have long “taken the initiative to develop new standards for emerging technologies . . . to facilitate international exchange . . . [,] enhance the reputation of the industry as a whole, and reduce the costs of doing business.”²⁹ In addition, SSOs’ insistence on fair, reasonable, and non-discriminatory IP terms may reflect social and political concerns or demands of consumers and governments.

In addition to the standards and rules that they develop, SSOs also function in ways that are consistent with transnational private regulation. Such regulation is generally voluntary from the outset but limited in effect.³⁰ For example, private sector parties that “wish to join” a regulatory body may be “free to do so”; however, once in, they may be legally

²⁶ *Id.* at 8–9.

²⁷ See *infra* text accompanying notes 45–49.

²⁸ ICT standards are particularly important for such cooperation because of the “large numbers of inter-dependent suppliers and . . . very rapid pace of technological change.” Simcoe, *supra* note 21, at 161.

²⁹ HAUFLER, *supra* note 19, at 8–9.

³⁰ Cafaggi, *supra* note 22, at 1–2.

bound and subject to sanctions for violations.³¹ For others, “participation in a private regime and compliance with its standards is the condition to access . . . other regimes which provide market opportunities for the regulated entities.”³² IP regimes developed by SSOs often exemplify a soft version of the latter limitation. Many ICT-focused SSOs “request” that their private sector members license patents on FRAND terms—although, if a member declines to make a FRAND commitment, then the SSO will generally adopt alternative technology³³—while other SSOs require that members comply with their IP rules as a prerequisite to their participation in the standards-development process.³⁴ Notably, SSOs are generally unable to enforce market adoption of their own technical rules,³⁵ but scholars have described the technical work of SSOs as *de jure*³⁶ because of its seemingly irreversible impact³⁷ on the “rate and direction of technological change.”³⁸

SSOs’ IP rulemaking thus represents a clear example of new governance and will be the focus of this Article. To appreciate the role of SSOs as transnational private regulators, however, their standards development efforts—which are

³¹ *Id.*

³² *Id.* at 2.

³³ Brooks & Geradin, *supra* note 17, at 3–4.

³⁴ See, e.g., ETSI, ETSI RULES OF PROCEDURE: ANNEX 6 § 4.1 (2013) [hereinafter ETSI RULES OF PROCEDURE].

³⁵ See Simcoe, *supra* note 21, at 163.

³⁶ See, e.g., PAUL A. DAVID & SHANE GREENSTEIN, THE ECONOMICS OF COMPATIBILITY STANDARDS: AN INTRODUCTION TO RECENT RESEARCH, ECONOMICS OF INNOVATION AND NEW TECHNOLOGY 3–41 (1990).

³⁷ “Once implemented, standards have a conservative momentum, enduring because of network effects, institutional commitments, and user and vendor investments.” Laura DeNardis, *Open Standards and Global Politics*, 13 INT’L J. COMM’NS L. & POL’Y 168, 176 (2009); see also Joseph Farrell, *Standardization and Intellectual Property*, 30 JURIMETRICS J. 35, 37 (1989).

³⁸ Simcoe, *supra* note 21, at 163.

central to their mission—must also be recognized as examples of new governance, especially since IP arrangements are often considered to “underlie” the standards themselves.³⁹ But if “technical standards have long been produced by private actors at the international level,”⁴⁰ how can their creation exemplify much more recent trends of transnational private regulation? For instance, the Standardization sector of the International Telecommunication Union (ITU-T) was formed in 1865 (albeit under a different name, the International Telegraph Union) and has always functioned as a public–private partnership in which private entities complete the brunt of the technical development work. Although it is still active today, the ITU-T actually exemplifies the lawmaking trends of “Old Governance”—treaties and intergovernmental organizations.⁴¹

For one, unlike the ITU-T, many powerful SSOs are now solely private endeavors established without the guidance of a treaty. This, however, is not the main reason, as other early SSOs were also purely private organizations.⁴² More importantly, as technology became increasingly sophisticated and integrated, it has resulted in more compounding effects. Most simply, technical standards are enablers of compatibility between different manufacturers’ products,⁴³ but compatibility decisions often have knock-on effects.⁴⁴ For instance, telegraphs and telephones revolutionized communication, and the ITU-T’s telegraph and early telephone standards surely increased the cost of developing alternative versions of both

³⁹ DeNardis, *supra* note 37, at 169.

⁴⁰ Cafaggi, *supra* note 22, at 7.

⁴¹ Abbott & Snidal, *supra* note 20, at 501.

⁴² Brooks & Geradin, *supra* note 17, at 1.

⁴³ Lemley, *supra* note 21, at 1893, 1896–98.

⁴⁴ *Id.* at 1901.

technologies. However, their market impact has been minimal relative to more recent ICTs.

Today, the technical design decisions embedded in technologies like the Internet more heavily impact⁴⁵ important economic and political developments, affecting not only competition and access to “any global commerce, regardless of industry”⁴⁶ but also many other aspects of modern life, including medicine, marketing, national security, and privacy.⁴⁷ Thus, even if SSOs “do not constitute a factor in the emergence of private regulation *per se*,” they “influence the emergence of private regulatory regimes” by blurring the boundaries between technical and normative standards.⁴⁸ Likewise, SSO-developed IP regimes have compounding normative effects since they “establish policies about the economic competitiveness of certain markets, how innovation should proceed, and what opportunities might exist for developing countries to compete in global technology markets.”⁴⁹ Ultimately, in attempting to understand how to evaluate these regimes and in considering enforcement mechanisms, the interests reflected in each industry self-regulation “type” will be important to consider.

⁴⁵ “Impact” may not be considered a strong enough verb for some. For instance, referring to standards like Internet protocols, Lawrence Lessig famously said, “Code is law,” meaning that technical decisions “control” or otherwise “determine” many economic and political outcomes. Lawrence Lessig, *Cyberspace and Privacy: A New Legal Paradigm*, 52 STAN. L. REV. 987, 990 (2000) (citing LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (1999)).

⁴⁶ DeNardis, *supra* note 37, at 176 (emphasis added).

⁴⁷ *See id.* at 169.

⁴⁸ Cafaggi, *supra* note 22, at 7.

⁴⁹ DeNardis, *supra* note 37, at 169.

III. THE MAKING OF INDUSTRY SELF-REGULATION: SSOs AND FRAND CONTRACTUAL TERMS

While national IP laws and private licensing deals traditionally govern IP-related transactions, in recent decades, SSOs have often “mediate[d]” between IP owners and users.⁵⁰ Because of changing profit structures and U.S. court decisions that confirmed computer inventions as patentable subject matter, patents have become increasingly important to ICT developers in recent decades.⁵¹ As a result, SSOs have increasingly encountered companies asserting ownership over—and royalty payments for—patents embedded in proposed industry standards.⁵² Such assertions threaten the goals and standardization efforts of SSOs, which tend to publish open, freely accessible specifications.⁵³ In short, while

⁵⁰ Lemley, *supra* note 21, at 1892.

⁵¹ See, e.g., *Alice Corp. v. CLS Bank Int’l*, 134 S.Ct. 2347 (2014); Simcoe, *supra* note 21, at 162 (explaining that increased specialization in IT development and commercialization has created a more active “technology input market,” allowing many firm to focus on “monetizing” inventions themselves); Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. 351, 352 (2007); Ken Krechmer, Conference Report, *The Econ. of the Software and Internet Indus.* (Jan. 2005), http://www.csrstds.com/star.html#_edn1.

⁵² See Lemley, *supra* note 21, at 1893; see also Anne Layne-Farrar, A. Jorge Padilla & Richard Schmalensee, *Pricing Patents for Licensing in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 ANTITRUST L.J. 671, 672 (2007) (writing that IP has “become a customary feature in standard-setting efforts over the last few decades Companies with patents that have been selected for a standard . . . may be tempted to opportunistically abuse this market power; for example, by refusing to license or charging excessively high royalty rates”).

⁵³ See Miller, *supra* note 51, at 353; see also Krechmer, *supra* note 51. “Standards development is moving to the center of the fundamental conflict between the unique and the uniform. Patents are one way to value the unique; standards are a technical society’s means to define the uniform.” *Id.* Krecher also explains why the IP standards-setting conflicts are particularly

a patent owner may want to monetize its IP, other participants in an SSO will likely want to be able to employ a standard-essential patent royalty-free, creating “divergent vested interests” among SSO participants, complicating consensus, and delaying standard setting.⁵⁴ To mediate between SSO participants and ease the standard setting process, SSOs developed IP rules “to lessen an IP owner’s control” over standards that the organization adopts.⁵⁵ Notably, some SSOs have also decided to develop IP licensing rules to *avoid* government intervention.⁵⁶ To achieve these goals, however, most SSOs have chosen to implement FRAND policies.⁵⁷

In developing IP policies, SSOs that have adopted a FRAND policy chose to do so as a middle ground.⁵⁸ On the

heightened in the context of communications standards: Whereas patented technology adds value in stand-alone products, standard-essential patents *must* be licensed or infringed in communication standards, which are required for *compatibility* (rather than just valuable *similarity*). *Id.* Moreover, in communication standards, IP rights are increasingly complicated to disentangle because “the number of standards required for electronic information exchange has dramatically increased [A] single device now integrates functionality previously provided by many devices [that] embed hundreds of standards, [and] [v]endors . . . must . . . deal with numerous separate licensing arrangements.” DeNardis, *supra* note 37, at 172.

⁵⁴ Lemley, *supra* note 21, at 1901; *see also* Farrell, *supra* note 37, at 40 “To put it crudely, SSO participants usually want all of the technology needed to implement a standard to be open—except for their own.” Simcoe, *supra* note 21, at 161–62. Such standard-setting delays are commonly referred to as “patent holdup.” *See, e.g.*, Michael A. Lindsay & Robert A. Skitol, *New Dimensions to the Patent Holdup Saga*, 27 ANTITRUST 34 (2013).

⁵⁵ Lemley, *supra* note 21, at 1901.

⁵⁶ *See* HAUFLER, *supra* note 19, at 20–21 (explaining that private actors self-regulate to learn, improve their reputation, and avoid risks, such as intervention by the government or another regulator).

⁵⁷ *See* Miller, *supra* note 51, at 353.

⁵⁸ Lemley, *supra* note 21, at 1902.

one hand, SSOs could have insisted on an “open” policy that required SSO participants and IP owners to make their patents available on a royalty-free basis; on the other hand, SSOs could have adopted a “closed” system, which would have allowed IP owners to continue to choose whether and at what rate they wanted to license their patents to various users.⁵⁹ Instead, FRAND policies are both open and closed; while “no one can be prohibited from using [the standard-essential patents] . . . , those who would use the standard must pay royalties to the IP owner.”⁶⁰ However, few SSOs clearly define⁶¹ what is meant by “fair, reasonable, and non-discriminatory” licensing, and no universally agreed upon definition exists.⁶² Nonetheless, much attention has been devoted by economists and other scholars to developing FRAND formulas,⁶³ and consensus has developed around some basic meanings of the terms over time. For instance, to act non-discriminately, SSO participants should license similarly situated adopters of their technology on the

⁵⁹ *Id.*; Miller, *supra* note 51, at 353.

⁶⁰ Lemley, *supra* note 21, at 1902.

⁶¹ Notably, some commentators say that defining “fair, reasonable, and non-discriminatory” more explicitly would be impossible for SSOs. *See, e.g.*, ERICSSON, RESPONSE TO FTC’S REQUEST FOR COMMENTS (writing that explicitly specifying what criteria must be met for royalty rates to be fair, reasonable, and non-discriminatory “would be impossible in the abstract; there are too many variables and unknowns for an *a priori* commitment of what is reasonable”), available at http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00049%C2%A000049-80189.pdf.

⁶² *See, e.g.*, Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 671.

⁶³ *See, e.g.*, DAVID J. SALANT, MUNICH PERSONAL REPEC ARCHIVE: PAPER NO. 8569, FORMULAS FOR FAIR, REASONABLE AND NON-DISCRIMINATORY ROYALTY DETERMINATION (2007), available at http://mpra.ub.uni-muenchen.de/8569/1/MPRA_paper_8569.pdf; PAPER TRAIL: WORKING PAPERS AND RECENT SCHOLARSHIP, THE ANTITRUST SOURCE (William H. Page & John R. Woodbury eds., 2013).

same terms.⁶⁴ Likewise, numerous commentators have explained that “reasonable” terms “*should* mean the royalties that the patent holder could obtain in open, up-front competition with other technologies, not the royalties that the patent holder can extract once other participants are effectively locked in to use technology covered by the patent.”⁶⁵ In other words, because inclusion in a widely used standard significantly increases a patent’s value, it seems “unreasonable” or “unfair” to license that patent in consideration of its post-inclusion value rather than its pre-inclusion value, especially since an alternative technology could have been chosen at the outset if SSO participants had known about the high royalty fee.

Still, FRAND licensing terms seem to provoke questions as often as they provide answers. Many standard-essential patent licensing cases have been brought in the United States, Europe, and elsewhere,⁶⁶ and “[c]onflicting definitions of FRAND lie at the heart of all of [them].”⁶⁷ While many cases contemplate numerous other contentious issues, including patent stacking and patent holders seeking

⁶⁴ Miller, *supra* note 51, at 355.

⁶⁵ CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 241 (1999) (emphasis in original); *see also* George S. Cary, Larry C. Work-Dembowski & Paul S. Hayes, *Antitrust Implications of Abuse of Standard-Setting*, 15 GEO. MASON L. REV. 1241, 1260 (2008).

⁶⁶ *See, e.g.*, Jacob Goldstein, *The Smartphone Patent War*, in 1 *Graphic*, NPR: PLANET MONEY (Aug. 17, 2011, 9:36 PM), <http://www.npr.org/blogs/money/2011/08/17/139723088/the-smartphone-patent-war-in-1-graph> (depicting a complex web of past and current smartphone cases, some of which involve RAND-encumbered patents).

⁶⁷ Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 673.

injunctions,⁶⁸ this Article focuses on patent disclosure and pricing.

Most SSOs “request that their members make *reasonable efforts* to identify and disclose any intellectual property that might be relevant for a standard under development.”⁶⁹ A clear reason for this request is related to the accepted, general meaning of FRAND’s “reasonable” term.⁷⁰ If a patent is to be an essential inclusion in a standard, SSO participants will likely want to know as early as possible how much the patent owner will require in royalty fees, and a “reasonable” determination—unaffected by the increase in value that results from being essential to a standard—will likely be easier to calculate from the outset. Indeed, commentators have considered the value of making *ex ante* disclosure licensing terms mandatory so that standard developers and early implementers are able to decide on a patent’s inclusion or alternatively develop complementary technologies while being fully aware of the costs of those decisions.⁷¹ Moreover, Chinese commentators have concluded that *ex ante* disclosure of maximum royalty rates is “necessary to ensure integrity and competitiveness in ICT standardization” and that, relatedly, developing countries are particularly adversely affected by vague FRAND terms that result in “unbalanced negotiation power in favour of IP [rights] owners.”⁷²

⁶⁸ See, e.g., Contreras, *supra* note 13, at 49–50, 71, 95–96; XUAN LI & BAISHENG AN, SOUTH CTR.: RESEARCH PAPER NO. 21, IPR MISUSE: CORE ISSUES IN STANDARDS AND PATENTS 4, 17 (2009).

⁶⁹ Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 672 (emphasis added).

⁷⁰ See *supra* text accompanying notes 64–65.

⁷¹ See, e.g., DeNardis, *supra* note 37, at 179–80; Simcoe, *supra* note 21, at 181.

⁷² LI & AN, *supra* note 68, at 17, 20–25.

SSO rules regarding *ex ante* disclosure vary. While many SSOs encourage FRAND and patent disclosure policies, few encourage *ex ante* disclosure of royalty rates, and only one seems to require *ex ante* disclosure of maximum royalty rates for patents included in standards: the VMEbus International Trade Association (VITA) Standards Organization, an IT-focused SSO with more than a hundred company members from Canada, China, Europe, Russia, and the United States.⁷³ More commonly, IP policies contain language like that developed by the Institute of Electrical and Electronics Engineers (IEEE),⁷⁴ the Trusted Computing Group (TCG),⁷⁵

⁷³ *Id.* at 26; Tim Simcoe, *How Much Ex Ante is Enough?*, TALKSTANDARDS (Sept. 23, 2009, 5:12 AM), <http://www.talkstandards.com/how-much-ex-ante-is-enough>. However, note that this author's review of SSO IP policies is not exhaustive.

⁷⁴ The IEEE's bylaws explain that, if IEEE receives notice that a proposed standard may require an essential patent, it shall request a licensing assurance via a "Letter of Assurance." IEEE, IEEE-SA STANDARDS BOARD BYLAWS § 6.2 (2013) [hereinafter IEEE BYLAWS], available at <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html>.

Then,

[T]he Submitter of the Letter of Assurance may, after Reasonable and Good Faith Inquiry, indicate it is not aware of any Patent Claims that the Submitter may own If the patent holder or patent applicant provides an assurance, it should do so as soon as reasonably feasible in the standards development process At its sole option, the Submitter may provide with its assurance any of the following: (i) a not-to-exceed license fee or rate commitment; (ii) a sample license agreement, or (iii) one or more material licensing terms If . . . the Submitter becomes aware of additional Patent Claim(s) not already covered by an existing Letter . . . , then such Submitter shall submit a Letter of Assurance stating its position regarding enforcement or licensing of such Patent Claims. . . . Nothing in this policy shall be interpreted as giving rise to a duty to conduct a patent search.

the European Telecommunications Standards Institute (ETSI),⁷⁶ or the American National Standards Institute (ANSI).⁷⁷ While the IEEE policy allows owners, at their “sole

Id.

⁷⁵ Under TCG’s policy,

[T]he Board of Directors shall provide the Members with not less than sixty (60) days’ prior notice of the adoption of a new or revised Specification. . . . Upon receipt of the notice and Specification, the Member, on behalf of itself and its Affiliates, may review the same for any Necessary Claims [which are defined as claims of a patent or patent application that . . . are necessarily infringed by implementing . . . the specification (i.e., standard-essential patents)] that may be implicated by the Specification. While there is no requirement for a Member to review its patent portfolio for Necessary Claims, Members are put on notices that unless they withdraw from the Corporation . . . before the end of the period [as required by 16.3(c)], the Member is committing to the licensing provisions of Sections 16.4.

TCG, BYLAWS OF TRUSTED COMPUTING GROUP §§ 16.1(c), 16.3(a)–(b), (2012) [hereinafter TCG BYLAWS]. Section 16.4 stipulates that Members and Affiliates must “grant to other Members and Affiliates, under reasonable terms and conditions that are demonstrably free of any unfair discrimination, a nonexclusive, nontransferable, worldwide license under its Necessary Claims” *Id.* § 16.4.

⁷⁶ ETSI’s Intellectual Property Rights Policy requires each member to “use its reasonable endeavours, in particular during the development of a STANDARD or TECHNICAL SPECIFICATION where it participates, to inform ETSI of ESSENTIAL IPRs in a timely fashion. In particular, a MEMBER submitting a technical proposal for a STANDARD or TECHNICAL SPECIFICATION shall, on a bona fide basis, draw the attention of ETSI to any of that MEMBER’s IPR which might be ESSENTIAL if that proposal is adopted.” ETSI RULES OF PROCEDURE, *supra* note 34, § 4.1. However, the policy makes clear that such obligations “do however not imply any obligation on MEMBERS to conduct IPR searches.” *Id.* § 4.2

⁷⁷ ANSI’s policy requires that, if an ANSI-Accredited Standards Developers (SSOs) receives notice that a proposed or an approved American National

option,” to provide “a not-to-exceed license fee or rate commitment,” it does not assign to patent owners a “duty to conduct a patent search.”⁷⁸ Within IEEE, disclosing maximum royalty rates has not become “an especially popular option.”⁷⁹ Although TCG’s IP policy does not mention *ex ante* disclosure of maximum royalty rates, it requires Members to submit patent claims by a prescribed date.⁸⁰ ETSI’s policy also does not mention disclosure of maximum royalty rates; rather, it requires members to use their “reasonable endeavours” to “inform ETSI of essential IPRs in a timely fashion,” again making clear that patent owners have no “duty” to conduct a patent search.⁸¹ ETSI does “allow” *ex ante* licensing declarations to be made, but, as of mid-2010, “not a single declaration was to be found.”⁸² Finally, ANSI’s policy simply requires that patent owners agree to royalty-free or FRAND license terms, mentioning disclosure only to elucidate that ANSI and ANSI-accredited SSOs have no duty to conduct a patent search.⁸³

Some academics and government entities have voiced their support—if hedged—for *ex ante* patent disclosure policies. For instance, Tim Simcoe wrote that “[e]x ante disclosure goes [a long] way towards resolving the ambiguities

Standard requires the use of an essential patent, the SSO receives assurance that the patent owner will license it royalty free or “under reasonable terms and conditions that are demonstrably free of any unfair discrimination.” ANSI, ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS § 3.1.1 (2013) [hereinafter ANSI REQUIREMENTS].

⁷⁸ IEEE BYLAWS, *supra* note 74, § 6.2.

⁷⁹ Simcoe, *supra* note 73; *see also* Blind et al., *supra* note 11, at 25–26.

⁸⁰ TCG BYLAWS, *supra* note 75.

⁸¹ ETSI RULES OF PROCEDURE, *supra* note 34.

⁸² Blind et al., *supra* note 11, at 25.

⁸³ ANSI REQUIREMENTS, *supra* note 77.

inherent in FRAND...”⁸⁴ In addition, the U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC) encouraged SSOs to make *ex ante* licensing commitments—at least akin to those that TCG requires.⁸⁵ While the agencies have noted “potential anti[-]competitive risks,”⁸⁶ they have also recognized how such *ex ante* policies could “mitigate the potential for IP owners to hold up those seeking to use a standard by demanding licensing terms greater than they would have received before their proprietary technology was included in the standard.”⁸⁷ Notably, in a joint report, the DOJ and FTC concluded that “[g]iven the strong potential for procompetitive

⁸⁴ Simcoe, *supra* note 73. In doing so, he responded to commentators who have suggested that increased *ex ante* disclosure, “a policy that is somewhere between [royalty free] and FRAND” (in terms of openness), “might do more to weaken [royalty free] than FRAND.” *Id.*

⁸⁵ DEP’T OF JUST. & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 55–56 (2007) [hereinafter ANTITRUST ENFORCEMENT], available at <http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf>; Renata Hesse, Deputy Assistant Att’y Gen., U.S. Dep’t of Just., Remarks as Prepared for the ITU-T Patent Roundtable, Six “Small” Proposals for SSOs Before Lunch (Oct. 10, 2012), available at <http://www.justice.gov/atr/public/speeches/287855.pdf>; see also Lindsay & Skitol, *supra* note 54, at 35.

⁸⁶ Lindsay & Skitol, *supra* note 54, at 35. Although antitrust or competition issues are very important in the context of SSOs and IP policy, a detailed discussion of the risks are beyond the scope of this Article. In short, anti-competitive risks are inherent in the work of SSOs since standards, once developed and implemented, “have a conservative momentum, enduring because of network effects, institutional commitments, and user and vendor investments.” DeNardis, *supra* note 37, at 176. These risks are exacerbated when SSOs, which sometimes have decision-making power concentrated in the hands of larger private sector members, also make IP decisions. For more information, see, e.g., Philippe Chappatte, *FRAND Commitments—The Case for Antitrust Intervention*, 5 EUR. COMPETITION J. 319 (2009).

⁸⁷ ANTITRUST ENFORCEMENT, *supra* note 85, at 55.

benefits, the Agencies will evaluate joint *ex ante* negotiation of licensing terms pursuant to the rule of reason.”⁸⁸ Then, in 2012, Deputy Assistant Attorney General Renata Hesse went further, encouraging SSOs to take more responsibility for disclosure by “[e]stablish[ing] procedures that seek to identify, in advance, proposed technology that involves patents which the patent holder has not agreed to license on F/RAND terms and consciously determine whether that technology should be included in the standard.”⁸⁹

Moreover, the FTC and the judiciary have considered enforcement of SSO IP policies that require *ex ante* disclosure. In 1996, the FTC and Dell Computer Corporation agreed to a settlement that precluded Dell from enforcing its patent rights because it did not disclose the relevant patents during the standard setting process, even though the Video Electronics Standard Association, an SSO, required it to do so.⁹⁰ However, in the mid-to-late 2000s, when the FTC argued that Rambus, Inc. “deceptively” failed to disclose its pending patent applications and attempted to limit the royalty rates that Rambus could charge companies that already incorporated its technology, the U.S. Court of Appeals for the District of Columbia overruled the Commission’s order (and the Supreme Court denied the Commission’s petition for Writ of Certiorari).⁹¹ Meanwhile, in a series of cases between

⁸⁸ *Id.* at 55–56.

⁸⁹ Hesse, *supra* note 85, at 9.

⁹⁰ *Dell Computer Corporation*, FED. TRADE COMM’N (June 17, 1996), available at <http://www.ftc.gov/news-events/press-releases/1996/06/dell-computer-corporation>.

⁹¹ *In the Matter of Rambus Incorporated*, FED. TRADE COMM’N (May 14, 2009), available at <http://www.ftc.gov/enforcement/cases-proceedings/011-0017/rambus-inc-matter> (ruling that FTC did not sufficiently established that competition was harmed by Rambus); see also Lindsay & Skitol, *supra* note 54, at 34–35.

Qualcomm Inc. and Broadcom Corporation, two participants in the Joint Video Team (JVT) SSO, district and appellate courts held that because Qualcomm did not disclose its patents, it either could not enforce them or could only enforce them after paying damages.⁹²

But there also exist sensible and practical reasons for SSOs to refrain from insisting on and for companies to continue to avoid *ex ante* disclosure. While companies might avoid *ex ante* disclosure to reap higher patent royalties later,⁹³ the sheer number of patents that many ICT companies already possess and continually acquire almost certainly means that *ex ante* disclosure would vastly increase the costs of and complicate disclosure. For example, Ericsson wrote:

In some sectors, standard setting is relatively straightforward; for example, where the technology is limited in scope and static, and the patent ownership profile is known and predictable. The telecom sector, however, is characterized by complex, dynamic standards having broad technical scope, involving significant numbers of technology contributions and long evolution cycles over many years. In [one SSO], for example, tens of thousands of technical documents are submitted each year. . . . [So] a broad disclosure obligation could easily

⁹² Qualcomm Inc. v. Broadcom Corp., 548 F. 3d 1004, 1025–26 (Fed. Cir. 2008); Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 314 (3d Cir. 2007); Qualcomm Inc. v. Broadcom Corp., 539 F. Supp. 2d 1214, 1248–49 (S.D. Cal. 2007). Notably, though, Qualcomm was not held to have violated antitrust law. Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 673.

⁹³ Contreras, *supra* note 13, at 62 (explaining that “patent holders . . . know very well that their leverage in licensing negotiations increases dramatically” after a standard is adopted and widely implemented).

result in a culture of excessive over-declarations by SSO members. Standardization of telecom technology is a continuously evolving process where important on-going R&D is carried out in parallel with the standardization process; thus, there is often a time-delay in identifying patents that may be essential to practice the standard. The draft specification of a standard is also continuously subject to change as the various parts of the standard are developed. It is therefore very unclear during the development process which patents . . . will be essential. In addition, . . . [patent] claims have complicated technical and legal language allowing . . . different interpretations even by qualified lawyers familiar with the technology Before a patent is issued, the claims are always subject to amendment and any attempt to determine prior to issue whether or not the granted claims will be relevant will inevitably be associated with even more uncertainty. This, in combination with the fact that a patent applicant may, within reasonable limits, decide on the particular technical terms used in a patent application, makes it hardly possible to efficiently make computerized searches for relevant patent applications. . . . Imposing too extensive disclosure obligations, therefore, may lead to fewer industry participants in the standardization process since they will feel obliged to disclose hundreds of patents and patent applications, which at a very broad level

might be essential but ultimately prove to be irrelevant. . . . The cumulative effect . . . would be to make the patent landscape substantially more obscure.⁹⁴

Ultimately, “existing theories offer relatively little guidance on the costs and benefits of providing a stricter *ex ante* mandate,”⁹⁵ and challenges associated with *ex ante* disclosure are tied to larger challenges—within the IT patent system—that have yet to be resolved.⁹⁶ In addition, who should resolve them is unclear. While the FRAND issue is legally ambiguous but receiving increasing scrutiny from executive agencies, FRAND terms and *ex ante* disclosure are governance issues that could be addressed by SSOs themselves, administrative orders and guidelines, or some other governing body, such as the judiciary.

IV. JUDICIAL DETERMINATION OF FRAND ROYALTY RATES

According to Dan Burk and Mark Lemley, if statutes “exist on a continuum [from] . . . tightly drafted, detailed rules . . . drafted . . . to curtail judicial interpretation . . . to general

⁹⁴ See, e.g., ERICSSON, *supra* note 61.

⁹⁵ Simcoe, *supra* note 73; see also Blind et al., *supra* note 11, at 25–26 (highlighting that, although the potential benefits of *ex ante* disclosure have recently “caught the attention of policy makers,” few academic contributions strongly support such licensing). Ultimately, *ex ante* disclosure may be best evaluated in practice, but few SSOs require it, making such evaluations difficult.

⁹⁶ DAN L. BURK & MARK A. LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT 156–64 (2009) (suggesting that, because the software development cycle is much different than that of biotechnological and chemical inventions, its patent system needs to be tailored to that cycle to circumvent the current “patent crisis”).

delegations of authority to judges to make correct decisions,” then U.S. patent law is situated much closer to the latter edge.⁹⁷ In the United States, federal courts have played “a major role in defining the scope of patent protection.”⁹⁸ Indeed, Burk and Lemley argue that, in addressing the current “patent crisis,” much of which is centered on the IT industry, courts should continue to interpret patent law rather than reforming patent legislation or empowering executive agencies to reform the patent system.⁹⁹ In addition to preferring the flexible common law approach to resolving complicated, dynamic patent disputes, they further point out that the judiciary is the least likely lawmaking body to be influenced by special interest groups.¹⁰⁰ But judges are not perfectly impartial, and suspicion may be piqued in cases pitting local or domestic against foreign-based companies. Still, judges have already tackled many important patent issues¹⁰¹ and have the ability to provide much-needed clarification on calculating FRAND royalty rates.

As discussed in Part III of this Article, when a patent owner agrees to license its standard essential patent, most SSOs require patent owners to agree to license that patent on FRAND terms. Thus, the FRAND agreement may be treated as—or

⁹⁷ BURK & LEMLEY, *supra* note 96, at 103.

⁹⁸ *Id.*

⁹⁹ *Id.* at 104–07.

¹⁰⁰ *Id.* at 106–07 (writing that an executive agency that “interacts repeatedly with a particular constituency, especially a constituency with whom it shares particular expertise” is likely to be influenced by that constituency and highlighting that this is a “special risk with patents” since the Patent and Trademark Office “interacts regularly with those seeking patents, but very little with third parties affected by the patents they grant”).

¹⁰¹ *Id.* at 160 (writing that case law “has proven to be a big help in tackling . . . injunctions,” which often resulted in companies paying overly high royalty rates to avoid the risks of stopping production and losing market momentum—however, courts have awarded “supracompensatory damages” to patent owners for infringement, eliminating benefits from such case law).

may actually be—a contract between an SSO participant/patent owner and other SSO participants that license the patent or between an SSO participant/patent owner and the SSO itself.¹⁰² For instance, in the Microsoft–Google dispute, Microsoft (an SSO participant) sued Motorola (an SSO participant/patent owner) on patents which are owned by Google, alleging that Motorola was in breach of its contract by charging “unreasonable” royalty fees.¹⁰³

Judge Robart’s decision in the Microsoft–Google dispute represented the second time FRAND royalty rates had ever been judicially determined. Before 2013, no judge had adjudicated this issue before, though judges had determined damages for infringement of RAND-encumbered patents. In the United States, *Georgia-Pacific Corp. v. U.S. Plywood Corp.* is the seminal case for such determinations.¹⁰⁴ In *Georgia-Pacific*, the court used fifteen factors to determine

¹⁰² See, e.g., Brooks & Geradin, *supra* note 17, at 1, 4; ERICSSON, *supra* note 61 (writing that, “[d]epending on the different SSO rules, a (F)RAND commitment could be regarded as a contract to offer a license on RAND terms between an adopter of a standard and an essential patent holder making such an offer . . . however[,] in most cases[,] [this is] subject to reciprocity”). Notably, courts may also evaluate whether FRAND commitments violate competition law. “[E]ven if (F)RAND obligations could be enforceable through contract law, it is also important that competition law can be used. If one company that owns patents that are essential for a given standard imposes excessive and discriminatory terms on all licensees, downstream competition is restricted and all the licensees suffer loss, and all consumers and users of the products concerned suffer corresponding losses. These harmful economic effects are not contract issues, and could not be treated as if they were. Failure to enforce competition law on account of the existence of a contract would deny protection of consumers and other third parties and would evade the public policy objectives for competition law.” *Id.*

¹⁰³ See *infra* text accompanying notes 112–113.

¹⁰⁴ 318 F. Supp. 1116, 1143 (S.D.N.Y. 1970).

compensation for infringement, including rates for similar patents, the commercial relationship between contracting parties, the profitability of the patented product, the nature of the patented invention, and the utility and advantages of the patent itself.¹⁰⁵ But how applicable are these *Georgia-Pacific* factors for determining royalty rates for FRAND-encumbered patents? Even before Judge Robart employed these factors in his analysis, numerous scholars and practitioners found the majority of them to be entirely relevant, especially for patents with a pre-standard licensing history, though they may require

¹⁰⁵ *Id.* at 1120. The 15 factors are: 1) “The royalties received by the patentee for the licensing of the patent . . . , proving or tending to prove an established royalty”; 2) “The rates paid by the licensee for the use of other [similar] patents”; 3) “The nature and scope of the license,” such as whether it is exclusive; 4) “The licensor’s . . . policy . . . to maintain his patent monopoly” by licensing the use of the invention only under special conditions; 5) “The commercial relationship between the licensor and licensees, such as, whether they are competitors”; 6) “The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items”; 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 . . . that had been used”; 10) “The nature of the patented invention,” including its character and benefits; 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”; 13) “The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing processes, business risks, or significant features or improvements added by the infringer”; 14) “The opinion testimony of qualified experts”; and 15) “The amount that a licensor . . . and a licensee . . . would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement” *Id.* at 1120; *see also* Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 680–81.

some modification.¹⁰⁶ For instance, “factor 13 could be modified to read, “[t]he portion of the realizable profit that should be credited to the *standard component covered by the invention* as distinguished from other components, both patented and non-patented.”¹⁰⁷

Likewise, while Judge Robart’s decision to calculate a FRAND royalty rate was groundbreaking, “[a]t its heart, the bulk of [his] decision is a fairly conventional *Georgia-Pacific* analysis of the ‘reasonable royalty’ rates applicable to Motorola’s patents” despite making “significant modifications” to the traditional analysis in adapting it to assess RAND royalty rates.¹⁰⁸ Notably, he distinguishes FRAND-encumbered patent royalty determinations from the determinations of “reasonable royalties” in non-FRAND patent contexts by highlighting their more public character and acknowledging the problem of “royalty stacking” in standards.¹⁰⁹ More specifically, Judge Robart “recognizes the public benefit of standards and the public interest in ensuring that royalty rates for standardized technology enable broad implementation” and that, “unlike most patent licensing negotiations, the licensing of standards-essential patents . . . is not merely a closed-door negotiation between two private parties.”¹¹⁰ In addition, he often refers to the threat of royalty stacking, wherein “the aggregation of

¹⁰⁶ See, e.g., Brooks & Geradin, *supra* note 17, at 13; Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 681–82.

¹⁰⁷ Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 681 (emphasis added).

¹⁰⁸ Jorge L. Contreras, *So That’s What “RAND” Means?: A Brief Report on the Findings of Fact and Conclusions of Law in Microsoft v. Motorola, PATENTLY-O* (Apr. 27, 2013), <http://patentlyo.com/patent/2013?w=17>; see generally *Microsoft Corp. v. Motorola, Inc., et al.*, No. C10-1823JLR, 2013 WL 2111217, at *1 (W.D. Wash. Apr. 25, 2013).

¹⁰⁹ Contreras, *supra* note 108.

¹¹⁰ *Id.*

royalty demands by multiple patent holders can result in significant and unsupportable royalty burdens on standardized products” and insists that FRAND-related royalty payments consider other standard-essential royalty payments for the standard in question.¹¹¹

Turning to the Microsoft–Google dispute, the litigation between Microsoft and Motorola relates to two common industry standards, a video coding standard and the Wi-Fi standard that are used in thousands of products on the market today, including Microsoft’s Windows operating system and the Xbox 360.¹¹² The standards were developed at the ITU and IEEE, both of which require FRAND licensing commitments, but Microsoft asserted that Motorola’s demand of more than \$4 billion per year in royalty payments was excessively unreasonable.¹¹³ In 2012, Judge Robart ruled that “the applicable [F]RAND royalty rate must be determined before a finding can be made regarding Motorola’s alleged breach of contract.”¹¹⁴ To determine that rate, in addition to weighing the public benefits from standardization and royalty stacking concerns, Judge Robart makes clear that “the royalty associated with a particular patented technology should be commensurate with the actual value that [the] technology adds to the overall standard and to the product in which it is implemented,” concluding that Motorola’s patented technologies add relatively little to both the video coding and Wi-Fi standards.¹¹⁵

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*; see also *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *13 (W.D. Wash. Apr. 25, 2013).

Importantly, he also examines other licenses for comparable patents to construct a “hypothetical negotiation.”¹¹⁶

While Judge Robart presented for the first time a judicial opinion with a “logical and consistent methodology for computing a [F]RAND royalty . . . it is not clear that [his] methodology offers the *optimal means* for resolving disputes It is, at best, complex and time consuming. At worst, it may be criticized as somewhat arbitrary.”¹¹⁷ Moreover, it may work best only in a context analogous to Motorola and the video recording and Wi-Fi standards.

With less functionally discrete technology, judges may struggle to assess the value of a particular patent, and with less broadly adopted standards, fewer comparable licensing options will be available.¹¹⁸ In October 2013, Judge Holderman of the Northern District of Illinois “applied a modified version of Judge Robart’s methodology to determine the FRAND rate to be paid” for Innovatio’s Wi-Fi standard-essential patents.¹¹⁹ He found none of Innovatio’s proposed comparable licenses appropriate for determining a royalty, instead adopting a hypothetical negotiation approach proposed by an expert who testified on behalf of manufacturers attempting to purchase

¹¹⁶ Contreras, *supra* note 108; *see also* *Microsoft*, 2013 WL 2111217, at *20.

¹¹⁷ Contreras, *supra* note 108. For instance, in constructing his hypothetical negotiation between Microsoft and Motorola, Judge Robart doubled his original figure to account for the fact that comparable patent licenses (for the video coding technology) were part of a patent pool. Such doubling could be construed as arbitrary. *Id.*

¹¹⁸ *Id.*

¹¹⁹ *PUBLIC version of Judge Holderman’s RAND determination in Innovatio WiFi SEP Litigation*, THE ESSENTIAL PATENT BLOG (Oct. 3, 2013), <http://www.essentialpatentblog.com/2013/10/public-version-of-judge-holdermans-rand-determination-in-innovatio-wifi-sep-litigation>.

Innovatio's patent.¹²⁰ In addition, although both Judge Robart and Judge Holderman were considering the Wi-Fi standard, they chose different dates by which to begin calculating hypothetical negotiations. Whether judges choose the date the infringement began or the date the standard was adopted (i.e., consistent with *ex ante* disclosure) could have a significant impact on the hypothetical negotiation.¹²¹ Thus, although the fifteen factors in *Georgia-Pacific* are "the most obvious starting point for FRAND . . . , [they] leave the specific method of royalty determination an open question," requiring continuous, case-by-case tinkering.¹²²

Nonetheless, if courts use agreed-upon principles, such variations may be manageable. But outside of the United States, where *Georgia-Pacific* is not a significant precedent, how are courts likely to evaluate FRAND royalty rates? The first court in the world that attempted to do so was China's Shenzhen Intermediate People's Court. Huawei, a leading global telecom based in China, brought suit against InterDigital, alleging that the U.S.-based company failed to negotiate licensing for its patents, which are essential to 2G, 3G, and 4G wireless networking standards, on FRAND terms.¹²³ The court determined that "despite the fact that the FRAND requirement originated from ETSI's Intellectual Property Rights policy, which refers to French law, InterDigital's license offers to Huawei should be evaluated

¹²⁰ *Id.*

¹²¹ See, e.g., Thomas F. Cotter, *Remedies for the Infringement of Standard Essential Patents Subject to a FRAND Commitment*, INTELLECTUALIP (May 8, 2013), <http://intellectualip.com/2013/05/08/remedies-for-the-infringement-of-standard-essential-patents-subject-to-a-frand-commitment>.

¹²² Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 705.

¹²³ Alfonso & Zeck, *supra* note 1, at 1 (indicating that Huawei also brought suit against InterDigital for abusing its market power in violation of China's Anti-Monopoly law).

under Chinese law.”¹²⁴ Ultimately, in concluding that InterDigital’s licensing offers did not comply with FRAND, the court ruled that Huawei should not pay more than 0.019 percent of the actual sales of each Huawei product that uses InterDigital’s technology.¹²⁵ Although it “did not explain how it arrived at [that] figure,”¹²⁶ it is unlikely that the court employed an analysis that resembles that of Judge Robart’s. Its decision nonetheless could have reflected consideration of principles also represented in factors eight, eleven, twelve and thirteen of *Georgia-Pacific*.¹²⁷ However, these factors seemed to hold less significance in Judge Robart’s and Judge Holderman’s decisions, which both focused more heavily on hypothetical negotiations. Unfortunately, how other jurisdictions will calculate FRAND royalty rates remains an open question.¹²⁸ Notably, U.S. and European courts have significantly disagreed on other important FRAND issues, such

¹²⁴ *Id.* at 2.

¹²⁵ *Id.* at 1.

¹²⁶ *Id.*

¹²⁷ See *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970); Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 680–81.

¹²⁸ This Article focuses on decisions by U.S. and Chinese courts. Although a more detailed comparative analysis of different jurisdictions’ interpretation of FRAND royalty rates would be useful, to this author’s knowledge, no other cases in which judges calculate rates have yet been decided. In late 2012, Justice Floyd wrote that the forthcoming Nokia/HTC/IPCom FRAND trial would “examine for the first time, as far as I am aware, the methodology which it is appropriate to adopt to arrive at a [FRAND] license,” but, as of mid-2013, that trial had been “kicked into the long grass.” Robert Lundie Smith, *High Court Builds Up Momentum to Determine FRAND Licensing Terms*, KLUWER PATENT BLOG (Feb. 12, 2013), <http://kluwerpatentblog.com/2013/02/12/high-court-builds-up-momentum-to-determine-frand-licensing-terms-part-1-of-2>; see also Robert Lundie Smith & Carissa Kendall-Palmer, *UK FRAND Update*, KLUWER PATENT BLOG (July 30, 2013), <http://kluwerpatentblog.com/2013/07/30/uk-frand-update>.

as whether patent owners should be able to receive injunctive relief rather than or in addition to damages.¹²⁹

As a result, relying on national courts of each country to determine and enforce FRAND royalty rates may be both beneficial and detrimental to this SSO-developed system. As Burk and Lemley argued, U.S. federal courts are usually agile enough to deal with the case-to-case particularities and quick evolution of ICT patent law issues.¹³⁰ In addition, each jurisdiction's national IP law may be recognized by its courts, whereas SSO rulemaking tends to be dominated by powerful Western ICT companies. Some practitioners have further argued that courts should only assess whether an IP owner's licensing offer falls outside a "range of reasonableness contemplated by the FRAND commitment" rather than determining actual royalty rates.¹³¹ Moreover, challenges related to judicial impartiality¹³² are exacerbated at the international level, where the judiciary may, in some states, be perceived as beholden to other government power brokers and thus likely to rule in favor of national companies.¹³³ Finally, since constructing a consistent rule is difficult, even for judges within the United States, relying on each country's national

¹²⁹ See, e.g., Cotter, *supra* note 121.

¹³⁰ BURK & LEMLEY, *supra* note 96, at 103–07.

¹³¹ Brooks & Geradin, *supra* note 17, at 4 (emphasis added).

¹³² See, e.g., James L. Gibson, *Challenges to the Impartiality of State Supreme Courts: Legitimacy Theory and "New-Style" Judicial Campaigns*, 102 AM. POL. SCI. REV. 59 (2008).

¹³³ For instance, a cynic might point out that the above-discussed ruling by Judge Robart, in a district near Microsoft's headquarters, developed a FRAND royalty rate that seemed much more in line with Microsoft's than Motorola's and Google's expectations. Similarly, in China (where many companies are state-run or state-supported), the ruling by the Shenzhen Intermediate People's Court seemed to be much more in favor of China's powerful telecom company Huawei than InterDigital, a U.S.-based company.

courts to determine and enforce FRAND royalty rates will likely result in different jurisdictional rules for global products. Thus, rather than achieving the goal of transnational private regulation to create seamless global rules in order to increase efficiency, relying on courts may frustrate such regulatory efforts.¹³⁴

V. ALTERNATIVE METHODS FOR RESOLVING FRAND DISPUTES

The previous two Parts detailed FRAND-related issues and the national legal mechanisms that have attempted to resolve those issues—namely, executive agencies (in the United States, especially the FTC) and the judiciary. While Burk and Lemley detailed the advantages of judicial rather than executive agency–led enforcement of patent laws in the United States,¹³⁵ transnational or international legal alternatives may be more effective in the transnational legal realm of most ICT-focused SSOs. Possibilities include developing transnational legal alternatives or international legal treaties or international arbitration bodies to encourage particular interpretations of FRAND terms or to determine FRAND royalty rates.

Some ICT companies have already attempted to circumvent patent holdup and royalty stacking by creating

¹³⁴ Cafaggi writes that the judicial enforcement and other domestic monitoring “frequently bring[] about conflicting results, which contradict the fundamental rationales of transnationalising regulation.” Cafaggi, *supra* note 22, at 5. However, he still believes that such domestic monitoring should “play a role” and explains that “the role of national Courts is quite significant,” but it is important to recognize that States’ implementation may be biased. *Id.*

¹³⁵ BURK & LEMLEY, *supra* note 96, at 104–07.

patent pools.¹³⁶ Importantly, while many patent pools¹³⁷ are designed to “facilitate standards implementation . . . , patent pools may also be anti-competitive when used to shelter price collusions and to tie trivial or even invalid patents together with” standard-essential patents.¹³⁸ But when numerous patent owners that hold patents essential to a particular standard form a well-designed patent pool, licensing negotiations are facilitated and technology transfer eased.¹³⁹ In addition, because “royalty rates and other terms are determined and disclosed at the outset,” patent pools “address many of the uncertainties associated with FRAND commitments.”¹⁴⁰ However, relatively few¹⁴¹ patent pools have developed, likely due in large part to “substantial up-front expenses . . . associated with their formation”¹⁴² as well as “administrative overheads” and intensive planning costs.¹⁴³

Nonetheless, other company-led industry self-regulation initiatives may develop on their own. For instance, in late 2011 and early 2012, Apple and Google issued statements to ETSI, IEEE, and other SSOs regarding their interpretations of FRAND licensing terms, and Microsoft

¹³⁶ See, e.g., Carl Shapiro, *Navigating the Patent Thicket: Cross-Licenses, Patent Pools and Standard Setting*, 1 INNOVATION POL’Y & ECON. 119, 119 (2001) (describing patent pools as a “natural and effective” method to “cut through the patent thicket”).

¹³⁷ In patent pools, “multiple patent holders agree to charge a single, collective royalty” on patents included in the pool. Contreras, *supra* note 13, at 54.

¹³⁸ LI & AN, *supra* note 68, at 18.

¹³⁹ *Id.*

¹⁴⁰ Contreras, *supra* note 13, at 78.

¹⁴¹ Still, patent pools are more common than *ex ante* disclosure of FRAND licensing terms. Blind et al., *supra* note 11, at 26.

¹⁴² Contreras, *supra* note 13, at 76.

¹⁴³ Blind et al, *supra* note 11, at 14.

posted a similar statement on its website.¹⁴⁴ Though the statements were limited in scope and often used vague language,¹⁴⁵ they did contain “important” acknowledgements—for instance, that “FRAND commitments should ‘travel with the patent.’”¹⁴⁶ If more companies issued such statements and an industry norm developed, the meaning of FRAND terms may be elucidated for both negotiators and courts. However, such policy statements may not be indicative of a growing trend of companies voluntarily disclosing such acknowledgements. A few days after Google and Microsoft’s statements were published, the DOJ’s Antitrust Division issued decisions to close investigations of acquisitions by all three companies, and the European Commission (EC) approved Google’s acquisition of Motorola Mobility.¹⁴⁷ Thus, all three companies may have been encouraged by U.S. and E.U. regulatory agencies to issue such statements.¹⁴⁸

As an alternative to company-led transnational private regulation, SSOs, which are more plentiful and well-resourced than patent pools and more influential than individual companies, could develop more extensive industry self-

¹⁴⁴ See Jorge L. Contreras, *Guest Post: The February of FRAND*, PATENTLY-O (Mar. 6, 2012), <http://www.patentlyo.com/patent/2012/03/february-of-frand.html>.

¹⁴⁵ For example, Google’s statement committed to a maximum royalty rate for Motorola Mobility patents only, and Apple’s statement explained that “[s]tandards-essential patents should be licensed at an ‘appropriate’ royalty rate reflective of the licensor’s share of the overall number of patents essential to the standard.” *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ Jorge L. Contreras, *Good Things Come in Threes? DOJ, FTC, and EC Officials Wax Eloquent About FRAND*, PATENTLY-O (Oct. 28, 2012), <http://www.patentlyo.com/patent/2012/10/good-things-come-in-threes-doj-ftc-and-ec-officials-wax-eloquent-about-frand.html#tpe-action-posted-6a00d8341c588553ef017c32e8343f970b>.

regulation. Since 2012, SSO-based approaches have “gained currency,”¹⁴⁹ and numerous SSO-focused policy proposals have recently been advanced by DOJ officials.¹⁵⁰ For instance, Renata Hesse suggested that SSOs: (1) identify excluded patents; (2) “[e]nsure that FRAND licensing commitments bind subsequent purchasers of patents”; (3) “[r]equire that patent holders offer FRAND licenses on ‘cash-only’ terms”; (4) “[l]imit participants’ right to seek injunctions”; (5) “[s]et guidelines for FRAND royalty rates, or establish an arbitration or other mechanism for resolving disputes”; and (6) “[e]nsure that disclosure of ‘essential’ patents is accurate and not overly broad.”¹⁵¹ The American Antitrust Institute has also argued that SSOs should be held liable for failing to enact adequately clear patent policies and procedural safeguards to prevent patent holdup, calling on the DOJ and FTC to issue “joint enforcement guidelines that provide safe harbor” to

¹⁴⁹ Jorge L. Contreras, *supra* note 13, at 80 n.123; *see also* Joaquin Almunia, Vice President, Eur. Comm’n Responsible for Competition Pol’y, Remarks Prepared for Fordham Competition Law Inst., Competition Enforcement in the Knowledge Economy (Sept. 20, 2012), *available at* http://europa.eu/rapid/press-release_SPEECH-12-629_en.htm; Hesse, *supra* note 85, Fiona Scott-Morton, *Policies, Practices, and Experiences of Leading Standards Organizations*, Presentation to National Academies of Science Symposium on Management of Intellectual Property in Standard-Setting Processes (Oct. 3, 2012), *available at* http://sites.nationalacademies.org/xpeditio/groups/pgasite/documents/webpage/pga_072703.pdf; Joseph F. Wayland, Acting Assistant Att’y Gen., Dep’t of Just., Antitrust Policy in the Information Age: Protecting Innovation and Competition, Remarks Prepared for Fordham Competition Law Inst. (Sept. 21, 2012), *available at* <http://www.justice.gov/atr/public/speeches/287215.pdf>.

¹⁵⁰ *See* Contreras, *supra* note 148.

¹⁵¹ *Id.*; *see also* Hesse, *supra* note 85; Lindsay & Skitol, *supra* note 54, at 37–41.

SSOs that adopt and enforce certain patent policies, including *ex ante* licensing commitments.¹⁵²

Relatedly, SSOs might also insist on *ex ante* disclosure of licensing terms like VITA¹⁵³ if they determine that arms-length negotiations between standard-essential patent owners and licensees would then function more effectively.¹⁵⁴ However, *ex ante* disclosure is not only avoided by IP owners¹⁵⁵ but also not heavily pursued by potential licensees. As Jorge Contreras explains, negotiating patent licenses costs time, effort, and money—and more often, standards-setting projects involve engineers rather than lawyers, “armies” of which “would be required to negotiate all of these patent licenses, potentially increasing the cost of standardized technology and bogging down the standardization process.”¹⁵⁶ In addition, much lawyerly effort would likely be wasted on standards that were ultimately not developed or that failed in the marketplace.¹⁵⁷ Finally, potential licensees do not want to wake “sleeping dogs” that were merely holding onto patents for defensive purposes.¹⁵⁸

SSOs might counter these *ex ante* disclosure disincentives by pursuing a model developed by economists,

¹⁵² THE AM. ANTITRUST INST., REQUEST FOR JOINT ENFORCEMENT GUIDELINES ON THE PATENT POLICIES OF STANDARD SETTING ORGANIZATIONS: PETITION TO THE DEPARTMENT OF JUSTICE AND THE FEDERAL TRADE COMMISSION 12 (2013).

¹⁵³ See *supra* text accompanying note 73.

¹⁵⁴ See Contreras, *supra* note 13, at 55–56; Damien Geradin, *Standardization and Technological Innovation: Some Reflections on Ex-Ante Licensing, FRAND, and the Proper Means to Reward Innovators* 5 (Tilburg Law and Econ. Center, Discussion Paper, 2006).

¹⁵⁵ See *supra* text accompanying note 94.

¹⁵⁶ Contreras, *supra* note 13, at 60.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 62.

who suggest holding an auction over competing technologies and associated patents during the development phase.¹⁵⁹ Auctions may hold appeal for SSO participants because, although disclosure will remain challenging, auctions “will be won by the ‘best’ IP option” (i.e., “the option that permits production of the downstream product at the lowest cost”).¹⁶⁰ Moreover, “a competitively neutral license fee should compensate the IP owner both for the incremental costs of licensing IP and the opportunity cost of licensing the technology. Faced with such a fee, the IP holder will be indifferent between licensing the technology to rivals and producing the product itself.”¹⁶¹ However, while this model “provides an elegant solution to determining whether a license price meets FRAND terms,” its analysis “rests on some strong simplifying assumptions.”¹⁶² The most important assumption is that while standards often consist of many patents, “the standard they consider requires only one patented technology.”¹⁶³

Finally, Contreras proposes that SSOs develop a “pseudo-pool” approach, adapting the “beneficial attributes of patent pools” to “the more flexible and prolific world” of SSOs.¹⁶⁴ In doing so, he concedes that the vetting process undertaken by patent pools to “ensure” that their patents are

¹⁵⁹ Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 686; Daniel G. Swanson & William J. Baumol, *Reasonable and NonDiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 23 (2005).

¹⁶⁰ Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 686; *see generally* Swanson & Baumol, *supra* note 159, at 23.

¹⁶¹ Layne-Farrar, Padilla & Schmalensee, *supra* note 52, at 686–87.

¹⁶² *Id.* at 688.

¹⁶³ *Id.*

¹⁶⁴ Contreras, *supra* note 13, at 54.

essential would be “cost-prohibitive” to SSOs.¹⁶⁵ In order to implement it, Contreras’s approach requires: (1) declaration of standard-essential patents (based on good faith evaluations); (2) the establishment by an SSO of a *reasonable* “aggregate royalty” to be divided among all standard-essential patent holders; (3) agreement by each patent holder to license standard-essential patents on FRAND terms or through an SSO-developed, uniform license agreement; (4) allocated royalties (each patent holder will receive as share of the “aggregated royalty” based on its number of declared, standard-essential patents); (5) penalties for over-declaration of standard-essential patents; (6) permission to license outside of the pseudo-pool structure (as is allowed with most patent pools); and (7) the right opt out by agreeing not to sue “for the benefit of all vendors implementing the standard.”¹⁶⁶

However, Contreras acknowledges that much more work is required in order to analyze the implementation of his approach, especially since SSOs each have their own “constituencies, histories, and idiosyncrasies.”¹⁶⁷ Moreover, many SSOs have disclaimed any interest, role, or responsibility for “establishing, interpreting, or adjudicating the reasonableness of FRAND licensing terms.”¹⁶⁸ SSOs reason that adopting such policies may result in member departure or vastly slowed development of standards. Thus, it is unlikely that SSOs will begin to further elucidate or develop their IP policies without significant pressure.

In the interim, however, international legal methods may also contribute to this patchwork of national and

¹⁶⁵ *Id.* at 76–77.

¹⁶⁶ *Id.* at 79–83.

¹⁶⁷ *Id.* at 78 n.119.

¹⁶⁸ *Id.* at 51.

transnational law. To the extent that ICT standards create and allocate the finite resources required to access knowledge, they have “economic and distributive justice effects...”¹⁶⁹ Thus, how essential patents for such standards are licensed may be within the purview of international organizations. In 2005, organizations began meeting to discuss an “Access to Knowledge” treaty, which was proposed in the World Intellectual Property Organization Development Agenda.¹⁷⁰ The draft treaty intends to establish a “committee on open standards,” which will in turn establish “a process and criteria” for SSOs to “request a managed disclosure of relevant patent claims for standards relevant to a knowledge good or service.”¹⁷¹ However, the treaty-developing process has not moved forward since 2005, even though the access to knowledge movement remains active.¹⁷²

Meanwhile, in 2013, Mark Lemley and Carl Shapiro proposed an alternative international legal method for determining FRAND royalty rate: “binding, baseball-style arbitration.”¹⁷³ Notably, parties to FRAND disputes already engage in arbitration, but Lemley and Shapiro’s proposal is

¹⁶⁹ See DeNardis, *supra* note 37, at 175.

¹⁷⁰ *Meeting on the “Access to Knowledge” Treaty*, OPEN SOCIETY FOUNDATIONS. (Feb. 3, 2005), <http://www.opensocietyfoundations.org/events/meeting-access-knowledge-treaty>.

¹⁷¹ May 9, 2005 Draft, Treaty on Access to Knowledge, arts. 6-1, -2, available at http://zoo.cs.yale.edu/classes/cs457/backup/A2K_Treaty_consolidatedtext_may9.pdf.

¹⁷² See, e.g., Becky Hogge & Vera Franz, *The Rise of the Access to Knowledge Movement: An Interview with Vera Franz*, OPEN SOCIETY FOUNDATIONS. (Feb. 2, 2011), <http://www.opensocietyfoundations.org/voices/rise-access-knowledge-movement-interview-vera-franz>.

¹⁷³ Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1138 (2013).

intended to be “far more efficient” than existing alternatives.¹⁷⁴ They write:

In baseball-style arbitration, the parties produce evidence and argument before the arbitrator, and then they each propose a royalty number. The arbitrator must pick one of the two numbers offered and cannot come up with her own number. Using baseball-style arbitration logically drives the parties toward making reasonable proposals, because the party that asks for too much (or offers too little) risks losing the case altogether. FRAND disputes are well suited to baseball-style arbitration, because the only thing at issue is which of two numbers in fact represents the more reasonable royalty Baseball-style arbitration has a number of other advantages. The arbitrator does not need to decide whether any given patent is valid and infringed. Nor does she need to decide whether a particular patent is essential except in unusual circumstances. Both of those things may be contested, and the evidence on each question will likely influence the reasonableness of the competing royalty proposals. But unlike a court that might have to rule on any number of subsidiary fact reasons, the only thing the arbitrator needs to do is pick the better of two proposed royalty rates.¹⁷⁵

However, Florian Mueller has contested this proposal by highlighting that “actual” baseball arbitration is more “fair,”

¹⁷⁴ *Id.* at 1135.

¹⁷⁵ *Id.* at 1144–45.

because it imposes limitations on salary figures that clubs may submit.¹⁷⁶ He also argues that implementers of standards are not “free agents.”¹⁷⁷ Instead, they *must* implement standard-essential patents to participate in the marketplace; just like non-free agents cannot “just leave and sign a contract with a different team,” implementers of standards can[not] just license other patents that solve the same technical problem if the standard dictates only one particular solution.”¹⁷⁸

While there are many possible transnational and international legal alternatives for interpreting and enforcing FRAND commitments—especially involving an increased role for SSOs—none is devoid of challenges. Thus, according to Contreras, while DOJ commentators rightly assess that SSO-based solutions “are the most likely avenues toward widespread alleviation of FRAND uncertainty . . . [,] barring [such a development by SSOs] . . . the decision will be left to courts.”¹⁷⁹ However, even if, in the short-term, courts will continue to play the most significant interpretive and enforcement roles for FRAND licensing terms, it seems fair to ask: in an ever-evolving, global system in which transnational private regulation is increasingly proliferating, what entity *should* play those roles?

VI. TRANSNATIONAL LEGAL LESSONS: UNDERSTANDING IMPACTS ON REGULATORY BENEFICIARIES

As Haufler writes, “the need for industry self-regulation reveals the gaps in global governance, where the profound lack of international consensus on important contemporary issues

¹⁷⁶ Mueller, *supra* note 16.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ Contreras, *supra* note 148.

leaves them unresolved.”¹⁸⁰ Even SSOs devoted to the global ICT industry have developed ambiguous IP policies in need of clarification or more effective enforcement. Due to a lack of consensus on how such IP policies should be clarified or enforced, SSOs developed FRAND terms to forestall the ICT patent crisis, which is particularly exacerbated in the standards context because the licensing of standard-essential patents is particularly important to fair competition. But the ICT patent crisis has enveloped the standard-setting process, where patent holdup, royalty stacking, and excessive royalty rates are pervasive. Industry self-regulation thus far has attempted to fill the gaps in global governance, but, as Haufler writes, “[a]ny self-regulatory system requires some consensus on what the rules ought to be and expertise on how to implement them.”¹⁸¹ Although some consensus regarding the meaning of FRAND licensing terms has developed, many aspects of the terms remain vague, and implementing them has mostly been the project of national courts, which have not always implemented them consistently.

But what entity or entities should create or drive Gordon’s consensus, and from where should that implementation expertise come? Likewise, how should it be decided? Though industry must play a significant role, “[t]here are—and should be—limits to the role of business in designing policy.”¹⁸² While businesses are efficient rule makers and gap fillers, their primary interest is profit. In other words, “[m]arket values and the kinds of accountability that markets enforce are not necessarily sufficient in a variety of contexts . . . in need of

¹⁸⁰ HAUFLER, *supra* note 19, at 113–14.

¹⁸¹ *Id.* at 27.

¹⁸² *Id.* at 121.

greater transparency, participation, and explicit consideration of noneconomic values.”¹⁸³

For instance, in the ICT standard-setting context, numerous scholars have commented on IP advantages of large corporations in developed countries.¹⁸⁴ Meanwhile, developing and emerging companies “have disadvantages that heighten the [negative] effects” of many SSO IP policies.¹⁸⁵ Usually, they are “later market entrants,” meaning that they will likely have to pay many, and receive no, royalty payments, discouraging “new entrepreneurial activity among developing country enterprises” and preventing emerging company manufacturers from building products encumbered with high-royalty demanding but essential patents.¹⁸⁶ Meanwhile, although developing countries that want to use or develop IT products rarely have the option of choosing an alternative standard, the global imbalance¹⁸⁷ in ICT standards development and IP

¹⁸³ Alfred C. Aman, *supra* note 24, at 1701.

¹⁸⁴ See, e.g., LI & AN, *supra* note 68; DeNardis, *supra* note 37, at 172–73. For instance, “[t]hey have extensive research and development capacity; they have large legal staffs to deal with IPR; they regularly engage in cross-licensing agreements with other large companies; they are culturally well-versed in the historical traditions of standards-setting institutions, and they have enormous patent portfolios.” DeNardis, *supra* note 37, at 173.

¹⁸⁵ DeNardis, *supra* note 37, at 175.

¹⁸⁶ *Id.* at 173–75. DeNardis also writes that the lack of IPR disclosure makes it especially difficult for developing and emerging economy companies to invest in product development. *Id.* at 175.

¹⁸⁷ For instance, Cafaggi writes that transnational private regulation has “distributional effects,” namely a transfer of power from southern states to private actors in developed economies. Cafaggi, *supra* note 22, at 2. The transfer is not to Brazil, Russia, India, and China (BRIC) actors but to developed economies because of the phenomenon of BRIC investing. *Id.* at 7. Haufler also writes that voluntary action by industry is particularly challenging in North–South relations. HAUFLE, *supra* note 19, at 113–18.

beneficiaries is prompting large emerging economies¹⁸⁸ to develop “home-grown standards that may not be completely interoperable with global standards,” risking “national balkanization” of the Internet that may ultimately impede the global flow of information.¹⁸⁹ In addition to large, Western ICT companies pursuing innovation as well as developing and emerging economies, the needs of individual technology users—who likely benefit from low-cost, high quality, and interoperable hardware and software—should also be considered.

Thus, in evaluating executive agencies, courts, SSOs, international treaties, and international arbitration as alternative authorities or methods for explicating, monitoring,¹⁹⁰ or enforcing industry self-regulation, an important question to ask is: Who are the beneficiaries? According to Fabrizio Cafaggi, many transnational private regulation regimes exist because objectives and incentives vary among private actors.¹⁹¹ Cafaggi highlights four regime models: an industry-driven model (i.e.,

¹⁸⁸ China and India especially are increasingly pursuing “indigenous innovation”—not only to limit their royalty payments and develop their own IP, but also to empower local companies in domestic markets, develop more trusted ICT security, and increase their bargaining power in SSOs. For instance, after China developed trusted computing standards in competition with the TCG, the SSO developed a new generation of its own trusted computing standard—which is now interoperable with Chinese encryption algorithms. See, e.g., Justin D. Osborn & David C. Challener, *Trusted Platform Module Evolution*, 32 JOHN HOPKINS APL TECHNICAL DIGEST 536 (2013); Thomas Hemphill, *Indigenous Innovation Policies and the New Global Protectionism*, REAL CLEAR MARKETS (Jan. 14, 2013), http://www.realclearmarkets.com/articles/2013/01/14/indigenous_innovation_policies_and_the_new_global_protectionism_100087.html.

¹⁸⁹ DeNardis, *supra* note 37, at 176–77.

¹⁹⁰ HAUFLER, *supra* note 19, at 17 (explaining that some method of monitoring is essential to effective industry self-regulation).

¹⁹¹ Cafaggi, *supra* note 22, at 8.

trade associations, SSOs); a non-governmental organization-driven model (i.e., a non-governmental organization certifies products or services that comply with their guidelines); expert-led model (i.e., SSOs); and multi-stakeholder model (i.e., the Internet Corporation for Assigned Names and Numbers, or ICANN).¹⁹² While all are governed by private actors, each model reflects different interests and regulatory strategies, which are often reflected in the regime’s choice of enforcement mechanisms.¹⁹³

In evaluating the relative benefits and tradeoffs of these models, Cafaggi asks: What is the relationship between the regulator, the regulated firms, the beneficiaries of the regulatory process, and the parties negatively affected by the regulation?¹⁹⁴ Designing a regulatory relationship structure that includes beneficiaries and negatively affected parties responds to what Haufler refers to as “the most difficult issue raised by self-regulation”—accountability.¹⁹⁵ She writes: “If a regulatory system is supposed to meet public goals, how does the public have any voice in a privately run system?”¹⁹⁶ Although Cafaggi’s structure does not give a “voice” to beneficiaries or parties negatively affected, it is an important step toward encouraging more accountability in recognizing the public goals of regulation. As Cafaggi writes, her structure “redefines the nature of responsiveness and the means through which effectiveness of the regulation should be measured.

¹⁹² *Id.* at 9–13.

¹⁹³ *Id.* at 8.

¹⁹⁴ *Id.* at 9. In addition to the regulated firms (i.e., the members of an SSO), Cafaggi highlights that transnational private regulation directly affects a wide number of parties (i.e., those that benefit and are negatively affected) who have not given their *ex ante* consent to the rules to which they are subject. *Id.* at 2.

¹⁹⁵ HAUFLER, *supra* note 19, at 119.

¹⁹⁶ *Id.*

Effectiveness does not only measure regulatees' compliance but looks at the effects of the regulatory process on the final beneficiaries."¹⁹⁷

Cafaggi's industry-driven, expert-led, and multi-stakeholder models are the most relevant for ICT standardization and IP issues, especially since Cafaggi concedes that, in the context of technical standardization, experts are frequently subject to "capture" by industry—diluting their neutrality and objectivity.¹⁹⁸ In the industry-driven model, the regulator and regulated coincide, and beneficiaries and negatively affected parties are outside the regulatory body, which is the "opposite of a public regulation structure in which the regulator and regulated have to differ, and capture of the regulator by the regulatees is one of the main governance problems."¹⁹⁹ In the expert-led model, "the regulator is a private nonprofit organization, supposedly independent from the industry and from the final beneficiaries but often subject to capture. The regulator differs from the regulated and from the beneficiaries and its legitimacy is based on expertise."²⁰⁰ Finally, in the multi-stakeholder model, "both the regulated and the beneficiaries are represented in the regulatory body with differences concerning interest representation."²⁰¹ In addition, public bodies are occasionally part of the governance regime "either directly or as observers."²⁰²

¹⁹⁷ Cafaggi, *supra* note 22, at 9.

¹⁹⁸ *Id.* at 11. In citing their potential "capture," Cafaggi is referring to the fact that experts are often employed by industry and so to some extent represent their employer's interests in SSOs.

¹⁹⁹ *Id.* at 9.

²⁰⁰ *Id.* at 11.

²⁰¹ *Id.*

²⁰² *Id.*

In addition, how the private and public spheres interact at the transnational level must be considered.²⁰³ Cafaggi focuses on the “significantly increased use of soft law . . . as an alternative or as a complement to private regulation”²⁰⁴ and considers contracts to be “powerful vehicle[s] for hardening soft law.”²⁰⁵ Although SSOs, rather than governments, develop the “soft law” of FRAND,²⁰⁶ Cafaggi’s interpretation of contractual issues is relevant. In particular, the position of regulatory beneficiaries or negatively affected parties is important because the effectiveness of a contract as a vehicle to harden soft law depends on their ability to have an enforceable contract claim. In effect, then, if they are considered to be third parties, they would not be able to use contract liability for FRAND violations.

Thus, in the context of ICT standards and associated IP issues, evaluating regulatory regimes without disentangling the identity of the regulator, regulated parties, beneficiaries, and negatively affected parties is insufficient. For instance, if the beneficiaries in this regulatory system are the IP implementers, or the companies that pay licensing fees to use a FRAND-encumbered patent, then they can access contract liability. There, a judicial enforcement system that allows companies to hold IP owners accountable would, at least, offer important remedies but may create challenges for the efficiency of transnational private regulation globally. However, if the

²⁰³ *Id.* at 14. For instance, Cafaggi writes: “Three distinctive features of the public sphere are modifying the relationship with the private sphere at transnational level: (1) the significantly increased use of soft law, (2) the limited delegability of law-making power by [international organizations] to private regulators, (3) the limited, albeit increasing, direct effects on private parties of public regulatory regimes.” *Id.* at 15.

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 30.

²⁰⁶ *See supra* Part II.

beneficiaries are consumers who may ultimately pay for excessive licensing fees or for inhibited innovation, then perhaps a judicial enforcement system is insufficient—and an entirely new multi-stakeholder regime, which could include roles for SSOs, an international organization like WIPO, civil society, and national governments, may need to be imagined.

The work and IP regulatory efforts of SSOs not only bring to the surface a host of questions about various enforcement mechanisms for transnational private regulation but also demonstrate a fundamental challenge of such regulation: choosing—or at least prioritizing—among beneficiaries in such a complex global system. In the national context, in which governments still tend to function as the primary regulators, the chief beneficiaries are intended to be the people or the public—not only in democracies but also in other political systems (although in a public regulation structure, capture of the regulator (the government)²⁰⁷ by the regulatees (i.e., private industry) is one of the main governance problems). However, in the transnational context, many possible regulators and beneficiaries exist. Thus, even the goal of pursuing the public interest may easily be lost in the shuffle.²⁰⁸ Given this struggle to identify and pursue the public

²⁰⁷ See *supra* text accompanying note 198.

²⁰⁸ For instance, depicting this shuffle, Benedict Kingsbury writes:

The idea of a “global administrative space” marks a departure from those orthodox understandings of international law in which the international is largely inter-governmental, and there is a reasonably sharp separation of the domestic and the international. In the practice of global governance, transnational networks of rule-generators, interpreters and appliers cause such strict barriers to break down. This global administrative space is increasingly occupied by transnational private regulators, hybrid bodies such as public-private partnerships involving states or inter-state

interest in transnational private regulation, is the SSO-led regulation even “law,” as Benedict Kingsley has asked about global administrative law,²⁰⁹ or is it something else?

First, Kingsley notes that “[t]he exercise of power beyond the state is fundamentally different from exercise of power by the state and its agencies within the national legal and political order,” so “[o]nly limited direct analogies may be drawn.”²¹⁰ He then recognizes that “[l]aw is a social practice,” and “a social practice consisting of primary norms of behaviour and secondary rules for recognizing, adjudicating on, and changing the primary rules could be a legal system.”²¹¹ However, Kingsley then explains that “[a] condition for the existence of law must be the internal attitudes actually held by the leading participants and by those dealing with and critically evaluating them and their practices”; in short, they must share an “internal sense of obligation” toward the “law” and its source.²¹²

organizations, national public regulators whose actions have external effects but may not be controlled by the central executive authority, informal inter-state bodies with no treaty basis (including “coalitions of the willing”), and formal interstate institutions (such as those of the United Nations) affecting third parties through administrative type actions. A lot of the administration of global governance is highly decentralized and not very systematic.

Benedict Kingsbury, *The Concept of “Law” in Global Administrative Law*, 20 EUR. J. INT’L L. 23, 25 (2009).

²⁰⁹ See generally *id.*

²¹⁰ *Id.* at 27.

²¹¹ *Id.* at 27–28.

²¹² *Id.* at 29.

Finally, he asserts that certain “normative commitments” of “publicness” must be inherent in law.²¹³ Kingsley defines “publicness” as law that “has been wrought by the whole society, by the public” and “addresses matters of concern to the society as such.”²¹⁴ Thus, in the context of SSO-led private sector regulation, incorporating the interests of beneficiaries and negatively affected parties into the regulatory structure—through, for instance, a multi-stakeholder regime—may be essential to recognizing this form of transnational private regulation as “law.” Meanwhile, to the extent that the status quo system largely reflects the interests of Western ICT companies, which, according to Cafaggi’s industry-led model, are both regulators (as powerful entities within SSOs) and the regulated (as SSO participants), its status as “law” is subject to those companies’ devotion to the public interest.

VII. CONCLUSION

In the current global landscape, FRAND licensing terms represent transnational private regulation, which has largely been promulgated by SSOs and judicially enforced. SSOs have assumed the role as private regulators, with their rulemaking fitting into the broader trends of industry self-regulation. Further, the SSO-led development of FRAND terms has created difficulties associated with those terms’ vagueness, including *ex ante* disclosure issues and the calculation of actual royalty rates for standard-essential patents. Although there are various venues for interpreting and enforcing FRAND terms, including executive agencies, the judiciary, companies, SSOs,

²¹³ *Id.* at 30–31.

²¹⁴ *Id.* at 31. Moreover, he explains that the principles of legality, rationality, and proportionality as well as the rule of law and human rights protection are intrinsic to a public legal system devoted to the public. *Id.* at 31–33.

international treaties, and international arbitration, none is a clear favorite. Finally, there are various transnational private regulation regimes, but an important consideration in choosing the appropriate regime is the intended regulatory beneficiaries of SSOs' IP policies. According to Kingsley, unless the FRAND regime incorporates the interests of beneficiaries, within which the "public interest" is represented, the transnational private regulation that has developed to ease the development of standards amidst the ICT patent crisis may not be "law." However, importantly, defining the public interest, especially in the context of IP, has been an ongoing project—and no clear answer has resulted. Most likely, the interest of IP owners, IP implementers, and the broader public, which enjoy relatively low-cost, exciting new innovation in the current system, must all be considered as important elements of the "public interest."