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THE PROBLEM WITH FRAND: HOW THE LICENSING COMMITMENTS OF STANDARD-SETTING ORGANIZATIONS RESULT IN THE MISVALUING OF PATENTS

INTRODUCTION

Many modern patent systems have two aims that often conflict: to promote the dissemination of knowledge and to protect the rights of innovators.¹ A patent grants an inventor a limited period of time² to exclude others from practicing his invention.³ This temporary monopoly is meant to allow the inventor to commercially profit from his invention, as a reward for sharing it with the public.⁴ Thus, patent regimes attempt to provide enough legal protection to incentivize an inventor to share his invention, while not affording so much protection as to stifle others from building upon current knowledge and further advancing the field.⁵ Conversely, countries without patent rights allow the public to exploit new technology immediately, but may cause inventors to carefully guard their innovations.⁶ These countries also run the risk of deterring innovation because it is not profitable; new industries stagnate if the monetary incentive to copy inventions is greater than the incentive to invent.⁷ In the modern era of rapidly advancing technology, some companies have found that it is more profitable to collaborate in the development of one new technical standard⁸ rather

1. See David Kline, *Do Patents Truly Promote Innovation*, IPWATCHDOG (April 15, 2014), <http://www.ipwatchdog.com/2014/04/15/do-patents-truly-promote-innovation/id=48768/>.

2. A patent expires twenty years from the filing date of the patent application in the United States.

3. CRAIG ALLEN NARD, *THE LAW OF PATENTS* 1 (3d ed. 2014).

4. *Id.* at 2–3.

5. *Id.*

6. Kline, *supra* note 1.

7. *Id.*

8. A technical standard can be defined as “any set of technical specifications that . . . provides . . . a common design for a product or process.” Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1896 (2002).

than to individually develop competing technologies.⁹ When this situation arises, a private standard-setting organization (“SSO”) may emerge to oversee the development of the technology.¹⁰ These collaborative bodies serve the purpose of pooling resources and reducing both the time and money spent on the development of alternative products.¹¹ SSOs are generally pro-competitive,¹² but have anticompetitive implications by providing a forum for collusion.¹³

As a prerequisite to joining SSOs companies must contract with one another, and sometimes with the SSO itself, to ensure mutual fair treatment during the development and implementation of a new technical standard.¹⁴ The two most important obligations that these companies commit to are disclosure and licensing rules.¹⁵ Disclosure rules require that SSO members “identify patents that [may be] essential to a proposed standard” in a timely manner.¹⁶ This requirement helps to keep SSO members up to date on the state of technical development and prevents “patent ambush”¹⁷ situations.¹⁸ Licensing rules ensure

9. See *Apple, Inc. v. Motorola Mobility, Inc.*, 886 F.Supp.2d 1061, 1067 (W.D. Wis. 2012) (“Through the standards-setting organizations, companies agree on common technological standards so that all compliant products will work together. Standards lower costs by increasing product manufacturing volume and increase price competition by eliminating the costs for consumers to switch between products manufactured by different firms.”).

10. See, e.g., *infra* Part I.A. on the formation of ETSI.

11. See *id.*

12. In the Matter of Motorola Mobility LLC and Google Inc., Analysis of Proposed Consent Order to Aid Public Comment, 78 Fed. Reg. 2398, 2399 (proposed Jan. 3, 2013) (“[T]hey encourage common technological platforms that many different manufacturers ultimately incorporate into their respective products.”).

13. See *Legal Issues Affecting Standard-Setting: Antitrust and Intellectual Property*, VENABLE LLP (April 2004), <http://www.venable.com/legal-issues-affecting-standard-setting-antitrust-and-intellectual-property-04-01-2004/>.

14. See *Apple, Inc. v. Motorola Mobility, Inc.*, 886 F.Supp.2d at 1067 (“[Disclosure and licensing] rules help to insure that standards do not allow the owners of essential patents to abuse their market power to extort competitors or prevent them from entering the marketplace.”).

15. *Id.*

16. *Id.*; see Annex 6: *ETSI Intellectual Property Rights Policy*, in ETSI RULES OF PROCEDURE 35 (2014), <http://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf>.

17. One commentator describes patent ambush as follows:

that SSO members license their respective intellectual property rights (“IPR”) to each other on equitable terms.¹⁹ These rules prevent patent hold-up situations, where a member abuses his status as a standard-essential patent (“SEP”) holder by demanding excessive fees from potential licensees that have no other alternative than to pay.²⁰

The language that pervades SSO licensing requirements is “fair, reasonable, and non-discriminatory,” or “FRAND.”²¹ Although these words seem intuitive and rational in theory, FRAND is interpreted in a variety of ways.²² The requirement is deliberately broad, in part to encourage contracting parties to err on the side of caution during negotiations, but this vagueness has a significant indirect effect on the business policies of both major and minor players in technological industries.²³ Patents that are branded with a FRAND encumbrance have inherently uncertain economic value, which can affect decisions such as whether or not to apply for a patent in the first

The patent ambush . . . is said to occur where a patent owner participates in the decision of a [SSO] to adopt a particular technology, while failing to disclose its ownership of patents governing that technology. Once the standard has been adopted and SSO members and their constituents have adjusted their production to conform to the standard . . . the patent owner asserts the patent and demands licensing fees far higher than the patent owner could have achieved had it sought to negotiate for a licensing fee prior to the adoption of the standard.

Brian Dean Abramson, *The Patent Ambush: Misuse or Caveat Emptor*, 51 IDEA 71, 72 (2011).

18. See *Disclosure Requirements for Patent Holders Who Participate in Standard Setting Organizations*, IP LAW BLOG (Dec. 14, 2005), <http://www.theiplawblog.com/2005/12/articles/patent-law/disclosure-requirements-for-patent-holders-who-participate-in-standards-setting-organizations/>.

19. Richard J. Gilbert, *Deal or No Deal? Licensing Negotiations In Standard-Setting Organizations*, 77 ANTITRUST L. J. 855, 856 (2011) http://works.bepress.com/cgi/viewcontent.cgi?article=1042&context=richard_gilbert.

20. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1993 (2007).

21. Gilbert, *supra* note 19, at 856.

22. See *id.* at 860.

23. See discussion of the smartphone wars, *infra* Part I.E.

place.²⁴ This ambiguous requirement naturally results in litigation to determine whether the FRAND standard has been met.²⁵ Every contract negotiation is distinct, encompassing many different considerations, and the few rulings that have come down on FRAND matters are often too context-specific to yield much precedent.²⁶

A SEP is a patent that claims technology implemented into a technical standard.²⁷ Parties that hold SEPs are diverse, ranging from individuals to corporate behemoths, and the licensing rates they fetch for their patents are also varied.²⁸ Smaller entities may not have sufficient capital to engage in protracted litigation with larger companies, and this imbalance of power during license negotiations can result in lopsided contractual terms.²⁹ A weaker party is more likely to accept a low, possibly un-FRAND royalty rate³⁰ for SEPs it holds than to embark down a costly litigious path that might avail it nothing.³¹ Equally unappealing is the prospect of a company that holds relatively low-value SEPs extracting a high royalty rate, simply

24. An inventor or company may opt to keep the invention secret rather than face this risk. See LYDIA PALLAS LOREN & JOSEPH SCOTT MILLER, *INTELLECTUAL PROPERTY LAW: CASES & MATERIALS* 110 (4th ed. 2015) ("Where an invention can be kept secret, an inventor can choose trade secret law's mix of benefits and risks, or opt for patent law's different mix instead."); David N. Makous & Mina I. Hamilton, *Compulsory IP Licensing and Standards-Setting, Standard-Essential Patents and F/RAND*, in *INTELLECTUAL PROPERTY LICENSING STRATEGIES* 95 (2014).

25. See, e.g., *Apple, Inc. v. Motorola Mobility, Inc.*, 886 F.Supp. 2d 1061 (W.D. Wis. 2012).

26. See, e.g., *id.*; see also *Apple, Inc. v. Motorola, Inc.*, 869 F.Supp. 2d 901 (N.D. Ill. 2012).

27. See *Apple, Inc.*, 886 F.Supp.2d at 1067.

28. See *infra* Part II.

29. See generally Daniel D. Barnhizer, *Inequality of Bargaining Power*, 76 U. COLO. L. REV. 139 (2005).

30. A patent royalty rate is the amount that is paid from a commercial producer to a patent holder for each unit the producer sells that employs the technology. The rate is generally a certain percent of the retail value of the unit. See, e.g., Eric Stasik, *Royalty Rates and Licensing Strategies for Essential Patents on LTE (4G) Telecommunication Standards*, LES NOUVELLES, Sept., 2010, at 114, available at <http://www.lesi.org/les-nouvelles/les-nouvelles-online/2010/septembre-2010/2011/05/02/royalty-rates-and-licensing-strategies-for-essential-patents-on-lte-%284g%29-telecommunication-standards>.

31. See Barnhizer, *supra* note 29.

by having dominant negotiating power.³² In an ideal world, patents would be licensed at a rate that reflects their true value.³³ Although “true value” is an innately debatable term that is open to many interpretations, there are existing patent-valuation methods that are appropriate for SEPs that could be used to help level the playing field in the context of SSOs.³⁴

This Note argues that the vague requirements of the patent-licensing system overseen by SSOs lead to the consistent misvaluing of SEPs by interested parties, and that this system could be improved by an objective assessment of a patent’s value prior to any contract negotiations. If the patents contributing to a standard could be given a basic appraisal by an uninterested third party, one that concentrates on the importance of each patent to the standard at issue, then a large contract negotiation hurdle could be overcome before license negotiations begin. Although there would still be disagreements between negotiating parties, and the concept of FRAND would remain very relevant and contentious, a large amount of uncertainty would be discharged at a much lower cost than that of litigation and protracted negotiation. The overriding policy consideration behind this proposal is that it is beneficial for negotiating parties to have a clear, impartial determination of the technical value of their intellectual property, especially when the licensing of it is compulsory.

Part I of this Note will discuss the relationship of SSOs and the law, and why the current situation is untenable. Although many SSOs impose requirements identical or comparable to FRAND, this Note will focus on one SSO in particular, the European Telecommunications Standards Institute (ETSI).³⁵ ETSI is highly relevant today because it is responsible for overseeing the technologies that dominate the booming smartphone industry,³⁶ and because its ambiguous FRAND requirement is

32. See Stasik *supra* note 30.

33. Joseph G. Hadzima, Jr., *How to Tell What Patents are Worth*, FORBES (June 25, 2013), <http://www.forbes.com/sites/forbesleadershipforum/2013/06/25/how-to-tell-what-patents-are-worth/>.

34. See *infra* Part III.

35. See generally EURO. TELECOMM. STANDARDS INST., <http://www.etsi.org/> (last visited September 5, 2015).

36. Such technologies include 3G and LTE wireless telecommunication networks. See discussion of the smartphone wars *infra* Part I.E.

at the heart of the disputes plaguing the industry.³⁷ This Part will also illuminate the SEP issues that judicial bodies around the world are grappling with to illustrate how a clearer FRAND requirement can address many of the problems. Part II will discuss the royalty rates that are currently being paid for telecommunications SEPs, and the factors that influence the rates. Although contract details, including royalty rates, between companies are often confidential,³⁸ there are some trends to be gleaned from the data that is available.³⁹ Some courts have ordered specific royalty rates in FRAND litigation,⁴⁰ and this Part will address the considerations that informed the judgments. Part III will discuss the concept of patent valuation in general, and the different valuation methods that parties employ. This discussion will include an analysis of how these methods would bear on SEPs and the contract negotiations surrounding them. Part IV of this Note will propose methods to improve the current state of FRAND-based law by implementing patent-valuation techniques early in the technical standard development process. This section will discuss the different ways to implement this valuation, and analyze its potential benefits and detriments.

I. BACKGROUND ON SSOs AND FRAND

Part I of this Note will provide the relevant context for technical standards and SSOs. It will discuss SSOs in general, but will focus specifically on ETSI, and the obligations it requires of its members. ETSI's FRAND requirement in its Intellectual Property Rights Policy ("IPR Policy") provides minimal guidance to its members, and many legal controversies have resulted.

A. *Technical Standards and SEPs*

SSOs are entities devoted to the development of new technical standards.⁴¹ Technical standards are technological cus-

37. See *infra* Part II.

38. Stasik, *supra* note 30, at 115.

39. *Id.*

40. See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *3 (W.D. Wash. Apr. 25, 2013). For an in-depth discussion of this case, see *infra* Part II.

41. See *In the Matter of Motorola Mobility LLC and Google Inc.*, Analysis of Proposed Consent Order to Aid Public Comment, 78 Fed. Reg. at 2399

toms that emerge in industries, either naturally through market dominance⁴² or through SSO promulgation.⁴³ By joining SSOs, major players in an industry agree to develop a technical standard that would include technological contributions from many members, rather than each developing its own stand-alone technology.⁴⁴ Standards provide a common base technology that manufacturers can build upon in their own distinct ways.⁴⁵ Additionally, standards lower costs for consumers by reducing the research and design costs that companies incur.⁴⁶ They also encourage the compatibility of complementary products and product components, and the interoperability of competing products.⁴⁷ For instance, ETSI oversees the development of wireless standards such as 3G⁴⁸ and LTE⁴⁹ mobile communication technologies.⁵⁰ ETSI was formed in 1988, “both to accelerate the standardization process and to promote a greater degree of harmonization among the various European telecommunications systems.”⁵¹ It is managed by the General Assem-

“American consumers rely on standardized technology for the interoperability of consumer electronics and other product. Manufacturers of these products participate in standard-setting organizations . . . that agree upon and develop standards based on shared technologies that incorporate patents.”)

42. This is considered a “de facto” standard. Karen Bartleson, *What’s the Difference Between De Jure and De Facto Standards?* (Nov. 13, 2012), ELECTRONIC DESIGN, <http://electronicdesign.com/embedded/what-s-difference-between-de-jure-and-de-facto-standards>.

43. This is considered a “de jure” standard. *Id.*

44. See In the Matter of Motorola Mobility LLC and Google Inc., Analysis of Proposed Consent Order to Aid Public Comment, 78 Fed. Reg. 2398, 2399 (proposed Jan. 3, 2013).

45. See Lemley, *supra* note 8, at 1892–1893.

46. *Apple, Inc. v. Motorola Mobility, Inc.*, 886 F.Supp.2d 1061, 1067 (W.D. Wis. 2012).

47. Makous & Hamilton, *supra* note 24, at 9; In the Matter of Motorola Mobility LLC and Google Inc., Analysis of Proposed Consent Order to Aid Public Comment, 78 Fed. Reg. at 2399.

48. For a basic description of 3G technology, see Vangie Beal, 3G, WEBOPEDIA, <http://www.webopedia.com/TERM/3/3G.html> (last visited Jan. 24, 2015).

49. For a basic description of 4G LTE technology, see Vangie Beal, 4G LTE, WEBOPEDIA, http://www.webopedia.com/TERM/4/4G_LTE.html (last visited Jan. 24, 2015).

50. *Apple, Inc.*, 886 F.Supp. 2d at 1068.

51. Stanley M. Besen, *The European Telecommunications Standards Institute*, 14 TELECOMM. POL’Y 521 (1990)

bly, the ETSI Board, and the Secretariat.⁵² Substantive work is performed by a range of different committees,⁵³ and membership in ETSI is open to “administrations, public network operators, manufacturers, users, private service providers⁵⁴ and research bodies.”⁵⁵ All of the big names in the telecommunications industry, including Apple, Google, and Samsung, are members of ETSI, and incorporate ETSI technical standards into their smartphones and tablets.⁵⁶ Some other SSOs include the International Organization for Standardization (ISO)⁵⁷ and

52. *How We Organize Our Work*, EURO. TELECOMM. STANDARDS INST., <http://www.etsi.org/about/how-we-work/how-we-organize-our-work> (last visited Oct. 18, 2015). ETSI describes the General Assembly as “the highest decision-making body in ETSI,” whose responsibilities include “[d]etermining our overall policy and strategy[,] . . . [d]ealing with membership issues[,] . . . appointing the members of the ETSI Board[,] . . . the Director-General[, and] . . . the Finance Committee members[, and] [a]pproving changes to our Statutes and Rules of Procedure.” *The General Assembly*, EURO. TELECOMM. STANDARDS INST., <http://www.etsi.org/about/how-we-work/how-we-organize-our-work/general-assembly> (last visited Oct. 18, 2015). The ETSI Board is “the executive arm of the General Assembly,” and performs tasks such as overseeing the technical committees and advising the General Assembly on finance issues. *The ETSI Board*, EURO. TELECOMM. STANDARDS INST., <http://www.etsi.org/about/how-we-work/how-we-organize-our-work/board> (last visited Oct. 18, 2015). The Secretariat “comprises about 120 members of staff who provide technical, administrative and logistical support” for ETSI, including processing and publishing standards, legal services, and financial services. *The Secretariat*, EURO. TELECOMM. STANDARDS INST., <http://www.etsi.org/about/how-we-work/how-we-organize-our-work/secretariat> (last visited Oct. 18, 2015).

53. Technical committees “address[] a number of standardization activities in a specific technology area,” which includes drafting standards and specifications. Industry Specification Groups focus on very specific activities when the need arises. Special Committees are similar to Technical Committees, but focus on coordination. Specialist Task Forces are “groups of technical experts who come together for a defined period (typically a few months) to work intensively on specific items.” *How We Organize Our Work*, *supra* note 52.

54. These entities perform the following functions: “[m]anufacturers develop and/or manufacture equipment that is to be connected to a public network, users are entities that use a public network, and private service providers make use of a public network to provide service to third parties.” Besen, *supra* note 51 at 522 n.8.

55. *Id.* at 522.

56. See *ETSI Current Members*, EURO. TELECOMM. STANDARDS INST., <http://www.etsi.org/membership/current-members> (last visited Jan. 24, 2015).

57. See *About ISO*, INT'L ORG. FOR STANDARDIZATION, <http://www.iso.org/iso/home/about.htm> (last visited Jan. 24, 2015).

the Institute of Electrical and Electronics Engineers Standards Association (IEEE-SA),⁵⁸ which produce standards in industries including power and energy, information technology, and communications.⁵⁹

Many standards use patented technology, and “if a patent claims⁶⁰ technology selected by [an] SSO, the patent is called an ‘essential patent’” or SEP.⁶¹ Ownership of a SEP conveys some burdens as well as benefits. In comparison with a normal patent, a SEP owner “has a powerful position, and could achieve monopoly or exclusionary power in the market for the technology.”⁶² For example, every company that manufactures phones or tablets incorporating standards such as WiFi,⁶³ 3G, and LTE uses technology reading on all of the patents that are essential to those standards. Smartphones incorporate approximately 250,000 patents total,⁶⁴ and unless the company has a license to each, it is infringing at least one. A SEP owner could theoretically leverage this position by demanding a high royalty rate from smartphone manufacturers, based on the notion that it makes better business sense for the manufacturer to pay than to potentially face a court-ordered injunction to cease pro-

58. See *About the IEEE Standards Association*, IEEE STANDARDS ASS'N, <http://standards.ieee.org/about/ieeesa.html> (last visited Jan. 24, 2015).

59. *Apple, Inc. v. Motorola Mobility, Inc.*, 886 F.Supp. 2d 1061, 1069 (W.D. Wis. 2012); see also *Technology Standards & Resources*, <http://standards.ieee.org/findstds/index.html> (last visited Sep. 18, 2015).

60. A patent claim is

the part of the patent application where the inventor specifically states what their invention is and what it can do. Claims define the legal scope of a patent and define what can be protected by patent law. You could say that claims define the invention, what it is and what it does.

Mary Bellis, *Definition – Claim*, ABOUT MONEY, <http://inventors.about.com/od/definations/g/claim.htm> (last visited Jan. 24, 2015).

61. *Apple, Inc.*, 886 F.Supp. 2d at 1067.

62. Makous & Hamilton, *supra* note 24, at 9.

63. See Vangie Beal, *Wi-Fi*, WEBOPEDIA, <http://www.webopedia.com/TERM/W/Wi-Fi.html> (last visited Jan. 24, 2015).

64. Mike Masnick, *There Are 250,000 Active Patents That Impact Smartphones; Representing One In Six Active Patents Today*, TECHDIRT (Oct. 18, 2012, 8:28 AM), <https://www.techdirt.com/blog/innovation/articles/20121017/10480520734/the-re-are-250000-active-patents-that-impact-smartphones-representing-one-six-active-patents-today.shtml>.

duction entirely.⁶⁵ However, this powerful position is limited by the licensing requirements that ETSI imposes.

B. Requirements of SSOs

Most SSOs require their members to enter into covenants with the SSO or with each other that govern the development of the standards they promulgate.⁶⁶ The disclosure rules require SSO members to divulge IPR they own that are relevant to a standard, including patents and patent applications, at the earliest feasible time during development of that standard.⁶⁷ ETSI, in its IPR Policy, requires that “each member shall use its reasonable [endeavors] . . . to inform ETSI of essential IPRs in a timely fashion.”⁶⁸ The primary intent of these rules is to avoid patent ambush situations and to keep SSO members abreast of the current state of the developing technology.⁶⁹ The licensing rules generally “restrict the terms that holders of SEPs can demand” from a licensee, requiring licenses on fair, reasonable, and nondiscriminatory terms (FRAND or “RAND”).⁷⁰ ETSI requires that its members sign a contract stating that it will grant irrevocable licenses on these terms.⁷¹ These commitments are not licenses in themselves, but a contract with the SSO mandating the member enter into a FRAND license with a potential licensee if and when the opportunity arises.⁷² Additionally, ETSI requires that if one of its members transfers essential IPR to another party, the member “shall include appropriate provisions in the relevant transfer documents to ensure that the undertaking is binding on the

65. See Lemley & Shapiro, *supra* note 20 (discussing patent hold-up).

66. *Apple, Inc.*, 886 F.Supp. 2d at 1067.

67. See Annex 6: *ETSI Intellectual Property Rights Policy*, *supra* note 16, at 35.

68. *Id.*

69. See *Apple, Inc.*, 886 F.Supp. 2d at 1067 (“Such rules help to insure that standards do not allow the owners of essential patents to abuse their market power to extort competitors or prevent them from entering the marketplace.”).

70. Makous & Hamilton, *supra* note 24, at 10. American courts have generally dropped the “fair” portion since it does not really add anything that is not covered by “reasonable” and “nondiscriminatory,” but the terms “FRAND” and “RAND” are used interchangeably. *Id.* at 7 n.44.

71. Annex 6: *ETSI Intellectual Property Rights Policy*, *supra* note 16, at 36.

72. Makous & Hamilton, *supra* note 24, at 10.

transferee.”⁷³ This provision allows licensees to feel safe knowing that the licensor cannot sell his IPR to a third party that could subsequently revoke the license and demand higher royalties.

C. FRAND Licensing

Defining “FRAND” is a contentious issue. The SSOs that employ the term leave it vague and give little-to-no guidance about what licensing terms actually qualify as FRAND.⁷⁴ The words that make up the acronym are designedly broad because they must work across a variety of industries, and be interpreted by different jurisdictions around the world.⁷⁵ Defining the term precisely would be prohibitively complex or “may be impossible, given the variety of licenses and industries” it applies to.⁷⁶ This is why “virtually no SSO specifies the terms on which licenses must be granted beyond [these] vague requirement[s],”⁷⁷ and why some SSOs, like IEEE-SA, “expressly forbid discussion of such issues when a standard is under consideration, presumably for fear of antitrust liability.”⁷⁸ The term “reasonable” refers primarily to royalty rates,⁷⁹ and courts that have attempted to set the rate themselves have shown that the analysis is wholly dependent on the facts of the dispute and the context of the SSO.⁸⁰ “Nondiscriminatory” does not imply that royalty rates must be identical for all licensees of a SEP, but that “condition[s] included in a licensing agreement must be the same regardless of the licensee.”⁸¹ For example, a royalty rate that is FRAND for one licensee may be so expensive for another licensee that it prohibits her from feasibly manufacturing her product.⁸² The nondiscriminatory requirement is intended to “maintain a level playing field with respect to com-

73. Annex 6: ETSI Intellectual Property Rights Policy, *supra* note 16, at 36.

74. *Id.*

75. See Mikko Valimaki, A Flexible Approach to RAND Licensing 3 (Mar. 31, 2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1261642.

76. *Id.*; Makous & Hamilton, *supra* note 24, at 10.

77. Lemley, *supra* note 8, at 1964.

78. *Id.* at 1965.

79. Makous & Hamilton, *supra* note 24, at 10.

80. *Id.*; see *infra* Part II.A.

81. Makous & Hamilton, *supra* note 24, at 11–12.

82. *Id.* at 12.

petitors,” so it might be considered discriminatory for a licensor to demand such a rate.⁸³

Prior to the smartphone wars,⁸⁴ FRAND was not as controversial and there was no need for a clearer definition.⁸⁵ Because of the close relationship that companies in the same industry have, there exists a mutual deterrent against aggressive licensing strategies; it may be more beneficial to err on the side of caution in the short term than to lose out in the long term by damaging a business relationship.⁸⁶ But since the rise of non-practicing entities (“NPE”s), more pejoratively referred to as “patent trolls,” FRAND issues have increased.⁸⁷ Big name patent holders, such as Apple or Google, can sell patents to NPEs who, rather than produce something using the patented technology, hold onto them solely to extract licensing fees and damages from potential infringers.⁸⁸ This practice, referred to as “patent privateering,” changed the passive playing field because an NPE has little incentive to maintain a professional relationship with a company that has nothing to offer it except money.⁸⁹

NPEs are free to “abuse the market power conferred after a standard has been adopted[,] without fear of future retaliation.”⁹⁰ Additionally, the smartphone industry has been particularly contentious ever since “Apple started a thermonuclear patent war”⁹¹ to eliminate Google’s Android operating system from the marketplace.⁹² The field is immensely profitable, and “Apple had so much to lose from the inevitable commoditization

83. *Id.* at 11–12.

84. See discussion of smartphone wars *infra* Part I.E.

85. Dan O’Connor, *Standard-Essential Patents in Context: Just a Small Piece of the Smartphone War Puzzle*, PATENT PROGRESS, Mar. 5, 2013, at 5, available at <http://www.patentprogress.org/2013/03/05/standard-essential-patents-in-context-just-a-small-piece-of-the-smartphone-war-puzzle/>.

86. *Id.*

87. *Id.*

88. Scott M. Daniels, *Privateering: Patent Holding Companies Unleash Patent Portfolios*, IPWATCHDOG (Feb. 11, 2013), <http://www.ipwatchdog.com/2013/02/11/privateering-patent-holding-companies-unleash-patent-portfolios/id=35287/>.

89. *Id.*

90. O’Connor, *supra* note 85, at 6.

91. *Id.*; see *infra* Part I.E.

92. Maurits Dolmans & Daniel Ilan, *European Antitrust and Patent Acquisitions: Trolls in the Patent Thickets* 8 COMPETITION L. INT’L, Aug. 2012, at 7, 8.

of the smartphone and tablet space that the heavy cost of waging war seemed to be worth the price.”⁹³ This ongoing patent cold war is fought in the courtroom, and concerns issues such as low-quality patents, design patents, the interpretation of FRAND, and the availability of injunctions on SEPs.⁹⁴

D. Problem with ETSI's IPR Policy

As of now, ETSI gives no guidance as to what constitutes a FRAND licensing rate, other than the words that make up the acronym.⁹⁵ In fact, ETSI does not even ensure that the patents that are declared as “essential” to a standard are actually essential.⁹⁶ In essence, ETSI is simply a repository for declarations made by companies about patents that may not only be nonessential, but may even be invalid.⁹⁷ The Foreword of a Special Report issued by ETSI states that “ETSI has not checked the validity of [the IPR declarations] . . . and cannot confirm, or deny, that the patents/patent applications are, in fact, essential, or potentially essential.”⁹⁸ By “potentially essential,” ETSI is referring to patent applications that have not even been granted as patents yet. A study published in an IEEE scientific journal estimates that only 21 percent of the patents declared essential to the 3GPP standard are actually essential.⁹⁹ An evaluation of SEPs for the LTE standard “esti-

93. O'Connor, *supra* note 85, at 7.

94. *Id.* at 8.

95. See, e.g., *Annex 6: ETSI Intellectual Property Rights Policy*, *supra* note 16, at 36.

96. EURO. TELECOMM. STANDARDS INST., INTELLECTUAL PROPERTY RIGHTS (IPRS); ESSENTIAL, OR POTENTIALLY ESSENTIAL, IPRS NOTIFIED TO ETSI IN RESPECT OF ETSI STANDARDS 4 (1999), available at <http://webstore.ansi.org/RecordDetail.aspx?sku=ETSI+SR+000+314-v1.4.1-1999-11>.

97. See *id.* (“The information that appears on the ETSI IPR database reflects the ETSI Members’ declarations with regards to IPRs that they have considered essential for a particular ETSI standard.”).

98. *Id.*

99. David Goodman, *3G Cellular Standards and Patents*, IEEE WIRELESS COMM. 2005, June 13, 2005, Part VI, <http://eeweb.poly.edu/dgoodman/wirelesscom2005.pdf>. The definition of “essential” used for the purposes of the study is that of the ETSI IPR Policy, which the author describes as narrow:

“ESSENTIAL” as applied to IPR means that it is not possible on technical (but not commercial) grounds, taking into account normal

mated that 55 of them are 'essential' patents conforming to ETSI standards."¹⁰⁰

Additionally, each patent is unique. They "differ in their likely validity, their importance to the standard, and the ease with which they can be designed around."¹⁰¹ Treating all SEPs as equal "may have the perverse result of encouraging [SSO] members to list as many patents as possible that are conceivably relevant to a standard, hoping to increase their royalty rate through sheer quantity without any reference to quality."¹⁰² Declaring a patent as essential becomes more of a business decision than anything; if a company considers a patent more valuable if it is declared essential, then it will probably do so, even if its essentiality is questionable. A company should not be allowed to gain market power, and thus enhance royalty rates, through such an imprecise measurement as "declarations to ETSI."

E. Litigation Surrounding FRAND: The Smartphone Wars

The ambiguity of FRAND has caused problems that have propagated beyond the licensing terms that it is focused on, primarily because of its important role in the smartphone wars. In brief, when Android¹⁰³ began to infiltrate the smartphone market, Apple and Microsoft sought to resist Google's intrusion.¹⁰⁴ Both of their strategies hinged around their extensive patent portfolios, but they approached the problem differently: Apple sought injunctions against some smartphone manufacturers that utilized Android, while Microsoft charged these manufacturers substantial royalties to drive up the cost of Android smartphones.¹⁰⁵ Google sought to bolster its defenses by

technical practice and the state of the art generally available at the time of standardization, to make, sell, lease, otherwise dispose of, repair, use of operate EQUIPMENT or METHODS which comply with a STANDARD without infringing that IPR.

Annex 6: ETSI Intellectual Property Rights Policy, supra note 16, at 41.

100. CYBER CREATIVE INSTITUTE CO. LTD., EVALUATION OF LTE ESSENTIAL PATENTS DECLARED TO ETSI 25 (2011), <http://www.cybersoken.com/research/pdf/lte01EN.pdf>.

101. *See* Lemley *supra* note 8, at 1965.

102. *Id.*

103. Android is Google's operating system.

104. Dolmans & Ilan, *supra* note 92, at 8.

105. *Id.*

buying patents on the market,¹⁰⁶ and a patent race ensued.¹⁰⁷ Apple and Microsoft's efforts culminated in a joint effort with other tech companies to buy six thousand patents from Nortel,¹⁰⁸ "outbidding Google's initial 'stalking horse' bid of \$900 million and picking up the portfolio for a tidy \$4.5 billion," after which Google bought Motorola, including all of Motorola's patents, in response.¹⁰⁹ The smartphone conflicts are not limited to these companies, but extend to dozens more.¹¹⁰ For example, a five-year long infringement dispute between Apple and Samsung recently settled for \$548 million, but remains open pending an appeal of an earlier partial judgment.¹¹¹

The issues stemming from this dispute are global, and have been addressed by many different judicial bodies. Germany has been an attractive venue because of its relatively quick proceedings, and its *Orange Book* decision¹¹² has proved influential in the smartphone wars, despite concerning a different technology.¹¹³ In the decision, the German Supreme Court provided guidance for when a "FRAND defense" could be raised successfully.¹¹⁴ The defense is premised on the unavailability of injunctions for SEP infringement: ownership of a SEP can be characterized as a legal monopoly over the standardized technology, in the sense that a party deploying the technology must be

106. When the parties to a patent dispute have comparably-sized patent portfolios that read on similar technologies, the incentive to cross-license usually exceeds the incentive to litigate. *Id.*

107. *Id.*

108. Nortel is a technology company that went bankrupt. *Welcome*, NORTEL NETWORKS INC., <http://www.nortel-us.com/> (last visited Jan. 24, 2015).

109. Dolmans & Ilan, *supra* note 92, at 8.

110. Mike Masnick, *Meet the Patent Thicket: Who's Suing Who for Smartphone Patents*, TECHDIRT (Oct. 8, 2010, 9:34 AM), <https://www.techdirt.com/blog/wireless/articles/20101007/22591311328/meet-the-patent-thicket-who-s-suing-who-for-smartphone-patents.shtml>.

111. Ben Lovejoy, *Five Years After Patent Trial, Samsung & Apple Reach \$548M Settlement – But It's Not Over Yet*, 9TO5MAC.COM (Dec. 4, 2015), <http://9to5mac.com/2015/12/04/apple-samsung-patent-trial-settlement/>.

112. Bundesgerichtshof [BGH] [Federal Court of Justice] May 6, 2009, 180 ENTSCHIEDUNGEN DES BUNDESGERICHTSHOFES IN ZIVILSACHEN [BGHZ] 312 (Ger.).

113. Bernd Allekotte, *FRAND-Based Litigation and Competition Issues in Europe*, IAM, Aug. 29, 2013, at 53, 54, available at <http://www.iam-magazine.com/Intelligence/IP-Monetisation-Yearbook/2013/Articles/FRAND-based-litigation-and-competition-issues-in-Europe>.

114. *Id.* at 54.

granted rights to all of the SEPs to legally use the technology, so seeking an injunction for infringement of a SEP could be considered abuse of a dominant market position.¹¹⁵ The court ruled that this defense can only be used by an alleged infringer if he had “offered a reasonable license agreement to the patentee; and fulfilled all obligations resulting from a license agreement (even in cases where the offer was rejected).”¹¹⁶ This high standard for resisting an injunction is a compelling reason for patentees to sue potential infringers in German courts.¹¹⁷

The European Commission (EC) also assumed a more central position in the smartphone wars after various complaints were filed with it subsequent to the merger of Google and Motorola.¹¹⁸ In one such complaint, Apple and Microsoft alleged antitrust violations by Motorola, who had sought injunctions and significant royalties against Apple and Microsoft based on SEPs.¹¹⁹ The EC responded in part by saying that an injunction could be legitimate if the potential licensee is unwilling to negotiate FRAND terms in good faith, based on elements of the *Orange Book* ruling.¹²⁰ The concept of “unwilling licensees” remains significant in jurisdictions worldwide, and the proper application of the term hinges partly on whether a potential licensee’s opening offer can be characterized as FRAND.¹²¹ These verdicts show how a poorly defined FRAND can contribute to disputes concerning billions of dollars.

II. ROYALTY RATES FOR SEPS

In general, judicial and administrative bodies have elected not to calculate and order royalty rates for FRAND-encumbered patents, opting to let disputing parties resolve it between themselves.¹²² This sort of determination does not of-

115. See Dolmans & Ilan, *supra* note 92, at 9.

116. Allekotte, *supra* note 113, at 54.

117. *Id.* at 55.

118. See Dolmans & Ilan, *supra* note 92, at 8–9.

119. *Id.* at 8.

120. *Id.* at 4.

121. See, e.g., Florian Mueller, *Google Tells Appeals Court Apple is ‘Unwilling Licensee’, Seeks Injunction Over FRAND Patents*, FOSS PATENTS (Mar. 15, 2013), <http://www.fosspatents.com/2013/03/google-tells-appeals-court-apple-is.html>.

122. See Jonathan Radcliffe & Gillian Sproul, *FRAND and the Smartphone Wars*, INTELL. PROP., Dec. 2011–Jan. 2012, at 45, 46, available at <http://www.mayerbrown.com/Files/Publication/477a076f-dd7e-408c-8321->

ten fall within the competence of courts that do not specialize in patent disputes, and for a court to calculate the rate itself is a long and expensive process.¹²³ Additionally, FRAND disputes were not all that common until the smartphone wars, so there is little precedent to guide a court for this kind of analysis.¹²⁴ Only recently have some U.S. courts and one Chinese court specifically ordered a royalty rate that it considered FRAND, and the detailed opinions from the U.S. courts help illuminate the relevant factors going into these rates.¹²⁵

The royalties that parties agree to without legal intervention are, like most contractual details, largely confidential, but studies have been performed to estimate the rates. By comparing the royalty rates articulated by judicial bodies and those that were negotiated, the disparity between the intent of FRAND and FRAND in practice is illuminated, and a strong case is made for the importance of an objective patent valuation.

A. Court-Ordered Royalty Rates

When necessary, U.S. courts calculate appropriate royalty rates for normal patent licenses by using a multifactor test¹²⁶ that was first expressed by the Southern District of New York in *Georgia-Pacific Corp. v. U.S. Plywood Corp.*¹²⁷ and approved soon after by the Federal Circuit.¹²⁸ Among the fifteen factors are considerations “including the relationship of the licensing parties; the type of license they likely would agree upon; comparable licenses made by the licensee . . . ; the nature, benefits, extent of use, and alternative to the patented technology; and

64edf33c190e/Presentation/PublicationAttachment/5b202a76-bc80-4467-b286-7a3b8e90e06d/Frand_Smartphone_Sproul.pdf.

123. See Karl P. Kilb, *Arbitration of Patent Disputes: An Important Option in the Age of Information Technology*, 4 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 599, 609 (1993); see also, e.g., *infra* note 137.

124. See O'Connor, *supra* note 85, at 5.

125. See discussion *infra* Part I.A.

126. See Lemley, *supra* note 8, at 1966 n.331.

127. *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F.Supp. 1116, 1120 (S.D.N.Y. 1970).

128. Christopher B. Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages*, 2010 B.Y.U. L. REV. 1661, 1681 (2010).

the value of features unrelated to the patent.”¹²⁹ The Southern District declined to rate the importance of each factor, stating that it “attempted to exercise a discriminating judgment reflecting its ultimate appraisal of all pertinent factors in the context of the credible evidence.”¹³⁰

Prior to April 25, 2013, “no judge had ever attempted to calculate what would constitute a licensing rate that is [FRAND] until U.S. District Judge James Robart of the Western District of Washington,”¹³¹ in a case between Microsoft and Motorola Mobility¹³² involving the H.264 video codec standard¹³³ and the IEEE-SA 802.11 WiFi¹³⁴ standard.¹³⁵ In his lengthy opinion, Judge Robart seeks “to strike the FRAND balance (compensating fairly, but not overcompensating, SEP holders) within the *Georgia-Pacific* framework.”¹³⁶ He stressed that a highly relevant consideration is the relative importance of the SEP to the

129. *Id.* at 1683. The relevant factors articulated in *Georgia-Pacific*, in brief, are 1) royalties received from other licensees for the same patent, 2) royalties paid by licensees for comparable patents, 3) the nature and scope of the license, 4) the licensor’s policy regarding its patent monopoly, 5) the commercial relationship between the parties, 6) the effect the patent has on other products or sales of either party, 7) the duration of the patent and the term of the license, 8) the established profitability of products made under the patent, 9) the utility and advantages of the patent product over old methods or products, 10) the nature of the patented invention, 11) the extent to which the infringer has made use of the invention, 12) the custom in the business or comparable businesses, 13) the portion of the profit that should be credited to the invention, 14) the opinion of experts, and 15) the amount that would have been agreed upon in a good faith negotiation. *Georgia-Pacific Corp.*, 318 F.Supp at 1120.

130. *Id.* at 1121.

131. Ryan Davis, *Landmark Motorola FRAND Ruling May Serve as Roadmap*, LAW360 (Apr. 26, 2013), <http://www.law360.com/articles/436295/landmark-motorola-frand-ruling-may-serve-as-roadmap>.

132. Google is Motorola Mobility’s parent company. 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>.

133. *What is H.264*, H264 INFO, http://www.h264info.com/?page_id=10 (last visited Jan. 24, 2015).

134. Vangie Beal, *802.11 IEEE Wireless LAN Standards*, WEBOPEDIA, http://www.webopedia.com/TERM/8/802_11.html (last visited Jan. 24, 2015).

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

136. Mueller, *supra* note 132.

standard,¹³⁷ which can be assessed using information such as “the total number of essential patents [declared to the standard]; the patent holder’s level of involvement in the standards setting process . . . ; the quantifiable value of the essential patent’s contribution to the standard . . . ; and the existence or non-existence of alternative technologies . . . that could have been integrated into the standard.”¹³⁸ Despite the fact that his opinion is only binding on the Western District of Washington, it is anticipated to be influential in other jurisdictions and abroad.¹³⁹

Judge Holderman of the Northern District of Illinois followed Judge Robart’s approach in a memorandum opinion assessing a reasonable royalty rate for patents essential to WiFi in a dispute between Innovatio IP Ventures (a patent assertion entity) and “numerous . . . commercial users of wireless internet technology located throughout the United States,” including coffee shops, hotels, and restaurants.¹⁴⁰ The importance of the patent in relation to the standard as a whole was again a vital consideration, and the royalty rate was assessed in comparison to that found in *Microsoft v. Motorola*¹⁴¹:

Judge Robart concluded that Motorola’s patents were only of minimal value to the standard, [. . .] whereas the court here has found that Innovatio’s patents are of moderate to moderate-high importance to the standard. A multiplier of about three is a reasonable difference between the two royalties to account for the greater importance of Innovatio’s patents to the 802.11 standard.¹⁴²

137. Stan Lewis, *Valuing FRAND-Obligated Patents: An Emerging Consensus*, LEXOLOGY (Nov. 5, 2013), <http://www.lexology.com/library/detail.aspx?g=1a8dc5a6-7b2c-4d23-901b-0cf9d6af0065>.

138. *Id.*

139. See Mueller, *supra* note 132. The considerations he expressed are very relevant to the basic valuation method that will be discussed *infra* Part III.

140. *In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11 C 9308, 2013 WL 5593609 (N.D. Ill 2013).

141. Florian Mueller, *Federal Judge Determines 19 WiFi Patents are Worth a FRAND Rate of Less than 10 Cents per Unit*, FOSS PATENTS (Oct. 3, 2013), <http://www.fosspatents.com/2013/10/federal-judge-determines-19-wifi.html>.

142. *In re Innovatio*, 2013 WL 5593609, at *44; see also Mueller, *supra* note 141.

Prior to either of these cases, Judge Richard Posner, in a dismissal of a dispute between Apple and Motorola,¹⁴³ provided some FRAND guidance different from, but not at odds with, Judge Robart's framework.¹⁴⁴ He wrote that:

The proper method of computing a FRAND royalty starts with what the cost to the licensee would have been of obtaining, just before the patented invention was declared essential to compliance with the industry standard, a license for the function performed by the patent. That cost would be a measure of the value of the patent [in its capacity of being a] patent.¹⁴⁵

A potential licensee of a SEP has no alternative to obtaining a license for the patent once it is adopted by a standard. However, Posner's approach would completely disregard this unique hold-up value of a SEP and "confine the patentee's royalty demand to the value conferred by the patent itself" rather than considering this additional value.¹⁴⁶ Many SEPs would have a commercial value of close to zero if they weren't included in a standard, because of the prevalence of suitable workarounds.¹⁴⁷ Allowing patent holders to "unduly enrich themselves because they were part of a standard-setting cartel" would make innovations incorporating the standard more expensive, at odds with one of the main objectives of FRAND and standard-setting, which is to foster innovation.¹⁴⁸

Foreign courts have not been as forthcoming as U.S. courts when it comes to establishing royalty rates for FRAND-encumbered patents.¹⁴⁹ One notable exception is China, where the Guangdong People's Court affirmed a lower court's FRAND

143. *Apple, Inc. v. Motorola Inc.*, 869 F.Supp. 2d 901 (N.D. Ill. 2012).

144. Florian Mueller, *Judge Posner's Dismissal of Two-Way Apple-Motorola Lawsuit has Many Important Implications*, FOSS PATENTS (June 23, 2012), <http://www.fosspatents.com/2012/06/judge-posners-dismissal-of-two-way.html>.

145. *Apple, Inc.*, 869 F.Supp 2d at 913.

146. *Id.*

147. Mueller, *supra* note 144.

148. *See id.*

149. *See generally* Koren W. Wong-Ervin, Fed. Trade Comm'n, *Standard-Essential Patents: The International Landscape*, INTELL. PROP. COMMITTEE SECTION ON ANTITRUST L., Spring 2014, at 4, http://www.ftc.gov/system/files/attachments/key-speeches-presentations/standard-essential_patents_the_intl_landscape.pdf.

royalty determination in *Huawei v. InterDigital*,¹⁵⁰ but failed to disclose the calculation that went into the figure.¹⁵¹ The dispute concerned telecommunications SEPs¹⁵² that Huawei, the leading smartphone manufacturer in China, alleged that InterDigital refused to license on FRAND terms.¹⁵³ The lower court ruled that the royalty rate for the SEPs “should not exceed .019 percent of the actual sales price” of the infringing products.¹⁵⁴ It is possible that this low rate was influenced by the desire to penalize InterDigital for its un-FRAND tactics towards Huawei, including royalty demands that can be characterized as discriminatory, when compared to the deals that InterDigital struck with other smartphone manufacturers concerning the same SEPs.¹⁵⁵ The EC generally has a hands-off approach to this issue, but has expressed that a neutral third-party, such as a court or an arbitrator, can set FRAND rates.¹⁵⁶ It has also indicated that a “‘reasonable royalty’ must be – or approximate to – the price that would hypothetically be reached in an arms-length negotiation.”¹⁵⁷ This notion is consistent with the American approach in *Georgia-Pacific* and its progeny.¹⁵⁸

B. Negotiated Royalty Rates

Assertions regarding the value of a SEP are widely varied. Some have contended that one SEP can have the same value as an entire portfolio of SEPs, while others have contended that each individual SEP contributes the same amount of value to

150. Michael Han & Kexin Li, *Huawei v. InterDigital: China at the Crossroads of Antitrust and Intellectual Property, Competition and Innovation*, COMPETITION POL'Y INT'L, Nov. 28, 2013, at 6.

151. Shylah R. Alfonso & Kevin A. Zeck, *Chinese Court Issues Landmark Decision Determining a FRAND Royalty Rate*, INTELL. PROP. COMMITTEE SECTION ON ANTITRUST L., Apr. 1–5, 2013, at 1, http://www.americanbar.org/content/dam/aba/publications/antitrust_law/at315000_tidbits_20130405.authcheckdam.pdf.

152. The SEPs at issue relate to 2G, 3G, and 4G technologies.

153. Alfonso & Zeck, *supra* note 151.

154. Han & Li, *supra* note 150, at 6.

155. *See id.*

156. Wong-Ervin, *supra* note 149, at 8–9.

157. Radcliffe & Sproul, *supra* note 122.

158. *See, e.g.,* Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013).

the standard.¹⁵⁹ Licensing terms between companies are usually confidential, but studies have revealed a wide range of royalty rates for smartphone technology.¹⁶⁰ At one end, cumulative royalty rates paid by a smartphone manufacturer for patents reading on the 3G capability (the standard is also known as UMTS or WCDMA) have been estimated “as high as 30 percent of the total price of each phone.”¹⁶¹ On the other end, Nokia, who holds many SEPs reading on the UMTS standard, stated that it “paid less than 3 percent aggregate license fees on WCDMA handset sales under all its patent license agreements.”¹⁶² This stark disparity implies that companies with patents to “trade” in a cross-licensing scenario, such as Nokia, are fetching exceedingly favorable rates.¹⁶³ For the 2G (GSM) standard, some have alleged that the cumulative royalties paid by cell phone manufacturers with no patents to cross-license was as high as 35 to 40 percent of the phone’s selling price, with more conservative estimates putting the rate at 10 to 13 percent.¹⁶⁴ It suffices to say that there is little transparency and no strong consensus regarding the value of SEPs for these standards.

In addition to these estimates, a limited study was conducted during the rollout of the 4G (LTE) standard to analyze the royalty rates that companies announced for their portfolios when compared to the number of SEPs held by the companies.¹⁶⁵ The results expectedly showed that companies demand higher royalty rates for larger patent portfolios,¹⁶⁶ but also demonstrated that the value of each individual SEP declines as the portfolio

159. See Peter Quies, Valuing Standard Essential Patents: An Examination of Announced FRAND Royalty Rates for LTE 1 (Dec. 2012), http://www.americanbar.org/content/dam/aba/publications/litigation_committees/intellectual/012413-valuing-standard-essential-patents-memo.authcheckdam.pdf.

160. Stasik, *supra* note 30, at 114.

161. *Id.* at 114.

162. *Id.* at 115.

163. *Id.*

164. *Id.* at 114.

165. Quies, *supra* note 159.

166. At one end, Qualcomm, which holds three hundred fifty essential LTE patents, announced a royalty rate of 3.3 percent, while at the other end, Alcatel, which holds nine essential patents, announced a royalty rate of 2.0 percent. *Id.* at 2.

gets larger.¹⁶⁷ Companies with few SEPs announced a much higher royalty per SEP than those with many.¹⁶⁸ In essence, “the value of one standard essential patent . . . may . . . depend[] on the relative size of the patent portfolio.”¹⁶⁹ Parties that are aware of this phenomenon, and of the more favorable rates that parties get in cross-licensing scenarios, can go out and purchase some SEPs if they do not want to invest in research and design themselves.¹⁷⁰ For a company that owns a lot of SEPs, such as Ericsson (who holds 838 essential patents on the GSM standard), selling some patents could be far more lucrative than the additional royalty revenue that would be generated by licensing them with the rest of their SEPs.¹⁷¹

III. PATENT VALUATION OUTSIDE OF THE COURTROOM

This Part will discuss patent valuation and its pertinence to SSOs. Many factors can affect a patent’s value, especially the context of the valuation, so different methods may be employed that suit specific situations. Due to the complexity of patents, these techniques are not perfect, but are potentially useful for comparing similar patents. Some are especially relevant for the purpose of comparing patents that contribute to the same technical standard.

A. Patent Valuation Considerations

Valuing patents, in general, is a practice that “requires substantial technical knowledge and legal expertise.”¹⁷² The “specific context of the valuation, in terms of focus, time, purposes, and interested parties” is important because value can be assessed for legal, economic, strategic, and other reasons.¹⁷³ Additionally, there is value both in the patent itself and in the un-

167. *Id.* at 3.

168. *See id.* at 2.

169. *Id.* at 5.

170. Stasik, *supra* note 30, at 118.

171. *Id.* at 119.

172. Michael S. Kramer, *Valuation and Assessment of Patents and Patent Portfolios Through Analytical Techniques*, 6 J. MARSHALL REV. INTELL. PROP. L. 463, 466 (2007).

173. Federico Munari & Raffaele Oriani, *Why, When and How to Value Patents? An Introduction*, in *THE ECONOMIC VALUATION OF PATENTS: METHODS AND APPLICATIONS* 6 (Federico Munari & Raffaele Oriani eds., 2011).

derlying technology.¹⁷⁴ The patent itself has value as a protection right; in other words, the right to exclude others from practicing the technology or method.¹⁷⁵ In a patent-licensing context, since “the licensing contract transfers not only the patent, but also the underlying technology,” it is a common practice to include the technological value with the patent.¹⁷⁶

Further considerations affecting patent value in a licensing situation are the time frame, the reasons underlying the need for a license, and the nature of the parties involved in the negotiation.¹⁷⁷ A patent in the United States expires twenty years from the filing date of the patent application, and a patent approaching the end of its life is intrinsically less valuable than one that was just issued.¹⁷⁸ The time frame also contributes to varying levels of uncertainty.¹⁷⁹ If a patent application is undergoing examination there is uncertainty as to whether the examiner will limit the scope of the claims or reject the application altogether.¹⁸⁰ If an issued patent has not yet been challenged by any third party there will be uncertainty regarding the strength of the claims or whether the patent’s legitimacy will be called into question at some point.¹⁸¹ This ambiguity is reduced if a patent has undergone one or more reexaminations and not been declared invalid.

B. Patent Valuation Considerations in the Context of SSOs

Patent value as a whole is highly subjective.¹⁸² As stated previously, a patent may be more valuable to a party when it is kept secret, despite the royalties that could be generated.¹⁸³ There are legitimate business concerns to keep in mind, such as a potential future need to use IPR defensively,¹⁸⁴ and whether a company wants to “reveal[] valuable information to

174. *Id.* at 7.

175. *Id.*

176. *Id.*

177. *See id.* at 8–9.

178. *Id.* at 8.

179. *Id.*

180. *Id.*

181. *See id.* at 13–14.

182. *See* Anne Layne-Farrer et al., *Pricing Patents for Licensing in Standard Setting Organizations: Making Sense of FRAND Commitments* 6 (CEMFI, Working Paper No. 0702, Jan. 2007).

183. *See id.* at 7.

184. *See* Dolmans & Ilan, *supra* note 92, at 8.

rivals about future technology strategies.”¹⁸⁵ ETSI recognizes these concerns, and “simply request[s] that members use ‘reasonable endeavors’ to identify relevant intellectual property, rather than demand an exhaustive reporting.”¹⁸⁶

Some argue that a basic numeric proportionality method should be used, where all patents that are essential to a standard are afforded equal value.¹⁸⁷ Proponents justify this determination because each essential patent “afford[s] patent holders the same market power (or hold up power) ex post,” in the sense that a manufacturer employing standardized technology needs a license for every SEP to avoid infringing.¹⁸⁸ The most obvious benefit of such an arrangement would be low transaction costs.¹⁸⁹ The primary disadvantage of this method would be a pervasive specter of unfairness. As discussed earlier, many of the declared patents have questionable essentiality, and “[a] rule compensating companies holding patents of questionable relevance, but which are nonetheless declared essential, on the same terms as those companies holding truly essential patents would not satisfy either the ‘fair’ or the ‘reasonable’ aspects of FRAND.”¹⁹⁰ It would incentivize companies to declare as many patents as possible, or even to split their innovations into multiple patents when in reality they belong within different claims of one patent.¹⁹¹ Therefore, for this rule to work, a precise definition of essentiality would have to be agreed upon and an independent reviewer would need to be employed to analyze which patents satisfy the definition.¹⁹² Although this approaches a level of fairness, essentiality to a standard is only one of many factors that influence patent value.

C. Existing Methods for Assessing Patent Value

There are a variety of methods available to assess patent value, both quantitative (often an economic estimate in monetary terms, or some other numerical value) and qualitative (a detailed guide to a patent’s strengths and weaknesses, or a rat-

185. Layne-Farrer et al., *supra* note 182, at 7.

186. *Id.* at 7.

187. *Id.* at 11–14.

188. *See id.* at 11.

189. *Id.*

190. *Id.* at 12.

191. *Id.* at 12–13.

192. *Id.* at 12.

ing/ranking method of different patent qualities).¹⁹³ There are qualities of both categories that could be pertinent to the valuation of a FRAND-encumbered patent.

The quantitative “patent indicators approach” takes into account patent qualities such as legal status, technological scope, citations in later patents, and existence of opposition or litigation.¹⁹⁴ It is a quick, but imprecise method that can be performed for any patent without the need for confidential information.¹⁹⁵ The “cost approach” quantifies “the costs of obtaining a patented invention by either internal development or external acquisition,” the “market approach” analyzes the pricing of comparable patents, and the “income approach” estimates the future cash flows associated with a patent.¹⁹⁶ The market approach would have little bearing on standards that are still in development, considering the cutting edge technology that is often involved and the lack of comparable patents,¹⁹⁷ and the income approach would also be difficult to use, considering that all of the essential patents are being pooled into one technology. The patent indicators and cost approaches, however, utilize information that is readily available while a standard is still in development, and prior to commercial use and the licensing negotiations that follow.

The two primary qualitative methods for patent valuation are a “due diligence approach” and the “rating/ranking approach.”¹⁹⁸ The due diligence approach is generally “a deep investigation into the status and strength of a patent (or patent portfolio) . . . aimed at finding relevant facts that influence the value of the assets”¹⁹⁹ Some elements that are considered include “the maturity of the technology, . . . the status of the patent procedures, potential third parties’ rights, . . . barriers of penetration of the technology into the market, . . . and the existence of active or passive infringements.”²⁰⁰ The rat-

193. Munari & Oriani, *supra* note 173, at 9–10.

194. *Id.* at 13–14.

195. *Id.* at 14.

196. *Id.* at 14–15.

197. Another reason that the market approach will not work for SEPs is the fact that the individual SEPs may have little to no value outside of the standardized technology.

198. *Id.* at 10.

199. *Id.* at 10.

200. *Id.* at 10–11.

ing/rankings method is a relatively simple one that “assign[s] single patents . . . to different value classes (such as ‘very important’, ‘important’, ‘less important’ or ‘negligible’)” by analyzing relevant criteria and assigning a score on a scale of, for instance, 1–5.²⁰¹ This method allows the analyst “to obtain a whole picture of the patent” on a broader basis than advanced numerical techniques.²⁰²

D. Complications with Patent Valuation Techniques

There are several issues that complicate the valuation of patents, flowing from their intangible nature and their many inherent uncertainties.²⁰³ Unlike tangible assets, patents “can be deployed simultaneously in different places and by different subjects,”²⁰⁴ and in each instance may have context-specific value. Additionally, their market value is difficult to ascertain because there is not much of an established market for patents.²⁰⁵ In recent years companies have begun to use patents for strategic reasons,²⁰⁶ encouraging greater commodification of patents in general, but “the creation of organized and standardized markets is still in its infancy.”²⁰⁷ The primary uncertainty present in patents is their legal status. Not only are the boundaries of the property rights “fuzzy and unpredictable, due to sometimes vague and (often strategically) ambiguous wording of claims,” but also their validity is rarely guaranteed except after multiple costly reexamination procedures.²⁰⁸ Another uncertainty is the “future economic value that can be extracted from patents,” stemming from the unknown future demand for products based on the patent-protected technology and the uncertain performance of the innovation in a commercial context.²⁰⁹

201. *Id.* at 11.

202. *Id.* at 13.

203. *Id.* at 19.

204. *Id.* at 19–20.

205. *Id.* at 21.

206. *Id.* at 4. Reasons include the desire to “generat[e] revenue through licensing, increas[e] bargaining power in negotiations . . . , enhanc[e] reputation and access[] external sources of financing.” *Id.* at 4–5.

207. *Id.* at 20.

208. *Id.*

209. *Id.* at 21.

IV. OBJECTIVE VALUATION OF PATENTS TO HELP PREEMPT AND RESOLVE DISPUTES

FRAND must be applicable to countless different circumstances, thus it must remain loosely defined. There are many factors to take into account during a contract negotiation, especially when it concerns a burgeoning technology with unpredictable market value. However, a factor that should not be debatable is the importance of an individual SEP relative to its standard. For example, one patent that is declared essential may have been crucial to the implementation of the standardized technology, while another patent that is declared essential may not even read on the standard, or could be easily designed around. These two patents should not be treated equally. If basic valuation techniques were implemented by SSOs throughout the development of technical standards, then the current licensing landscape, revolving around market power and patent portfolio size, could be legitimized and streamlined. Litigation concerning FRAND licensing would be simplified and better focused. This Part will explore an ideal mechanism for performing this analysis, and will propose a workable framework.

A. Arbitration of Patent Disputes in General

Arbitration of patent disputes is quicker and more efficient than resolution through the court system.²¹⁰ Judges are not normally technical experts; simply getting the judge up to speed is a lengthy undertaking, and even with proper briefing, “patent litigation can present issues so complex that legal minds, without appropriate grounding in science and technology, may have difficulty in reaching a decision.”²¹¹ This difficulty naturally leads to more hearings, expert testimony, amicus briefs, and even demonstrations of the technology.²¹² In addition to the concerns with expense, the amount of time taken “could be devastating to the parties involved.”²¹³ Patent disputes often involve a product that is currently or soon to be manufactured. By stalling this production both parties lose po-

210. See Kilb, *supra* note 123, at 609.

211. *Id.* at 609.

212. See, e.g., *id.* at 610.

213. *Id.* at 611.

tential revenue,²¹⁴ and by the time the dispute is resolved the patent at issue could be outdated and of little value.²¹⁵ Not only do the parties lose out, but a lengthy dispute could disadvantage the public as well.²¹⁶ For example, in the case of a pharmaceutical-patent conflict, the time and money spent on litigation could have been used on research and production of a drug treatment that saves lives.²¹⁷

Detractors of arbitration cite concerns such as arbitrator bias and the lack of procedural safeguards present in litigation.²¹⁸ Bias is an ever present concern in most kinds of legal dispute resolution, but there are safeguards in place to ensure the impartiality of arbitrators. They have a duty to disclose any appearance of bias,²¹⁹ and courts are well equipped to assess the impartiality of an arbitrator if a party chooses to contest it.²²⁰ Some parties may be hesitant to disclose company secrets to outsiders, and other procedural safeguards of the judicial system include an appeals process and extensive discovery.²²¹ In the context of this Note, where a form of arbitration is proposed as a solution for assessing patent value only, these concerns are mitigated or nonexistent. Confidentiality can be protected by nondisclosure agreements, and the evaluation process will be ongoing during standard development, ensuring that every interested party will be given a chance to have its say.

B. How Arbitration Techniques Can be Used In-House at ETSI

A large amount of confusion surrounding SEPs includes a question of whether a licensing offer is FRAND or not.²²² If parties can agree to the value of a patent prior to the start of licensing discussions, then a large hurdle is already overcome, and much litigation may be avoided. ETSI itself should form a new committee, comparable to one of its Technical Committees or Specialist Task Forces,²²³ which will henceforth be called the

214. *See id.* at 611.

215. *See id.* at 610.

216. *Id.* at 611.

217. *Id.*

218. *Id.* at 623.

219. *Id.* at 618.

220. *See generally id.* at 618–23.

221. *Id.* at 624.

222. *See* Mueller, *supra* note 121.

223. *See How We Organize Our Work*, *supra* note 52.

“Valuation Committee,” to determine the value of patents declared to a standard, using elements of the valuation techniques previously discussed. Each of the valuation methods will be analyzed for application in this unique standard-setting context, and the optimal result will be an amalgamation of different parts of the techniques. There are some obvious concerns with this proposal, not least of which being the reliability of the patent-value assessment, but those concerns will be addressed below. Implicit in this impartial valuation is an assessment of whether or not the patent that has been declared essential is actually essential. True value aside, overcoming the initial hurdle of essentiality will help legitimize the standard-setting process and could reduce disputes regarding patent validity. Although ETSI is the focus, similar methods may be appropriate for other SSOs.

The assessment should be performed by ETSI itself, or another similarly situated SSO, rather than hiring an external firm. ETSI is in the best position to perform this assessment; although it generally does not analyze the patents that are disclosed to it, it has the greatest capability to do so, and attaching its name to the appraisal will enhance the legitimacy of the judgment.²²⁴ ETSI had an income of approximately \$25 million in 2013, with contributions coming from members and various commercial activities.²²⁵ The potential cost of the Valuation Committee requires an analysis outside the scope of this paper, but patent arbitration in general costs far less than a patent infringement case.²²⁶ One policy that ETSI could implement is to charge a fee for every patent that is declared essential, with the money going directly toward the valuation. If a company is able to avoid even one patent suit because of the program, then it will almost certainly be saving money in the long term. Additionally, ownership of an essential patent comes with an array

224. Lemley, *supra* note 8, at 1966.

225. ETSI, ANNUAL REPORT (2014), <http://www.etsi.org/images/files/AnnualReports/etsi-annual-report-april-2014.pdf>.

226. In America, litigating a patent infringement case can take three to five years and cost \$3–5 million. Todd Hixon, *For Most Small Companies Patents Are Just About Worthless*, FORBES (Oct. 4, 2013), <http://www.forbes.com/sites/toddhixon/2013/10/04/for-most-small-companies-patents-are-just-about-worthless/>; see also Kilb, *supra* note 123, at 609.

of benefits, as discussed earlier, and it is not unrealistic for an SSO to demand a fee from its members.

Although standardization is an ongoing process taking many years, it would not be desirable for one comprehensive SEP valuation to be done at the very end of the standardization process. Standardized technology is often rolled out before all of the relevant patents are declared or even applied for, and contract negotiations may be initiated before the technology is perfected and implemented.²²⁷ Therefore, there is a need for continuous evaluation throughout the process as new patents are being declared, to take place at some interval of weeks or months, or once certain numbers of SEP declarations are reached. This does not, however, mean that a full analysis is required at every interval. If the Valuation Committee is working within a ranking framework such as 1–10, where one is minimal relative value and ten is maximum relative value, then it would not be very difficult for it to change an initial determination of value by bumping it up or down when new information comes in. The valuation will need to be fairly basic; an extensive analysis would neither be desired by the parties, nor useful during such a preliminary stage.

C. How the Valuation Would Work

The patent-valuation methods discussed previously provide a useful starting point for figuring out a workable framework.²²⁸ A comprehensive quantitative analysis, where a patent is assigned an economic estimate of its worth,²²⁹ is not entirely necessary in the context of an SSO. It would be useful, but prohibitively costly, to do such an analysis for the hundreds or thousands of patents that are declared to a standard. However, the factors that a quantitative analysis generally takes into account could be useful.²³⁰ The patent indicators method, for example, takes into account the legal status of the pa-

227. See Quies, *supra* note 159, at 1 (“Starting in late 2008, a number of companies announced royalty rates they would charge for handsets using the LTE standard . . .”). This was so even though there were new declarations for LTE as recent as September 26, 2014. See *IPR Online Database*, ETSI, <http://ipr.etsi.org/> (last visited Jan. 24, 2015).

228. See Munari & Oriani, *supra* note 173.

229. See *id.* at 13.

230. See *id.*

tent/application, which is very relevant.²³¹ A granted patent generally has greater value than when it is in its application phase because of the uncertainty regarding whether it will ever issue as a patent.²³² It would be unrealistic to expect the Valuation Committee to delve deeply into the validity of a patent application; that is a job for a professional patent examiner, and is time consuming and costly.²³³ However, a simple consideration of its legal status is worthwhile. Other patent qualities that the patent indicators method utilizes²³⁴ are also worth considering. The cost approach is similarly relevant.²³⁵ If, for example, a company invested significant time and money into a burgeoning technology, that investment may be taken into account.²³⁶ This factor could be important when a particularly difficult engineering problem has been solved. It may be difficult to assess this factor with any sort of accuracy,²³⁷ but if this situation arises the committee can choose to disregard it. It is not the goal of the Valuation Committee to determine an exact value, but to consider many factors and arrive at an estimate. The market approach and the income approach, however, would have little bearing on this assessment.²³⁸ During the standardization process, it is generally assumed that there are not any similar patents or technology out there to compare with. Analyzing the income that can be generated from a SEP is similarly irrelevant, because the patent may have little value standing alone, and is only profitable when combined with the rest of the SEPs.

231. *Id.*

232. *Id.* at 8.

233. The cost varies, but in 2011 an *inter partes* examination was estimated to cost \$278,000 from start to finish. Scott A. McKeown, *How Much Does Patent Reexamination Cost?*, PATENTS POST-GRANT (Aug. 25, 2011), <http://www.patentspostgrant.com/lang/en/2011/08/how-much-does-patent-reexamination-cost>. Also, an evaluation of prior art or obviousness is not relevant to the proposed evaluation. It is the worth of the technology in relation to other contributing technology, and the technology as a whole, that is the focus.

234. These qualities include technological scope, citations in later patents, and existence of opposition or litigation. See Munari & Oriani, *supra* note 173, at 13.

235. See *id.* at 14.

236. *Id.* at 14.

237. Companies would be incentivized to inflate their research and design numbers in order to effect greater importance for their patents.

238. Munari & Oriani, *supra* note 173, at 14–15.

The qualitative approaches are applicable in the SEP context as well. The due diligence approach²³⁹ would be very useful, but may be difficult when a technology is still in development. Delving deeply into the strength of a patent may be impossible at this early stage because it is unknown what the final technological product is going to look like. It might also be prohibitively expensive. The rating/ranking approach,²⁴⁰ however, seems ideal. The quantitative techniques may be too expensive for SSOs, but taking similar factors into account, such as investment, technological scope, and any prior opposition, and assigning a broad 1–5 or 1–10 ranking²⁴¹ to every patent in each of those categories, is cheap and effective. An obvious critique to this method is all of the rounding and guesswork that seems implicit in it, but that does not mean there is no utility in it.

A common theme in current FRAND litigation is inflated claims for damages and desired royalty rates.²⁴² Judge Holderman in *In re Innovatio IP Ventures* reduced IP Ventures' award to a few percentage points of its original claim.²⁴³ He justified this action by stressing the importance of the patent to the standard at issue and ruled that patents of lesser importance are not entitled to as high of rates as patents of greater importance.²⁴⁴ This proposed valuation framework intends to assess that very same importance, *ex ante* and prior to any negotiations or litigation. The intent is for contracting parties to have an initial understanding of the patent value prior to negotiations. In the same way that Judge Holderman's judgment turned on the classification of the at-issue patents as "of moderate to moderate-high importance to the standard,"²⁴⁵ an opinion from ETSI that assesses this same importance would give negotiating parties a relatively clear picture of the importance of their patents.

239. *See id.* at 10.

240. *See id.* at 11.

241. *Id.*

242. *See, e.g., In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11 C 9308, 2013 WL 5593609 (N.D. Ill 2013).

243. *Id.* at *44; Lewis, *supra* note 137.

244. *In re Innovatio*, No. 11 C 9308, 2013 WL 5593609, at *44.

245. *Id.*

D. The Effects of Such Valuation

The intended effect of this mandatory patent valuation is not to solve every patent-licensing disagreement that parties will have. It is merely a proposed tool that will help companies come to an agreement more efficiently. Both parties will be aware if one party has a portfolio full of patents with little importance and will not waste time debating the value. Similarly, if two parties are in litigation regarding whether or not a royalty rate is FRAND, the judge will not have to perform an independent analysis of the patent's importance herself, but can instead rely on ETSI's determination. The effect of this reliance, and the initial determination of essentiality, will be far reaching. Duplicitous patent holders that may claim essentiality for meritless patents will now be barred from asserting SEP rights.²⁴⁶ Important innovators with valuable patents will be more justly rewarded for their innovation, not only by having an "important" label on their SEPs, but by no longer competing for royalties with patents that are deemed to be nonessential.

An objective patent valuation would also have significant implications for a smaller company that might have formerly accepted a low royalty rate for important SEP contributions. If this weaker entity has an ETSI valuation to fall back on, it might be more willing to engage in limited litigation against a more powerful adversary. When the likelihood of success is greater there is less risk of wasteful litigation. This is not to say, however, that an ETSI valuation would be material in all or even most SEP-related disputes; this valuation cannot include an assessment of a patent's validity, not only because it would be expensive, but because an ETSI validity ruling would hold little to no weight with any jurisdiction worldwide.

E. Potential Pitfalls and Solutions

One of the most important issues that this method would encounter is getting SSO members to agree to it.²⁴⁷ The companies that currently use their dominant market power to get favorable royalty rates would have no incentive to support this initiative. Considering their size and power, their opinion could have a significant influence on the rest of the industry. However, the nonbinding nature of this valuation could make it more

246. See Lemley, *supra* note 8, at 1966.

247. See *id.* at 1967.

attractive. The judgments of the Valuation Committee would not be binding on any court or legally affect any party, unless courts chose to utilize them. If the committee does its job well enough, eventually it will gain enough legitimacy to directly influence the licensing strategies of SSO members. Implicit in this effect is the good faith of the negotiating parties. Parties would be able to handily oppose this initiative if they would rather fight tooth and nail for every last cent of royalty revenue.

Another related issue is the amount of deference a judicial body would give a valuation ruling. This valuation cannot encompass everything that a court would consider in an infringement or reasonable royalty-setting case. For instance, an “important” ruling by the Valuation Committee would mean very little if the patent is later found to be invalid. For courts to give this valuation any sort of respect would take time. If after the committee is implemented courts continue to make rulings similar to Judge Holderman in *In re Innovatio IP Ventures*, who analyzed the importance of the patent to the standard,²⁴⁸ then there will be data available comparing committee rulings to court-ordered rulings. If the judgments from the two bodies sync up to a reasonable degree, then courts would feel more comfortable slowly introducing these valuation rulings into their opinions. At a minimum, ETSI will have an essentiality assessment that will keep the SSO-patent pool free from duplicious declarations.²⁴⁹

CONCLUSION

The legal issues underlying the smartphone wars have no simple solution. So long as there are advantages for companies to exploit, there will be no objective fairness to the SSO patent-licensing system. What this Note proposes is not an overhaul of this flawed system, but rather a small step towards the fair compensation of patent holders. The hands-off approach that ETSI currently employs allows dominant parties too much flexibility to bully their adversaries into granting or accepting royalties to their disadvantage. This approach hurts the legitimacy of the organization and causes rampant uncertainty in the technological community. A basic patent valuation prior to li-

248. *In re Innovatio*, No. 11 C 9308, 2013 WL 5593609.

249. See Lemley, *supra* note 8, at 1967.

censing negotiations will give weaker parties a clearer idea of the worth of their IPR. The basic patent valuation techniques that are currently used can be easily tailored to the standard-setting context, and some of the mystery surrounding FRAND licensing can be eliminated. FRAND is simply not enough guidance, and so long as administrative bodies continue to shy away from a clearer definition, costly litigation is the only answer.

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