

ARTICLE

A BRIEF HISTORY OF RAND

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INTRODUCTION

The United States Constitution grants Congress the ability to give exclusive rights to inventors for their discoveries.² This grant conjures images of an inventor selling his wares without fear of competition from rivals or the government. In many areas, this has been the case. If a person invents a better mousetrap, nothing prevents her from manufacturing or selling it in the open market. In other industries, for a manufacturer to sell his invention, the invention must work with existing tools and infrastructures. For example, if the invention was for an improved railroad car, the car must fit on preexisting railroad tracks. If the car does not meet this requirement, potential purchasers will not be interested and sales will falter. Put another way, in order to profit, the manufacturer must ensure that his product conforms to the prevailing standards in the industry.

A standard may primarily come about in one of three ways. First, a government might identify common industry needs and pass legislation requiring companies to meet these needs.³ Second, a standard might come about due to natural market forces—consumers favor a single product family, making these products a *de facto* standard.⁴ Finally, a standard could be formulated by a private industry organization, typically referred to as a Standard Setting Organization (“SSO”).⁵ Historically, standards have been promulgated through government intervention.⁶

In the late nineteenth century, as a result of rapid developments in electricity, technological change began to outpace government intervention.⁷ The lack of standardization in this field became a worldwide problem causing increased costs to both purchasers of electric devices, who had to rely on expert consultants to ensure interoperability, and manufacturers, who were unable to automate their processes.⁸ As a consequence, industry participants and associations began to form committees with the express purpose of

² U.S. CONST. art. I, § 8, cl. 8.

³ Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1899 (2002).

⁴ *Id.*

⁵ *Id.* at 1898.

⁶ See, e.g., Act of July 1, 1862, ch. 120, § 12, 12 Stat. 489, 495 (1862) (specifying that railroad tracks be a uniform width, to be determined by the President); An Act for Regulating the Gauge of Railways, 9 & 10 Vict. c. 57 (1846) (Eng.) (“[I]t shall not be lawful . . . to construct any Railway for the Conveyance of Passengers on any Gauge other than Four Feet Eight Inches and Half an Inch . . .”).

⁷ See Mark Frary, *In the Beginning. . . : The World of Electricity: 1820-1904*, INTERNATIONAL ELECTROTECHNICAL COMMISSION (Mar. 20, 2013), <http://www.iec.ch/about/history/beginning> (last visited Mar. 20, 2013).

⁸ *Id.*

creating standards to be used in the new and growing electrical field.⁹ The first standards these organizations promulgated were primarily concerned with terminology and unit standardization, but soon expanded into the standardization of various devices and components.¹⁰ With these early standard setting activities, the first SSOs were born.

Over the course of the twentieth century, private standard setting has become more prevalent.¹¹ As technology becomes more complex, new standards, regardless of how they are adopted, will become increasingly vital and will play a larger role in day-to-day life for most people.¹² In a number of industries, products that implement standards have already become almost ubiquitous. For example, almost every electronic device on the market implements at least one industry standard.¹³ Regardless of how a standard comes into existence, there is one constant: standards likely trigger intellectual property concerns, usually in the form of a patent.¹⁴ For a single organization, or the government, a patent raises minimal concerns.¹⁵ An organization is typically in control of all its intellectual property and the government is immune from suit in many contexts.¹⁶ For an SSO, however, patents give rise to a number of issues.

In a typical standard setting negotiation, engineers and technical experts will lead discussions with little to no input from non-technical teams.¹⁷ As such, the focus of the group will primarily be technical and center on technologies to be selected for a standard.¹⁸ After a standard is agreed upon, patent ownership and

⁹ *Id.*; see L. RUPPERT, BRIEF HISTORY OF THE INTERNATIONAL ELECTROTECHNICAL COMMISSION 1-3 (1956), available at <http://www.iec.ch/about/history/documents/pdf/IEC%20History%201906-1956.pdf>.

¹⁰ RUPPERT, *supra* note 8, at 4-5; D. T. Michael, *The First IEEE Standard: IEEE Standards—The Early Years—1884 to 1900*, IEEE POWER ENGINEERING REV., Nov. 1981 at 2, 2.

¹¹ See Donald C. Loughry, *The IEEE-SA: A New Era for Standards*, 31 COMPUTER 106, 106, 110 (Feb. 1998) (discussing the formation of the IEEE-SA in order to streamline standards creation).

¹² *Id.*

¹³ Lemley, *supra* note 2, at 1896 (“In the United States, electrical plugs and outlets are built to a particular standard for voltage, impedance, and plug shape.”).

¹⁴ See Priscilla Caplan, *Patents and Open Standards*, 15 INFO. STANDARDS QUARTERLY 1, 1-2 (2003).

¹⁵ See Lemley, *supra* note 2, at 1899-1900.

¹⁶ *Id.*

¹⁷ Caplan, *supra* note 13, at 2; Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. 351, 369 (2007); François Lévêque & Yann Ménière, *Vagueness in RAND Licensing Obligations is Unreasonable for Patent Owners* 10 (CERNA Working Paper Series, Working Paper No. 2009-04, 2009).

¹⁸ See Damien Garadin, *Standardization and Technological Innovation: Some Reflections on Ex-Ante Licensing, FRAND, and the Proper Means to Reward Innovators*, 9

licensing become much more important. A complex standard may be subject to a “patent thicket,” a set of patents owned by different SSO participants.¹⁹ In such a scenario, any owner of a patent necessary to the use of the standard (a standard-essential patent) has the power to block other SSO participants from the market by asserting its patent rights in order to “hold up” competitors.²⁰

To ensure effective implementation of a standard and prevent this hold up, SSOs often require members to disclose any standard-essential patents and commit to licensing them on Reasonable and Nondiscriminatory (“RAND”) terms.²¹ The disclosure requirements, as well as the terms “reasonable” and “nondiscriminatory,” are often vague.²² This Article details the legal obligations generated by these requirements, with a focus on RAND licensing terms. Part I puts the RAND requirement into historical context. Part II

(TILEC Discussion Paper, DP 2006-017, 2006).

¹⁹ Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 4-5 (2005-2006). Some SSOs attempt to avoid the patent thicket by refusing to incorporate any technology subject to a patent into its standards. See, e.g., *The KAME IPR policy and concerns of some technologies which have IPR claims*, THE KAME PROJECT, <http://www.kame.net/newsletter/20040525> (last visited Apr. 28, 2013) (stating that the project does not implement protocols which require a license or are not free of charge).

²⁰ *Id.* Though the problem of patents was a long-running concern for SSOs, Caplan, *supra* note 13, at 2, many did not have explicit patent policies until the late 1990s and early 2000s. Lemley, *supra* note 2, at 1904; see also Caplan, *supra* note 13, at 6 (noting that the National Information Standards Organization did not adopt a patent policy until 2003); W3C, *Public Issues for Patent Policy Framework of 20010816*, <http://www.w3.org/2001/11/PPF-Public-Issues.html> (last visited Mar. 22, 2013) (indicating that the World Wide Web Consortium did not have a patent policy in place until 2001). But see Int'l Telecomm. Union [ITU], *Information Technology Digital Compression and Coding of Continuous-Tone Still Images – Requirements and Guidelines*, Recommendation T.81 (1992) at ii, 179 (showing that the JPEG committee had a patent policy in place as early as 1986). These policies appear to be a direct response to two changes in the legal landscape. These were the growing prominence of software patents and the increase of patent litigation brought by non-practicing entities. See Caplan, *supra* note 13, at 2. With regards to non-practicing entity suits, two examples, both from the internet context appear to have had the most impact. In 1995, Unisys began enforcing a patent that it held on the GIF image format since 1984, leading a number of companies to abandon the format. Jared Sandberg, *Unisys Enforces Patent on Tool Used On-Line*, WALL ST. J., Jan. 4, 1995, at B8. In 1997, Forgent Networks, a small video company, acquired and began enforcing the JPEG image format patent, which had been unenforced by its previous owner since 1986. Caplan, *supra* note 13, at 2. Until SSOs began adopting patent policies, it had been common for companies to “keep quiet” about their patents in hopes of seeing it become a standard (or incorporated into a standard). See Sandberg, *supra*.

²¹ Lemley, *supra* note 2, at 1904–06. Alternatively, SSOs may require Fair, Reasonable and Nondiscriminatory (FRAND) terms. Mikko Välimäki, *A Flexible Approach to RAND Licensing*, 12 EUR. COMPETITION L. REV. 686, 686 (2008). Commentators appear to use the phrases interchangeably. See *id.* at 686 n.1. In this Article, I will use RAND.

²² Lemley, *supra* note 2, at 1904–05, 1913.

reviews the academic literature regarding RAND obligations. Part III reviews court interpretations of RAND. Part IV proposes an alternate interpretation of the RAND commitment.

HISTORICAL ORIGINS: PATENT THICKETS AND INDUSTRY WORKAROUNDS

Patent Pools

Though SSO patent policies are a relatively recent innovation, patent thickets are not a new problem. Currently out of favor with many SSOs, a popular early approach to navigating the thicket was the creation of a patent pool.²³ At its core, a patent pool is an arrangement by which multiple patent holders “pool” their patents in exchange for a license to all patents in the pool and a share of royalty revenue.²⁴ In a modern patent pool, this is typically facilitated through the use of a “central corporate entity that licenses the pool’s patent assets.”²⁵ Patent pools trace their origin to the Industrial Revolution. The first patent pool was formed in 1856 as a way to settle disputes regarding the manufacture of sewing machines.²⁶

The Sewing Machine Combination

“The Sewing Machine War,” as some newspapers dubbed it,²⁷ began with Elias Howe, the first person to patent the sewing machine.²⁸ Though Howe had invented the machine, he did not have much success selling it.²⁹ It would be Isaac Singer and a later group of inventors who would popularize the machine and patent improvements upon it.³⁰ Though Howe had been unsuccessful marketing the sewing machine himself, he was determined to share in profits should another group be successful.³¹ He first attempted to open negotiations with Singer for a licensing arrangement.³² After negotiations broke down,³³ Howe brought suit against every sewing machine manufacturer then in the market, including Singer’s firm.³⁴

This strategy made Howe a very rich man. Within eight years of filing his

²³ Miller, *supra* note 16, at 385–86.

²⁴ *Id.* at 387.

²⁵ *Id.* at 386.

²⁶ RUTH BRANDON, A CAPITALIST ROMANCE: SINGER AND THE SEWING MACHINE 97–98 (1977).

²⁷ *Id.* at 89.

²⁸ *Id.* at 63–64. At the time, it was said that Howe’s model was “one of the most beautiful ever presented to the Patent Office.” *Id.*

²⁹ *Id.* at 64–66.

³⁰ *Id.* at 71–74.

³¹ *Id.* at 71–72.

³² *Id.* at 76.

³³ *Id.*

³⁴ *Id.* at 89.

first infringement suit, Howe's income went from a few hundred dollars per year to \$444,000 per year in licensing fees.³⁵ The result of Howe's finding the success in patent infringement suits that he couldn't find in business was that sewing machine manufacturers began initiating suits against one another.³⁶ Though Howe controlled the original patent, no sewing machine could be manufactured without parts that had been patented by several people.³⁷ If Howe could block the manufacture of a sewing machine to extract profits, so could any other company.³⁸ Rather than building sewing machines, companies "got busily down to the job of suing each other out of existence."³⁹

In 1856, just before the start of a complex suit involving most of the sewing machine manufacturers, Orlando Potter, the president of one of the firms, had the inspiration for a patent pooling arrangement as a way to settle the dispute.⁴⁰ The idea was relatively simple. Each firm would join an association, called the Sewing Machine Combination (the "Combination"), and agree to license their patents to any other firm in the collective for a fixed fee payable to the Combination.⁴¹ The fees would then be divided among the members with some money held in reserve to pay for litigation expenses in suits against nonmembers.⁴² In that moment, the concept of a patent pool was born.⁴³

³⁵ Adam Mossoff, *The Rise and Fall of the First American Patent Thicket: The Sewing Machine War of the 1850s*, 53 ARIZ. L. REV. 165, 193 (2011). Howe may be considered to have been the first patent troll. *See id.* at 170.

³⁶ BRANDON, *supra* note 25, at 95.

³⁷ *Id.* at 95–96.

³⁸ Howe would later become a defendant in an infringement suit when he attempted to open his own factory. *Id.* at 96.

³⁹ *Id.* at 95.

⁴⁰ *Id.* at 97–98.

⁴¹ *Id.*

⁴² *Id.* at 98.

⁴³ *Id.* Though the newly formed pool allowed members to compete in the market, its members also used the Combination to exclude other firms. *See Mossoff, supra* note 34, at 195–96. In order to license the patent portfolio, all members needed to agree. *Id.* at 196. In addition, the Combination used its combined power to maintain its position in the marketplace and charge "ruinous" licensing prices. *See id.* at 197–98. There were even allegations of price fixing. *Id.* at 196. Though harmful to competition, this behavior would not become illegal until Congress passed the Sherman Act in 1890. *See Sherman Act*, 15 U.S.C. § 1 (2012) ("Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce . . . is declared to be illegal."). The Combination would not face antitrust scrutiny for its behavior because it dissolved in 1877, thirteen years before the Sherman Act's promulgation, when the last patent in the pool expired. *See Ryan L. Lampe & Petra Moser, Do Patent Pools Encourage Innovation? Evidence from the 19th-Century Sewing Machine Industry* 8 (Nat'l Bureau of Econ. Research, Working Paper No. 15061, 2009), available at <http://www.nber.org/papers/w15061>. This lack of government oversight and ability to effectively close down competition secured the Combination's dominance and profitability in the market for many years. *See Mossoff, supra* note 34, at 199–200.

Thirty years later, the automobile industry would further refine and streamline patent pooling arrangement thus creating a blueprint for the modern patent pool.

The Automobile Board of Trade

In the years after the Sewing Machine War, patent wars and their resulting patent pooling arrangements modeled after the Combination became common fixtures in the industrial landscape of the United States.⁴⁴ Patents were the tools of choice for companies to establish and consolidate a place in a market.⁴⁵ It is not surprising, therefore, that at the start of the twentieth century the nascent automobile industry was the target of a number of patent applications.⁴⁶ With a large number of patents, it was inevitable that a large number of patent suits would follow. It was common for those in the automotive supply chain to see warning notices and threats of infringement suits on a daily basis.⁴⁷ The industry reached a tipping point with George Selden's patent on the automobile.

Unlike Howe's patent, which represented a technological step forward at the time of issue, Selden's patent did not contribute to the advancement of the industry.⁴⁸ Selden, a patent attorney, initially filed his application in 1879, but, by taking advantage of Patent Office rules, did not get the patent issued until 1895.⁴⁹ It was not uncommon to use this tactic to delay applications, but Selden raised delay to an art form.⁵⁰ Though the disclosure did not add anything new to the state of the automobile industry, the patent's priority date of 1879 meant that, in theory, any automobile in existence in 1895 automatically infringed Selden's patent.⁵¹ In 1900, Selden and his associates put this theory to the test and attempted to extract royalties from every gasoline car manufacturer in the country.⁵²

⁴⁴ See WILLIAM GREENLEAF, *MONOPOLY ON WHEELS: HENRY FORD AND THE SELDEN AUTOMOBILE PATENT* 87–89 (1961).

⁴⁵ *Id.* at 86.

⁴⁶ See *id.* at 242–43. By 1930, 25% of patents at the PTO were related to the automobile industry. *Id.* at 246.

⁴⁷ *Id.* at 243.

⁴⁸ *Electric Vehicle Co. v. C. A. Duerr & Co.*, 172 F. 923, 934 (C.C.S.D.N.Y. 1909) (“In short, this American patent represents to me a great idea, conceived in 1879, which lay absolutely fallow until 1895, was until then concealed in a file wrapper, and is now demanding tribute from later independent inventors (for the most part foreign) who more promptly and far more successfully reduced their ideas to practice.”), *rev'd sub nom.* *Columbia Motor Car Co. v. C. A. Duerr & Co.*, 184 F. 893 (2d Cir. 1911).

⁴⁹ *Id.*

⁵⁰ GREENLEAF, *supra* note 43, at 41. It may be said that Selden mastered the art of the nineteenth century submarine patent.

⁵¹ See *id.* at 49.

⁵² *Id.* at 74.

Rather than go to court, a number of manufacturers approached Selden's associates with a proposal to form a trade association in which the members would pay royalties, but the association would control the patent.⁵³ After negotiations concluded, the resulting group became the Association of License Automobile Manufacturers ("ALAM").⁵⁴ Selden believed that many would join the association after deciding that membership was the less costly option.⁵⁵ In order to protect its members, however, the ALAM rarely granted admission to new applicants.⁵⁶ The Ford Motor Company was one such company denied admission.⁵⁷ Ford's exclusion from the association would have profound implications for the industry.

After being rejected, Ford had two options. He could exit the industry, or he could fight ALAM and the Selden patent. He opted for the latter and invited suit by opening manufacturing operations in 1903.⁵⁸ ALAM accepted the invitation and filed five separate actions at the end of 1903 which were then consolidated into two test cases.⁵⁹ Though largely ignored by the popular press, the trials were considered the most important events in the automotive industry; regardless of which side prevailed, the industrial landscape would be markedly different.⁶⁰ Due to the procedural rules at the time, the initial trial did not reach a conclusion until 1909, six years after suit was filed.⁶¹ At that time, the Circuit Court found the patent valid and infringed.⁶² Two years later, however, the Second Circuit reversed, finding the patent valid, but not infringed, allowing Ford to continue manufacturing without a membership in or a license from the ALAM.⁶³ This result effectively meant that the ALAM no longer had a viable business model; its members dissolved the association soon

⁵³ *Id.* at 95–96.

⁵⁴ *Id.* at 97.

⁵⁵ *Id.* at 100. The strategy was quite effective. Before 1903, ALAM had twenty-seven members, and the patent had never been challenged in court. *See id.* at 119, 123.

⁵⁶ In May of 1903, forty-three producers requested membership into the organization. *Id.* at 101. By July, fourteen had been admitted. *Id.*

⁵⁷ *Id.* at 107.

⁵⁸ *Id.* at 114–15. This act may be unsurprising considering that Ford had little patience for those who used patents as a means of blocking others from the market. Speaking to the *New York Times* in 1925, he said:

Patents are silly things when they are used to hinder any industry. No man has a right to profit from a patent only. That produces parasites, men who are willing to lay back on their oars and do nothing. If any reward is due the man whose brain has produced something new and good he should get it through profits from the manufacture and sale of that thing.

'*Ford of the Air*' *Soon to Be Ready*, *N.Y. TIMES*, Oct. 7, 1925, at 1.

⁵⁹ GREENLEAF, *supra* note 43, at 127.

⁶⁰ *Id.* at 131–32.

⁶¹ *Electric Vehicle Co. v. C. A. Duerr & Co.*, 172 F. 923, 924 n.1 (C.C.S.D.N.Y. 1909) *rev'd sub nom. Columbia Motor Car Co. v. C. A. Duerr & Co.*, 184 F. 893 (2d Cir. 1911).

⁶² *Id.* at 937.

⁶³ *See Columbia Motor Car Co. v. C.A. Duerr & Co.*, 184 F. 893, 914 (2d Cir. 1911).

after the court decision.⁶⁴

After the ALAM dissolved, a new organization rose to replace it, the Automobile Board of Trade.⁶⁵ Unlike its predecessor, this organization never excluded any applicants.⁶⁶ By this time, most in the automotive world agreed that patent wars, such as the war over the Selden patent, were a real threat to the industry as a whole.⁶⁷ Many in the industry began considering patent pooling as a solution.⁶⁸ As a general rule, car makers preferred to leave each other alone rather than deal with patents and the long, drawn out cases that followed.⁶⁹ In 1914, the association entered into a pooling arrangement, which became effective the following year.⁷⁰

The pooling arrangement was very similar to that of the Sewing Machine Combination with two key differences. First, rather than paying a licensing fee to the collective, members agreed to royalty-free cross-licensing for all patents.⁷¹ Second, the agreement would cover all patents granted during the time the agreement was active, not just those patents that had already issued.⁷² Excepted from this broad ruling were patents that were considered “basic” or “revolutionary,” though no patents of this type arose during the course of the agreement.⁷³ Originally scheduled to run ten years, the agreement was renewed through the majority of the association’s existence.⁷⁴ At the time of its adoption, the plan was the most comprehensive and effective patent pool in American industry and served as the blueprint for pools for years to come.⁷⁵

The Automobile Board of Trade pool had all the hallmarks of a modern patent pool except for one, the central corporate entity. This final aspect came shortly afterward in the pool formed by the airplane industry.⁷⁶

The Manufacturers Aircraft Association

In the airline industry, just as in both the sewing machine and automobile industries, a patent war developed due to a preliminary patent and subsequent improvements. Here, the issue concerned wing twisting and wing flaps. In

⁶⁴ See GREENLEAF, *supra* note 43, at 242.

⁶⁵ *Id.* This organization was the direct ancestor of the Automobile Manufacturers Association. *Id.*

⁶⁶ See *id.* Though membership was non-restrictive, Ford did not initially join. *Id.* at 247.

⁶⁷ *Id.* at 244.

⁶⁸ *Id.*

⁶⁹ See *id.*

⁷⁰ *Id.* at 245.

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ See *id.*

⁷⁵ *Id.* at 246.

⁷⁶ Miller, *supra* note 16, at 387.

1903, Wilbur and Orville Wright solved the problem of flight stabilization by constructing a system that warped airplane wings in opposite directions.⁷⁷ Subsequently, they obtained a patent for this system of control.⁷⁸ Around the same time, Glenn Curtiss developed a different system of flight stabilization involving wing flaps, which achieved the same stabilization without warping the wings.⁷⁹ Curtiss's method was adopted by the industry, leaving the Wright Brothers without royalties from airplane manufacturers.⁸⁰

In order to benefit from the industry, the Wrights sued Curtiss in 1909 for patent infringement, claiming that the wing flaps infringed their wing warping patent.⁸¹ Though the court upheld the claim against Curtiss in 1913,⁸² the Wrights did not get the royalties they sought. On the advice of his attorney, W. Benton Crisp, who was one of the lawyers previously representing Ford against Selden, Curtiss made a slight modification to his method in order to force the Wright Corporation, the Wrights' successor corporation,⁸³ to restart litigation.⁸⁴ The patent war did not continue after the initial case due to the United States' entry into World War I.⁸⁵ In order to fight the war, the government needed planes.⁸⁶ Manufacturers, however, were reluctant to take contracts because they feared that they would be sued for patent infringement.⁸⁷ To ensure an adequate supply of airplanes, the government demanded a solution.⁸⁸

Drawing on his experience in the automotive industry, Crisp suggested a pooling arrangement as a way for Curtiss and Wright to come to terms.⁸⁹ The contours of the arrangement were similar to the Automobile Board of Trade arrangement in that the majority of patents, present and future, would be made available to members at a reduced rate.⁹⁰ There was one major difference: the pool itself would be a corporate entity, called the Manufacturers Aircraft Association (the "MAA").⁹¹

⁷⁷ George Bittlingmayer, *Property Rights, Progress, and the Aircraft Patent Agreement*, 31 J.L. & Econ. 227, 230–31 (1988).

⁷⁸ *See id.* at 231.

⁷⁹ *Id.*

⁸⁰ *See id.*

⁸¹ *Id.*

⁸² *Wright Co. v. Herring-Curtiss Co.*, 204 F. 597, 614 (W.D.N.Y. 1913).

⁸³ Bittlingmayer, *supra* note 76, at 231. At this point, Wilbur Wright had since died and Orville Wright had sold his interest. *Id.*

⁸⁴ *Id.*

⁸⁵ *See id.* at 231–32.

⁸⁶ *See id.*

⁸⁷ *Id.*; *see* Mfrs. Aircraft Ass'n-Antitrust Laws, 31 Op. Att'y Gen. 166, 166–67 (1917).

⁸⁸ Bittlingmayer, *supra* note 76, at 231–32.

⁸⁹ *Id.*

⁹⁰ 31 Op. Att'y Gen. at 167.

⁹¹ *Id.* at 166.

A New York corporation, the MAA would provide stock to patent holders in exchange for the right to grant licenses for any airplane patent owned by the patent holder.⁹² Shareholders would be granted licenses for all patents owned by other shareholders and would receive a share of the royalties extracted from non-members through dividends.⁹³ As a separate corporate entity with the ability to independently license patents, the MAA exhibited all the characteristics of a successful modern patent pool. Until its dissolution in 1975, pool members were ensured long-term access to patents in the pool and a steady stream of royalties as well.⁹⁴

Antitrust Scrutiny of Patent Pools

From their inception, patent pools have caused monopoly concerns.⁹⁵ If all the relevant patents in an industry are controlled by a single group, there is nothing to stop that group from controlling the market, to the detriment of competition. This concern is not unfounded. From the start, patent pools have engaged in anticompetitive behavior.⁹⁶ This behavior led, in large part, to the formation of the Anti-Trust Division of the United States Department of Justice.⁹⁷ Despite anticompetitive behavior by many pools, the Supreme Court and the Attorney General's Office endorsed pooling arrangements in the early years of the Sherman Act.⁹⁸

As the century progressed, the Court put patent pools under increasing scrutiny, subjecting them to multiple requirements.⁹⁹ Though pools could divide royalties between patent holders, the royalty payments required could not be so high as to restrain commerce.¹⁰⁰ In addition, a pooling arrangement for the purpose of fixing prices, creating a monopoly, or creating an unreasonable restraint of trade would also be considered an anti-trust violation.¹⁰¹ Though subject to these restrictions, the general rule was that a

⁹² *Id.* at 168.

⁹³ *See id.* at 172.

⁹⁴ Miller, *supra* note 16, at 388.

⁹⁵ Before joining the Sewing Machine Combination, Elias Howe required that at least twenty-four manufacturers be members to prevent a monopoly. BRANDON, *supra* note 25, at 98.

⁹⁶ *See supra* note 42.

⁹⁷ BRANDON, *supra* note 25, at 98.

⁹⁸ *See* Bement v. Nat'l Harrow Co., 186 U.S. 70, 93 (1902) (noting the procompetitive benefits of patent pooling); *see also* 31 Op. Att'y Gen. at 172 (stating that the MAA patent pool was not in violation of the antitrust laws).

⁹⁹ *See* Standard Oil Co. v. United States, 283 U.S. 163, 169-70 (1931) ("Hence the necessary effect of patent interchange agreements, and the operations under them, must be carefully examined in order to determine whether violations of the [Sherman] Act result.").

¹⁰⁰ *See id.* at 171-72.

¹⁰¹ *Id.* at 175.

court would analyze a pooling arrangement under the Rule of Reason.¹⁰²

In 1947, the Court became more hostile to patent pooling arrangements. Rather than evaluating the pooling arrangement under the Rule of Reason, it held that terms of pooling arrangements should be viewed as any other agreement.¹⁰³ If a patent pool had the effect of fixing prices,¹⁰⁴ or excluding competition,¹⁰⁵ the arrangement would be found to be illegal as a matter of law.¹⁰⁶ Over the subsequent decades, courts would routinely find patent pooling agreements illegal under the *per se* rules, even in the absence of an anticompetitive effect.¹⁰⁷ This hostility to patent pooling would culminate in the “nine no-no’s” of intellectual property licensing, a list of practices that the Justice Department considered illegal *per se*.¹⁰⁸

During this era, the MAA dissolved under increased scrutiny from the Justice Department.¹⁰⁹ Before its dissolution in 1975, the MAA had been the subject of antitrust investigations numerous times and had received a clean bill of health, even being called “the very antithesis of monopoly” at one point.¹¹⁰ The Justice Department alleged in its 1972 complaint that the MAA’s patent policies restricted competition in research and development, as well as competition in the market of airplane patents.¹¹¹ Though the government

¹⁰² *See id.*

¹⁰³ *United States v. Line Material Co.*, 333 U.S. 287, 314–15 (1948).

¹⁰⁴ *Id.* at 314.

¹⁰⁵ *See United States v. Singer Mfg. Co.*, 374 U.S. 174, 195–97 (1963).

¹⁰⁶ *See id.* at 197.

¹⁰⁷ *See Robert J. Hoerner, The Decline (and Fall?) of the Patent Misuse Doctrine in the Federal Circuit*, 69 ANTITRUST L.J. 669, 671–72 (2001).

¹⁰⁸ The nine no-no’s were:

- (1) Tying Unpatented Materials
- (2) Assignment Back of Later Patents
- (3) Resale Restrictions
- (4) Exclusive Dealing
- (5) Patentee’s Licensing Freedom (requiring the patentee’s consent before the licensee grant further licenses)
- (6) Mandatory Package Licensing
- (7) Royalties Unrelated to Sales of the Patented Item
- (8) Process Patent Sales Limits
- (9) Price Maintenance

Bruce Wilson, Deputy Assistant Att’y Gen., Antitrust Div., Remarks Before the Michigan State Bar Antitrust Law Section and Patent, Trademark and Copyright Law Section (Sept. 21, 1972), in [1969-1983 Transfer Binder] Trade Reg. Rep. (CCH) ¶ 50,146, at 55,248 (Oct. 9, 1972).

¹⁰⁹ Miller, *supra* note 16, at 388.

¹¹⁰ Bittlingmayer, *supra* note 76, at 234–35 & n.30 (internal citations omitted).

¹¹¹ *United States v. Mfrs. Aircraft Ass’n*, [1970-1979 Transfer Binder] Trade Reg. Rep. (CCH) ¶ 45,072, at 53,464–65 (1979).

sought the MAA's dissolution, the resulting consent decree did not foreclose all cross-licensing agreements. Former MAA members were allowed to grant licenses for "reasonable and non-discriminatory royalties."¹¹² In other words, airplane manufacturers were free to license patents to one another, but only through a RAND commitment and not through a pooling arrangement.

In more recent years, the government has repudiated the "nine no-no's" approach in favor of a Rule of Reason analysis of patent pools.¹¹³ In general, pooling arrangements will not be considered anticompetitive as long as pool members do not have market power in the relevant market.¹¹⁴ Though scrutiny is now lower, pooling arrangements will typically face some level of government scrutiny before they are formed.¹¹⁵

Standard Setting Organizations

With the decline of patent pooling arrangements, standard setting organizations expanded to provide a new solution to the problem of the patent thicket. Due to the presence of government oversight and the potential for anticompetitive impact, it is unsurprising that many SSOs chose to avoid patent pooling arrangements when dealing with standard-related patents. Though patent pools share some features with SSOs, there are also fundamental differences between the two.¹¹⁶ SSOs tend to be organized around a desired future technical outcome, whereas patent pools are formed around an existing marketplace containing blocking patents.¹¹⁷ Therefore, when SSOs meet to establish standards, participants do not yet know whether they will be patentees or licensees.¹¹⁸ As such, a formal pooling arrangement may not yet

¹¹² United States v. Mfrs. Aircraft Ass'n, 1976-1 Trade Cas. (CCH) ¶ 60,810, at 68,506 (S.D.N.Y. 1975).

¹¹³ See Joel I. Klein, Acting Assistant Att'y Gen., Antitrust Div., Address Before the American Intellectual Property Law Association 4 (May 2, 1997), available at <http://www.justice.gov/atr/public/speeches/1118.pdf>. Even under this lower level of scrutiny, however, the MAA pool still may be considered anticompetitive due to its requirement that both present and future patents be licensed to pool members. See *id.* at 10-12.

¹¹⁴ See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY 28-29 (1995).

¹¹⁵ See, e.g. Press Release, U.S. Dep't of Justice, Antitrust Div., Justice Department Approves Proposal for Joint Licensing of Patents Essential for Meeting Video Technology Standard Used in Electronics and Broadcast Industries (June 26, 1997), 1997 DOJBRL LEXIS 14, at *1. At a pool's inception, the government will look at the validity of the patents and their relationships to one another. MPEG LA Business Review Letter, 1997 DOJBRL LEXIS 14, at *19 (Dep't of Justice, Antitrust Div. June 26, 1997). If the patents are truly complementary or blocking, the pooling arrangement will be considered an efficient means to disseminate rights to potential licensees. *Id.*

¹¹⁶ Lemley, *supra* note 2, at 1951.

¹¹⁷ See *id.*

¹¹⁸ Miller, *supra* note 16, at 389.

be appropriate.¹¹⁹ The goal of an SSO is primarily to design a standard, not to deal with licensing.¹²⁰ In contrast, patent pools frequently have little technical content beyond that necessary to determine appropriate royalty rates.¹²¹

A typical SSO agreement is, however, similar to a pool without its core structure.¹²² Rather than contributing patents to a central entity, members are simply required to disclose patents that are relevant, or essential, to the standard; rather than providing royalty-free (or low-royalty) licenses, members, taking a page from the MAA consent decree, simply commit to licensing their patents on RAND terms.¹²³ By avoiding a formal pooling arrangement, and leaving the commitments vague, SSOs shield themselves from most potential antitrust liability.¹²⁴ Antitrust, however, still plays a role in the SSO context. Because SSOs do not control any patents, individual members are required to honor commitments made to the SSOs. Should they renege on their obligations, antitrust law and contract law serve as enforcement mechanisms.

SSOs require members to disclose and promise to license patents relevant to a standard in order to prevent a single firm from controlling and thereby exercising monopoly power over a standard.¹²⁵ In order to prevent this from occurring, the Federal Trade Commission (the “FTC”) has taken the view that deceptive actions, or other actions which manipulate the standard setting process, may harm competition in the form of higher than expected costs to licensees.¹²⁶ Front and center in this analysis is the RAND promise.¹²⁷ Only fraudulent actions that allow a firm to avoid a RAND commitment are anticompetitive.¹²⁸ This view has been met with a lukewarm response in the courts.¹²⁹

¹¹⁹ *Id.*

¹²⁰ *See id.*

¹²¹ *Id.*

¹²² *See id.* at 386–89.

¹²³ Lemley, *supra* note 2, at 1904–06.

¹²⁴ *See* Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, slip op. at 27 (W.D. Wash. filed Apr. 25, 2013); Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 Berkeley Tech. L.J. 1043, 1078. Though SSOs are not immune from antitrust scrutiny, they will face less scrutiny than a patent pool. *See* Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 501 (1988) (noting that most courts apply a Rule of Reason analysis to SSO activities).

¹²⁵ *See* J. Thomas Rosch, Comm’r, Fed. Trade Comm’n, LSI 4th Antitrust Conference on Standard Setting & Patent Pools: Section 2 and Standard Setting: Rambus, N-Data, and the Role of Causation, at 2 (Oct. 2, 2008), *available at* <http://www.ftc.gov/speeches/rosch/081002section2rambusndata.pdf>.

¹²⁶ *See* Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 314 (3d Cir. 2007); Rosch, *supra* note 124, at 2.

¹²⁷ *Broadcom Corp.*, 501 F.3d at 314.

¹²⁸ *See id.*

¹²⁹ *Compare* Rambus Inc. v. Fed. Trade Comm’n, 522 F.3d 456, 463–64 (D.C. Cir.

In the SSO context, contract law may yield an alternate method of enforcing members' disclosure and licensing promises. The RAND promises may be viewed as creating a contract between an individual member and a SSO with potential licensees as third-party beneficiaries; a member's failure to honor its promises would then give rise to a breach of contract claim.¹³⁰ This approach has had some measure of success in the courts.¹³¹ Regardless of which theory is used to allege that a party hasn't met its obligations, liability will depend on whether that party has offered, or is offering, RAND licensing terms. In order to make this determination, a court must determine the proper meaning of RAND.

ACADEMIC ANALYSIS: THE MEANING OF RAND IN THEORY

Defining RAND in the Standard-Setting Context

Though the exact definition of the RAND term is vague in the standard-setting context, commentators have attempted to add more concrete meaning to the term.¹³² In academic literature, there are three primary interpretations of this obligation: that the RAND commitment requires a party to provide a license on explicit predefined terms, that the RAND commitment is a waiver of a party's rights to extraordinary relief in the form of injunctions and treble damages, and that the RAND commitment requires a party to engage in good faith negotiations to license its patents.

First, the RAND obligation may be interpreted to require a party to provide a license on explicit predefined terms. This interpretation comes from the view that the "Reasonable" in "Reasonable and Nondiscriminatory" stands for "the level of royalty resulting from competition in advance of standard selection."¹³³ The basis of this formulation stems from the idea that *ex post*

2008) (stating that, even with anticompetitive intent, the FTC would need to show that the SSO would have adopted a different technology had it known about an existing patent) *with Broadcom*, 501 F.3d at 314 (holding that demanding non-RAND royalties after promising to license on RAND terms constitutes actionable anticompetitive conduct).

¹³⁰ See Michael G. Cowie & Joseph P. Lavelle, *Patents Covering Industry Standards: The Risks to Enforceability Due to Conduct Before Standard-Setting Organizations*, 30 AIPLA Q. J. 95, 143–44 (2002); Lemley, *supra* note 2, at 1914–15; Damien Geradin, *Standardization and Technological Innovation: Some Reflections on Ex-Ante Licensing, FRAND, and the Proper Means to Reward Innovators*, 4 (TILEC Discussion Paper, DP 2006-017, 2006).

¹³¹ See *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 884–85 (9th Cir. 2012); *Realtek Semiconductor Corp. v. LSI Corp.*, No. C-12-03451 RMW, 2012 WL 4845628, at *3–4 (N.D. Cal. Oct. 10, 2012); *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913–15 (N.D. Ill. 2012), *aff'd in part, rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014); *Apple Inc. v. Samsung Elecs. Co.*, No. 11-CV-01846, 2012 WL 1672493, at *11–12 (N.D. Cal. May 14, 2012); *Barnes & Noble, Inc. v. LSI Corp.*, 849 F. Supp. 2d 925, 944–45 (N.D. Cal. 2012).

¹³² See, e.g., Miller, *supra* note 16, at 355.

¹³³ Lévêque & Ménière, *supra* note 16, at 6.

market power in the form of higher royalties resulting from the SSO's selection of a technology should be limited.¹³⁴ The conclusion then follows that a reasonable royalty can only be a royalty that a patent holder could have obtained before adoption of the standard.¹³⁵ To establish whether a license term is reasonable, it will be evaluated from the perspective of this fixed point in time. Any royalty that is greater than the fee that could have been obtained before the adoption of the standard would then be unreasonable.¹³⁶

Second, the RAND obligation may be interpreted as a waiver of a party's rights to extraordinary relief in the form of injunctions and treble damages. The focus of this interpretation is not on RAND licensing itself, but rather on the commitment to license on RAND terms.¹³⁷ Under this reading, if there is infringement in the form of a party practicing a standard, the RAND commitment requires the remedy to be a reasonable royalty, rather than an injunction or enhanced damages.¹³⁸ The goal of the RAND promise is then to lock in access to essential technology and thus satisfy the SSO's core goals of preventing hold up and ensuring adoption of a standard.¹³⁹ Determination of licensing terms would then be left to the parties themselves and industry custom.¹⁴⁰ The royalty ultimately agreed upon should, however, take into account the available alternative technologies at the time the SSO adopted the standard and not the value that a patent holder might be able to extract due to the standard's adoption.¹⁴¹

This reading of the obligation does not, however, foreclose the possibility of an injunction or damages for willful infringement; the possibility is merely limited. To foreclose these remedies entirely may permit licensees to force a discounted royalty by refusing to pay unless sued.¹⁴² This sort of bad faith action can be handled by awarding attorney fees to the patentee if there is evidence of bad faith.¹⁴³ Alternatively, a bad faith rejection of an offer to license may be seen as evidence of willful infringement, which would justify enhanced damages or an injunction.¹⁴⁴ The standard for these remedies would,

¹³⁴ Swanson & Baumol, *supra* note 18, at 10–11.

¹³⁵ *See id.*

¹³⁶ *See* Anne Layne-Farrar et al., *Pricing Patents for Licensing in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 ANTITRUST L.J. 671, 685 (2007).

¹³⁷ Miller, *supra* note 16, at 363.

¹³⁸ *Id.* at 375. This also would foreclose an exclusion order through the International Trade Commission. Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 39–40 (2012).

¹³⁹ Miller, *supra* note 16, at 389.

¹⁴⁰ *See* Lemley, *supra* note 2, at 1913–14.

¹⁴¹ *Id.* at 1967 n.332.

¹⁴² Miller, *supra* note 16, at 390.

¹⁴³ *Id.*

¹⁴⁴ *See* Cowie & Lavelle, *supra* note 129, at 149.

however, be higher than in typical patent cases.¹⁴⁵ A party who rejects an offer in good faith should be able to petition the courts to determine a reasonable royalty without risking an award of a royalty that is exaggerated.¹⁴⁶

Finally, the RAND obligation may be interpreted to require a party to engage in good faith negotiations to license its patents. Under this interpretation, a RAND commitment is “an agreement to enter into future negotiations to agree to a price . . . that may be deemed ‘reasonable’ by some . . . metric.”¹⁴⁷ Similar to the previous interpretation, which focused on the commitment to license, this reading also focuses on the idea that a RAND commitment is designed to prevent an “outright refusal to license.”¹⁴⁸ This interpretation does not, however, include a waiver of injunctive relief or other exaggerated damages.¹⁴⁹ According to Professors Geradin and Rato, allowing such a waiver would be in direct contradiction to “an established principle of law according to which a waiver of right can never be assumed lightly and must always be made explicitly or must at least be derived from circumstances that cannot possibly be interpreted any differently than the right owner’s consent to waive its right.”¹⁵⁰ Furthermore, if the only form of compensation for infringement were ex post damages, capped at the value of a royalty, adopters of a standard would be incentivized to infringe immediately and take their chances in court.¹⁵¹ This secondary risk would, however, as discussed above, be mitigated through the use of penalties for bad faith dealing. Because a patent holder’s only obligation under this interpretation is to engage in good faith negotiations, a reasonable royalty is simply a rate that is determined through “fair, bilateral negotiations in accordance with market conditions.”¹⁵²

Calculating RAND Licensing Terms

For the RAND commitment to be enforceable, it must be possible to determine what license terms satisfy the commitment. In general, commentators appear to view the commitment as containing two independent requirements; the terms must be reasonable and they must be non-discriminatory.¹⁵³

¹⁴⁵ Doug Lichtman, *Understanding the RAND Commitment*, 47 HOUS. L. REV. 1023, 1048 (2010).

¹⁴⁶ *See id.*

¹⁴⁷ Alan Devlin, *Standard-Setting and the Failure of Price Competition*, 65 N.Y.U. ANN. SURV. AM. L. 217, 247 (2009).

¹⁴⁸ Geradin, *supra* note 129, at 5.

¹⁴⁹ Damien Geradin & Miguel Rato, *Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of FRAND*, 3 Eur. Competition J. 101, 117-118 (2007).

¹⁵⁰ *Id.* at 118.

¹⁵¹ *Id.* at 119.

¹⁵² Geradin, *supra* note 129, at 5.

¹⁵³ *See, e.g.,* Devlin, *supra* note 146, at 237; Miller, *supra* note 16, at 355; Swanson &

Reasonable Terms and Conditions Prong of RAND

Economic Perspective

From an economic perspective, a reasonable royalty is designed to prevent a patent holder from exercising market power created by standardization.¹⁵⁴ To this end, Professors Swanson and Baumol specify three characteristics of a reasonable royalty under RAND. A royalty must be non-zero, related to the cost of continued innovation, and related to the field of use.¹⁵⁵

The requirement of a non-zero royalty creates a lower bound for the royalty. At minimum, a royalty should cover transaction costs associated with licensing.¹⁵⁶ Furthermore, there should also be a profit incentive for firms to incur the costs of innovation.¹⁵⁷ Similarly, because innovation at a firm is typically ongoing, a license fee should be related to the cost of further innovation and not just cover sunk costs in order to incentivize continued research and development.¹⁵⁸ Finally, because technologies are used across fields, the royalty should be related to the field of use.¹⁵⁹ Forcing a royalty to be uniform across all fields may cause royalties that are either unreasonably high or unreasonably low for the domain of the standard's ultimate use, which necessitates a royalty related to a specific industry valuation of the technology.¹⁶⁰

The result of these criteria is that a license fee should be “competitively neutral” in that it should compensate the patent holder both for the incremental costs of licensing the technology and the opportunity costs of doing so.¹⁶¹ This causes a party to be economically indifferent between licensing the technology to other manufacturers and producing the product.¹⁶² Based on these criteria and the intended result, Swanson and Baumol suggest that to be a reasonable royalty, a licensing term must satisfy the Efficient Component Pricing Rule (the “ECPR”).¹⁶³

At its core, a fee satisfies the ECPR if the fee is equal to the price that a patent holder implicitly pays to itself for the use of its innovation.¹⁶⁴ This price is measured as the difference between the final price of a product and the

Baumol, *supra* note 18, at 25.

¹⁵⁴ Swanson & Baumol, *supra* note 18, at 24.

¹⁵⁵ *Id.* at 21–24.

¹⁵⁶ *Id.* at 22.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 23.

¹⁵⁹ *Id.*

¹⁶⁰ *See id.* at 23–24.

¹⁶¹ Layne-Farrar et al., *supra* note 135, at 686–87.

¹⁶² *Id.* at 687.

¹⁶³ Swanson & Baumol, *supra* note 18, at 29.

¹⁶⁴ *Id.* at 30.

aggregate cost of all other inputs.¹⁶⁵ In practice, computation of the ECPR becomes more complicated if no single firm can produce the final product without licenses from other firms.¹⁶⁶ In this case, assuming licenses are for complementary technologies, the sum of the license fees will be the difference between the final price of a product and the aggregate cost of all other inputs.¹⁶⁷

Though attractive as a straight-forward measurement of reasonable terms and conditions, the ECPR approach has a number of drawbacks which limit its applicability. First, the model assumes that all technology owners are on an approximately level playing field and all are vertically integrated concerns.¹⁶⁸ In practice, however, SSO members vary in their size and business models, with some firms being pure patent licensing firms and others being vertically integrated.¹⁶⁹ The practical implication of this is that the vertically integrated firms hold a disproportionate amount of control over the final cost of licensing by virtue of their greater bargaining power over pure innovators, which are reliant on license revenue rather than sales revenue.¹⁷⁰ Furthermore, because the final product is not necessarily a commodity, the vertically integrated firm may also have control over the final price, influencing the final cost of licensing to the detriment of the non-integrated firm, especially if the product is sold at close to marginal cost.¹⁷¹

Second, the ECPR approach treats all contributions as equally valuable by focusing purely on efficiency and price concerns.¹⁷² In practice, however, not all patents are of equal value.¹⁷³ “Patents differ in their likely validity, their importance to the standard, and the ease with which they can be designed around.”¹⁷⁴ An efficiency-oriented approach then creates an incentive for firms to list as many patents as possible in order to influence their royalty rates.¹⁷⁵ The practical consequence would be that firms with large portfolios of questionable patents would command a larger share of the total royalty revenue than firms with fewer patents, even if those patents contributed more value to the standard.¹⁷⁶

¹⁶⁵ *Id.* at 32.

¹⁶⁶ See Layne-Farrar et al., *supra* note 135, at 688-89.

¹⁶⁷ *Id.* at 691-92. For a complete, generalized solution for the computation of the ECPR, see *id.* at 690-93.

¹⁶⁸ See *id.* at 688-89.

¹⁶⁹ Damien Geradin et al., *Competing Away Market Power? An Economic Assessment of Ex Ante Auctions in Standard Setting*, 4 EUR. COMPETITION J. 443, 453-54 (2008).

¹⁷⁰ *Id.*

¹⁷¹ See *id.* at 451.

¹⁷² See Layne-Farrar et al., *supra* note 135, at 693.

¹⁷³ Lemley, *supra* note 2, at 1965.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ See Geradin et al., *supra* note 168, at 457-58.

Some of these concerns may be mitigated by assigning royalties based on the relative values of patents.¹⁷⁷ A division of royalties among SSO members according to their average marginal or incremental contribution to a standard would limit disproportionate bargaining power, as well as reward higher quality contributions to a standard over higher quantity contributions.¹⁷⁸ This approach would result in a more equitable outcome in that the royalty received is in direct proportion to the value of the contribution.¹⁷⁹

While this approach has appeal, it is likely unworkable in practice. It would be “difficult, time consuming, and generally contentious” to determine the individual marginal contribution of most patents to a standard.¹⁸⁰ Furthermore, even if the marginal contribution is known, negotiated royalties would also take into account other factors, such as the likelihood of validity, which impact the final royalty price.¹⁸¹

Legal Perspective

From a legal perspective, analysis tends to begin by looking to patent law for guidance.¹⁸² The patent statute states that a floor for damages is set as a “reasonable royalty.”¹⁸³ Interpretation of the term “reasonable royalty” in the statute may then inform the term “reasonable” in the RAND commitment.¹⁸⁴

In a typical patent damages case, a court will determine a reasonable royalty based on the fifteen-factor *Georgia-Pacific* test.¹⁸⁵ The test is designed to aid a

¹⁷⁷ See Layne-Farrar et al., *supra* note 135, at 693.

¹⁷⁸ See *id.*

¹⁷⁹ *Id.* at 693-94.

¹⁸⁰ *Id.* at 705.

¹⁸¹ Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 642 (2010).

¹⁸² See Lemley, *supra* note 2, at 1966.

¹⁸³ 35 U.S.C. § 284 (2000).

¹⁸⁴ See Miller, *supra* note 16, at 378.

¹⁸⁵ See Durie & Lemley, *supra* note 180, at 628. The factors are:

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.
2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.
3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.
4. The licensor’s established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.
5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter.
6. The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-

court in determining what royalty a willing licensor and a willing licensee would have agreed upon before the infringement occurred.¹⁸⁶ There is a split among commentators as to how to appropriately apply this test.

According to the majority of commentators, this framework does not directly map on to standard-essential patents, but could be modified so as to be appropriate. As discussed above, “[a] reasonable royalty should consider the available alternatives at the time the decision was made to adopt the standard, not the value that [a patent] owner might be able to extort by virtue of the SSO’s adoption of that standard.”¹⁸⁷ In the typical case, infringement would not occur until the standard has been adopted.¹⁸⁸ Because the value of the patent has been inflated by its inclusion in a standard, the willing buyer-willing seller test of *Georgia Pacific* would potentially result in a higher royalty than would be appropriate.¹⁸⁹ To mitigate this, Professors Cowie and Lavelle note that the hypothetical analysis could consider a point in time prior to the adoption of the standard, rather than a point in time prior to the infringement,

patented items; and the extent of such derivative or convoyed sales.

7. The duration of the patent and the term of the license.

8. The established profitability of the product made under the patent; its commercial success; and its current popularity.

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.

11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

14. The opinion testimony of qualified experts.

15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention— would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.

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

¹⁸⁶ *Georgia-Pacific Corp.*, 318 F. Supp. at 1121.

¹⁸⁷ Lemley, *supra* note 2, at 1967 n.332.

¹⁸⁸ Cowie & Lavelle, *supra* note 129, at 147.

¹⁸⁹ *Id.* at 148.

which would eliminate any market power conferred on the patentee by virtue of the standard's adoption.¹⁹⁰

This approach has drawbacks. Commentators agree that courts are not the best judges of reasonable royalties, even in a typical infringement case.¹⁹¹ In the SSO setting, because no market necessarily exists before the standard has been adopted, many of the *Georgia-Pacific* factors do not apply and misjudgment of reasonable royalties is likely to be worse.¹⁹² Furthermore, court-imposed royalties typically exceed the value of any negotiated agreement parties would have entered into prior to infringement.¹⁹³

A minority of commentators takes the approach that any license terms agreed upon through fair, bilateral negotiations in accordance with market conditions are necessarily reasonable.¹⁹⁴ This interpretation assumes that various market forces, such as the existence of multiple patent holders, the risk of exclusion from subsequent standards, and the risk of lowering revenue will serve to keep royalty rates at a reasonable level.¹⁹⁵ This approach also takes a more holistic approach to licensing. Whereas other approaches focus on royalties, Professor Geradin notes that actual licensing agreements take many additional variables into account, such as, among others, cross-licensing, scope of license, and payment terms, which can only come about through direct

¹⁹⁰ *Id.* This is also the interpretation that the FTC has given to a reasonable royalty commitment in the past. *Rambus Inc. v. Fed. Trade Comm'n*, 522 F.3d 456, 462 (D.C. Cir. 2008).

¹⁹¹ Devlin, *supra* note 146, at 239; Durie & Lemley, *supra* note 180, at 643.

¹⁹² See Devlin, *supra* note 146, at 240.

¹⁹³ Lichtman, *supra* note 144, at 1035. *Contra* Devlin, *supra* note 146, at 239–40 (“a liability rule approach creates a potential distortion toward undercompensation”). Professors Durie and Lemley, however, argue that this overcompensation in damages computations is desired. Durie & Lemley, *supra* note 180, at 642. They note that the simulated negotiation of *Georgia-Pacific* phrases the question as “what a willing buyer would have paid a willing seller if both parties knew at the time that the patent was valid and infringed.” *Id.* (emphasis in original). A real negotiation that takes place before infringement includes the risk that each party bears should it lose in future litigation. *Id.* As such, damages equivalent to a royalty that parties to prior licenses “agreed upon would systematically undercompensate patent owners.” *Id.* After litigation, a patent owner has prevailed in litigation and no longer needs to build risk of loss into a royalty offer. See *id.* at 642–43. If courts did not take this change in value to a patent into account, potential licensees would be incentivized to take their chances by infringing because they would only be liable for this lower royalty should they lose in court. *Id.* at 642. For example, before litigation a patent holder would rationally license a patent with a 25% chance of validity at 25% of its full value. Lichtman, *supra* note 144, at 1042. If, after litigation, a court imposed the same 25% of full value as a royalty, a rational licensee would begin negotiations by offering terms that were 25% of the court-imposed royalty, or 6.25% of the patent's actual value. *Id.*

¹⁹⁴ Geradin, *supra* note 129, at 5.

¹⁹⁵ *Id.* at 6–7.

negotiation.¹⁹⁶ The practical consequence of this view is that, should parties be unable to come to terms in negotiations, classic damages calculations embodied by *Georgia-Pacific* may simply be used to compute a reasonable royalty.¹⁹⁷

Rather than using court precedent, at least one group has proposed a rule of numeric proportionality to determine appropriate licensing terms and royalties.¹⁹⁸ This approach is similar to the approach used by a number of patent pools, which license out entire portfolios of patents.¹⁹⁹ Under this approach, there would be one royalty assigned for the entire standard and the owner of each component patent would receive an equal share of the royalty.²⁰⁰ The primary advantages to this approach are predictability and lower transaction costs.²⁰¹

This approach, however, has a number of disadvantages. First, it assumes that all patents are of equal value and relevance to a standard.²⁰² As noted above, this is rarely the case in practice.²⁰³ For example, the value of an essential patent for a jet engine is likely more than the value of an essential patent for a reclining aircraft seat.²⁰⁴ Because both patents are essential in the construction of a plane, however, the owners of these patents would receive equal shares of the total royalty. Furthermore, this approach would unfairly benefit companies with large patent portfolios over companies with fewer, but more important patents.²⁰⁵

Nondiscrimination Prong of RAND

While there are a number of interpretations as to the reasonable terms and conditions prong of RAND, both economic commentators and legal commentators appear to be in general agreement as to the interpretation of nondiscrimination in the context of RAND obligations. This is that license terms should not be created as to confer disproportionate market power to a single entity or group.²⁰⁶ Stated differently, nondiscrimination means that a patent owner should not charge similarly situated licensees substantially different royalty rates.²⁰⁷

¹⁹⁶ *Id.* at 9.

¹⁹⁷ Geradin & Rato, *supra* note 148, at 120.

¹⁹⁸ Layne-Farrar et al., *supra* note 135, at 682.

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ *Id.* at 682–83.

²⁰² *See id.*

²⁰³ Geradin, *supra* note 129, at 14.

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 15.

²⁰⁶ George S. Cary et al., *Antitrust Implications of Abuse of Standard-Setting*, 15 GEO. MASON L. REV. 1241, 1260–61 (2008); Swanson & Baumol, *supra* note 18, at 27.

²⁰⁷ Richard Schmalensee, *Standard-Setting, Innovation Specialists and Competition*

Nondiscrimination does not mean that all potential licensees should pay the same royalty rate. Standards differ in their importance to different products, and different products may command different prices in the market.²⁰⁸ A “one size fits all” approach would be unlikely to work well in this situation.²⁰⁹ In addition, it is rare that two licenses will be identical in their terms; for example, licensees who enter into cross-license agreements should likely pay less than licensees who do not.²¹⁰ Furthermore, imposing similar royalties to differently situated licensees may be viewed as price discrimination in violation of the antitrust laws.²¹¹

THE SMARTPHONE WARS: THE MEANING OF RAND IN PRACTICE

Though the FTC had been concerned with RAND promises made to SSOs since the middle of the 1990s, there was very little court precedent on the subject; it appeared that SSO agreements had been as effective in preventing patent wars as pooling arrangements.²¹² War, however, did break out. Starting in 2010, smartphone companies began asserting patents subject to RAND obligations in various court actions.²¹³ By 2012, “The Smartphone Wars” had drawn in nearly every phone manufacturer.²¹⁴ In order to resolve the cases, judges, by necessity, needed to rule on what exactly a RAND licensing term meant. These decisions were not, however, made in a total vacuum. RAND may have been new to patent law, but it was not new to courts. Historical RAND cases in other contexts and jurisdictions should, therefore, inform the meaning of RAND in the SSO context.

Historical RAND Appearances

The earliest appearances of the term “Reasonable and Nondiscriminatory” appear in the common carrier context.²¹⁵ Concerned with the monopoly power of railroad companies, in 1887, Congress passed legislation that required companies to charge rates that were “reasonable and just,” and to treat all

Policy, 57 J. INDUS. ECON. 526, 548 (2009); Geradin & Rato, *supra* note 148, at 13.

²⁰⁸ Lemley, *supra* note 2, at 1965.

²⁰⁹ *See id.*

²¹⁰ Devlin, *supra* note 146, at 237.

²¹¹ Geradin, *supra* note 129, at 10.

²¹² *See* Rosch, *supra* note 124, at 2.

²¹³ *See, e.g.*, Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2012 WL 5993202 at *3–4 (W.D. Wash. Nov. 30, 2012); Apple Inc. v. Samsung Elecs. Co., No. 11-CV-01846, 2012 WL 1672493, at *2-3 (N.D. Cal. May 14, 2012).

²¹⁴ Sascha Segan, *Infographic: Smartphone Patent Wars Explained*, PCMAG.COM (Jan 19, 2012, 2:46 PM), <http://www.pcmag.com/article2/0,2817,2399098,00.asp>.

²¹⁵ *See, e.g.*, United States v. Pa. R.R. Co., 242 U.S. 208, 228 (1916); Atchison, T. & S.F. Ry. Co. v. United States, 191 F. 856, 864 (U.S. Com. Ct. 1911), *rev'd sub nom.* United States v. Atchison, Topeka, & Santa Fe Ry Co., 234 U.S. 476 (1914).

clients equally.²¹⁶ The legislation also created an oversight commission, supervised by the courts, called the Inter-State Commerce Commission (the “Commission”), to enforce the legislation and determine when rates were unreasonable.²¹⁷ In 1910, Congress amended the act, giving the Commission the authority to not just evaluate rates, but also set rates that it deemed “just, fair, and reasonable.”²¹⁸ Once the Commission had set a rate, the courts were free to modify or set the rate aside.²¹⁹ Though courts did not explicitly set rates, they frequently had to determine whether a rate set by either a carrier or the Commission was reasonable.²²⁰

With the rise of antitrust jurisprudence, courts went from evaluating reasonable and nondiscriminatory rates in the common carrier context to determining them in the patent context. If a court determined that an antitrust violation was the result of patent misuse, the standard solution was a compulsory license to all comers at “uniform, reasonable royalties.”²²¹ Endorsed by the Court in 1947, this early RAND royalty had been frequently required by lower courts as part of antitrust consent decrees in conjunction with a prohibition on patent suits.²²² In 1950, the Court reaffirmed the appropriateness of RAND royalties as an antitrust remedy for patent misuse and directed lower courts to assist in determining an appropriate rate, should parties not come to an agreement.²²³ Subsequently, antitrust consent decrees involving patent rights routinely included language specifying that a defendant was required to provide a RAND royalty to any applicant, that a party had the right to petition the court to determine a reasonable royalty, and that a potential licensee had the right to use a patent while a court-determined license was pending.²²⁴

Though the Court expressly endorsed the concept of a RAND royalty, it did not define the term.²²⁵ It did, however, suggest that a “reasonable royalty” in

²¹⁶ See An Act to Regulate Commerce, ch. 104, §§ 1–3, 24 Stat. 379, 379–80. The term “reasonable and just” was left undefined. *Id.*

²¹⁷ §§ 11–16, 24 Stat. at 383–85.

²¹⁸ Act of June 18, 1910, ch. 309, § 12, 36 Stat. 539, 551.

²¹⁹ *Id.*

²²⁰ See, e.g., Philadelphia & Reading Ry. Co. v. United States, 240 U.S. 334, 340–41 (1916); Interstate Commerce Comm’n v. Union Pac. R.R. Co., 222 U.S. 541, 547–48 (1912).

²²¹ United States v. Nat’l Lead Co., 332 U.S. 319, 348 (1947).

²²² *Id.* at 349; see, e.g., Crosby Steam Gage & Valve Co. v. Manning, Maxwell & Moore, Inc., 1944-1945 Trade Cas. (CCH) ¶ 57,336, at 57,662–63 (D. Ma. 1945).

²²³ See United States v. U.S. Gypsum Co., 340 U.S. 76, 93–94 (1950).

²²⁴ See, e.g., United States v. Am. Linen Supply Co., 1956 Trade Cas. (CCH) ¶ 68,542, at 72,201–02 (N.D. Ill. 1956); United States v. Gen. Shoe Corp., 1956 Trade Cas. (CCH) ¶ 68,271, at 71,231 (M.D. Tenn. 1956); United States v. Int’l Bus. Machs. Corp., 1956 Trade Cas. (CCH) ¶ 68,245, at 71,127–28 (S.D.N.Y. 1956); United States v. Magcobar, Inc., 1955 Trade Cas. (CCH) ¶ 68,023, at 70,324–25 (S.D. Cal. 1955).

²²⁵ See *Nat’l Lead Co.*, 332 U.S. at 349–51.

the antitrust context was the same as the “reasonable royalty” that courts computed in cases of patent infringement.²²⁶ Though courts have had the right to determine a RAND royalty since 1950, prior to 2010, courts had not been called upon to exercise this right.²²⁷ Courts have, however, had to determine RAND licenses in the music industry on multiple occasions. Though not identical, a court’s process in determining a RAND royalty in copyright would likely be analogous to a determination of a RAND royalty in patent.²²⁸

The American Society of Composers, Authors and Publishers (“ASCAP”) and Broadcast Music, Inc. (“BMI”) are the two major licensors of copyrighted music, holding the rights to a combined 4,000,000 songs.²²⁹ In 1941, ASCAP entered into a consent decree with the federal government in which ASCAP agreed to license its catalog to any party at a nondiscriminatory rate.²³⁰ In 1950, using language similar to later patent-related consent decrees, the order was modified to allow a party to petition the court for a reasonable license, should the parties fail to come to an agreement, and to use the compositions at issue while a license was pending.²³¹ Once the court made a determination, ASCAP was also required to provide similar licenses to other similarly situated parties.²³² In 1966, BMI entered into a substantially similar consent decree, which was similarly amended in 1994.²³³ In interpreting these consent decrees, the Second Circuit has held that a reasonable royalty in this context is the “fair market value,” which is defined as “the price that a willing buyer and a willing seller would agree to in an arm’s length transaction.”²³⁴ Interpreting the nondiscrimination requirement, the Second Circuit noted that this value may be

²²⁶ See *id.* at 349-50 & n.8 (referring to patent damages computations when referencing a “reasonable royalty”).

²²⁷ See Välimäki, *supra* note 20, at 690.

²²⁸ Due to the historic relationship between patent and copyright, concepts are commonly imported from one branch of law to the other. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 439 & n.19 (1984).

²²⁹ See *Am. Soc’y of Composers, Authors and Publishers v. Showtime/The Movie Channel, Inc.*, 912 F.2d 563, 565 (2d Cir. 1990).

²³⁰ *United States v. Am. Soc’y of Composers, Authors and Publishers, 1940-1943 Trade Cas. (CCH) ¶ 56,104 at 402 (S.D.N.Y. 1941).*

²³¹ *United States v. Am. Soc’y of Composers, Authors and Publishers, 1950-1951 Trade Cas. (CCH) ¶ 62,595, at 63,754 (S.D.N.Y. 1950).*

²³² *Id.*

²³³ *United States v. Broad. Music, Inc.*, 1996-1 Trade Cas. (CCH) ¶ 71,378, at 76,891–92 (S.D.N.Y. 1994); *United States v. Broad. Music, Inc.*, 1966 Trade Cas. (CCH) ¶ 71,941, at 83,326 (S.D.N.Y. 1966).

²³⁴ *United States v. Broad. Music, Inc.*, 316 F.3d 189, 194 (2d Cir. 2003); *Am. Soc’y of Composers, Authors and Publishers*, 912 F.2d at 569. This language is similar to the language of patent damages. See *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1121 (S.D.N.Y. 1970) (discussing the hypothetical negotiation framework in calculating patent royalties).

computed using, as a benchmark, other similarly situated licensees.²³⁵

Though the Second Circuit's interpretation of RAND royalties in the copyright context in antitrust is very similar to the "hypothetical negotiation" in determining reasonable patent royalties,²³⁶ and the Supreme Court has noted that a RAND royalty in the patent context in antitrust is analogous to the "reasonable royalty" for patent damages,²³⁷ courts have ignored this approach to defining RAND in the SSO context.²³⁸

RAND in Other Jurisdictions

Standard setting is inherently an international activity.²³⁹ Consequently, the RAND license commitment has an impact in other jurisdictions. The emerging consensus in the European Union is that a RAND obligation does not initially preempt a patentee's rights, but may create obligations once a party attempts to license a RAND-encumbered patent.²⁴⁰

In the European Union as a whole, the European Commission has issued guidelines as to the proper meaning of the RAND promise.²⁴¹ According to the Commission, if a patentee refuses to license a patent, or requests an unreasonable royalty rate, a RAND license may be determined by looking at prior licensing practices, getting an evaluation from an independent expert, or requesting a determination from a competent civil or commercial court.²⁴² The guidelines are, however, silent with regards to the specific obligations that a RAND commitment entails.²⁴³

²³⁵ *Broad. Music, Inc.*, 316 F.3d at 194.

²³⁶ *See Georgia-Pacific Corp.*, 318 F. Supp. at 1121.

²³⁷ *United States v. Nat'l Lead Co.*, 332 U.S. 319, 349-50 & n.8 (1947).

²³⁸ *See infra* Part III.C.

²³⁹ *See* RUPPERT, *supra* note 8, at 1.

²⁴⁰ For example, the European Commission has stated that attempting to obtain an injunction against a willing licensee may be an abuse of market position and would potentially give rise to antitrust liability. European Commission Press Release IP/14/489 (Apr. 29, 2014); European Commission Press Release IP/14/490 (Apr. 29, 2014).

²⁴¹ *Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements*, 2011 O.J. (C 11) 1, 60-61.

²⁴² *Id.*

²⁴³ *See id.* The European Commission has, however, begun investigations to determine whether attempting to enforce a RAND-encumbered patent gives rise to antitrust liability. Press Release, European Comm'n, Antitrust: Commission Opens Proceedings Against Motorola (Apr. 3, 2012), available at http://europa.eu/rapid/press-release_IP-12-345_en.htm; Press Release, European Comm'n, Antitrust: Commission Opens Proceedings Against Samsung (Jan. 31, 2012), available at http://europa.eu/rapid/press-release_IP-12-89_en.htm. The Commission had previously implied that failing to honor RAND obligations may create liability under the European Union antitrust laws. *See* Google/Motorola Mobility, Art. 6(1)(b) Non-Opposition Letter, No. COMP/M.6381 ¶ 147 (Feb. 13, 2012), available at http://ec.europa.eu/competition/mergers/cases/decisions/m6381_20120213_20310_2277480

Though the commitment is still vague in the European Union, the German Bundesgerichtshof (Federal Court of Justice) has tethered standard-essential patents (those typically subject to a RAND obligation)²⁴⁴ to the compulsory licensing provisions of the Patatentgesetz (German Patent Act).²⁴⁵ As long as a party complies with the requirements of the German Patent Act, it may petition a court for a RAND license.²⁴⁶ Under the Act, a party may request a compulsory license from a court if it tried to get a license, and it was in the public interest for the party to have it.²⁴⁷ Similar to a reasonable royalty calculation in the United States, the court will determine the royalty to be paid based on the circumstances of the case, as well as the commercial value of the license.²⁴⁸ The practical consequence of this approach is that a RAND obligation is only triggered by the affirmative acts of a potential licensee.

Germany is not the only country to link a RAND obligation to a compulsory licensing theory. In the Netherlands, the District Court of the Hague held that until the compulsory licensing requirements of the Rijksoctrooiwet (Dutch Patent Act) were met by a potential licensee, a patentee was free to enforce a RAND-encumbered patent.²⁴⁹ Though there are slight differences, the Dutch Patent Act is similar to the German Act in that it allows a government official, for reasons of the public interest, to dictate license terms that it deems “reasonable,” but only after giving the patentee an opportunity to voluntarily grant a license under reasonable terms.²⁵⁰

Because the emerging consensus in the EU is that a RAND obligation is closely tied to a jurisdiction’s compulsory licensing regime,²⁵¹ it follows that a

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²⁴⁴ See *supra* note 20 and accompanying text.

²⁴⁵ See Bundesgerichtshof [BGH] [Federal Court of Justice] May 9, 2009, 180 ENTSCHEIDUNGEN DES BUNDESGERICHTSHOFES IN ZIVILSACHEN [BGHZ] 312, (315–18) (Ger.).

²⁴⁶ *Id.*

²⁴⁷ Patentgesetz [PatG] [Patent Act], May 5, 1936, BGBL. at 1, as amended by the Act on Improvement of Enforcement of Intellectual Property Rights of 31 July 2009, §§ 24(1), 85(1) (Ger.).

²⁴⁸ *Id.* § 24(6).

²⁴⁹ Rechtbank’s-Gravenhage, 17 maart 2010, Joint Cases No. 316533 / HA ZA 08-2522 and 316535 / HA ZA 08-2524 (Koninklijke Philips Electronics N.V./SK Kassetten GmbH & Co. KG) (Neth.).

²⁵⁰ Rijksoctrooiwet [National Patent Act of] 1995, Stb. 1995 p. 51. Arts. 57–58 (Neth.). The District Court of the Hague later elaborated that a party’s patent rights would remain intact so long as the patentee did not abuse its patent rights. Rechtbank’s-Gravenhage, 14 oktober 2011, Joint Cases No. 398308 / KG ZA 11-818, 398332 / KG ZA 11-819, 400246 / KG ZA 11-936 en 400247 / KG ZA 11-937 (Samsung Elecs. Co./Apple Inc.) (Neth.).

²⁵¹ Australia appears to be moving in this direction as well. See Australian Gov’t, Productivity Comm’n, Issues Paper, *Compulsory Licensing of Patents*, at 24–25 (Aug. 2012), available at http://www.davies.com.au/cms_images/files/Link%20-%202012-08-

reasonable royalty would simply be the royalty that a court would determine in other compulsory licensing situations. Unfortunately, there is almost no precedent regarding a compulsory license royalty, leaving an appropriate framework as an open question.²⁵² The United States, however, recognizing an absolute right not to practice a patent, does not have a compulsory licensing mechanism available to private parties.²⁵³ Adopting the EU approach to RAND in the United States without a compulsory licensing mechanism would have the result of rendering the obligation meaningless. Consequently, courts in the United States have lowered the burden on potential licensees.²⁵⁴

Court Interpretations of RAND

In 2012 and 2013, a number of district courts, the FTC, and the International Trade Commission (the “ITC”) issued decisions in Smartphone Wars cases regarding the meaning of RAND in the SSO context.²⁵⁵ These decisions gave the RAND agreement additional concrete meaning. The courts determined what a party could do with a patent subject to the obligation, whether the obligation creates a cause of action in contract or antitrust, and how to compute a reasonable royalty in the SSO context.

First, in going further than the courts of the European Union, district courts and the FTC made it clear that a party could not seek an injunction based on a patent subject to a RAND obligation.²⁵⁶ In 2010, Motorola brought a complaint

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²⁵² See *id.* at 11–12 (noting that out of three total applications for a compulsory license, none were granted); Australian Gov’t, Australian Law Reform Comm’n, *Genes and Ingenuity Report: Gene Patenting and Human Health*, at 614–16, Report 99 (June 2004), available at <http://www.alrc.gov.au/sites/default/files/pdfs/publications/ALRC99.pdf> (detailing compulsory license grants outside Australia).

²⁵³ See *Cont’l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 429 (1908). With the increase in suits brought by non-practicing entities, it has been argued that this right should be curtailed. See Oskar Liivak & Eduardo M. Peñalver, *The Right Not to Use In Property and Patent Law*, 98 CORNELL L. REV. 1437, 1479–80 (2013). In the SSO context, a patentee that refuses to provide a RAND license may be viewed as analogous to a non-practicing entity.

²⁵⁴ See *infra* Part III.C.

²⁵⁵ *Microsoft Corp. v. Motorola, Inc.*, 854 F. Supp. 2d 993 (W.D. Wash. 2012); *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901 (N.D. Ill. 2012), *aff’d in part, rev’d in part*, 757 F.3d 1286 (Fed. Cir. 2014); *Apple Inc. v. Samsung Elecs. Co.*, No. 11-CV-01846, 2012 WL 1672493 (N.D. Cal. May 14, 2012); *Motorola Mobility LLC*, File No. 121-0120, 2013 WL 124100 (Fed. Trade Comm’n Jan. 3, 2013); *Certain Gaming & Entm’t Consoles, Related Software, & Components Thereof*, Inv. No. 337-TA-752, 2012 WL 1704137 (U.S. Int’l Trade Comm’n Apr. 23, 2012).

²⁵⁶ Initially, echoing the reasoning seen in the European Union, patentees unsuccessfully had attempted to argue that a RAND obligation was only triggered after a party attempted to obtain a license. *Apple, Inc.*, 869 F. Supp. 2d at 914; *Microsoft Corp.*, 2012 WL 5993202, at *4.

against Microsoft at the ITC, requesting an exclusion order, as well as a cease and desist order for infringement of RAND-encumbered patents.²⁵⁷ In a third-party statement, the FTC stated that an exclusion order against such patents was against the public interest and should not be available through the ITC,²⁵⁸ a position echoed by Microsoft in its filings.²⁵⁹ The ITC did not find these arguments persuasive and found that a RAND obligation did not foreclose an exclusion order.²⁶⁰

Having failed to convince the ITC that an exclusion order was not appropriate, the FTC subsequently brought a complaint against Motorola, and its successor in interest, Google, in antitrust, alleging that Google violated its RAND commitments by bringing actions in the ITC, which harmed competition.²⁶¹ In its complaint, the FTC asserted that, rather than seeking an injunction, Motorola should have requested a neutral party, such as a judge, to determine licensing terms.²⁶² Consequently, as part of its settlement with the FTC, Google agreed to cease and desist from seeking injunctions on RAND-encumbered patents.²⁶³ The settlement did not, however, preclude all injunctive relief; Google could still seek an injunction against a bad actor that refused to take a license under any circumstances.²⁶⁴

Sitting by designation, Judge Posner endorsed the FTC's RAND interpretation.²⁶⁵ Reasoning that because a RAND commitment acted as a signal that a royalty would be adequate compensation for the use of a patent,

²⁵⁷ Certain Gaming & Entm't Consoles, Related Software, & Components Thereof, 75 Fed. Reg. 80,843 (Int'l Trade Comm'n Dec. 23, 2010) (notice); U.S. Fed. Trade Comm'n, Inv. No. 337-TA-752, Third Party U.S. Fed. Trade Comm'n's Statement on the Public Interest, Certain Gaming & Entm't Consoles, Related Software, & Components Thereof 1, available at <http://www.ftc.gov/os/2012/06/1206ftcgamingconsole.pdf>.

²⁵⁸ U.S. Fed. Trade Comm'n, *supra* note 255, at 3–5.

²⁵⁹ *Certain Gaming & Entm't Consoles, Related Software, & Components Thereof*, 2012 WL 1704137, at *162–64. Microsoft itself, however, had previously stated that a RAND obligation should not preclude injunctive relief. *Id.* at *164.

²⁶⁰ *See id.*

²⁶¹ Motorola Mobility LLC, File No. 121-0120, 2013 WL 124100, at *1, *4 (Fed. Trade Comm'n Jan. 3, 2013).

²⁶² *Id.* at *3.

²⁶³ *Id.* at *10–11. As a result, Motorola subsequently withdrew the ITC complaint against Microsoft. *Certain Gaming & Entm't Consoles, Related Software, & Components Thereof*, Inv. No. 337-TA-752, 2013 WL 167997, at *1 (Int'l Trade Comm'n Jan. 11, 2013).

²⁶⁴ *See Motorola Mobility LLC*, 2013 WL 124100, at *11. The United States Department of Justice and the United States Patent and Trademark Office also endorsed such an exception. U.S. Dep't of Justice and U.S. Patent and Trademark Office, *Policy Statement on Remedies for Standard–Essential Patents Subject to Voluntary F/RAND Commitments*, at 7–8 (Jan. 8, 2013).

²⁶⁵ *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913–14 (N.D. Ill. 2012), *aff'd in part, rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014).

an injunction could not be justified.²⁶⁶ Unlike the FTC's interpretation, this interpretation did not create a bad-actor exception.²⁶⁷ Responding to the argument that the lack of an exception would force patentees to settle for less than an appropriate amount, Judge Posner noted: "You can't obtain an injunction for a simple breach of contract on the ground that you need the injunction to pressure the defendant to settle your damages claim on terms more advantageous to you than if there were no such pressure."²⁶⁸

On appeal, the Federal Circuit held that Judge Posner erred in applying a *per se* rule against injunctions relating to RAND-encumbered patents and explicitly adopted the FTC's bad-actor exception.²⁶⁹ Judge Reyna, writing for the panel majority, noted that the nature of the RAND commitment could be captured in the traditional injunction analysis for patent infringement.²⁷⁰ He further noted that, though it may be difficult for a patentee to establish irreparable harm, "an injunction may be justified where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect."²⁷¹

Writing separately, Judge Prost noted that because money damages were "likely adequate" to compensate for infringement of a RAND-encumbered patent, a party's pre-litigation conduct should not be relevant to the inquiry.²⁷² According to Judge Prost, the relevant inquiry was whether money damages *could* provide adequate compensation.²⁷³ In this context, an injunction would be appropriate in circumstances where an infringer was judgment-proof or where an infringer refused to pay damages after being found by a court to have infringed.²⁷⁴ Second, the courts treated a RAND commitment with a SSO as a binding contract between a patentee and the SSO with potential licensees being third-party beneficiaries. Though a refusal to license on RAND terms can create antitrust liability,²⁷⁵ the dominant theory of liability in the district courts sounded in contract.²⁷⁶ When a firm promises an SSO that it will license a patent under RAND terms to applicants, this promise is consideration in

²⁶⁶ *Id.*

²⁶⁷ *Id.* at 914.

²⁶⁸ *Id.* at 915.

²⁶⁹ *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1331 (Fed. Cir. 2014).

²⁷⁰ *Id.* at 1332 (citing *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391–94 (2006)).

²⁷¹ *Id.*

²⁷² *Id.* at 1342–43 (Prost, J. concurring-in-part and dissenting-in-part).

²⁷³ *Id.* at 1343.

²⁷⁴ *Id.*

²⁷⁵ *Motorola Mobility LLC*, File No. 121-0120, 2013 WL 124100, at *1, *4 (Fed. Trade Comm'n Jan. 3, 2013).

²⁷⁶ See *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 884–85 (9th Cir. 2012); *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2012 WL 5993202, at *4 (W.D. Wash. Nov. 30, 2012); *Apple, Inc.*, 869 F. Supp. 2d at 915; *Apple Inc. v. Samsung Elecs. Co.*, No. 11-CV-01846, 2012 WL 1672493, at *11–12 (N.D. Cal. May 14, 2012).

exchange for the patent's adoption into a standard and creates a contract between the firm and the SSO.²⁷⁷ SSO members and perspective licensees are then third-party beneficiaries of the contract.²⁷⁸

Finally, in order to determine a RAND rate, one court has held that a modified *Georgia-Pacific* framework should apply.²⁷⁹ In modifying the framework, Judge Robart of the Western District of Washington reasoned that in the RAND context, the hypothetical negotiation should take into account the fact that the patentee is obligated to license its patents on RAND terms, in contrast to a normal patentee, who may choose to withhold a license.²⁸⁰ In addition, in the SSO context, a patentee would be aware that it was not the only party that a licensee would need to approach; many standards incorporate technology from numerous patent-holders, not just one.²⁸¹ In modifying the fifteen factors,²⁸² Judge Robart put particular stress on factors 1, 6, 8, 9, and 13.²⁸³ In modifying each factor, two principles emerged. First, when using other licenses as a benchmark, the other licenses must be for RAND-encumbered patents.²⁸⁴ Second, it is critical to separate the value of the patent from the value of the standard; giving a patentee any value of the standard itself would be “hold-up value and contrary to the purpose behind the RAND commitment.”²⁸⁵ The value of the patent, then, is simply the value of its contribution to the “technical capabilities of the standard.”²⁸⁶

To this end, Judge Robart discounted licenses that had been crafted under threat of litigation.²⁸⁷ Royalties commanded through pooling arrangements, though not necessarily appropriate measures of RAND, could be used as indicators of a royalty rate, if the rates were consistent with the purpose of the RAND commitment, phrased as “promoting widespread adoption of [the] standard[.]”²⁸⁸ For pool licenses that satisfy this requirement, a RAND royalty

²⁷⁷ *Samsung Elecs Co.*, 2012 WL 1672493, at *12.

²⁷⁸ *Microsoft Corp.*, 2012 WL 5993202, at *4. In addition, as third-party beneficiaries, these parties are entitled to enforce the contracts in courts. *See id.*

²⁷⁹ *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *3 (W.D. Wash. Apr. 25, 2013). This approach had been suggested in the past. *See Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 314 n.8 (3d Cir. 2007); *ESS Tech. v. PC-Tel, Inc.*, No. C-99-20292 RMW, C-01-1300 VRW, C-01-1981 VRW, 2001 WL 1891713, at *3 (N.D. Cal. Nov. 28, 2001).

²⁸⁰ *Microsoft Corp.*, 2013 WL 2111217, at *18.

²⁸¹ *Id.*

²⁸² *See supra*, note 184 for a listing of the fifteen *Georgia-Pacific* factors.

²⁸³ *Microsoft Corp.*, 2013 WL 2111217, at *18-19.

²⁸⁴ *Id.* at *18.

²⁸⁵ *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *18 (W.D. Wash. Apr. 25, 2013).

²⁸⁶ *Id.*

²⁸⁷ *Id.* at *72.

²⁸⁸ *Id.* at *82. By extension, if a pool does not achieve widespread use of its portfolio, its licensing practices will be less relevant. *Id.* at *89.

could be inferred by comparing the value of joining the patent pool with the value of acting independently.²⁸⁹

In these recent interpretations of the RAND commitment, there appears to be one unifying theme. The lack of precedent on the topic has consistently influenced the courts in their decisions, leading them to treat these cases as cases of first impression.²⁹⁰ As noted above, this does not need to be the case; appearances of the RAND promises in the antitrust context may be used as an indication of what the RAND promise should mean in the SSO context.²⁹¹ In addition, other jurisdictions have taken similar approaches to interpreting the RAND commitment that are directly applicable.²⁹² Using these precedents, it is possible to create a definition of RAND that is consistent with both other areas of law and other jurisdictions.

PROPOSED RAND DEFINITION

The RAND obligation should be interpreted as a variant of the antitrust consent decrees discussed above.²⁹³ The boilerplate RAND language present in the consent decrees tracks closely with the language of the RAND promise required by many SSOs.²⁹⁴ Given the similarity of language, as well as the outgrowth of SSO arrangements from earlier patent pools,²⁹⁵ the two RAND instances should be treated analogously. A court interpretation of one type of RAND obligation should inform the interpretation of the other.

First, a RAND obligation should not foreclose the possibility of an injunction, though it may limit its use. In the antitrust context, the language of the consent decrees does not explicitly state that a patentee may never enforce its patent; it simply says that a court may determine an appropriate rate should the parties fail to come to an agreement.²⁹⁶ To read this sort of foreclosure into a contract, which, arguably, should put fewer burdens on a party than the result of an antitrust complaint, stretches the limits of contract law.²⁹⁷ If an infringer deliberately avoids obtaining a license on RAND terms, it should not later be

²⁸⁹ *Id.* at *85 n.23 (detailing the methodology used to compute a RAND rate based on a pool rate).

²⁹⁰ *See id.* at *17-18; *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913-14.

²⁹¹ *See supra* Part III.A.

²⁹² *See supra* Part III.B.

²⁹³ *See supra* note 223 and accompanying text.

²⁹⁴ *Compare* *United States v. Am. Linen Supply Co.*, 1956 Trade Cas. (CCH) ¶ 68,542, at 72,201-02 (N.D. Ill. 1956) (stating that, upon written application, the patentee will grant a non-exclusive and unrestricted license on reasonable and nondiscriminatory royalty terms) with *European Telecommunications Standards Institute [ETSI], Rules of Procedure, Directive Version 32* (Oct. 2013) at 35-36 (stating that a patentee must affirm that it is prepared to grant licenses on fair, reasonable, and nondiscriminatory terms).

²⁹⁵ *See supra* Part I.C.

²⁹⁶ *See Am. Linen Supply Co.*, 1956 Trade Cas. (CCH) at 72,201-02.

²⁹⁷ *See Geradin, supra* note 129, at 5.

able to claim a RAND defense as a shield.²⁹⁸ This approach would have the effect of creating a compulsory licensing mechanism, akin to that of the European Union,²⁹⁹ through contract. The consequence of this approach would be to acknowledge that, though one party is subject to a RAND obligation, both parties have an obligation to act in good faith.

Second, a RAND royalty should be treated as a specialized damages computation. As discussed above, courts have experience determining “reasonable royalties” in the context of patent damages.³⁰⁰ In determining RAND licensing terms, it would be appropriate to use similar techniques, taking prevailing market conditions into account, with a modification to the *Georgia-Pacific* factors in order to capture the existence of RAND obligations and the existence of multiple patents in a standard.

Courts should take prevailing market conditions into account when determining reasonable royalties. The majority viewpoint of attempting to fix a point in time prior to a standard’s adoption, or discounting the value of the standard as a whole, may lead to unreasonable results. In summarizing this view, Professor Lichtman notes that the ultimate goal should be that the damages awarded should “approximate the royalty the parties would have negotiated prior to standardization plus a kicker for the now-resolved uncertainty.”³⁰¹ While this approach may remove market power conferred upon a patent holder by the adoption of a standard, it may also create a disincentive for parties to participate in standard setting activities.³⁰² Faced with the choice between a guaranteed royalty imposed by a SSO which may be close to zero (if there are perfect substitutes to a technology before adoption) and the potential of capturing higher royalties by winning a standards war in the market by promoting a proprietary standard, a firm may choose to “go to war” in the hopes of achieving these higher royalties.³⁰³ A royalty that removes the incentive for firms to propose their technology for incorporation into a standard cannot be reasonable.³⁰⁴

This incentive to nonparticipation only holds true, however, if a firm is able to provide a complete proprietary solution.³⁰⁵ Even if a firm is able to provide this to potential customers, it would still have to convince them that the proprietary standard was superior in either technology or price.³⁰⁶ In many cases, firms are unable to provide an alternate standard and failing to

²⁹⁸ See Miller, *supra* note 16, at 390.

²⁹⁹ See *supra* Part III.B.

³⁰⁰ Lemley, *supra* note 2, at 1966.

³⁰¹ Lichtman, *supra* note 144, at 1043.

³⁰² See Richard T. Rapp & Lauren J. Stiroh, *Standard Setting and Market Power*, NERA, at 10 (Apr. 18, 2002), available at <http://nera.myowg.com/extImage/5156.pdf>.

³⁰³ See *id.*

³⁰⁴ *Id.*

³⁰⁵ Geradin et al., *supra* note 168, at 449.

³⁰⁶ *Id.*

participate in a SSO may even shut them out of the market.³⁰⁷ Consequently, before adoption of a standard, a patent holder might agree to a royalty which is less than reasonable in order to prevent a complete loss of revenue.³⁰⁸ Therefore, attempting to fix an earlier point in time for royalty rates may encourage vertically integrated firms to opt out of future standard setting activities and take away bargaining power from firms which are unable to compete on their own.

Furthermore, this approach assumes a stable value for a standard as a whole. While this goal is meant to take into account competing technologies that may have been available prior to selection,³⁰⁹ it fails to take the existence of competing standards into account. Just as the value of a single technology may change over time, the value of a standard may change over time as well, depending on market conditions.³¹⁰ A licensee who took on more risk early in standard's lifecycle should be entitled to a lower royalty rate than a licensee who waited to see if a standard would ultimately be successful. The practical consequence is that the risk an early adopter takes on is not rewarded. Such a result would neither be fair nor reasonable. As such, fixing a royalty rate at this earlier point in time would not just undercompensate a single patent holder, but would systematically undercompensate every standard-essential patent holder.

The relative contribution of a patent to the standard should be taken into account in a damages analysis. Though a standard's value changes over time, the relative contribution of a single patent to a standard tends to remain constant. If a patent contributes 5% of a standard's value at the time of the standard's implementation, it will likely contribute 5% of the standard's value throughout the standard's lifecycle. This relative contribution, while potentially difficult to ascertain,³¹¹ may be used as a factor in the damages calculations under *Georgia-Pacific*.³¹² The thirteenth factor, which suggests courts look at "the portion of the realizable profit that should be credited to the invention . . ." could be modified to suggest looking at "the 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."³¹³ Adopting this approach would allow a court to adequately

³⁰⁷ *Id.*

³⁰⁸ *See id.*

³⁰⁹ Lévêque & Ménière, *supra* note 16, at 6–7.

³¹⁰ *See* Lichtman, *supra* note 144, at 1028–29. For example, prior to the victory of Blu-Ray over HD-DVD, the two standards could be viewed as perfect substitutes. As such, the license fee for *all* the patents in either portfolio would approach the incremental cost of recurring innovation and licensing expenses. *See* Swanson & Baumol, *supra* note 18, at 19. After Blu-Ray's victory in the marketplace, the value of the Blu-Ray portfolio would be significantly higher and the value of the HD-DVD portfolio would approach zero.

³¹¹ *See* Layne-Farrar et al., *supra* note 135, at 705

³¹² *Id.* at 681.

³¹³ *Id.*

compensate a patentee for its contribution to a standard, while simultaneously acknowledging that a standard's value may fluctuate over time.

CONCLUSION

As courts and commentators currently interpret it, the RAND obligation is treated as a nebulous and mostly undefined concept. As shown above, this is not necessarily the case. In analyzing a RAND obligation, courts should adopt principles in use in other jurisdictions and areas of law. To this end, in determining whether a party has complied with its obligations, courts should look at the actions of the potential licensee, as well as those of the patentee. In determining a royalty amount, a court should apply a modified version of the *Georgia-Pacific* framework that considers the relative contribution of a patent to the standard while also taking other market forces into account. This approach has the benefit of using tools familiar to courts while simultaneously acknowledging that, in the standard-setting context, it is typical for more than one patent to contribute to the overall value of a standard. In addition, this proposed method would be consistent with the historical meaning of the RAND term and harmonize its use between multiple jurisdictions, and across the areas of patent law, copyright law, antitrust law, and contract law.