BRAVE NEW FRONTIER: ANTITRUST IMPLICATIONS OF STANDARD-SETTING PATENTS IN THE SMARTPHONE MARKET

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INTRODUCTION

Every product on the market has been developed in accordance with one or more voluntary or mandatory standards. Standards are "set[s] of characteristics or qualities that describe[] features of a product, process, service, interface, or material."[1] Standards provide performance metrics by which products can be evaluated. Issues surrounding standardization have become increasingly significant with the rise of a technological-driven world economy. Standard setting is essential to the growth of an economy. Technological products depend on interoperability to reach mass effect. Without interoperability, products such as power outlets would not work uniformly across different countries.

Standard setting, however, also creates potential antitrust problems. Selecting a standard involves competitors evaluating competing technologies and selecting a single technology to be standardized, to the exclusion of other patented or non-patented substitutes. Once an industry has committed itself to one path, it becomes locked in.[2] Standard essential patent holders can impose high royalties or exclusionary terms and conditions.[3] The other competitors within the industry will find themselves foreclosed to the market, as the patent holder attempts to expand its dominant position.

Such a problem has been the source of contention between Apple and Samsung. Apple has accused Samsung of violating its "fair, reasonable, and non-discriminatory" commitments by using its standard

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1 Esteban Burrone, *Standards, Intellectual Property Rights (IPRs) and Standards-Setting Process*, WORLD INTELL. PROP. ORG., http://www.wipo.int/sme/en/documents/ip_standards_fulltext.html (last visited Apr. 15, 2014).

2 Deborah Platt Majoras, Chairman, Fed. Trade Comm'n, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, Remarks at Standford University prepared for Standardization and the Law: Developing the Golden Mean for Global Trade 3 (Sept. 23, 2005).

3 *Id.* at 4.

essential patents to extort excessive royalties or exclude competitors from the smartphone industry.[4] Samsung and Apple's litigation over this issue has the potential to impact how standard essential patents are treated in the future. Apple and Samsung's relative positions as the first and second-most dominant phone manufacturers in the world mean that the outcome of this litigation has the power to shape the global telecommunications economy.

As a result of the international nature and implications of Apple and Samsung's conflict, it is worth considering whether Samsung committed antitrust violations under both United States and European Union law. The United States and European Union have contrasting antitrust frameworks. Not only do the two national bodies require different elements in order to prove a successful antitrust case, but they also have opposing philosophies towards what constitutes suitable remedies once a party has been found guilty.[5]

This article discusses two topics. Part I discusses standardization and how antitrust issues can arise as a result of standard essential patents. It introduces the legal framework for antitrust analysis, and gives an overview of important standard setting cases. Comparing how Europe and the United States have ruled on antitrust violations of standard essential patents provides the framework for analyzing whether Samsung committed antitrust violations in its interactions with standard essential patents.

Part II, using the antitrust analysis, defines how Samsung's patented technology and its substitutes form the relevant market. It discusses Samsung's monopoly power and analyses whether Samsung abused its standing by withholding information regarding its patents from the European Telecommunications Standards Institute during the development of the third generation universal mobile telecommunication system standard.

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[4] Matt Macari, *FRANDs Forever: How the Smartphone Industry Turned a Gentlemen's Agreement into a Full-Scale Patent War*, VERGE (Feb. 16, 2012), http://www.theverge.com/2012/2/16/2786970/FRAND-smartphone-industry-apple-motorola-samsung.

[5] *See* Eleanor M. Fox, *US and EU Competition Law: A Comparison*, *in* GLOBAL COMPETITION POLICY 339, 339–40 (Edward M. Graham & J. David Richardson eds., 1997).

I. BACKGROUND

A. BENEFITS AND DANGERS OF STANDARD SETTING ORGANIZATIONS

Telecommunication technologies, such as the third generation universal mobile telecommunication system (UMTS), rely heavily on a network effect to succeed.[6] In a network effect situation, the more people use a particular technology, the more valuable it becomes for each user.[7] Because of the increasing adoption size, more individuals will be inclined to use the technology.[8] This exponential demand encourages more manufacturers to enter the market. Consequently, competition flourishes because many manufacturers vie for market dominance.

Standardization is essential for a technology to successfully reach the necessary network effect. Standards are sets of technical specifications providing a common design for a product or process.[9] Standardization promises a minimum standard of quality and interoperability.[10] Interoperability is significant because it allows consumers to use the technology intercontinentally.[11]

Standardization provides economic benefits. It lowers the barriers to entry for new entrants.[12] Because standardization results in homogeneous products, economies of scale occur.[13] Standardization may

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[6] Sumit K. Majumdar & S. Venkataraman, *Network Effects and the Adoption of New Technology: Evidence from the U.S. Telecommunications Industry*, 19 STRATEGIC MGMT. J. 1045, 1045 (1998).

[7] *See* DAVID EASLEY & JON KLEINBERG, NETWORKS, CROWDS, AND MARKETS: REASONING ABOUT A HIGHLY CONNECTED WORLD 449 (2010).

[8] Majumdar & Venkataraman, *supra* note 6, at 1046.

[9] Thomas J. Scott, Jr. & April Weisbruch, *Standards-Related Patents and Standard-Setting Organizations, Navigating the Challenges of SSOs: Licensing, Disclosure, and Litigation*, STRAFFORD 6 (Oct. 16, 2012), http://media.straffordpub.com/products/standards-related-patents-and-standard-setting-organizations-2012-10-16/presentation.pdf.

[10] *Newsletter No. 03 – October 2011, The Benefits of Standards for National Economies*, WORLD STANDARDS COOPERATION, http://www.worldstandardscooperation.org/newsletters/003/newsletter03.html (last visited Apr. 15, 2014).

[11] *See* Craig Shank, *Interoperability: Standards that Open Doors for Businesses and Consumers*, MICROSOFT (Aug. 25, 2011), http://www.microsoft.com/eu/transforming-business/article/interoperability-standards-that-open-doors-for-businesses-and-consumer.aspx.

[12] Burt Braverman, *Standard-Setting Organizations Can Be Risky Business for Their Members*, DAVIS WRIGHT TREMAINE LLP (Feb. 6, 2013), http://www.dwt.com/Standard-Setting-Organizations-can-be-Risky-Business-for-their-Members-02-06-2013/.

[13] Karoline Flåten and Ellen M. Burud, *The Economic Impacts of Compatibility Standards* 18 (BI Nor. Bus. Sch., Ctr. for Research in Econ. & Mgmt., Publication No. 8-2010, 2010), *available at*

encourage the development of complementary services.[14] Complementary services provide value added services to consumers, which could hasten adoption rates for new technology.[15]

Standard-setting organizations (SSOs) are industry groups that meet over a fixed period of time to develop a common standard.[16] SSOs cannot compel membership.[17] However, members still join SSOs because they want strategic or technical influence. They want to decide which standards will be created, in what order, and to serve what purpose.[18] Members want to access information regarding the standard, so they can use that knowledge to formulate their own product and design strategies.[19]

During the standard-setting process, a SSO evaluates it members' intellectual property on the technical and practical merits.[20] SSOs may adopt either an "open" or "closed" standard.[21] Open standards are free to be used by all market participants.[22] Closed standards involve licensing patented technologies.[23] SSOs consider the needs of the industry when deciding which type of standard to incorporate.[24] Regardless of which standard is adopted, most SSOs require their

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http://brage.bibsys.no/xmlui/bitstream/handle/11250/95454/2010_08_CREAM_wp.pdf?sequence=1.

14 *See* SUPPORTING DOCUMENT AA: PATENT THICKETS, LICENSING AND STANDARDS 6 (cited in IAN HARGREAVES, DIGITAL OPPORTUNITY: A REVIEW OF INTELLECTUAL PROPERTY AND GROWTH 59 n.25 (2011)).

15 Platforms become successful due to scale-generating network effects; the more users of a platform there are, the more complementary products are created, which in turn attracts more users. If the platform does not have enough scale to generate applications or other valuable content, it may not attract more consumers. Fiona M. Scott-Morton, Deputy Assistant Attorney Gen. for Econ. Analysis, Antitrust Div., U.S. Dep't of Justice, The Role of Standards in the Current Patent Wars, Presented at Charles River Associates Annual Brussels Conference: Economic Developments in European Competition Policy 4 (Dec. 5, 2012).

16 Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1892 (2002).

17 *See* Scott & Weisbruch, *supra* note 9, at 8.

18 Andrew Updegrove, *The Essential Guide to Consortia and Standards*, CONSORTIUMINFO.ORG ch. 2, § 2.1, http://www.consortiuminfo.org/essentialguide/participating1.php (last visited Apr. 15, 2014).

19 *Id*.

20 Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*,

40 IND. L. REV. 351, 365 (2007).

21 *See* Lemley, *supra* note 16, at 1891.

22 *Id*. at 1902.

23 *See id*. at 1901–02.

24 *See generally id*.

members to disclose their intellectual property rights.[25] SSOs that do not mandate disclosure have other provisions that amount to the same result.[26] This policy exists because SSOs carry significant risks to their members via a process known as "patent holdup."[27]

Patent holdup arises because standardization excludes alternative technologies.[28] By definition, the standard-setting process locks an industry into one way of doing business for an extended period of time.[29] An industry invests time and money integrating the standard once it is adopted.[30] Network effects in highly specialized technologies compound this lock-in effect.[31]

Accordingly, SSO members could be tempted to not disclose their own standard essential patents during the standard-setting process or encourage the SSO to adopt its technology without the other members knowing the implication of such a decision.[32] SSO members would have enormous power over the market once the standard has been integrated into existing and new products. SSO members could impede the manufacturing process by charging higher royalties to extract greater profits from the manufacturers or to foreclose companies from the market.[33] They could bring patent infringement claims against users of the standard. Both of these actions would increase the price of technology, thereby harming consumers.[34]

Consequently, SSOs have responded to this threat by requiring that holders of essential or potentially essential patents commit to license those patents on "fair, reasonable and non-square mandatory" (FRAND)

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[25] *Id*. at 1904.

[26] *Id*.

[27] George S. Cary et al., *The Case for Antitrust Law to Police the Patent Holdup Problem in Standard Setting*, 77 ANTITRUST L.J. 913, 915 (2011).

[28] *Id*. at 914.

[29] *Id*.

[30] U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 35 (2007).

[31] Cary et al., *supra* note 27, at 914–15.

[32] Adam Speegle, *Antitrust Rulemaking as a Solution to Abuse of the Standard-Setting Process*, 110 MICH. L. REV. 847, 851 (2012).

[33] *Id*.

[34] *See* Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2011–17 (2007) (explaining through modeling that patent holdup results in higher prices and lower output).

licensing terms.[35] However, the technological industry has not clearly delineated what is considered reasonable.[36] Technology companies vary dramatically in what they consider fair royalties for standard essential patents.[37] In addition to FRAND terms not being clearly defined, patent holders can chose to disregard a SSO's FRAND terms by demanding blatantly excessive royalties.[38]

In such situations, a SSO can seek remedies by bringing an antitrust claim. In both the United States and the European Union, SSOs can bring antitrust claims because against the patent holdings. This is because patent holding distorts market share within an industry and negatively impacts consumers.[39] In the United States, SSOs can bring an antitrust claim under Section 2 of the Sherman Act or Section 5 of the Federal Trade Commission Act (FTCA).[40] In the European Union, SSOs can bring an antitrust claim under Article 102 of the Treaty on the Functioning of the EU (TFEU).[41]

B. LEGAL FRAMEWORK FOR ANTITRUST VIOLATIONS DUE TO PATENT HOLDUPS

1. European Law

In the European Union, a claimant can bring an antitrust claim under Article 102 of TFEU.[42] Article 102 prohibits the "abuse by one or

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[35] Anne Layne-Farrar, *Be My FRAND: Standard Setting and Fair, Reasonable and Non-Discriminatory Terms*, AM. INTELL. PROP. L. ASS'N 2 (Mar. 30, 2010), http://www2.aipla.org/html/spring/2010/papers/Layne-Farrar_paper.pdf.

[36] *Id.*

[37] *See* Timo Ruikka, *"FRAND" Undertakings in Standardization – A Business Perspective*, FORDHAM IP CONF. (Mar. 28, 2008), http://fordhamipconference.com/wp-content/uploads/2010/08/T-Ruikka-paper-FRAND-from-business-perspective-Fordham.pdf.

[38] *Id.*

[39] THOMAS F. COTTER, PATENT HOLDUP, PATENT REMEDIES, AND ANTITRUST RESPONSES 8 (2008), *available at* http://www.meetings.abanet.org/litigation/committees/intellectual/roundtables/0309_outline.pdf.

[40] *See* Joshua D. Wright & Aubrey N. Stuempfle, Patent Holdup, Antitrust and Innovation: Harness or Noose? 10 (George Mason Univ. Law & Econ. Research Paper Series, 09-25, 2009), *available at* http://www.law.gmu.edu/assets/files/publications/working_papers/0925PatentHoldup.pdf.

[41] As a result of the Lisbon Treaty, article 82 is now article 102. *Changes After the Entry into Force of the Treaty of Lisbon (1 December 2009)*, EUR. COMM'N, http://ec.europa.eu/competition/information/treaty.html (last updated Apr. 16, 2012).

[42] *See* Yves Botteman & Agapi Patsa, *Towards a More Sustainable Use of Commitment Decisions in Article 102 TFEU Cases*, 2013 J. ANTITRUST ENFORCEMENT 1 (2013).

more undertakings of a dominant position within the internal market or in a substantial part of it."[43] Thus, the requirements of Article 102 are a company's dominant position, abuse of that dominant position, and a negative effect on trade between member states.[44]

Determining whether an undertaking has a dominant position requires examining the relevant market and the undertaking's position in that market.[45] Dominant position is defined as the firm having sufficient economic strength "to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers."[46] Significant market share is indicative of dominance.[47] Other factors indicating dominance include barriers to entry[48] and the extent of any countervailing buyer power.[49]

To constitute a violation of Article 102, a firm must have engaged in "exploitative" or "exclusionary" abuses.[50] EU courts broadly interpret what constitute exploitative or exclusionary abuses. Firms that impose "unfair purchase or selling prices or other unfair trade conditions" could be subject to liability.[51] In the context of the standard-setting process, such a definition suggests that Article 102 would apply to a patent holder who applied unfair licensing terms, engaged in

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[43] Consolidated Versions of the Treaty on European Union and the Treaty on the Functioning of the European Union art. 102, 2008 O.J. (C 115) 1, 89.

[44] *EU Competition Law: Article 101 and Article 102*, FIELD FISHER WATERHOUSE (Jan. 21, 2010), http://www.ffw.com/pdf/EU-competition-law-articles-101-102.pdf.

[45] *Id*.

[46] Case 27/76, United Brands Co. v. Comm'n, 1978 E.C.R. 207, ¶ 65.

[47] *See* Case 85/76, Hoffman-La Roche & Co. AG v. Comm'n, 1979 E.C.R. 461, ¶ 41. A market share of fifty percent is sufficient to establish dominance whereas a forty percent market share will usually not be enough by itself to be dominant. *EU Competition Law: Article 101 and Article* 102, *supra* note 44.

[48] ALISON JONES & BRENDA SUFRIN, EU COMPETITION LAW 297 (2014).

[49] Countervailing power exists when buyers have the ability to extract price concessions from suppliers. Christopher M. Snyder, Contribution to the *New Palgrave Dictionary*, Countervailing Power, DARTMOUTH (Mar. 23, 2005), http://www.dartmouth.edu/~csnyder/countervail01.pdf.

[50] Christopher B. Hockett & Rosanna G. Lipscomb, *Best FRANDs Forever? Standard-Setting Antitrust Enforcement in the United States and the European Union*, ANTITRUST, Summer 2009, at 19, 22.

[51] Nicholas Petit & Norman Neyrinck, *Behavioral Economics and Abuse of Dominance: A Proposed Alternative Reading of the Article 102 TFEU Case-Law* 14 (Global Competition Law Ctr., Working Paper 02/10, 2010), *available at* https://www.coleurope.eu/sites/default/files/research-paper/gclc_wp_02-10_-_petit__neyrinck.pdf.

excessive pricing, or refused to license its patents in order to monopolize a downstream market.[52]

2. American Law

In the United States, a claimant can bring an antitrust claim under Section 2 of the Sherman Act.[53] Section 2 holds that: "[e]very person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce . . . shall be deemed guilty . . . ."[54] Monopolization requires showing that a firm possessed monopoly power and acquired, enhanced, or maintained that monopoly power by use of exclusionary conduct.[55] Monopoly power is defined as "the power to control prices or exclude competition."[56]

Exclusionary conduct is defined as "exclud[ing] rivals on some basis other than efficiency,"[57] taking action beyond "valid business reasons,"[58] and "a willingness to forsake short-term profits to achieve an anticompetitive end."[59] Determining whether a firm engaged in exclusionary conducts entails an extensive, fact-specific inquiry into the scope of the relevant product and geographic market.[60] It requires considering the actual ability of the firm to raise prices or reduce output given the presence of any other competitors or potential entry of new competitors into the market.[61]

Once the claimant has established that the defendant engaged in unilateral anticompetitive conduct, the defendant has the right to rebut

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[52] *See* Karolina Mojzesowicz, *Article 102 TFEU*, UNIWERSYTET JAGIELLOŃSKI, http://www.law.uj.edu.pl/~kpe/pliki_13/EU.comp.law.Article.102.TFEU.pdf (last visited Apr. 15, 2014).

[53] Ashby Jones, *Sherman Stirs: U.S. Revives Section 2 of the Antitrust Act*, WALL ST. J., online.wsj.com/news/articles/SB124693452204503961 (last updated July 7, 2009).

[54] 15 U.S.C. § 2 (2000).

[55] United States v. Microsoft Corp., 253 F.3d 34, 58 (D.C. Cir. 2001).

[56] United States v. E. I. du Pont de Nemours & Co., 351 U.S. 377, 391 (1956).

[57] Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 605 (1985).

[58] Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 483 (1992).

[59] *See* Verizon Commc'ns, Inc. v. Law Office of Curtis V. Trinko, LLP, 540 U.S. 398, 409 (2004).

[60] U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT, ch. 2 (2008), *available at* http://www.justice.gov/atr/public/reports/236681.pdf..

[61] *Id*.

such evidence by enunciating a legitimate business purpose.[62] Monopolization does not occur if a firm used "superior skill, foresight and industry" to acquire its dominant position.[63] This strict approach of Section 2 exists because violations can carry substantial consequences. Firms that violate Section 2 are subject to criminal penalties.[64] If a court decides that the firm harmed its competitors, it can impose treble damages (three times the amount of monetary harm inflicted on competitors).[65]

In addition to Section 2, a claimant can bring a claim under Section 5 of the FTCA.[66] Section 5 prohibits "unfair or deceptive acts or practices in or affecting commerce."[67] An unfair act occurs when "it causes or is likely to cause substantial injury to consumers, cannot be reasonably avoided by consumers, and is not outweighed by countervailing benefits to consumers or to competition."[68] A deceptive act occurs when "a misrepresentation, omission, or practice misleads, or is likely to mislead the consumer; a consumer's interpretation of the representation, omission, or practice is considered reasonable under the circumstances; and the misleading representation, omission, or practice is material."[69] Determining whether an act is unfair or deceptive requires a fact-specific analysis.[70] While some companies' violations are isolated incidents at first glance, the narrative shifts when considering the totality of the circumstances.[71]

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62 AM. BAR ASS'N, ANTITRUST LAW DEVELOPMENTS 300 (Jonathan M. Jacobson et al. eds., 6th ed. 2007).

63 United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945) (Hand, J.).

64 William F. Adkinson, Jr. et al., *Enforcement of Section 2 of the Sherman Act: Theory and Practice* (Nov. 3, 2008) (Fed. Trade Comm'n, Working Paper), *available at* http://www.ftc.gov/system/files/documents/public_events/ section-2-sherman-act-hearings-single-firm-conduct-related-competition/section2overview.pdf.

65 *Id*.

66 CHRISTOPHER R. LESLIE, ANTITRUST LAW AND INTELLECTUAL PROPERTY RIGHTS: CASES AND MATERIALS 35 (Oxford University Press, 2011).

67 15 U.S.C. §45 (2006).

68 BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, CONSUMER COMPLIANCE HANDBOOK FTC ACT 1 (June 2014), *available at* http://www.federalreserve.gov/boarddocs/supmanual/cch/ftca.pdf.

69 *Id*.

70 FED. DEPOSIT INS. CORP., ABUSIVE PRACTICES-FEDERAL TRADE COMMISSION ACT 1.6, *available at* http://www.fdic.gov/regulations/compliance/manual/pdf/VII-1.1.pdf.

71 *Id*.

C. CASE PRECEDENT ON PATENT HOLDUP

In re Dell Computer Corp. was one of the first cases where the US government acted against a company for unilaterally attempting to impose costs on its rivals through abuse of the standard-setting process.[72] In that case, the Federal Trade Commission (FTC) alleged that Dell had intentionally failed to inform the Video Electronics Standards Association (VESA) that it owned patents on standard essential patents for the VESA-local (VL) computer bus.[73] This violated VESA's bylaws, as VESA required its members to disclose all intellectual property rights relating to the proposed standard.[74]

Dell had disclosed that the company owned no standard essential patents, even though it had obtained such patents one year earlier.[75] Eight months after the new standard was approved (and had achieved commercial success), Dell informed VESA members of its standard essential patents and demanded royalties.[76] Consequently, the FTC ruled that Dell Corporation had engaged in "unfair methods of competition" in violation of Section 5 of the FTCA.[77] The FTC asserted that Dell's actions had hindered industry acceptance of the VESA VL-bus standard.[78] Dell's patent litigation had increased the standard's implementation costs, and uncertainty ratcheted within the industry. Because of these barriers to entry, fewer businesses were inclined to enter the market. Dell's patent claims had foreclosed the market and undermined the long-term viability of the VESA-VL standard.[79]

To settle the charges, Dell subjected itself to structural remedies.[80] Dell agreed not to enforce its patent rights against computer manufacturers using the VL-bus.[81] Furthermore, the settlement terms stipulated that Dell would be prohibited from enforcing any of its patent rights that it intentionally failed to disclose upon request of any SSO

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[72] Hockett & Lipscomb, *supra* note 50, at 21.

[73] *Dell Computer Settles FTC Charges*, FTC (Nov. 2, 1995), http://www.ftc.gov/opa/1995/11/dell.htm.

[74] *In re* Dell Computer Corp., 121 F.T.C. 616, 617 (1996).

[75] *Id*.

[76] *Id*.

[77] Speegle, *supra* note 32, at 860.

[78] *Dell Computer Settles FTC Charges*, *supra* note 73.

[79] *Id*.

[80] *Id*.

[81] *Id*.

during the standard-setting process.[82] Dell did not challenge the FTC's terms despite the fact that less restrictive remedies existed to bring the market back to a competitive state.[83]

Similarly, in 2003, the FTC charged Union Oil Company of California (Unocal) with wrongful monopolization, attempted monopolization, and unreasonable restraint of trade.[84] The FTC alleged that Unocal illegally acquired monopoly power as a result of its actions during the standard-setting process of the California Air Resources Board (CARB).[85] Unocal persuaded CARB to adopt certain standards by misrepresenting its patents as non-proprietary.[86] Simultaneously, Unocal pursued patents that overlapped with the standard.[87]

The FTC claimed that Unocal's misrepresentation directly led to the acquisition of monopoly power by undermining the downstream firms.[88] Moreover, the FTC noted how Unocal's behavior harmed consumers. Its patents could have imposed additional costs totaling hundreds of millions of dollars per year on California taxpayers.[89] Consequently, Unocal agreed to settle with the FTC. Unocal would cease to enforce its standard essential patents.[90]

While cases such as *Dell* and *Unocal* have resulted in favorable rulings for the FTC, other cases have concluded differently. In *Rambus, Inc. v. FTC*, the FTC charged Rambus, Inc. with violating the disclosure policies of the Joint Electronic Device Engineering Council (JEDEC), an international SSO.[91] JEDEC was developing the SDRAM computer memory standard.[92] Supposedly, Rambus used information gathered at JEDEC meetings to amend its existing patents on file, so they covered

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82 *Id*.

83 *Id*.

84 Hockett & Lipscomb, *supra* note 50, at 20.

85 Press Release, FTC, FTC Charges Unocal with Anticompetitive Conduct Related to Reformulated Gasoline (March 4, 2003), *available at* http://www.ftc.gov/news-events/press-releases/2003/03/ftc-charges-unocal-anticompetitive-conduct-related-reformulated.

86 *Id*.

87 *Id*.

88 *Id*.

89 *Id*.

90 Hockett & Lipscomb, *supra* note 50, at 20.

91 *In re* Rambus, Inc., 2006 FTC LEXIS 60, *rev'd* 522 F.3d 456 (D.C. Cir. 2008).

92 M. Sean Royall, Amanda Tessar & Adam Di Vincenzo, *Deterring "Patent Ambush" in Standard Setting: Lessons from Rambus and Qualcomm*, 23 ANTITRUST 19, 34 (2009), *available at* http://www.gibsondunn.com/publications/Documents/Royal-Tessar-DiVincenzo-DeterringPatantAmbush.pdf.

the proposed standard more precisely.[93] Rambus pursued this scheme over several years, never once disclosing the patents or amendments to JEDEC.[94] This deception led Rambus to later assert patent claims against firms employing the near universal industry standard.[95]

The FTC determined that Rambus had engaged in unilateral anticompetitive conduct.[96] Rambus's manipulation of the JEDEC standard-setting process allowed it to gain monopoly power.[97] Had Rambus disclosed the patents to JEDEC, JEDEC could have chosen to use alternative nonproprietary technology.[98] On the other hand, JEDEC could have chosen to continue with Rambus's technology, but negotiated *ex ante* FRAND licensing commitments from Rambus.[99] The FTC determined that Rambus would be liable under either possibility.[100]

The D.C. circuit court, however, took a different position than the FTC regarding the proper causation standard. The D.C. circuit court reversed the FTC's decision on Rambus.[101] In its opinion, the circuit court emphasized how the FTC was unable to prove with reasonable certainty that JEDEC would not have standardized Rambus's patent had it properly disclosed the technology.[102] Thus, the FTC failed to adequately show the causation requirement in Section 2.[103] The circuit court overturned the Rambus decision based on the lack of sufficient evidence, not on the relationship between SSO deception and unilateral anticompetitive behavior. The circuit court did not foreclose the possibility that Rambus's conduct violated Section 5.[104]

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93 Compl. at 15, *In re* Rambus, Inc., No. 9302 (June 18, 2002), *available at* http://www.ftc.gov/os/adjpro/d9302/020618admincmp.pdf.

94 *Id*.

95 *See* M. Sean Royall, *The Role of Antitrust in Policing Unilateral Abuses to Standard –Setting Processes*, 18 ANTITRUST 44, 45 (Spring 2004).

96 *See In re* Rambus, 2006 FTC LEXIS 60 at *71–75.

97 In the Matter of Rambus Inc., F.T.C. Docket No. 9302 1, 5 (Aug. 2, 2006) (Rambus Commission Opinion), *available at* http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf.

98 *Id*. at 98.

99 *Id*.

100 Stanley M. Besen & Robert J. Levinson, *Lessons from FTC v. Rambus*, CHARLES RIVER ASSOCIATES 17, 18 (last visited Aug. 16, 2014), http://crai.com/uploadedFiles/Publications/besen_levinson_icarus-summer-2010-2.pdf?n=6583.

101 *Id*. at 19–20.

102 *Id*.

103 Rambus Inc. v. FTC, 522 F.3d 456, 463–64 (D.C. Cir. 2008).

104 *Id*. at 467–69.

The Rambus case highlights how the differences in the American and European Union antitrust laws can lead to drastically different results. The European Commission (EC) investigated allegations that paralleled those at issue in the D.C. circuit's decision in *Rambus*.[105] Unlike the D.C. circuit, however, the EC focused on Rambus's subsequent behavior to the patent ambush when determining whether Rambus breached Article 102.[106] The EC held that Rambus violated Article 102 by seeking unreasonable royalties for use of certain patents relating to the SDRAM standard.[107] This EC focused on Rambus's intentional breach of JEDEC policy and the underlying duty of good faith in the context of standard setting.[108] The EC determined that Rambus undermined confidence in the standard-setting process when "it did not disclose "the existence of the patents which it later claimed was relevant to the adopted standard."[109] Furthermore, the EC considered the standard-setting process to be essential for the development of the market in general to the benefit of the consumers.[110] The EC emphasized how, in order for the SSO to remain a beneficial process, entities should pay special attention to "procedures used to guarantee that . . . the users of standards are protected."[111]

The EC adopted an underlying duty of good faith within the standard-setting context.[112] According to the *Intellectual Property Rights and Standardization* manual, patent holders act in bad faith if they knowingly fail to disclose standard essential patent until after the standard's adoption.[113] In addition to an implied duty of good faith, the EC emphasized how Rambus's suppression of information distorted the

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[105] Hockett & Lipscomb, *supra* note 50, at 22.

[106] *Id*.

[107] Commission Decision COMP/38.636 – Rambus of 9 Dec. 2009, art. 101, 102, 2010 O.J. (C 30) ¶ 28, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/38636/38636_1203_1.pdf .

[108] Ruben Schellingerhout & Piero Cavicchi, *Patent ambush in standard-setting: the Commission accepts commitments from Rambus to lower memory chip royalty rates*, COMPETITION POL'Y NEWSL., no. 1, 2010, at 32, 33, *available at* http://ec.europa.eu/competition/publications/cpn/cpn2010_1.pdf.

[109] Press Release, MEMO/07/330, Commission Confirms Sending a Statement of Objections to Rambus (Aug. 23, 2007), *available at* http://europa.eu/rapid/press. ReleasesActions.do?reference=MEMO/07/330&form.

[110] SCHELLINGERHOUT & CAVICCHI, *supra* note 108, at 34.

[111] Comm'n Decision, supra note 107, ¶¶ 30–32.

[112] Schellingerhout & Cavicchi, *supra* note 108, at 35.

[113] Comm'n Decision, supra note 107, ¶ 32.

decision making process within a standard-setting body.[114] The EC considered this to be determinative factor in an Article 102 claim.[115] Consequently, Rambus settled with European regulators regarding these allegations.[116] In the settlement terms, Rambus agreed that it would stop charging royalties on licenses for technology from the 1990s and would cap its royalty rates on licenses for more recent technologies.[117] In exchange, Rambus would not be subjected to a fine or criminal liabilities.

While the FTC failed to establish its antitrust claim in *Rambus* because of causation issues, other cases have that the US courts are willing to sidestep this issue and to continue to issue broad remedies for a SSO antitrust violation. In *Broadcom v. Qualcomm*, Broadcom accused Qualcomm of violating Section 2 of the Sherman Act.[118] Unlike the defendant in *Rambus*, the defendant in *Qualcomm* disclosed its standards-essential patents before the standard was formalized.[119] However, *Qualcomm* is still relevant because it involves issues of implied duties of good faith. The issue central to *Qualcomm* was whether or not the defendant had failed to meet an express obligation to license on FRAND terms.[120]

Broadcom alleged that the SSO incorporated Qualcomm's patented technology into the Code Division Multiple Access (CDMA) standard because of assurances that Qualcomm would commit to license that technology on FRAND terms. However, Qualcomm used its power under the CDMA standard to threaten phone manufacturers with lost pricing benefits if they purchased chipsets from Qualcomm competitors; to induce companies to exclusively purchase Qualcomm chipsets by offering reduced royalty rates in return; and to manipulate SSOs to ensure that the third generation (3G) standard could also be controlled by

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[114] *Id.* ¶ 39.

[115] *Id.* ¶ 42.

[116] Matthew Newman & Joel Rosenblatt, *Rambus Offers to Settle European Union Antitrust Case (Update 3)*, BLOOMBERG (June 12, 2009 16:19 EDT), http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aK08MSmH0Fz4.

[117] *Id.*

[118] Daniel Culley et al., *Learning from* Rambus—*How to tame those troublesome trolls*, 57 THE ANTITRUST BULL. 117, 122, 126 (2012), *available at* http://www.cgsh.com/files/Uploads/Documents/Learning%20From%20Rambus—How%20to%20Tame%20those%20Troublesome%20Trolls.pdf.

[119] *Id.* at 122.

[120] Hockett & Lipscomb, *supra* note 50, at 20.

Qualcomm's patents.[121] The district court dismissed Broadcom's monopolization claims.[122] The court emphasized how it was the creation of the standard, not Qualcomm's alleged deception, which eliminated competition in the relevant markets.[123] Like *Rambus*, the district court did not believe that the claimant sufficiently established that Qualcomm's behavior was the proximate cause for the elimination of competition within the market.

The United States Court of Appeals for the Third Circuit, however, reversed.[124] It held that an "intentionally false promise to license technology on FRAND terms, coupled with a SSO's reliance on that promise, qualifies as actionable anticompetitive conduct."[125] The determining factor in the third circuit's ruling was whether Qualcomm had engaged in conduct "so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such right has been relinquished."[126] By taking this approach instead of focusing on the "but-for" analysis, the third circuit avoided the causation burden at issue with *Rambus*.

Just as the third circuit in *Qualcomm* demonstrated that not all courts will dismiss antitrust claims regarding SSO violations because of the claimant's failure to prove the "but for" test, the events surrounding the EC investigation of Qualcomm blurs the line between legitimate antitrust complaints and commercial disputes. In the EU, six of Qualcomm's competitors—among them the world's biggest mobile network equipment maker and Qualcomm's biggest wireless chip rival—lodged complaints with the EC.[127] The competitors alleged that Qualcomm breached Article 102 by refusing to license its patents to competing chipset manufacturers in the downstream market on FRAND terms in contravention of its obligations to an international standard-setting body.[128] In addition, they alleged that Qualcomm had offered

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[121] Broadcom Corp. v. Qualcomm Inc., No. 05-3350, 2006 WL 2528545 at *2 (D.N.J. Aug. 31, 2006).

[122] Culley et al., *supra* note 118, at 122.

[123] *See* Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 304 (3d Cir. 2007).

[124] Culley et al., *supra* note 118, at 122.

[125] *Id.* at 123.

[126] Qualcomm, Inc. v. Broadcom Corp., No. 05-CV-1958-B(BLM)„ 2007 U.S. Dist. LEXIS 28211, at *32–*33 (S.D. Cal.).

[127] Press Release, European Comm'n, Antitrust: Commission initiates formal proceedings against Qualcomm (Oct. 1, 2007), available at http://europa.eu/rapid/press-release_MEMO-07-389_en.htm.

[128] *Id.*

"lower royalty rates to handset customers who buy chipsets exclusively from Qualcomm."[129] Therefore, Qualcomm's exclusionary acts increased its competitors' costs and distorted the industry by imposing severe barriers to entry, causing other manufacturers to refrain from entering the market.

The investigation ended with a flurry of Qualcomm's competitors making cross-license agreements with Qualcomm.[130] This suggests that the actual impetus was about commercial disputes, as opposed to antitrust violations.[131] The EC closed its investigation after four years of inquiry when all the claimants withdrew their complaints.[132] Qualcomm and Broadcom settled in 2009.[133] Qualcomm agreed to pay Broadcom $891 million over a four-year period.[134] In addition, the two parties agreed not to assert patents against each other for their respective circuit parts.[135]

II. ANTITRUST ANALYSIS

A. RELEVANT MARKET

In order to establish a successful antitrust case, a claimant must define a relevant market. This applies to both the EU and U.S. The traditional analysis for determining a relevant market focuses on the product and geographic dimensions.[136] Product dimensions means looking at a product market and its substitutes.[137] Geographic dimension means considering what locations a customer might purchase the product as well as its substitutes.[138]

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[129] *Id*.

[130] *See, e.g.*, Susan Decker & Ian King, *Qualcomm to Pay Broadcom $891 Million in Patent Case (Update 3)*, BLOOMBERG (Apr. 27, 2009 16:14 EDT), http://www.bloomberg.com/apps/news?pid=newsarchive&sid=alXkMGfVAIQY.

[131] *Id*.

[132] *Id*.

[133] Brooke Crothers, *Qualcomm, Broadcom reach $891 million settlement*, CNET (April 26, 2009, 7:18PM), http://news.cnet.com/8301-13924_3-10227815-64.html.

[134] *Id*.

[135] *Id*.

[136] ANDREW I. GAVIL, ET AL., ANTITRUST LAW IN PERSPECTIVE: CASES, CONCEPTS, AND PROBLEMS IN COMPETITION POLICY 471 (2d ed. 2008).

[137] Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 (2004).

[138] GAVIL ET AL., *supra* note 136, at 619.

Defining a technology market, as opposed to a product market, becomes appropriate when "rights to intellectual property are marketed separately from the products in which they are used."[139] Defining a relevant technology market involves identifying "the smallest group of technologies and goods over which a hypothetical monopolist of those technologies and goods likely would exercise market power, for example, by imposing a small but significant and non-transitory price increase."[140] Technology substitutes include "other technologies and goods which buyers would substitute at a cost comparable to that of using the licensed technology" if a monopolist raised the price of its technology.[141] The emphasis is on the economic substitutability of the two technologies, as opposed to the two technologies accomplishing a similar function.[142] The focus away from quantitative metrics is due to financial data regarding licensing terms not being readily available.[143]

The claim between Apple and Samsung involves an element of the UMTS technology market. Samsung's alleged abuse involves the licensing of UMTS standard essential patents.[144] Consequently, Samsung's patented technology and the potential substitute technology comprise the relevant technology market. The relevant technology market is not UMTS technology in its totality. Samsung does not have monopoly power over the entire enterprise—only one element of it.

Samsung's patented technology involves data transfers over the UMTS network.[145] Samsung's patented technology is essential to UMTS.[146] Determining viable substitutes to Samsung's patented technology entails looking at comparable technologies from other mobile communication standards that offer the buyer economic parity. Code division multiple access (CDMA) is the main alternative to UMTS for

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[139] U.S. DEPT. OF JUSTICE & FTC, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY, § 3.2.2 (1995), available at http://www.justice.gov/atr/public/guidelines/0558.htm.

[140] *Id*.

[141] *Id*.

[142] Unitherm Food Sys. v. Swift-Eckrich, Inc., 375 F.3d 1341, 1364 (Fed. Cir. 2004).

[143] *See* U.S. DEPT. OF JUSTICE & FTC, *supra* note 139.

[144] *See* Macari, *supra* note 4.

[145] *See European Patent Specification*, EUROPEAN PATENT OFFICE (Sept. 4, 2008), https://data.epo.org/publication-server/pdf-document?pn=1720373&ki=B1&cc=EP.

[146] Overview of Samsung's 3G patent assertions against Apple: 13 patents in 9 countries, FOSS PATENTS (Oct. 11, 2011), http://www.fosspatents.com/2011/10/overview-of-samsungs-3g-patent.html.

3G technology.[147] While CDMA is prevalent world-wide, it cannot utilize a SIM card, which makes switching handsets difficult.[148] Moreover, UMTS networks handle data faster than CDMA,[149] and CDMA lacks the economies of scale that UMTS has.[150] Were buyers to replace UMTS with CDMA, the buyers would disregard consumers that only have access to UMTS cellular networks. Disregarding a consumer group would minimizes a firm's potential profits and might not offset the higher charges associated with a monopolist raising patent prices.

Another potential alternative is the global system for mobile communications (GSM); however, it was designed primarily for voice telephony.[151] As 2G technology, GSM does not support fast wireless data transfers.[152] The unequal capabilities between the two technologies have economic implications. The demand for 2G is much smaller, as technology moves forward. In the United States, 2G technology makes up less than a quarter of the mobile communications market.[153] Economically, switching to 2G technology would not be a viable substitute to a monopolist raising its price on UMTS technology.

Similarly, long term evolution, or evolved universal terrestrial access network, is an unsuitable alternative to UMTS.[154] As 4G technology, LTE offers higher data rates and data volumes.[155] However, 4G devices have much smaller market adoption than 3G devices, as they are a relatively new technology.[156] Many telecommunication providers have yet to build sufficient 4G networks that make mass adoption possible.[157] Both supply and demand for LTE pales to UMTS. Even if a

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147 Ben Parr, *What's the Difference Between AT&T and Verizon's 3G Networks*, MASHABLE (Jan. 11, 2011), http://mashable.com/2011/01/11/cdma-umts-att-verizon-networks.

148 *Id*.

149 *Id*.

150 Wireless Watch, *Nokia backs away from CDMA*, THE REGISTER (June 30, 2006 5:02 GMT), http://www.theregister.co.uk/2006/06/30/nokia_qualcomm_battle/.

151 ETSI, *Mobile technologies GSM*, ETSI, http://www.etsi.org/index.php/technologies-clusters/technologies/mobile/gsm.

152 PETER RYSAVY, DATA CAPABILITIES FOR GSM EVOLUTION TO UMTS (2002), *available at* http://www.rysavy.com/Articles/2002_11_Data_GSM_to_UMTS.pdf.

153 *Analysis: Half of all mobile connections running on 3G/4G networks by 2017*, WIRELESS INTELLIGENCE, https://wirelessintelligence.com/analysis/2012/11/half-of-all-mobile-connections-running-on-3g-4g-networks-by-2017/359/.

154 Magdalena Nohrborg, *LTE*, 3GPP, http://www.3gpp.org/LTE.

155 *Id*.

156 Sascha Segan, *3G v. 4G: What's the Difference?*, PC MAGAZINE (Feb. 24, 2012 10:17 AM EST), http://www.pcmag.com/article2/0,2817,2399984,00.asp.

157 *Id*.

monopolist raises the price of its 3G technology, the costs associated with switching to 4G technology might remain unduly prohibitive for companies.

In addition to specifying a product dimension, defining a relevant market requires identifying a geographic dimension.[158] The geographic dimensions involve looking at the areas in which Samsung's patented technologies can be used. Samsung patented its technology in the United States and Europe. Samsung's patents form the basis of UMTS technology. Therefore, Samsung's patented technology encompasses the geographic region in which 3G technology is accessible. 3G technology is used by wireless carriers world-wide.[159] UMTS service is available in over 155 countries.[160]

B. DOMINANCE

In the United States, in addition to defining a relevant market, a claimant must show that the company has monopoly power in order to have a valid Section 2 claim. Monopoly power may be established through direct evidence of supracompetitive prices and restricted output.[161] The relevant market's structure and composition may indicate monopoly power.[162] Monopoly power may be established through circumstantial evidence of the firm's dominant share in a relevant market and the entry barriers associated with that market.[163] Barriers to entry include "regulatory requirements, high capital costs, or technology obstacles that prevent new competition from entering a market in response to a monopolist's supracompetitive prices."[164]

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[158] *See* AUGUSTINE PETER, CONCEPT PAPER: DEFINITION AND DELINEATION OF THE "RELEVANT MARKET" IN COMPETITION ANALYSIS 11, *available at* http://cci.gov.in/images/media/ResearchReports/surabhi_20090119114030.pdf.

[159] *Countries Supporting 3G Technology*, VERIZON WIRELESS, https://scache.vzw.com/dam/businessportal/content/assets/files/Available_Global_Services.pdf.

[160] *Id.*

[161] U.S. v. Microsoft Corp., 346 U.S. App. D.C. 330, 253 F.3d 34, 51 (D.C. Cir. 2001) (en banc); Rebel Oil Co. v. Atl. Richfield Co., 51 F.3d 1421, 1434 (9th Cir. 1995).

[162] Harrison Aire, Inc. v. Aerostar Int'l, Inc., 423 F.3d 374, 381 (3d Cir. 2005); Microsoft, 253 F.3d at 51.

[163] Harrison Aire, 423 F.3d at 381.

[164] Microsoft, 253 F.3d at 51; Rebel Oil, 51 F.3d at 1439; Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 591 n.15, 106 S. Ct. 1348, 89 L. Ed. 2d 538 (1986).

Similarly, in the EU, in addition to defining a relevant market, a claimant must show that Samsung has a dominant position in order to have a valid Article 102 claim.[165]

What constitutes a dominant position overlaps significantly with Section 2's conception of monopoly power.[166] Dominant position, however, is more expansive in the EU. Market share in the relevant market may indicate a dominant position,[167] but unlike a Section 2 claim, the threshold for market share indicating a firm's dominant position is much lower.[168] Defining a dominant position does not rest solely on quantitative metrics, such as market share.[169] Rather, the inquiry on a dominant position focuses on the economic leverage that a company's standard essential patents have in hindering effective competition.[170] Firms with a dominant position must have an effect on trade between member states.[171]

As a result of its UMTS standard essential patents, Samsung has a dominant position in the mobile communications industry in Europe. Samsung declared seven of the Samsung Asserted Patents to the European Telecommunications Standards Institute (ETSI) as essential to practice the UMTS standard.[172] Inherent in receiving a patent is the right to a limited monopoly;[173] thus a firm has absolute control over a technology for a specified period of time. Consequently, the structure of a patented technology market mandates extremely high barriers to entry.

Samsung's patented technology is indicative of a dominant position because the EU has taken the position that standard essential

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[165] *See* European Commission, *Antitrust Procedures in Abuse of Dominance (Article 102 TFEU cases)* (August 17, 16, 2013).

[166] GAVIL ET AL., *supra* note 136, at 719.

[167] *See* NICHOLAS MOUSSIS, EUROPEDIA: 15.4.1. PREVENTING THE EXPLOITATION OF A DOMINANT POSITION IN THE EU, *available at* http://www.europedia.moussis.eu/books/Book_2/5/15/04/01/index.tkl?all=1&pos=196.

[168] GAVIL ET AL., *supra* note 136, at 719.

[169] MOUSSIS, *supra* note 167.

[170] *Id*.

[171] *Id*.

[172] D. Brian Kacedon et al., *Failure to Comply with IPR Policy of Standards Setting Organization May Support Antitrust and Breach of Contract Claims*, FINNEGAN (July 23, 2012), http://www.finnegan.com/resources/articles/articlesdetail.aspx?news=c29f5398-a9c0-46b2-9d30-7095dfba8b0a.

[173] Cornell University Law School, *Patents*, LEGAL INFORMATION INSTITUTE (Aug. 19, 2010 5:21 PM), http://www.law.cornell.edu/wex/patent.

patents give their holders market power.[174] As indicated by Joaquin Alumnia, the Vice President of the European Commission and the commissioner responsible for competition,[175] "once a standard is adopted, it becomes the norm and the underlying patents are indispensable."[176] While a patent holder may control a small percentage of the overall technology in a standard, Alumnia's view reflects the practical realities of how such control can convey economic power.

Because of the barriers of entry and structure of the patent market, standard essential patents give companies the capability to hinder competitors to the determinant of the end user.[177] Samsung is the only supplier of specific wireless data transfer patents that are essential to the UMTS standard.[178] The indispensability of Samsung's patented technology enables it to dictate what constitutes FRAND terms.[179] Inherent in FRAND is a presumption of reasonableness and good faith. However, what constitutes good faith is open to manipulation. For example, in the EU, no clear definition exists to what constitute "fair," "reasonable," and "non-discriminatory."[180]

The economic costs of not acquiring a license may distort the negotiations in favor of the patent holder.[181] Buyers might decide not to pay Samsung's royalty rates because they believe the rates are excessive. Samsung, however, has the capability to ask for injunctions, which prohibits the infringed product from being sold on the market.[182] Thus, the buyers' only option, aside from litigation, would be to watch their products get removed from the market.

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[174] *See* Press Release, EU, Joaquin Alumnia Vice President of the European Commission responsible for Competition Policy Industry policy and Competition policy: Quo vadis Europe? (Oct. 2, 2012), available at http://europa.eu/rapid/press-release_SPEECH-12-83_en.htm.

[175] *Joaquin Alumnia*, ECR EUROPE, http://www.ecreuropeforum.net/joaquin-almunia.

[176] EU, *supra* note 111.

[177] *Id.*

[178] *See* Jon Brodkin, *Apple attacks Samsung for asserting standards-essential patents*, ARS TECHNICA (Aug. 17, 2012, 5:53 PM), http://arstechnica.com/tech-policy/2012/08/apple-attacks-samsung-for-asserting-standards-essential-patents/.

[179] *See* Jonathan Radcliffe & Gillian Sproul, *Mayer Brown, FRAND and the smartphone wars* 46, *available at* http://www.mayerbrown.com/Files/Publication/477a076f-dd7e-408c-8321-64edf33c190e/Presentation/PublicationAttachment/5b202a76-bc80-4467-b286-7a3b8e90e06d/Frand_Smartphone_Sproul.pdf.

[180] *Id.*

[181] *Id.*

[182] Matthew Hall & Robert B. Rakison, *Commission concerned with SEP injunctions*, LEXOLOGY (Feb. 1, 2013), http://www.lexology.com/library/detail.aspx?g=26e395ba-5698-4df0-bd35-b01bbdc1e7f4.

Foreclosing products to a market harms the end user by giving consumers fewer options. The capacity for licensing negotiations to favor the patent holder suggests that standard essential patents carry a tax to the consumers. Because the patent is essential to the standard, buyers may have to pay more, even though the underlying technology may not be more beneficial than non-standard essential technology. Accordingly, consumers might find themselves paying more for technology than they would otherwise had the market behaved efficiently.

C. UNILATERAL ANTICOMPETITIVE CONDUCT

Under US antitrust law, in order to establish that Samsung acquired, enhanced, or maintained its monopoly power by unilateral anticompetitive conduct in theory and actuality, one must consider whether Samsung willfully committed unilateral anticompetitive conduct, obtained or kept monopoly power as a result, excluded rivals with its actions, and harmed consumers.[183] Within a consensus-oriented private standard-setting environment, actionable anticompetitive conduct exists with "a patent holder's intentionally false promise to license essential proprietary technology on FRAND terms, coupled with a [SSO's] reliance on that promise when including the technology in a standard, and the patent holder's subsequent breach of that promise."[184]

Samsung abused its position as a member of the European Telecommunications Standards Institute (ETSI). As a member of the Third Generation Platform Partnership (3GPP), ETSI finalized the Universal Mobile Telecommunications Standard (UMTS), which forms the basis of all 3G smartphones.[185] Similar to the defendants in *Dell* and *Unicop*, Samsung had not disclosed all its standard essential patents when ETSI was finalizing the UMTS standard, even though ETSI mandated such action as part of Samsung's membership.[186] Because of

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[183] U.S. Dep't. of Justice, *supra* note 60.

[184] Susan E. Foster et al., *US: Recent Developments in Intellectual Property Antitrust Law*, *available at* http://www.perkinscoie.com/files/upload/12_08_Reingold_US_IP_&_Antitrust.pdf.

[185] D. Brian Kacedon et al., *Failure to Comply with IPR Policy of Standards Setting Organization May Support Antitrust and Breach of Contract Claims*, LES INSIGHTS (July 23, 2012), http://www.finnegan.com/resources/articles/articlesdetail.aspx?news=c29f5398-a9c0-46b2-9d30-7095dfba8b0a.

[186] *Id*.

this omission, it is reasonable to conclude that Samsung undertook FRAND obligations without intending to honor them.[187]

Samsung's conduct significantly induced the institute to adopt a standard based on its technology.[188] By adopting a standard based on Samsung technology, the institute foreclosed the market to alternative technologies. Before the standard was adopted, these alternative technologies "were competing to perform each of the various functions covered by each of Samsung's purported essential patents for UMTS."[189] The adoption of Samsung's standard essential patents in the UMTS made Samsung a gatekeeper, "accruing the power to harm or eliminate competition in relevant markets that include various technologies competing to perform the functions covered by the declared standard essential patents."[190] As a result of the standardized technology in smartphones, Samsung's control over its standard essential patents means that it can exclude rivals. Samsung's refusal to negotiate with Apple on standard essential patents is an example of this.

Evidence of Samsung's undermining of its FRAND commitments include its insistence that Apple must enter in a cross-license involving non-standard essential patents in order to receive Samsung's standard essential patents. During the negotiations, Samsung insisted that discussions over FRAND license terms needed to be "tied to a broader licensing deal that would include a cross-license to Apple's non standards-essential patents."[191] Samsung may demand fair and reasonable terms, but Apple has made no commitment to negotiate its nonstandard essential patents in exchange for Samsung's non-essential patents.[192] Likewise, Samsung set the royalty rate for its FRAND licenses at 2.4 percent of the overall product.[193] While no entities have agreed on what specifically FRAND rates should be, Samsung's 2.4 percent royalty

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[187] *Id*.

[188] *Id*.

[189] Florian Mueller, *Apple's amended FRAND counterclaims against Samsung largely withstand motion to dismiss*, FOSS PATENTS (May 15, 2012), http://www.fosspatents.com/2012/05/apples-amended-frand-counterclaims.html.

[190] Foster et al., *supra* note 184, at 17.

[191] Florian Mueller, *Apple says Samsung has "abusively" asserted UMTS patents to get away with "illicit" copying*, FOSS Patents (July 22, 2011), http://www.fosspatents.com/2011/07/apple-says-samsung-has-abusively.html.

[192] *See* Philip Elmer-DeWitt, *How the ITC forced a veto in the Samsung-Apple patent case*, CNNMONEY (Aug. 5, 2013, 6:13 AM), http://tech.fortune.cnn.com/2013/08/05/apple-samsung-itc-pinkert/.

[193] Mueller, *supra* note 191.

rate figure is considered high for the industry.[194] Furthermore, part of the exchange involved in setting a standard includes companies accepting discounted royalty rates for the opportunity to have a near monopoly over an essential element of their industry's technology.[195] Thus, Samsung demanding more than the industry standard can be seen as a repudiation of the implicit covenant.

When determining whether a company engaged in unilateral anticompetitive conduct, one considers whether the conduct could be seen as excluding an equally or more efficient competitor.[196] If such conduct does exclude an equally or more efficient competitor, the patent holder has engaged in anti-competitive behavior.[197] While Samsung has the leading market share in the global market, Apple has the leading market share in the US market.[198] While Apple is the company with the highest profit margins, Samsung is not far behind.[199] Considering the rest of the market lags in term of both market share and profit margins,[200] Apple and Samsung could be considered equally efficient competitors. Consequently, Samsung's demand for a 2.4 percent royalty rate and pursuit of a cross-license with Apple's non-standard essential patents can be seen as the actions of an anticompetitive firm because Samsung excludes an equally or more efficient competitor from its technology.

Prior case precedent indicate that Samsung's defense to a Section 2 claim would entail showing that no alternative technology existed at the time that the ETSI was considering the standard setting process for UMTS. Like the defendant in *Qualcomm,* Samsung would need to successfully show that Apple failed to sufficiently support a

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194 *Id*.

195 *See* Guillaume Duffey, *Patents and Standardisation: Competition Concerns in New Technology Markets*, GLOBAL ANTITRUST REV., 7–8 (2013); Brianne L. Kucerik, *District Court Enters the FRAND Fray*, METROPOLITAN CORP. COUNS., July-Aug. 2013, at 50, *available at* http://www.metrocorpcounsel.com/pdf/2013/July/50.pdf.

196 *See* U.S. DEP'T OF JUSTICE, *supra* note 60, at 41 n.59.

197 *Id*. at 43.

198 Global Market Share Held by Leading Smartphone Vendors from 4th Quarter 2009 to 2nd Quarter 2014, STATISTA, http://www.statista.com/statistics/271496/global-market-share-held-by-smartphone-vendors-since-4th-quarter-2009/ (last visited Sept. 3, 2014); Darrell Etherington, *Apple's Growth Outpaces Samsung's in Most Recent comScore U.S. Smartphone Share Report*, TECHCRUNCH (Mar. 6, 2013), http://techcrunch.com/2013/03/06/apples-growth-outpaces-samsungs-in-most-recent-comscore-u-s-smartphone-share-report/.

199 Geoff Duncan, *How Apple and Samsung Cornered All Smartphone Profits*, DIGITAL TRENDS (Aug. 6, 2012), http://www.digitaltrends.com/mobile/how-apple-and-samsung-cornered-all-smartphone-profits/.

200 *Id*.

plausible inference that had Samsung disclosed its patented technology to ETSI, a viable alternative performing the same functionality would have been adopted into the UMTS standard.[201] Similarly, Samsung could show that disclosure would lead ETSI to not incorporate the patented technology's functionality into the standard at all.[202] Samsung could accomplish this by arguing that Apple needed to provide more detailed facts surrounding the circumstances of the false FRAND declaration to ETSI.

In addition, Samsung could rebut the claim of unilateral anticompetitive action with a sufficient business justification.[203] Samsung could argue that its demand of a 2.4 percent royalty rate is legitimate considering the research and design expense behind the UMTS patents, or Samsung could argue that the portrayal of the 2.4 percent royalty rate as being excessive is irrelevant because the smartphone industry is still developing. What constitutes acceptability is hard to measure, as indicated by the lack of specific ranges within the industry. Furthermore, considering the cost and profit margin of iPhones, Samsung could argue that what is demanding from Apple is reasonable.[204] Just because Samsung must accede to FRAND terms does not discount its right to seek adequate compensation for its intellectual property.[205]

Finally, Samsung could argue that its pursuit of injunctions against Apple is not an attempt to maneuver Apple into a cross-license for nonstandard essential patents. Rather, it is an attempt to stop a competitor from infringing on its patent rights, as Apple does not have a license for Samsung's UMTS patents in its smartphones. If Samsung wants to protect the investment it made into developing those patents, it should have the right to pursue infringers. From a business perspective, Samsung is protecting its bottom line and ensuring that the firm acts

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[201] John W. Arden, *Apple Fails to State Antitrust Claims Against Samsung for Standards Setting Abuse*, TRADE REGULATION TALK (Oct. 27, 2011), http://traderegulation.blogspot.com/2011/10/apple-fails-to-state-antitrust-claims.html

[202] *Id*.

[203] American Bar Association, *supra* note 62.

[204] *See* Seth Fiegerman, *Apple vs. Samsung: Everything You Need to Know about the (Patent) Trial of the Century*, BUSINESS INSIDER (July 30, 2012, 3:38PM), http://www.businessinsider.com/apple-vs-samsung-everything-you-need-to-know-about-the-patent-trial-of-the-century-2012-7?op=1#ixzz2rqJQKgb9 ("The gross margins on the iPhone ranged from 49%-58% between April, 2010 and March, 2012.")..

[205] *See* Roger G. Brooks & Damien Geradin, Interpreting and Enforcing the Voluntary FRAND Commitment 12, *available at* http://www.cravath.com/files/Uploads/Documents/Publications/Interpreting%20and%20Enforcing%20Vol%20Frand%20Commitment_Brooks%207.20.10.pdf.

rationally. It should not matter that Apple is Samsung's closest rival and Samsung's injunctions could do Apple great harm because the industry has many competitors. The harm that Apple would suffer might be disproportionate from a profit-earning perspective, but every company that did not have a license for Samsung's UMTS patents would have suffered the same.

D. ABUSE OF A DOMINANT POSITION

EU law specifies what constitutes abuse of a dominant position.[206] Article 102 defines abuse as directly or indirectly imposing unfair prices; limiting markets to the detriment of consumers; applying dissimilar conditions to equivalent transactions with other trading parties; and making the negotiations of contracts contingent upon the other party accepting supplementary obligations which have no relationship to the original contract.[207] Article 102 broadly aims to prevent abuses of dominant position.[208] Unlike the United States, the EU considers both exclusionary and exploitative actions when analyzing abuse of a dominant position.[209] In addition, the EU does not disregard antitrust violations if the firm's conduct can be justified in the name of efficiency.[210] This view protects competitors. Unlike the United States, the EU believes that shielding competitors will preserve competition and enhance consumer welfare in the long term.[211]

Samsung's pursuit of injunctions against Apple for allegedly infringing upon its standard essential patents after Apple's attempted negotiations with Samsung over a FRAND license amounts to an abuse of a dominant position in the EU. The EC's guidelines on horizontal cooperation agreements explicitly hold that FRAND commitments are essential in ensuring access to the standardized technology for all interested parties.[212] Thus, Samsung cannot request injunctions against

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[206] *See* MOUSSIS, *supra* note 167.

[207] *Id.*

[208] JONES & SUFRIN, *supra* note 48, at 59.

[209] *Id.* at 367.

[210] James Kanter & Steve Lohr, *As Europe Presses Google on Antitrust, U.S. Backs Away*, N.Y. TIMES (Dec. 17, 2012), http://www.nytimes.com/2012/12/18/technology/eu-and-google-to-discuss-antitrust-issues.html?_r=0.

[211] *Id.*

[212] *See* Press Release, European Commission, Mergers: Commission approves acquisition of Motorola Mobility by Google (Feb. 13, 2012), *available at* http://europa.eu/rapid/press-release_IP-12-129_en.htm.

Apple prior to offering FRAND licensing terms because Samsung made clear commitments to license its standard essential patents on FRAND terms when the UMTS standard was adopted in Europe.[213]

During its negotiations with Apple, Samsung did not offer FRAND licensing terms when it demanded a 2.4 percent royalty rate for its standard essential patents. Had Apple accepted Samsung's conditions, it would have faced similar royalty rate demands from other UMTS standard essential patent holders, which would have resulted in an extrapolated 44 percent aggregate royalty burden.[214] This would undermine Apple's capabilities to successfully compete in the smartphone market when considering the cost of raw materials and profit margins. The exorbitance of a 44 percent aggregated royalty burden is reflected in how Samsung argued 5-7 percent was the appropriate range for aggregate royalties during its litigation with Ericsson and InterDigital.[215] No evidence exists showing that Samsung has ever told a company other than Apple that the royalty rate for its standard essential patents would be set at 2.4 percent of average selling price.[216]

Quantitative data regarding royalty rates of standard essential patents suggests that Samsung's demand for a 2.4 percent royalty does not constitute FRAND terms.[217] While quantitative data is not readily available for royalty rates of UMTS standard essential patents, data exists for royalty rates of LTE standard essential patents and can be used to draw inferences about the acceptable range of royalty rates of UMTS standard essential patents.[218] Regression analysis suggests that the more patents a firm possess, the higher the total royalty rate.[219] Samsung holds

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[213] *See* Peter Willis, *Statement of Objections in Samsung Standard-Essential Patent Case*, BIRD & BIRD (January 21, 2013), http://www.twobirds.com/en/news/articles/2012/statement-of-objections-samsung-standard-essential-patent-case0113.

[214] Mueller, *supra* note 191.

[215] *Id*.

[216] *Id*.

[217] Leon B. Greenfield Et Al, *SEP Enforcement Disputes Beyond the Water's Edge: A Survey of Recent Non-U.S. Decisions*, 27 Antitrust 55 (2013)., *available at* http://www.wilmerhale.com/uploadedFiles/WilmerHale_Shared_Content/Files/PDFs/Sum13-GreenfieldC.PDF.

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

[219] *Id*.

103 of 1,889 (5.45 percent) essential patents for UMTS.[220] Patent holders with an approximate share of 7 percent of LTE essential patents have a royalty rate of .01 percent per patent.[221]

The circumstances surrounding Samsung's negotiations with Apple implies Samsung used the negotiations as leverage against Apple for a cross-license on Apple's non standards-essential patents. Samsung's demand for a 2.4 percent royalty rate seems unreasonable from an economics perspective. Samsung owns a limited percentage of all UMTS patents.[222] While important, 3G is but one of the many features incorporated in a smartphone. However, the 2.4 percent royalty rate that Samsung demanded was for the entire market value of Apple's mobile products.[223] This dichotomy implies that Samsung had no intention of offering FRAND terms. Furthermore, Samsung did not provide license terms for its standard essential patents and took the position during negotiations that discussions over FRAND license terms need to be "tied to a broader licensing deal that would include a cross-license to Apple non standards-essential patent."[224] By attempting to use its standard essential patents as leverage against Apple until Apple grants Samsung a license on its non FRAND-committed patents, Samsung undermined its commitments to FRAND terms. Thus, Samsung abused its dominant position.

Samsung's attempt to use its negotiations with Apple as leverage for a cross-license on non-FRAND commitments is paralleled by the allegation that Samsung refused to provide Sony-Ericsson with a license to standard essential patents on FRAND terms.[225] Samsung allegedly undertook this position to compel Sony-Ericsson to license its patent portfolio at a significant discount to what other competitors pay.[226] Even though these are two separate incidents, taken in totality, it gives credence to the idea that Samsung did not act in good faith.

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[220] Brief for Plaintiff at 50, *Apple Inc. v. Samsung Electronics Co., LTD, et al.*, 888 F. Supp. 2d 976 (N.D. Cal. 2012).

[221] Quies, *supra* note 218.

[222] Brief for Plaintiff, *supra* note 220, at 48.

[223] Dan Levine & Poornima Gupta, *Apple says Samsung patent royalty demands unfair*, Reuters (July 25, 2012 5:35 PM), http://www.reuters.com/article/2012/07/25/us-apple-samsung-lawsuit-idUSBRE86O1BX20120725.

[224] Mueller, *supra* note 191.

[225] *See* Florian Mueller, *New Ericsson lawsuits against Samsung indirectly help Apple in fight against FRAND abuse*, FOSS PATENTS (Nov. 27, 2012), http://www.fosspatents.com/2012/11/new-ericsson-lawsuits-against-samsung.html.

[226] *Id.*

Samsung's abuse of its dominant position is furthered illustrated by how Samsung has brought requests for injunctions in multiple countries, particularly in the United Kingdom, France, and the Netherlands, on the claim that Apple's products infringed upon its standard essential patents.[227] While companies can seek injunctions in order to end patent infringement, Samsung's attempt to ban sales of Apple's products through the use of injunctions can be seen as an attempt to have leverage for cross-licensing negotiations involving Apple's nonstandard essential patents. This is because injunctions involve prohibiting the product infringing the patent from being sold. Consequently, injunctions would distort licensing negotiations unduly in the standard essential patent holder's favor. Withholding a product from a developed market would cause a loss in profits and erosion of investor confidence, which would affect the company's market capitalization. Samsung's abuse of dominant position can be implied by how no court has accepted Samsung's requests for standard essential patent-based injunctions.

III. CONCLUSION

From past cases, courts in the United States and Europe display a willingness to punish firms that use their standard essential patents to engage in antitrust behavior. In the specific matter of Samsung and Apple, one starts the antitrust analysis with the relevant market. Samsung has a dominant position or monopoly power in its patented technology. Samsung has significant leverage in licensing negotiations with buyers because its patents are essential to the UMTS standard. Samsung not disclosing its technology during the formation of the UMTS standard, however, suggests an intent to falsely promise to license essential patents on FRAND terms.

This falsity is reflected in Samsung's demand for a royalty rate of 2.4 percent from Apple. Samsung's actions—particularly its use of injunctions—can be construed as a desire to foreclose Apple from the European market. Samsung's actions may be motivated by a desire to leverage its position so that Apple will accede to a cross license agreement on non-essential patents. Samsung's actions may have

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[227] Chris Foresman, *Samsung lawsuits against Apple over 3G patents could backfire*, ARS TECHNICA (Sept. 23, 2011, 3:31 PM), http://arstechnica.com/apple/2011/09/samsung-lawsuits-against-apple-over-3g-patents-could-backfire/.

downstream effects on the consumer through higher retail prices or elimination of choice. In the United States, Apple is less likely to successfully establish a Section 2 claim because Samsung's actions may have sufficient business justifications. In addition, Samsung may argue that Apple did not sufficiently prove causality.

Whether or not Samsung committed antitrust violations has significant implications within the smartphone industry. Court judgments would provide guidance about what constitute FRAND terms by specifying the boundaries of such commitments.[228] Remedying the uncertainty may only benefit this still developing industry.[229]

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[228] Ossi Niiranen, *Apple v. Samsung patent showdown could affect future FRAND-licensing – commentary*, FINANCIAL TIMES (Aug. 17, 2012 2:15 PM), http://www.ft.com/intl/cms/s/2/215afb90-e86d-11e1-b724-00144feab49a.html.

[229] *See id.*