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Settling FRAND Disputes
Is Mandatory Arbitration a Reasonable and Non-Discriminatory
Alternative?

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SETTLING FRAND DISPUTES:
IS MANDATORY ARBITRATION A REASONABLE
AND NON-DISCRIMINATORY ALTERNATIVE?

By

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Abstract. This paper reviews the recent proposal that SSOs amend their IPR policies to require SEP owners and willing licensees to resolve disputes over licensing terms, particularly FRAND royalty rates, using mandatory, binding baseball-style (or “final offer”) arbitration. We first consider the fundamental underlying premise of the arbitration proposal - namely, that there are systemic problems relating to FRAND-based standardization and that current disputes are not being efficiently addressed. We find that mandatory baseball arbitration is a solution in search of a problem, will not necessarily afford “better” outcomes, and is more likely to lead to decisions that undermine the standardization process.

Keywords: Arbitration, Courts, Final-offer arbitration, FRAND royalties, IPRs, Hold up, Patent disputes, SEPs, SSOs and Standardization.

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I. Introduction

Standard setting is a compelling force of technological advancement, a driver of competition, and a source of enormous social and consumer gain. If anything, standards have grown in prominence in connection with key industries and sectors dependent upon network interoperability, as has been illustrated by the global ubiquity of smartphones and wireless networking. Even a casual observer can identify the unparalleled speed with which new features and functionality have been introduced in connection with such products, providing ever-expanding performance capabilities even as consumer costs decrease.²

A key factor in the success of standardization is the voluntary, consensus-driven approach commonly used by major standard-setting organizations (“SSOs”) throughout the world.³ Under this approach, SSOs solicit participation and contribution from all stakeholder interests and focus on the development of standards that reflect a consensus among all interested parties. In the end, every voice has the opportunity to be heard and considered, even if agreement on the end result is not unanimous.

Another key factor in the success of standardization is the manner in which SSOs have addressed issues involving intellectual property rights (“IPR”). If incorporated in a standard, some patented technologies can provide enormous benefits to standards implementers and consumers. SSOs have addressed the use of patents in standards through their IPR policies, which seek to balance the interests of all stakeholders, meaning that the interests of owners of IPR - *i.e.*, owners of patents that may be essential to the standard being developed (standard essential patents, or “SEPs”) - and implementers of the standard must both be accommodated. On the one hand, it is desirable to attract the best available technology for possible inclusion in a standard, including patented technology, and owners of such technology included in standards must have the ability to obtain reasonable compensation in consideration for granting rights to their IPR. On the other hand, if standardization is to be successful, standards must be broadly implemented by producers and suppliers of standardized products

² See discussion *infra* at 9-10.

³ See discussion *infra* at 6-8.

and services, who should have access to the patented technology that is standardized. This balance is reflected in, and achieved by, SSO IPR policies that provide for licensing on (fair) reasonable and non-discriminatory (“FRAND”) terms. FRAND licensing does not specify the terms that must be agreed upon by patent owners and potential licensees, but rather provides that SEP owners will negotiate with each implementer seeking a license as to the commercial terms specific to their bilateral relationship that best reflect each party’s commercial priorities, with both parties having the duty to do so in good faith. Thus, by committing to license on FRAND terms, an SEP owner forgoes its right not to license its FRAND-committed SEPs, or its right to license to some, but not all, implementers of a standard who desire a license. At the same time, the SEP owner is ensured a reasonable royalty sufficient to reward its inherently risky investment in activities leading to the patenting of the standardized technology and to compensate it for the value of the standardized technology. In turn, standards implementers have the opportunity to employ FRAND-committed SEPs, which by definition would be infringed absent a license, and to negotiate those licenses for FRAND-committed patents so that they may profitably bring standardized products and services to market. Thousands of license negotiations involving FRAND-committed SEPs have occurred successfully, allowing for the proliferation of standards-compliant products and services.

Notwithstanding the indisputable marketplace successes of technical standards, including those based in large degree on patented technology, certain commenters argue that the voluntary consensus-based standard-setting process is in need of repair to better address the possibility that owners of claimed SEPs will abuse their FRAND commitments and engage in “hold up” by charging fees that, for example, reflect the costs that implementers would incur if they were to switch a different standard without the SEP owner’s IP.⁴ More specifically, these commenters suggest that FRAND-based IPR policies are ineffective or inadequate because such policies are ambiguous and uncertain, which undermines the effectiveness of FRAND

⁴ See, e.g., George S. Cary, *et al.*, *The Case for Antitrust Law to Police the Patent Holdup Problem in Standard Setting*, 77 ANTITRUST L.J. 801, 908 (2011); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1992-93 (2007).

commitments.⁵ They contend that this ambiguity, in turn, has caused systemic inefficiencies as reflected by a growing volume of FRAND-related litigation. Accordingly, their calls for modifications to SSO IPR policies are on the rise, including the assertion that FRAND compliance requires SEP owners to make cash-only licensing offers and categorically forego the availability of injunctive or exclusionary relief. Many of these proposals are already being discussed in SSOs in connection with SSO members' discussions as to whether existing IPR policies should be modified.⁶ Such efforts have occurred repeatedly in SSOs for decades.⁷

This paper reviews one such proposal, recently promulgated by Professors Lemley and Shapiro, which argues that SSO IPR policies be amended so that “if an [*sic*] standard-essential patent owner and an implementer of the standard cannot agree on licensing terms, the standard-essential patent owner is obligated to enter into binding baseball-style (or ‘final offer’) arbitration with any willing licensee to determine the royalty rate.”⁸

First, in section II, we consider the fundamental underlying premise of the arbitration proposal - *i.e.*, that there are systemic problems relating to FRAND-based standardization and that current disputes are not being efficiently addressed. We believe this presumption is based on a simple theoretical model whose predictions are unsupported by empirical evidence. Casting standard setting in a negative light and insisting that changes must be made to protect standards against SEP owners'

⁵ See Cary, *et al.*, *supra* n.4, at 908; Lemley & Shapiro, *supra* n.4, at 1992-93.

⁶ At the time of this writing, the authors are aware of on-going discussions concerning potential revisions to SSO IPR policies in at least the European Telecommunications Standards Institute (“ETSI”), the International Telecommunications Union (“ITU”), and the Institute of Electrical and Electronics Engineers (“IEEE”).

⁷ For example, the American National Standards Institute (“ANSI”) has constituted a policy group since the early 1990s to continually consider issues regarding whether changes to the ANSI IPR policy should be made. Such considerations have also been undertaken directly in ANSI-accredited SSOs since the 1980s. SSOs engaged in such efforts have included the Telecommunication Industry Association (“TIA”), IEEE, and the Alliance for Telecommunications Industry Solutions (“ATIS”). Through its history, ETSI has also engaged in continual evaluation and re-evaluation of its IPR policy. In all instances, revisions supported by the SSOs' memberships have been made to such policies.

⁸ Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, BERKELEY TECH. L.J. 2-3 (2013) (forthcoming), available at <http://faculty.haas.berkeley.edu/shapiro/frand.pdf>. While we disagree with many, if not most, of the assumptions underlying their proposal, this paper does not seek to address all points of disagreement, but rather focuses on the most relevant in terms of their policy implications.

opportunism is suspect when no actual harm from “hold up” has been shown, and when it appears that existing means for resolving FRAND disputes (including bilateral negotiations, voluntary arbitration, and, in the event that all else fails, judicial litigation) are working well, and have not been shown to have deterred in any way the pace or effectiveness of standardization.

Second, in section III, we investigate the merits of the proposal to amend SSO IPR rules to require SEP owners to engage in mandatory arbitration to resolve any disputes involving FRAND. We show that, contrary to the stated purpose of the mandatory arbitration proposal, that approach may, in fact, be more likely lead to decisions that undermine the guiding principles of effective standardization and SSO IPR policies - *viz.*, ensuring that all interests are balanced and considered. More specifically, arbitration generally, and especially as proposed by Professors Lemley and Shapiro, may diminish the incentives of parties to licensing negotiations that encourage them to seek resolution of FRAND-related issues through negotiation, as distinct from some form of adjudication. Increasing adjudicative, rather than negotiated, resolutions will impose delay, costs, and other inefficiencies on standards development efforts, and decrease the effectiveness of such efforts. In addition, the mandatory arbitration proposal may increase the risk of bias if FRAND disputes must be decided by arbitration, and specifically final offer arbitration. As we show, such bias may arise consistently, undercompensating SEP owners and thereby upsetting the balance that is sought and achieved by existing SSO IPR policies. Finally, we show that arbitration generally, and the type proposed by Professors Lemley and Shapiro specifically, is not a necessarily more efficient or less costly dispute resolution mechanism; it might even create greater roadblocks to effective resolutions of FRAND disputes.

Our conclusions are set out in section IV: we find that the mandatory arbitration proposal is, for the reasons discussed, a solution in search of a problem and, more importantly, poses a significant risk of negatively impacting the successful adoption of technical, consensus-based, industry standards.

II. Assessing existing SSO FRAND-based IPR policies

The fundamental premise underlying the mandatory arbitration proposal is the belief that current SSO IPR policies are flawed and that, as a result, FRAND disputes are not being efficiently resolved. In particular, Professors Lemley and Shapiro presume that patent hold up is undermining the standardization process and/or the success of standardized products and services, especially in high technology industries, and that the problem exists because FRAND commitments are supposedly vague and imprecise.⁹ That conclusion is factually incorrect. It therefore fails to provide justification for the proposed radical upheaval of the *status quo*. In no event, moreover, do the supposed flaws in FRAND justify mandatory arbitration, as opposed to existing avenues to address failed bilateral negotiations, including court litigation or voluntary alternate dispute resolution mechanisms that might include arbitration as defined by the parties.

A. *The principles of voluntary standardization and the role of FRAND*

At the outset, it is worth pointing out the well-accepted position that standard setting can greatly facilitate competition and innovation. As Professors Lemley and Shapiro themselves acknowledge,¹⁰

[i]ndustry standards are widely acknowledged to be one of the engines driving the modern economy. Standards can make products less costly for firms to produce and more valuable to consumers. They can increase innovation, efficiency, and consumer choice; foster public health and safety; and serve as a fundamental building block for international trade. Standards make networks, such as the Internet and wireless telecommunications, more valuable by allowing products to interoperate. The most successful standards are often those that provide timely, widely adopted, and effective solutions to technical problems.¹¹

The success of standardization has occurred in the context of SSOs' voluntary, consensus-based processes, whereby technical decisions regarding the direction of

⁹ See, e.g., Lemley & Shapiro, *supra* n.8, at 2-3, 6-7.

¹⁰ *Id.* at 2 (citing U.S. Dep't of Justice & Fed. Trade Comm'n, Chapter 2, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition*, (2007) (hereinafter, 'U.S. IPR Guidelines'), available at <http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf>).

¹¹ U.S. IPR Guidelines, *supra* n.10, at 33 (internal citations and quotations omitted).

standards are determined by consensus among participants in the standard development process. For such purposes, consensus means something less than unanimity, but more than a simple majority, reflecting sustained support, where parties voicing negative views have the opportunity to have them heard and addressed.¹² In this way, the standardization process accommodates the potentially divergent views of many stakeholders - *e.g.*, owners of technology; producers of standardized products and services; users of such products and services, including consumers; and governmental interests.

SSOs particularly need to accommodate divergent stakeholder views when a consensus of SSO members determine that patented technology should be incorporated in a standard, a circumstance that is all but inevitable for high-tech standards. To do so, SSO IPR policies balance two primary objectives: (1) affording SEP owners adequate compensation for their patented technology taking into account their investments in R&D; and (2) assuring implementers of standards the opportunity to profitably bring standardized products and services to market, including by practicing patented inventions embodied in such products and services, and thereby allow the broad adoption and uptake of the standard.¹³ Achieving both objectives

¹² See, *e.g.*, ANSI, *Response to Request for Information Re: Federal Agencies' Participation in Standards and Conformity Assessment Activities*, 2, 7, 9 (June 10, 2011) (hereinafter "Comments of ANSI"), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00006-60456.pdf> (espousing a process for developing standards that ensures "decisions are reached through consensus among those affected" and that "all views are considered and a dispute resolution process exists"). "The SDO's major responsibility is to ensure that the due process-based procedures for developing consensus on the standard are properly followed." *Id.* at 11; see also TIA, *Re: Federal Trade Comm'n Request for Comments and Announcement of Workshop on Standard-Setting Issues*, 4 (June 14, 2011) (hereinafter, "Comments of TIA"), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00016-60530.pdf> ("Market--driven open standards can help promote competition and innovation, and such standards are developed or ratified through a voluntary, open and consensus-based process."); U.S. Office of Mgmt. & Budget, Circular A119, *Federal Participation in the Development & Use of Voluntary Consensus Standards & in Conformity Assessment Activities* (Feb. 10, 1998), available at http://www.whitehouse.gov/omb/circulars_a119 (defining voluntary consensus bodies and defining consensus as requiring "general agreement, but not necessarily unanimity" and the fair consideration and resolution of all comments).

¹³ WiseHarbor, *A Compendium of Industry and Market Analysis Articles on Intellectual Property in Mobile Communications Standards*, 6-7 (June 12, 2011) (hereinafter "Comments of WiseHarbor"), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00007-60459.pdf>. As an example, ETSI and the 3rd Generation Partnership Project ("3GPP") define the three main objectives of their IPR policies as (1) creating standards based on technologies that best met the technical objectives; (2) promoting the availability of essential IPR; and (3) ensuring an adequate and fair reward to IPR holders for use of IPR included in standards. ETSI, *Intellectual Property Rights Policy*, Rules of Procedure, Annex 6 (March 20, 2013), available at <http://www.etsi.org/images/files/IPR/etsi-ipr->

facilitates the welfare-enhancing and procompetitive outcomes of standardization, as consumers benefit from preferred technology choices, increased suppliers of standardized goods and services, and, oftentimes, decreasing prices.¹⁴

Consistent with this balanced approach is the freedom afforded by FRAND to SEP owners and potential licensees to establish mutually agreeable terms through negotiation. This allows the counterparties to pursue their respective marketplace-driven priorities and reach agreement on license terms, where agreement is the best indicator that such terms are “reasonable,” as distinct from terms that would be imposed or defined by specified formulae as proposed by some. As an example, Professors Lemley and Shapiro propose that a FRAND royalty rate should be measured by the incremental value of the SEP over its next best alternative *ex ante*.¹⁵ Such a valuation would purportedly allow the SEP holder to receive compensation attributable to the value of the patent, and not any additional value arising from standardization. As this incremental value test has evolved, however, it would

policy.pdf. ETSI developed the 2G GSM standards. 3GPP was subsequently formed to address future generations of standards, and uses the rules and IPR Policy of ETSI. Similarly, the ITU, the International Organization for Standardization (“ISO”), and the International Electrotechnical Commission (“IEC”), which collaborate closely in a number of areas, have a Common Patent Policy whose sole objective is to make SEPs “accessibly to everybody without undue constraints,” but notes that “detailed arrangements . . . are left to the parties concerned” and that the ITU, ISO, and IEC “are not in a position to give authoritative or comprehensive information about evidence, validity, or scope of patents[.]” ITU, *Common Patent Policy for ITU-T/ITU-R/ISO/IEC*, (Apr. 23, 2012), available at <http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx>.

¹⁴ Lemley and Shapiro refer to SSO IPR policies’ goals of addressing interests of patent owners and implementers, but their characterization of these goals reveals their bias against the owners of SEPs. Specifically, they state that FRAND’s goal is “to promote the standard by assuring companies implementing the standard that they will not be blocked from bringing their products to market so long as they are willing to pay reasonable royalties for any standard essential patents.” Lemley & Shapiro, *supra* n.8, at 2. FRAND, however, is not so limited and SSO IPR policies accommodate broader interests. For example, FRAND licensing accommodates both monetary and non-monetary terms. See, e.g., *In re Certain Electronic Devices* (“*Apple v. Samsung*”), No. 337-TA-794, Commission Opinion (Public Version), 61-62 (U.S. Internat’l. Trade Comm’n, July 5, 2012) (noting that ETSI’s FRAND declaration, executed by Samsung, contemplated additional “terms and conditions,” such as balancing payments or settlement of litigation, and not only royalty rate). Further, read literally, the Lemley and Shapiro characterization would allow an implementer to adopt an infringing use simply by declaring a willingness to license on FRAND terms, but without first negotiating in good faith and actually entering a license, or obtaining a judicial determination of its right to do so. This would force the SEP owner “to defend its rights through expensive litigation” while “depriv[ing it] of the exclusionary remedy that should normally flow.” *Id.* at 62-63. Not only would this impose costs on the SEP owner to protect its rights, but it would also tip the balance between the SEP owner and the potential licensee dramatically in favor of the latter, which would then have decidedly greater leverage in any negotiations that might ultimately take place.

¹⁵ Lemley & Shapiro, *supra* n.8, at 10.

deprive the SEP owner of reasonable compensation for its patent. As one of us has previously commented, such a methodology would impose a pricing cap that would render pointless investment of risk capital in the invention of patented technologies that can be contributed to standards. This is because such a cap would not permit a return on sunk investment by the inventor.¹⁶ Commentators also have observed that the type of incremental value test supported by Lemley and Shapiro would deprive SEP owners of *all* value of the standard that, by industry consensus, includes an SEP, regardless of the significance of the contribution the SEP makes to the standard's success. While an SEP may not warrant attribution of all social value created by standardization, denying any attribution of value to an SEP that facilitates the success of a standard would undercompensate the SEP holder for its investment in what turn out to be successful R&D efforts.¹⁷

The benefits of the balanced approach reflected in existing SSO IPR policies are more than bare theory. Standardization has made possible the unparalleled growth of the mobile communications industry since the mid-1990s. Over the last twenty years, “[s]uccessive generations of mobile technology have increased massively in performance with end-user data rates increasing 1,000-fold in 20 years,” as well as “substantially improved voice encoding, reduced power consumption, and . . . [the availability of] multimedia messaging and location tracking.”¹⁸ By 2020, it is anticipated that new technology will increase network capacity of existing 3G technologies by 550%, given the same amount of spectrum.¹⁹ While technology has evolved by leaps and bounds and competition has grown ever more intense,²⁰ “mobile

¹⁶ See Richard Taffet, *The Federal Trade Commission's Evolving IP Marketplace Report's Challenge to Inventiveness, Innovation, & Competitiveness*, ANTITRUST SOURCE 7 (Feb. 2012); see also J. Gregory Sidak, *The Meaning of FRAND, Part 1: Royalties*, 12 (Draft, May 10, 2013), available at <http://idei.fr/doc/conf/sic/seppapers2013/sidakwebb.pdf>.

¹⁷ Richard A. Epstein, *et al.*, *The FTC's Proposal for Regulating IP through SSOs Would Replace Private Coordination with Government Hold-Up*, 41-43 (Aug. 5, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00041-80171.pdf>.

¹⁸ Comments of WiseHarbor, *supra* n.13, at 7, 10.

¹⁹ *Id.* at 20-23.

²⁰ The U.S. Federal Communications Commission reports that between 2006 and 2010, “the number of mobile wireless handset manufacturers that distribute in the U.S. market increased from eight to 21” and “offered a total of 302 handset models to mobile wireless service providers in the United States.” U.S. Fed. Communications Comm’n, *15th Annual Mobile Wireless Competition Report*, 185 (June 27, 2011) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-103A1.pdf; see also

operators are as eager as ever to invest in new technologies to improve performance and lower total costs. New technology cost savings outweigh licensing fees.”²¹ Indeed, since 1993, “handset prices and royalty costs have actually fallen—with handset prices, upon which royalty fees are based, declining 77% on average[.]”²² Meanwhile, world-wide sales of mobile devices continue to grow.²³ FRAND-based licensing has served as the principal mechanism by which standardized technology has been made accessible - and been guaranteed to remain accessible - to market participants.²⁴

B. Existing FRAND-based IPR rules work!

The efficacy of FRAND-based rules is not limited to the mobile telecommunications market, and where issues have arisen, avenues exist for parties to obtain redress. As recently reported, the FTC’s chief IP counsel, Suzanne Munck, observed at a recent ABA conference that

[i]f you look at the vast majority of FRAND negotiations, they are working. . . . If you think about the number of enforcement cases we’ve had in the last 20 years, it’s six. If you think about the number of FRAND negotiations that have taken place over that time, I think that shows that the Commission is looking at these issues very seriously and weighing in

Richard S. Taffet & Hill Wellford, *Questioning the FTC’s incremental value test and claims of widespread hold-up in technology standards*, 57 ANTITRUST BULLETIN 161, 185-88 (2012) (describing the FTC’s proposed reforms as based on an inaccurate view of patent hold-up).

²¹ Comments of WiseHarbor, *supra* n.13, at 18.

²² *Id.* at 16.

²³ Gartner, Inc., *Gartner Says Sales of Mobile Devices in Second Quarter of 2011 Grew 16.5 Percent Year-on-Year; Smartphone Sales Grew 74 Percent* (Aug. 11, 2011), available at <http://www.gartner.com/newsroom/id/1764714>.

²⁴ Comments of WiseHarbor, *supra* n.13, at 7, 9 (“[T]he (F)RAND regime and bilateral licensing agreements have enabled the successful deployment and rapid growth of standards-based products and systems,” including the deployments of GSM and WCDMA); see also WiseHarbor, *Supplementary Submission of Industry and Market Analysis on Intellectual Property in Mobile Communications Standards*, 18 (July 26, 2011) (hereinafter “Supplemental Comments of WiseHarbor”), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00033-80105.pdf> (noting that “in some cases, would-be licensees would rather sign a royalty-bearing license than commit to other onerous conditions demanded in royalty-free licensing”); *Testimony of Donald J. Rosenberg, Hearing on Standard Essential Patent Disputes and Antitrust Law Before the S. Comm. on the Judiciary, Antitrust, Competition Policy, and Consumer Rights Subcommittee*, 9, 113th Cong. (July 30, 2013) (statement of Donald J. Rosenberg, Executive Vice President, Qualcomm Inc.), available at <http://www.judiciary.senate.gov/pdf/7-30-13RosenbergTestimony.pdf>. “[F]RAND-based licensing has also been highly effective with video and audio codec technologies, including the MPEG standards, which are incorporated in all DVD players.” Supplemental Comments of WiseHarbor at 9.

with enforcement authority in relatively few instances. In other words, FRAND works.²⁵

If systemic problems did in fact abound, one would anticipate decreased performance of standardized products, fewer new product introductions, diminished development of next generation solutions of existing standards, fewer competitors in technology and goods markets for standardized solutions, and higher prices for standardized goods and services. But the exact opposite conditions exist - as exemplified by the state of the mobile telephony market, discussed above. There is no evidence that the adoption or implementation of any standard has been defeated or delayed as a result of claimed-SEPs reading on the standard or because of FRAND disputes. There is no evidence that the licensing practices of those patents' owners have limited the launch and penetration of new products and services. There is no evidence that consumers have not benefited from increased competition and innovation. There is, in short, no evidence that opportunism by SEP owners is an overarching or systemic problem requiring an overhaul of the existing voluntary consensus standards process.

Leading SSOs, companies engaged in standards development, and many academics have all commented on the absence of an impending threat to competition due to a broken standards process and a proliferation of hold up. Such comments were made, most notably, as a part of a 2011 U.S. Federal Trade Commission ("FTC") Patents Standards Workshop. A number of commenters, including the U.S. Chamber of Commerce and industry experts, found that "empirical evidence supporting a concern

²⁵ Leah Nylen, *FTC cautious about stepping into disputes over standard-essential patents, top official says*, MLEX MARKET INTELLIGENCE, April 3, 2013. Munck noted that of those six, only two cases were recent, "against autoparts maker Bosch and internet giant Google[.]" *Id.* Both cases were FTC enforcement proceedings (rather than litigation), and were "specific cases meant to address specific conduct." *Id.* Moreover, FTC Commissioner Ohlhausen dissented in both cases. *Id.*; see also *Transcript, Hearing on Standard Essential Patent Disputes and Antitrust Law Before the S. Comm. on the Judiciary, Antitrust, Competition Policy, and Consumer Rights Subcommittee*, 23, 113th Cong. (July 30, 2013), available at <http://www.judiciary.senate.gov/hearings/hearing.cfm?id=042c67570e0fe19705acabbb8230ee0c> ("MUNCK: . . . I think it is fair to say that a large number of FRAND negotiations are working."); Comments of ANSI, *supra* n.12, at 12 ("The ANSI Patent Policy has proven over time to be a flexible and effective means of addressing the incorporation of patented technology into standards. Indeed, out of the approximately 10,000 current ANS, for only a relatively small number have questions ever been formally raised regarding the ANSI Patent Policy, including issues relating to improper 'hold up.'").

with a widespread risk of holdup is lacking.”²⁶ The Association for Competitive Technology (“ACT”), speaking for small businesses, stated that they are “not convinced that there is a wide-spread patent hold up problem.”²⁷ And indeed, the two leading U.S.-based organizations responsible for standard development in wireless technology, TIA and ATIS, reported that they had not experienced hold up in their standards development efforts. TIA stated it “has never received any complaints regarding such ‘patent hold up[;]’”²⁸ while ATIS reported it “has not experienced the hold up problem . . . nor has any such problem impeded in any way ATIS’s standards development efforts.”²⁹ Quite the contrary: “the success on the ground bears out . . . that hold-ups are not a serious threat to collaboration over and around standards.”³⁰

Voices to the contrary presented no objective evidence of a problem, touting only the possibility that hold up *may* occur from FRAND abuses, but offering no concrete or objective proof that the standards process has been distorted or that existing remedies are unable to address any actual unlawful behavior.³¹

²⁶ U.S. Chamber of Commerce, *Comments Re: Patent Standards Workshop, Project No. P11 1204*, 8 (Aug. 5, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00047-80186.pdf>; see also Jay P. Kesan, *Re: Request for Comments and Announcement of Workshop on Standard-Setting Issues*, Project No. P111204, 2 (June 14, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00022-60546.pdf> (“[T]here is little or no empirical evidence indicating that there is a significant problem with patent ‘hold up.’”); Comments of WiseHarbor, *supra* n.13, at 8 (June 12, 2011) (“[T]here has been no evidence of ‘windfall gains’ to patent owners impeding the adoption of any technology-based standards.”).

²⁷ ACT, *Comments Re: Patent Standards Workshop, Project No. P11-1204*, 2 (Aug. 5, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00050-80203.pdf>.

²⁸ Comments of TIA, *supra* n.12, at 1, 4; ATIS, *Comments in Response to Request 76 FR 28036*, 1 (June 14, 2011) (hereinafter “Comments of ATIS”), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00015-60529.pdf>.

²⁹ Comments of ATIS, *supra* n.28, at 1.

³⁰ Epstein, *et al.*, *supra* n.17, at 18.

³¹ Cisco Sys., Inc. & Research in Motion, *Comment of Cisco and Research in Motion in Response to Comment from TIA*, 2-3 (June 17, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00025-60567.pdf>; Broadcom Corp., *Comments of Broadcom Corp.*, 2-4 (Aug. 5, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00053-80206.pdf>; Cisco Sys., Inc., *et al.*, *Comments of Cisco Systems, Inc., Hewlett-Packard Co., Internat’l Bus. Machines Corp., and Research in Motion Ltd.*, 4-5 (Aug. 1, 2011), available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00035-80135.pdf>; Verizon Comms., Inc., *Written Comments of Verizon Communications Inc.* (Aug. 5, 2011), 2-3, available at <http://www.ftc.gov/os/comments/patentstandardsworkshop/00051-80236.pdf>; see also Cary, *et al.*, *supra* n.4, at 913.

Recent litigation has also contradicted the existence of a hold up problem, further belying the need for an overhaul of standardization rules, including specifically with respect to IPR issues. In the *Microsoft v. Motorola* case, for example, where Microsoft alleged hold up based on what Microsoft claimed was Motorola's non-FRAND licensing conduct, Microsoft's own experts could not provide a single concrete example of patent hold up occurring in the real world.³² More recently, in *Ericsson Inc. v. D-Link Systems, Inc.*, the judge noted that despite plaintiffs' arguments regarding the harm caused by patent hold up, they had failed to present any evidence that such damage had actually occurred.³³

Nor do *Microsoft* or other "patent war" cases, such as *Apple v. Samsung*³⁴ and *Apple v. Motorola*,³⁵ prove the existence of systematic problems resulting from FRAND abuses. As former Director of the U.S. Patent and Trademark Office ("USPTO"), David Kappos, explained:

[t]he current software patent "war" is hardly the first patent war - and unlikely not the last in our nation's patent history. Whenever breakthrough technologies come into the scene, market players find themselves joined in the marketplace by new entrants. The first instinct of the breakthrough innovators is to bring patents into play. This is not only understandable, it is appropriate. Those who invest in breakthrough innovation have a right to expect others to respect their resultant IP. However, in the end, as history has shown time and time again, the players ultimately end up agreeing to pro-consumer solutions via licenses, cross-licenses or joint development agreements allowing core technologies to be shared.³⁶

³² *Microsoft Corp. v. Motorola Inc.*, No. 10-cv-1823, Hearing Transcript, 180 (W.D. Wash. Nov. 13, 2012) (Testimony of Kevin Murphy); see also *id.* at 201-02 (admitting that "hold-up has not necessarily been a problem"); *id.* at 183 (testifying that Motorola's licenses merely "could" contain hold-up); *Microsoft Corp. v. Motorola, Inc.*, No. 10-cv-1823, Hearing Transcript at 67 (W.D. Wash. Nov. 16, 2012) (Testimony of Timothy Simcoe) (acknowledging that he has "no evidence that the dispute between Motorola and Microsoft in this case is in fact based on hold-up" and that he "can't nail down any particular license from any company as an example of hold-up"); *id.* at 135-36 (Testimony of Matthew Lynde) (acknowledging that "I have no basis from economic evidence to conclude whether or not patent hold-up is a real problem").

³³ Case 6:10-cv-00473-LED-KFG, Memorandum Opinion and Order (Dkt. No. 615), 50, 51 (Aug. 6, 2013).

³⁴ *Apple Inc. v. Samsung Electronics Co. Ltd.*, Case No. 12-CV-00630-LHK, (N.D. Cal.).

³⁵ *Apple Inc., et al. v. Motorola, Inc., et al.*, Case No. 11-CV-8540 (N.D. Ill.).

³⁶ David Kappos (then Under-Secretary of Commerce for IP and Director of the USPTO), *An Examination of Software Patents*, Keynote Address to the Center for American Progress, 2 (Nov. 20,

Benoit Battistelli, President of the European Patent Office, commented similarly, *i.e.*, that the “patent wars” involving standardized technologies reflect the increased risk of competitive conflict resulting from the growth of innovation that is encouraged by the patent system.³⁷ Moreover, many issues in the so-called “patent war” cases concern the licensing of non-SEPs, rather than claimed-SEPs. In fact, as Commissioner Joshua Wright of the FTC has recently noted, SSO-set standards can help avoid “standards wars, where firms may have to incur significant costs in order to establish an installed base of users,” and which may cause consumers to hold off on purchases “until the *de facto* standard is established to avoid the costs of choosing a losing standard.”³⁸

Most telling for purposes of the instant discussion, beyond the conjecture that inadequate or inefficient avenues exist for the resolution of FRAND disputes, no empirical corroboration has been presented to support this position or the assertion that such claimed inadequacies and inefficiencies are having an impact on innovation or competitiveness. The facts are to the contrary - available dispute resolution avenues (including voluntary arbitration as designed by the parties) are working, and “[r]eforms that suggest undermining [the FRAND bargaining process] . . . create a significant risk of doing more harm than good.”³⁹

2012); see also Kenneth Corbin, *Technology Patent Wars Sign of Robust Innovation*, CIO, 1, 3 (May 17, 2012) available at http://www.cio.com/article/706589/Technology_Patent_Wars_Sign_of_Robust_Innovation (stating “the patent wars common to the tech sector - and particularly smartphones - are hardly a sign that the system is broken, but rather a hallmark of robust innovation” and quoting Kappos as saying “I do not believe [the patent wars are] a sign that there’s anything at all wrong with the innovation environment in the U.S. In fact, I think it’s a byproduct of a very healthy overall innovation environment. These things happen. They sort themselves out”).

³⁷ Benoit Battistelli, *Patents in crisis? Thoughts on the Apple-Samsung decision*, European Patent Office Blog (Aug. 29, 2012), available at <http://blog.epo.org/uncategorized/patents-in-crisis-thoughts-on-the-apple-samsung-decision>.

³⁸ Joshua D. Wright, Commissioner, Federal Trade Commission, *SSOs FRAND, & Antitrust: Lessons from the Economics of Incomplete Contracts*, Inaugural Academic Conference: The Commercial Function of Patents in Today’s Innovation Economy, 7-8 (Center for the Protection of Intellectual Property, Sept. 12, 2013).

³⁹ *Id.* at 31.

C. *Existing dispute resolution mechanisms effectively resolve FRAND disputes*

The current state of affairs, as discussed immediately above, confirms that FRAND has generally achieved its intended purpose: to reward patent owners with reasonable compensation and assure standards implementers access to patented technology on reasonable terms. The opportunity to engage in commercial negotiations, however, does not ensure that agreement will be reached.

Nor can it plausibly be argued that the lack of more precise definitions of FRAND renders existing mechanisms for dispute resolution inadequate.⁴⁰ Commissioner Wright has noted that

[b]y entering into the contractual relationship with incomplete terms, the transacting parties reveal their belief that the expected gains from trade outweigh the expected costs associated with the possibility of hold-up. This suggests that contractual incompleteness and ambiguity in SSOs' IPR policies is an intended and key design feature of SSOs. Indeed, despite the changes SSOs have made to some of their IPR policies, the key ambiguities involving F/RAND and other terms have persisted over time. The persistence of these terms in competitive markets over time suggests, strongly in my view, that this imprecision is a feature and not a bug of the SSO contracting process.⁴¹

The very imprecision of these definitions, in fact, can allow for flexibility in the face of rapidly changing markets.⁴²

In fact, a standard of “reasonableness” has proven workable throughout the law: it figures in a number of key elements of contract law,⁴³ tort law,⁴⁴ constitutional law,⁴⁵

⁴⁰ See Wright, *supra* n.38, at 13 (“[N]either economic theory nor available empirical evidence supports a general presumption that [the current SSO approach to FRAND] is inefficient compared to feasible alternative contractual arrangements.”); *id.* at 15 (“The relevant question is . . . whether there is reason to believe - based upon economic theory and evidence - alternative contracts would improve efficiency as compared to those observed in the real world.”).

⁴¹ *Id.* at 19-20.

⁴² *Id.* at 27.

⁴³ The concept of reasonableness permeates contract law, including notions like the reasonableness of efforts to perform or the reasonable duration of a contract. The Uniform Commercial Code, for example, codifies the reasonableness standard with regard to many contracts. See, e.g., U.C.C. § 2-305 (2013) (reasonable price at time of delivery); U.C.C. § 2-306 (1989) (no quantity unreasonably disproportionate); U.C.C. § 2-309 (2013) (time of delivery shall be a reasonable time); U.C.C. § 2-609 (1989) (reasonable grounds for insecurity); see also REST. (SECOND) OF CONTRACTS § 37 (incorporating a reasonableness standard into the concept of reliance).

regulatory,⁴⁶ or, closer to the issues discussed here, antitrust/competition law⁴⁷ or intellectual property law.⁴⁸ The reasonableness standard actually empowers courts, granting decision makers broad flexibility to address fact-specific issues while providing real jurisdictional procedural constraints, particularly precedent, which “give[s] content to and specif[ies] the broad meaning of the rule of reason.”⁴⁹ The need for such flexibility is particularly important in evaluating FRAND commitments, which are complex and multi-faceted and therefore not easily shoehorned into one-size-fits-all mandates.⁵⁰ And there are a growing number of decisions addressing the

⁴⁴ The classic test for negligence is framed in terms of the behavior of a reasonably prudent person. *United States v. Carroll Towing Co.*, 159 F. 2d 169, 173 (2d Cir. 1947) (Learned Hand, J.) (reasonable conduct for negligence established as $B < PL$ based on probability an event would occur, the seriousness of likely damage, and the burden of taking preventative measures); see also *Martin v. Evans*, 711 A.2d 458, 461 (Pa. 1998) (“Negligence is the absence of ordinary care that a reasonably prudent person would exercise in the same or similar circumstances.”).

⁴⁵ As just one example, U.S. courts are regularly asked to determine the reasonableness of searches and seizures in the context of the Fourth Amendment. See U.S. Const. amend. IV (protecting against “unreasonable searches and seizures”); *Illinois v. Rodriguez*, 497 U.S. 177, 183, 186 (1990) (reasonableness depends on the reasonableness of the citizen’s expectation of privacy and the reasonableness of what the government authority intends to do).

⁴⁶ As for financial regulation, under the Dodd-Frank Act, U.S. courts can be required to determine whether government and private sector actually took “all reasonable steps to ensure financial stability and to mitigate systemic risk[.]” See Dodd-Frank Wall Street Reform & Consumer Protection Act, 12 U.S.C. § 5322 (2013). As for telecom regulation, much of the statutory regime governing telecommunications law, particularly as applied by the courts, is phrased in terms of reasonable behavior. As in antitrust, for example, the question of whether a restraint of trade is reasonable turns on whether a reasonable business purpose exists. *Comcast Cable Comm’ns., LLC v. FCC*, No. 12-1337, 77 F.3d 982, 992-994 (D.C. Cir. 2013) (finding no violation of § 616 of the Communications Act of 1934, 47 U.S.C. § 536(a)(3), and implementing regulation, 47 C.F.R. § 76.1301(c), which bar “unreasonable” restraint of an unaffiliated video programming vendor to compete “fairly,” because there was a “reasonable business purpose” for treating vendors differently, and thus no unlawful discrimination).

⁴⁷ Under U.S. law, only the most perniciously anticompetitive conduct is barred by a bright-line rule. In all other cases, courts must apply the rule of reason to determine whether competition has been harmed. *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1, 66 (1911) (a combination or contract is only actionable in antitrust if it is an unreasonable restraint of trade).

⁴⁸ Both patent and copyright law entitle holders of those rights to no less than a reasonable royalty, the value of which is often adjudicated before the courts. See, e.g., 35 U.S.C. § 284 (entitling prevailing patent owner to no less than a “reasonable royalty”); *Jarvis v. K2, Inc.*, 486 F.3d 526, 533 (9th Cir. 2007) (9th Circuit imports patent law’s “reasonable royalty” concept into copyright proceedings); *United States v. Am. Soc’y of Composers, Authors, & Publishers*, Civ. Action No. 41-1395 (WCC), Second Amended Final Judgment, 12-16 (S.D.N.Y. June 1, 2011), available at <http://www.ascap.com/~media/files/pdf/members/governing-documents/ascapafj2.pdf> (requiring charging of “reasonable fees” for blanket music licenses).

⁴⁹ David Zaring, *Rule by Reasonableness*, 63 ADMIN. L. REV. 525, 527 (2011).

⁵⁰ See Richard A. Epstein, F. Scott Kieff & Daniel F. Spulber, *The FTC, IP, and SSOs: Government Hold-Up Replacing Private Coordination*, 8 J. COMPETITION L. & ECON. 1, 28-29 (2012).

“reasonableness” issue in the FRAND context from multiple jurisdictions, including the U.S.,⁵¹ the EU,⁵² Korea,⁵³ and even China.⁵⁴ Regardless of whether one agrees with the substantive conclusions of these courts, the fact remains that FRAND-related disputes are being regularly addressed consistent with legal norms and processes.

The critical question, therefore, is whether mandatory arbitration as proposed by Professors Lemley and Shapiro provides a *better* alternative - that is, a necessarily more efficient alternative - to resolving FRAND disputes while balancing the guiding principles of SSO IPR policies of affording SEP owners with a reasonable reward for their investment in innovative technology and providing implementers the opportunity to use such patented technology and broadly make and sell standardized products and services based on them.

Our discussion in Part III below indicates that it does not. Instead, as we show, the mandatory arbitration approach advocated by Professors Lemley and Shapiro risks making standardization less efficient by reducing incentives to resolve disputes through negotiation rather than adversarial adjudication; upsetting the balance between the interests of SEP owners and standards implementers, because it leads to undercompensating SEP owners; and, in all events, yielding no savings in terms of time or cost over existing processes.

III. The mandatory final-offer arbitration (“FOA”) alternative

Professors Lemley and Shapiro’s proposal, in essence, is that SSOs’ IPR policies should be modified so that SEP owners making a FRAND commitment promise, in the event they cannot come to terms with potential licensees, to forego court enforcement of their SEPs and submit to arbitration for a determination of FRAND royalties. They propose that the arbitration be mandatory and take the form of baseball, or “final-offer”, arbitration - *i.e.*, each of the SEP owner and potential

⁵¹ *Microsoft v. Motorola*, Case No. C10-1823JLR, Findings of Fact & Conclusions of Law (Apr. 25, 2013) (Robart, J.).

⁵² *Orange Book Standard*, Doc NO. KZR 39.06 (German Fed. Supreme Ct., May 6, 2009).

⁵³ *Samsung Electronics Corp. v. Apple, Inc.*, Case No. 2011 Ga Hap 39522, Case Report (Seoul Centr. Dist. Ct., 11th Civ. Div., Aug. 24, 2012).

⁵⁴ *Huawei Techs. Co., Ltd. v. InterDigital Tech. Corp., et al.*, No. 858 (Shenzhen Intermed. People’s Ct., Apr. 4, 2011).

licensee would submit its proposed royalty rate to an arbitrator, who would then select one or the other.⁵⁵ In doing so, according to Professors Lemley and Shapiro, the arbitrator should consider all patents declared to the relevant SSO by the owner as essential to the standard in question and not just those that are the subject of the specific arbitration.⁵⁶ Professors Lemley and Shapiro also propose that the arbitration decision be disclosed to willing licensees.⁵⁷

According to this proposal, although the arbitrator will not decide issues of essentiality, infringement, or validity, she should consider evidence relevant thereto in order to inform her decision on the royalty rate, since she will be required to consider the probabilistic nature of the patents at issue in the arbitration.⁵⁸ While the proposal provides that the outcome of the arbitration should be binding on both parties, the potential licensee would remain free to further litigate issues of validity, essentiality, and infringement in a subsequent proceeding and seek re-examination of the SEPs by the relevant patent offices.⁵⁹ Professors Lemley and Shapiro also propose that FRAND rates established through arbitration remain in force regardless of the outcome of the validity challenges.⁶⁰

Professors Lemley and Shapiro claim that this proposal will not prevent or discourage private licensing agreements; but rather simply provide a fallback option in the event bilateral negotiations fail.⁶¹ They also claim that so long as the arbitration procedure is not biased, bargaining in the shadow of binding arbitration will tend to lead to reasonable rates (a point that is no less true for adjudication of FRAND disputes by the courts).⁶² In their opinion, “baseball arbitration logically drives the parties toward

⁵⁵ Lemley & Shapiro, *supra* n.8, at 8. This is distinct from conventional arbitration (“CA”), which more closely approximates judicial adjudications with the parties submitting evidence and their positions on an appropriate award, with the arbitrator(s) free to determine an award based on their own assessment of the full record.

⁵⁶ *Id.* at 12.

⁵⁷ *Id.* at 9.

⁵⁸ *Id.* at 13.

⁵⁹ *Id.* at 21.

⁶⁰ *Id.* at 22.

⁶¹ Lemley & Shapiro, *supra* n.8, at 6.

⁶² *Id.* at 7.

making reasonable proposals, because the party that asks for too much (or offers too little) risks losing the case all together.”⁶³ Finally, Professors Lemley and Shapiro aver that under their proposal, arbitration will be “more predictable than litigation, greatly increasing the efficiency and accuracy with which FRAND disputes are resolved.”⁶⁴

Below, we demonstrate that these claimed benefits of a mandatory “baseball” arbitration approach are at best questionable. We then conclude by explaining that there is no reason to presume that arbitration is more efficient than other dispute resolution mechanisms.

A. The mandatory FOA proposal is biased and inefficient

We discuss in this section the reasons why the specific aspects of the mandatory arbitration proposal will likely increase the risk that SEP owners will be undercompensated in connection with licensing of their FRAND-committed SEPs and lead to more FRAND disputes that are not resolved through negotiations and thus require formal adjudication. This proposal thus risks making standardization less effective, diminishing standardization’s procompetitive and welfare-enhancing potential.

1. The chilling effect of mandatory arbitration on negotiated resolutions

Contrary to Professors Lemley and Shapiro’s claim that their proposal will not prevent or discourage private licensing agreements, mandatory arbitration, by effectively lowering the overall cost of disagreement, will increase the incidence of disagreement relative to the status quo and, therefore, will have a “chilling effect” on bilateral negotiations.⁶⁵

Economic theory has shown that all dispute resolution mechanisms, including court litigation and arbitration, tend to reduce settlement rates and increase conflict. This chilling effect is greater when the parties are able to predict the award reasonably

⁶³ *Id.* at 8.

⁶⁴ *Id.* at 14.

⁶⁵ C. Stevens, *Is Compulsory Arbitration Compatible with Bargaining?*, 5 INDUSTRIAL RELATIONS 38-52 (1996).

accurately and there is, therefore, not much uncertainty about the outcome of arbitration or litigation. If awards are uncertain and the parties risk averse, then the parties may prefer to reach a negotiated settlement rather than resort to arbitration or litigation. On the contrary, if there is no uncertainty or, even if there is some uncertainty on the award, but the parties are risk friendly or unduly optimistic about the outcome of the arbitration process, the parties are less likely to reach a negotiated agreement and will always rely on arbitration or litigation.⁶⁶

Different dispute resolution mechanisms - *e.g.*, different arbitration procedures - will differ according to their ability to induce negotiated settlements - *i.e.*, they will lead to higher or smaller dispute rates. The economics literature has explored in depth the properties of two arbitration procedures: conventional arbitration (“CA”) and FOA - *i.e.*, baseball arbitration. Under CA, the arbitrator makes an unconstrained settlement choice after receiving the parties’ final offers. Under FOA, the arbitrator must choose among the disputants’ final offers.

CA mimics civil litigation in court since the arbitrator, like the judge, listens to the two sides’ settlement proposals and is free to impose any award of her choice. Therefore, by comparing the chilling effects of CA and FOA, we are able to assess whether the proposal of Professors Lemley and Shapiro is likely to incentivize or deter bilateral negotiations relative to court litigation and, therefore, relative to the status quo.

Early theoretical results suggested that dispute rates are likely to be higher under CA than FOA. This is because CA has been said to generate less uncertainty: if arbitrators split the difference between the parties’ final offers in CA, the parties’ behavior will be easily predictable and, hence, the cost of disagreement will be low.⁶⁷

⁶⁶ The chilling effect of arbitration and its relationship to uncertainty and risk preferences has been described by Crawford (1979), Farber and Katz (1979) and Farber (1980), among others. See V. P. Crawford, *On Compulsory Arbitration Schemes*, 87 J. OF POLITICAL ECON. 131-59 (1979); H. S. Farber & H. C. Katz, *Interest Arbitration, Outcomes, and the Incentives to Bargain*, 33 INDUSTRIAL & LABOR RELATIONS R. 55-63 (1979); H. S. Farber, *An Analysis of Final-Offer Arbitration*, 24 J. OF CONFLICT RESOLUTION 683-705 (1980). The effect of optimism on disputes rates has been established by Dickinson (2006). See D. L. Dickinson, *The Chilling Effect of Optimism: The Case of Final-Offer Arbitration*, 35 JOURNAL OF SOCIO-ECON. 17-30 (2006).

⁶⁷ Stevens, *supra* n.65, at 38-52.

However, several empirical studies, most notably Ashenfelter *et al.* (1992) and Dickinson (2006), have found that dispute rates are higher under FOA.⁶⁸ There is evidence that arbitrators do not split the difference in CA, presumably because that would provide the parties with the incentive to make their last offers as extreme as possible.⁶⁹ Arbitrators in CA pay attention to the facts of the case along with the final offers made by the disputants. This generates the sort of uncertainty in arbitration awards that induces risk-averse parties to reach a negotiated agreement.

A recent theoretical contribution demonstrates that CA will result in a greater settlement rate when the parties are risk neutral and unconstrained in payments to each other, which is the typical situation in commercial negotiations. FOA, by contrast, results in a higher settlement rate where one of the parties is risk averse or wealth constrained, as is often the case in labor disputes.⁷⁰ It follows that in the context of FRAND disputes, CA is likely to lead to lower disputes rates (and higher settlement rates) than FOA. Thus, Professors Lemley and Shapiro's proposal will not only fail to promote bilateral negotiations, as they claim, but in fact will likely cause more conflict than under the existing framework of bilateral negotiation under the shadow of court litigation.⁷¹

The chilling effect of mandatory arbitration will be socially costly.⁷² Any dispute resolution mechanism that deters negotiations increases transaction costs. Furthermore, an increase in dispute rates reduces the ability of the parties to factor in elements of which they are alone aware, such as the value of their other commercial

⁶⁸ Dickinson, *supra* n.66, at 17-30; O. Ashenfelter, *et al.*, *An Experimental Comparison of Dispute Rates in Alternative Arbitration Systems*, 60 *ECONOMETRICA* 1407-33 (1992).

⁶⁹ D. Bloom, *Empirical Models of Arbitrator Behavior Under Conventional Arbitration*, 68 *R. ECON. & STATISTICS* 578-85 (1986).

⁷⁰ T. Mylovanov & A. Zapachelnyuk, *Optimal Arbitration*, 54 *INTERNAT'L ECON. R.* 769-1083 (2013).

⁷¹ This tendency is exacerbated where royalty rates for SEPs are paid per unit rates rather than as a percentage of the total value of the products in which the technology is embedded. Deck and Farmer (2007) show that conflict is increased when both parties negotiate over an uncertain value (*e.g.*, the revenues generated by a newly launched product) but one party receives a fixed payment (*e.g.*, a per unit royalty rate) while the other receives the uncertain residual. C. Deck & A. Farmer, *Bargaining Over An Uncertain Value: Arbitration Mechanisms Compared*, 23 *J. OF LAW, ECON. AND ORG.* 457-79 (2007).

⁷² Stevens, *supra* n.65, at 38-52.

interactions, and which could be taken into account in a negotiated settlement but are unlikely to be considered by an arbitrator.⁷³

2. *Mandatory arbitration will likely undercompensate SEP owners*

Professors Lemley and Shapiro claim that so long as the arbitration procedure is not biased,⁷⁴ their proposal should yield reasonable rates, defined as rates that allow implementers to profitably manufacture and sell standard-compliant products and that promote the adoption of the standard, while properly remunerating patent holders. But recent literature has shown that FOA, as proposed by Professors Lemley and Shapiro, is inherently biased. It is true that Farber and Bazerman (1986) found that the arbitration awards under FOA and CA were reasonably similar,⁷⁵ but this result appears to depend on assumptions that do not apply to the mandatory arbitration procedure proposed by Professors Lemley and Shapiro. Key features of the Lemley and Shapiro approach, in fact, would lead to a bias that undercompensates SEP owners because SEP owners would consistently receive less than their preferred outcome and standards-implementers would receive more, but with no increase in overall welfare.

First, the arbitration procedure advocated by Professors Lemley and Shapiro systemically undercompensates SEP owners because (i) even if FRAND rates are resolved through arbitration, implementers remain free to bring additional challenges regarding the validity of the patents, and (ii) the FRAND rates established through arbitration will remain in force regardless of the outcome of the validity challenges.

We demonstrate this proposition with the help of the stylized model presented in the Annex. In our model, an SEP owner and an implementer submit royalty proposals between 0 and 1 to a neutral arbitrator. Both parties are risk neutral. Following

⁷³ Farber & Katz, *supra* n.66, at 55-63.

⁷⁴ An arbitrator biased in favour of the implementer will induce the implementer to move towards her most preferred position and the patent holder away from its most preferred position and will end up setting a royalty rate that is likely to be too low. See D. Wittman, *Final Offer Arbitration*, 32 MGMT. SCI. 1551-61 (1986).

⁷⁵ H. S. Farber & M. H. Bazerman, *The General Basis of Arbitrator Behavior: An Empirical Analysis of Conventional and Final Offer Arbitration*, 34 ECONOMETRICA 819-44 (1986).

standard practice and consistent with published data on arbitrator behavior,⁷⁶ the arbitrator's decision may be defined as a random variable, which we assume to be distributed uniformly between 0 and 1. The arbitrator's decision will reflect her views on the likelihood that the patent is valid and essential, as well as on what constitutes a FRAND remuneration for a valid SEP. The parties cannot be certain about the arbitrator's decision because they cannot predict how she will interpret the evidence presented by the parties regarding the value of the patent.

First scenario - binding arbitration on both parties: Under our model, if (i) the implementer cannot challenge the validity of the patent after the arbitration award has been granted, and (ii) the outcome of the arbitration is binding on both parties, then the parties behave as follows: the SEP owner proposes a royalty rate of 1, the implementer offers a royalty rate of 0, and the arbitrator selects the implementer's proposal 50% of the time (that is, the same rate at which the arbitrator chooses the SEP owner's proposal). The resulting expected royalty rate for FOA is therefore $\frac{1}{2}$, which is equal to the royalty rate that would prevail under CA if the arbitrator simply split the difference between the parties' proposals.⁷⁷

Second scenario - implementer is free to challenge validity but arbitrated royalties remain unchanged: Assume now that (i) the implementer can challenge the validity of the patent following the arbitration award, as is proposed by Professors Lemley and Shapiro, and (ii) the royalty rate is binding on both parties - that is, even if the SEP owner wins the validity challenge, the arbitrator's royalty rate is not revised upwards in favor of the SEP owner. Under these assumptions, the implementer will seek to invalidate the asserted patents in each instance that an arbitration decision favors the SEP holder, because it is the only way to escape the consequences of the arbitral award.⁷⁸ On the other hand, if the arbitration decision favors the implementer (a 50%

⁷⁶ See Farber, *supra* n.66, at 683-705; O. Ashenfelter & G. B. Dahl, *Bargaining and the Role of Expert Agents: An Empirical Study of Final Offer Arbitration*, 94 R. OF ECON. & STATISTICS 116-32 (2012).

⁷⁷ For the purposes of this analysis we apply the traditional assumption that arbitrators would, indeed, split the difference in CA. As discussed above, however, this may not be the case. See discussion *supra* at 20-22. Accordingly, even under this scenario, FOA might not offer any significant advantage over CA. The FOA format proposed by Professors Lemley and Shapiro does not follow assumptions (i) and (ii) above, however.

⁷⁸ An arbitration award, at least under U.S. law, is effectively not subject to appeal. *Oxford Health Plans LLC v. Sutter*, 569 U.S. ----, 133 S.Ct. 2064, 2068-9 (2013).

probability), the SEP holder could have no recourse to increase the royalty by showing validity of the SEPs and the implementer would not bring a challenge because it already has realized a royalty rate of 0 (its preferred outcome) through arbitration, and that result cannot be changed.

As a result, the expected royalty rate under FOA becomes dependent on the probability that the patent is declared invalid.⁷⁹ (We define that probability as “ σ ”.) Expressed in formal terms, under FOA, the expected royalty rate is $(1 - \sigma)/2$, a value which is necessarily less than $1/2$ for all values of the probability that the patent is declared invalid. Thus, our model predicts that where a subsequent validity challenge is possible (as proposed by Professors Lemley and Shapiro), but does not affect the arbitrated royalty rate, the implementer will still propose a rate of 0 and the SEP holder will still propose a royalty rate of 1. The implementer will have no incentive to modify its proposed rate of 0 because it would always bring a validity challenge in the event the SEP holder’s proposed rate is accepted, because litigating the SEP’s validity entails no cost in terms of royalty rates for the implementer. The SEP owner will not lower its offer because the implementer’s decision to challenge validity is independent of the SEP owner’s proposal. In these circumstances, the expected royalty rate equals $(1 - \sigma)/2$ because the SEP’s proposed royalty rate, 1, will only be paid if the arbitrator selects the SEP offer, which occurs with a 50% probability, and the patent is found to be valid, which happens with probability $(1 - \sigma)$.

Third scenario - implementer is free to challenge validity but arbitrated royalties increase if the patent is found valid: Assume next that (i) the implementer can again challenge the validity of the patent following the arbitration award, but (ii) if the SEP owner wins, the royalty rate is revised upwards, in his favor. To express (ii) in terms of the model: if the patent is declared valid, the royalty rate is set at 1 irrespective of the SEP owner’s proposal. In this scenario, the implementer only appeals the arbitration decisions that favor the SEP owner if the royalty rate proposed by the SEP

⁷⁹ $0 < \sigma < 1$.

owner and chosen by the arbitrator exceeds $(1 - \sigma)$.⁸⁰ We show that in this scenario the SEP owner will propose a royalty rate equal to $(1 - \sigma)$ (less than what he would propose in either of the previous scenarios) in order to limit the probability of a validity challenge. The implementer still offers a royalty rate of 0. The arbitrator selects the implementer's proposal with a probability of $(1 - \sigma)/2$, or less than 50% - a slight decrease in frequency from the base case and the first iteration.⁸¹ As a result, the expected royalty rate will equal $(1 - \sigma^2)/2$, which is still less than $1/2$, but greater than $(1 - \sigma)/2$ (the amount the implementer would pay in the second scenario).

The net result is that in any world where arbitration is mandatory but validity challenges are possible, the SEP owner will receive an expected royalty rate less than what he would receive in a world where validity cannot be challenged. The undercompensation problem is greater when royalty rates are not allowed to adjust if the validity challenge confirms the validity of the SEP.

Second, Lemley and Shapiro propose rules for disclosing the outcome of an arbitration to all willing licensees.⁸² Such disclosure is bound to have an impact on all future arbitrations.⁸³ If the current arbitration is resolved in favor of the implementer and the royalty rate is too low, so will be the royalty rates decided in subsequent arbitrations and negotiations. In the end, royalty rates will end up descending to the lowest set by any single arbitration. Under the mandatory arbitration proposal, multiple implementers will be able to demand separate arbitrations - and may later reject and attempt to re-litigate previous determinations as information about subsequent awards become available. Consider, for example, a scenario in which Licensee 1 and Licensee 2 both lose in separate FOA sessions, such that the SEP

⁸⁰ Hence, the likelihood of a validity challenge increases along with an increase in the probability with which the patent is found to be invalid.

⁸¹ Which is, of course, greater than $1/2$. This reflects the fact that while the implementer remains at her preferred position, 0, the SEP owner has moved away from his preferred position in order to reduce the likelihood of a validity challenge.

⁸² See discussion *supra* at 18.

⁸³ See Roger G. Brooks & Damien Geradin, *Interpreting and Enforcing the Voluntary FRAND Commitment*, 9 INT'L J. IT STANDARDS & STANDARDIZATION RES. 1, 16 (2011), available at http://www.cravath.com/files/Uploads/Documents/Publications/3285864_1.PDF (discussing this concept in the context of litigation and noting "[t]his 'that was then, this is now' aspect of FRAND is not only theoretically correct, it stands as a critically important deterrent to excessive litigation").

owner receives an arbitrarily high FRAND rate. Licensee 3 then receives an arbitrarily low award in another FOA session. Licensees 1 and 2 may then decide to reject the arbitration award and insist that the rate awarded to Licensee 3 is the actual FRAND rate. Faced with this dynamic, implementers could decide to negotiate settlements based on the best arbitration result to-date, using the arbitration process to ratchet down the royalty rate to the least common denominator. The SEP owner, meanwhile, is bound by each decision and unable to appeal. Consistent licensing terms become impossible to apply, competitive positions in each new FRAND negotiation become increasingly distorted, and the risk of litigation over discriminatory licensing increases.

As a result, we expect SEP owners to move away from their most-preferred position towards positions that are more likely to win, while implementers are likely to move towards their preferred position even if that means that they are less likely to win.⁸⁴ Thus, the FOA procedure proposed by Professors Lemley and Shapiro will skew the level of compensation for SEP owners to less than the amount they would have received under the current system, which attempts to balance that compensation against the ability of implementers to profitably manufacture and sell products that incorporate the standard.

Third, the undercompensation of SEP owners under the mandatory arbitration proposal becomes more pronounced if the royalty is not defined as a percentage over the entire value of the product, but rather as a fixed per-unit fee or an upfront payment. As shown by Deck and Farmer (2007), when two parties negotiate over an uncertain value (in this case the value of the products that utilize the disputed SEPs) and one party receives a fixed payment (here, the SEP owner, who receives the FRAND rate) while the other receives the uncertain residual (here, the implementer), the outcome of a FOA favors the residual claimant - that is, the implementer again benefits.⁸⁵ In the end, mandatory arbitration results in a clear bias in favor of the

⁸⁴ Wittman (1986) shows that the arbitration award under FOA tends to benefit the less risk-averse party. See Wittman, *supra* n.74, at 1551-61. Brams and Merrill (1991) find that if a party has an interest to win *per se* - *i.e.*, independent of the value of the settlement - then her optimal offer is less favorable to herself and the other party's optimal offer will be more favorable to herself. S. J. Brams & S. Merrill, III, *Final Offer Arbitration with a Bonus*, 7 EURO. J. OF POLITICAL ECON. 79-92 (2001).

⁸⁵ Deck & Farmer, *supra* n.71, at 457-79.

implementer, straying from the need for balance sought to be achieved by SSO IPR policies.

In short, the mandatory arbitration proposal would move the status quo from an approach that attempts to balance multiple stakeholders' interests to an approach that weighs heavily in favor of one set of stakeholders - with no evidence that such stakeholders need favoring, nor that any increase in overall welfare will result. Indeed, as commented above, the lack of balance may work an overall harm, disincentivizing innovation and the willingness to participate in standardization efforts.

3. *FOA does not increase convergence among the parties' proposals.*

According to Professors Lemley and Shapiro, under FOA the party that submits an unreasonable royalty risks losing the case all together, and as a result, the mandatory arbitration proposal will induce SEP owners and implementers to propose similar royalties to the arbitrator, which will facilitate the arbitrator's task and an efficient resolution of any dispute. This prediction is contradicted by existing economic theory and evidence. Brams and Merrill (1983) show that FOA need not induce the parties to converge on what they perceive to be the arbitrator's fair settlement.⁸⁶ Likewise, both Brams and Merrill (1991) and Ashenfelter and Dahl (2012) show that FOA offers are usually two or more standard deviations apart.⁸⁷

The model developed in the Annex illustrates this result. In our model, the SEP owner and the implementer can quote royalty rates between 0 and 1. Both parties are risk neutral. The SEP owner strictly prefers a royalty equal to 1, while the implementer prefers a royalty rate equal to 0. The arbitrator must select one of the offers. We find that the parties' offers do not converge: the SEP owner submits a royalty proposal equal to 1, whereas the implementer makes a royalty offer of 0. We

⁸⁶ S. J. Brams & S. Merrill, III, *Equilibrium Strategies for Final Offer Arbitration: There Is No Median Convergence*, 29 MGMT SCI. 927-941 (1983).

⁸⁷ Brams & Merrill, *supra* n.84, at 79-92; Ashenfelter & Dahl, *supra* n.76, at 116-32. Dickinson (2006) shows that optimism regarding the arbitrator's award causes final offers in FOA to diverge more than in the case of unbiased expectations. Dickinson, *supra* n.66, at 17-30. Divergence will also be more significant when the parties are risk friendly (and less likely if they are risk averse). See Wittman, *supra* n.74, at 1551-61.

find that each party wins with a probability of 50%. In fact, the rates offered by the parties under FOA and the rates offered under CA or court litigation are identical.

Thus, FOA does not induce the parties to act in a fashion that will assist the arbitrator in determining a reasonable value for the SEP, and does not lead to more convergence (and less uncertainty) than existing dispute resolution mechanisms.

B. Mandatory FOA is not necessarily more efficient

As we have seen in the previous sections, the arbitration procedure undercompensates SEP owners, does not promote convergence, and chills bilateral negotiations, all of which render FRAND less, rather than more, effective. In addition, contrary to Professors Lemley and Shapiro's assertion that their approach is simple and efficient, in truth, it is neither.

A fundamental value of arbitration lies in "the ability of users to tailor processes to serve particular needs. . . . [P]lanners and drafters must move beyond a monolithic one-size-fits-all view of arbitration and make deliberate process choices based on client goals and priorities."⁸⁸ Under the mandatory arbitration proposal, however, the mandated arbitration procedure would, in fact, be monolithic and would constrain parties who elect to resolve FRAND disputes through such a process to tailor the process to their specific needs.⁸⁹

As a starting point, it is becoming well-recognized that what are thought to be the procedural advantages of arbitration - *e.g.*, streamlined proceedings, limited discovery, and contained pre-trial practices - may not reflect reality. "Arbitration hearings are now often preceded by extensive discovery, including request for

⁸⁸ Thomas Stipanowich, *Arbitration: The "New Litigation"*, 2010 U. ILL. L. REV. 1, 57 (2010). Specific aspects of an arbitration that might be subject to the parties' determination could include: (i) whether the proceeding is binding or non-binding; (ii) whether the proceeding is kept confidential; and/or (iii) what issues will be addressed (*e.g.*, infringement, validity, solely a price, other FRAND license terms, reciprocity, defensive suspension, the value of a portfolio that includes SEPs and non-essential patents, and/or the availability of cross-licenses and/or grant-backs).

⁸⁹ The Lemley and Shapiro proposal would also impose requirements inconsistent with arbitration processes that at least one SSO has already adopted. See, *e.g.*, *Digital Video Broadcasting, Motorola/Google*, File No. 121-0120, 1-2 (Feb. 1, 2013) available at <http://ftc.gov/os/comments/motorolagoogle/563708-00007-85483.pdf> (noting that the DVB Project's IPR policy contains provisions as to the number of arbitrators and choice of substantive law, venue, and language of proceedings and urging the FTC to indicate in the consent order "that the arbitration provisions . . . are without prejudice to application of binding dispute resolution rules adopted by [that] standards body.").

voluminous document production and depositions. Since discovery has traditionally accounted for the bulk of litigation-related costs, the importation of discovery into arbitration (which traditionally operated with little or no discovery) is particularly noteworthy.”⁹⁰ As a result, to a large extent complex arbitration has taken on many of the characteristics of courtroom litigation,⁹¹ and the costs of arbitration are now considered comparable to litigation.⁹²

It is against that background that the alleged efficiencies of FOA over CA must be examined. The mandatory FOA proposal is presented as more efficient than the alternatives because it restricts the dispute to the “reasonableness” of the royalty and limits the arbitrator’s power to picking one proposal over the other. Yet the complexity of FRAND disputes may whittle away the ability to ringfence the arbitration as proposed. Indeed, Professors Lemley and Shapiro themselves acknowledge that, in their FOA proposal, evidence on issues of validity and infringement would be “appropriate and desirable[,]”⁹³ and that other evidence may be necessary, such as the contours of a hypothetical *ex ante* negotiation,⁹⁴ the

⁹⁰ Stipanowich, *supra* n.88, at 12; Hon. Curtis E. von Kann, *A Report Card on the Quality of Commercial Arbitration: Assessing the Improving Delivery of the Benefits Customers Seek*, 7 DEPAUL BUS. & COMM. L. J. 499, 514-515 (2008-2009); see also D. Fox & R. Weinstein, *Myth Busting: Arbitration Perceptions, Realities, & Ramifications*, 3, Am. Bar Ass’n 14th Annual Spring Conference (Apr. 19, 2012), available at http://www.micronomics.com/articles/Arbitration_and_Intellectual_Property_Disputes.pdf (discussing study by IP firm and AAA data that indicate that, absent appeal, litigation of IP disputes requires about the same, or slightly less, time than arbitration).

⁹¹ Raymond B. Bender, Jr., *Arbitration - An Ideal Way to Resolve High-Tech Industry Disputes*, 65 DISPUTE RESOLUTION J. 4 (2011) (“Escalating cost and duration of arbitration due to the use of litigation procedures have captured the attention of many in the arbitration community.”); see also von Kann, *supra* n. 93, at 514 (“The last five years have witnessed acceleration of a trend in which parties in more large commercial arbitrations . . . seek to arbitrate the matter in essentially the same way they would litigate it, with wide-ranging (sometimes massive) discovery.”); Thomas Stipanowich, *et al.*, *Protocols for Expeditious, Cost-Effective Commercial Arbitration: Key Action Steps for Business Users, Counsel, Arbitrators & Arbitration Provider Institutions*, 1, (College of Commercial Arbitrators 2010), available at <http://ssrn.com/abstract=1982169> (“While many business users still prefer arbitration to court trial because of other procedural advantages, the great majority of complaints being voiced by arbitration users are the same: commercial arbitration now costs just as much, and takes just as long, as litigation.”).

⁹² von Kann, *supra* n. 90, at 515; see also Alan Dadboub & Trey Cox, *Which costs less: Arbitration or litigation?*, INSIDE COUNSEL (Dec. 6, 2012), available at <http://www.insidecounsel.com/2012/12/06/which-costs-less-arbitration-or-litigation> (study of 19 single plaintiff employment dispute cases, nine of which were arbitrated and ten of which were litigated, showing that arbitration was more expensive and slower).

⁹³ Lemley & Shapiro, *supra* n.8, at 13.

⁹⁴ *Id.* at 10 & n.33.

existence of all declared SEPs (not just those of the party SEP owner) and license terms relating to all SEPs,⁹⁵ consideration of all patents declared, and the significance of strength of the portfolio to be licensed, including through evidence of validity and infringement.⁹⁶ Still other issues will be relevant - *e.g.*, an SEP owner's obligations under a specific SSO's IPR policy,⁹⁷ whether the prospective licensee was willing to take a license,⁹⁸ and the methodology for determining a "reasonable" FRAND royalty.⁹⁹ If all such factors are considered, then the likelihood of significant discovery is quite high.¹⁰⁰

Assuming a full presentation and consideration of evidence relevant to FRAND issues is made, either the proposed arbitration will not really be limited to the issue of the reasonable royalty alone or, if the proposed arbitration truly decides only that issue, other critical issues will be left to be determined at some other time, whether in advance of or after the proposed arbitration. Such issues could include whether the asserted patent is an SEP (and thus subject to FRAND requirements), whether it has been infringed, and/or whether it is valid. Either way, any purported efficiencies or cost savings resulting from the arbitration are eliminated. Indeed, little, if any reason, exists to require an alternative forum to decide the issue of a "reasonable" FRAND

⁹⁵ *Id.* at 11-12.

⁹⁶ *Id.* at 13.

⁹⁷ Lemley and Shapiro say that "[a] 'FRAND offer' means a cash-only offer to license the SSO participant's entire portfolio of standard-essential patents on reasonable and non-discriminatory terms for the purpose of making, using or selling products that comply with the standard." *Id.* at 5. No SSO IPR policy, however, imposes such an obligation, including in connection with making a cash-only offer.

⁹⁸ Lemley and Shapiro say that a "willing licensee" merely needs to be "an implementer who agrees to reciprocity and binding arbitration." *Id.* at 6. This ignores any consideration of opportunistic conduct by potential licensees to avoid an obligation to pay a royalty sufficient to support the SEP owner's incentives to invest in the development of the SEP, and instead seeks to engage in "reverse hold-up."

⁹⁹ Lemley and Shapiro assert that the "reasonable" FRAND royalty should be the incremental value at the time the standard is selected, and that it should not reflect any value attributable to the standard, regardless of the SEP's contribution to that value, and should take into account royalty stacking. Lemley & Shapiro, *supra* n.8, at 4, 10-12. But, there is no uniformity regarding this approach, there is no objective proof of a royalty stacking problem, and such an approach is biased against attributing proper value to SEPs. Moreover, Lemley and Shapiro's comment to the contrary notwithstanding, such an approach is not consistent with existing patent law. Indeed, Lemley and Shapiro state that their approach focuses on "issues specific to the FRAND regime, not the more general challenge of determining reasonable royalty rates." *Id.* at 9.

¹⁰⁰ *Id.* at 13.

royalty separate from that which decides issues of essentiality. Duplicative or additional discovery in parallel court proceedings could add costs and delay and wastes any possible savings that could accrue from applying a tribunal's accumulated knowledge to related issues. A subsequent decision that a patent has not been infringed or is not valid could, for example, render a preceding arbitration unnecessary and the resources devoted to the question of FRAND rates completely wasted.

Even if the issue is successfully resolved in a particular arbitral forum, further inefficiencies may arise if another jurisdiction determines that a mandatory FOA ruling is not enforceable. In that respect, mandatory FOA offers no advantage over other types of arbitration or over litigation before courts. As explained above, it is likely to prove difficult to keep issues of patent validity and infringement entirely out of a mandatory FOA, as Professors Lemley and Shapiro themselves acknowledge.¹⁰¹ Under these circumstances, a mandatory FOA award would offer none of the suggested benefits as compared to other forms of FRAND dispute settlement. This may be an issue in jurisdictions other than the United States,¹⁰² which might consider that arbitral awards in FRAND disputes - should they be construed as ruling on patent validity, even implicitly - touch upon "public policy" issues and are accordingly not enforceable in the jurisdiction in question.¹⁰³

Beyond that, some jurisdictions have attempted to limit the scope of international arbitration by introducing new powers to set aside awards (Russia) or banning certain subject-matter disputes (Hungary).¹⁰⁴ Asian jurisdictions have been repeatedly

¹⁰¹ See discussion *supra* at 29-30.

¹⁰² In the United States, ever since *Mitsubishi Motors v. Soler Chrysler-Plymouth*, 473 U.S. 614 (1985), courts have given a narrow construction to the "public policy" exception to arbitrability and to the recognition of foreign arbitral awards. See Convention on the Recognition and Enforcement of Foreign Arbitral Awards (Convention), art V, 1970. 21 U.S. T. 2517, T. I. A. S. No. 6997 (implemented by the U.S. Federal Arbitration Act, 9 U.S.C. 1 *et seq.*). (In any event, patent validity is now expressly made arbitrable at 35 U.S.C. § 294(a).) Other jurisdictions have maintained a broader scope for the public policy exception, including treating patent validity as a public policy matter.

¹⁰³ See Wei-hua Wu, *International Arbitration of Patent Disputes*, 10 J. MARSHALL REV. INTELL. PROP. L. 384 (2011); M.A. Smith *et al.*, *Arbitration of Patent Infringement and Validity Issues Worldwide*, 19 HARVARD J. LAW & TECH. 299 (2006).

¹⁰⁴ S. Wilske & G. Wegen, *Introduction*, GETTING THE DEAL THROUGH: ARBITRATION, 3-4 (2013); see also Michael Hwang S.C. & Yeo Chuan Tat, *Chapter 16: Recognition & Enforcement of Arbitral Awards*, ASIAN LEADING ARBITRATORS' GUIDE, 459-61 (2008) (available at <http://www.arbitration-icc.com>).

criticized with a lack of familiarity of the requirements of treaty compliance regarding enforcement of foreign arbitral awards - or, more fundamentally, a lack of implementing legislation.¹⁰⁵ And certain jurisdictions, such as China, India, and Russia, are simply perceived as hostile to enforcement:

[w]hen asked what kind of difficulties they had experienced at the place of enforcement, 56% of counsel cited the recognition and enforcement procedure [32%] or execution proceedings [24%]. The majority of counsel linked both these problems with the attitude of the local bureaucrats and courts. 10% of respondents cited difficulties arising from corruption at local courts. [22% of counsel cited the time required, and 12% cited the high cost of enforcement.]¹⁰⁶

All of these factors, at a minimum, raise questions regarding whether the mandatory arbitration proposed by Professors Lemley and Shapiro stands any chance to more efficiently or effectively resolve FRAND disputes as compared to existing dispute resolution avenues, including litigation, voluntary party-defined arbitration, or other means.

IV. Conclusion

If the process for resolving FRAND licensing disputes were broken, it might be necessary to fix it. Even if the process simply could be improved, changes might be warranted. But the current system of voluntary, consensus-based standardization works, and strives to keep two competing interests in balance: the need to allow implementers to profitably incorporate the standard into their products and thereby promote standardization and the need to adequately compensate SEP owners for their investment and success at innovation.

As we show, the mandatory arbitration approach risks upsetting this balance, and, even more fundamentally, inhibiting effective standardization by undercompensating SEP holders, deterring convergence on reasonable expectations, and chilling

[org/media/o/12232971501410/recognition_and_enforcement_of_arbitral_award.pdf](http://media/o/12232971501410/recognition_and_enforcement_of_arbitral_award.pdf) (noting problems with local protectionism).

¹⁰⁵ See generally Hwang & Tat, *supra* n.104, at 415-459.

¹⁰⁶ Loukas Mistelis, *International Arbitration: Corporate attitudes and practices* (PricewaterhouseCoopers 2008), available at http://www.academia.edu/262767/PricewaterhouseCoopers_International_Arbitration_Corporate_Attitudes_and_Practices).

incentives to reach bargained-for, rather than adjudicated, resolutions of FRAND disputes. Thus, while we fully endorse the opportunity for parties to a FRAND negotiation who cannot resolve their differences to resort to all available dispute resolution means as they may deem most appropriate - whether this will involve litigation, binding or advisory arbitration, or otherwise - imposing required steps such as the proposed mandatory arbitration process may have exactly the contrary consequences as intended.

ANNEX:
**A Stylized Model of Alternative Resolution Mechanisms
to FRAND Disputes**

P is an SEP owner and I is an implementer. P and I are involved in a FRAND dispute, which is subject to final offer arbitration (“FOA”). P proposes a royalty rate $r_P \in (0,1)$ and I proposes $r_I \in (0,1)$; $r_P > r_I$. Arbitrator A must choose one of the two proposals. We model the arbitrator’s view of the right royalty rate, r_A , which may be thought of as a random variable, uniformly distributed within $(0,1)$. The arbitrator’s decision, r_A , will reflect her views on the likelihood that the patent is valid and essential, as well as on what constitutes a FRAND remuneration for a valid SEP. The arbitrator selects I’s offer if

$$r_A \leq \frac{r_P + r_I}{2}.$$

P’s expected utility is $qr_I + (1 - q)r_P$, where $q = Pr\left\{r_A \leq \frac{r_P+r_I}{2}\right\}$. I’s expected utility is $-qr_I - (1 - q)r_P$. P and I are thus risk neutral. I chooses $r_I = 0$ and P chooses $r_P = 1$. Therefore, $q = 1/2$ and the expected royalty rate under FOA is also $1/2$. This is also the same royalty rate that would obtain under conventional arbitration (“CA”).

Suppose now that I can challenge the validity of the patent if A finds in favor of P (thus choosing r_P as the appropriate royalty rate). The probability that the patent is found invalid is defined as σ . Suppose that the royalty rate decided by A remains unchanged in the event the patent is found valid. I will always challenge validity if A favors P. This is because I will pay r_P if it does not bring a challenge, and $(1 - \sigma)r_P$ if it does (as it will pay 0 with probability σ and r_P with probability $(1 - \sigma)$). Given that the royalty rate is not revised upwards if the patent is found valid, challenging validity has no cost to I. P’s expected utility is now $qr_I + (1 - q)(1 - \sigma)r_P$, and I’s expected utility is $-qr_I - (1 - q)(1 - \sigma)r_P$. I chooses $r_I = 0$ and P chooses $r_P = 1$. I wins with probability $q = 1/2$ and the expected royalty rate under FOA is equal to $(1 - \sigma)/2$.

Suppose instead that if the patent is found valid, the royalty rate is set at 1 regardless of the arbitrator's decision. If $r_p \geq (1 - \sigma)$, I will challenge validity when A favors P. This is because I would pay r_p if it does not challenge, and $(1 - \sigma)$ if it does. Given that the royalty rate is revised upwards if the patent is found valid, challenging validity has now a cost to I and, therefore, I will only sue if it can save a significant amount of money - *i.e.*, when r_p is sufficiently large. P's expected utility is now $qr_I + (1 - q)[(1 - \beta)r_p + \beta(1 - \sigma)]$, and I's expected utility is $-qr_I - (1 - q)[(1 - \beta)r_p + \beta(1 - \sigma)]$. I chooses $r_I = 0$ and P chooses r_p so as to maximize $qr_I + (1 - q)[(1 - \beta)r_p + \beta(1 - \sigma)]$. (β is the likelihood of I challenging validity. If I does not challenge validity, $\beta = 0$, if I does, $\beta = 1$.)

If $r_p \geq (1 - \sigma)$, then $\beta = 1$, and P's expected utility decreases for all r_p . If, instead, $r_p < (1 - \sigma)$, then $\beta = 0$, and P's expected utility is increasing for all r_p . P's expected utility is depicted in Figure 1 below. From Figure 1, it is clear that P will set $r_p = (1 - \sigma)$. I wins with probability $q = (1 - \sigma)/2$ and the expected royalty rate under FOA is equal to $(1 - \sigma^2)/2$.

Figure 1

