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PATENT "HOLD-UP," STANDARDS-SETTING ORGANIZATIONS AND THE FTC'S CAMPAIGN AGAINST INNOVATORS

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I. INTRODUCTION

In March 2011, the FTC published a report entitled "The Evolving IP Marketplace," ("the Report") which recommends certain changes to patent remedies, as well as changes to the practices of Standard Setting Organizations ("SSOs").[1] Specifically, the Report addresses what it characterizes as a systemic problem of patent "hold-up,"[2] defined in the Report as "[t]he ability of patentees to demand and obtain royalty payments based on the infringer's switching costs."[3]

Following publication, the FTC solicited public comment and conducted a workshop focusing on patents and standards.[4] During the comment period, the FTC received 49 written submissions from a variety of companies, organizations, and individuals.[5] This Article reviews and analyzes these written submissions along with comments at the workshop ("the Record"). This Article will demonstrate, contrary to the Report's assumptions, that there is no systemic patent hold-up problem—however that term is defined—that could justify the sweeping changes to patent remedies or the practices of SSOs recommended in the Report. To the contrary, the Record provides strong evidence that existing law, combined with the flexible and consensus-based policies of SSOs, have been effective in balancing the interests of all stakeholders in high-technology industries so as to stimulate investment at every step from basic research through product development to manufacture, creating jobs while bringing consumers the benefit of innovative technologies and continually improving price and performance.

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1 *See* THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION, FTC, 22-23 (Mar. 2011), http://www.ftc.gov/os/2011/03/110307patentreport.pdf [hereinafter THE EVOLVING IP MARKETPLACE].

2 *Id.* at 5 ("Patent hold-up can overcompensate patentees, raise prices to consumers who lose the benefits of competition among technologies, and deter innovation by manufacturers facing the risk of hold-up.")

3 *Id.* at 22.

4 Request for Comments and Announcements of Workshop on Standard-Setting Issues, 76 Fed. Reg. 28036 (May 13, 2011).

5 *See* FTC Issues Agenda for Workshop to Explore the Role of Patented Technology in Collaborative Industry Standards, FTC, http://www.ftc.gov/os/comments/patentstandardsworkshop (last updated Aug. 12, 2011) [hereinafter FTC Issues Agenda].

The Report's recommendations for changes to the existing law regarding both damages[6] and injunctive relief[7] for patent infringement would significantly weaken the strength and value of patents. The changes would, in the short run, result in a massive transfer of value from those who invest in research and development ("R&D") to licensees that use their inventions. In the long run, it would dry up the beneficial flood of investment and cooperation that now flows through innovation markets, thereby harming all participants in those markets, including consumers.

This Article argues that the FTC's recommendations in the Report do not reflect the weight of the comments of those who are involved in, and most knowledgeable about, standardization and technology-intensive industries. Instead, the recommendations in the Report appear to be based on uncritical reliance on unsupported assertions by licensees with particular business models,[8] and on simplified economic constructs that bear no relationship to real markets, IP licensing or otherwise. Once actual market incentives and conduct as described in the Record are considered, the recommendations are not only unnecessary, but also contrary to the policy underlying patent law and damaging to the public interest.

By arming and authorizing prospective licensees to engage in "reverse hold up" of innovators, the Report's recommendations would severely depress returns on investment in R&D, and so inevitably reduce investment in innovation. The reduced investment will hurt not only innovators, but the entire chain of manufacturers, resellers, and consumers who currently share the benefits of innovation. Predictably, reduced investment will impede job creation in the United States. Although the Report acknowledges the importance of innovation incentives, it inexplicably fails to point to any empirical or other rigorous analysis of the impact of its recommendations on investment in R&D. This failure is even more glaring in light of the absence of any intuitive support for the proposition that "incremental value" or other compensation mechanisms designed to enable reverse hold-up of patentees, will promote such investment.

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6 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 18-25.

7 *Id.* at 25-30.

8 *See id.* at 8. The Report relies on the business model of a licensee who already uses the patented technology when approached by the patent owner, but lacks a license to use the technology. *Id.*

Looking beyond the U.S. patent law, the FTC's proposals have alarming implications for the interests of U.S. businesses on the international level. The Chamber of Commerce of the United States has urged the FTC to take a cautious and "light-handed" approach in recommending any changes that could weaken the enforcement and hence the value of patents, "out of concern for the tone of the conversations underway within certain governments around the world on these important subjects and the implications FTC pronouncements and actions have on U.S. trade policy."[9] Clearly, the FTC should not provide a roadmap for other governments to use in devaluing U.S. intellectual property rights ("IPR").

II. GOALS OF PATENTS AND PATENT REMEDIES

The Record and the Report reflect consensus that the goal of patent law (including remedies) is to motivate and facilitate innovation and competition to innovate.[10] The motivation, of course, comes from the prospect that innovators

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[9] Comments of R. Bruce Josten, U.S. Chamber of Commerce, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 13 [hereinafter U.S. Chamber of Commerce Comments to FTC Report]. *See also* Comments of Mark W. Lauroesch, Corning, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 4, 2011) at 2-3 [hereinafter Corning Comments to FTC Report] (noting that the U.S. government has "consistently resisted" the adoption of policies by foreign jurisdictions that would devalue intellectual property rights).

[10] *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 1; *see also* Comments of Donald J. Rosenberg & Roger G. Brooks, Qualcomm Inc., FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 13, 2011) at 6 [hereinafter Qualcomm Comments to FTC Report] (highlighting "the critical importance of the incentive structure that underpins the patent law—motivating investment to achieve ongoing, 'dynamic efficiency,' rather than insisting on short-term 'static efficiency' by minimizing input and consumer prices *now*"); Comments of Keith Mallinson, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 12, 2011), submission 1, at 5 [hereinafter Keith Mallinson Comments I to FTC Report ("Basic economic principles that underpin the IP system—such as being able to make a return on the capital, labour and time invested in what are typically risky developments of patented technologies—are as applicable with standards-based technologies as they are elsewhere."); Comments of Am. Nat'l Standards Inst. ("ANSI"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 10, 2011), submission 2, at 8-9 [hereinafter ANSI Comments II to FTC Report] ("The patent laws

will in at least some cases be able to recover heightened returns on successful investments in innovation. This is justified on the theory that over the long term, consumers are the net beneficiaries of the resulting innovation and competition, outweighing any near term higher prices.[11] Thus, patent law rests on a long-term, dynamic analysis, and the short-term, "static" goal of "lower prices now" is not a goal of the patent law.[12]

Comments from Professors Epstein, Kieff, and Spulber ("Epstein et al.") explain that the patent law is also designed to provide legal rights, remedies, and incentives necessary to spur the formation of the whole network of private relationships required to bring an invention all the way from conception to the consumer (financing at various stages, product development, capital investment in manufacturing, marketing, etc.).[13] An important outcome of this network is the creation or maintenance of jobs at each stage of commerce in standardized

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were designed in part to stimulate innovation and investment in the development of new technologies, which can greatly contribute to the success and vitality of a standardized solution to an interoperability or functionality challenge.").

11 *See* Comments of Earl Nied, Intel, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 2 [hereinafter Intel Comments to FTC Report] ("Over the long term, innovation is the most important driver of economic welfare—far more important than short-term pricing."); Comments of David Heiner, Microsoft, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 4 [hereinafter Microsoft Comments to FTC Report] ("[T]he gains from dynamic efficiency . . . can far outstrip the gains from incremental static improvements.") (quoting Gerald F. Masoudi, Deputy Assistant Att'y Gen., Antitrust Div., U.S. DOJ, Address at the High-Level Workshop on Standardization, IP Licensing, and Antitrust, Tilburg Law & Economic Center, Tilburg University: Efficiency in Analysis of Antitrust, Standard Setting, and Intellectual Property (Jan. 18, 2007) (manuscript at 2-3), *available at* http://www.justice.gov/atr/public/speeches/220972.pdf).

12 *See* Microsoft Comments to FTC Report, *supra* note 11, at 4 ("In developing policy positions relating to standards, governments should pay special attention to the importance of promoting the dynamic efficiencies that arise from preserving incentives for innovation.").

13 *See* Comments of Richard Epstein, F. Scott Kieff, & Daniel Spulber, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 5-7 [hereinafter Epstein et al., Comments to FTC Report].

technologies, including research, engineering, product development, manufacturing, services provision, marketing, distribution, retail, and customer support.

Epstein et al. emphasize that this network of contractual relationships creates immense value that an award of damages from infringer to patentee cannot create.[14] As a result, after-the-fact payment of a damages award has vastly different—and inferior—social value than payment of an "equivalent" amount pursuant to a voluntary license agreement. This is because the damage award cannot bring with it the broad range of benefits made possible by the textured contracts that typically implement voluntary licensing agreements.[15]

The law of patent remedies as it now stands has—as a purely empirical matter—made the U.S. the world-leader for high-tech R&D investment;[16] recommendations for significant change should therefore be approached with great caution.

III. THE DEFINITION AND LIMITS OF HOLD-UP

A. *The Definition of Hold-Up*

Unfortunately, the FTC's process did not begin with an impartial inquiry into "hold-up," nor did it seek input regarding its definition, its prevalence, or the success of current law, private contracts, and SSO policies in addressing any risk of hold-up. Instead, the FTC announced the workshop on remedies and invited public comment after issuing a Report that clearly prejudged "hold-up" by patentees to be an established and serious problem.[17] The Report defines "hold-up" to include any situation in which, as a result of pre-negotiation, infringement-specific "sunk costs" incurred by the implementer, a patentee is able to extract higher royalties than it could have obtained absent such "sunk costs."[18] This broad definition abandons both the classic definition of hold-up by

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14 *See id.* at 32-35.

15 *See id.* at 5-7, 32-35.

16 *See* Microsoft Comments to FTC Report, *supra* note 11, at 4 ("The United States, in recognizing the need to preserve incentives for innovation through a healthy patent system and marketplace competition, has been and remains a global technology leader.").

17 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 8, 22, 26.

18 *See id.* at 191 n.61; Edith Ramirez, FTC Commissioner, Welcoming Remarks: Tools to Prevent Patent "Hold-Up" Workshop at 7-8 (June 21, 2011)

economist Oliver Williamson that requires a component of "guile," and a somewhat broader definition previously proposed by Professor Joseph Farrell, currently the Director of the FTC Bureau of Economics, which requires that the patentee capture value *created by* the investment of the licensee.[19]

Commentators generally disagree that this new and broad definition of "hold-up" is useful. For example, Microsoft and the Telecommunications Industry Association ("TIA") insisted, in line with Williamson's definition, that "hold-up" must include "intentional and deceptive conduct," and that "routine bilateral disagreements over licensing terms" are not a "hold-up."[20]

B. *Bilateral Risks of Hold-Up.*

Epstein et al. observe that innovators, too, incur technology-specific "sunk costs" consisting of the R&D investment required to develop an innovation.[21] Indeed, at a moment before an implementer has begun to make technology-specific investments, it will commonly be true that essentially all of the *innovator's* technology-specific costs are already "sunk costs."[22] Thus, the risk of hold-up is a two-way risk. If hold-up is considered to produce harmful

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(transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf).

19 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 18.

20 *See* Microsoft Comments to FTC Report, *supra* note 11, at 7; Comments of Danielle Coffey & Brian Scarpelli, Telecomms. Indus. Ass'n ("TIA"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 5 [hereinafter TIA Comments to FTC Report]; *see also* Epstein et al., Comments to FTC Report, *supra* note 13, at 20 ("This peculiar FTC definition of hold-up is . . . so arbitrary as to be not useful."); Comments of Michele Herman, Davis Wright Tremaine LLP, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 5 [hereinafter Davis Wright Tremaine LLP Comments to FTC Report] (arguing that the proper definition of patent hold-up "should require either actual harm or at least 'a dangerous probability' of harm to competition or consumers").

21 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 40-41.

22 *See id.* at 42; Qualcomm Comments to FTC Report, *supra* note 10, at 15-16; Anne Layne-Farrar, Vice President, Compass Lexecon, Tools to Prevent Patent "Hold-Up" Workshop, at 134-35 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) (stating that patent holders' investments are sunk at the time of standardization creating the risk of "reverse hold-up" by implementers).

distortions to incentives to develop and commercialize innovations, then it is inexplicable why the Report treats hold-up of implementers as a serious problem, while positively endorsing and recommending rules to facilitate reverse hold-up of innovators by implementers.

In this regard, Epstein et al. note that the time labeled "*ex ante*" in the FTC Report and recommended as the optimal time for the "hypothetical negotiation" is in fact a midpoint "*ex ante*" investment by the implementer, but "*ex post*" investment by the innovator.[23] A truly "*ex ante*" and "lock-in"-free negotiation would have to occur prior to sunk costs by either party to the negotiation.[24]

C. *Information Prevents Hold-Up*

Epstein et al. point out, and the Report recognizes at least in part, that hold-up results from a lack of information.[25] If hold-up is foreseeable, then it is avoidable by the potential victim, whether by refraining from investing or by contracting prior to investing. Further, because foreseeable hold-up will result in sub-optimal investment by the potential victim, it is actually likely to be disadvantageous to both the victim and the perpetrator from a long-term perspective. Therefore, both parties have incentives to enter into hold-up-solving contractual relations *ex ante*.[26]

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[23] *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 11-12.

[24] *See id.* at 12 (describing a "truly '*ex ante*'" setting as one "at the outset of a new technology, before either inventors or manufacturers have made the investments necessary to the success of that technology"); *see also* Comments of Brian Pomper, Innovation Alliance, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 3 [hereinafter Innovation Alliance Comments to FTC Report] ("[C]apping ongoing royalties based on assessments of the 'incremental value' of the patented technology over available alternatives, *after* the patentee has sunk its investment but *prior* to investment by the infringer is directly at odds with over two centuries of patent law and could have a devastating impact on innovation incentives.").

[25] *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 18 - 20; THE EVOLVING IP MARKETPLACE, *supra* note 1, at 50.

[26] *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 20 ("[T]he advance knowledge of a potential holdout risk leads parties to negotiate mutually acceptable solutions prior to its occurrence."); THE EVOLVING IP MARKETPLACE, *supra* note 1, at 8, 50.

The patent system itself, with its requirement of enabling disclosure now enhanced by the additional availability of rapid computer searches, is a powerful source of information about potential claimants, enabling bilateral *ex ante* negotiation to preclude hold-up.[27]

In the case of later entrants into markets, information is likely to be nearly complete at the time investment decisions are made, so no hold-up can be possible: it will be known who is demanding royalties, and generally at what level. If a prospective licensee perceives these royalties to be "hold-up," expropriating value created by the implementer, it will simply not make technology-specific investments or enter the "held up" market.[28]

The Report and some commentators expressed concern that the large number of patents relating to some technologies, combined with the complexities of those technologies, can make it prohibitively expensive for implementers to identify all patents that they may potentially infringe.[29] Other commentators disagreed with this concern.[30] Epstein et al. pointed out that patentees have

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27 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 20.

28 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 13.

29 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 80-135; Comments of Deanne E. Maynard, Sean P. Gates, John Thorne, & Gail F. Levine, Verizon Commc'ns Inc., FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 4 [hereinafter Verizon Comments to FTC Report] ("The number of patents, combined with the secrecy of patent applications, prevents SSOs or their members from knowing of all potential patent rights that may cover standardized technologies."); Comments of Timothy Simcoe, Boston Univ. School of Mgmt., FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 3 [hereinafter Timothy Simcoe Comments to FTC Report] (noting that it is difficult for producers to determine relevant patents because "a modern laptop or smart-phone will implement hundreds of standards and infringe thousands of patents.").

30 *See* Comments of Am. Nat'l Standards Inst. ("ANSI"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 21, 2011), submission 3, at 5-6 [hereinafter ANSI Comments III to FTC Report] ("Many companies would prefer that their own patented material become the industry standard, and so they are willing to disclose it early in the standards development process.").

strong incentives to make their claims known in a timely fashion.[31] Certainly the Record is devoid of evidence that "unavoidable ignorance" is a systemic problem that is regularly causing excessive licensing fees or excessive damages verdicts. On the contrary, the parties charging meaningful royalties in, for example, the cellular industry, are major, long-term players (Qualcomm, Nokia, Motorola, Ericsson) from whom it was evident *ex ante* that licenses would be essential.

Perhaps more importantly, it was noted that the vast majority of patents relevant to technology areas identified as particularly subject to "patent thickets" (telecom being the leading example) are licensed on a portfolio rather than individual basis.[32] Thus, to engage in *ex ante* negotiations and eliminate the hold-up potential from all of these patents, it is not necessary to determine precisely which patents or claims may read on a particular product; it is only necessary to identify the counterparties from whom portfolio licenses will be necessary.[33]

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[31] *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 21 ("Although manufacturers may not know instantly precisely which patents are available for licensing, keeping patent portfolios hidden from potential revenue-producing users is a losing game for any patentee. Patents are wasting assets that cost their owners a great deal to enforce during their effective term. Accordingly, these patentees have powerful incentives to make their patent portfolios easily known to technology adopters, both large and small."); *see also* ANSI Comments III to FTC Report, *supra* note 30, at 12 ("Companies may have incentives to disclose known patent rights as soon as possible. Many companies would prefer that their own patented material become the industry standard, and so they are willing to disclose it early in the standards development process.").

[32] *See* Davis Wright Tremaine LLP Comments to FTC Report, *supra* note 20, at 8 (noting that parties rarely license patents individually, but rather license on a portfolio basis or using cross-licenses); Intel Comments to FTC report, *supra* note 11, at 3; *see also* Layne-Farrar, *supra* note 22, at 203-04 (stating that patents often overlap and are difficult to value individually, creating incentive for portfolio licensing to implement a technology as a whole).

[33] *See* Davis Wright Tremaine LLP Comments to FTC Report, *supra* note 20, at 11 ("As long as there is a RAND commitment and some identification of the patentees that have declared patents the standards process is not subverted as a result of any missing information. SSO patent policies do not require further transparency into specific patents or licensing terms because standards participants and implementers will know who to contact to negotiate appropriate agreements on a bilateral basis."); Microsoft Comments to FTC Report, *supra* note 11, at 10 ("In some ways, the value of a disclosure-based policy is finding out which patent holders likely will have

Thus, the law of large numbers may actually *simplify* the informational problem: it might be time-consuming to evaluate whether a particular patent reads on a cellular handset and is valid, but almost no analysis at all is required to conclude that, if one is making handsets, it will be necessary to obtain licenses from Motorola, Nokia, Ericsson, and Qualcomm. It is probably not coincidence that the Record is also devoid of evidence of any greater problem of hold-up, barriers to entry, or impairment to investment and innovation in the market that is pointed to as having the thickest of the "patent thickets"—telecommunications.

IV. THE RECORD CONTAINS NO EVIDENCE OF A SYSTEMIC HOLD-UP PROBLEM THAT COULD JUSTIFY SUBSTANTIAL CHANGE TO THE PATENT LAW

SSO and industry participant commentators overwhelmingly report that patent hold-up is not a problem, and statistics regarding the cost of IP in successively patent-intensive generations of cellular standards add credibility to these comments. In short, the theory of a pervasive patent hold-up problem on which the Report rests appears to be not only unsupported, but contradicted by the real-world facts.

A. *Commentators Overwhelmingly Report that Patent Hold-Up Is Not a Problem.*

Numerous commentators—including SSOs, academics, industry analysts, licensors, and potential targets of patent litigation—expressed the strong view that hold-up is not a significant problem in the real world.

- The Alliance for Telecommunications Industry Solutions ("ATIS") reports that it "has not experienced the hold up problem, nor has any

essential patent claims vis-à-vis the final standard."); Qualcomm Comments to FTC Report, *supra* note 10, at 7-8 (explaining that industry participants typically know which companies have relevant patent portfolios and negotiate agreements on a portfolio basis, thus "'disclosure' by SSO members of additional patents or applications at the margin is inconsequential in practice"); *see also* Michele K. Herman, Davis Wright Tremaine LLP, Tools to Prevent Patent "Hold-Up" Workshop, at 18-19 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) (noting that participation in SSOs allows implementers to discover the identity of patent-holders with essential patents).

such problem impeded in any way ATIS' standards development efforts."[34]

- TIA reports that it "has never received any complaints regarding such 'patent hold-up,'" and "believes that the FTC is presuming that 'patent hold-up' is a widespread and fundamental problem, without considering the practical experiences of SSOs such as TIA."[35]
- The American National Standards Institute ("ANSI") reported that "for only a relatively small number [of standards] have questions ever been formally raised regarding the ANSI Patent Policy, including issues relating to improper 'hold up.'"[36]
- Professor Jay Kesan of the University of Illinois Law School finds that "there is little or no empirical evidence indicating that there is a significant problem with patent 'hold-up.'"[37]
- Cellular industry analyst Keith Mallinson contends that "there has been no evidence of 'windfall gains' to patent owners impeding the adoption of any technology-based standard."[38] Indeed, Mallinson shows that in the cellular industry, implementers and carriers already reap the overwhelming majority of profits generated by the products enabled by the licensed IP.[39]
- Microsoft, a frequent patent defendant as well as plaintiff, also sees "little evidence that 'patent hold-up' in the standards context is a real problem."[40]

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[34] Comments of Thomas Goode, Alliance for Telecomm. Indus. Solutions ("ATIS"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 1 [hereinafter ATIS Comments to FTC Report].

[35] TIA Comments to FTC Report, *supra* note 20, at 4.

[36] Comments of Am. Nat'l Standards Inst. ("ANSI"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 10, 2011), submission 1, at 12 [hereinafter ANSI Comments I to FTC Report].

[37] Comments of Professor Jay P. Kesan, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 2 [hereinafter Professor Jay P. Kesan Comments to FTC Report].

[38] Keith Mallinson Comments I to FTC Report, *supra* note 10, at 8.

[39] *Id.* at 19-21.

[40] Microsoft Comments to FTC Report, *supra* note 11, at 16.

- Qualcomm, a leading seller of standards-compliant cell phone chips, reports that "there has been no 'hold-up' crisis."[41]
- Citing cellular market statistics, Epstein et al. conclude that "the success on the ground bears out the theoretical insight that hold-ups are not a serious threat to collaboration over and around standards."[42]

On the other hand, several implementers that are net royalty payers or downstream companies with strong self-interest in compelling lower royalty rates and enhancing their profit margin did assert that patent hold-up is a real

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41 Qualcomm Comments to FTC Report, *supra* note 10, at 21.

42 Epstein et al., Comments to FTC Report, *supra* note 13, at 14; *see also* Comments of Jonathan Zuck, Ass'n for Competitive Tech., FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 2 [hereinafter Ass'n for Competitive Tech. Comments to FTC Report] (explaining that its members, small businesses, "are not convinced that there is a wide-spread patent hold-up problem"); Comments of Steven W. Sprecher, InterDigital, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 3 (Aug. 5, 2011) [hereinafter InterDigital Comments to FTC Report]. ("Based on our firsthand experience participating in industry standards, we do not believe that the current policies and practices of the various standards organizations in the wireless industry lead to unreasonably high prices to consumers, or otherwise result in market distortion."); U.S. Chamber of Commerce Comments to FTC Report, *supra* note 9, at 8 ("[E]mpirical evidence supporting a concern with a widespread risk of holdup is lacking."); Naomi Abe Voegtli, SAP Software Solutions, Tools to Prevent Patent "Hold-Up" Workshop, at 22 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) at 20-21 (stating that SAP has participated in over 100 SSOs and has never accused a company or been accused of patent hold-up); Amy Marasco, Gen. Manager for Standards Strategy, Microsoft Corp., Tools to Prevent Patent "Hold-Up" Workshop, at 23-24 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) (stating that litigation between patent holders and licensees is not necessarily evidence of hold-up); Jorge Contreras, Washington University in St. Louis School of Law, Jorge Contreras, Wash. Univ. St. Louis Sch. of Law, Tools to Prevent Patent "Hold-Up" Workshop, at 26-27 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) (agreeing that hold-up is "not happening that much").

phenomenon.[43] It is significant, however, that this set of companies, with a vast combined experience in licensing of both standardized and non-standardized technologies, identified not a single concrete example of patent hold-up among them, even under the Report's broad definition of hold-up: excessive royalty demands made in negotiation after technology-specific investment by a implementer that was unaware of the need for a license prior to making that investment.[44]

B. *The Real-World Experience of the Cellular Telephony Industry Provides No Support For the Patent Hold-Up Theory*

The Report suggests that the risk of hold-up is particularly severe in standardized industries in which implementers cannot design around essential patents, and in industries in which there is a large volume of patents (a "patent thicket"), pointing to information technology as an example of a standardized, patent-dense industry.[45] However, industry analyst Keith Mallinson documents that, in the case of cellular telephony, no trace can be found of any reduction in competition, reduction in innovation, elevation of price, or other market distortion resulting from patent hold-up, gravely undermining the entire patent hold-up hypothesis in general, as well as the theory that "patent thickets" exacerbate hold-up problems in particular.[46]

Mallinson documents that the new 4G LTE standard has vastly more essential patents than did 2G cellular standards, yet investments in R&D,

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[43] *See* Comments of Gil Ohana, Cisco and RIM, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 17, 2011) at 2 [hereinafter Cisco and RIM Comments to FTC Report]; Comments of Gil Ohana, Cisco, HP, IBM and RIM, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 1, 2011) at 4 [hereinafter Cisco, HP, IBM and RIM Comments to FTC Report]; Verizon Comments to FTC Report, *supra* note 29, at 1.

[44] And of course, despite repeated opportunities to do so over a period of years and through the FTC's workshop and comment period, neither FTC staff nor any party has identified a single instance in which license fees prevented or delayed the success of a standard.

[45] *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 56, 191-92, 221-22.

[46] *See* Keith Mallinson Comments I to FTC Report, *supra* note 10, at 10, 12, 14; *see also* InterDigital Comments to FTC Report, *supra* note 42, at 2 ("[T]he market for wireless devices and services has proven to be one of the most dynamic and innovative sectors of the U.S. economy.").

standards development, infrastructure, and product design are all proceeding rapidly, at a high level, as is consumer uptake.[47] No excessive hold-up-driven royalties (nor for that matter, fear of future hold-up royalty demands from patent-holders yet unknown) are impeding these investments and rapid progress.[48] Instead, innovation has provided rapid and consistent price or performance improvements for LTE products, with actual handset prices declining even as capabilities and performance increase.[49]

Interestingly, Mallinson estimates that royalties have *declined* as a percentage of ownership cost from the 2G era to the 4G present,[50] despite the great increase in the number of essential patents, and the fact that an *increasing* percentage of the value received by the consumer is attributable to intellectual property rather than, for example, manufacturing cost.[51]

Furthermore, there have been new entrants into the 2G and 3G handset markets well after those standards were adopted and the relevant royalty environment was well-established and stable. These entrants included companies as HTC and Apple, which have captured significant market share since entry.[52] The choice of these companies to enter such markets in the face of full information strongly suggests that they did not perceive the prevailing royalty rates to reflect problematical hold-up.[53]

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47 *See* Keith Mallinson Comments I to FTC Report, *supra* note 10, at 9-11.

48 *See id.* at 18.

49 *See id.* at 14, 16.

50 *See id.* at 22. Mallinson finds claims of increased royalty burden to be unsubstantiated and contradicted by the available facts. *See id.* at 18.

51 *Id.* at 10, 19. Also of interest, Mallinson finds that market concentration is *lower* in the standardized handset market (in which essential patents are subject to RAND obligations) than is the case in the non-standardized microprocessor market. *See id.* at 13.

52 *See id.* at 10, 13, 14, 19-20.

53 *See supra* Part III.C.

C. *The Record Does Not Justify Fear That Increased Activity By "Patent Assertion Entities" Has Created a Hold-Up Problem*

The Report suggests that the emergence of so-called "patent assertion entities" ("PAEs") may be increasing the supposed problem of patent hold-up.[54] However, statistics cited in the Report indicate that patent assertion by PAEs is at an incremental rather than a game-changing level constituting, for example, only 17% of lawsuits for infringement of computer-related patents between 2000 and 2008.[55] Further, entities seeking maximum damages have strong incentives *not* to purchase or assert standards-essential patents, as these patents are usually subject to RAND commitments that may limit recoveries and certainly give defendants an additional line of defense. With the exception of IPCom, which attempted unsuccessfully to disclaim RAND commitments previously made by Bosch, no instance has been identified of a PAE asserting an essential patent against a standards-compliant product.[56] In short, PAEs are a sideshow, factually inconsequential to any concern about standards-facilitated hold-up.

D. *There Is No Evidence or Theoretical Reason to Believe That Consumers Are the Silent Victims of Patent Hold-Up*

Implicitly recognizing the absence of evidence of patent hold-up, Professor Farrell argued at the workshop that the absence of complaints of hold-up is no proof that there is not a problem.[57] Yet the absence of evidence of a

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54 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 58-60, 71.

55 *See id.* at 62 n.59 (citing Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1600 tbl.3 (2009)). Because some lawsuits name multiple defendants, Colleen Chien calculates that lawsuits filed by PAEs accounted for 26% of defendants named in infringement lawsuits in these cases. *See* Chien at 1601 tbl.4.

56 Broadcom refers to patent litigation by CSIRO as the conduct of a PAE "[r]eneging on [r]oyalty [c]ommitments." *See* Comments of Jennifer Bush, Broadcom, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 2-3 [hereinafter Broadcom Comments to FTC Report]. CSIRO is an agency of the Australian government engaged in scientific research as well as licensing, and thus is excluded from the Report's definition of a Patent Assertion Entity.

57 *See* Joseph Farrell, Dir. of Bureau of Econ., Fed. Trade Comm'n, Closing Remarks at the Tools to Prevent Patent "Hold-Up" Workshop, at 239-41 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/

problem is more than sufficient reason not to embark on radical changes to an overall well-functioning patent system. Furthermore, as noted above, there is indeed extensive evidence that there is no widespread hold-up problem.[58]

Professor Farrell also hypothesized that the absence of complaints about hold-up was attributable to the fact that consumers are the real victims of hold-up (because licensees can pass excessive royalties through to consumers), and those consumer-victims were not "at the table" in the FTC evidence-gathering process.[59]

However, Professor Farrell cites neither empirical data nor economic models to support his "pass through" hypothesis. And in fact, there is strong reason to doubt that incremental changes in handset royalties are passed through to consumers, making it doubtful that there would be any significant consumer impact at all. In particular, economic theory suggests that it is unlikely that changes in the royalty rates would be passed through to consumers.[60]

Mallinson calculates that the handset cost represents a mere 17% of the total cost of ownership of a cellular phone in the U.S.[61] Given that royalties in this industry are paid on the handset price, rather than the price of the full value of the much larger bundle of hardware and services enabled by patented technology, an incremental change in royalty rates would at most constitute an

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standards/transcript.pdf) ("[I] think it's probably true, by and large, that implementers . . . prefer better technology in the standards and prefer it to be cheaper, but I think there are reasons to believe, especially if nondiscrimination requirements are strongly enforced, that their incentives are relatively weak, because if you have a nondiscriminatory royalty, it's going to be passed through substantially to final consumers . . . . ").

58 *See supra* Part IV.B. InterDigital agrees that "in the absence of any empirical data suggesting the current system of standardization does not adequately serve consumer interests, it would be misguided to seek to scale back or restrict intellectual property protection for patents generally, and for standard-essential patents particularly." *See* InterDigital Comments to FTC Report, *supra* note 42, at 3.

59 *See* Farrell, *supra* note 57, at 240-41 ("[I]f you have a nondiscriminatory royalty, it's going to be passed through substantially to final consumers . . . .").

60 *See generally* W. KIP VISCUSI, JOHN M. VERNON, & JOSEPH E. HARRINGTON, JR., ECONOMICS OF REGULATION AND ANTITRUST, 258-59 (3d ed. 2000).

61 Keith Mallinson Comments I to FTC Report, *supra* note 10, at 15.

extremely small percentage of the consumer's cost of ownership. Indeed, while Professor Farrell has suggested that licensees are indifferent to patent hold-up because they will simply pass through increased royalty costs to consumers,[62] the vigorous advocacy by Cisco and RIM in the FTC proceedings for policies that will force down damage awards and royalty rates confirms that those licensees expect to be able to retain a substantial share of any resulting savings, rather than being forced by competitive pressures to pass those savings through to consumers. The fact that, within U.S. markets, a large percentage of handsets are provided to consumers at no direct charge at all, or at heavily subsidized prices, further highlights the lack of any close connection between incremental changes in cost to carriers and consumer prices.

E. *Why Is There No Systemic Hold-Up Problem?*

The simplified economic theories discussed in the FTC Report and by a number of academics predict patent hold-up, yet the real-world evidence points the other way. This casts doubt on the adequacy of those simplified theories and on the logic of the Report which depends upon those simplified theories. And indeed, the simplified hold-up theory excludes important factors that may mitigate or prevent hold-up altogether. These factors include:

- *Adequate information:* As discussed above, in many cases, implementers possess adequate information about relevant patents or portfolios at the time they make investment decisions, and so are able to prevent hold-up by *ex ante* negotiation.[63]
- *Reputational constraints:* Epstein et al. explain that reputational effects in a repeat-play environment can strongly discourage opportunistic behavior such as hold-up, and note that standardized technologies commonly are repeat-play environments.[64]
- *SSO RAND rules:* Several commentators report that voluntary RAND obligations can and do work effectively to discourage problematical royalty pricing.[65]

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[62] Farrell, *supra* note 57, at 239-41.

[63] *See supra* Part III.C.

[64] *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 23-24.

[65] *See id.* at 24-25; *see also* Voegtli, *supra* note 42, at 167-68 ("If SAP backs off from [a] RAND commitment, our reputation is going to be tarnished, and it's a public relation[s] disaster.").

V. STANDARDS AND STANDARD-SETTING ORGANIZATIONS: PRIVATE SOLUTIONS, GOVERNMENT DISRUPTION

Standard-setting organizations have over time evolved relationships and rules that provide pragmatic solutions to a wide range of licensing issues. To overlay this empirically effective system with government-imposed rules or disruptive enforcement practices is likely to be seriously counter-productive.

A. *Existing SSO Disclosure and Licensing Rules Are Carefully Balanced and Should Be Respected*

As previously noted, the Report evinces particular concern that the creation of standards by SSOs creates *heightened* risk of patent hold-up.[66] However, as the previously cited quotations from the Record reveal, SSOs (which are associations that include both licensors and licensees) and related organizations, *without exception,* do not believe that there is any widespread hold-up problem with respect to standards for which they are responsible,[67] and report no complaints from their members about patent hold-ups.[68] Notably, neither the FTC nor those few submitters who contend that hold-up is a real-world phenomenon cite a *single* example of a standard which has failed or has experienced slowed or diminished market success as a result of hold-up by patent owners.

Epstein et al. argue that this is not surprising given that SSOs have rules and create relationships that provide additional barriers to hold-up *over and above* those that operate in the market generally. Indeed, SSOs have strong motivations to adopt rules that maximize value by: (1) discouraging opportunistic behavior by any constituency, and (2) encouraging membership and participation in the SSO by all important constituencies.[69] Further, because SSOs are numerous, have existed for many decades, and in many instances

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66 THE EVOLVING IP MARKETPLACE, *supra* note 1, at 191.

67 *See supra* Part IV.A.

68 *See supra* Part IV.A.

69 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 12-14; *see also* Comments of David W. Hill, Am. Intellectual Prop. Law Ass'n ("AIPLA"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 3 [hereinafter AIPLA Comments to FTC Report] (explaining that SSO-created rules attempt to balance the varied interests of members and avoid the development of standards that will be blocked by an IPR holder).

compete against each other for the development of commercially successful standards, their consensus-based IP disclosure and licensing rules are not the result of theory, arbitrary choice, or dominance by one interest. Rather, their rules are the result of a continual competitive and evolutionary process.[70]

These facts caution against any sort of governmental pressure on SSOs to alter their rules or governmental intervention to create legal policies that would effectively trump SSO rules. Any such pressures or changes could destroy efficiencies. Given that SSOs by their nature are purely voluntary organizations dependent on the uncompensated efforts of their members, changes that would tilt the current consensus balance in favor of one interest or another could discourage participation by disfavored companies. This would damage the standards development and licensing processes to the grave disadvantage of downstream entities, and ultimately consumers.[71]

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[70] *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 14; *see also* Comments of Dan Bart, Valley View Corporation, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 3 [hereinafter Valley View Corporation Comments to FTC Report] ("[T]he standards development activities that Mr. Bart and [Valley View Corporation] have been involved in have *successfully evolved* along with the development of new technologies and emerging competitive environments.") (emphasis in original); Comments of Douglas K. Norman, Intellectual Property Owners Association, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 3 [hereinafter Intellectual Property Owners Association Comments to FTC Report] (noting that competition between standards and standards organizations can lead to improved SSO rules).

[71] *See* Comments of Ericsson, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 2 [hereinafter Ericsson Comments to FTC Report] (imposing extensive disclosure obligations on SSO members "may lead to fewer industry participants in the standardization process"); Intel Comments to FTC Report, *supra* note 11, at 2 ("Rigid disclosure requirements and excessive regulation of licensing terms will likely discourage innovative companies from participating in standard-setting organizations . . . ."); Corning Comments to FTC Report, *supra* note 9, at 2-3 (noting that if SSOs required mandatory licensing obligations, it "would have a chilling effect on the ability of some, particularly smaller companies, to participate"); Comments of Anne Layne-Farrar et al., Compass Lexecon, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (July 29, 2011) at 3 (showing that "commonly proposed rules that suggest to

B. *SSO Structures and Rules Provide Protections Against Hold-Up*

1. SSOs improve information about needed licenses

As previously noted, advance information enables parties to avoid hold-up. SSOs improve information in at least two important ways.

First, rules calling for disclosure of potential essential patents during the standardization process facilitate identification of necessary license counterparties.[72] However, SSOs recognize that it is difficult to identify all potentially essential patents with respect to complex standards, and impossible to do so with perfect precision.[73] Accordingly, leading SSOs uniformly strike a balance of requiring only limited, good-faith disclosure.[74] Nevertheless, these

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reward patent holders according to the incremental value a given technology contributes discourage firms from joining the SSO"); Mallinson Comments I to FTC Report, *supra* note 10, at 6 ("If regulated pricing principles were enforced, it could make patent owners leery of . . . participating in the standards process at all, resulting in inferior and ultimately more costly standards, potentially making the alleged problem of 'surprise patents' *worse* instead of better."); Qualcomm Comments to FTC Report, *supra* note 10, at 10 ("If disclosure rules are too burdensome, this could discourage some patent-owners with other options from participating in particular SSOs . . . .").

72 *See* Herman, *supra* note 33, at 18-19 (noting that participation in SSOs allows implementers to discover the identity of patent-holders with essential patents); *see also* Amy Marasco, Gen. Manager for Standards Strategy, Microsoft Corp., Tools to Prevent Patent "Hold-Up" Workshop, at 50 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) ("[W]hat matters most about disclosure is not the specific patents, it's who are the patent holders who likely will hold essential patent claims at the end of the day.").

73 Comments of Am. Nat'l Standards Inst. ("ANSI"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 10, 2011), submission 2, at 9-10 [hereinafter ANSI Comments II to FTC Report] ("As a practical matter, it is often virtually impossible to identify every potentially essential patent claim. Often the implication of a specific patent in connection with a particular standard may not be easy to determine or evaluate. Patent searches are expensive, time-consuming, require a potentially complex legal and technical analysis and may still not be dispositive.").

74 *See* Comments of Steve Mills, Institute of Electrical and Electronics Engineers ("IEEE"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE

requirements do increase available information, having resulted, for example, in the disclosure of over 3,000 patent families[75] by more than 30 participants with respect to the currently evolving LTE standard.

If disclosure requirements for members are excessively rigorous, or the penalty for failure to disclose accurately is excessively severe, membership and participation will be effectively penalized and discouraged, and available information about essential patents could easily *decrease*.[76] Even commentators that advocate government-compelled stiffening of SSO disclosure rules implicitly recognize this problem, and are forced to counter by advocating radical measures.[77] Among other things, they propose creating entirely new, non-voluntary legal obligations that would require even non-members to monitor SSO projects (of which there are vast numbers) and promptly disclose potentially

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AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 2 [hereinafter IEEE Comments to FTC Report] (expecting that its members will act in "good faith" to disclose any known patents that might prove essential); ANSI Comments II to FTC Report, *supra* note 73, at 8-9 (describing its policy as encouraging early disclosure of patents, but not requiring a patent search); *see also* Corning Comments to FTC Report, *supra* note 9, at 1 (observing that current SSO policies "fairly balance the interests of all stakeholders"); Layne-Farrar, *supra* note 22, at 25-26 (noting that SSO rules must achieve a balance in their disclosure requirements to encourage IPR holder participation); Qualcomm Comments to FTC Report, *supra* note 10, at 8 n.2 (noting that the European Commission's *Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements* only call for SSOs to require "good faith disclosure, by participants, of their IPR that might be essential for the implementation of the standard under development").

75 A "patent family" refers to a set of patents and applications derived from a single initial application and the specification contained in that application.

76 *See* Ericsson Comments to FTC Report, *supra* note 71, at 2 (imposing extensive disclosure obligations on SSO members "may lead to fewer industry participants in the standardization process"); Voegtli, *supra* note 42, at 22 ("[O]ur concern is now we see more and more standard organizations discussing what I call punitive IPR policy."); Layne-Farrar, *supra* note 22, at 25-26 (stating that IPR holders may "withhold from participating" in SSOs with "onerous" rules).

77 *See* Comments of Christopher Montgomery, Xiph.Org Foundation, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 15, 2011) at 7 [hereinafter Xiph.Org Foundation Comments to FTC Report].

essential patents, or risk losing the ability to enforce those patents, as well as potential antitrust liability.[78] This, however, would impose an often-unbearable burden on at least universities, start-up entities, and other small businesses.

Second, participating in an SSO—including in the frequent and intensely detail-oriented meetings of technical working groups—gives prospective licensees strong visibility into which companies are performing R&D in relevant areas, and thus are likely to have relevant patents.[79] The human relationships that form through SSO participation further enhance this information flow.

2. SSO standards-development rules discourage hold-up of innovators as well as implementers

The FTC Report ignores the risks and inefficiencies created by hold-up of innovators by implementers, and essentially advocates such reverse hold-up. It does this by urging an infringement damages model implicitly based on a hypothetical auction for inclusion of a patented technology into a standard under conditions deliberately designed to deny inventors the full value of their inventions.[80] Consensus SSO standards, in sharp contrast, do provide some protection for innovators by *prohibiting* the discussion of potential licensing terms in connection with technical standardization decisions.[81] This is not to say that the licensing reputation of an entity may not influence members as they cast their votes selecting between technologies, but the exclusion of license negotiations

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78 *See id.*

79 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 21; Marasco, *supra* note 72, at 51 ("[I] think at the end of the day . . . the value of disclosure is trying to find out who are the potential patent holders who may be players here . . . .").

80 While the Report does not explicitly advocate an "auction" model, the incremental value measure that it does advocate is achieved (in simplified models) precisely as a result of perfect competition with full knowledge of the prices offered for alternative technologies . . . in other words, an auction. *See* Comments of Keith Mallinson, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (July 26, 2011), submission 2, at 17-18 [hereinafter Keith Mallinson Comments II to FTC Report].

81 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 26 n.44.

from the standardization process does effectively reduce the possibility of hold-up of licensors.[82]

Importantly, SSOs and related organizations that touched on the topic were *unanimous* in urging that negotiation of license terms must continue to be entirely separate from the technical standards development process.[83]

3. SSO RAND licensing rules and the repeat-play nature of many SSO activities discourage hold-up of implementers

Commentators report that RAND commitments are not toothless, but are treated as enforceable contracts and have been asserted in court in a number of cases.[84] And as an economic matter, even the *prospect* of RAND-based claims or

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[82] *See id.* at 27.

[83] *See* ANSI Comments III to FTC Report, *supra* note 31, at 6 ("Detailed discussions or negotiations of specific license terms offered by an individual patent holder, however, should take place outside of the standards-setting venue . . . ."); Comments of Mary Logan, Ass'n for the Advancement of Med. Instrumentation ("AAMI"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 27, 2011) at 5 [hereinafter AAMI Comments to FTC Report] (stating that it does not "see any role for SSOs in negotiating license agreements between a patent holder and one or more other parties that wish to enter into a license agreement with the patent holder"); TIA Comments to FTC Report, *supra* note 20, at 11 ("[L]icensing negotiations are between the licensee and licensor and are to be conducted outside of the TIA standardization process."); IEEE Comments to FTC Report, *supra* note 74, at 7-8 (allowing discussion of relative costs of a proposed technology, but prohibiting group discussions of licensing terms); *see also* Herman, *supra* note 33, at 110-12 (recounting that an SSO amended its IP policy to prohibit discussion of licensing terms in working groups because it delayed standardization decisions).

[84] *See* Intel Comments to FTC Report, *supra* note 11, at 7 (noting that contract law is a tool implementers can use "to take advantage of the licensing assurances made to an SSO"); Qualcomm Comments to FTC Report, *supra* note 10, at 24; Keith Mallinson Comments I to FTC Report, *supra* note 10, at 7 ("In the rare instances where such negotiations have not been successful, contract law is applicable to the (F)RAND commitment and the courts are able to deal with such disputes . . . ."); Michael D. Hartogs, Qualcomm, Tools to Prevent Patent "Hold-Up" Workshop, at 158-59 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) (explaining that a RAND commitment creates an enforceable contractual

defenses acts to deter overreaching by patent-holders in negotiations.[85] While some commentators complain that RAND is not defined with sufficient precision,[86] others disagree, and there has been no broad-based support within SSOs for any more rigid definition.[87] Further, given the wide variety of

obligation); Marc Sandy Block, IBM, Tools to Prevent Patent "Hold-Up" Workshop, at 160-61 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) (stating that implementers are third-party beneficiaries of the RAND commitment); Herman, *supra* note 33, at 162-63 (agreeing with Block that RAND is an enforceable contract with implementers as third party beneficiaries); *see also* Comments of Nokia, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (July 8, 2011) at 5 [hereinafter Nokia Comments to FTC Report] ("The courts in the United States and in other countries will continue to play an important role in interpreting (F)RAND in individual cases . . . .").

85 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 25-26.

86 *See* Verizon Comments to FTC Report, *supra* note 29, at 6 ("RAND licensing obligations fail to prevent hold-up because the licensing terms are left undefined."); Cisco and RIM Comments to FTC Report, *supra* note 43, at 4 ("[F]urther definition of what RAND means would give implementers of standards and patentees claiming to own essential patents greater visibility into future licensing terms."); Comments of Albert A. Foer, Am. Antitrust Inst. ("AAI"), FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (June 14, 2011) at 4 [hereinafter AAI Comments to FTC Report] ("[A]n ex ante RAND commitment does not effectively constrain a patent owner's ex post license demands."); Comments of David G. Mclennan, Sierra Wireless Inc., FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 3 [hereinafter Sierra Wireless Comments to FTC Report] (advocating for a clarified definition of "non-discriminatory"); Gil Ohana, Senior Dir. for Antitrust and Competition, Cisco Sys., Tools to Prevent Patent "Hold-Up" Workshop, at 35 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) ("RAND[] [is] meaningless . . . .").

87 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 25 ("[M]aintaining flexibility around a RAND commitment is hugely beneficial for both patentees and manufacturers, and ultimately for consumers."); Comments of George T. Willingmyre, GTW Associates, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 5, 2011) at 3 [hereinafter GTW Associates Comments to FTC Report] (noting the ambiguity of RAND is its "strength"); Intel Comments to FTC Report, *supra* note 11, at 7 (seeing no reason "to specify a definition of

relationships and value-creating exchanges that may exist within a licensing agreement, any attempt by SSOs or courts to impose a less flexible definition on RAND could be severely value-destroying, and consequently should not be attempted.[88]

There is no disagreement in the Record with the Report's view that it is important that RAND commitments survive the sale of a covered patent.[89] Qualcomm observes that courts and enforcement agencies have thus far been able to achieve that goal without exception under existing legal doctrines.[90] In addition, the IEEE comment emphasizes that SSOs can reinforce this result (as the IEEE has done) by including in their rules a *requirement* that contractually binds any purchaser of a RAND-obligated patent to honor that commitment.[91]

'RAND'"); U.S. Chamber of Commerce Comments to FTC Report, *supra* note 9, at 11 (stating that the determination of "fair" rates and terms is "best left to the marketplace and not to be regulated in a one size fits all approach"); Microsoft Comments to FTC Report, *supra* note 11, at 12 (reducing "'RAND' to some uniform formula could undermine the value of current practices and restrict some of the flexibility that helps to enable current licensing practices and protect the defensive value of contributed patent technology"); TIA Comments to FTC Report, *supra* note 20, at 10 (arguing that there is no need to define RAND); Earl Nied, Program Dir. of Standards and Intellectual Prop. Rights for the Global Pub. Policy Grp., Intel Corp., Tools to Prevent Patent "Hold-Up" Workshop, at 152-53 (June 21, 2011) (transcript available at http://www.ftc.gov/opp/workshops/standards/transcript.pdf) ("When you actually go to negotiate [license] terms . . . what RAND does is it allows that negotiation to have the appropriate level of flexibility.").

88 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 24-28; Qualcomm Comments to FTC Report, *supra* note 10, at 19-20; Hartogs, *supra* note 84, at 171 (stating that uniformity of license terms would produce a "least common denominator [that would] disincentivize the kind of flexibility that we believe is built into the RAND mechanisms . . .").

89 *See, e.g.*, Broadcom Comments to FTC Report, *supra* note 56, at 4-5; Ericsson Comments to FTC Report, *supra* note 71, at 7; IEEE Comments to FTC Report, *supra* note 74, at 3; Comments of Gerald Lane & Marc Sandy Block, IBM, FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Aug. 4, 2011) at 18 [hereinafter IBM Comments to FTC Report]; Nokia Comments to FTC Report, *supra* note 84, at 5; AAI Comments to FTC Report, *supra* note 86, at 5; Qualcomm Comments to FTC Report, *supra* note 10, at 26.

90 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 26-27.

91 *See* IEEE Comments to FTC Report, *supra* note 74, at 3, n.8.

On the other hand, because a RAND obligation is the creation of a private *contract*, the call by at least one commentator for a "regulator to clarify" the binding effect of a RAND obligation on a subsequent purchaser of a patent[92] is misguided; it is the task of courts to interpret—and the parties themselves to "clarify" if necessary—the meaning of private contracts.

As noted above, Epstein et al. also argue that the relational and repeat-play context of standards-related licensing weighs heavily against excessive royalty demands by innovators.[93] This is because the next standard is often being developed even as royalties are being negotiated or paid on the prior standard.[94] A patent owner that is unreasonable in the license negotiation room may find a cold reception for its technology in technical working groups and even in other SSOs.[95]

VI. "REASONABLE ROYALTIES," INCREMENTAL VALUE, AND INCENTIVES FOR INNOVATION

The Report recommends that "reasonable royalties" for purposes of damage awards should be measured by a hypothetical negotiation conducted in the early stages, while the infringer is still making design decisions and has not yet made infringement-specific investments.[96] In the case of standardized technologies, the Report urges that the hypothetical negotiation should be conducted immediately prior to the adoption of the standard, even if the particular infringer made no infringement-specific investments until much later.[97] The Report then argues from economic theory that the maximum a licensee would agree to pay in such a negotiation is the "incremental value" of the patented technology over the next best alternative.[98] Accordingly, the

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92 Nokia Comments to FTC Report, *supra* note 84, at 5.

93 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 23.

94 *Id.;* Voegtli, *supra* note 42, at 167-68 ("If SAP backs off from [a] RAND commitment, our reputation is going to be tarnished, and it's a public relation[s] disaster, and SAP is a repeat player in a standard-setting organization. So, we want to maintain integrity.").

95 *Id.* at 23-24; Voegtli, *supra* note 42, at 167-68.

96 THE EVOLVING IP MARKETPLACE, *supra* note 1, at 190-91.

97 *Id.* at 192.

98 *See id.* at 189. In the classic economic theory, the price paid for the best product–A–would be the incremental value over the second-best product – B–*plus the price for which B could be obtained.* However, simplified theory also

reasoning goes, any royalty higher than this could only be the result of hold-up, and is not "reasonable."[99]

Although the recommendation is immediately directed at the calculation of compensatory damages for infringement, it could have additional far-reaching negative consequences. Notably, the "incremental value" principle, if accepted, might be inappropriately invoked by licensees as a basis to collaterally attack previously executed licenses as "not RAND" and hence unenforceable, or as a basis for "patent misuse" or antitrust claims in the U.S. and foreign jurisdictions.

However, comment in the Record reveals that neither the time chosen by the Report for the hypothetical negotiation, nor the "incremental value" rule for determining what is "reasonable," make sense. Nor are they consistent with the risk and reward incentives created by patent law.[100]

At the outset, regardless of the merits of the Report recommendations, these same recommended changes to patent damages have been proposed, discussed at great length, and rejected by Congress during recent patent reform debates.[101] It would be improper for courts or regulators to contradict those Congressional decisions through a back door of judicial "interpretation" or agency enforcement action.

A. *The Report Recommendation Favors the Infringer and Discourages Negotiated Licensing*

The Report contends that the infringer, if and after he is successfully identified and sued, must not pay more in damages than he would have agreed to pay had he negotiated a license prior to making any technology-specific

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suggests that in a perfectly competitive market the price of B will be its marginal cost of production, and in the case of a license to intellectual property, this approaches zero. Thus, it is not an oversight that the Report generally refers to the "incremental value" standing alone as the "reasonable" value of A, despite the often extremely low pricing that this implies. No good or service is subject to a similar limit on compensation. For example, RIM is not prohibited from charging more for a "BlackBerry" than the increment in value, if any, over a comparable device sold by Hewlett-Packard.

99 *See id.*

100 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 35.

101 *See id.* at 28-31.

investment.[102] Anything more is labeled as a "hold-up," and is not reasonable.[103] In other words, the patentee must not be made any better off as a result of the infringer's failure to secure a license, and the infringer must not be made any worse off as a result of that failure.[104]

Unfortunately, his principle destroys any incentive to search for relevant patents and seek out needed licenses. Thus, while the Report purports to recognize the value of private *ex ante* contracting,[105] the recommendations' actual effects discourage such contracting. This radical change in incentives would be value-destroying for the entire chain—from innovator to consumer. Negotiated contractual relationships create new value that damage awards never can. In addition, courts and regulators are ill-equipped to set prices for complex IP in ever-shifting markets. Thus, changes in incentives that steer pricing decisions away from private negotiation and towards litigated damage awards will result in incorrect pricing, with resulting inefficiencies in resource allocations and investment, ultimately harming the chain of innovation and value creation, eliminating jobs and harming consumers.[106]

The Report argues that penalties for willfulness continue to deter infringement, thereby motivating private contracting.[107] But as Epstein et al. point out, willfulness penalties affect only those who know of a patent, and do not motivate search for relevant patents and licensing counterparties.[108] Instead,

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102 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 22.

103 *See id.* at 5, 22-23.

104 *See id.* at 142.

105 *See id.* at 7-8 ("Patents also facilitate open innovation and technology transfer by creating rights based on intangible concepts, which makes contracting easier and helps create a market for ideas. In a technology transfer agreement, patents often define the rights to be transferred. Thus, patent transactions (licensing or sales) form the basis of many technology transfer agreements. Patent transactions that occur as part of a technology transfer agreement can be considered ex ante because they occur before the purchaser has obtained the technology through other means. Such ex ante patent transactions accompanied by technology transfer are an important means for advancing innovation, creating wealth, and increasing competition among technologies.").

106 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 37-39.

107 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 141.

108 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 37.

scholarship suggests that if anything, willfulness penalties actually *discourage* searching for relevant patents and potential licensing counterparties.[109]

B. *The Report "Ex Ante" Proposition is the Wrong Time for the Hypothetical Negotiation*

When voluntary licensing has not occurred and an infringement case is brought, the court must do its best to calculate damages. Unless lost profits can be proven, a "hypothetical negotiation" methodology is used. The result of that exercise may vary greatly depending on the *time* at which the hypothetical negotiation is posited, and the time termed "*ex ante" and* recommended by the Report is an economically inappropriate time. We focus in particular on the case of standardized technologies, for which the Report declares the *ex ante* time to be immediately before the standard is adopted.[110]

First, this moment is not actually '*ex ante*;' it is rather "*in media res*," halfway through the investment process, with the innovator having sunk all costs and the prospective licensee having sunk none.[111] This *faux ex ante* moment is the single moment of maximum negotiating leverage for the prospective licensee, the moment of greatest reverse hold up power over the innovator.[112] This is not a recipe for optimal pricing from a dynamic, long-term view. Further, if it is known from a truly *ex ante* perspective that this is how IP will be priced, innovators will severely under-invest in R&D, and all participants in the value chain, including consumers, will be harmed. Neither the Report nor the commentators have offered any analysis to the contrary.

Second, in the case of standardized technologies, the negotiation hypothesized by the Report is a counterfactual impossibility. The Report assumes that the licensing of patents will be subject to RAND obligations, including "reasonableness" and "nondiscrimination."[113] However, a RAND obligation pertains only to patents *essential* to a standard.[114] Prior to the adoption of a standard there can be no RAND obligation, and the patentee retains the option to license exclusively, on discriminatory terms, or not at all. The patentee

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109 *See id.* at 38.

110 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 194.

111 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 42.

112 *Id.*

113 *See* THE EVOLVING IP MARKETPLACE, *supra* note 1, at 194.

114 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 6.

also has the option to contribute the technology to a competing standard and make a RAND commitment to that standard only. In other words, a patentee engaging in an actual pre-standardization negotiation is negotiating from a position of maximum vulnerability to reverse hold-up by implementers, but the Report's fictitious "hypothetical negotiation" construct would make the patentee's bargaining position even worse by superimposing a RAND obligation that did not actually exist at that point in time.[115]

Third, because the value of intellectual property fluctuates over time as a result of market developments, new competing or complementary technologies, and new investments by parties and third parties, a model that assumes that the value of IP remains fixed throughout time is just wrong.[116] Basing damage calculations on this fossilized value regardless of when an infringement occurs will systematically result in diseconomic mis-pricing.[117]

Fourth, to permit later infringers who did *not* enter into an *ex ante* license to pay as though they had is to permit them to stand back and free ride on the investments of the innovator and early voluntary licensees who actually made the investments that created consumer awareness and built a market.[118] To do this would discourage these types of early investors from making similar investments in the future. Equally, the Report's *ex ante* pricing proposal hands infringers at no cost what is in fact a valuable option, by permitting them to watch how the market and product prices develop before deciding whether to make the investments necessary to enter the market, while guaranteeing them the same license price as early committers.[119] In short, the Report's recommended rule penalizes implementers who enter into early, voluntary licenses, and rewards those who wait, and then infringe.[120] From another angle, locking the price at the pre-standardization level for all time also prevents patentees from engaging in common and economically efficient market-creation pricing patterns, whereby low prices are offered to early customers in order to induce the investments and risk-taking needed to create a market, while the higher

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115 *See id.* at 42-43.

116 *See id.*

117 *See id.* at 43.

118 *See id.* at 41.

119 *See id.* at 42.

120 *See id.* at 39.

prices necessary to recoup investments are charged to later customers who did not participate and invest in that market-creation effort.[121]

Finally, if standardization creates per-unit value for the implementers' products over and above the value of the included technologies severally, then there is no reason why innovators should not secure at least some of that additional value through an incrementally higher royalty. On the contrary, since the standardization process requires extensive and uncompensated efforts on the part of innovator companies within the SSO, it is economically *desirable* that innovators should retain that value, so that incentives are aligned with desired behavior. Yet by placing the *faux ex ante* negotiation before standardization, the Report's recommendation denies the innovator any share of that additional value, transferring it instead to the licensee, who may or may not pass any of those savings on to the consumer.

C. *"Incremental Value" is the Wrong Measure for a "Reasonable Royalty"*

The Report advocates a model that would define a "reasonable royalty" by reference to the "incremental value over the next best alternative" provided by an invention, but this is neither appropriate nor practical for a number of reasons brought out in the Record.

1. The implications of incremental value pricing are risky

Several negative economic implications of an "incremental value" royalty model are overlooked in the Report. First, R&D investment is inherently risky investment, in which the return on successful innovations must cover the many failures, *and* provide a profit.[122] Yet an incremental value rule takes no account of the various risks borne by the innovator, including but not limited to the risk of technical failure, the risk of non-inclusion in a standard, or the risk of failing to detect or obtain compensation from infringers.

Second, the greater the number of innovators that compete to solve a particular problem, the smaller (on average) the value gap between the best and

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121 *See id.*

122 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 33 ("Any R&D investment risks failure, so the anticipated return in case of success must include a 'risk multiplier', or the investment will not be made."); Layne-Farrar, *supra* note 22, at 187 (observing the need for a "risk-adjusted reward" to encourage investment in R&D when there is a strong chance of failure).

the next-best solution—the incremental value—will be.[123] At the same time, in the case of standardized technologies, a larger number of competing solutions reduces the chance that a given solution will be incorporated into the standard. The bottom line is that an incremental value measure of infringement damages severely discourages investment in solving a particular problem if it is known (or suspected) that others are working on the same problem. This would seem counterproductive given that our patent system explicitly seeks to spur not merely innovation, but also competition for innovation—a *race* to innovate.[124]

Third, in the case of standardized technologies, the value provided by an innovation to downstream implementers and consumers is the value over the status quo standard, not the value over alternatives that were never included in the standard and never available to the downstream user.[125] Longstanding economic theory holds that innovators under-invest in R&D (from the perspective of overall societal utility) if they recover less than all of the value created by their inventions.[126] Yet an incremental value measure, by design, ensures severe under-recovery and hence underinvestment.

Fourth, incremental value pricing takes the bulk of the value created by the R&D investments of innovators, and hands it to licensee implementers, who made none of the value-creating investment.[127] Under the incremental value model, the proportion of the value that is transferred from the investor/innovator to the licensee/implementer depends entirely on the arbitrary happenstance of

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123 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 33-34.

124 *See id.* at 15; Potts v. Coe, 145 F.2d 27, 31 (D.C. Cir. 1944) ("The patent law is designed to encourage competition among inventors by giving a patent to the ingenious [party] who wins in a race for discovery.").

125 *See* Layne-Farrar, *supra* note 22, at 186-88 (noting that the value created by a new technological "major leap" is the "increment over the status quo" not the "increment over the next player").

126 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 37, n.45 (citing JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 390-91 (1988) (discussing underincentivization in context of patent-holder's failure to capture full value of innovation)); Steven Shavell & Tanguy Van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J. L. & ECON. 525, 533-34 (2001)).

127 *See* Qualcomm Comments to FTC Report, *supra* note 10, at 34-35 (explaining that the application of the incremental value standard will transfer value from the innovator to the implementer).

how good the second-best solution may be. It is not surprising that licensees such as Cisco and RIM that are net payors of royalties favor the recommended rule, but the transfer of gains from those who invested to create those gains to those who did not will distort incentives and reduce desirable investment—ultimately harming consumers.

2. Incremental value pricing is inconsistent with the FTC's view of the prices that firms should charge

In other contexts, the FTC has taken the position that a firm with market power must price its products and services "well above" average variable costs, plus a multiple thereof sufficient to cover contribution to sunk costs—a measure intended to approach long run average cost ("LRAC").[128] Yet "incremental value" takes no account of either the variable or fixed costs of the innovator, and depends solely on a factor uncontrollable by (and often unknown to) the innovator—the value of the next best solution. An incremental value measure of price will thus often fall below the LRAC incurred by the innovator of the licensed innovation. In certain foreign jurisdictions, depending on the market position of the innovator and the market definition adopted, pricing below LRAC could be deemed illegally "predatory" or anticompetitive. It is odd that the FTC should urge what will often be a below-cost pricing model for IP without any comment on the departure from the position it has taken previously.

3. Incremental value pricing does not describe real-world IP pricing behavior

The analysis summarized above suggests that, should it actually prevail in the real world, incremental value pricing of IP would prove seriously diseconomic—particularly in standardized industries. This implies either that innovation in standardized industries is currently severely under-rewarded, or that real-world negotiations for licenses to successful technologies do not in fact result in incremental value pricing, whatever radically simplified theoretical models may predict.

In fact, we see intensive and competitive investment in R&D in standardized industries through one technology generation after another.[129] In fact, we observe many innovator companies making good overall returns on

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[128] Complaint at 21, Intel Corp., No. 9341, 2009 FTC WL 4999728, at *19 (FTC Dec. 16, 2009).

[129] *See* Keith Mallinson Comments I to FTC Report, *supra* note 10, at 12.

these investments. In fact, there is no evidence at all in the Record that parties sitting down to negotiate patent licenses engage in the sort of incremental value analysis hypothesized by the Report. One is obliged to conclude, again, that the "hypothetical negotiation" recommended by the Report is not "hypothetical," but counterfactual and related only to academic theory rather than to real world negotiations.[130] This is not the goal of the law of patent remedies.

4. Incremental value is a meaningless and unusable measure in practice

Epstein et al. go farther and argue that not only is "incremental value" not currently used to set IP prices in the real world, but the concept itself is incoherent outside of radically simplified models, and therefore is unusable in real world practice.[131] They observe that even a single patent has no singular incremental value; it will have a (potentially wide) range of values depending on the resources, preferences, intended use, and efficiency of each particular licensee.[132] There is no abstract or generally applicable "correct" incremental value. However, to attempt to solve this problem by fixing a reasonable royalty by reference to the value to the *particular* licensee would be to reward the inefficient infringer with a royalty discount, and conversely to deprive the efficient implementer of its hard-earned (and socially beneficial) competitive advantage.[133]

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130 *See* Innovation Alliance Comments to FTC Report, *supra* note 24, at 4 ("[D]iffering technical proposals are rarely if ever presented as a menu of choices from which standards developers choose. In practice, patented technology is often incorporated into a standard without any competing alternatives being proposed by other participants. In other words, ex ante auctions among competing proposals is a theoretical construct that rarely, if ever, occurs.").

131 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 44-45.

132 *See id.*; *see also* Nied, *supra* note 87, at 116-17 ("put[ting] a price" on a new technology *ex ante* can be "incredibly difficult" because of the existence of "a lot of unknowns" surrounding the types of products in which the technology may be implemented).

133 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 44-45; *see also* Corning Comments to FTC Report, *supra* note 9, at 2 ("[T]he proposed incremental value approach to capping royalties may not fairly compensate patent holders, and cannot possibly result in a fair assessment for appropriate royalty compensation in all of the various complicated

Further, the great bulk of licensing is on a portfolio basis, often including not-yet-issued patents and spanning a period extending years into the future.[134] It is impossible even to imagine how one would begin an analysis of the "incremental value" of such a license.[135] Yet it cannot be that where market practice calls for portfolio licensing, an infringer can in essence coerce a license on a single-patent basis for only the litigated patent. This would grant infringers a huge advantage over licensees, and no commentator advocated such a rule.

The information pertaining to real-world value that *is* available (particularly in the case of standardized technologies that will generally be widely licensed) is the rate that others have agreed to pay for the relevant patents in real-world negotiations—exactly the class of information given first priority by courts applying *Georgia-Pacific*.[136] To the extent that the Report wishes to move away from the only available real-world evidence of value, it makes a grave mistake, and substitutes hopelessly indeterminate speculation for reasonably determinate information while ignoring both recent demonstrations of Congressional intent and recent case law affirming the existing principles governing patent damages.

VII. INJUNCTIVE RELIEF

The Report's call for changes to the *eBay Inc. v. MercExchange, LLC* ("*eBay*") injunction analysis to reduce the availability of injunctive relief is not well thought out and not supported by the Record.

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situations that occur when new technology is implemented and sold in products.").

134 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 21; Davis Wright Tremaine LLP Comments to FTC Report, *supra* note 20, at 8-9 (noting that parties rarely license patents individually, but rather license on a portfolio basis or use cross-licenses); Intel Comments to FTC Report, *supra* note 11, at 3; Layne-Farrar, *supra* note 22, at 203 ("I think one of the reasons why we've gotten to the place where lots of portfolios are licensed [as] a package is precisely because it can be so difficult to value these things. It's not like this patent is clearly on X and this patent is clearly on Y and we can give the economic value to X and Y and give you a la carte prices.").

135 *See* Epstein et al., Comments to FTC Report, *supra* note 13, at 44-45.

136 *See* Georgia-Pacific Corp. v. U.S. Plywood Corp., 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), *modified and aff'd*, 446 F.2d 295 (2d Cir. 1971) (outlining a list of factors commonly used to determine royalty damage awards).

A. *Injunctive Relief Generally*

The Report acknowledges that *eBay*[137] has provided courts with a flexible framework in which to consider the grant of injunctions.[138]

There was no disagreement with the Report's observation that the fact that a patent-holder does not practice the patent should not be considered conclusive evidence of absence of irreparable harm, because unauthorized competition against authorized licensees may inflict harm analogous to that suffered by a patentee that sells practicing products.[139]

On the other hand, the Report's recommendation that courts should consider the hardship of the infringer, "except in those instances where an infringer 'elects' to infringe by copying a patented invention with knowledge of the patent,"[140] continues the theme of favoring ignorance and eliminating incentives for implementers to search for and license potentially relevant patents. As previously discussed, de-motivating search and private contracting would have predictably negative economic consequences.[141]

B. *Injunctions and RAND Commitments*

The Report does not go so far as to recommend that injunctions should never issue with respect to patents subject to a RAND commitment. It does, however, urge that "[a] . . . RAND commitment can provide strong evidence that denial of an injunction will not irreparably harm the patentee," and suggests that because "[h]old-up in the standard setting context can be particularly acute," the public interest may be implicated by an injunction that prevents a defendant from manufacturing standard-compliant products.[142]

However, the hypothesis that injunctions against unlicensed infringers in the context of standardized technologies threaten the public interest is without

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137 eBay, Inc. v. MercExchange, LLC, 547 U.S. 388 (2006).

138 THE EVOLVING IP MARKETPLACE, *supra* note 1, at 223-35. Much less was said by commentators about the recommendations regarding injunctions than about standardization and damages.

139 *Id.* at 229.

140 *Id.* at 28.

141 *See supra* Part V.B.

142 THE EVOLVING IP MARKETPLACE, *supra* note 1, at 234-35.

basis. The *only* instance identified by *any* commentator of an injunction granted by a U.S. court relating to a standards-essential patent,[143] appeared in *Commonwealth Scientific & Industrial Research Org. v. Buffalo Tech. (USA), Inc.*[144] ("*CSIRO*"). *CSIRO* involved a defendant that (so far as the available briefs and opinions reveal) relied on non-infringement, and flatly refused to negotiate with CSIRO.[145] There is no suggestion in the Record that the relevant market did not remain vigorously competitive while the unlicensed infringer was enjoined. Absent a single other example of an injunction issued against the practice of a standards-essential patent, the specter of consumer harm threatening the public interest must be categorized as purely theoretical. Thus, the real effect of any doctrinal change would simply be to reduce the value of patents made subject to a RAND declaration by removing even the *possibility* of future injunctions as an available remedy when licenses are negotiated.

In addition, several commentators noted that the more nuanced and important question is whether an injunction may be obtained against a willful infringer who *refuses* to accept a license offered on RAND terms. If so, the infringer would be able to saddle the patentee with the burden of litigating repeatedly to recover damages for past infringement. The infringer would also be given an option to expropriate a prospective license on judicially determined terms rather than negotiating for the license with the patentee. This scenario is tantamount to a compulsory license. Moreover, to reward obstinate potential licensees and willful infringers would disadvantage and discourage voluntary licensing, undermine incentives for risky R&D investments and employment opportunities, and remove the deterrent effect of possible injunctive relief.

Not surprisingly then, a substantial majority of commentators agreed that a RAND commitment does *not* categorically preclude injunctive relief or result in an implied waiver of a patentee's right to seek an injunction.[146] The U.S.

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143 *See* IBM Comments to FTC Report, *supra* note 89, at 4.

144 Commonwealth Scientific & Indus. Research Org. v. Buffalo Tech. (USA), Inc., 492 F. Supp. 2d 600 (E.D. Tex. 2007).

145 *See* Brief for Plaintiff-Appellee at *59, Commonwealth Scientific & Indus. Research Org. v. Buffalo Technology (USA), Inc., No. 2007-1449, 2007 Fed. Cir. WL 4739058 at *51 (noting that Buffalo may instead practice a non-infringing IEEE standard "if it does not wish to take a license," implying that CSIRO continues to be willing to grant a license).

146 *See, e.g.*, Davis Wright Tremaine LLP Comments to FTC Report, *supra* note 20, at 13; Ericsson Comments to FTC Report, *supra* note 71, at 7; Microsoft

Chamber of Commerce urged that SSOs not be pressured to adopt rules precluding injunctions.[147] Several commentators specifically argued that injunctions should be available against infringers who decline RAND terms.[148] Qualcomm observed that the RAND obligation is a contractual one, and that no absolute bar on injunctive relief can be found in the relevant contractual terms.[149] Further, while the Report suggests that an injunction against an infringer could be particularly harmful to consumers where it blocks compliance with a standard,[150] just the opposite may be true. One of the central characteristics of a standardized technology is that consumers are likely to have compatible and highly substitutable alternatives available to them from other implementers, and presumably the enjoined infringer may resume supply at any time by taking a license on RAND terms.

Verizon's argument that categorical denial of injunctions against infringers of RAND-subject patents would not inflict "irreparable injury" on patent owners because the patent holder "can get [reasonable royalties] in court"[151] gives too little weight to the fact that the possibility of an injunction is a primary motivating factor that drives potential infringers to the negotiating

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Comments to FTC Report, *supra* note 11, at 13; Nokia Comments to FTC Report, *supra* note 84, at 5; Qualcomm Comments to FTC Report, *supra* note 10, at 39-43; Innovation Alliance Comments to FTC Report, *supra* note 24, at 5. IBM argues in its own submission that "situations apply in which [RAND] patent holders should be entitled to seek injunction." IBM Comments to FTC Report, *supra* note 89, at 20. One can only assume that it did not notice the language in a joint submission it signed that asserts that, "[t]he Commenters believe that giving a RAND commitment should mean that a patentee gives up the right to enjoin . . . ." *See* Cisco, HP, IBM and RIM Comments to FTC Report, *supra* note 43, at 21.

147 U.S. Chamber of Commerce Comments to FTC Report, *supra* note 9, at 12.

148 *See* IBM Comments to FTC Report, *supra* note 89, at 20 (noting that an injunction should be available when an implementer "rejects a bona fide RAND license offer and refuses to negotiate"); Ericsson Comments to FTC Report, *supra* note 71, at 7 (specifying that injunctions should be available when "a user is unreasonably refusing to take a necessary license"); Qualcomm Comments to FTC Report, *supra* note 10, at 41-42 (noting that an injunction is appropriate when "RAND terms have been previously offered and refused").

149 Qualcomm Comments to FTC Report, *supra* note 10, at 42.

150 THE EVOLVING IP MARKETPLACE, *supra* note 1, at 235.

151 Verizon Comments to FTC Report, *supra* note 29, at 20.

table.[152] The patent holder who must search for, pursue, and sue each infringer in order to recoup RAND royalties is at a disadvantage when compared to the scenario in which implementers voluntarily seek out licenses, pay RAND royalties in a timely fashion, and often enter into more complex value-creating exchanges in connection with their license agreements. If "incremental value" at the time of standardization were used as the measure of infringement damages, the problem would be much worse; it would eliminate any possibility that the infringer could obtain a better deal through negotiations rather than through litigation. In any case, Verizon did not argue for any *change* or special exception to the *eBay* analysis in the RAND context. Courts should continue to weigh the actual equities in light of actual facts.

In short, neither the Report nor the Record provide justification for modifying the *eBay* framework for determining the appropriateness of injunctive relief in the case of patents subject to RAND obligations. Any further refinement of that framework should be left to the ordinary course of common law development in light of real fact situations, rather than to academic speculations.

VIII. CONCLUSION

The FTC's Report and workshop usefully elicited a substantial volume of comments regarding patent licensing, damages, and hold-up from industry participants with a wide range of experience, interests, and business models. What this Record reveals is that there is no systemic patent hold-up problem damaging the interests of consumers or discouraging technological innovation and implementation—either in the context of standardized technologies or more generally. In particular, the majority of participants expressed satisfaction with current SSO rules and practices, and the conditions under which those participants develop, gain access to, and bring to market the world's most advanced and sophisticated technologies. These commentators emphasized the well-functioning and pro-competitive nature of the standards creation and patent licensing systems as they currently operate under existing law and SSO policies. They likewise underlined the benefits that the current system continues to yield in terms of U.S. innovation, competitiveness, job creation, and consumer welfare.

A significant theme echoed throughout the Record is that caution should be the watchword in proposing changes to the careful balance of intellectual

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[152] Qualcomm Comments to FTC Report, *supra* note 10, at 41; Epstein et al., Comments to FTC Report, *supra* note 13, at 6.

property rights and remedies achieved over many years by Congress and courts, or to the overlay of incentives and licensing obligations crafted by voluntary SSOs and their members. The FTC's concern for the efficient development and exploitation of innovation is commendable but not novel. The time-tested principles developed by Congress, courts, and SSOs have all been crafted with the goal of encouraging the maximum possible success of the entire value-chain of innovation, from basic R&D, through product development, to the consumer—spurring investment and job creation at each step in the chain.

Industry participants strongly caution that the far-reaching recommendations of the FTC carry the potential to upset a well-functioning status quo, and threaten severe damage to incentives for innovation in the long run. Moreover, industry leaders caution that the recommended policies risk catastrophic consequences to the health and international competitiveness of the national economy and the interests of U.S. consumers. In short, the FTC's Report must be taken as just one interim voice in an ongoing discussion of undeniably complex issues—and not yet a persuasive voice. Academic commentators and the FTC itself need to explore more carefully the long-term effect on incentives and investments that would be wrought by proposed changes to existing and well-tested rules governing patent licensing and infringement remedies in standardized industries.