

Patent Holdup and Oligopsonistic Collusion in Standard Setting Organizations

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Current controversies over patent policy place standard setting organizations (SSOs) on a collision course with antitrust law. Recent theoretical research conjectures that, in an SSO, patent owners can “hold up” patent users in the sense of demanding high royalties for a patented input after the SSO has adopted the patented technology as an industry standard and manufacturers within the SSO have incurred sunk costs to design end products that incorporate that standard. Consistent with this conjecture, actual SSOs have recently sought no-action letters from the Antitrust Division for a variety of amendments to SSO rules that would require or request, at the time a standard is under consideration, the ex ante disclosure by the patent owner of the maximum royalty that the patent owner would charge under the regime of fair, reasonable, and nondiscriminatory (FRAND) licensing. This price information—which is characterized as the “cost” of the patented input—would, under at least one recent SSO rule modification, be a permissible topic for potential users of the patent to discuss when deciding whether to select it in lieu of some alternative standard. This exchange of information among horizontal competitors would occur ostensibly because the cost of the patented technology had been characterized as simply one more technical attribute of the standard to be set, albeit an important technical attribute. The Antitrust Division and the Federal Trade Commission have jointly stated that such discussion, by prospective buyers who are competitors in the downstream market, of the price of a patented invention that might become part of an industry standard should be subject to antitrust scrutiny under the rule of reason rather than the rule of per se illegality. The rationale that the antitrust agencies offer for applying the rule of reason to such conduct is that such horizontal collaboration might avert patent holdup. The Antitrust Modernization Commission (AMC) similarly endorsed the view that rule-of-reason analysis is appropriate for ex ante discussion of royalty terms by competing buyers of patented technology. This rule-of-reason approach, however, is problematic because it conflicts with both the body of economic research on bidder collusion and with the antitrust jurisprudence on information exchange and facilitation of collusion. Put differently, because of their concern over the possibility of patent holdup, the U.S. antitrust agencies and the AMC are facilitating oligopsonistic collusion by encouraging the ex ante exchange of information among competitors concerning the price to be paid for a patented input as an implicit condition of those competitors’ endorsement of that particular patented technology for adoption in the industry standard. However, neither the proponents of these SSO policies nor the antitrust agencies and the AMC have offered any theoretical or empirical foundation for their implicit assumption that the social cost of patent holdup exceeds the social cost of oligopsonistic collusion. This conclusion does not change even if one conjectures that such collusion will benefit consumers by enabling licensees to pass through royalty reductions in their pricing of the downstream product incorporating the patented technology. Proper economic evaluation of the plausibility of the pass-through conjecture will require information about the calculation of royalty payments; the demand and supply elasticities facing the licensees; and the structure of any industries further downstream between the manufacturer and the final consumer. Consequently, the magnitude of this effect will likely be a matter of empirical dispute in every case. Moreover, such a justification for tolerating horizontal price fixing finds no support in antitrust jurisprudence. Given the analytical and factual uncertainty over whether patent holdup is a serious problem, it is foreseeable that antitrust questions of first impression will arise and affect a wide range of high-technology industries that rely on SSOs. However, there is no indication that scholars and policy makers have seriously considered whether oligopsonistic collusion in SSOs is a larger problem than patent holdup.

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I. INTRODUCTION

In a standard setting organization (SSO), or a standards development organization (SDO), owners and users of patents agree to establish standards that make possible the production of interoperable end products that use patented technologies as inputs. A notable example is the cellular telephone, for which applicable standards rely on hundreds, if not thousands, of patented inputs. An influential article by Professors Mark Lemley and Carl Shapiro conjecture that the owner of a patented input can “hold up” firms that wish to use that input to manufacture end products.¹ Lemley and Shapiro describe patent holdup as

1. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007) [hereinafter *Patent Holdup*]. See also Mark A. Lemley & Carl Shapiro, *Reply: Patent*

occurring when the patent holder uses a court's issuance of an injunction (or merely the threat of an injunction) to block an infringer's use of the patented invention unless the infringer, who has made sunk investments in expectation of using the patented invention, pays a royalty that is, from the infringer's perspective, excessively high. Lemley and Shapiro argue that the phenomenon of patent holdup justifies changing patent law, through legislation and judicial interpretation, to limit the availability of patent injunctions. These proposals envision public collective action to address patent holdup.

Private collective action is another way to respond to the patent-holdup conjecture. Although the Lemley-Shapiro analysis is not confined to SSOs, such organizations present the more interesting case of possible patent holdup because they are institutions that evolved explicitly for the purpose of coordinating *ex ante* agreements among multiple actors to harness the productive potential of complementary technologies. For example, a standard over cellular telephone technology allows communications over different networks and subscriber devices, so that those different network and devices can interoperate. An SSO introduces the possibility that its members will privately act, through the SSO's collective decision making process to adopt or reject a particular standard that incorporates particular technology. An implicit assumption of the nascent debate over patent holdup has been that collective action privately undertaken by SSOs to resist holdup should be permitted, if not actively encouraged. The argument is that licensees are justified in conducting *ex ante* joint negotiations because of the additional market power conferred on holders of essential patents by virtue of inclusion of their patents in the standard. Stated differently, *ex ante* joint negotiations are supposedly a welfare-enhancing means to take advantage of competition for inclusion of a technology in a standard that ends when the SSO adopts or implements the standard. This changed role for the SSO regarding *ex ante* joint negotiation of royalties is significant because collaborative selection of an interoperable technology does not require oligopsonistic price setting. Price is not a technical characteristic of a technology.

Some scholars share my skepticism about the existence and empirical significance of patent holdup.² The legal and economic literature on this subject continues to develop, and the intellectual debate over patent holdup would be unlikely to be resolved soon, if left to ripen undisturbed by the exigencies of real-

Holdup and Royalty Stacking, 85 TEX. L. REV. 2163 (2007) (responding to John M. Golden, *Commentary: "Patent Trolls" and Patent Remedies*, 85 TEX. L. REV. 2111 (2007)) [hereinafter *Reply to Golden*]. For my reply, see J. Gregory Sidak, *Holdup, Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement: A Reply to Lemley and Shapiro*, 92 MINN. L. REV. 713 (2008) [hereinafter *Reply to Lemley and Shapiro*]. Throughout this article, I refer to the "patent-holdup conjecture" in the strict Popperian sense of an *a priori* hypothesis that must survive rigorous attempts at falsification (both theoretical and empirical) before it can be accepted as plausibly true (that is, having what Popper called verisimilitude or "truthlikeness"). See KARL R. POPPER, *CONJECTURES AND REFUTATIONS: THE GROWTH OF SCIENTIFIC KNOWLEDGE* (1963); KARL R. POPPER, *OBJECTIVE KNOWLEDGE: AN EVOLUTIONARY APPROACH* (1972).

2. See Golden, *supra* note 1; Damien Geradin & Anne Layne-Farrar, *The Logic and Limits of Ex Ante Competition in a Standard Setting Environment*, 3 COMPETITION POL'Y INT'L 79 (2007); Damien Geradin & Miguel Rato, *Can Standard Setting Lead to Exploitative Abuse? A Dissonant View on Patent Holdup, Royalty Stacking and the Meaning of FRAND* (Apr. 2006), available at <http://www.ssrn.com/abstract=946792>; Damien Geradin, Anne Layne-Farrar & A. Jorge Padilla, *Royalty Stacking in High Tech Industries: Testing the Theory* (May 31, 2007), available at <http://papers.ssrn.com/sol3/papers.cfm?abstractid=949599>; Damien Geradin, Anne Layne-Farrar & A. Padilla, *The Ex Ante Auction Model for the Control of Market Power in Standard Setting Organizations* 27-30 (CEMFI Working Paper No. 0703, 2007).

world controversies. For sake of argument, I will assume, contrary to my skepticism, that patent holdup can occur, and that it causes demonstrable social harm when it does occur. The contribution of this article is not to add to the existing debate with respect to patent law but to consider an important but neglected antitrust implication of that debate. Simply put, *ex ante* collective action that is privately undertaken in an SSO to counteract potential patent holdup may facilitate, if not serve as an outright façade for, horizontal price-fixing by oligopsonists of the patented input. It is well established in antitrust jurisprudence that the rule of *per se* illegality applies to competitor exchanges of contemporaneous or forward-looking information on pricing. It is not obvious why a more lenient rule should apply when competing buyers of a patented input discuss the price that they believe the patented input should fetch now or in the future. It is also not obvious why policies of antitrust prosecutorial discretion should favor licensees of patented technologies over licensors—or, for that matter, why the distribution of rents between the two groups should concern the antitrust agencies in the first place.

Consistent with the recent research on patent holdup, actual SSOs have recently sought no-action letters from the Antitrust Division of the Department of Justice for a variety of amendments to SSO rules that would require or encourage, at the time that a standard is under consideration, the *ex ante* disclosure by the patent owner of the maximum royalty that the patent owner would charge under an agreed-upon regime of fair, reasonable, and nondiscriminatory (FRAND) licensing. This price information would, under at least one recent SSO rule modification, be a permissible topic for potential users of the patent to discuss, although the policy created some ambiguity by also purporting to prohibit joint discussion of “specific license terms.” This exchange of information among horizontal competitors would occur ostensibly because the “cost” of the patented technology—namely, its royalty rate—would be characterized as simply one more technical attribute of the standard to be set, albeit an important technical attribute.

The Antitrust Division has issued business review letters permitting the mandatory or voluntary disclosure of royalty and other licensing terms, and the Division and the Federal Trade Commission (FTC) have jointly stated that discussion among horizontal competitors who will need a license should be subject to antitrust scrutiny under the rule of reason rather than the rule of *per se* illegality. The rationale offered by the antitrust agencies for that legal standard is that such horizontal collaboration may be a justifiable response to the perceived problem of patent holdup. In 2007, the Antitrust Modernization Commission (AMC) similarly endorsed the view that rule of reason analysis is appropriate for *ex ante* discussion of royalty terms by competing buyers of patented technology. It bears emphasis that—unlike the conduct at issue in the FTC’s enforcement actions in *Rambus*,³ *Dell*,⁴ and *Unocal*⁵—the holdup scenario envisioned here does *not* arise from the patent holder’s misrepresentation or knowing, intentional failure to disclose to the SSO that the patent holder owns intellectual property rights in essential technologies.⁶ Rather, the assertion of patent holdup addressed

3. In the Matter of Rambus, Inc., No. 9302 (F.T.C. Aug. 2, 2006), *rev’d*, ___ F.3d ___ (D.C. Cir. Apr. 21, 2008).

4. In the Matter of Dell Computer Corp., 121 F.T.C. 616 (May 20, 1996).

5. In the Matter of Union Oil Co. of Cal., No. 9305 (F.T.C. July 27, 2005).

6. See *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3d Cir. 2007).

here arises because the patent holder does not forbear from charging the highest royalty that it can, once its technology has been knowingly chosen by the SSO for its standard. This reasoning conflicts with the Supreme Court's reasoning in *Trinko* that "[t]he opportunity to charge monopoly prices—at least for a short period—is what attracts 'business acumen' in the first place . . . [and] induces risk taking that produces innovation and economic growth."⁷

The rule of reason approach of the Antitrust Division, FTC, and AMC is also problematic because it conflicts with both the body of economic research on bidder collusion and with the antitrust jurisprudence on information exchange and facilitation of collusion. Put differently, because of their concern over the possibility of patent holdup, the antitrust agencies and the AMC in effect have indicated that they may be willing in at least some circumstances to forgo enforcement action against practices that facilitate oligopsonistic collusion. Those practices encourage the *ex ante* exchange of information among competitors concerning the price to be paid for a patented input as an implicit condition of those competitors' endorsement of that particular patented technology for adoption in the industry standard. Neither the proponents of those practices nor the antitrust agencies and the AMC, however, have offered any theoretical or empirical foundation for their implicit assumption that the social cost of patent holdup exceeds the social cost of oligopsonistic collusion. This conclusion does not change even when the enforcement agencies assert that such collusion will benefit consumers by enabling licensees to pass through royalty reductions in their pricing of the downstream product incorporating the patented technology. The magnitude of this effect is a matter of theoretical and empirical dispute. Moreover, such a justification for tolerating horizontal price fixing finds no support in antitrust jurisprudence.

This conclusion does not change even when the enforcement agencies assert that such collusion will benefit consumers by enabling licensees to pass through royalty reductions in their pricing of the downstream product incorporating the patented technology. The magnitude of this effect is a matter of theoretical and empirical dispute. Moreover, such a justification for tolerating horizontal price fixing finds no support in antitrust jurisprudence.

Lemley and Shapiro also make a conjecture about "royalty stacking." They hypothesize that, if multiple licensors of complementary inputs each tried to hold up licensees by demanding high royalties, the downstream product could become uneconomic to produce. However, neither the antitrust agencies nor the AMC have identified royalty stacking (as opposed to patent holdup *per se*) as a justification for coordinated action among competing buyers in an SSO. And, in any event, the existence and severity of royalty stacking are still conjectures rather than empirically substantiated facts. Put differently, royalty stacking is, fittingly, a conjecture stacked upon another conjecture. The probability that royalty stacking will occur with respect to a given downstream product is necessarily less than or equal to the probability that patent holdup will occur with respect to an essential patent reading on the standard for that downstream product. From a lawyer's perspective, therefore, royalty stacking cannot be bootstrapped into a more plausible theory than patent holdup for justifying private collective action in restraint of trade. Consequently, both patent holdup and royalty stacking would encounter a court's considerable skepticism under

7. *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 407 (2004) (quoting *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966)).

existing antitrust jurisprudence. Because of the doubly speculative nature of the royalty-stacking conjecture, I focus in this article on the antitrust implications of the patent-holdup conjecture. If the patent-holdup conjecture collapses under antitrust scrutiny, then so must the royalty-stacking conjecture.⁸

Given the analytical and factual uncertainty over whether patent holdup is a serious problem, and given the divergence of desired interpretations of antitrust law concerning SSO self-help responses to possible patent holdup, it is foreseeable that antitrust litigation on questions of first impression will arise and affect a wide range of high-technology industries that rely on SSOs. On the heels of the September 2007 *Microsoft* ruling by the Court of First Instance, broadening a monopolist's duty to share its intellectual property under European competition law,⁹ the European Commission initiated an Article 82 antitrust case against Qualcomm on October 1, 2007, in response to complaints of other firms (including vertically integrated firms that own and sometimes license patents covering competing and complementary technology, and make or sell products using such technology) that the level of its patent royalties for WCDMA technology for cellular telephones constitutes an abuse of dominance.¹⁰ This view

8. The analysis does not change if, instead of discussing the rates that would be paid to individual licensors, the patent licensees instead discussed the aggregate of such rates charged by all licensors of essential patents. In the latter case, the price paid for any given essential patent is still determined by oligopsonistic collusion rather than competitive bidding: competing buyers have collectively agreed not to exceed a global spending cap. If Ford, General Motors, and Chrysler collectively agreed not to pay more than \$1000 per vehicle for tires, wheels, and transmissions, they would have reached an agreement in restraint of trade concerning the price to be paid for tires, wheels, and transmissions. Nothing in the section 1 of Sherman Act implies that horizontal price fixing by either buyers or sellers becomes lawful when rivals manifest their agreement in restraint of trade in a price for a bundle of services.

9. *Microsoft Corp.*, Case T-201/04, Judgment of the Court of First Instance (Sept. 17, 2007). The CFI ruled that a dominant firm might, "in exceptional circumstances," violate Article 82 by refusing "to license a third party to use a product covered by an intellectual property right." *Id.* at II-65 ¶ 331. In the case of intellectual property having any significant commercial value, however, the exceptional circumstances are so broad as to swallow the general rule that even a monopolist may unilaterally refuse to deal with a third party. The three (disjunctive) exceptional circumstances that the CFI identified are that (1) "the refusal relates to a product or service indispensable to the exercise of a particular activity on a neighbouring market," (2) "the refusal is of such kind as to exclude any effective competition on that neighbouring market," and (3) "the refusal prevents the appearance of a new product for which there is potential consumer demand." *Id.* at II-65 to II-66 ¶ 332. It appears that the European Commission is already in the process of invoking one or more of these exceptions to cast an allegation of patent holdup as an abuse of dominance under Article 82.

10. European Commission, Antitrust: Commission initiates formal proceedings against Qualcomm, MEMO/07/389 (press release) (Oct. 1, 2007) available at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/389&format=HTML&aged=0&language=EN>. The EC stated:

The alleged infringement concerns the terms under which Qualcomm licenses its patents essential to the WCDMA standard. The investigation will focus on the issue of whether the licensing terms and royalties imposed by Qualcomm are, as alleged by the complainants, not fair, reasonable and non-discriminatory. In a context of standardization, a finding of exploitative practices by Qualcomm in the WCDMA licensing market contrary to Article 82 of the EC Treaty may depend on whether the licensing terms imposed by Qualcomm are in breach of its FRAND commitment.

Id. In a statement certain to provoke controversy, the EC matter-of-factly defined FRAND: "The economic principle underlying FRAND commitments is that essential patent holders should not be able to exploit the extra power they have gained as a result of having technology based on their

of European competition law, like the proposals of Lemley and Shapiro to attenuate patent rights under American law, would fundamentally alter the nature of negotiations between patent owners and patent users in SSOs. However, in neither jurisdiction is there any indication that scholars—or enforcement agencies bringing cases or issuing statements of an intention not to prosecute—have considered the possibility that oligopsonistic collusion in SSOs is a larger problem than patent holdup.

Part II of this article explains the Lemley-Shapiro patent-holdup conjecture. It then explains the legal and economic arguments that cast doubt on the plausibility of that conjecture.

Part III shifts the perspective to antitrust law. It critiques the reasoning by which the Antitrust Division, the FTC, and the AMC have concluded that rule of reason analysis should apply to collective action privately undertaken among buyers in an SSO, purportedly to prevent patent holdup. Consequently, these three bodies have failed to give appropriate attention to the possibility that the risk of oligopsonistic collusion in SSOs is significant. It bears emphasis that use of the rule of reason need not be a rubber stamp for *per se* legality. Narrowly read, the antitrust agencies' endorsement of the rule of reason in this context may reflect nothing more than a current underweighting of the risk of and harm from oligopsonistic behavior in SSOs. It may indicate only that those agencies are not prepared to assume that such risk and harm will always outweigh any countervailing justifications. This article argues that the antitrust agencies should revise that current perspective. If, in the alternative, the statements of the antitrust agencies are read to support a broader conclusion on the presumptive legality of oligopsonistic collusion, then they require a fundamental repudiation of the current expressions of prosecutorial discretion on the ground that they are antithetical to the purpose of antitrust law as articulated by the Supreme Court.

Part III further argues that existing antitrust jurisprudence indicates why the rule of *per se* illegality is the more appropriate rule to apply to negotiations among competitors in an SSO over the maximum level of royalties to be charged by a patent holder seeking adoption into the standard. The proper concern is not, as the proponents of buyer collusion evidently believe, how the exchange of information among competitors will affect the division of rents between licensors and licensees; the proper concern is whether that exchange of information will expand output, increase both allocative and dynamic efficiency, and increase consumer welfare. In the SSO context, is the objective of negotiations among competitors over licensing terms and royalties to reduce input prices through combined buyer power? Or is this coordinated action necessary to achieve some output-expanding objective that advances consumer welfare, and for which the royalty negotiations are merely an ancillary restraint of trade? If patent holdup is the only concern—if the only question is how rents will be distributed between patent licensors and patent licensees—then the negotiations among competitors over royalty rates are properly considered horizontal price-fixing subject to the *per se* rule of illegality.

patent incorporated in the standard.” *Id.* The EC’s casual pronouncement of a definition of FRAND in a press release will be monumentally controversial because the economic meaning of FRAND goes to the heart of any legal theory that competitive harm has resulted from breach of a patent holder’s FRAND commitment.

Part IV asks whether any of the preceding analysis of the patent-holdup argument requires modification if the justification offered for the SSO policies in question is the assertion by licensees that the lower licensing fees resulting from negotiations between colluding oligopsonists and owners of competing patented technologies will be passed on to consumers. This assertion is difficult to evaluate in the abstract. Proper economic evaluation of the plausibility of the assertion will require information about the calculation of royalty payments; the demand and supply elasticities facing the licensees; and the structure of any industries further downstream between the manufacturer and the final consumer, such as final-assemblers or retailers (in the computer industry) or network operators (as in wireless telephony). The complexity of those inquiries underscores why, as a matter of established antitrust jurisprudence, the passing on of cost reductions achieved solely by virtue of oligopsonistic collusion is not—and should continue not to be—a legally cognizable mitigation, justification, or excuse for horizontal price fixing.

II. THE PATENT-HOLDUP CONJECTURE

Lemley and Shapiro present a theory of patent holdup and draw from it policy recommendations to limit injunctive relief against alleged patent infringers. However, a subsequent decision by the Supreme Court makes it harder for a patent holder to get an injunction for infringement and, consequently, reduces substantially the plausibility of the patent-holdup conjecture.

A. *The Lemley-Shapiro Model*

Lemley and Shapiro analyze the case of a patent holder and a potential infringer who is producing a product that complies with a standard incorporating incorporates the patented product or component. Because the patent is only possibly valid and infringed, the potential infringer faces only the possibility of an injunction rather than the certainty of one. Lemley and Shapiro argue that this injunctive relief, particularly when sought or obtained to prevent infringement of when combined with a patented component that accounts for only a small portion of the infringer's product, results in a negotiated royalty rate that exceeds a defined hypothetical benchmark. Lemley and Shapiro theorize that a patent holder can use merely the threat of obtaining an injunction to negotiate royalty rates that exceed a defined hypothetical benchmark.¹¹

11. It bears emphasis that the Antitrust Division defines patent holdup differently from the Lemley-Shapiro model. The Division asks whether the royalty *ex post* could have been reasonably anticipated *ex ante*. See Hill B. Wellford, Counsel to the Assistant Attorney General, Antitrust Division, U.S. Department of Justice, Address at the Second Annual Seminar on IT Standardization and Intellectual Property, China Electronics Standardization Institute, Antitrust Issues in Standard Setting, Mar. 29, 2007, at 11. The Division says that, when royalty terms are known *ex ante*, there can be no patent holdup. *Id.* at 11-12. Thus, the Division's "reasonably could have been anticipated" test, unlike the Lemley-Shapiro test, does not depend on a "hypothetical benchmark." It is therefore erroneous to equate the Antitrust Division's understanding of patent holdup with Lemley's and Shapiro's. Put differently, the Division's definition is easily reconcilable with the economic efficiency of voluntary exchange, whereas the Lemley-Shapiro devolves into an *ex post* variant of cost-of-service regulation predicated on a hypothetical cost model. In this respect, the Lemley-Shapiro approach is reminiscent of the hypothetical cost models, used to estimate total element long-run incremental cost, which were employed by the Federal Communications

Lemley and Shapiro analyze a bargaining model where a patent holder and a downstream firm negotiate a royalty rate. The patent holder can threaten to seek an injunction at the time of bargaining and use this possibility to its advantage. A patent holder approaches a downstream firm that is already selling a product that incorporates a feature or component covered by the patent holder's patent. The two parties engage in Nash bargaining, where the negotiated rate depends on each party's threat point. Lemley and Shapiro calculate a hypothetical "benchmark" royalty by considering the case of a surely valid patent and conclude that the hypothetical benchmark would be the product of the patent holder's bargaining power, denoted B in the model, and the marginal value added by the patented component, V . The hypothetical benchmark royalty rate is therefore BV in the case of a surely valid patent. When the patent is not surely valid, but instead is valid with only some probability θ , the hypothetical benchmark royalty falls to θBV . Lemley and Shapiro regard the probability θ as a measure of patent strength.

The holdup scenario is considered in the context of two strategies by the downstream firm. The first strategy, "litigate," has the downstream firm litigating the infringement suit and redesigning the product only upon a loss; the second strategy, "redesign and litigate," has the downstream firm redesigning its product during the patent litigation and before the court enters judgment on the question of the patent's validity.

The "litigate" strategy is attractive to a downstream firm that faces either weak patents or high redesign costs relative to the lost profits that would follow a defeat in the litigation. If the court upholds the validity of the patent, Lemley and Shapiro use the model to calculate the "percentage gap" or "royalty overcharge" between the hypothetical benchmark royalty and the royalty that would result if a downstream firm were required to redesign its product after litigating. It is important to discern the pejorative connotation of their choice of words: Even a patent whose validity has been confirmed by a court can give rise to "overcharges." Of course, in the United States there is no basis in either antitrust or patent law for denying a lawful monopolist the right to charge as high a price as he likes. The grant of a patent is not conditioned on constraining the patent owner to charge those who infringe the patent a royalty rate that is no higher than the rate that a court would deem to be reasonable.

The "overcharge" in the "litigate" scenario derived by Lemley and Shapiro depends on two considerations—the need for the downstream firm to incur redesign costs, and the loss of a sales margin attributable to the injunction that follows the patent suit. The second component can grow very large if the mark-up for the downstream product is high relative to the incremental value, V , of the patented input used in that product. Lemley and Shapiro conclude that "the negotiated royalty rate for a single patent tends to be greatly elevated above a reasonable benchmark level if the value of the patented feature is small relative to the total value associated with the product. The intuition is that the accused infringer will lose the full value of its product, not merely the value of the patented component, if it is enjoined and has to redesign the product to avoid infringement."¹²

Commission to price unbundled access to the local exchange network after the Telecommunications Act of 1996.

12. *Id.* at 2001-02.

In contrast, a downstream firm prefers the “redesign and litigate” strategy if it faces a strong patent, or when redesign costs are low relative to the loss in revenue that would follow a defeat in court. If the patent is surely valid, Lemley and Shapiro reason that the negotiated royalty would be the first component of the two that comprised the negotiated royalty in the “litigate” strategy above. That is, the negotiated royalty would be the amount of duplicative costs incurred by the downstream firm in redesigning its product using another input. There is no second term in this case because the downstream product is never removed from (or delayed from entering) the market. Of course, not all patents are surely valid. For patent strength $\theta < 1$, the negotiated royalty would be this same cost divided by θ . The intuition is that the downstream firm will have wasted money on redesigning the product if the patent on the input is found to be invalid or if there was no infringement.¹³ The downstream firm would therefore be willing to pay more than the value of the patented feature but less than the cost of redesigning the product.

The scenarios discussed so far have assumed that the downstream firm learns of the patented feature only after committing itself to an initial product design. Thereafter, the downstream firm must negotiate a royalty rate with the patent holder. Lemley and Shapiro also consider the case where negotiations occur *before* the initial downstream product design. This second scenario has far greater practical significance in light of the common existence in high-technology industries of SSOs in which member firms disclose patented technology relevant to a particular standard and agree to license that technology to other members of the SSO at FRAND rates.¹⁴

Proceeding on the assumption that the downstream firm benefits from this pre-design posture only insofar as it may possibly design around the patent, Lemley and Shapiro argue that the negotiated royalty rate is independent of the patent strength, θ . If negotiations over licensing fail, the downstream firm designs around the patent regardless, which involves losing any marginal value associated with the patented feature, and not only when the patent is invalid.¹⁵ Lemley and Shapiro show, counterintuitively, that the percentage “overcharge” in this case increases as the actual strength of the patent decreases.¹⁶ That is, the

13. This use of θ is confusing. The variable is the probability of patent validity. But the “no infringement” scenario would entail a legal conclusion regarding the defendant’s actions toward a *valid* patent—such as the conclusion that the defendant’s product acts outside the scope of the valid patent. The Lemley-Shapiro analysis depends on whether the patent can be enforced. But if Lemley and Shapiro are emphasizing lack of validity specifically, then it is inappropriate for them to let θ serve a larger purpose in their model. If one’s objective is to drive the probability of an enforceable property right in an invention as low as possible, there are numerous policy levers that one might choose to manipulate.

Moreover, it is important to observe that Lemley and Shapiro evidently ascribe no private or social benefit to these redesign efforts. This implicit assumption is questionable. Whether it is induced by a carrot or a stick, a public policy aimed at stimulating inventive activity presumably will generate some positive externality.

14. See Daniel B. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 5 (2005); Geradin, Layne-Farrar & Padilla, *Royalty Stacking in High Tech Industries*, *supra* note 2.

15. This aspect of the model explicitly relies on the earlier analysis of probabilistic patents in Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75 (2005).

16. Again, this terminology admits an implicitly pejorative connotation. The “overcharge” that Lemley and Shapiro discuss in this context is only an “overcharge” if one considers any deviation from their hypothetical benchmark to constitute an “overcharge.” In some sense, *any*

more likely the patent is invalid, the more likely it is that any royalty payment made is an overcharge. “The intuition,” write Lemley and Shapiro, “is that the accused infringer has chosen to give up without a fight, effectively agreeing to treat a possibly invalid patent as certainly valid, and so the chance that it would have invalidated the patent will not be reflected in the negotiated royalty.”¹⁷

The bargaining model presented by Lemley and Shapiro therefore posits that, in a case where the patented feature adds little marginal value to the product as a whole, the negotiated royalty rate will be some large multiple of the hypothetical “reasonable benchmark” level. Further, for stronger patents, the downstream firm will likely choose to “redesign and litigate,” paying an inflated royalty rate (that is, a rate that exceeds the input’s hypothetical benchmark royalty rate) because the downstream firm will incur redesign costs with certainty if negotiations fail.¹⁸

B. Addressing the Patent-Holdup Conjecture through Public Collective Action: Recommendations to Limit Injunctive Relief

Lemley’s and Shapiro’s primary policy prescription is a change in law through public collective action. That is, they recommend that courts or Congress limit injunctive relief—by staying the force of any injunction—in cases where the patented component represents only a small share of the overall value of the infringer’s product. Public collective action of this sort can be viewed as an alternative to private collective action taking the form of changes to SSO rules that aim to drive down royalties on patents that are essential to the standard. As part of their prescription for a change in public policy, Lemley and Shapiro would also impose as prerequisites for injunctive relief that the patent holder practice, or intend to practice, the patent in some way, and that the infringing party has not developed the patented technology independently of the patent holder.

Their other recommendations include setting royalty rates with the next-best alternative design in mind, such that royalties should be smaller when the next-best alternative is almost as valuable to the downstream firm as the infringed design. Of course, if the next-best alternative is a close substitute for the technology covered by the infringed patent, then it is hard to understand why the infringer’s predicament has anything to do with holdup. The existence of a substituting complement constrains the patent holder’s ability to charge a royalty that includes a component that exploits the downstream firm’s sunk costs associated with the SSO’s adoption of a particular standard.¹⁹ The infringer’s predicament in this case—to the extent that it exists—does not result from being

positive royalty would constitute an “overcharge” because the marginal cost to the patent holder is zero.

17. Lemley & Shapiro, *Patent Holdup and Royalty Stacking*, *supra* note 1, at 2005.

18. Lemley and Shapiro also present three conjectures concerning negotiated royalties when many patents cover aspects of a particular product: rent splitting, shutdown, and Cournot complementarity. The first conjecture is that, after each successive royalty agreement, the remaining margin to the downstream firm is smaller, such that future royalty agreements will have smaller gains to divide. The second conjecture is that a downstream firm will not produce an unprofitable product, so the royalty rates will never be so extreme as to violate the break-even constraint. The third conjecture posits that each patent holder is “marking up” the royalty on the patent, which raises the downstream price and reduces demand for the product.

19. See Sidak, *Reply to Lemley and Shapiro*, *supra* note 1, at 745 (discussing Giuseppe Dari-Mattiacci & Francesco Parisi, *Substituting Complements*, 2 J. COMPETITION L. & ECON. 333 (2006)).

held up by the patent holder; rather, it is the direct consequence of the infringer's own informed choice.²⁰

1. Staying Injunctive Relief When the Input Covered by the Patent Represents a Small Share of Value of the Final Product

In the standard case considered by Lemley and Shapiro, the value of the patented invention is a small fraction of the value of the final product. Indeed, one driving force behind the holdup outcome is that the infringing firm will lose revenues in the face of an injunction.²¹ In the limit, as the value of the patented feature approaches zero, any royalty paid to the patent holder, according to Lemley and Shapiro, is an “overcharge based on holdup.”²²

The “preferred solution” of Lemley and Shapiro in holdup cases is to stay injunctive relief until the infringing party has an opportunity to design around the patented feature.²³ In cases where the patent is valid and infringed, the infringing party will now have the use of the patented feature for a “reasonable” time necessary to redesign the final product to remove the patented feature. Lemley and Shapiro propose that this solution would eliminate holdup flowing from the disparity between the value of the final product and the value associated with the patented feature.²⁴ They also argue that staying any injunction would remove, or at least delay, a cost associated with the “redesign and litigate” strategy—namely, the cost of redesigning. If the patent is found valid and infringed, the infringer will not need to incur redesign costs until after litigation. If the patent is invalid, the redesign costs will not have been wasted.²⁵

The proposed staying of permanent injunctions is primarily aimed at eliminating “patent trolls” that hold up potentially infringing firms by threatening to seek injunctive relief against a product that is “predominantly non-infringing.”²⁶ Lemley and Shapiro argue that, because the goal of injunctive relief is to protect the patent holder's market and ensure a return on investment, injunctive relief should not be available when the patented item or feature is only a small piece of a much more complicated product.

20. One might object that an improvident choice by the infringer somehow lacks informed consent. But this argument collapses upon closer examination. The patent-holdup argument posits that two or more alternatives available before the choice of a standard were functionally equivalent (of sufficiently close) but incompatible. Conceivably, two technologies could have been close alternatives and even substitutes *ex ante* in the sense that both could achieve the same performance. But once one alternative is adopted in a standard and costs are sunk in building to it, it is no longer economic for licensees to switch to the alternative. The improvidence in this scenario comes not from the choice of one alternative over another, but from the failure of the licensees to recognize, before making sunk investments that are specific to the standard, that the patented input is sufficiently valuable to the downstream product that the patent's owner can command a high royalty. But that would be true of the owner of *any* functionally equivalent patent chosen.

21. See Lemley & Shapiro, *Patent Holdup and Royalty Stacking*, *supra* note 1, at 2001-02.

22. *Id.* at 2003.

23. *Id.* at 2037-38.

24. *Id.* at 2038.

25. *Id.* Lemley and Shapiro ignore the possibility that the downstream firm can defend itself by preemptively filing for, or acquiring, adjacent patents that may succeed in invalidating or limiting the patent of the upstream patent holder who is suing for infringement. More generally, the downstream firm has an incentive *ex ante* to aggregate patents related to the patented inputs so as to (1) defend against possible infringement and (2) raise costs for competing downstream firms that are contemplating using an unpatented alternative to the patented input.

26. *Id.* at 2008.

If it is settled that no injunction will be issued for the time that it takes an infringer to redesign its product, there is little incentive for an infringer to commence redesign efforts during the patent litigation. That is, Lemley's and Shapiro's policy recommendation essentially eliminates the "redesign and litigate" strategy because no firm would redesign at the outset of litigation, before uncertainty over validity is resolved, when it can costlessly wait until later to redesign.²⁷ Lemley and Shapiro "consider this a plus"²⁸ because redesign costs will only be incurred when necessary and the patent holder will receive a reasonable royalty for any infringing sales that take place during the stay of the injunction when redesign is occurring.

By removing the patent holder's threat of injunctive relief, therefore, an infringing firm will not lose sales during any period of redesign, will not need to decide early during litigation whether to redesign regardless of the ultimate validity or invalidity of the patent, and, in the case of a valid and infringed patent, will only pay a reasonable royalty on its sales during the stay of injunctive relief.²⁹

2. Denying Injunctive Relief When the Patent Holder Is a Non-Practicing Entity

Lemley and Shapiro would allow injunctive relief *only* when the patentee practices the patent in competition with the accused infringer. They consider the goal of the injunctive relief sections of the patent law to be to ensure that people who need injunctive relief to protect their markets or ensure a return on their investment can receive it. In contrast to the recommendation that injunctions be stayed "in holdup cases," Lemley and Shapiro "consider the presumptive right to injunctive relief to be an important part of the patent law," and they agree that, "[i]n most cases, there will be no question as to the patentee's entitlement to an injunction."³⁰ (This statement significantly undercuts the force of any concern over holdup, because "in most cases" there is no holdup at all.)

The result that non-practicing entities should not be entitled to injunctive relief flows by negative implication from the policy recommendations of Lemley and Shapiro. They defend the right of injunctions for practicing entities, and by implication argue that non-practicing "patent trolls" are prime candidates for denial of injunctive relief.³¹ "Practicing" in this context includes selling the patented product, selling a different product in the same market, exclusively licensing the patent to someone in the market, or preparing to do any of these things through research and development or otherwise.³² Lemley and Shapiro thus envision the definition of a patent troll to include firms and other institutions holding important patents that do not produce downstream products but instead recover their R&D costs through broad licensing that maximizes downstream

27. *Id.* at 2038.

28. *Id.*

29. As I argue elsewhere, this combination of factors grants the infringer a free option because the "reasonable" royalty rate is unlikely to compensate the patent holder for the full opportunity cost of involuntary exchange. See Sidak, *Reply to Lemley and Shapiro*, *supra* note 1, at 735-42.

30. Lemley & Shapiro, *Patent Holdup and Royalty Stacking*, *supra* note 1, at 2035.

31. *See id.* at 2035-36.

32. *See id.*

competition. Stanford University, for example, is a patent troll under this interpretation because it holds the patent to Google's search engine.

It is difficult to understand the logic behind distinguishing, for purposes of granting injunctive relief, between patent owners that practice their patents and patent owners who license their patents. The availability of injunctions reflects a public policy determination that the prospect of receiving uncertain damages established by a court or jury will not provide sufficient incentives for innovation. But this reasoning applies regardless of whether the patent owner practices or licenses the patent.

A practical problem with this distinction drawn by Lemley and Shapiro is that it requires a de facto oversight of market structure by the court. The court would need to determine whether certain business activities by the patent owner constitute licensing the technology (an upstream activity) or practicing the technology (a downstream activity). In a technologically dynamic industry, this kind of determination is harder than may first appear. By comparison, the consent decree that broke up the Bell System forbade the regional Bell operating companies (RBOCs) from "manufacturing" telecommunications equipment. The court reviewing waiver requests from this line-of-business restriction had to decide, for example, whether software developed by the RBOCs to improve the functionality of the switches in their local exchange networks constituted the forbidden manufacturing of equipment or merely the permissible management of those networks. To reduce the cost and uncertainty of such litigation, the patent owner in the world envisioned by Lemley and Shapiro would be compelled to vertically integrate into some degree of practicing the patent. That outcome is inefficient. The decision to vertically integrate into practicing the patent (by manufacturing a downstream product) should be made by management on the basis of the underlying economic conditions in the two levels of activity. Downstream vertical integration should not be driven by an asymmetry in the availability of injunctive relief.

Finally, it does not enhance investment in innovation to have an injunction rule that diminishes the value of the alienability of the patented technology. The right to sell a patent is worth less if the right to have that patent protected through an injunction is contingent on the nature of the prospective buyer's activities (if any) in the downstream market.

C. Does eBay Moot the Patent-Holdup Conjecture?

The Supreme Court's 2006 decision on patent injunctions in *eBay Inc. v. MercExchange, L.L.C.*³³ undercuts the patent-holdup conjecture, if it does not moot the conjecture entirely. In *eBay*, the Supreme Court unanimously held that courts may not issue injunctions as a matter of course in patent cases after a finding of infringement. Instead, the Court instructed lower courts to weigh the same four equitable factors that they consider when determining whether to grant permanent injunctive in non-patent cases. Consequently, the patent holder's threat of enjoining an alleged infringer's use of the patented technology—which is critical to the plausibility of the Lemley-Shapiro conjecture—is less credible now than it was before *eBay*.

33. 126 S. Ct. 1837 (2007).

eBay is an online consumer-to-consumer marketplace and auction house, and MercExchange holds business method patents, including one designed to facilitate internet selling.³⁴ MercExchange unsuccessfully attempted to license its patent to eBay and thereafter filed a patent infringement suit against eBay and its wholly owned subsidiary, Half.com, in the Eastern District of Virginia.³⁵ A jury upheld the patent's validity and found the defendants liable for infringement. MercExchange moved for permanent injunctive relief. The district court denied the motion, noting that "a plaintiff's willingness to license its patents' and 'its lack of commercial activity in practicing the patents' [is] sufficient to establish that the patent holder would not suffer irreparable harm if an injunction did not issue."³⁶ The Federal Circuit reversed, applying instead its "'general rule that courts will issue permanent injunctions against patent infringement absent exceptional circumstances."³⁷

The Supreme Court reversed. Relying on the Patent Act's language that an injunction "*may*" issue upon a finding of infringement, and noting the general rule that "a major departure from the long tradition of equity practice should not be lightly implied," the Court found that Congress did not intend for courts in patent cases to depart from traditional equity practice.³⁸ The Court ruled that the Federal Circuit's reliance on the patent holder's statutory "right to exclude" was misplaced. This right did not justify a presumption in favor of permanent injunctive relief, the Court noted, because "a creation of a right is distinct from the provision of remedies for violations of that right."³⁹ The Court restated that under the traditional standard for determining whether to issue injunctive relief, the burden is on the patent holder to establish that "(1) it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction."⁴⁰ Noting that neither the district court nor the Federal Circuit applied this four-factor test, the Court vacated the Federal Circuit's holding and instructed the district court to apply the test to determine whether injunctive relief is warranted.⁴¹

Justice Kennedy also wrote a concurrence—joined by Justices Stevens, Souter, and Breyer—that is particularly relevant to an analysis of patent holdup because it described the practice of "firms us[ing] patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees."⁴² Justice Kennedy cautioned that courts should be particularly vigilant in applying the four-factor test when it is possible that the patent holder seeks an injunction "simply for undue leverage in negotiations" with the alleged infringer

34. *Id.* at 1839.

35. *Id.*

36. *Id.* at 1840 (quoting *MercExchange, L.L.C. v. eBay, Inc.*, 275 F. Supp. 2d 695, 712 (E.D. Va. 2003)).

37. *Id.* at 1839 (quoting *MercExchange, L.L.C. v. eBay, Inc.*, 401 F.3d 1323 (Fed. Cir. 2005)).

38. *Id.* (emphasis added).

39. *Id.* at 1840.

40. *Id.* at 1839.

41. *Id.* at 1841.

42. *Id.* at 1842.

(for example, in cases where “the patented invention is but a small component of the product the [infringer] seeks to produce”).⁴³

Before *eBay*, permanent injunctions were, for the most part, issued as a matter of course after a finding of infringement. However, *eBay* makes clear that patent holders will no longer be granted injunctive relief with such ease. Indeed, on remand, the district court in *eBay* applied the four-factor test and again denied MercExchange’s motion for permanent injunctive relief.⁴⁴ Moreover, post-*eBay*, several district courts have found injunctive relief inappropriate after applying the four-factor test.⁴⁵ Notably, a number of these courts appear to have followed Justice Kennedy’s instruction to be wary of granting injunctions where there is the potential for patent holdup. Accordingly, these courts are less likely to find that a patentee has met its burden of proving that monetary damages are insufficient where the infringing party is not the patentee’s direct competitor and where the patented device is one component in the infringer’s overall product.⁴⁶

The patent-holdup conjecture builds on the critical assertion that a patent holder can credibly threaten alleged infringers with injunctions. Clearly, *eBay* reduces the credibility of that threat, such that patent holders have less leverage in royalty negotiations with alleged infringers, particularly where the alleged infringer seeks to use the patented device as a component in a product rather than directly compete against the patent holder in the market for the patented product. Consequently, after *eBay*, it is less plausible for oligopsonistic licensees to argue that their joint negotiation of royalties is a necessary restraint of trade that is ancillary to their objective of averting patent holdup.

III. CURRENT ENFORCEMENT POLICY ON COORDINATED NEGOTIATIONS OF PATENT LICENSING TERMS BY COMPETING BUYERS IN AN SSO

If patent holdup actually occur, and if collective action by private parties could prevent it, then some measure of social welfare (net of transactions costs) would necessarily increase. But what if those private parties simultaneously create a new social cost as a direct result of their collective action?

The most obvious social cost would be the loss in dynamic efficiency from reduced incentives for patent owners to invest in innovation. Dynamic inefficiency arises when the level of investment in research and development that maximizes the net value to society is not undertaken. When buyers of a product collaborate to force the seller’s price below the cost of producing the service, the

43. *Id.* (Kennedy, J., concurring).

44. *MercExchange, L.L.C. v. eBay, Inc.*, 500 F.Supp.2d 556, 568 (E.D. Va. 2007).

45. *See, e.g.*, *Tiber Laboratories, L.L.C. v. Hawthorn Pharmaceuticals, Inc.*, 2007 WL 2710456, at *8 (N.D. Ga. Sept. 12, 2007) (extending *eBay*’s reasoning to *preliminary* injunctions and denying patentee’s motion for such relief); *Praxair, Inc. v. ATMI, Inc.*, 479 F.Supp.2d 440, 444 (D. Del. 2007) (denying patentee’s motion for permanent injunctive relief); *Voda v. Cordis Corp.*, 2006 WL 2570614, at *6 (W.D. Okla. Sept. 5, 2006) (same); *Paice, L.L.C. v. Toyota Motor Corp.*, 2006 WL 2385139, at *6 (E.D. Tex. Aug. 16, 2006) (same) (vacated in part on other grounds); *z4 Technologies, Inc. v. Microsoft Corp.*, 434 F.Supp.2d 437, 439 (E.D. Tex. 2006) (same).

46. *See, e.g.*, *Paice, L.L.C. v. Toyota Motor Corp.*, 2006 WL 2385139, at *5 (E.D. Tex. Aug. 16, 2006) (denying patentee’s motion for permanent injunctive relief because, among other things, patentee “does not compete for market share with the [infringing product]”); *z4 Technologies, Inc. v. Microsoft Corp.*, 434 F.Supp.2d 437, 440, 441 (E.D. Tex. 2006) (citing Justice Kennedy’s concurrence and concluding that a permanent injunction is inappropriate because, among other things, Microsoft does not produce or individually sell or license the patented product, and the product is but a “small component” of Microsoft’s own software).

profit that the seller anticipates (and the profit that other firms anticipate) from supplying the service is reduced. Consequently, firms may decide to devote research and development efforts to other services rather than to the service that is priced below cost. Although such a reallocation of investment in research and development will increase profit for buyers in the short run, it may reduce the net benefits that accrue to society as a whole. This argument is a respectable one and has received the enthusiastic support of the Antitrust Division.⁴⁷ But the argument may prove difficult to substantiate or refute empirically, because it necessarily concerns effects that will occur prospectively, over an extended period of time. Consequently, the argument about dynamic efficiency often devolves—in regulation, in antitrust cases, and in intellectual property disputes—into a battle of opposing *a priori* arguments from which little consensus emerges.

Meanwhile, conspicuously absent from the debate over patent holdup is any sustained analysis of the loss in allocative efficiency from oligopsonistic collusion forming within SSOs under the guise of preventing possible patent holdup. Compared with arguments about innovation and dynamic efficiency, the predictable welfare effects of collusion surely provoke less disagreement, even when buyers rather than sellers are at issue. Nonetheless, the Lemley-Shapiro model does not acknowledge that oligopsonistic collusion is a social cost to be weighed against the benefits that Lemley and Shapiro claim will accrue to the eradication of patent holdup.

A. Information Exchange and Collusion Under Oligopsony

A monopsony is a market in which a single firm purchases the entire market supply of the good—typically, but not necessarily, the supply of an input used to make an end product sold to consumers.⁴⁸ A monopsonist by definition influences the market price for the inputs that it exclusively purchases. Consequently, it can profitably restrict its purchases of an input to reduce the price that it pays. For an input supplier with the standard upward-sloping supply curve, monopsony results in a lower market price for the input and a lower quantity demanded than would occur in a market in which buyers lacked market power.

An oligopsony is a market in which each of several firms purchases a substantial share of the market supply for an input.⁴⁹ A market in which a small number of buyers perfectly colluded with respect to their purchases of a given input would cause the same effects as a monopsonist. The welfare losses from

47. Assistant Attorney General Thomas O. Barnett has championed the role of dynamic efficiency in antitrust analysis: “Antitrust enforcers must be careful not to pursue immediate, static efficiency gains at the expense of long-term, dynamic efficiency improvements, since the latter are likely to create more consumer welfare than the former.” Thomas O. Barnett, Assistant Attorney General, Antitrust Division, United States Department of Justice, Presentation to the George Mason University School of Law Symposium, Managing Antitrust Issues in a Global Marketplace, Interoperability Between Antitrust and Intellectual Property (Oct. 31, 2007), at 15. He believes that “[d]ynamic efficiency—particularly leapfrog dynamic efficiency—accounts for the lion’s share of efficiency/welfare gains.” *Id.* at 5.

48. See, e.g., DENNIS CARLTON & JEFFREY PERLOFF, MODERN INDUSTRIAL ORGANIZATION 107 (3d ed. 2000); ROGER D. BLAIR & JEFFREY L. HARRISON, MONOPSONY: ANTITRUST LAW AND ECONOMICS 73-75 (1993); Roger D. Blair & Jeffrey L. Harrison, *Antitrust Policy and Monopsony*, 76 CORNELL L. REV. 297 (1991).

49. See, e.g., James M. Dowd, *Oligopsony Power: Antitrust Injury and Collusive Buyer Practices in Input Markets*, 76 B.U. L. REV. 1075, 1084 (1996).

monopsony and oligopsonistic collusion may be less familiar in antitrust law than are the welfare losses from monopoly and cartels, and monopsony and oligopsony might never be mentioned in a typical antitrust course.⁵⁰ Nonetheless, the Supreme Court has held that oligopsonistic collusion is *per se* unlawful under the Sherman Act.⁵¹

A substantial economic literature exists on cartels, price fixing, and bid-rigging. Daniel Graham and Robert Marshall studied cartel behavior and cartel formation in seminal research published in 1987.⁵² Formation of the “optimal cartel” and the seller’s best response to the existence of a buyers’ cartel was studied by Preston McAfee and Robert McMillan.⁵³ Economists have also developed the theory of the cartel’s optimal response to a member that deviates from the collusive arrangement.⁵⁴

Despite the depth of research on cartel behavior that is present in the economics literature, economists have often struggled with the task of cartel detection. As early as 1960, economists noticed that competitors often submit similar prices for similar goods, but it is difficult to determine whether those prices result from collusion or competition.⁵⁵ The mere fact that two or more firms apparently act in a similar manner cannot be deemed evidence of a collusive arrangement. Because firms in an oligopsony market act strategically, those firms naturally attempt to understand how their actions affect their rival firms.⁵⁶ “Conscious parallelism” is not an overtly collusive arrangement, because the firms in question act independently to take into account the expected responses of their rivals when making their own market decisions.⁵⁷

Although conscious parallelism can naturally occur in an oligopsony market, economists have reservations about the sharing of information among rivals. Economists have generally found that information sharing maximizes total

50. Perhaps that neglect is ending. See EINER ELHAUGE & DAMIEN GERADIN, *GLOBAL ANTITRUST LAW AND ECONOMICS* 232-47 (2007) (analyzing buyers’ cartels under both American and European law).

51. See *Mandeville Island Farms v. Am. Crystal Sugar Co.*, 337 U.S. 219 (1948). The Court’s most recent monopsony case, *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 127 S. Ct. 1069, 1075 (2007), was really a predation case in which overbuying of the input was allegedly the method by which to harm the monopsonist’s competitors in the downstream market. See *id.* at 1075 (“The reduction in input prices will lead to ‘a significant cost saving that more than offsets the profit[s] that would have been earned on the output.’ If all goes as planned, the predatory bidder will reap monopsonistic profits that will offset any losses suffered in bidding up input prices.”); see also Steven C. Salop, *Anticompetitive Overbuying by Power Buyers*, 72 *ANTITRUST L.J.* 675 (2005). Nonetheless, *Weyerhaeuser* contains the relevant observation: “The kinship between monopoly and monopsony suggests that similar legal standards should apply to claims of monopolization and to claims of monopsonization.” 127 S. Ct. at 1076. Analogously, horizontal fixing of output prices should be treated the same as horizontal fixing of input prices.

52. Daniel Graham & Robert C. Marshall, *Collusive Bidder Behavior at Single-Object Second-Price and English Auctions*, 95 *J. POL. ECON.* 1217 (1987).

53. R. Preston McAfee & John McMillan, *Bidding Rings*, 82 *AM. ECON. REV.* 579 (1992).

54. See Robert Porter, *Optimal Cartel Trigger Price Strategies*, 29 *J. ECON. THEORY* 313 (1983).

55. See, e.g., Vernon A. Mund, *Identical Bid Prices*, 68 *J. POL. ECON.* 150, 150-51 (1960).

56. See, e.g., CARLTON & PERLOFF, *supra* note 32, at 107-19.

57. See, e.g., *id.* at 134 (equating tacit coordination with a form of conscious parallelism, which itself refers to a strategic interaction between firms in an imperfectly competitive market); see also Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 *HARV L. REV.* 665 (1962) (arguing that the Sherman Act does not reach conscious parallelism).

welfare only when firms share information in an effort to act competitively.⁵⁸ To that end, the economic literature on information sharing has acknowledged that consumers and producers typically have conflicting interests.⁵⁹ For one to determine whether information sharing improves economic welfare as a whole, one must weigh producer benefits against the potential harm to consumers from a collusive arrangement that could commence from information sharing under oligopsony.⁶⁰ However, economists have cautioned that an information sharing arrangement in which all buyers participate can be considered *prima facie* evidence of collusion because it is typically not beneficial for all buyers to participate in an information sharing arrangement unless that arrangement involves collusion.⁶¹ That economic conclusion is consistent with the Supreme Court's statements, in cases involving collusion among sellers, that the exchange of price information among competitors can violate section 1 of the Sherman Act even when the existence of an agreement to fix prices has not been proven.⁶²

B. Antitrust Division Prosecution of Oligopsonistic Collusion

Consider, in contrast to the current controversy over royalties for patented WCDMA technology, a different fact pattern that also concerns cellular telephony. A country holds a spectrum auction. To produce the next generation of cellular telephony, spectrum is a necessary input, along with equipment such as handsets, which incorporate numerous patents. Because of the problem of the winner's curse—a kind of market failure—one could plausibly argue that telecommunications carriers are indeed paying “too much” for licenses in the open simultaneous multi-round (SMR) ascending auctions typically used by the Federal Communications Commission (FCC). To put the issue in context, as a result of the high prices paid for 3G spectrum in Europe, telecommunications companies that won spectrum auctions assumed enormous debt loads. Their bond ratings, stock prices, and purchases of equipment for wireless networks all fell sharply. In turn, equipment manufacturers suffered an enormous collapse in their stock prices. To the extent that spectrum policy manifests a kind of high-tech industrial policy, the European 3G auctions turned out to be roughhewn industrial policy indeed.

The government's spectrum authority could expand the supply of spectrum (and thus lower its market-clearing price to mitigate the bidder's curse) by allocating a larger slice of frequency to the auction. But suppose that it does not do so, because one objective of the spectrum auction is to generate revenue for the treasury. Alternatively, the government could change the design of the

58. See, e.g., Richard N. Clarke, *Collusion and the Incentives for Information Sharing*, 14 BELL J. ECON. 383, 383, 392 (1983) (explaining that in an uncertain economic landscape, all firms do not have incentive to share information unless they are engaged in a cartel); Larry M. DeBrock & James L. Smith, *Joint Bidding, Information Pooling and the Performance of Petroleum Lease Auctions*, 14 BELL J. ECON. 395, 395-96, 404 (1983) (explaining how pooling cost and value estimates on oil tracts can reduce uncertainty and allow firms to bid in government auctions more accurately).

59. See, e.g., Michael Raith, *A General Model of Information Sharing in Oligopoly*, 71 J. ECON. THEORY 260, 280-81 (1995).

60. *Id.* at 261, 280-81.

61. Clarke, *Collusion and Information Sharing*, *supra* note 55, at 392.

62. See *United States v. Container Corp.*, 393 U.S. 333 (1968); *United States v. Foley*, 598 F.2d 1323 (4th Cir. 1979); *United States v. Champion Int'l*, 557 F.2d 1270 (9th Cir. 1977); *Esco v. United States*, 340 F.2d 1000 (9th Cir. 1965).

spectrum auction, intentionally choosing a bidding mechanism that auction theory reveals to leave a larger amount of surplus for bidders. For example, in the United States, the FCC could refrain from using an open SMR ascending auction. Again, suppose that the government does not do so.

Suppose that the activity fee (for the right to keep bidding in successive rounds) and reserve price for spectrum are so high that only a small number of competing telecommunications companies intend to participate in the auction. In other words, the government spectrum monopolist faces oligopsonists. Regarding the government's management of the spectrum auction as unreasonable, these oligopsonistic competitors enter bids in any given round of the auction that are strangely precise to the penny, such as \$82,495,011.34 or \$78,387,018.12. Peter Cramton and Jesse Schwartz call this practice "code bidding."⁶³ They found that in the FCC's simultaneous open bidding for PCS spectrum, a bidder sometimes would "tag" the last few digits of its bid with the market number of a related license so as to signal its bidding intentions to its competitors. Cramton and Schwartz found that firms that used code bidding paid significantly less for their spectrum.

In 1998, the Antitrust Division settled a civil suit against Omnipoint, a wireless carrier, under section 1 of the Sherman Act on the theory that the firm "submitted bids that ended with three-digit numerical codes to communicate with rival bidders and that, through the use of these coded bids, Omnipoint and one of its rivals reached an agreement to refrain from bidding against one another," such that "Omnipoint and its competitor paid less for certain PCS licenses, resulting in a loss of revenue to the Treasury of the United States."⁶⁴ In 2006, on the basis of the economic research conducted on bidder collusion in spectrum auctions, the Bureau of Competition within the FTC advised the FCC that such collusion remains a serious risk:

The possibility of bidders using collusive strategies in SMR type auctions is well established in the theoretical economics literature. In addition, several empirical economics papers have provided strong evidence that signaling behavior consistent with collusive strategies has occurred in past FCC spectrum auctions . . . The combination of evidence from the theoretical and empirical economics literature suggests that concern over the competitive environment in SMR spectrum auctions is certainly warranted.⁶⁵

63. See Peter Cramton & Jesse A. Schwartz, *Collusive Bidding in the FCC Spectrum Auctions*, 1 CONTRIBUTIONS TO ECON. ANALYSIS & POL'Y, issue 1, art. 11, available at <http://www.bepress.com/bejeap/contributions/vol1/iss1/art11>. See also R. Engelbrecht-Wiggans & C. Kahn, *Low Revenue Equilibria in Simultaneous Ascending Price Auctions*, 51 MGMT. SCI. 356 (2005); Paul Milgrom, *Putting Auction Theory to Work: The Simultaneous Ascending Auction*, 108 J. POL. ECON. 245 (2000); S. Brusco & G. Lopomo, *Collusion via Signaling in Simultaneous Ascending Bid Auctions with Heterogeneous Objects, with and without Complementarities*, 69 REV. ECON. STUD. 407 (2002); Paul Klemperer, *What Really Matters in Auction Design*, 16 J. ECON. PERSPECTIVES no. 1, at 169 (2002); Patrick Bajari & Jeremy T. Fox, *Complementarities and Collusion in an FCC Spectrum Auction* (Oct. 3, 2005), NBER Working Paper No. W11671, available at <http://ssrn.com/abstract=819832>.

64. *United States v. Omnipoint Corp.*, Civil Action No. 1:98CV02750, Competitive Impact Statement at 1 (D.D.C. Nov. 10, 1998) (proposed final judgment), available at <http://www.usdoj.gov/atr/cases/f2000/2066.htm>.

65. Reply Comment of the Staff of the Bureau of Economics of the Federal Trade Commission, at 3, In the Matter of Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006, Federal Communications Commission, AU Docket No. 06-30 (undated), available at <http://www.ftc.gov/os/2006/03/ReplyoftheFTCBureauofEconomicsOnFCCAWSAuction>

In short, the Antitrust Division and at least the economists at the FTC take seriously the risk that information exchange among competing bidders can facilitate collusive bidding for spectrum, and these antitrust enforcers do not consider it an excuse for such collusion that it is directed at reducing the price of an essential input for mobile communications—radio spectrum—that is supplied by a monopolist (the federal government) and that, for technological reasons, lacks *any* substitute. The Antitrust Division’s Omnipoint prosecution is consistent with a long line of public and private antitrust cases (unrelated to SSOs) in which courts have scrutinized oligopsonistic collusion under the rule of *per se* illegality.⁶⁶

In a spectrum auction like this one, the only seller was the FCC. In contrast, in standard setting there will typically be competition *for the market*—that is, competition among multiple owners of alternative patented technologies that could satisfy the standard. If it is unlawful for buyers to collude over the price that they will pay to a monopolist, it cannot be any less unlawful for them to collude over the price that they will pay to the firm that beats out other firms and has its technology chosen (by those same buyers) as the desired standard.

C. Judicial Recognition of the Risk of Oligopsonistic Collusion within SSOs

When an SSO establishes a standard that requires the use of an input that is protected by a patent, downstream manufacturers that belong to the SSO must purchase a license from the patent owner to use the input. Those downstream manufacturers share a common objective of minimizing the cost of patent licenses associated with their required inputs. “When intellectual property rights are at stake,” Lemley has observed, “standard-setting organizations sometimes

AUDocket06-30.pdf. The Bureau’s letter contains the following tortured disclaimer: “This letter expresses the views of the Federal Trade Commission’s Bureau of Economics. The letter does not necessarily represent the views of the Federal Trade Commission (Commission) or of any individual Commissioner. The Commission has, however, voted to authorize us to submit these comments.” *Id.* at 1 n.1.

66. For example, in September 2007, the Northern District of Illinois, ruling on a motion to dismiss, applied the *per se* rule to a seller’s allegation that a buyers’ cartel of managed health care companies violated section 1 of the Sherman Act by conspiring to suppress the reimbursement rates for the seller’s pharmacy services. *Omnicare, Inc. v. UnitedHealth Group, Inc.*, 524 F. Supp. 2d 1031 (N.D. Ill. 2007). The court held that the complaint properly stated a cause of action predicated on the theory that the defendants formed a buyers’ cartel for the *per se* unlawful purpose of lowering the price paid for the plaintiff’s pharmacy services. In addressing the requirement that the agreement result in an unlawful restraint of trade in the relevant market, the court held that the *per se* rule, rather than the rule of reason, should apply to a complaint alleging the existence of a buyers’ cartel conspiring to fix the price terms on which the buyers deal with a seller. Such agreements have “strong enough anti-competitive tendencies to be labeled a *per se* violation.” *Id.* at 1039-40. The court said that “a buyers’ cartel is the mirror image of a sellers’ cartel,” *id.* at 1040, and that the “excessively low prices from members of the buyers’ cartel” are cognizable antitrust injury for the seller. *Id.* The court noted that, because the *per se* rule applies to a buyers’ cartel’s price-fixing scheme, a plaintiff seller could establish an antitrust injury without showing that the defendants possessed market control or affected the entire seller’s market. *Id.* at 1041-42.

For other examples of judicial application of the *per se* rule to oligopsonistic collusion, see *Mandeville Island Farms v. Am. Crystal Sugar Co.*, 337 U.S. 219 (1948); *In re National Macaroni Mfrs. Ass’n*, 65 F.T.C. 583 (1964), *enforced*, 345 F.2d 421 (7th Cir. 1965).

act as a buyers' cartel (or, more precisely, a licensee cartel)."⁶⁷ That result, he elaborates, poses a serious antitrust problem:

It is well established in antitrust law that monopsony and buyers' cartels are just as pernicious to competition as are monopoly and sellers' cartels. The risks mirror the risks from sellers' cartels—prices will be artificially depressed rather than artificially raised. Legal treatment of monopsony likewise mirrors the treatment of monopoly The fact that [a] horizontal agreement injure[s] sellers rather than buyers, and [drives] prices down rather than up, [does] not save it from se condemnation.⁶⁸

Given this potential for standard setting to facilitate collusion among patent licensees, recent policy proposals and revised patent policies by SSOs might be cast as attempts by licensees in SSOs to acquire market power *vis-à-vis* owners of patented technology. The question for antitrust enforcers and courts is whether SSO policies that increase the likelihood that patent licensees will acquire market power violate antitrust law. Do changes in SSO policies that increase information exchange among licensees facilitate collusion among buyers of patented technology?

In 2001, a district court took seriously this risk of oligopsonistic collusion when, in *Sony Electronics, Inc. v. Soundview Technologies, Inc.*, it denied a motion to dismiss a claim that SSO members conspired to fix the price that they would pay for a patented input.⁶⁹ Soundview's technology was essential to a standard adopted by the Electronics Industry Association (EIA) for the V-chip. Soundview alleged that EIA members conspired to suppress the royalty for Soundview's technology, setting the rate at 5 cents per television.⁷⁰ Sony, a manufacturer of televisions, moved to dismiss on the rationale that Soundview failed to allege actionable antitrust injury.⁷¹ The court disagreed and found that licensees exerting oligopsony power to reduce patent royalties is an actionable antitrust injury.⁷² In denying the motion to dismiss, the court explained in detail that an oligopsony in an SSO could drive royalty rates below an efficient level.⁷³ The court reasoned that oligopsonistic collusion reduces the return to a patent holder and, in a dynamic sense, reduces the incentives to innovate or enter technology markets in the first place.⁷⁴

Several important points regarding *Soundview* are easy to overlook. First, although the court in *Soundview* was deciding a motion to dismiss, the precise harm alleged was collusion by licensees in a standard setting process. The case is noteworthy because it suggests the power that licensees can exert on patent

67. 2 HERBERT HOVENKAMP, MARK D. JANIS & MARK D. LEMLEY, *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW* § 35.6b, at 35-49 (2004).

68. *Id.* § 35.6b, at 35-48 (citing *In re National Macaroni Mfrs. Ass'n*, 65 F.T.C. 583 (1964), *enforced*, 345 F.2d 421 (7th Cir. 1965)). Lemley observes that in *Macaroni* the FTC "successfully argued that the standards were intended to artificially depress the price of durum wheat, a traditional ingredient in pasta." *Id.*

69. *Sony Elecs., Inc. v. Soundview Technologies, Inc.*, 157 F. Supp. 2d 180 (D. Conn. 2001).

70. *Id.* at 183. The original action was a declaratory judgment action brought by Sony and the EIA. Soundview counterclaimed on antitrust grounds.

71. *Id.* at 183-84.

72. *Id.* at 184-88.

73. *Id.* at 184-85.

74. *Id.*

holders in an SSO.⁷⁵ Some dispute the significance of *Soundview*, both on the grounds that the alleged collusion took place after the standard was set⁷⁶ and because they assume, incorrectly, that the court applied the rule of reason.⁷⁷ The fact that the buyer collusion allegedly occurred after the standard's adoption does not imply that similar collusion occurring before or during the standard setting process would be innocuous.

Second, the notion that the *Soundview* court applied the rule of reason is misguided.⁷⁸ The court was deciding a motion to dismiss and analyzing antitrust injury. Whether the *per se* rule or the rule of reason should apply was not before the court. Moreover, given the court's analysis of the harm from oligopsonistic collusion, there is no basis to extrapolate that the rule of reason, rather than the *per se* rule that would be applied to oligopolistic collusion, would ultimately apply.⁷⁹

D. The Antitrust Analysis Statutorily Specified in the Standards Development Organizations Advancement Act

The Standards Development Organization Advancement Act (SDOAA) of 2004 extends to standards development organizations (SDOs) the same protections that Congress provided to joint ventures in the National Cooperative Research and Production Act of 1993.⁸⁰ In pertinent part, the SDOAA states that

75. Sony was one of the alleged conspirators. When one considers the size of the companies in the buyers' group to the size of the patent holder, Soundview, the risk of licensee collusion becomes more tangible.

76. See Gerald F. Masoudi, Deputy Assistant Att'y Gen'l, Antitrust Division, U.S. Dep't of Justice, *Efficiency in Analysis of Antitrust, Standard Setting, and Intellectual Property*, Address at High-Level Workshop on Standardization, IP Licensing, and Antitrust, Tilburg Law & Economic Center, Tilburg Univ. (Jan. 18 2007), at 9, available at <http://www.usdoj.gov/atr/public/speeches/220972.pdf>. Proponents of this view might argue that, after standardization, one can find no compelling justification for buyer collusion, such as the avoidance of patent holdup. But that argument is not convincing. The asserted benefit to consumers from buyer collusion (the pass-through of reduced royalties) is a marginal effect, not an inframarginal effect. In this sense, one can see that the pass-through argument differs fundamentally from the royalty-stacking argument, which asserts an inframarginal effect—the claim is not simply that the price of the downstream product will be high, but that it will be so high as to render its production infeasible on the ground that the aggregate production costs, inclusive of patent royalties, will exceed consumers' aggregate willingness to pay. This distinction between the postulated effects of buyer collusion, both marginal and inframarginal, underscores that the patent-holdup and royalty-pass-through arguments are overbroad across time, as well as across other fact patterns. The asserted benefits of such collusion are not unique to the period of *ex ante* negotiation. For example, the buyers could negotiate a royalty of \$1.00 before the adoption of the standard, but subsequently demand that the patent owner reduce the royalty to \$0.50 on the same rationale that consumers would benefit from a pass-through of *any* "cost savings" at *any* time. Similarly, the argument is overbroad with respect to a different set of facts that give rise to the post-adoption market power in the upstream market. That market power need not arise from a patent. It can arise from a commitment by downstream firms to use a particular asset to which its owner has the legal right to exclude unauthorized use through the issuance of an injunction.

77. See Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 737 (2005).

78. See *id.* ("In essence, the court treated the claim as requiring rule of reason analysis including consideration of actual competitive effects.")

79. Cf. *Golden Bridge Technology, Inc. v. Nokia, Inc.*, 416 F. Supp. 2d 525, 532 (E.D. Tex. 2006) ("The *per se* rule can apply to a standard setting organization . . .").

80. 15 U.S.C. §§ 4301-4305 (2004); see also Press Release, Department of Justice, Justice Department Implements the Standards Development Organization Advancement Act of 2004 (June 24, 2004), available at http://www.usdoj.gov/atr/public/press_releases/2004/204345.htm.

“the conduct of . . . [an SDO]” that is “engaged in a standards development activity . . . shall be judged” using the rule of reason.⁸¹ Moreover, the Act limits liability resulting from standards development activities to actual (rather than treble) damages and recovery of attorney’s fees.⁸² Those limitations on liability are conditioned on an SDO, within 90 days after commencing a standards development activity, simultaneously filing with the Attorney General and the Federal Trade Commission a notification disclosing the SDO’s name and principal place of business and any “documents showing the nature and scope of such activity.”⁸³

The SDOAA defines an SDO as an “organization that plans, develops, establishes, or coordinates voluntary consensus standards using procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process, and consensus in a manner consistent with the Office of Management and Budget Circular Number A-119,” and excludes “the parties participating in the [SDO].”⁸⁴ In turn, OMB Circular A-119, which directs agencies of the federal government to use voluntary consensus standards in lieu of government-specific standards, defines “consensus” as “general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.”⁸⁵ The SDOAA next defines “standards development activity” as “any action taken by [an SDO] for the purpose of developing, promulgating, revising, amending, reissuing, interpreting, or otherwise maintaining a voluntary consensus standard, or using such standard in conformity assessment activities, including actions relating to the intellectual property policies of the [SDO].”⁸⁶

Notably, however, the SDOAA explicitly excludes the following activities from its coverage: exchanges of “*information among competitors relating to cost, sales, profitability, prices, marketing or distribution of any product, process, or service that is not reasonably required for the purpose of developing or promulgating a voluntary consensus standard, or using such standard in conformity assessment activities*”; agreements among competitors to “allocate a market”; or “any agreement or conspiracy that would *set or restrain prices of any good or service*.”⁸⁷ Accordingly, the Act’s rule of reason and limited liability provisions do not apply to claims alleging that an SDO exchanged information among competitors relating to cost or distribution of a good or service, conspired to allocate market share, or agreed to restrain or set the price of a good or service. Consequently, if these activities are *per se* illegal under standard antitrust principles, they continue to be so even when the actor is an SDO. Moreover, the Act explicitly excludes from its coverage entities participating in an SDO.⁸⁸

81. 15 U.S.C. § 4302.

82. *Id.* § 4303(a).

83. *Id.* §§ 4303(a), 4305(a)(2).

84. *Id.* § 4301(a)(8).

85. OMB CIRCULAR NO. A-119, § 4(a)(1)(v) (Feb. 10, 1998), *available at* <http://www.whitehouse.gov/omb/circulars/a119/a119.html>.

86. 15 U.S.C. § 4301(a)(7).

87. *Id.* § 4301(c)(1)-(3) (emphasis added).

88. *Id.* §§ 4301(a)(8), 4303(e) (stating that the limited liability provisions “shall not be construed to modify the liability under the antitrust laws of any person (other than [an SDO]) who

Thus, the conduct of individual SDO members—such as downstream manufacturers that are patent licensees—is likewise subject to *per se* liability and treble damages to the extent that such conduct is *per se* illegal under standard antitrust principles.

The framework that Congress created in the SDOAA is consistent with a cautious approach to the risk of oligopsonistic collusion in standard-setting organizations. That approach differs markedly from the subsequent statements of prosecutorial discretion by the Antitrust Division and FTC.

E. Antitrust Division and FTC Statements of Prosecutorial Discretion Concerning Coordinated Negotiation of Royalties Before Adoption of a Standard

In April 2007, the Antitrust Division and the FTC jointly issued a report on antitrust and intellectual property that discussed, among many other topics, whether the potential for patent holdup justifies coordinated action by competing buyers in an SSO concerning the licensing terms for a patented input before the adoption of any standard.⁸⁹ The antitrust agencies concluded that “joint *ex ante* activity to establish licensing terms as part of the standard setting process will not warrant *per se* condemnation” because it “*might* mitigate the potential for IP holders to hold up those seeking to use a standard.”⁹⁰ The Antitrust Modernization Commission reached the same conclusion in its final report, also issued in April 2007. It explicitly addressed joint negotiations and collaboration between SSO members and holders of patented technologies essential or relevant to the standard at issue.⁹¹ (One commissioner of the AMC, however, vigorously dissented,⁹² and the Vice-Chairman qualified her endorsement by emphasizing that “the Commission is not recommending that such joint negotiation is a preferred approach under the antitrust laws or a necessary one to avoid ‘hold up’ issues.”⁹³) Like the Antitrust Division and the FTC, the AMC worried about possible patent holdup and concluded that *ex ante* “joint negotiations with intellectual property owners by members of a standard setting organization with

(1) directly . . . participates in a standards development activity with respect to which violation of any of the antitrust laws is found, (2) is not a fulltime employee of the [SDO] that engaged in such activity, and (3) is, or is an employee or agent of a person who is, engaged in a line of commerce that is likely to benefit directly from the operation of the standards development activity with respect to which such violation is found”).

89. U.S. DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 53-56 (Apr. 2007) [hereinafter DOJ/FTC IP REPORT].

90. *Id.* at 55 (emphasis added). Similarly, in January 2008 Philip Lowe, Director General of the EC’s Directorate General for Competition, said that *ex ante* mechanisms employed by standardization bodies have “the potential to bring strong pro-competitive benefits by competing the price down to the market level before the standard is set.” Philip Lowe, Director General, Directorate General for Competition, European Commission, Address to the IBC Conference on Pricing and the Dominant Company, The Commission’s Current Thinking on Article 82, 10 (Jan. 31, 2008), available at http://ec.europa.eu/comm/competition/speeches/text/2008_01_en.pdf.

91. ANTITRUST MODERNIZATION COMMISSION, FINAL REPORT AND RECOMMENDATIONS 117 (Apr. 2007) [hereinafter AMC REPORT].

92. *Id.* at 403, 405-11 (dissenting statement of Commissioner Makan Delrahim, a former Assistant Attorney General, Antitrust Division, U.S. Department of Justice).

93. *Id.* at 139 n* (statement of Commissioner Deborah A. Garza, Vice-Chairman of the AMC and current Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice).

respect to royalties prior to the establishment of the standard, without more, should be evaluated under the rule of reason.”⁹⁴

Despite its apparent relevance to the debate over patent holdup, the SDOAA is virtually neglected in both reports. The Antitrust Division and FTC summarize the SDOAA in a footnote but provide no further discussion of the law’s significance.⁹⁵ The AMC’s report mentions the SDOAA only as one of many antitrust exemptions.⁹⁶ The Antitrust Division, FTC, and AMC do not indicate that the SDOAA has informed their analysis of patent holdup in any manner. Nor do they indicate that the SDOAA has informed the analysis of any secondary authority upon which their reports rely.⁹⁷

Both reports point only to the possibility of holdup as justification for applying rule of reason analysis to joint licensing negotiations. That justification, however, is tantamount to an admission of a naked restraint of trade. The negotiations exist precisely to lower the price that licensees pay to use patented technologies in the standardized product. It bears emphasis that the theoretical and empirical verifiability of patent holdup is irrelevant because, even if Lemley and Shapiro are correct on theoretical and empirical grounds that patent holdup is a real possibility, it nonetheless remains the case that a desire to reduce royalty rates paid on patented inputs does not constitute a legitimate—let alone sufficient—justification for competitors to coordinate their bidding to suppress the price of those inputs.⁹⁸

94. *Id.* at 121.

95. DOJ/FTC IP REPORT, *supra* note 89, at 50-51 n.99. The extent of the antitrust agencies’ discussion is to summarize:

Congress enacted legislation to limit the potential antitrust liability of SSOs that meet certain open-process standards. The Standards Development Organization Advancement Act of 2004 provides that the antitrust rule of reason applies to these SSOs multilateral licensing negotiations, thus, while they are engaged in standards development activities. It also provides special rules for attorney fees in any antitrust case challenging the standards development activity of an SSO. In addition, qualifying SSOs may limit their antitrust liability for standards development activities to actual, as opposed to treble, damages if they file a proper notification with the Agencies.

Id.

96. AMC REPORT, *supra* note 91, at 355.

97. Evidently, the academic literature also ignores how the SDOAA might affect an antitrust analysis of *ex ante* discussions of licensing terms as a response to licensees’ concern over patent holdup. For example, the Hovenkamp-Janis-Lemley treatise only summarizes the SDOAA. *See* 2 HERBERT HOVENKAMP, MARK D. JANIS & MARK A. LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW §§ 35.8, 36.4c (Supp. 2008). Moreover, as of the end of 2007, neither Lemley nor Shapiro appeared to have examined the SDOAA in writings on patent holdup and royalty stacking. The few law review articles that do discuss the SDOAA are uninformative on this question. *See, e.g.*, Matthew Topic, *The Standards Development Organization Advancement Act of 2004: A Victory for Consumer Choice?*, 12 J. TECH. L. POL’Y 45 (2007); Matthew N. Kriegal, Note, *Would You Go to Work if You Weren’t Paid? The Problem of Incentives for Participants in Standards Development Organizations*, 84 WASH. U. L. REV. 211 (2006).

98. The Supreme Court’s 2007 decision in *Bell Atlantic Corp. v. Twombly*, 127 S. Ct. 1955 (2007), probably would not affect the legal analysis of buyer collusion in SSOs. *Twombly* concerned the factual specificity required in an antitrust complaint to distinguish lawful parallel but unilateral action of competitors from unlawful collusive behavior. Certainly, it is easier to infer agreement among competing buyers of a particular patented technology who jointly participate in the standard setting process of an SSO to which they are members than it was to infer agreement

It is difficult to reconcile the Antitrust Division's prosecution of Omnipoint in 1998 and the FTC Bureau of Competition's concern in 2006 over oligopsonistic collusion in spectrum auctions with the position taken by the Antitrust Division and the FTC in 2007 that the rule of reason should apply to explicit discussions of royalty levels among oligopsonists in an SSO. The same concern about high input prices (holdup) could be offered as a justification for code bidding among competing purchasers of spectrum rights, as could a similar argument about how unreasonably high spectrum prices would harm owners of patented inputs for cellular telephony that exhibit complementarity of demand with respect to spectrum (royalty stacking). Yet, in the SSO context, the Antitrust Division and the FTC evidently regard bidder collusion as unlikely even if competitors, when choosing one technology over a different one for inclusion into the industry standard, explicitly exchange views on the proper price to pay in the future to use the chosen patented technology.

F. The Antitrust Agencies' General Assessment That the Risk of Oligopsonistic Collusion in SSOs Is Small

The Antitrust Division and the FTC (as well as the AMC) have identified two antitrust risks that could arise when potential licensees discuss royalties. Despite those risks, all three bodies concluded in 2007 that the potential benefit of eliminating the possibility of holdup by patent holders justifies the application of the rule of reason rather than the rule of *per se* illegality to *ex ante* joint negotiations over licensing terms in an SSO.⁹⁹

The first risk identified is the possibility that such discussions will extend to naked restraints on the price that those licensees will charge consumers of the final goods incorporating the standard and its patented technologies.¹⁰⁰ In 2005, former Chairman Deborah Majoras of the FTC stated: "If in conducting joint *ex ante* royalty discussions, manufacturing rivals cross over the line from discussing the price of technology they will 'buy,' if they choose a particular standard and start discussing—and fixing—the price of the products they sell, summary condemnation is almost certainly warranted."¹⁰¹ This statement is disturbing. There is no basis in antitrust law for regarding collusion by buyers as less important than collusion by sellers. So why subject the former to rule of reason analysis while summarily condemning the latter as *per se* unlawful? The Supreme Court rejects that asymmetry.¹⁰² So does Lemley.¹⁰³ It is an indication that the public discourse over patent holdup has gone astray that the phrase "rivals . . . discussing . . . price" would, with evident approval, roll off the tongue of one of the federal government's two senior antitrust enforcers.

among the incumbent local exchange carriers, whose conduct the Supreme Court found, on the bare pleadings in *Twombly*, to be indistinguishable from unilateral conduct.

99. AMC REPORT, *supra* note 91 at 121; DOJ/FTC IP REPORT, *supra* note 89, at 55.

100. AMC REPORT, *supra* note 91 at 121; DOJ/FTC IP REPORT, *supra* note 89, at 50.

101. Deborah Platt Majoras, Chairman, Federal Trade Commission, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, Remarks at Standardization and the Law: Developing the Golden Mean for Global Trade 10 (Sept. 23, 2005), available at <http://www.ftc.gov/speeches/majoras/050923stanford.pdf>. Chairman Majoras further argues that it is easier and less costly for licensees to collude in the standard setting process than outside it. *Id.* (citing BLAIR & HARRISON, MONOPSONY, *supra* note 48).

102. See *Mandeville Island Farms v. Am. Crystal Sugar Co.*, 337 U.S. 219 (1948).

103. See text accompanying note 25, *supra*.

The second antitrust risk—the elephant in the corner—is that the potential licensees will exploit oligopsony power, newly acquired as a result of discussions among competitors, to force patent holders to accept royalties that fall below a “reasonable” level.¹⁰⁴ The coordinated strategy of the buyers is analogous to the public utility regulator’s strategy of rent extraction under cost-of-service regulation. After the incumbent has made a sunk investment to provide service, the regulator cuts the allowed price to a level that covers only average variable cost. The regulator thereby expropriates for consumers the quasi rent from the utility’s investment but does not induce the utility to shut down.¹⁰⁵ Despite acknowledging the risk of oligopsonistic collusion, the Antitrust Division and the FTC conclude that the rule of reason should apply because, in their assessment, allowing buyers to engage in joint negotiations over royalty rates can prevent patent holdup.¹⁰⁶

By defending the rule of reason as the appropriate level of antitrust scrutiny when addressing joint negotiations over royalties by buyers in an SSO, the Antitrust Division and the FTC are implicitly favoring licensees over licensors. Compare the antitrust agencies’ treatment of licensees in the standard setting process to their treatment of patent holders. The Antitrust Division and the FTC state in their joint report that “summary condemnation would be justified if IP holders were to reach naked agreements on the licensing terms they will propose to an SSO that permits multilateral negotiations, thus, in effect, rigging their selling bids.”¹⁰⁷ Yet only two sentences later, those agencies conclude: “In the absence of nakedly anticompetitive restraints by an SSO or by its members, it is appropriate to determine whether an SSO’s efforts to reduce opportunities for IP holders to hold up future users of a standard violates the antitrust laws pursuant to the rule of reason.”¹⁰⁸ As will be explained below, that assessment does not flow from existing antitrust doctrine. These statements manifest the antitrust agencies’ decided preference for licensees over patent holders in the standard setting process. Why?

It bears emphasis that the antitrust agencies here are concerned only with the distribution of revenues within the SSO from sales of the standardized technology (and, derivatively, the sharing of some of those revenues with downstream consumers). The agencies are not concerned with the availability of the downstream product employing the patented technology. As noted earlier, if the Antitrust Division and the FTC were relying on the royalty stacking hypothesis, or if they were arguing that certain products would not even exist without the ability of licensees to negotiate royalty rates jointly, then the discussion would focus on the likelihood of stacking. In their joint report, however, the statements of the Antitrust Division and the FTC, in relying only on concern over possible patent holdup, express a preference for licensees over patent holders within SSOs.

104. AMC REPORT, *supra* note, 91 at 121 (citing *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 127 S. Ct. 1069 (2007); *Mandeville Island Farms v. Am. Crystal Sugar Co.*, 337 U.S. 219 (1948)); DOJ/FTC IP REPORT, *supra* note 89, at 50. For further analysis, see Philip B. Nelson, *Patent Pools: An Economic Assessment of Current Law and Policy*, 38 RUTGERS L.J. 539, 552–53 (2007); Geradin & Rato, *supra* note 2.

105. See JEAN-JACQUES LAFFONT & JEAN TIROLE, A THEORY OF INCENTIVES IN PROCUREMENT AND REGULATION 54 (1993).

106. DOJ/FTC IP REPORT, *supra* note 89, at 50.

107. *Id.* at 51–52.

108. *Id.* at 52.

The possibility of holdup by a patent holder once its technology has been selected for the standard is the primary consideration convincing the Antitrust Division and the FTC that the rule of reason should apply to collaboration among licensees regarding the price to be paid to the patent holder. The agencies acknowledge that, if there is no market power or ability to hold up licensees in an SSO, then joint licensing negotiations pose a risk to competition.¹⁰⁹ However, there is no reason to presume—even after a patented technology has been selected for the standard—that holdup is likely or even possible.¹¹⁰ The Antitrust Division and the FTC concede that, when the patent holder has little or no market power, *ex ante* negotiations among competitors over royalties and licensing would harm competition.¹¹¹ The agencies’ discussion of joint royalty negotiations seems to assume a fact—that the licensor possesses market power—that may be absent from a large percentage of cases of alleged patent holdup. There are good reasons—reasons with which courts and agencies have agreed—that such a presumption of market power should not exist, either as a matter of *a priori* economic reasoning or as a matter of antitrust doctrine. The Supreme Court unanimously held in *Illinois Toolworks v. Independent Ink* in 2006 that there is no longer a presumption in antitrust law that a firm possesses market power because it holds a patent over a particular technology or product.¹¹² Consequently, as a matter of law, one cannot assume that licensees in an SSO that collude over the royalty for a patented input can legitimately claim to be engaging in self-help to counteract the exercise of market power by a monopolist.

Of course, the holdup argument goes further than the presumption, overruled in *Independent Ink*, that a patent confers market power. Proponents of joint negotiations over royalty rates claim that the standard setting process, by adopting a definitive standard in the industry, confers a new increment of “post-adoption” market power on patent holders with technology essential to the standard. However, even in the face of standard setting there is no reason to assume that patent holders, by virtue of their statutory rights in the technologies that they have developed, wield post-adoption market power sufficient to justify collusive behavior by buyer licensees in the SSO. Chairman Majoras of the FTC observed in 2005 that, “if the chosen standard has to compete with rival standards, the owner of the SSO’s chosen technology may end up with little market power.”¹¹³ In this sense, “[h]oldup by no means is inevitable.”¹¹⁴ She argues that the notion of “holdup” itself is misleading: “members of the organization that chose the standard are not necessarily being held up” simply because “an intellectual property owner can obtain a royalty rate higher than those of other technology owners,” because “[t]he higher royalty rate may be explained by the superiority of [the licensor’s] technology.”¹¹⁵

Put differently, before they can begin to offer a credible argument for applying the rule of reason, the antitrust agencies and scholars supporting it must characterize the source of market power as lock-in from the standards selection,

109. *Id.* at 53.

110. See Sidak, *Reply to Lemley and Shapiro*, *supra* note 1; Geradin, Layne-Farrar & Padilla, *Royalty Stacking in High Tech Industries*, *supra* note 2

111. See DOJ/FTC IP REPORT, *supra* note 89, at 53.

112. *Illinois Toolworks, Inc. v. Independent Ink, Inc.*, 126 S. Ct. 1281 (2006). The vote was 8-0, as Justice Alito, newly appointed to the Court, did not participate.

113. Majoras, *supra* note 101, at 3.

114. *Id.*

115. *Id.* at 3-4.

rather than preexisting market power from the underlying demand for and nonsubstitutability of the patented input. A legitimate question to pose when evaluating proffered justifications for oligopsonistic collusion is how a court can reliably distinguish post-adoption market power, which accrues in the holdup scenario, from market power that arises virtuously from innovative activity. A critical issue, therefore, is that the burden of proof on any claimed business justification or efficiency defense rests not with the patent licensor but with the patent licensees against whom a *prima facie* case of oligopsonistic price fixing has been proven. However, even allowing this line of defense goes too far: it is analogous to allowing sellers, who have colluded to fix prices, to avoid the *per se* rule and use the defense that competition in the marketplace leads to the inefficient bidding up of the price of an input. The Supreme Court rejected such reasoning long ago.¹¹⁶

Others who recognize the risk of patent licensees engaging in oligopsonistic collusion nevertheless conclude that the ability to discuss royalty and licensing terms is important to the standard setting process. Lemley, for example, discusses the antitrust concerns associated with monopsony and the potential for a buyers' cartel when SSOs establish a framework for joint negotiations over royalties; nevertheless, he concludes that licensees must be allowed to discuss price.¹¹⁷ Specifically, Lemley notes that the risk of a buyers' cartel "does not mean that members of the SSO should be prohibited from discussing price."¹¹⁸ Although one need not simultaneously assert that patent holdup is a real problem and that oligopsonistic coordination is not, Lemley does.

In addition to citing Lemley, the Antitrust Division and the FTC cite Robert Skitol, a practitioner who represents SSOs, to support the proposition that the rule of reason should govern collaboration on royalties and licensing by licensees in the standard setting process.¹¹⁹ However, in arguing for the rule of reason, Skitol makes the same policy judgment that the Antitrust Division and the FTC make in choosing to worry more about holdup than buyer collusion. He distinguishes "buyers' power in a general sense" from "buyers' 'market' power in the monopsony or oligopsony sense."¹²⁰ However, the same distinction can and should be made on the patent holder's side of the market: one must distinguish the power associated with existence of the patent and its inclusion in the standard from the ability and incentive to engage in holdup as conceived by the antitrust agencies, Lemley, and Skitol. To conclude that the rule of reason applies to licensee behavior, and to justify that choice by relying on the possibility of holdup by patent holders, requires assuming the best possible behavior by licensees and the worst possible behavior by patent holders.

Another argument advanced by proponents of joint royalty negotiations is that the colluding licensees should be considered a single entity for antitrust

116. See *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 218 (1940) ("price-fixing agreements are unlawful *per se* under the Sherman Act and . . . no showing of so-called competitive abuses or evils which those agreements [are] designed to eliminate or alleviate may be interposed as a defense").

117. Mark A. Lemley, *Intellectual Property Rights and Standard Setting Organizations*, 90 CAL. L. REV. 1889, 1947 (2002).

118. *Id.*

119. Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727 (2005).

120. *Id.* at 735.

purposes, presumably because the negotiations occur in an SSO.¹²¹ This characterization is significant because, as the Supreme Court reiterated in 2006, a single entity cannot conspire with itself for purposes of section 1 of the Sherman Act.¹²² As a statutory matter, however, the single-entity argument is difficult to reconcile with the fact that the SDOAA expressly regards a standards development organization as being an entity legally distinct from “the parties participating in the [SDO].”¹²³ Nonetheless, some have defended the single-entity thesis on the basis of the “integrative effort that takes place in developing a standard and in creating the demand for the technology” within SSOs.¹²⁴ Such language is dangerous. Michael Carrier, for example, in a response to an article by David Teece and Edward Sherry,¹²⁵ argued—before the SDOAA’s enactment in 2004—that SSOs “do not resemble a collection of horizontal competitors that conspires to raise price or to reduce output.”¹²⁶ The statement begs the question. Stating that a collection of licensees jointly negotiating licensing or royalty rates does not constitute collusion ignores what is occurring: competitor licensees combining their bargaining power to negotiate lower royalty rates. Further, the notion that licensees should be shielded from the *per se* rule merely because the standard setting process results in one integrated standard is not supportable in theory or practice. Single-entity treatment for the members of the SSO not only would validate collusive behavior by licensees as buyers of patented technology (thereby reducing incentives for investment and for research and development by patent holders), but also would validate downstream price-fixing of products incorporating the standardized technology or component. It would be too clever by half to argue that downstream manufacturers are a single entity when buying inputs but multiple entities when selling outputs.

In their 2007 report on intellectual property, the Antitrust Division and the FTC cite work by Mark Patterson—which also predates the SDOAA’s enactment—in support of the single-entity proposition.¹²⁷ He concludes that the “underlying rationale” for the *per se* rule is not applicable to the standard setting case because SSO members and the SSO itself have a unity of interest in the standard.¹²⁸ Even if the single-entity thesis survived the SDOAA’s enactment, it is noteworthy that Patterson’s rationale for the single-entity thesis relies on the argument that technologies incorporating the standard would not come into existence without joint negotiations by licensees in the process.¹²⁹ In other words, Patterson does not simply argue that some patent holders will engage in holdup. Rather, he advances the royalty-stacking conjecture—that many patents will be

121. See DOJ/FTC IP REPORT, *supra* note 89, at 52.

122. *Texaco v. Dagher*, 126 S. Ct. 1276, 1281 (2006); see also *Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752, 768 (1984).

123. 15 U.S.C. §§ 4301(a)(8); see text accompanying note 88, *supra*.

124. DOJ/FTC IP REPORT, *supra* note 89, at 52 (quoting Joseph Kattan of Gibson, Dunn & Crutcher).

125. David Teece & Edward Sherry, *Standards Setting and Antitrust*, 87 MINN. L. REV. 1913 (2003).

126. Michael A. Carrier, *Why Antitrust Should Defer to the Intellectual Property Rules of Standard Setting Organizations: A Commentary on Teece and Sherry*, 87 MINN. L. REV. 2030 (2003).

127. Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043 (2002).

128. *Id.* at 1078–79.

129. *Id.* (“[W]hen the goal of the negotiation is to procure a patent license that will enable the practice of the standard, . . . the members can be thought of as negotiating for the standard itself.”).

implicated by the standard, and that the aggregate royalties on Cournot-complementary inputs will make it unprofitable for manufacturers to produce any downstream products incorporating the standard.

G. The Antitrust Division's Business Review Letters to SSOs

Between October 2006 and April 2007, the Antitrust Division issued two significant business review letters outlining its position on various patent disclosure and patent information policies proposed by SSOs. Both letters place little weight on the risk that information exchange among patent licensees in an SSO will facilitate oligopsonistic collusion.

On October 30, 2006, the Division issued a business review letter responding to a proposed patent policy of the VMEbus International Trade Association (VITA).¹³⁰ The Division described the policy as being intended to “reduce the likelihood of unexpected licensing terms that threaten the success of future VITA standards” and “to expand the scope of competition between alternative technological solutions during the standard setting process.”¹³¹ The policy requires each member of any standard setting group to identify all patents or patent applications known and believed to be essential to the implementation of the standard.¹³² Further, the patent holder “must declare the maximum royalty rates and most restrictive non-royalty terms” that the patent holder will request for any essential patents.¹³³ If a patent holder fails to disclose the most restrictive licensing terms within the period required by the policy,¹³⁴ then that patent holder will be deemed to have “represent[ed] to license the essential claims of the undisclosed patent for implementation of the VITA standard to all interested parties on a royalty-free basis.”¹³⁵

On April 30, 2007, the Antitrust Division issued a business review letter responding to the proposed patent information policy of the Institute of Electrical and Electronics Engineers (IEEE) and its Standards Association (the IEEE-SA).¹³⁶ The IEEE-SA proposed a patent information policy whereby patent holders can choose to submit a “letter of assurance” to the IEEE-SA, which can contain varying degrees of commitment to particular licensing terms.¹³⁷ A patent holder would be able to reply to a request by the IEEE by not responding at all, by responding that it does not own any patents that may be essential to the standard, by waiving any claims that may arise, or by agreeing to licensing terms

130. Letter from Thomas O. Barnett, Assistant Attorney Gen., U.S. Dep't of Justice, to Robert A. Skitol, Esq., Drinker, Biddle & Reath LLP (Oct. 30, 2006), available at <http://www.usdoj.gov/atr/public/busreview/219380.pdf> (Business Review Letter Reviewing VITA patent policy) [hereinafter *VITA Business Review Letter*].

131. *Id.* at 4.

132. *Id.*

133. *Id.* The policy actually refers to working group members who represent companies that own the patents. Effectively, the patent holder must disclose these terms.

134. This period is sixty days from the time that the working group on the standard is formed. *Id.* at 6.

135. *Id.*

136. Letter from Thomas O. Barnett, Assistant Attorney Gen., U.S. Dep't of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney LLP (Apr. 30, 2007), available at <http://www.usdoj.gov/atr/public/busreview/222978.pdf> (Business Review Letter Reviewing an IEEE-SA Patent Information Policy) [hereinafter *IEEE Business Review Letter*].

137. *Id.* at 5–6.

and/or royalty rates that are reasonable and nondiscriminatory.¹³⁸ Any letter of assurance would bind all present and future owners of the patented technology, would be irrevocable, and would apply for the life of the standard at issue.¹³⁹

In response to the patent disclosure policies proposed by VITA and the IEEE, the Antitrust Division announced that, “unless the standard setting process is used as a sham to cloak naked price-fixing or bid rigging, the Department analyzes action during the standard setting process under the rule of reason.”¹⁴⁰ The Division’s starting assumption is that the standard setting process is procompetitive. But that also appears to be its ending assumption, for the business review letters fail to supply persuasive analysis that the VITA and IEEE policies are procompetitive.

Judge Richard Posner has observed that in markets with few rather than many sellers “the inference is stronger that complete certainty as to the actual transaction prices of competitors is sought primarily to facilitate cartelization.”¹⁴¹ The same reasoning applies to exchanges of purchase price information among few rather than many buyers. Furthermore, cartels are more likely when products are homogenous.¹⁴² The fact that SSOs exist to facilitate product homogenization underscores the need for the Antitrust Division to conduct a rigorous analysis of the positive and negative effects of information sharing among competing licensees. It is therefore surprising that the Antitrust Division’s analysis of these two proposed patent information policies only briefly mentions the risk of buyer collusion.

At first, it would appear that this lack of emphasis on collusion reflects the specific SSO policies being proposed. VITA’s policy explicitly prohibits joint negotiation by licensee buyers, and the Antitrust Division uses that prohibition to dismiss the risk of collusion by buyers.¹⁴³ The Division states that the “proposed policy should not permit licensees to depress the price of licenses for patented technologies through joint action because it prohibits any joint negotiation or discussion of licensing terms among the working groups members or with third parties at all [standards development subcommittee] and working group meetings.”¹⁴⁴ However, the Antitrust Division added that, even if such information exchange occurred, it would likely reach the same conclusion about the applicability of the rule of reason: “If the proposed policy did allow such negotiations and discussions, the Division likely would evaluate any antitrust concerns about them under the rule of reason because such actions *could* be procompetitive.”¹⁴⁵ The Division then, in effect, assumes away the problem of facilitation of collusion, as opposed to explicit collusion:

Moreover, working group members will not set actual licensing terms. The patent holder and each prospective licensee will negotiate separately, subject

138. *Id.*

139. *Id.* at 7.

140. *Id.* at 8; *IEEE Business Review Letter*, *supra* note 136, at 9.

141. RICHARD A. POSNER, *ANTITRUST LAW* 86-87 (2d ed. 2001).

142. *See id.* at 75 (“The less standardized (more customized) a product is, in the sense that its specifications differ in important respects from purchase order to purchase order rather than being uniform across orders, the more difficult it will be for the sellers of the product to collude effectively.”).

143. *VITA Business Review Letter*, *supra* note 130, at 9.

144. *Id.* § IV, at 7.

145. *Id.* § IV n.27 (emphasis added).

only to the restrictions imposed by the patent holder's unilateral declaration of its most restrictive terms.¹⁴⁶

The Antitrust Division chooses to ignore that “the patent holder’s unilateral declaration of its most restrictive terms” is not really a unilateral act at all. Rather, that declaration is the predictable response to a new rule—which could have been adopted only through the collective action of a sufficient number of SSO members—that implies that the patent holder’s technology will be rejected for the standard in absence of such a declaration. Moreover, for the Antitrust Division to say that “each prospective licensee will negotiate separately” is to ignore that the bargaining power of each such licensee has grown due to the collective action that produced the rule change that now implicitly threatens a boycott of the patent holder’s technology unless its most restrictive licensing terms are disclosed for all prospective licensee to see before commencing their various bilateral negotiations with the patent holder. If the patent holder faces a FRAND obligation, it cannot charge different prices to similarly situated licensees. Thus, the patent holder will have little incentive to deviate from its most restrictive licensing terms in the various bilateral negotiations. Consequently, the common expectation of both the licensor and all prospective licensees will be that all of the various bilateral negotiations will yield the same, “most restrictive” prices, terms, and conditions for the patented input. As Lemley has observed, “collusion is most likely to succeed when each cartel member can observe the prices and terms used by other cartel members.”¹⁴⁷

Similarly, in its review of IEEE’s policy, the Antitrust Division circumvents the question of whether the rule change will facilitate collusion by noting that the IEEE has “not requested, and we are not providing, the Department’s views on joint negotiations that might take place inside or outside such standards development meetings or IEEE sponsored meetings.”¹⁴⁸ This statement, however, merely underscores that the Antitrust Division chooses not to address the elephant in the corner: the significant risk that proposals to exchange information among oligopsonists in an SSO will facilitate explicit or tacit collusion.

With respect to both business review letters, the Antitrust Division’s analysis of the risk of facilitation of oligopsonistic collusion ignores the admonition of Phillip Areeda and Herbert Hovenkamp that, “[i]n rare cases a concerted facilitating practice should be treated as a conspiracy on the facilitated matter.”¹⁴⁹ As an example (based on the facts of *United States v. Champion International*¹⁵⁰), Areeda and Hovenkamp posit a group of competitors tacitly colluding to rotate bids for the purchase of timber-cutting rights. The competitors’ objective is to refrain from bidding against one another and driving up the price of those rights. That objective resembles the objective of licensees of

146. *Id.*, § IV, at 7.

147. 2 HOVENKAMP, JANIS & LEMLEY, *supra* note 67, § 30.4, at 35-17.

148. *IEEE Business Review Letter*, *supra* note 136, at 11. It is significant that, unlike the VITA policy, the IEEE policy did not contain a blanket prohibition of joint *ex ante* discussions regarding the relative costs of specific technologies. However, the IEEE policy did preclude *ex ante* discussions of “specific” license terms. The Antitrust Division did not explain how this difference would affect the analysis or why an *ex ante* discussion of license prices would not in fact pose an anticompetitive concern.

149. 6 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 1407c at 34 (2d ed. 2003).

150. 557 F.2d 1270 (9th Cir. 1977).

patented technology in an SSO—they, too, want to refrain from bidding up the price of an important input. In their example, Areeda and Hovenkamp emphasize that, when there are “periodic meetings at which each [competitor] party discloses . . . information [that] would enable” the bid rotation scheme to work, “[t]he meetings . . . facilitate this noncompetitive result.”¹⁵¹ In that situation, Areeda and Hovenkamp conclude, “[w]e can treat the meeting of minds on the decision to have meetings of this sort as also a meeting of minds on that which clearly resulted from those meetings.”¹⁵²

The VITA and IEEE business review letters provide no guidance as to the propriety of joint negotiations by buyers and the risks of collusion by licensees that can result from such facilitating practices. Nor does the Antitrust Division provide any analysis that demonstrates that the information exchanges in the VITA and IEEE policies will *not* facilitate collusion. VITA’s policy may prohibit joint negotiations, and the IEEE may not have asked for a review of joint negotiations. But neither fact establishes that the particular type of information exchange that is being allowed—indeed, the information sharing that is *required* by the VITA policy—will not facilitate collusion by licensee buyers within those SSOs. The Antitrust Division curiously ignores that one might appropriately treat a meeting of minds among prospective licensees on the need to amend their SSO’s rules in the manner that VITA and the IEEE have done as a meeting of minds on the need to suppress the price paid to the licensor for the right to use its patented technology.

It is also curious that the Antitrust Division’s two business review letters contain no discussion of, or citation to, the SDOAA. The Division does refer to “standards development organizations” rather than “standards settings organization,” and in this sense the agency may be understood to reference a term of art specifically defined by the SDOAA.¹⁵³ But the Division does not explicitly refer to the SDOAA, and in its letters’ “Agency Analysis” section, the Division does not assess whether VITA and the IEEE-SA qualify as SDOs and whether their proposed activities merit rule of reason scrutiny under the provisions of the SDOAA. It is puzzling that the Division’s business review letters neglected, as an initial matter, to state that VITA and the IEEE-SA met the requirements of the SDOAA before determining that rule of reason scrutiny should be used to evaluate their proposed rule changes, for Congress expressly intended the SDOAA to be used to assess an SDO’s policy on *ex ante* discussions of licensing terms.¹⁵⁴

In short, the Antitrust Division’s VITA and IEEE business review letters are insufficiently concerned about the danger of oligopsonistic collusion in SSOs. That lack of concern is troubling because there is an established body of

151. 6 AREEDA & HOVENKAMP, *supra* note 149, ¶ 1407c at 34.

152. *Id.*

153. See VITA Business Review Letter, *supra* note 130, at 1; IEEE Business Review Letter, *supra* note 136, at 9.

154. See 15 U.S.C. § 4301(a)(7) (defining “standards development activity” to include “actions relating to the intellectual property policies of the standards development organization”); see also H.R. REP. 108-125, at 10 (2003) (“[The SDOAA] seeks to encourage disclosure by intellectual property rights owners of relevant intellectual property rights and proposed licensing terms. It further encourages discussion among intellectual property rights owners and other interested standards participants regarding the terms under which relevant intellectual property rights would be made available for use in conjunction with the standard or proposed standard.”).

economic research on the behavior and effects of buyers' cartels generally,¹⁵⁵ and because there are more litigated cases of collusion among buyers, in all types of markets, than there are documented cases of patent holdup and royalty stacking. Nonetheless, the Antitrust Division and the FTC defend the rule of reason approach in this setting because they believe that it best balances increased future competition against decreased current competition.¹⁵⁶ It is hard to understand how the antitrust agencies have such confidence in their abstract ability to balance dynamic and static efficiency in the SSO context when their own merger guidelines reject the view that reliable predictions about market power and efficiencies from collaboration among rivals can extend farther than two years into the future.¹⁵⁷

H. The D.C. Circuit's Skepticism of Patent Holdup in Rambus

In its April 2008 decision in *Rambus Corp. v. Federal Trade Commission*, the D.C. Circuit cast serious doubt on the patent-holdup thesis.¹⁵⁸ Rambus owned patent interests that were ultimately incorporated into an industry standard for dynamic random access memory (DRAM).¹⁵⁹ Rambus participated in the standard setting, but it allegedly did not fully disclose the extent of its patent

155. For example, agriculture is one industry especially affected by the phenomenon of buyer collusion. See, e.g., R.J. Sexton & M. Zhang, *A Model of Price Determination for Fresh Produce with Application to California Iceberg Lettuce*, 78 AM. J. AGR. ECON. 924 (1996); T. Richards, P. Patterson & R. Acharya, *Price Behavior in a Dynamic Oligopsony: Washington Processing Potatoes*, 83 AM. J. AGR. ECON. 259 (2001).

156. See DOJ/FTC IP REPORT, *supra* note 89, at 52–53.

157. See DOJ/FTC HORIZONTAL MERGER GUIDELINES § 3.2 (1997). In his separate statement accompanying the AMC's report, Commissioner Makan Delrahim expressed concern over the potential for *ex ante* negotiations to "ultimately result in reduced innovation." AMC REPORT, *supra* note 91, at 407 (separate statement of Commissioner Delrahim). He observed that "any joint discussions, negotiations, and setting of royalty and other licensing terms may reduce any procompetitive benefits of the standards process and raise risks of collusive exercise of monopsony or oligopoly power." *Id.* at 408. He endorsed "the continued application of a per se rule to ensure that there will not be a collusive buyers' cartels." *Id.* at 409 (citing *Mandeville Farms v. American Crystal Sugar*, 334 U.S. 219 (1948); *National Macaroni Mfrs. Ass'n v. FTC*, 345 F.2d 421 (7th Cir. 1965)). Commissioner Delrahim further observed that "[t]he VITA and IEEE-SA policies are not only changing the way standard-setting organizations operate, but also may be tilting the process in favor of IPR users at the expense of IPR owners, and perhaps to innovation itself." *Id.* at 410. In his assessment, oligopsonistic collusion could result:

The result could be a classic "buyers' cartel" exercising per se unlawful market power with the effect of: (1) reducing the incentive to innovate both in core technologies and complementary applications; (2) depriving consumers of products based upon superior technology; (3) artificially lowering return on investment to IPR owners below market rates; and (4) ultimately increasing costs to consumers of products resulting from standardization efforts.

Id. at 410. Deputy Assistant Attorney General Gerald F. Masoudi similarly has argued that, although he believed that the VITA and IEEE policies did not directly pose such a problem, the SSO policies under scrutiny "could drive down the rewards to patent holders, thereby reducing innovation incentives, which is a serious argument." Gerald F. Masoudi, Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice, Address at the Annual Comprehensive Conference on Standards Bodies and Patent Pools, Law Seminars International, Objective Standards and the Antitrust Analysis of SDO and Patent Pool Conduct (Oct. 11, 2007), at 14–15.

158. *Rambus Inc. v. FTC*, No. 07-1086 (D.C. Cir. Apr. 22, 2008).

159. *Id.* at 4.

interests (including issued patents and pending patent applications) or plans to amend earlier patent applications to add related claims.¹⁶⁰ The FTC found that Rambus deceptively failed to disclose its patent interests to the SSO and thus violated section 2 of the Sherman Act.¹⁶¹ The FTC stated its monopolization holding in the alternative: the deception enabled Rambus either to acquire a monopoly in the standardized technology *or* to charge higher prices than it otherwise could.

The D.C. Circuit reversed.¹⁶² Writing for the court, Judge Stephen Williams, found that the latter theory of liability—nondisclosure in a standard-setting proceeding to reap additional profits—does not describe antitrust harm.¹⁶³ Without a showing that competition suffered, the claim must fail.¹⁶⁴ Judge Williams stressed that “an otherwise lawful monopolist’s end-run around price constraints, even when deceptive or fraudulent, does not alone present a harm to competition in the monopolized market.”¹⁶⁵ Citing *Microsoft* and *Trinko*, he observed that the prerequisite for a finding of liability under section 2 is harm to the competitive *process*, rather than to individual competitors.¹⁶⁶ Because the FTC conceded that the SSO might have standardized the Rambus technologies even if the company had made a fuller disclosure, the D.C. Circuit concluded that the primary consequence of nondisclosure was merely a missed chance to secure RAND commitments: “Rambus’s alleged deception cannot be said to have had an effect on competition in violation of the antitrust laws; [the SSO’s] loss of an opportunity to seek favorable licensing terms is not as such an antitrust harm.”¹⁶⁷

More fundamentally, the D.C. Circuit rejected the economic logic by which patent holdup would supposedly facilitate monopolization. Judge Williams observed that, had the SSO “limited Rambus to reasonable royalties and required it to provide licenses on a nondiscriminatory basis, we would expect less competition from alternative technologies, not more; high prices and constrained output tend to attract competitors, not to repel them.”¹⁶⁸ As Judge Williams emphasized, this reasoning directly follows from the Supreme Court’s 1998 decision in *NYNEX Corp. v. Discon, Inc.*: “an otherwise lawful monopolist’s use of deception simply to obtain higher prices normally has no particular tendency to exclude rivals and thus to diminish competition.”¹⁶⁹ Given the breadth and rigor of the opinion, *Rambus* has clear relevance to the larger debate over patent holdup. If fraud in the standard-setting process cannot create a serious danger of a cognizable harm from monopolization, then collusion over royalties by

160. *Id.*

161. In the Matter of Rambus, Inc., No. 9302 at 118-19 (F.T.C. Aug. 2, 2006), <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>.

162. *Rambus*, slip op. at 19.

163. *Id.* at 19.

164. *Id.* at 14.

165. *Id.* at 17.

166. *Id.* at 12 (quoting *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001), and citing *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004)).

167. *Rambus*, slip op. at 17.

168. *Id.*

169. *Id.* at 15 (citing *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128 (1998)). In strikingly blunt terms, the D.C. Circuit said the Third Circuit’s decision in *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3d Cir. 2007), may be wrongly decided: “to the extent that it may have rested on a supposition that there is a cognizable violation of the Sherman Act when a lawful monopolist’s deceit has the effect of raising prices (without an effect on competitive structure), it conflicts with *NYNEX*.” *Rambus*, slip op. at 17.

licensees cannot be justified as a lawful counterstrategy to prevent the patent owner from charging its requested royalty. It follows with even greater force that, if the standard-setting process is free of any taint of fraud by the patent owner, then oligopsonistic collusion cannot credibly be justified as a form of lawful self-help.

I. Do Licensees in an SSO Maximize Consumer Welfare When the Antitrust Agencies Permit Them Collectively to Trade Performance for Cost When Selecting a Standard?

What assurance does the Antitrust Division have that, when a buyers' cartel in an SSO successfully reduces the price to be paid for a patented technology adopted as the standard, consumers of the downstream product will value the price reduction (assuming, heroically, that the buyers' cartel passes through the entire cost savings) more than the forgone increment of product performance that would have resulted if the SSO's members had selected the standard solely on the basis of its technical quality? The answer to this question speaks to whether a court could plausibly conclude on *a priori* grounds that joint negotiation of *ex ante* royalty rates by licensees in an SSO unambiguously increases consumer welfare on balance, as is required of a successful efficiency defense under the rule of reason.

One key objective of the IEEE-SA "working groups" charged with drafting new standards is to devise standards that guarantee the quality of end-products ultimately disseminated to end-users. The quality of an end-product is critically dependent on the quality of the technology inputs that the working groups select for implementation of a standard. However, there are considerations other than the quality of technology. One such consideration is the cost incurred in the process of acquiring the rights to use the technology necessary to implement a standard. Under the prior IEEE-SA policy, standard-setting decisions did not incorporate information pertaining to the costs of acquiring the rights to patented technologies. Thus, the standard-setting process, by design, placed relatively little weight on cost, and instead focused on purely technical attributes of the standard in question. To a first approximation, the working groups sought primarily to optimize the quality of technology used to implement the standard. However, the IEEE-SA's proposed patent information policy would allow working groups to accumulate and share information regarding the costs of patented technologies, and to incorporate that information into their standard-setting decisions. Therefore, the IEEE-SA's revised policy places increased emphasis on licensing cost at the expense of technological superiority.¹⁷⁰

The importance to product quality of the IEEE-SA's revised policy is that, all else equal, the more technologically intensive is a proposed standard, the higher are the expected licensing costs for patent claims. This effect occurs through two basic channels. First, a larger number of patents implies higher expected costs, all else equal. Second, more sophisticated or advanced technologies will command higher royalty rates on average. Therefore, if the

170. For an example of how a change in organizational priorities changes an economic agent's optimal decision making, see David E. M. Sappington & J. Gregory Sidak, *Competition Law for State-Owned Enterprises*, 71 ANTITRUST L.J. 479 (2003); David E.M. Sappington & J. Gregory Sidak, *Incentives for Anticompetitive Behavior by Public Enterprises*, 22 REV. INDUS. ORG. 183 (2003).

quality of an end product is positively related to the amount of licensed technology required to produce that product, then higher quality products are also more costly.

Because the IEEE-SA's revised patent policy allows licensees to report the maximum royalty rate that they would demand for their patented technology and also allows IEEE working groups to discuss royalty rates when constructing standards, the revised policy represents a significant shift toward cost consciousness. To achieve a standard that will have lower expected cost, a shift from more valuable to less valuable patented technology will occur at the margin. For example, consider a scenario in which a hypothetical SSO is considering two patented technologies, T_1 and T_2 , that could be used as inputs into a standardized product. Input T_1 is more advanced, and is therefore more valuable than T_2 , both in terms of the quality of the end product that would be created from its inclusion in the standard and the expected royalty rate that it will likely command. Were the SSO in question chiefly concerned with the quality of the end product, it would likely choose to include T_1 rather than T_2 in the standard. The more weight that the SSO places on cost-consciousness, however, the more likely that it is to favor T_2 as an input. The result of an SSO emphasizing cost over quality is to lower the expected quality of the standards that the SSO formulates.

Ordinarily, a typical profit-maximizing firm does not harm consumers when it takes its own costs into account. Instead of having customers in the ordinary sense, however, the IEEE-SA is tasked with setting standards with a very broad base of potential beneficiaries. The standard-setting process generates a technological platform intended for widespread adoption by producers and consumers of complementary innovations. The ultimate beneficiaries of the standard-setting process consist of those who adopt end products whose value is enhanced by the existence of the standard. Hence, the benefits of IEEE-SA's technology choices are widespread. It is therefore unclear whether IEEE-SA is considering the welfare of all eventual consumers of its products when it chooses, at the margin, to favor lower cost inputs at the expense of quality.

The IEEE-SA's revised policy is further called into question when one considers that IEEE-SA is a monopolist in the creation of standards for wireless communications. Were there no standard setting organization, or were there multiple standard setting organizations, it is conceivable that many competing standards would materialize. With substitute technologies available to consumers, they would then be able to choose the technology that best balances cost and quality considerations. Therefore, market forces would determine the eventual standards that are adopted. The IEEE-SA, however, faces no such competition. Consumers of products developed under IEEE-SA standards must rely on IEEE-SA working groups to balance the cost and quality of standardized products properly. There is no guarantee that IEEE-SA can accurately or appropriately balance those two concerns. Consequently, the IEEE-SA's revised patent policy risks the standardization of products with suboptimal levels of quality, which will diminish the value and quality of end products, to the detriment of consumers.

J. The Competitive Significance of Procedural Safeguards Within the SSO to Prevent Expropriation of the Value of Patented Inputs by the Majority

An SSO can adopt governance mechanisms to protect against opportunistic behavior by licensees in the same way that FRAND obligations protect against opportunism by patent holders.¹⁷¹ Voting rules are one such mechanism. If the voting mechanism is a majority vote, but there are many more members who are potential users of the patented input than there are producers of the patented input (which would be the case if the input truly were an “essential” patent for the standard), then the majority will likely expropriate the patent’s value from the patent owner.

Recognition of the need for antimajoritarian protections is familiar in constitutional law and corporate law. In constitutional law, of course, the tyranny of the majority is a standard account of the need for judicial review of statutes enacted by democratically elected legislatures.¹⁷² With respect to constitutional text itself, the ability of the majority to expropriate the property of the minority is constrained by, among other things, the Fifth Amendment’s rights to due process and to just compensation for takings of private property for a public purpose.¹⁷³ In corporate law, familiar rules exist to protect minority shareholders, such as the appraisal remedy, which requires that a forced buyout of minority shareholders occur at the fair market price.¹⁷⁴ If an SSO adopts VITA-style or IEEE-style rules but lacks procedural and arbitral rules for preventing licensees’ expropriation of the patent’s value, then those rules become suspect because of their potential to facilitate oligopsonistic collusion. In that case, it becomes considerably less credible that the genuine motivation for joint royalty negotiations by licensees is to avert the market failure attributed to royalty stacking.

A strong argument can be made that an SSO’s failure to promulgate and enforce voting rules that prevent expropriation by licensees of the value of patented inputs would, by virtue of the SDOAA, automatically cause any information exchange among competing licensees to be scrutinized under the *per se* rule rather than the rule of reason. The absence of antimajoritarian safeguards would constitute a lack of “balance of interests” and “due process,” which the SDOAA expressly requires for an entity to be deemed a “standards development organization” entitled to rule of reason scrutiny and limited antitrust liability.¹⁷⁵ This argument has implications as well for the legitimacy of business review letters of the sort that the Antitrust Division has rendered to SSOs since 2006.

If the congressional expression of one thing is to the exclusion of another, then the Antitrust Division would be skating on thin ice as a statutory matter to opine to an SSO lacking an antimajoritarian safeguard that its adoption of a policy permitting information exchanges among members who are prospective licensees is properly scrutinized under the rule of reason. The Antitrust Division may sincerely embrace that opinion of law as a matter of prosecutorial discretion.

171. See Mario Calderini & Andrea Giannaccari, *Standardisation in the ICT Sector: The (Complex) Interface Between Antitrust and Intellectual Property*, 15 *ECON. INNOV. NEW TECH.* 543, 554 (2006).

172. See, e.g., JOHN HART ELY, *DEMOCRACY AND DISTRUST* (1980).

173. U.S. CONST., amend. V.

174. See, e.g., J. Gregory Sidak & Susan E. Woodward, *Takeover Premiums, Appraisal Rights, and the Price Elasticity of a Firm’s Publicly Traded Stock*, 25 *GA. L. REV.* 783 (1991).

175. 15 U.S.C. § 4301(a)(8).

But the Division is the enforcer of law. Congress wrote the law on the antitrust treatment to be given standard setting activities, and the courts ultimately will render the definitive opinion as to the law's precise meaning. The courts and the Division may interpret the law differently, particularly concerning issues affected by rapid technological change, as evidenced by the fact that the Division in recent memory has lost at least one prominent case that it has chosen to litigate in a high-technology industry.¹⁷⁶ The Division's business review letters therefore deserve a critical eye, not genuflection.

The Antitrust Division's VITA and IEEE business review letters contain no discussion of whether the proposed change to SSO rules is accompanied by any antimajoritarian safeguard against expropriation of the value of a licensor's patented invention by licensees within the SSO. It necessarily follows that the Division does not provide any analysis of whether the voting procedures or other safeguards within the SSO will, with respect to the adoption of the proposed rule change, respect a "balance of interests" and afford "due process," as the SDOAA requires (among other factors) for an entity to qualify as an SDO entitled to rule of reason scrutiny and limited antitrust liability.¹⁷⁷

IV. IS A PASS-THROUGH OF COST SAVINGS TO CONSUMERS A LEGITIMATE JUSTIFICATION FOR OLIGOPSONISTIC COLLUSION BY LICENSEES?

One justification offered in defense of oligopsonistic collusion by licensees within an SSOs is the assertion that the lower license fees extracted from patent owners will be passed on to consumers of the downstream product. On economic grounds, this assertion must be rigorously tested and verified before one can determine whether any significant pass-through to consumers exists. To calculate the amount of consumer benefits from a lower patent royalty, several factors must be considered. These factors include the form of the royalty (whether it is a fixed fee per licensee, a per unit fee, or a percentage of sales); the demand and supply elasticities facing the licensees; and the structure of any industries further downstream between the manufacturer and the final consumer, such as final-assemblers or retailers (in the computer industry) or network operators (as in wireless telephony). Finally, a countervailing inefficiency resulting from artificially low royalty payments must be weighed against these putative gains from horizontal collusion. Beyond these economic arguments, there is the simple legal response that antitrust jurisprudence has long rejected justifications offered in defense of naked price fixing.

A. *The Form of Patent Royalties*

The investigation must first ask whether the royalty is a fixed fee per licensing firm or an *ad valorem* fee.¹⁷⁸ This is an important distinction, because fixed fees cut into licensees' profits, but have no effect on the marginal cost of production. Thus, if the royalty is a fixed fee, reduced fees will only reach the consumer through potential firm entry. A lower fixed fee might induce more

176. See, e.g., *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098 (N.D. Ca. 2004) (unsuccessful Antitrust Division lawsuit to block merger of two business software companies).

177. 15 U.S.C. § 4301(a)(8).

178. A royalty consisting of a per-unit fee would have a similar effect on marginal costs as the *ad valorem* royalty.

firms to license the patent, and thus the final market might be more competitive or feature wider product choice. However, understanding whether firms might enter requires an examination of other barriers to entry in the market and an assessment of potential profits upon entry, as well as a consideration of whether potential entrants exist. All of these are empirical questions in their own right. We must also consider whether the additional entry is socially desirable—for example, in their seminal article on inefficient entry, N. Gregory Mankiw and Michael Whinston discuss circumstances in which, because an entering firm may steal business from existing firms, the entering firm's incentives for entry are stronger than the social ones.¹⁷⁹ Finally, the investigation must consider the possibility that the patent holder, in maximizing profit, has set the fixed royalty fee such that all potential entrants find it profitable to enter. In this case collusive negotiations by the licensees serve only to transfer wealth between licensor and licensee.

Since an *ad valorem* fee changes the licensee's marginal cost of production, licensees are more likely to pass royalty decreases on to the consumer when those licenses achieve a reduction in *ad valorem* royalties. The benefit to consumers, however, from this royalty depends on the supply and demand elasticities faced by the licensee. I discuss empirical analysis of these product markets below.

A final practical concern involves mixed contracts—royalty arrangements consisting of a fixed fee and an *ad valorem* or per-unit fee. Research by Alain Bousquet, Helmuth Cremer, Marc Ivaldi, and Michel Wolkowitz¹⁸⁰ describes the licensing practices of CNET, the research center of France Telecom, and reports that 63 percent of its total licensing portfolio in 1990 consisted of contracts made up of a fixed fee combined with an *ad valorem* royalty. When an SSO negotiates with a patent owner, if the parties use a mixed contract it is not clear which part of the contract will yield the reduced royalties. Thus, there is no way to know whether the negotiation will result in a reduction in marginal cost.

B. Markets for Intermediate Products and the Structure of Downstream Industries

Were one to establish that a royalty reduction would lead to a decrease in licensees' marginal costs of production, one must then determine the portion of the reduction in marginal cost that will be reflected in the price of the final product. For simple products not involving the production of intermediate goods, this calculation requires one to estimate firm-specific demand and supply elasticities. The reduction in price as a function of the supply and demand elasticities can then be calculated. The general result, however, is that consumers will receive more of the surplus when demand is more inelastic than supply. Although this exercise may be simple in a theoretical sense, the estimation of supply and demand elasticities requires a rich dataset involving product prices, consumption, consumer characteristics, and firm costs. These data, however, are unlikely to be available for product that has yet to be introduced to the market.

179. N. Gregory Mankiw & Michael D. Whinston, *Free Entry and Social Inefficiency*, 17 RAND J. ECON. 48, 48-58 (1986).

180. Alain Bousquet, Helmuth Cremer, Marc Ivaldi & Michel Wolkowitz, *Risk Sharing in Licensing*, 16 INT'L. J. INDUS. ORG. 535, 535-54 (1998).

Therefore, an extrapolation must be made from data available for related products and firms that are already in existence.

More complex industry structures can further complicate these calculations. Many products based on licensed patents are sold as inputs to other firms, so that the reduction in price depends not only on the intermediate product's supply and demand elasticities, but on the supply and demand elasticities for each final product. Additionally, either the licensee or the downstream firm may sell together multiple products that are related—that is, the products are either complements or substitutes. The presence of these multiproduct firms introduces the possibility that firms may set prices irrespective of costs. Crandall and Sidak examine this issue of Ramsey pricing¹⁸¹ in their analysis of regulation of mobile termination fees.¹⁸² Consider a firm selling multiple, complementary products (for example, cellular telephone handsets and airtime) where one product has more price-elastic demand than the other. In such situations, firms tend to depart from marginal cost pricing—raising prices on the product with relatively inelastic demand (airtime) and lowering prices on the product with relatively elastic demand (handsets). Crandall and Sidak observe that, although wireless network operators face large fixed, per-subscriber costs and low variable, per-minute costs, they charge their consumers almost nothing upon signing up (heavily subsidizing handsets, in fact), and recoup all of their costs in the form of variable charges (wireless airtime).¹⁸³

A simple example illustrates the point. Consider a firm that a firm sells two goods, a product *A* and a service contract *B*. Now, suppose that because of consumer credit constraints, product *A*, (an upfront equipment purchase) has very elastic demand, with elasticity equal to -5. And suppose that service contract *B*, because of consumer discount of future payments, has elasticity of demand equal to -1. *A* and *B* are complements, because using the firm's service requires both the product and service contract. However, because consumers are more sensitive to current expenditures than to future ones, at any given price the firm can increase its flow of new subscribers by changing its prices. Suppose that when the price of product *A* is \$100, and the present value of the service contract *B* payments is \$100, then the firm signs up 100 new subscribers a week. By lowering the price of product *A* by one percent, the firm gains five percent more subscribers per week. If they also raise the price of service contract *B* by one percent, the firm achieves revenue per customer equal to the original amount of \$200, but only loses one subscriber, and thus gains four customers per week overall. As long as the firm does not wish to charge a negative price, continuing this logic leads the firm to set a price of \$0 for product *A*, and compensate with a higher markup on service contract *B*.

Note that the price of the upfront product is \$0 regardless of marginal cost. This is because consumers are more sensitive to upfront payments than to future payments. In the wireless services industry, many handsets are priced at \$0, but almost none are priced below \$0; this disinclination to charge negative prices means that the wireless operator will not pass on small decreases in the wholesale cost of the handset to consumers through handset prices. It is thus apparent that

181. The original concept of Ramsey pricing relates to socially optimal pricing for regulated multiproduct industries, but the logic also extends to profit-maximizing, unregulated industries.

182. J. Gregory Sidak & Robert W. Crandall, *Should Regulators Set Rates to Terminate Calls on Mobile Networks?*, 21 YALE J. ON REG. 261, 261-314 (2004).

183. *Id.* at 298.

Ramsey pricing has the potential to decouple prices from marginal costs for individual products. In this example, it is possible that marginal-cost savings might lead operators to lower the price of the non-zero product, the service contract. However, because in practice firms offer many varieties of goods *A* and *B*, it would be very difficult to establish what the effect of one particular phone's marginal cost was on the price of a particular service plan. In any case, this is yet another empirical question that requires more data and assumptions on the structure of the market.

Ramsey pricing is only one example of an industry feature that might complicate the analysis of royalty rate pass-through to consumers. However, this example makes clear that we cannot assume that a rate concession to patent licensees will benefit consumers. Calculating this consumer benefit is a difficult empirical question and must be thoroughly investigated as part of any rule-of-reason argument.

C. Dynamic Inefficiency

Finally, since the rule of reason is a question of economic efficiency, one must also consider the effect of the inefficiencies that result when one allows oligopsonistic collusion to force patent royalties below their value to licensees. Although it is technically true that licensing a patent has almost zero marginal cost, such under-pricing can lead to dynamic inefficiency.¹⁸⁴

Dynamic inefficiency occurs when research and development expenditures are below their optimal levels. In the case of patents, setting royalties below their value to licensees can prevent firms from making positive expected profits on the sale of service. As a consequence, firms would be reluctant to undertake research and development projects if they believe they will be unable to make a positive return on those investments, even in cases where potential licensees value the results of those projects highly. They would either allocate research and development expenditures to other projects, or they would reduce their overall expenditures on research and development. In either scenario, the net benefits to society are reduced.

D. The Irrelevance of the Passing-On Defense as a Matter of Antitrust Jurisprudence

Proponents of rule of reason scrutiny for oligopsonistic collaboration in royalty negotiations suggest that resulting reductions in the royalty rates paid by patent licensees would benefit consumers because the licensees will pass some or all of the cost savings along to purchasers of the end product.¹⁸⁵ This argument proves too much. Unlawful conduct is not rendered lawful due merely to the willingness of parties to the enterprise to share some of the proceeds with the public. If a group of competitors agreed to ignore environmental and workplace safety regulations, they could conceivably shed costs and pass some of the savings along to consumer in the form of lower prices. But the price to the end

184. See David E. M. Sappington & J. Gregory Sidak, *Competition Law for State-Owned Enterprises*, 71 ANTITRUST L.J. 479 (2003); David E.M. Sappington & J. Gregory Sidak, *Incentives for Anticompetitive Behavior by Public Enterprises*, 22 REV. INDUS. ORG. 183 (2003).

185. See DOJ/FTC IP REPORT, *supra* note 89, at 55; AMC REPORT, *supra* note 91, at 121.

users would be a price that failed to reflect the full social cost of consuming the product.

The Antitrust Division has successfully prosecuted oligopsonistic collusion. In the reported cases, one can find no discussion in which a court quantified the potential pass-through to consumers of the reductions in the oligopsonists' marginal costs. Nor can one find any discussion in which the court regarded the possibility of partial or total pass-through of such cost reductions to be relevant to the question of whether liability should be imposed for conspiring to fix input prices.

VI. CONCLUSION

Oligopsonistic collusion among licensees in an SSO is a legitimate antitrust concern. Yet, when presented the patent-holdup argument, the Antitrust Division and the Federal Trade Commission strongly incline toward the rule of reason, notwithstanding that horizontal collaboration on pricing historically has been condemned as *per se* illegal. That inclination suggests an implicit, though unexplained, preference for licensees rather than licensors of patented technology.

It is questionable whether this policy of prosecutorial discretion rests on good law and good economics. Policy revisions that SSOs have recently proposed serve to highlight that SSOs are requesting from antitrust authorities the ability to improve their market power *vis-à-vis* owners of patented technologies. Allowing an SSO the ability to request maximum royalty rates from IPR holders and then to discuss those royalty rates during the standard setting process is troubling when one considers that SSO members who are licensees of that technology may be oligopsonists possessing market power. Put simply, U.S. antitrust authorities have assumed, rather than tested and determined, that the social cost of patent holdup exceeds the social cost of information sharing policies that facilitate buyer collusion. A more balanced antitrust approach to joint negotiation of royalties within SSOs is appropriate.