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**EVALUATING MARKET POWER IN TECHNOLOGY MARKETS
WHEN STANDARDS ARE SELECTED IN WHICH PRIVATE
PARTIES OWN INTELLECTUAL PROPERTY RIGHTS**

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EVALUATING MARKET POWER IN TECHNOLOGY MARKETS WHEN STANDARDS ARE SELECTED IN WHICH PRIVATE PARTIES OWN INTELLECTUAL PROPERTY RIGHTS

Daniel G. Swanson¹

I. INTRODUCTION

This paper is directed at a limited topic in the much broader subject area of standard setting and antitrust law. In particular, the paper is concerned with the effects of the adoption by standard-setting organizations (SSOs) of standards in which private parties own intellectual property rights.²

It is by now largely agreed that the mere possession of a patent, copyright or other intellectual property right does not in itself warrant any presumption of market or monopoly power.³ Thus, the U.S. antitrust agencies regard the power, if any, conferred by an intellectual property right as a function of the availability of alternative technologies or products.⁴ As a practical matter, market power in technology markets is often measured by counting the number of technologies that appear to be substitutable at comparable costs.⁵ A market with two, three or four alternative technologies may be reasonably competitive

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- ¹ The views expressed in this paper are those of the author alone and are not necessarily those of (and should not be attributed to) Gibson, Dunn & Crutcher LLP or any of its clients.
 - ² The paper assumes that the IP right either is coextensive with the standard in question in the sense that it may be the principal basis for the production of a standardized product or process, or is one of several inputs into the production of such a product or process. The paper deals only with known intellectual property rights and does not address, e.g., *Dell* issues.
 - ³ See *Jefferson Parish Hosp. v. Hyde*, 466 U.S. at 37 n.7 (O'Connor, J., concurring); *In re Independent Service Organizations Antitrust Litigation*, 203 F.3d 1322, 1325-26 (Fed. Cir. 2000); *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1364 (Fed. Cir. 1998); *Town Sound and Custom Tops, Inc. v. Chrysler Motors Corp.*, 959 F.2d 468, 479-80 (3d Cir.), *cert. denied*, 506 U.S. 868 (1992); *Abbott Laboratories v. Brennan*, 952 F.2d 1346, 1354-55 (Fed. Cir. 1991), *cert. denied*, 505 U.S. 1205 (1992).
 - ⁴ See U.S. Department of Justice and Federal Trade Commission Antitrust Guidelines for the Licensing of Intellectual Property § 2.2 (1995).
 - ⁵ See Herbert Hovenkamp, Mark D. Janis & Mark A. Lemley, *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW* (2001), §4.1c at 4-7 & §4.3c1 at 4-48.

(and a market with five may be eligible for the antitrust “safety zone” prescribed by the DOJ-FTC IP Guidelines).⁶

Thus, almost by definition, standard-setting exercises are likely to occur in competitive — perhaps very competitive — technology markets as several technologies compete for selection *ex ante*. Once a standard has been selected, however, the potential for *ex post* change in the market arises. As Lemley and McGowan explain the issue, “[t]he general danger of allowing a private party to own intellectual property rights in an open standard is that the private party may at some point attempt to close the standard, either by licensing it on discriminatory terms, by setting an unreasonable price for continued access, or simply by denying access (a license) altogether.”⁷

In order to evaluate concerns such as these, it is necessary to examine the question of how to measure market power in the technology market — on an *ex ante* or *ex post* basis? This requires consideration of (1) the likely economic effects of standard selection; (2) the potential role of contracting (licensing) in controlling market power; and (3) the potential role of SSOs and the standard-selection process in limiting market power.

II. ANALYSIS OF MARKET POWER AFTER STANDARD SELECTION

A. The Economic Effects of Standard Selection on Market Power

Although competition may exist in the technology market in advance of the selection of a proprietary standard, the act of selection has consequences that can lead to reduced competitiveness and increased *ex post* market power. The adoption of a proprietary standard, for example, is likely to lead at least some (and perhaps many) market participants to view alternative technologies as less close substitutes for the designated technology. For example, standard-setting activities often involve testing and comparative evaluation of competing

⁶ See U.S. Department of Justice and Federal Trade Commission Antitrust Guidelines for the Licensing of Intellectual Property § 4.3 (1995).

⁷ Mark A. Lemley & David McGowan, *Could Java Change Everything? The Competitive Propriety of a Proprietary Standard*, 43 ANTITRUST BULLETIN 715, 760 (1998).

technologies.⁸ Victory in such a process – at least one whose outcome has not been skewed by noticeably biased procedures – bestows credibility and likely conveys positive information to the market about the quality of the technology in question or negative information about the relative quality of alternative candidates.

Selection can affect not just relative beliefs about quality but also market expectations regarding future commercial success. This can be a particularly significant factor when standard-setting occurs in network markets. Much has been written about network effects and the phenomena of path dependence, critical mass, and tipping in network markets.⁹ In such markets, demand is strongly influenced by buyers' forecasts of future sales and the ultimate size of the network.¹⁰ Actions that have the potential to affect expectations positively, such as the endorsement of a technology by a standard-setting body, can yield large – even decisive – benefits in the marketplace. “In these circumstances, victory need not go to the better or cheaper product: an inferior product may be able to defeat a superior one if it is widely expected to do so.”¹¹ Regardless of whether alternative technologies are clearly better or cheaper, the point for present purposes is that they may in time be sidelined as effective competitive constraints on the winning technology if network effects are strong.¹²

⁸ Access to the detailed results of such analyses may be limited to those who have entered into non-disclosure agreements.

⁹ See, e.g., Luís M. B. Cabral, INTRODUCTION TO INDUSTRIAL ORGANIZATION (2000), at 311-34; Oz Shy, INDUSTRIAL ORGANIZATION: THEORY AND APPLICATIONS (1995), at 253-277; Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSPECTIVES 117 (1994); Michael L. Katz & Carl Shapiro, *Technology Adoption in the Presence of Network Externalities*, 94 J. POLIT. ECON. 822 (1986); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424 (1985).

¹⁰ See, e.g., Luís M. B. Cabral, INTRODUCTION TO INDUSTRIAL ORGANIZATION (2000), at 312-14; Carl Shapiro & Hal Varian, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY (1999) at 230 (“We have stressed the importance of expectations as a driver of positive feedback in network markets: confidence breeds success, while doubt spells doom”); Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSPECTIVES 117, 118 (1994) (“expectations about the ultimate size of the network are crucial”).

¹¹ Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSPECTIVES 117, 118 (1994).

¹² The focus here is on the network effects in the technology market itself. It should be noted that where the proprietary technology is not coextensive with the standard, for example when it is only an input into the

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Another factor tending to diminish *ex post* competitiveness in the relevant technology market is the extent to which the selection of a proprietary technology leads licensees (or prospective licensees) to incur durable technology-specific investments that give rise to non-negligible switching costs.¹³ Such investments may take many forms.¹⁴ For example, adoption of a technology may lead to specialized investments in “learning” the techniques involved and digesting ongoing improvements.¹⁵ Similarly, practicing the technology may require specific investments in plant and equipment. Costly marketing campaigns may be undertaken to create buyer awareness of the use or incorporation of the proprietary technology. Sunk investments such as these can give rise to high switching costs leading to the phenomenon of “lock-in,” whereby the ability to turn to alternative technologies is significantly constrained.¹⁶

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production of a standardized product or process, then it is possible that network effects could arise in the relevant “goods” market without also characterizing the relevant technology market. Network effects may arise in technology markets for a variety of reasons, of course (*e.g.*, more licensees for a given technology means more potential for improvements, more incentives for the development of multiple complementary technologies, etc.). In some instances, network effects may be so strong that multiple technologies may not be viable in the ultimate configuration of the marketplace.

- ¹³ See, *e.g.*, Carl Shapiro & Hal Varian, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY (1999) at 103-71. Asset-specific investments, of course, may also be made in advance of standard selection.
- ¹⁴ Of course, when standardization promotes compatibility with complementary products, it serves to that extent to reduce switching costs (by minimizing the extent to which investments in complementary products are lost when switching suppliers). See, *e.g.*, Joseph Kattan, *Market Power in the Presence of An Installed Base*, 62 ANTITRUST L. J. 1 (1993).
- ¹⁵ The technical personnel involved may be placed “off limits” for exposure to alternative technologies because of licensor concerns regarding the protection of know-how and other trade secrets.
- ¹⁶ The term “lock-in” is also used to refer to the phenomenon of a network market tipping to one product as the result of the demand-side economies of scale (*i.e.*, network effects) discussed above. See, *e.g.*, Luís M. B. Cabral, INTRODUCTION TO INDUSTRIAL ORGANIZATION (2000), at 315. In the perhaps unlikely case where the a standardized technology is licensed on terms allowing licensees an unfettered right to sublicense to third parties (without paying additional compensation to the original licensor), intra-standard competition may substantially reduce the leeway for lock-in to arise. See, *e.g.*, Joseph Kattan, *Market Power in the Presence of An Installed Base*, 62 ANTITRUST L. J. 1 (1993) (“the lock-in effect is of little competitive consequence when consumers are ‘locked into’ a competitive market”).

B. Constraining *Ex Post* Market Power Through Pre-Selection Licensing

As we have seen, the act of selecting a standard can lead to the creation or enhancement of market power. That is, the various economic effects flowing from the endorsement of a proprietary technology by an SSO have the potential to convert an *ex ante* competitive technology market into one that is subject to *ex post* market or monopoly power.¹⁷ Of course, the facts of any given case of standard setting must be analyzed individually as it is entirely possible that alternative technologies (even alternative standards) may co-exist in the market post-selection as viable substitutes for the standardized technology.¹⁸ Nonetheless, to the extent that *ex post* market power is a realistic threat, one would expect to see efforts in the market to limit or prevent the creation and exercise of such power.

One possible solution to the problem of *ex post* market power is for prospective licensees to bargain in advance of selection, when the market is at its most competitive — as proponents of alternative technologies are actively vying with each other for advantage — and to close the deal at or before the time when the standard is finally chosen. Contracting activities are certainly a well-recognized means to attempt to regulate the economic power that a decision-maker may voluntarily choose to bestow upon one among numerous contending parties. In this regard, economists have explored the nature of “competition for a prize” — the “prize” in the present context being standard selection — and the incentives for the contestants involved to compete away the expected *ex post* gains in the effort to gain victory.¹⁹ The theory of

¹⁷ For the moment, no distinction is drawn between “traditional” market power and the power to exploit individual licensees that arises after the licensees are locked-in by their relationship-specific investments.

¹⁸ See, e.g., Carl Shapiro, Setting Compatibility Standards: Cooperation or Collusion? (unpublished manuscript 2000), available at <http://haas.berkeley.edu/~shapiro/standards.pdf>; Oz Shy, INDUSTRIAL ORGANIZATION: THEORY AND APPLICATIONS (1995), at 259-61.

¹⁹ Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSPECTIVES 117, 119 (1994). Of course, the “prize” of standardization is bestowed by the SSO, not by individual buyers, but timely individual licensing decisions, particularly by buyers with reputations for technical expertise and financial sophistication, can serve as valuable “endorsements” having the potential to affect the outcome of the standard-selection process. A somewhat analogous situation arises in the aviation industry, for example, where competition between Boeing and Airbus to sign up sufficient “launch customers” to reach the critical mass justifying a proposed new aircraft model is often brutally intense as each OEM (and its complementary systems suppliers) seeks to sign up sophisticated

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franchise bidding, for example, has explored the opportunities to limit the power of natural monopolies by making the monopoly franchise the “prize” to be won by contesting bidders, with *ex post* pricing and performance constrained to more competitive benchmarks by the terms of the franchise contract.²⁰

Even a licensor generally facing vigorous competition from alternative technologies may have the power to exploit its existing licensees to the extent that they are locked-in due to switching costs arising from sunk relationship-specific investments. This is the problem of opportunism (or “hold-ups”).²¹ Opportunism arises in a vertical supply relationship as a result of the supplier’s incentives (in the absence of effective constraints) to exercise the power flowing from the creation of the relationship — after the buyer invests in relationship-specific assets creating switching costs — to “hold up” the buyer by imposing a higher price or lower quality than would be efficient.²² There is a rich literature in economics recognizing that rational buyers will negotiate contracts containing terms that seek to prevent opportunistic hold-ups by regulating the relationship and limiting what the seller is allowed to do.²³

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airlines with reputations for expertise in evaluating aircraft performance and cost long before actually delivering (or even producing) any aircraft. The launch airlines will invariably negotiate in advance over detailed terms and conditions (with the manufacturer and with complementary suppliers) covering a host of items applicable over the very long productive life of an aircraft, such as aircraft configuration, second-sourcing, warranty terms, maintenance rates, spares pricing, technical support and the like.

- ²⁰ See, e.g., W. Kip Viscusi, John M. Vernon & Joseph E. Harrington, Jr., *ECONOMICS OF REGULATION AND ANTITRUST* (3rd ed. 2000), at 395-409. Franchise bidding can theoretically yield pricing below the monopoly level, such as average cost pricing (or even marginal cost pricing if two-part tariffs can be successfully implemented).
- ²¹ See, e.g., W. Kip Viscusi, John M. Vernon & Joseph E. Harrington, Jr., *ECONOMICS OF REGULATION AND ANTITRUST* (3rd ed. 2000), at 407-09; Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post-Contract Hold-Up Analysis to Vertical Relationships*, 67 *ANTITRUST L. J.* 283 (1999); Carl Shapiro, *Aftermarkets and Consumer Welfare: Making Sense of Kodak*, 63 *ANTITRUST L. J.* 483 (1995); Joseph Farrell & Carl Shapiro, *Optimal Contracts with Lock-In*, 79 *AM. ECON. REV.* 51 (1989); Oliver Williamson, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* (1985); Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 *MINN. L. REV.* 521 (1981).
- ²² See, e.g., Joseph Farrell & Carl Shapiro, *Optimal Contracts with Lock-In*, 79 *AM. ECON. REV.* 51, 51 (1989).
- ²³ See, e.g., Benjamin Klein, *Market Power in Antitrust: Economic Analysis After Kodak*, 3 *SUP. CT. ECON. REV.* 43, 50-51 (1993); Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 *MINN. L. REV.* 521 (1981).

Although the term “market power” is frequently used (and is generally used in this paper) in the broadest sense to encompass the seller’s relationship-specific power to exploit individual buyers (to the extent that the buyers are locked-in by their relationship-specific investments), it bears repeating that opportunism can arise in the absence of *any* market power in the narrower or “traditional” sense.²⁴ In the standard-setting context, however, the *ex post* emergence of “traditional” market power in the technology market can enhance the relationship-specific power flowing from individual lock-in by increasing post-selection switching costs. In other words, protecting against opportunism takes on greater significance in the standard-setting context since an ineffectively-constrained licensor may have *ex post* incentives to exploit *both* “traditional” market power as well as relationship-specific power.

In a perfect world, *ex ante* contracting would be capable of depriving the winner of the standards-setting process of any ability to take advantage of any *ex post* market power. The world is not perfect, however, and a very broad literature has arisen to address and debate the potential shortcomings of contractual remedies in the presence of real-world phenomena such as incomplete information, transaction costs and imperfect contracts.²⁵ Much of the commentary in this area is directed at the most appropriate reading of the Supreme Court’s decision in *Eastman Kodak Co. v. Image Technical Services*,

²⁴ See, e.g., Benjamin Klein, *Market Power in Antitrust: Economic Analysis After Kodak*, 3 SUP. CT. ECON. REV. 43, 59 (1993) (concepts of monopoly power and opportunism are distinct); Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 MINN. L. REV. 521, 523 (1981) (opportunism is not a problem of precontractual monopoly); Joseph Kattan, *Market Power in the Presence of An Installed Base*, 62 ANTITRUST L. J. 1 (1993) (“circumstantial” market power associated with contracting problems may exist in many situations not commonly called monopolies); Joseph Farrell & Carl Shapiro, *Optimal Contracts with Lock-In*, 79 AM. ECON. REV. 51, 51 (1989) (“Even if competition is perfect *ex ante*, once a relationship is established there is some *ex post* bilateral monopoly, which ... can lead to problems of opportunism”).

²⁵ See, e.g., Warren S. Grimes, *Market Definition in Franchise Antitrust Claims: Relational Market Power and the Franchisor’s Conflict of Interest*, 67 ANTITRUST L. J. 243 (1999); Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post-Contract Hold-Up Analysis to Vertical Relationships*, 67 ANTITRUST L. J. 283 (1999); Carl Shapiro, *Aftermarkets and Consumer Welfare: Making Sense of Kodak*, 63 ANTITRUST L. J. 483 (1995); Severin Borenstein, Jeffrey MacKie-Mason & Janet Netz, *Antitrust Policy in Aftermarkets*, 63 ANTITRUST L. J. 455 (1995); Joseph Farrell & Carl Shapiro, *Optimal Contracts with Lock-In*, 79 AM. ECON. REV. 51 (1989). Much of this literature is directed at aftermarkets and franchising scenarios, but this does not limit the generality of its application.

Inc.,²⁶ which was vitally concerned with the question of measuring market power on an *ex ante* or *ex post* basis.

It is not the purpose of this paper to review this debate but merely to note that a reasonably persuasive case can be made for the proposition that an *ex ante* approach to measuring market power is defensible — even when post-contract market power exists — as long as there is:

- competition at the pre-contact stage,
- reasonable (though not complete or perfect) information on the buyer’s part, and
- conduct that is not outside of the (reasonable disclosed) limits imposed by the contract terms.²⁷

In other words, as Professor Klein explains it, “the reasoning of *Kodak* requires that an actual hold-up take place, not merely that a potential hold-up exists, before throwing out pre-contract competition analysis and using a post-contract definition of market power.”²⁸ Such an approach to measuring market power is attractive in standard-selection cases of the sort under examination here in the sense that competition is likely to exist pre-selection, participants are likely to be informed and sophisticated, and contracts (licenses) are likely to provide a reasonably detailed benchmark against which to assess any claim of opportunistic post-contract hold-ups.

The fly in the ointment here is that despite the manifest benefits of contracting in the pre-selection phase of a standard-setting endeavor, there are several reasons why any given prospective licensee may rationally chose to postpone contracting until after standard selection. Contracting is costly, of course, and it may be rational to avoid the costs of taking licenses from all competing licensors and to adopt a wait-and-see attitude pending the resolution of the selection process. Additionally, some prospective licensees may not deem

²⁶ 504 U.S. 451 (1992).

²⁷ This argument is advanced in Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post-Contract Hold-Up Analysis to Vertical Relationships*, 67 ANTITRUST L. J. 283 (1999).

²⁸ Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post-Contract Hold-Up Analysis to Vertical Relationships*, 67 ANTITRUST L. J. 283, 284 (1999).

themselves to possess the leverage or expertise to gain the full advantage of pre-selection competition.²⁹ The consequence is that much or most licensing activity may take place only after the SSO selects the standard. This means that it is necessary to consider the standard-selection process itself, to assess whether and to what extent that process can replicate the constraining influence of pre-selection contracting behavior.

C. Constraining *Ex Post* Market Power By The Selection Process Itself

An SSO has no legitimate reason to foster the creation or facilitate the exercise of *ex post* market power on the part of a licensor holding intellectual property rights in a standard adopted by the organization. To the contrary, to the extent that an SSO is composed of or at least influenced by the potential licensees of the IP rights, it has every legitimate reason to avoid creating or facilitating such power. Antitrust policy, sharing a similar objective, should be reasonably accommodating of measured and proportionate efforts on the part of SSOs to attain this goal.³⁰

One approach by SSOs to constraining *ex post* market power has been circumscribed by serious concerns about antitrust exposure. That approach is for the SSO to negotiate license terms with each participating IP-holder (conditional on selection) for the benefit of all potential licensees as part of the standard-selection process. The antitrust risk inherent in such an approach is the potential for *per se* liability for monopsonistic price fixing.³¹ A key touchstone for avoiding *per se* risk in such collaborative endeavors is the

²⁹ See note 19 *supra*.

³⁰ The patent and copyright laws should favor no different goal here when (as has been assumed in the scenario examined in this paper) the market power in question arises most proximately from the outcome of the standard-selection process rather than directly from the intellectual property grant itself.

³¹ Cf. *Sony Electronics, Inc. v. Soundview Technologies, Inc.*, 157 F.Supp.2d 180, 183-88 (D. Conn. 2001) (refusing to dismiss Section 1 price fixing and boycott claims directed at alleged monopsony conspiracy to fix low license royalty rates on IP implicated by an SSO standard by potential licensees subsequent to promulgation of the standard)..

ability to point to the existence of an “efficiency-enhancing integration” to which the challenged activity is ancillary.³² But as Shapiro has pointed out:

While the law has typically looked for integration and risk-sharing among collaborators in order to classify cooperation as a joint venture and escape *per se* condemnation, these are not very helpful [or] useful screens for standard-setting activities. The essence of cooperative standard setting is not the sharing of risks associated with specific investments, or the integration of operations, but rather the contribution of complementary intellectual property rights and the expression of unified support to ignite positive feedback for a new technology.³³

Even in cases where the existence of an efficiency-enhancing integration has been apparent in more traditional terms, the threat remains of expensive and fact-laden rule of reason challenges that are not susceptible to disposition before trial.³⁴

While outright pre-selection bargaining by an SSO over license terms may require a high tolerance for antitrust risk (pending further development of doctrine in this area), there should be less acute antitrust sensitivity in regard to other methods of constraining the post-selection exercise of market power. For example, SSOs commonly require in effect that IP holders license their IP on reasonable and non-discriminatory (RAND) terms as a condition of selection.

³² See U.S. Department of Justice and Federal Trade Commission Antitrust Guidelines for Collaborations Among Competitors §3.2 (2000).

³³ Carl Shapiro, Setting Compatibility Standards: Cooperation or Collusion? (unpublished manuscript 2000), available at <http://haas.berkeley.edu/~shapiro/standards.pdf>.

³⁴ See *Addamax Corp. v. Open Software Foundation, Inc.*, 888 F.Supp. 274 (D. Mass. 1995) (granting summary judgment on *per se* but not rule of reason claim of plaintiff whose IP had not been selected by the defendant non-profit industry consortium in its efforts to solicit bids for standardized components of a platform-independent version of the UNIX operating system). Despite the fact that most commentators find the result in *Addamax* problematic, see Herbert Hovenkamp, Mark D. Janis & Mark A. Lemley, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW (2001), §35.4a2 at 35-27 n. 16; Carl Shapiro, Setting Compatibility Standards: Cooperation or Collusion? (unpublished manuscript 2000), available at <http://haas.berkeley.edu/~shapiro/standards.pdf>, the defendants were obliged to incur the expense of a trial on the merits. See *Addamax Corp. v. Open Software Foundation, Inc.*, 152 F.3d 48 (1st Cir. 1998) (affirming judgment for defendants after trial on causation of damages).

Such a RAND commitment by *ex ante* competitive technology proponents can be given teeth in several ways.

First, the commitment can be measured against “model” license terms solicited as part of the objective evaluation process.³⁵ As a matter of antitrust policy, SSOs should not be limited to soliciting only technical information from IP holders but should be allowed to obtain necessary information permitting evaluation of the economics of licensing as well. As long as the economic terms are received and evaluated subject to appropriate safeguards against spillover collusion, the legitimacy of the activity should be beyond serious question.³⁶ To reach a contrary conclusion would be to stand economics on its head and hobble standard-setting efforts by enforcing an irrational ignorance of licensing cost. As Shapiro and Varian recommend: “[M]ake sure early on that holders of key patents are explicit about their commitment to license for ‘reasonable’ royalties. Reasonable *should* mean the royalties that the patent-holder could obtain in open, up-front competition with other technologies, not the royalties that the patent holder can extract once other participants are effectively locked in to use technology covered by the patent.”³⁷

Of course, the (fully legitimate) point of the exercise of soliciting terms is to lead IP holders to conclude that it is in their independent interest to submit the most competitive terms possible in order to boost their odds of ultimate selection.³⁸ To be sure, the terms submitted in such a process are set unilaterally by the technology owner, and are not subject to further negotiation by the SSO, although it should be permissible for SSOs to mandate single or

³⁵ An SSO may go beyond a simple RAND commitment and inquire whether candidate IP holders would be willing if selected to commit to empower a neutral third-party agent to license the IP on the owner’s behalf on the basis of the model terms..

³⁶ Nonetheless, some has observed that the risk remains that “antitrust counsel is likely to circumscribe the information exchanges more than is absolutely necessary, particularly because what is necessary for antitrust purposes is not always well defined.” James J. Anton & Dennis A. Yao, *Standard-Setting Consortia, Antitrust, And High-Technology Industries*, 64 ANTITRUST L. J. 247, 264 (1995).

³⁷ Carl Shapiro & Hal Varian, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* (1999) at 241.

³⁸ In an inter-technology competition, “a public commitment [by the IP holder] to low prices over the long term is another way to convince buyers that they will get large benefits from joining a particular network.” Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSPECTIVES 117, 124 (1994).

multiple rounds of submissions in order to promote the most competitive submissions.³⁹

A second technique for infusing a RAND commitment with meaning is for SSOs to reward an IP holder's pre-selection negotiation and conclusion of licenses with individual licensees by making such endorsements a positive factor of some weight in the standard-selection process. This empowers the putative licensees with more individual clout to affect the ultimate selection decision, and encourages more vigorous competition to strike pre-selection licensing deals. Of course, to be effective, the RAND commitment must be interpreted to encompass pre-selection licenses so that any material divergence in terms post-selection would be deemed to be either discriminatory or unreasonable. In this way, post-selection licensing is carried out against a presumptively competitive pre-selection benchmark.

Of course, all of the observations in this section assume that the SSO is acting with due concern for the interests of the direct consumers — the potential licensees — of the proprietary technology covered by the putative standard. It similarly assumes that the standard-selection process is structured in such a way as to lead the contending IP holders to compete away their *ex post* market power to the benefit of the licensees as opposed to compensating other players in the process in exchange for the right to retain and exploit that power. In part, this may explain the focus on process and the avoidance of bias in many antitrust decisions in the standard-setting context.⁴⁰

A recent case, *Townshend v. Rockwell International Corp.*,⁴¹ can be read to illustrate some of the principles discussed above. In relevant part, the case involved an antitrust claim against an IP holder for allegedly refusing to license its technology on reasonable terms subsequent to prevailing upon an SSO to adopt a standard incorporating the IP. The District Court rejected this claim on

³⁹ In a single round process, for example, all candidates would be provided with the same opportunity to submit “best and final” technical and economic information in response to the SSO’s RFP. In a multi-round process, all proponents would be given the further opportunity (although with no obligation to respond) to improve on their respective submissions.

⁴⁰ See James J. Anton & Dennis A. Yao, *Standard-Setting Consortia, Antitrust, And High-Technology Industries*, 64 ANTITRUST L. J. 247, 255-58 (1995) (noting frequency of analysis of decision-making procedures in standard-setting antitrust cases but rejecting exclusive focus on same).

⁴¹ 2000-1 Trade Cas. (CCH) ¶72,890 (N.D. Cal. 2000).

several grounds. As to market power, while the Court may have somewhat hastily rejected the plaintiff's argument that the industry standard conferred market power on the incorporated patent,⁴² it plainly found no basis for an allegation of *ex ante* power in view of the plaintiff's improper reliance on the mere existence of the patent and its failure to allege any dominant market share in the technology market.⁴³ Independent of this finding, the Court rejected the *ex post* licensing challenge on the ground that there was no allegation that the IP holder had refused to license the antitrust plaintiff in accordance with the proposed licensing terms and conditions that had been submitted to the SSO and its members before the standard was adopted.⁴⁴ In effect, the Court was rejecting the antitrust plaintiff's hold-up claim in deference to the SSO's ability to protect potential licensees by properly structuring the selection process to elicit reasonably competitive license terms.

III. CONCLUDING THOUGHTS

The analysis sketched out in this paper suggests that it may be appropriate in some instances to apply a pre-selection approach to measuring market power in cases of competitive standard-selection processes that result in an IP owner holding proprietary rights in the selected standard. The flip side of this argument is that in other (different) instances it may be appropriate to initiate antitrust enforcement proceedings against IP holders who succeed in opportunistically holding up licensees despite *ex ante* competition. Some limiting considerations should be borne firmly in mind when contemplating private or public enforcement in this area, however.

First, it has been persuasively argued by many commentators on standard-setting issues that it is a mistake to assume that antitrust intervention is

⁴² The Court erroneously conclude that the “adoption of a [sic] industry standard incorporating ... proprietary technology does not confer any power to exclude that exceeds the exclusionary power to which a patent holder is otherwise legally entitled.” 2000-1 Trade Cas. (CCH) ¶72,890 at 87,636. It was noted, however, that the antitrust plaintiff had not alleged that the industry standard prevented the development of competing proprietary technology.

⁴³ 2000-1 Trade Cas. (CCH) ¶72,890 at 87,636-37.

⁴⁴ 2000-1 Trade Cas. (CCH) ¶72,890 at 87,633-34 & 87,636. The Court observed that the adoption of the standard by the SSO “suggests that the [SSO] was satisfied that the proposed terms submitted by [defendant] evidenced a willingness by [defendant] to negotiate non-discriminatory, fair, and reasonable terms.” *Id.* at 87,633.

necessarily more nimble or sure-footed than other (less intrusive) legal or private remedies (e.g., remedies provided by contract law).

A second, and related point is that while we have defined the concept of “market power” broadly in this paper — taking it to encompass both “traditional” and relationship-specific power — many commentators have not unreasonably questioned the policy decision implicit in *Kodak* to treat the short-run abuse of relationship-specific power as on a par with the more durable economic power held by a monopolist or dominant firm.

This point can cut both ways in the standard-setting context. To the extent that standard setting fosters not just relationship-specific power but also “traditional” market power, there is perhaps less warrant than in the typical franchising or aftermarket case to defer to *ex ante* competition, since there may be no market mechanism (such as the supplier’s need to maintain its reputation for fair dealing in order to continue to entice previously uncommitted customers into new relationships) to discipline opportunism and since opportunism may take the form of exercising traditional market power.. On the other hand, when there appears to be no threat of traditional market power — as when, for example, a standard fails in the marketplace — even the incidence of opportunism may be insufficient to justify the invocation of antitrust remedies.⁴⁵

Third, it is always instructive to bear in mind that an antitrust violation requires proof of conduct that satisfies the traditional tests for anticompetitive or predatory behavior. Acts by an alleged monopolist that are directed solely at customers (not at competitors) are unlikely to form the basis for a Section 2 claim no matter how opportunistic or reprehensible (though they may well be — indeed, likely are often — remediable by tort or contract law).

This argues for clarity in antitrust theorizing and pleading. Is it an antitrust violation for an IP holder merely to charge an unfairly high royalty? Some have questioned the rationale for liability in such cases even on an *ex post*

⁴⁵ Unsuccessful businesses can evidence “last period” problems, where the supplier finds it profitable to engage in short-term opportunism because its short-term gains from holding up its locked-in customers may be greater than the long-term losses from such a policy. See, e.g., Benjamin Klein, *Market Power in Antitrust: Economic Analysis After Kodak*, 3 SUP. CT. ECON. REV. 43, 56-57 & n. 28 (1993). If the technology market is subject to network effects, however, the holder of IP in the failed standard may find that its licensees’ switching costs may dwindle to nothing.

hold-up theory.⁴⁶ Moreover, the courts have generally rejected the notion that it is an antitrust offense for a monopolist to charge a monopoly price without more.⁴⁷ If a theory is to serve for an antitrust prosecution, it should identify a cognizable threat to competition.

⁴⁶ Benjamin Klein, *Market Power in Franchise Cases in the Wake of Kodak: Applying Post-Contract Hold-Up Analysis to Vertical Relationships*, 67 ANTITRUST L. J. 283, 324-26 (1999).

⁴⁷ *See, e.g.*, *Alaska Air v. United Airlines*, 948 F.2d 536 (9th Cir. 1991); *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980).