INNOVATION FOR THE 21ST CENTURY

HARNESSING THE POWER OF

INTELLECTUAL PROPERTY AND

ANTITRUST LAW

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A standard is a common platform that allows products to work together. Standards are ubiquitous in our economy. They allow us to speak to and understand one another. They let consumers access credit card and ATM machines. They offer phone, fax, and modem networks. They permit computer users to share videos and programs. They appear in countless other settings.\(^1\)

In contrast, the absence of standards, from biblical times to the present, has had damaging effects. The multiplicity of languages at the Tower of Babel led to misunderstanding and conflict.\(^2\) Before the standardization of time zones in the late 19th century, cities and towns used different forms of time, relying on clocks placed in town squares or jeweler’s windows.\(^3\) During the Great Baltimore Fire of 1904, which burned longer than 30 hours and destroyed more than 1,500 buildings, the city’s hydrants did not fit the hoses of firefighters from nearby cities.\(^4\) In the late 20th century, purchasers of Sony’s Betamax VCRs

\(^{1}\) See generally Carl Shapiro, Setting Compatibility Standards: Cooperation or Collusion?, in Expanding the Boundaries of Intellectual Property: Innovation Policy for the Knowledge Society 81, 83–84 (Rochelle Cooper Dreyfuss et al. eds., 2001).

\(^{2}\) Id. at 81.


were stranded as the market tipped to JVC’s VHS format. And for nearly two years, consumers delayed buying high-definition DVD players and recorders until Toshiba abandoned its HD-DVD format, ceding the market to Sony’s Blu-Ray technology.¹

Standards, in short, are crucial to our economy. As is apparent from the examples, they are especially needed in network effects markets, in which users benefit from an increase in the number of other users in the system. A telephone or e-mail system, for example, becomes more valuable as more users connect to it. Networks also feature positive feedback. The more popular a computer operating system becomes, the more applications will be written for it.

Even though standards are vital, antitrust traditionally viewed the process of setting standards with suspicion. Standard-setting organizations (SSOs) tend to be composed of industry rivals discussing sensitive information such as price. As Adam Smith worried: “People of the same trade seldom meet together even for merriment or diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.”⁶

Despite antitrust’s concern, competitors have good reason to engage in such discussions. Before the selection of a standard, an SSO often can choose from an array of alternative technologies.⁷ In contrast, after a standard is chosen and the industry has invested in a particular technology, flexibility is severely restricted. If the selected technology is patented, the owner could impose excessive licensing terms that reflect not just the value of the patent but also the significant costs of switching to a new technology. The patentee, in other words, could hold up the standard’s implementation.

This threat of holdup explains why SSOs have required members to provide certain information before the standard’s selection.⁸ Some SSOs have mandated that participants disclose patents that could be implicated by the standard. Many have required members to agree to license their IP on reasonable and nondiscriminatory (RAND) terms. One SSO has compelled participants to specify the maximum royalties it would impose. Although the enforcement agencies have recently softened their position, antitrust law traditionally has been suspicious of such price-related activities. And this suspicion deters SSO members from sharing information that could prevent holdup.⁹

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⁷ In certain settings, there may be only one superior technical option.

⁸ The threat also has encouraged the formation of patent pools, which I discuss in Chapter 5.

⁹ For example, firms in the computer hardware and software industries have explained that their standards-related discussions of licensing terms have been inhibited...
In this chapter, I first describe the various types of standard-setting. I then offer a brief history of antitrust treatment of SSOs. Next, I set forth the anticompetitive concerns of standard-setting, including the harm posed by buyer power known as monopsony. I conclude that these concerns are almost always outweighed by the significant procompetitive benefits that SSOs and their IP rules offer. I conclude that courts and the agencies should apply Rule-of-Reason analysis to SSOs and uphold standard-setting activity in the vast majority of cases.

**STANDARD-SETTING**

**Types**

There are several types of standards and processes for setting them. Governments often enact performance standards, which address product quality, health, and safety.\(^{10}\) Safety standards, for example, define features that products must possess to be sold on the market or to obtain approval from a standard-setting body.\(^{11}\) Governments also have enacted other standards that they require market participants to adopt, such as standards for high-definition television (HDTV) and for interconnection between telephone networks.\(^{12}\) Government-set standards have become less important in recent years and have suffered weaknesses such as failures to abandon inefficient standards and susceptibility to undue influence by entities with an interest in the outcome.\(^{13}\)

A second type involves de facto standard-setting, which occurs when one firm dominates the market.\(^{14}\) In such a case (exemplified by the QWERTY keyboard layout and Microsoft Windows operating system), the firm’s position as market leader allows it to select the standard and (where the standard is protected by IP) force rivals to obtain licenses.\(^{15}\) Because of the benefits of adopting the same

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product as others, de facto standards are particularly likely in networks effects markets.\(^\text{16}\)

This chapter focuses on the third type, standards voluntarily set by private industry groups known as SSOs. Hundreds of SSOs operate throughout the world in varying degrees of formality, size, and scope.\(^\text{17}\) Formal SSOs include Underwriter’s Laboratory, the Institute of Electric and Electronic Engineers, and the National Institute of Standards and Technology. In the United States, SSOs often fall under the umbrella of the American National Standards Institute, which requires due process principles and open participation.\(^\text{18}\) Firms also have created informal consortia, such as the World Wide Web consortium, to exercise greater control and obtain faster implementation. While SSOs are voluntary in nature, they are sometimes incorporated into state laws or municipal ordinances that require compliance.\(^\text{19}\)

Many companies participate in a range of SSOs. One of the central aspects of SSOs is their openness, with the standard available to all members and, often, outsiders as well. Standards are used throughout various industries and facilitate the interaction of users and providers.\(^\text{20}\) They have typically been set by engineers, though lawyers have played a larger role in recent years. Because standards bodies do not have enforcement authority, disputes (including numerous antitrust claims) have been adjudicated by courts.\(^\text{21}\)

An important category of standards set by SSOs, and the focus of this chapter, consists of interface (or interoperability) standards. These standards, vital to the economy, allow products made by different firms to work together.\(^\text{22}\) The plethora of communications technologies today—such as laptop computers, personal digital assistants, cell phones, pagers, and other devices—would not be possible without interface standards.\(^\text{23}\) In addition, nearly every aspect of using a computer or navigating the Internet is based on interface standards.\(^\text{24}\) To illustrate, the application programming interfaces defining compatibility with

16. Lemley, SSOs, at 1899.
18. Shapiro, at 84.
20. Id.
21. Shapiro, at 85.
22. Lemley, SSOs, at 1892–93.
the Windows operating system offer a standard that ensures that applications need not become their own “mini-operating systems.”

Another benefit of interface standards is their ability to create new markets by avoiding standards wars, which occur when substitute products with incompatible designs are introduced in the marketplace. In the period before one format emerges victorious, some consumers delay their purchases because they do not wish to be stuck with the losing format. Just to pick one example, 60 percent of consumers indicated they would not purchase HD DVD or Blu-ray technology “until there was just one format.” Standards wars are particularly likely in network effects markets, in which there are significant benefits to customers having compatible products.

**IP Rules**

Standard setting organizations have adopted an array of IP-related rules designed to limit a patentee’s imposition of licensing terms that could hold up the standard’s implementation. Disclosure rules inform SSO members of IP held by participants. The rules most typically cover patents and sometimes apply to patent applications and other IP rights. Disclosure rules allow members to make informed decisions but could increase costs for IP owners, even causing them to leave the organization. Supplementing disclosure rules, some SSOs have adopted search rules that require members to search for relevant IP rights.

Standard setting organizations also typically implement licensing rules that specify the terms under which the IP would be licensed. The most popular such rule requires members to license their patents on a “reasonable and nondiscriminatory” (RAND) basis. The benefit of such a commitment, however, is reduced by its vagueness. “Reasonable” royalties do not specify an exact amount, leaving the parties to argue over the term’s meaning. In particular, patentees whose patents have been incorporated into the standard tend to have higher conceptions.
of what constitutes a reasonable royalty than licensees. Because of this uncertainty, some SSOs have required members to specify their most restrictive licensing terms, such as the maximum royalty they would charge.

A few SSOs, such as those developing standards for the Internet, require members to commit to royalty-free licensing. Such licensing dispenses with the difficulties of determining reasonable royalties and considers the views of open-source developers that might not otherwise use the standards. But the natural concern with such licensing is a potential reduction in innovation incentives.

**PATENT HOLDUP**

One of the dangers facing standard setting is the likelihood of patent holdup. Before a standard’s adoption, an SSO often can choose from an array of alternative technologies. At that time, a patentee has no more leverage than any other potential supplier and is unable to command more than a competitive price.

After the SSO chooses a standard, however, the owner of the selected technology may gain significant power. If the technology is patented, the owner could impose royalties so high that members are effectively prevented from using the standard. In many cases, the royalties are passed on to consumers, who are forced to pay higher prices.

Nor can SSO members, faced with demands for excessively high royalties, migrate easily to a different technology. After a standard is selected, industry

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35. See VITA Letter. One response to the vagueness of RAND licensing is to enter into patent pools.

36. *ANTITRUST ENFORCEMENT AND IP RIGHTS*, ch. 2, at 47.


The Supreme Court’s decision in *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006), which is the focus of Chapter 10, would appear to reduce the likelihood of holdup, though the magnitude of the change is uncertain.

participants begin designing, testing, and producing goods that conform to the standard. That, as former FTC Chairman Deborah Platt Majoras explained, is “the whole idea of engaging in standard setting.” But these efforts, in learning about a particular technology and investing in equipment and complementary products, typically do not have value if the user switches to an alternative technology. In addition, the industry typically will incur the costs of selecting a new standard. As a result of all these costs, the industry will be locked into the chosen standard.

Holdup is not just a theoretical concern. Of many examples that could be offered, I will describe three. The first is provided by the Union Oil Company of California (Unocal). In the 1990s, the California Air Resources Board sought to reduce pollution by adopting a standard for reformulated gasoline. After refiners invested $4 billion to comply with the standard, Unocal revealed a “clean fuels” patent covering the standard and demanded royalties. Given their significant investments, the leading California refiners did not have a choice but to invest an additional $1.5 billion to comply with the standard. Unocal’s enforcement of its patents would have cost consumers roughly 5 cents per gallon, or more than $500 million annually.

In the second example, computer memory developer Rambus refused to disclose patents and applications and engaged in other deceptive conduct in a semiconductor engineering SSO. As a result, manufacturers faced significant holdup. Abandoning the technology might have been easy early in the standard’s development but, less than a decade later, became “near[ly] impossible.” As the FTC’s expert in the case explained, lock-in “grows over time,” as manufacturers make sunk investments in complementary goods before “deploy[ing] the standardized product in volume.”

Lock-in arises from the accumulation of investments at each stage. For example, in the computer memory setting, it involves (1) designing chips and products conforming to the standard; (2) testing and verifying the designs; (3) building, testing, and qualifying prototypes; and (4) ramping up production on a commercial scale. As a result of these investments, manufacturers

40. The FTC Act adopts the term “Chairman,” and this title has been used in connection with all such officials. 15 U.S.C. § 41.
41. Majoras, at 3.
42. Daniel G. Swanson & William J. Baumol, Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power, 73 ANTITRUST L.J. 1, 9 (2005); Farrell et al., at 612 n.35.
43. Farrell et al., at 619.
44. Mueller, at 625.
45. Farrell et al., at 620–21.
could spend hundreds of millions of dollars if forced to switch to a different technology. In the Rambus case, Cisco stated that the cost of redesigning and requalifying its products could have exceeded $1 billion.\footnote{Id. at 100, 108.}

A third instance is provided by the World Wide Web Consortium, which develops technology standards for the Web, allowing users to link to and distribute documents across the world.\footnote{Daniel Weitzner, \textit{Supplemental Comments} (Nov. 6, 2002), http://www.w3.org/2002/11/15-doj-ftc-ipr-weitzner-suppl.html.} Holdup led this group to suffer significant delay, inefficient resource allocation, and excessive patentee control over design.\footnote{Id. at 1.} The head of the SSO’s technology activities pointed to five design efforts, making up 10 percent of its activity, that suffered from patent holdup.\footnote{Id. The five include Platform for Privacy Preferences (P3P), XML Linking (Xlink), Scalable Vector Graphics (SVG), Synchronized Multimedia Integration Language (SMIL), and Voice Extensible Markup Language (VoiceXML).}

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Holdup and other concerning activities have surfaced in the SSO antitrust cases that the agencies have brought and the courts have considered. Many of the most important cases fall into two categories. The first involves SSO members manipulating the standard-setting process. In the second, participants engaged in deceptive conduct such as refusing to disclose patents. In addition to these categories, three recent actions are worthy of attention. One illustrated the danger of SSOs reducing the price paid to patentees. Another sanctioned an SSO rule requiring members to declare their most restrictive licensing terms before standard selection. And a third challenged an alleged refusal to comply with RAND obligations.

**MANIPULATION**

The first set of cases involves the manipulation of the standard-setting process. The case of \textit{Allied Tube \& Conduit Corp. v. Indian Head, Inc.} involved a fire protection association’s code that specified the types of allowable electrical conduit (hollow tubing that carries electrical wires through a building’s walls and floors) and was adopted by many state and local governments. Manufacturers of steel
conduit packed an SSO meeting to defeat a rival’s attempt to certify plastic conduit. The manufacturers recruited more than 200 persons to attend the meeting to vote against the proposal, telling them how to vote and communicating with them through walkie-talkies and hand signals. The steel manufacturers were successful in rejecting the proposal that would have allowed plastic conduit by four votes. The Supreme Court concluded that this activity violated the antitrust laws.\footnote{486 U.S. 492, 496–97 (1988).}

At the heart of the second case, American Society of Mechanical Engineers \textit{v. Hydrolevel Corp.}, was an SSO’s Boiler and Pressure Vessel Code, adopted by 46 states. The code governed “low-water fuel cutoffs,” which blocked the flow of fuel to water boilers when the water level fell so low that it could no longer moderate the boiler’s temperature. The firm dominating the market for low-water fuel cutoffs benefited as its vice president, in his capacity as vice chairman of the relevant SSO subcommittee, interpreted the code so that its rival’s product was deemed unsafe, thus discouraging customers from buying it. The Court sought to “ensure that standard-setting organizations will act with care when they permit their agents to speak for them” and concluded that the conduct presented an antitrust offense.\footnote{456 U.S. 556, 559–63, 577–78 (1982).}

\section*{Deception}

The second set of cases involves a participant’s deceptive conduct. In \textit{In re Dell}, the FTC examined the standard for VL-bus, which transferred instructions between a computer’s central processing unit and its peripherals (such as hard disk drives and modems). The Video Electronics Standards Association required members to disclose IP they possessed that conflicted with the proposed standard. A Dell representative certified that the proposal did not infringe any of its trademarks, copyrights, or patents. Based on these assurances, the SSO adopted the standard. In the succeeding eight months, the standard was widely adopted, being included in more than 1.4 million computers. At that point, Dell informed SSO members that their implementation of the standard violated its “exclusive rights.” The FTC entered into a consent agreement that prevented Dell from enforcing the patent against those implementing the standard.\footnote{In re Dell, 121 F.T.C. 616, 617, 623–24 (1996).}

The FTC also challenged the misrepresentation of Unocal before the California Air Resources Board, which developed standards for low-emissions, reformulated gasoline. Unocal participated in the rulemaking proceedings, asserting that its research data (on which the agency relied) was “nonproprietary” and failing to disclose its relevant patents and applications. California refiners spent billions...
of dollars modifying their refineries to comply with the new standards. Unocal then claimed that the standards infringed its patents and sought to collect royalties that would have cost consumers more than $500 million annually. The parties ultimately settled, with Unocal agreeing not to enforce patents related to the standards.\footnote{56. In re Union Oil Co. of California, No. 9305, ¶¶ 9, 10, 26, 31, 61, 63 (F.T.C. Nov. 25, 2003), http://www.ftc.gov/os/2003/11/031126unionoil.pdf, rev’d, No. 9305 (F.T.C. July 7, 2004); FTC Statement, In re Union Oil Co. of California, Docket No. 9305 (June 10, 2005), www.ftc.gov/os/adjpro/d9305/050802statement.pdf.}

A final FTC challenge occurred in \textit{In re Rambus}. Rambus developed computer memory technologies known as DRAM (dynamic random access memory), which processes information and is used in computers, printers, and cameras. Rambus participated in the Joint Electron Device Engineering Council (JEDEC), a semiconductor engineering SSO made up of DRAM manufacturers and purchasers as well as producers of complementary products. The SSO’s disclosure policy was not clear, leading the Federal Circuit to find that it suffered from “a staggering lack of defining details.”\footnote{57. Rambus, Inc. v. Infineon Technologies AG, 318 F.3d 1081, 1102 (Fed. Cir. 2003).}

The FTC nonetheless found that Rambus “engaged in representations, omissions, and practices likely to mislead JEDEC members,” which “significantly contributed to its acquisition of monopoly power.”\footnote{58. In re Rambus, No. 9302, 2006 WL 2330117, at 5–6, 8, 50, 67, 104, 118 (Aug. 2, 2006).}

\textit{In re Rambus} was reversed in 2008, the D.C. Circuit, focusing on causation, reversed this conclusion. It found that JEDEC might have adopted Rambus’s technology even absent any deception. As a result, any “loss of an opportunity to seek favorable licensing terms” did not, without more, constitute “antitrust harm.”\footnote{59. Rambus Inc. v. F.T.C., 522 F.3d 456, 466–67 (D.C. Cir. 2008). For a different analysis, see Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 314 (3d Cir. 2007) (denying a motion to dismiss since a false promise of RAND licensing could “harm[] the competitive process by obscuring the costs of including proprietary technology in a standard and increasing the likelihood that patent rights will confer monopoly power on the patent holder”).}

\textbf{POTENTIAL HARMs OF PRICE REDUCTION}

A different type of concern is presented by a potential SSO conspiracy to depress the price paid to suppliers. The case of \textit{Sony Electronics, Inc. v. Soundview Technologies, Inc.} involved standards for the “V-chip” technology in television sets that allows parents to block violent or sexually explicit programming.\footnote{60. 157 F. Supp. 2d 180 (D. Conn. 2001).}
The plaintiff, Soundview, alleged that members of an industry association agreed to reduce the price for licenses for a Soundview patent needed for the standard. An SSO subcommittee found that Soundview possessed the patent most likely to be infringed in the standard’s operation. Although Soundview informed the SSO that it would license its patent “on a nonexclusive, nondiscriminatory basis,” the organization allegedly did not respond to this offer.  

The SSO then apparently agreed on a uniform price for a license for Soundview’s technology of 5 cents per television set. The court found that this adequately alleged monopsony harm, by which a powerful buyer reduces the price of goods it purchases. Although SSO members did not purchase fewer television sets as a result of the alleged conspiracy to reduce price, the price reductions could have harmed innovation. The court initially relied on the presence of these “complex questions” in refusing to dismiss Soundview’s case. Although the court later granted summary judgment against Soundview (because SSO members’ technology did not infringe its patent), the case nonetheless provides the most direct illustration of potentially anticompetitive monopsony harms.

ANNOUNCEMENT OF MAXIMUM ROYALTIES

A related development involved the announcement by SSO members, before a standard’s adoption, of their most restrictive licensing terms. The SSO VMEbus International Trade Association (VITA) developed computer architecture standards enabling engineers to design systems used in ultrasound machines, semiconductor manufacturing equipment, and weapons systems radar. VITA’s experiment with RAND licensing was unsuccessful, with members demanding excessively high royalties that delayed or blocked standards. As a result, VITA revised its patent policy and sought approval in the form of a business review letter, by which a party asks the Department of Justice’s Antitrust Division to review proposed conduct and state its enforcement intentions.

One element of the VITA policy required members to make a “good faith and reasonable inquiry” into its patents and disclose any patents or applications that they believed could become essential to the specification being developed. Members also were required to specify the maximum royalty rate (in dollars or

61. Id. at 181–82.
62. Id. at 183–86, 190.
64. VITA Letter, at 1–4.
65. 28 C.F.R. § 50.6. The letter addressed VITA and its standards development subcommittee, VSO.
percentage of sales price) and the most restrictive nonprice licensing terms they would request.\textsuperscript{66}

Thomas Barnett, the head of the Antitrust Division, began his analysis by explaining that the Division analyzes most standard-setting activities under the Rule of Reason.\textsuperscript{67} He also pointed to the difficulties of holdup, explaining that SSO members “can choose among multiple substitute technological solutions” early in the process. In contrast, after a standard is developed, “it can be extremely expensive or even impossible” to substitute technologies, often requiring “the entire standard-setting process . . . to be repeated.” Barnett applauded VITA’s new policy, concluding that it would allow the group to evaluate technologies not only on technical merit but also on licensing terms. In addition, he did not worry about licensees forcing a price reduction since the policy prohibited the joint negotiation or discussion of licensing terms. Barnett concluded that the Division “has no present intention to take antitrust enforcement action” against VITA’s new policies.\textsuperscript{68}

After addressing one more recent guidepost in standard-setting analysis, I will set forth how such activity should be analyzed. Standard setting organizations potentially offer anticompetitive effects such as allowing firms to boycott rivals and reducing the price paid to suppliers. On the other hand, they provide significant procompetitive justifications in increasing consumer choice and preventing holdup.

\textbf{RAND REFUSAL}

The final development constitutes the most aggressive government prosecution of SSO activity to date. In January 2008, the FTC announced a complaint against and settlement with Negotiated Data Solutions (N-Data). Negotiated Data Solutions licensed patents used in equipment employing Ethernet, a networking standard “used by almost every American consumer who owns a computer.” This technology enables devices in a local area network to “automatically configure themselves to optimize their communication.” The company’s predecessor had committed to license its technology for a one-time royalty of $1,000 per licensee. But N-Data later demanded royalties “far in excess of that commitment.”\textsuperscript{69}

\textsuperscript{66} VITA Letter, at 5–6.

\textsuperscript{67} The analysis would differ if the standard-setting process was “used as a sham to cloak naked price-fixing or bid rigging.” \textit{Id}. at 8.

\textsuperscript{68} \textit{Id}. at 8–10.

By a vote of 3-2, the FTC challenged N-Data’s action. It did not allege a violation of the Sherman Act but instead claimed an unfair method of competition and unfair act or practice under Section 5 of the Federal Trade Commission Act. The majority asserted that N-Data’s behavior harmed consumers and businesses and explained that its exercise of its “unique” authority was needed to “preserve[a] a free and dynamic marketplace.”

Deborah Platt Majoras, the former Chairman of the FTC, dissented, worrying that the majority did not “identify[y] a meaningful limiting principle” for determining an unfair method of competition. She also found no allegation of improper or exclusionary conduct and questioned whether N-Data had market power. Then-Commissioner (and later Chairman) William Kovacic also dissented, stating that the FTC’s challenge would have an unacknowledged effect on state enforcement and that the majority’s failure to distinguish between its two theories of liability—unfair methods of competition and unfair acts or practices—masked weaknesses in its challenge.

ANTICOMPETITIVE CONCERNS

Though SSOs do not usually result in significant anticompetitive effects, there is a range of activity that could potentially cause antitrust concern. First, SSOs could restrict product diversity and consumer choice by creating an unnecessary standard and excluding certain products. As a leading treatise explains: “It is not clear . . . why the world would need consistent rules for steak knives, or coffee mugs, or couches.” Second, SSOs could increase prices. Such a result could flow from, for example, product safety restrictions or licensing board certifications.

For our purposes, these two concerns are not central. In particular, the prevalence of interface standards that promote interoperability, and are the focus of this chapter, will almost always outweigh these concerns. The absence of interoperability standards will often lead to fewer products in the marketplace, diminishing any concerns of reduced diversity. In addition, unnecessary standardization does not appear to be a significant problem, and SSOs are far more likely to reduce price and make products available than increase price.


70. Id.


73. HOVENKAMP, JANIS & LEMLEY, at 35–9.

74. Id. at 35-8 to 35-9.
A third concern is that SSOs could increase collusion in the downstream market for goods sold to consumers. By bringing together rivals and aggregating information, the organizations provide a ready-made setting for collusion. Standardized products also facilitate collusion by making it easier to monitor rivals’ activity. To be clear, just because SSOs agree on standards does not mean they will agree to set prices for the products they sell. But the antitrust agencies should be sensitive to this important concern and challenge any such behavior. As former Chairman Majoras correctly observed: “summary condemnation is almost certainly warranted” when “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.”

A fourth concern, arising in SSOs in which membership is restricted to a subset of an industry, involves a concerted refusal to deal with competitors, or boycott. Many of these closed SSOs have legitimate reasons for their exclusion such as preserving neutrality, reducing concerns of capture, limiting free-riding, or failing to meet reasonable requirements. But in certain cases, organizations could be forced to admit outsiders. Such a remedy should be limited to cases in which SSOs (1) exclude rivals, (2) offer members a significant market advantage that they could not otherwise obtain, and (3) lack legitimate business reasons for their exclusion.

The final concern deserves more thorough discussion. Industry members could exercise monopsony power that would depress the price of patented inputs.

### Monopsony

The most frequent concern raised about SSOs is their potential to cause monopsony harms. Monopsony is the lesser-known mirror image to monopoly. Monopoly occurs when a seller has the power to restrict sales and thereby increase the price paid by consumers. Monopsony takes place when a powerful buyer, by limiting its purchases, reduces the price it pays to suppliers.

This concern could apply to SSOs since licensing rules and royalty discussions could allow SSO members (the buyers) to force patent owners (the suppliers) to

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75. Id. at 35–8.
76. Majoras, at 10. Relatedly, if the organization is only a sham for cartel-type activities, per se condemnation would be appropriate.
77. Hovenkamp, Janis & Lemley, at 35–21 to 35–22.
78. Id. at 35–23.
reduce the royalties they can charge. Technically, the activity in SSOs would resemble an oligopoly because it involves multiple buyers. But I will employ the monopsony term because of its prevalence.

In settings in which SSO members have the power to reduce license prices below competitive levels, monopsony threatens two harms. First, it could have adverse effects on allocative efficiency, reducing the quantity and price of the input below competitive levels. Second, it could have effects on dynamic efficiency, reducing innovation. Before showing why these effects are not likely, I explore four characteristics of SSOs that dramatically reduce the monopsony concern.

The first stems from the composition of the bodies. Standard setting organizations consist of not only licensees but also licensors. Some parties, in fact, may play both roles depending on the setting. The presence of licensors in the negotiation process diminishes the likelihood that SSOs would excessively reduce price.

Second, the timing of interactions between licensees and suppliers reduces the possibility of monopsony. Before selection, SSO members do not know the standard that will be selected or the identity of the owner. As a result, the organization deals not with a specified party but with an array of potential suppliers.

Third, the nature of SSO interactions minimizes monopsony concerns. The typical setting involves suppliers announcing their adherence to RAND terms or specification of maximum royalties. But such individual declarations do not resemble joint monopsony action depressing royalties. Antitrust concern also is lessened since unilateral announcements of licensing terms do not satisfy the concerted-action requirement of Section 1 of the Sherman Act.

Fourth, the power of patentee suppliers distinguishes SSOs from other potential monopsony settings. A party owning a patent essential to a standard’s implementation has far more bargaining power than the typical seller confronting a monopsony. It could abstain from joining the SSO, refuse to license its patent, and hold up the standard. Any maximum royalties set by the SSO thus would not affect nonmember patentees. The voluntary nature of SSOs and importance of every essential patent reading onto a standard thus reduce the monopsony concern.

80. Id. at 6; see also J. Gregory Sidak, Patent Holdup and Oligopsonistic Collusion in Standard-Setting Organizations, at 17–18, http://ssrn.com/abstract=1081997 (distinguishing between monopsony, in which “a single firm purchases the entire market supply of the good,” and oligopsony, in which “each of several firms purchases a substantial share of the market supply for an input”).

81. For an argument that there is a greater risk of oligopsony than I discuss, see Sidak.


Relatedly, if SSO members reduce prices too much, patentees will be discouraged from joining the organization, making it less likely that it would know about potentially relevant patents.84

Aside from these four general characteristics, the primary harm linked to monopsony—reduced purchases—is absent in this setting. A brief detour into rudimentary economics shows that in monopsony cases, buyers’ reduced purchases artificially depress price. The reason flows from the upward-sloped supply curve. A supply curve depicts the quantity of goods that a seller provides at a specified price. In the case of monopsony, the supply curve slopes upward because goods are scarce. In other words, buyers purchase the lowest-cost items first and higher-cost goods later.85 Because buyers would pay more for additional units, the price rises as the purchases increase. For example, in the labor market, employers pay higher wages to employ additional workers because of constraints such as geography and talent.86

For our purposes, the relevant concern would be that SSO members are able to depress the price paid to patentees below the competitive level by cutting back on licensing. But a quick look at the supply curve reveals that monopsony does not explain such behavior. The supply curve for patented goods is flat. Nearly all the costs attributed to supplying patented items flow from the initial costs of creation, with a zero marginal cost of producing additional items.87 As a result, buyers’ reductions in purchased items would not lower the price received by the sellers. Because the supply curve is flat, any reduction in purchases does not affect price.

Casting for analogies, the scenario is less like a monopsony and more like an all-or-nothing scenario. In such a setting, buyers do not reduce their purchases but aggregate them and award them to a single seller, inviting the sellers to bid against each other.88 The all-or-nothing label is explained by the consequences of the transaction: the winning bidder gets to supply all the buyers’ purchases, while the others get nothing. In contrast to monopsony’s reduction in social welfare, the all-or-nothing deal, by lowering the prices charged by sellers with market power, can improve welfare.89

84. Majoras, at 9.
89. Id, at 403–06 (explaining that buyers can force sellers’ prices down to marginal cost and that consumers could thereby benefit).
In the SSO setting, even if buyers reduce a supplier’s price, they tend not to reduce the number of items purchased. In fact, disclosure and negotiations before a standard’s selection are designed to increase its implementation, which would expand the number of licenses. This is directly contrary to monopsony’s goal.

The primary concern of monopsony—the welfare loss of fewer inputs purchased—thus does not apply to IP. At the time of the activity, there is no static allocative loss of resources not being employed in their highest-value use.

Nonetheless, there may be a dynamic, long-term concern. Dynamic efficiency contemplates the employment of resources in their highest-valued use over time. It is tightly linked to innovation. The concern with monopsony is that a reduction in price paid to patentees could lower innovation incentives. Future inventors might be dissuaded if they knew the royalties they could obtain would be reduced. Is such a result likely?

In the vast majority of cases, it is not. Innovators substantially benefit from having their patents reflected in standards widely adopted in an industry. Any effects of depressed licensing rates thus tend to be significantly outweighed by more numerous licenses. By reducing the number of standards, holdup threatens “a more immediate adverse impact on innovators’ efforts.”

Because of innovation’s importance and the possibility that it could be affected by SSO members’ purchasing power, patentees should be allowed the opportunity to offer evidence of reduced innovation incentives. If they can introduce specific evidence that SSO members have buying power and that their joint depression of prices has reduced innovation incentives, such anticompetitive effects could be considered. But in nearly all cases, such a showing is not likely.

**Procompetitive Justifications**

**SSOs**

Despite their potential anticompetitive effects, SSOs more typically offer (as discussed throughout the chapter) an array of powerful procompetitive justifications.

First, they can improve product quality by collecting information related to safety
and performance records. Second, interoperability standards enable firms to use a common platform and can reduce price and enhance competition in the marketplace. Third, the standards contribute to a greater realization of network effects and prevent buyers from being stranded in a product that loses the standards war. Fourth, they prevent holdup and create markets that might not otherwise exist.

Further strengthening the procompetitive benefits, the industries in which SSOs have developed are those with the greatest potential for bottlenecks, patent thickets, and thwarted innovation. A study conducted by Professor Mark Lemley demonstrated that SSOs have concentrated “in precisely those industries where the unconstrained enforcement of patents could be most damaging to innovation,” namely, software, Internet, telecommunications, and semiconductors. The danger of holdup is more pronounced in these industries since a single product may require licenses for hundreds or thousands of patents.

Just as ominous, the industries are marked by cumulative innovation, with one generation’s patented invention built on those of previous generations. The clearing of patent thickets and fostering of cumulative innovation and new markets through SSOs offers perhaps the most powerful benefits for competition and innovation. Significant to begin with, the procompetitive benefits of SSOs are magnified in removing the potentially explosive landmines of the patent system.

**IP Rules**

Not only are the SSOs themselves procompetitive, but their IP Rules are as well. The rules are designed to address the issue of holdup. As stated before, an SSO often can choose among an array of alternative technologies before a standard’s selection. But after the standard has been chosen and the organization has invested in technologies to implement it, it has less flexibility to switch. At that point, participants can charge higher-than-expected royalties knowing that the members are not easily able to abandon the technology. As the example of the VITA SSO revealed, even promises to license patents on a reasonable and nondiscriminatory basis will not prevent holdup when the details are left vague and are the subject of dispute after the standard has been adopted. The cases involving failure to disclose even more strongly demonstrate the dangers of holdup. For this reason, search, disclosure, and licensing rules are procompetitive.

*Search rules* merely require SSO members to search for IP that might read on a standard. Most SSOs do not impose this obligation because of the burden it
would impose. But even when they do, such an obligation would not lead to anticompetitive effects. Even if a broad obligation to search dissuades potential patentees from entering the organization, this does not constitute anticompetitive effect.

Disclosure rules inform SSO members deciding on a standard of the IP that would be implicated by the selection of certain standards. Disclosure rules generally differ from information-sharing arrangements that antitrust courts have condemned since the information divulged prevents the strategic hiding and ex post exploitation of IP. The American National Standards Institute recommends that all accredited standards bodies require early disclosure, which provides notice, gives an opportunity to evaluate the technology, and offers time to negotiate license terms.

Licensing rules are even more essential in avoiding the holdup problem. They offer a procompetitive justification by circumventing a potential bottleneck and contributing to the creation of a product that might not otherwise exist. RAND licensing aims to address holdup by requiring patentees to agree, before the standard’s selection, to reasonable licensing.

Because the requirement is vague, some SSOs have required participants to provide more specific terms, such as the maximum royalties they would charge. A simple announcement of terms under which patents would be licensed does not constitute an antitrust violation since there is no agreement between rivals. And even discussion of the terms in the SSO should be evaluated under the Rule of Reason. As Professor Mark Lemley explains, “[T]he parties are going to have to have these conversations individually or collectively anyway” and it is preferable to have them before the standard’s adoption.

In its Technology Transfer Guidelines, the European Commission recognized the benefits of SSO members negotiating licensing terms, stating that parties are “free to negotiate and fix royalties for the technology package and each technology’s share of the royalties either before or after the standard is set.” It explained that such agreement “is inherent in the establishment of the standard . . . and cannot in itself be considered restrictive of competition.” And it highlighted the efficiencies from agreeing to royalties before the standard’s selection.

100. A thorough search is costly and time-consuming, particularly because of the evolving nature of standards under development and subjectivity involved in determining whether a patent reads on a standard. Anne Layne-Farrar, Antitrust and Intellectual Property Rights: Assessing the Link Between Standards and Market Power, 21 ANTITRUST 42, 45 (2007).


adoption to “avoid the choice of the standard conferring a significant degree of market power.”

In U.S. law, the IP rules of SSOs bear some resemblance to other types of activity that have received substantial antitrust deference. In one case, the Supreme Court upheld blanket licenses that allowed licensees to perform any of the millions of copyrighted musical works in the package, thereby reducing transaction costs and creating “a different product.” In a second category, the antitrust agencies have upheld nearly all cross-license agreements and patent pools they have examined because they resolve bottlenecks among owners of blocking patents that could have otherwise prevented the use of products.

PROPOSAL

Given SSOs’ significant procompetitive justifications, courts and the antitrust agencies should consider their activity under the Rule of Reason. The sole exception would be SSO members’ joint decision to fix prices for the goods they sell to consumers. Such activity is not needed for standards development and has severe anticompetitive effects. As a result, it should be per se illegal.

Three other actions should be closely monitored. The first involves the type of deception that occurred in the Dell and Unocal cases. This activity could demonstrate attempted monopolization under Section 2 of the Sherman Act. Such a claim requires a plaintiff to demonstrate “(1) that the defendant has engaged in predatory or anticompetitive conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power.” For our purposes, a plaintiff making this claim thus must prove factors such as causation (with the deception resulting in a standard’s adoption or higher royalties), control of the market, and intentional conduct.

107. Hovenkamp, Janis & Lemley, at 35–44 to 35–51. The case of manipulation similarly should require plaintiffs to demonstrate a subversion of the process that results in competitive harm. Id. at 35–36.
The second activity involves a boycott. A closed SSO of industry competitors should be opened when it excludes rivals, offers members a significant market advantage they could not otherwise obtain, and lacks a legitimate business reason for exclusion.\textsuperscript{108}

The third action occurs when patentees demonstrate that SSO members have buying power and that their joint depression of prices has reduced innovation incentives. In that case, such an anticompetitive effect should be balanced against the SSO’s procompetitive justifications. Such balancing between reduced innovation incentives and the prevention of holdup will admittedly be challenging. And it will not occur in many cases. But given the importance of the values on each side of the scale, courts must consider both. Given the demonstrated procompetitive effects and multiple hurdles to monopsony power, the justifications should prevail in nearly all cases. Nonetheless, a legitimate showing of reduced innovation incentives could conceivably carry the day.

Absent these situations, SSO activity should be upheld under the Rule of Reason. Standard setting organizations serve significant procompetitive purposes in fostering compatibility, enhancing competition, contributing to network effects, and creating markets that might not otherwise exist.\textsuperscript{109} These benefits are even more potent given that the industries in which SSOs have developed are those with the greatest potential for bottlenecks and thwarted innovation. The IP rules of SSOs are procompetitive as well. Search, disclosure, and licensing rules eliminate ambiguity and prevent holdup, the most significant concern facing SSOs. For that reason, courts and the antitrust agencies should uphold nearly all such rules.

CONCLUSION

In short, the gathering of rivals in SSOs might, at first glance, present concerns for antitrust. Members in the organizations could boycott rivals. They could manipulate the process to hurt competitors. They could engage in downstream collusion, raising the price for consumers. And they could exercise buying power to reduce innovation incentives.

But in the vast majority of cases, these concerns will not be paramount. Standards usually increase competition and offer consumers a greater range of products.

\textsuperscript{108} Id. at 35–23.

\textsuperscript{109} Recognizing these benefits, Congress provided for Rule-of-Reason treatment (and a reduction in potential liability from treble to single damages) for standards-related activity. Standards Development Organization Advancement Act of 2004, Pub. L. No. 108–237, 118 Stat. 661, 15 U.S.C. §§ 4301–4305 (2004). The Act, however, was limited to formal SSOs (as opposed to informal consortia) and did not protect the organizations’ members.
They increase network effects and allow the creation of products that might not otherwise be produced. And in markets that tend to coalesce around one product, jointly set standards are superior to the alternative of a dominant firm’s de facto standard. For while de facto standards protected by IP allow a single firm to control a technology, SSOs allow multiple parties to make products complying with a standard.\textsuperscript{110}

The IP rules of SSOs also are important in reducing holdup. A patentee’s power may exponentially increase after the organization has adopted a standard and its members have invested in technologies to implement it. Requiring members to disclose relevant patents provides essential information to the SSO. Nailing down licensing terms increases this information and reduces surprise attributed to holdup.

Consumers will typically benefit from standard-setting and the IP rules of SSOs. As a result, courts and the agencies should apply Rule-of-Reason analysis to the activity. While they should carefully scrutinize boycotts, collusion in selling products, and stifled innovation, they should foster competition and innovation by upholding nearly all standard-setting activity.

\textsuperscript{110} Lemley, SSOs, at 1901; Gifford, at 359.