

This is a section of [doi:10.7551/mitpress/12686.001.0001](https://doi.org/10.7551/mitpress/12686.001.0001)

Innovation Matters

Competition Policy for the High-Technology Economy

By: Richard J. Gilbert

Citation:

Innovation Matters: Competition Policy for the High-Technology Economy

By: Richard J. Gilbert

DOI: 10.7551/mitpress/12686.001.0001

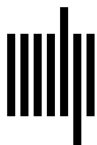
ISBN (electronic): 9780262358637

Publisher: The MIT Press

Published: 2022

OA Funding Provided By:

The open access edition of this book was made possible by generous funding from Arcadia—a charitable fund of Lisbet Rausing and Peter Baldwin.



The MIT Press

10 Competition Policy for Standards

[A] standard-setting organization ... can be rife with opportunities for anti-competitive activity.

—*American Society of Mechanical Engineers v. Hydrolevel Corp.*, US Supreme Court (1982)

1 Introduction

Standards are ubiquitous and mostly invisible, but the high-technology economy could not function without them.¹ Generally, there are three types of standards: (1) technical, (2) minimum quality or safety, and (3) informational. Technical standards provide specifications for new and improved products, and they promote economies of scale, competition, and innovation by allowing firms to specialize in compatible components. Quality and safety standards, along with certifications such as the Underwriters Laboratories mark, reduce the risk of buying shoddy or unsafe goods. Informational standards guide the way that facts are reported or work is performed. The focus in this chapter is on technical standards because they are most relevant to competition and innovation in the high-technology economy.²

Standards can be developed unilaterally by a single firm that, by virtue of timing or market power, has the ability to impose its will on the market. These include specifications such as Adobe's Portable Document Format (PDF), the x86 microprocessor architecture developed by Intel, and Apple's FairPlay digital rights management technology. They also include metastandards such as the Microsoft Windows, Apple iOS, and Google Android operating systems, which comprise many technologies, some of which are themselves defined by standards.

Alternatively, standards can arise from cooperation between firms and other interested parties. Many established standards development

organizations (SDOs) supervise the development of standards at the international and national level. International SDOs include the International Organization for Standards (ISO), the International Telecommunications Union (ITU), and the International Electrotechnical Commission (IEC). Regional, multinational SDOs include the European Telecommunications Standards Institute (ETSI) and the European Committee for Standardization. Some standards are developed with the cooperation of several different multinational SDOs. An example is the third-generation partnership project for mobile telecommunications (3GPP).

In the US, the American National Standards Institute (ANSI) supervises the development of thousands of standards that affect many business sectors. ANSI also evaluates and accredits other organizations for conformance with its standard-setting guidelines. They include the Institute of Electrical and Electronic Engineers Standards Association (IEEE-SA); the Joint Electron Device Engineering Council (JEDEC); the Motion Picture Experts Group (MPEG), which sets standards for audio and video compression and transmission; and ASTM (formerly the American Society for Testing and Materials), which sets standards for a wide range of materials, products, systems, and services. The National Institute of Standards and Technology (NIST), established in 1901 to improve measurement services, develops standards in a wide range of industries, from smart electric power grids to nanomaterials.

Parties that wish to develop standards can bypass established SDOs and form standard-setting consortia (also called “special interest groups”), which can range from ad hoc groups to structured organizations that may or may not have ANSI accreditation. Examples include the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C), which provide forums for network designers, operators, vendors, and researchers concerned with the evolution and smooth operation of the internet; the Blu-Ray Disc Association, for high capacity optical disk storage; and the universal serial bus (USB) for computer connections, originally developed by a group of seven companies and now managed by the USB Implementers Forum.

Most standards that are developed unilaterally or cooperatively are not legally binding on manufacturers or firms that use products related to the standards. Some standards are promulgated by law, and compliance is enforced by agencies such as the Federal Communications Commission or the Environmental Protection Agency.

Whether a standard is open can have significant policy implications, but the term has no standard definition. Some refer to standards as

“open” if they are developed following ANSI guidelines, which emphasize inclusiveness, transparency, and consensus. Others use the term to mean that the standard is available to anyone, not confined to particular firms or business applications. Still others use “open” to mean that the standard is not encumbered by proprietary intellectual property rights, which is the definition employed in this chapter.

A proprietary standard is owned by a firm or a group of firms, or covers technologies that have patent protection or software protected by copyright. Firms that own the rights to a standard may contractually restrict its use. An example is the Dolby Digital standard for audio compression, which Dolby licenses for use by manufacturers of audio and video equipment. Depending on the rules that govern the development of a standard, firms that own patents that cover technologies specified in a standard may charge royalties or refuse to license their patent rights, even if the standard was developed in an open process.

Standards vary along a continuum between truly open and proprietary. Many standards are proprietary but licensed without charge. A standard can be open for use by anyone without compensation, but it may require users to comply with conditions such as not making unauthorized changes to the standard or not exerting property rights that cover the standard. Other standards are open, but users have added features that have intellectual property protection. The Linux operating system kernel (the software that interfaces with the computer hardware) is “open source,” which means that the Linux source code is freely available and may be redistributed and modified, although a number of extensions that are proprietary have been added to the Linux kernel.

Firms that promote a particular standard have to convince consumers and the suppliers of complementary products and services to support their preferred standard. These so-called standards wars can incur wasteful duplication and impose costs on firms and consumers that have made commitments to a defeated and incompatible technology.³ Examples of standards wars include the struggle between the incompatible VHS and Betamax videotape recording formats in the late 1970s and 1980s, and more recently, between the incompatible Blu-ray and High-Definition Digital Versatile Disk (HD-DVD) optical disk standards.

Cooperative efforts to develop standards can avoid standards wars that occur when firms promote different preferred standards, but cooperation can be costly and does not always produce the best outcome. Members of an SDO or consortium may fail to agree on a standard or can take years to reach consensus.⁴ The process of developing a new

standard within an SDO can become corrupted by special interests, resulting in standards being chosen that do not provide the most economic value.⁵

Standards often create consumer benefits and promote competition and innovation, but standards also can raise concerns that warrant antitrust vigilance.⁶ Section 2 addresses several types of unilateral conduct associated with standard-setting that have raised antitrust concerns, including conduct related to the exercise of intellectual property rights. Section 3 addresses antitrust issues for coordinated conduct in standard-setting. Standard-setting often brings together firms that compete in markets that would implement the standard. This naturally raises the possibility that the firms can conspire to set standards that are mutually profitable, but not in the best interests of consumers. They can also use the standard-setting venue to adopt intellectual property policies that promote the interests of the participants in the standards development process but do not promote innovation or benefit consumers. Section 4 offers proposals related to commitments to license patents that are essential to practice a standard that can have benefits for competition and innovation.

2 Antitrust Issues for Unilateral Standard-Setting

Antitrust concerns for conduct by a single firm generally involve attempts to maintain or achieve monopoly power. Standards have been involved in such attempts in at least three ways:

1. Efforts to disrupt industrywide compatibility with a standard
2. Efforts to compel adherence to a dominant firm's preferred standard
3. Efforts to capture value from a standard by exerting proprietary intellectual property rights

Efforts to disrupt industrywide compatibility with a standard

The Microsoft case discussed in chapter 8 illustrates possible competitive effects when a dominant firm fragments an industry standard to promote its own customized version of that standard. Microsoft licensed the Java technologies from Sun Microsystems. A standard Java implementation promised easy porting of computer applications across different operating systems, which could break the applications barrier to entry that supported Microsoft's personal computer (PC) operating system monopoly.⁷ The US Department of Justice (DOJ) and the plain-

tiff states alleged that Microsoft's efforts to splinter the Java standard were a violation of the Sherman Act.

The district court held that Microsoft's effort to splinter the standard violated the antitrust laws. The court of appeals affirmed this finding, but it did not require Microsoft to conform to a single Java standard. As noted in chapter 8, a requirement that Microsoft support a common Java implementation has an economic justification because the adoption of a Java standard was central to the allegations in the case. The court could have compelled Microsoft to support a common Java standard, while also allowing Microsoft to pursue a proprietary Java implementation. The European Commission (EC) did something similar when it required Microsoft to offer a "ballot box" on the Windows start-up screen, which allowed consumers to choose their preferred browser.

Efforts to compel adherence to a dominant firm's preferred standard

The Android case pursued by the EC against Google illustrates the second type of standards-related conduct: efforts by a dominant firm to enforce a standard. Google offers a no-fee license for its Android mobile operating system, provided that smartphone licensees also install a collection of Google apps called Google Mobile Services, which include the Google Play store and the Google Chrome browser. Google's royalty-free license prohibits manufacturers from selling devices that run on a different version of Android (known as a standard "fork"). The EC held that Google could not prevent developers from developing Android forks by denying them licenses to the Google Mobile Services collection of mobile apps. In its decision, the EC stated that "Android forks constitute a credible competitive threat to Google" by allowing smartphone developers to develop differentiated versions of Google's Android operating system at relatively low cost.⁸ The EC found that Google's licensing policies contributed to an abuse of dominance by tying Google apps to the operating system⁹ and, in July 2018, it levied a fine of 4.34 billion euros.¹⁰

The EC rejected Google's argument that the licensing restrictions were necessary to prevent fragmentation of the Android ecosystem. Instead, it argued that Google's refusal to authorize forks of its Android operating system impeded innovation and competition from smart mobile devices based on alternative versions of the Android operating system.

Allowing a standard to splinter into different specifications undermines the power of the standard to promote compatibility, but it also

allows greater product diversity and innovation. Google's Android mobile operating system is based on a modified version of the Linux kernel. Apple's iOS mobile operating system is based on a version of Unix, which is a predecessor to Linux. If one had to choose between a single standard version of Unix or Linux and allowing Unix or Linux to fragment, the latter was the better choice because it facilitated innovation and competition in mobile operating systems.

Efforts to capture value from a standard by exerting proprietary intellectual property rights

No aspect of standards-related conduct has attracted more scrutiny (at least as measured by the number of investigations and policy papers) than conduct related to the disclosure and exercise of standards-essential patents (SEPs). Most SDOs allow standards to include proprietary intellectual property rights and do not prohibit rights owners from charging royalties. The ANSI patent policy states, "There is no objection in principle to drafting an American National Standard (ANS) in terms that include the use of an essential patent claim (one whose use would be required for compliance with that standard) if it is considered that technical reasons justify this approach."¹¹ Some standards specify technologies that are covered by hundreds of patents. One study identified over 700 patent families that were declared essential to the WCDMA cellular standard and over 500 patent families declared essential to the CDMA2000 cellular standard as of early 2004.¹²

The development of standards that are covered by proprietary intellectual property rights often pits two camps against each other: innovators, who own patent rights and want compensation for use of their rights; and implementers (who can also be innovators for follow-on discoveries), who sell products that implement the standard and want a low cost for the standardized technologies. Implementers complain about the risk of holdup by patentees who charge high royalties for patents on a standard after they make investments that lock themselves into the use of the standard.¹³ Innovators, on the other hand, complain about the risk of holdout by implementers, who want to practice their patents without fair compensation for their research and development (R&D) expenditures. Both complaints allege opportunistic behavior to exploit sunk costs. For implementers, it is the cost of investments to develop products that comply with the standard, and which cannot be repurposed to other products. For innovators, it is the cost of R&D that was necessary to make the patented discoveries.

Patent rights can interfere with innovation and allow patent owners to impose high royalties when products embody numerous technologies with many owners. Each patent owner that is active in this patent thicket has an individual incentive to demand a large share of the value of the product, and the resulting total royalty demand can exceed the royalties that would maximize a licensor's profit if it were the sole source for all the patents.¹⁴ Implementers complain about this "royalty stacking" that results from demands by separate patent owners and fear injunctions that prohibit sales of products that infringe a patent.¹⁵ Standards aggravate concerns from injunctions and royalty stacking if firms and consumers make investments that are specific to the standard and face high costs to switch to an alternative standard.

Many SDOs address the conflict between implementers and innovators by requiring, prior to the approval of a proposed standard, that innovators declare patent rights that they own (and sometimes patent applications) that are essential to the standard specification, and to agree to license such patents at terms that are fair, reasonable, and nondiscriminatory (FRAND, also called RAND or F/RAND). The ANSI patent policy states:¹⁶

The [ANSI-Accredited Standards Developer] shall receive from the patent holder or a party authorized to make assurances on its behalf, in written or electronic form, either:

- a) assurance in the form of a general disclaimer to the effect that such party does not hold and does not currently intend holding any essential patent claim(s); or
- b) assurance that a license to such essential patent claim(s) will be made available to applicants desiring to utilize the license for the purpose of implementing the standard either:
 - i) under reasonable terms and conditions that are demonstrably free of any unfair discrimination; or
 - ii) without compensation and under reasonable terms and conditions that are demonstrably free of any unfair discrimination.

Unfortunately, SDOs have not defined the limits on FRAND terms. Furthermore, they do not have uniform disclosure requirements or uniform definitions of "essential." Studies show that many patents declared essential to common standards are not technically nor economically necessary to implement the standard.¹⁷

Antitrust authorities in the US and elsewhere have challenged several alleged failures of SEP owners to disclose their patents or license them on FRAND terms. One of the first of these cases involved Dell Computer and the VL computer bus standard for communicating data between a

central processing unit and peripheral devices. The VESA SDO, of which Dell was a member, standardized the VL bus design in 1992. Before VESA approved the standard, a Dell representative certified that the proposed standard did not infringe any of Dell's trademarks, copyrights, or patents. However, Dell had received a patent on the VL bus design a year earlier and sought to enforce its patent after computer manufacturers adopted the standard. The Federal Trade Commission (FTC) lodged a complaint, alleging that VESA would have implemented a different nonproprietary design had it been informed of the patent conflict during the certification process.¹⁸ The Commission and Dell reached a settlement, according to which Dell agreed not to enforce its patent against anyone implementing the VL bus standard.¹⁹

The FTC pursued its concerns about the disclosure of SEPs in several other cases, including extensive litigation against Rambus, a company that develops and licenses technologies for computer memory and other devices.²⁰ The allegations involved Rambus's conduct as a participant in JEDEC, an SDO that develops standards for, among other devices, dynamic random access memory devices (DRAMs).²¹ Rambus participated in JEDEC for a period of time, during which it did not disclose that it had patent applications and plans to apply for patents that covered standards being developed for DRAMs, including for synchronous dynamic random access memory (SDRAM) devices. After JEDEC issued SDRAM standards, Rambus demanded royalties for infringement of patents it owned that covered the standards. The FTC alleged that Rambus's silence and subsequent enforcement of its patents allowed Rambus to monopolize key technology markets for these devices.

Rambus appealed. The Court of Appeals for the DC Circuit (the same court that issued the final ruling in *US v. Microsoft*) ruled in Rambus's favor.²² The gravamen of the court's decision was the failure of the FTC to prove that JEDEC would have chosen a *different* standard that did not infringe Rambus's patents if these patents had been disclosed. The court stated:²³

[The Commissions'] factual conclusion was that Rambus's alleged deception enabled it *either* to acquire a monopoly through the standardization of its patented technologies rather than possible alternatives, *or* to avoid limits on its patent licensing fees that the SDO would have imposed as part of its normal process of standardizing patented technologies. But the latter—deceit merely enabling a monopolist to charge higher prices than it otherwise could have charged—would not in itself constitute monopolization.

The court observed that JEDEC's patent policies were muddled during the time that Rambus was a member, and did not clearly require the disclosure of planned applications for patents that may be necessary to make or use standard-compliant products. Nonetheless, the court held that had Rambus engaged in deceptive conduct, it would not have been a violation of the Sherman Act if it did not affect JEDEC's chosen standards.²⁴ The court emphasized this conclusion, notwithstanding that JEDEC's patent policy would have required a commitment from Rambus to license its patents at FRAND terms as a condition to approve the standards, which likely would have resulted in lower negotiated patent royalties.

The court's reasoning can be understood only in the context of arcane US antitrust law. US antitrust law prohibits monopolization; it does not prohibit high prices. The court distinguished its conclusion from that of *US v. Microsoft*, where the same court held that Microsoft's deceptive claims about the cross-platform compatibility of its Java tools was a violation of Section 2 of the Sherman Act (but nonetheless did not compel Microsoft to support an industry-standard Java implementation). The distinction is that Microsoft's conduct excluded competition and contributed to the maintenance of its Windows monopoly, whereas Rambus's conduct arguably only resulted in higher prices. With regard to Rambus, the court emphasized, "Indeed, had JEDEC 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."²⁵

Conduct that enables a patent owner to evade FRAND commitments should not be lawful. High royalties harm consumers and can impede innovation for technologies for which a patent license is necessary. Some have argued that patent holdup is no more than an academic curiosity because innovation and competition for smartphones and other devices have thrived, despite the fact that these devices implement standards covered by hundreds of SEPs.²⁶ But this argument is flawed. It does not recognize that prices for smartphones and other devices would likely be much higher if the antitrust authorities and the courts stopped policing FRAND licensing obligations.²⁷ The fact that it is reasonably safe to drive on highways in the US does not mean that speed limits are unnecessary. FRAND limitations are speed limits on the information superhighway.

Organizations that develop standards are joint ventures whose members include firms that are actual or potential competitors. Joint

ventures can benefit consumers by creating new or more efficient products or by creating standards that facilitate new or more efficient products. They can also harm consumers by serving as venues to fix prices, reduce quality, raise costs, or exclude competitors. As the next section shows, SDOs are not immune to these concerns.

3 Antitrust Concerns from Collective Conduct by SDOs

Collective conduct by SDOs and their members has raised antitrust concerns for a variety of reasons. In the high-tech sector of the economy, these concerns mostly involve collusion to exclude competing technologies and policies that SDOs adopt to address royalties and other licensing terms for SEPs. SDOs are ripe for collusion because they bring together actual or potential competitors with powerful commercial interests that can bias standards choices. Antitrust enforcers have been understandably reluctant to second-guess technological choices made by SDOs and their members, but they have not hesitated to challenge abuse of the standards development process that allegedly has anti-competitive consequences.²⁸

An example of alleged abuse of the standard-setting process is “vote stacking,” in which members of a standards body recruit participants to vote affirmatively for their interests. The Supreme Court addressed vote stacking by an SDO in *Allied Tube & Conduit Corp. v. Indian Head*, which involved standards for conduit to protect electrical wiring. The National Fire Prevention Association (NFPA) publishes the National Electrical Code, which establishes requirements for the design and installation of electrical wiring systems. Indian Head, a manufacturer of plastic conduit, submitted a proposal to extend the code to approve the use of plastic, as well as the conventional steel, conduit.

Allied, the largest producer of steel conduit in the US, colluded with members of the steel industry, other steel conduit manufacturers, and independent sales agents to recruit new NFPA members whose only function was to vote against the proposal to approve the use of plastic conduit. Their recruiting efforts were successful, and the proposal was defeated. In response, Indian Head sued, alleging that Allied and others had unreasonably restrained trade in the electrical conduit market, in violation of Section 1 of the Sherman Act. After a number of decisions and reversals, the Supreme Court sustained a verdict for Indian Head, stating, “What [Allied] may not do (without exposing itself to possible antitrust liability for direct injuries) is bias the process by, as in this

case, stacking the private standard-setting body with decisionmakers sharing their economic interest in restraining competition."²⁹

The court did not define vote stacking or limit the circumstances in which it should raise antitrust concerns. Participation in standards-setting meetings is driven by economic interests, and firms with more at stake in the standards process tend to supply more participants to relevant standard-setting organizations.³⁰ Vote stacking could be defined as recruiting participants who are not employees of interested firms, but that would not prevent firms that can tap a large labor pool from dominating the standard-setting process.

It is not clear that vote stacking results in inferior economic outcomes compared to more limited representation in a standard-setting organization. Unlike the outcome of market competition, which generally benefits consumers by resulting in lower prices, there is no corresponding "invisible hand" principle that standard-setting bodies will coordinate on the best standard, even if the process of standard-setting is open and transparent. Kenneth Arrow (who proved central results for innovation competition, as described in chapter 3) established this result as a corollary of his famous "impossibility theorem," which proves that voting rules (such as those followed by SDOs) cannot generally assure outcomes that satisfy reasonable conditions for rational choice.³¹

Nonetheless, allegations of anticompetitive exclusion by SDOs have typically failed when courts concluded that the standards were developed following an open and transparent process, when participation in standard-setting was unrestricted and nondiscriminatory, and when compliance with the standard was voluntary.³² Courts have also considered allegations of anticompetitive standard-setting when these conditions were not satisfied. In at least one case, a court refused to dismiss an allegation that a standard-setting consortium harmed competition by engaging in a closed standard-setting process that was intended to give its members a time-to-market competitive advantage over rival manufacturers.³³

Coordination in the determination of FRAND patent-licensing obligations

Most SDOs require that patent owners agree to license patents that cover technologies specified in a standard as either royalty-free or at FRAND terms. But FRAND obligations are ambiguous, and FRAND licensing commitments have not resolved tensions between patent owners and the firms that sell products that implement standards covered by the patents.

Several courts have addressed compliance with FRAND licensing and found that owners of FRAND-encumbered patents made royalty demands that greatly exceeded the value of the licensed patents.³⁴ Some SDOs have attempted to address these concerns by providing opportunities to clarify FRAND obligations *ex ante*, before the standards issue.

VITA exemplifies an SDO with a strong *ex ante* patent policy. VITA began in 1982 as the VMEbus Manufacturers Group to create a standard for the Versa Module Europa computer bus. Since 2006, the VITA standards organization (VSO) has required members of its working groups to disclose the existence of all patents and patent applications owned, controlled, or licensed by the member company that the member believes contain claims that may become essential to a draft specification, and to declare the maximum royalty rate and most restrictive licensing terms for these patent claims. Under the VSO policy, failure to disclose an essential patent claim in a timely manner obligates the owner to license the patent on a royalty-free basis.³⁵

VITA asked the DOJ for a Business Review Letter (BRL) prior to publishing its VSO patent policy. A BRL is an advisory statement from the Department about its current enforcement intentions regarding a proposed policy or combination. VITA justified its patent policy proposal by citing past experience, in which owners of patents on VSO standards demanded high royalties after the standard issued, which raised costs and delayed the standard's market adoption, and in one instance rendered a proposed standard commercially infeasible. In response, the DOJ recognized efficiencies from VSO's proposed policy by allowing working groups to make more informed decisions about the costs as well as the purely technical merits of alternative standards, while acknowledging that the collaborative standard-setting process could result in exclusionary and collusive practices that harm competition and violate antitrust laws. Applying a rule of reason analysis to potential costs and benefits, the DOJ concluded that it had no intention to challenge the VSO patent policy.³⁶ This was about as favorable a conclusion as one can expect from a BRL.

IEEE-SA, the SDO for the IEEE, has a much larger portfolio of standards development activities. The IEEE-SA updated its patent policy in 2015 to clarify the meaning of a FRAND offer and to impose other conditions on the licensing of SEPs by members that agree to abide by the licensing commitments. The DOJ reviewed these changes and concluded that the process leading to the modified policy was open and did not raise antitrust concerns. The BRL noted that the modified policy

had the potential to improve the IEEE-SA standard-setting process by possibly reducing patent litigation and mitigating holdup and had the potential to benefit competition and consumers by creating greater clarity.³⁷ The letter also concluded that the DOJ had no intent to challenge the policy.

Notwithstanding the generally favorable BRL responses from the DOJ, the VSO and IEEE-SA policies raise several potential types of antitrust concerns:

- Members of standard-setting committees that make, use, or sell products that implement standards may use the mandatory disclosure of patent-licensing terms as a means to collusively exercise monopsony power to depress royalties below the levels that the implementers can obtain in bilateral negotiations. SDO patent policies disavow such collusion, but that does not mean it cannot happen.
- Members of standard-setting committees that own patents may use the mandatory disclosure of patent-licensing terms as a means to collusively exercise monopoly power to raise royalties above the levels that the implementers can obtain in bilateral negotiations.
- Onerous patent disclosure policies and licensing rules can cause patent owners to choose different standard-setting venues that have more favorable patent disclosure and licensing policies or cause them to withdraw from the activity of developing draft standards.³⁸
- Negotiations required by disclosure and licensing rules can delay the progress of standards development.
- Mandatory disclosure and licensing rules can force owners of patents to establish royalties for patents that they would otherwise choose not to assert.
- Requirements to disclose maximum royalties and most restrictive licensing terms can incentivize patent owners to declare artificially high royalties and restrictive terms.
- Mandatory disclosure and licensing rules may cause patent owners to refuse to disclose possible SEPs or refuse to license SEPs at FRAND terms unless required to do so by the SDO.

Some of these concerns are either not likely to occur or have offsetting potential benefits. VSO's ex ante disclosure policy is mandatory but not likely to result in a significant exercise of monopsony power because VITA has long had a policy of promoting open standards. Disclosure delays in the standards development process caused by introducing an additional dimension for negotiation can have procompetitive benefits

by allowing implementers to evaluate the economic costs as well as the technical merits of alternative proposals for standards.

4 Some Suggested Policies to Promote FRAND Licensing

Antitrust authorities can influence the development of standards and encourage policies for SEPs that protect consumers and promote innovation. They can condition the approval of mergers or resolve allegations of anticompetitive conduct on agreements to support industrywide standards. Alternatively, they can address restrictive conduct by firms that control a standard with conditions that allow firms to develop alternative standards, as the EC has done for the licensing of Google's Android mobile operating system.

With regard to SEPs, courts could expand their concept of monopolization to condemn conduct that increases prices by abusing the standard-setting process instead of limiting liability to conduct that harms a narrow definition of competition. Post-Rambus, most challenges to the abuse of FRAND commitments have alleged a violation of a contract between the patent owner and the licensee rather than an antitrust violation. Antitrust enforcement is a valuable tool for FRAND compliance because, unlike contract enforcement, the plaintiff does not have to be a direct party to the contract. Furthermore, antitrust enforcement can allow remedies, such as compulsory licensing, that may not be available under the law of contracts.³⁹

Recent statements by the Assistant Attorney General for Antitrust at the DOJ have emphasized the risk of holdout as well as holdup for the licensing of SEPs.⁴⁰ Concerns about holdout are valid, but patent owners have legal recourse to collect damages from technology users that infringe their patents without adequate compensation. Holdup is different in this regard because neither patent, contract, nor antitrust laws clearly define the circumstances in which a licensee is entitled to compensation for licensing demands that violate FRAND obligations. Although courts that have reviewed complaints of FRAND violations did not always find evidence of holdup and royalty-stacking, they often found that SEP owners made royalty demands that exceeded the economic contribution of the patents to the value of the standard. Furthermore, some owners of FRAND-encumbered patents have attempted to avoid FRAND commitments altogether by transferring ownership of the patents to third parties that did not commit to license their patents at FRAND terms.⁴¹ Such avoidance should not be permitted.

Patent pools address the problem of royalty-stacking by offering licenses for the pool's entire patent portfolio.⁴² Organizations that develop standards could condition the certification of a standard on agreement by holders of SEPs to join a patent pool that offers a portfolio license. Some special-interest groups, such as Bluetooth and developers of standards for optical disks, offer a portfolio license for their members' patents. However, standards that have hundreds of SEPs owned by parties with different interests are unlikely to achieve broad participation by the patent owners in a portfolio license.

Nonetheless, patent pools have a useful lesson for FRAND compliance. Pools typically publish terms for a portfolio license. The terms may have a fixed fee, a fee that varies with the number of licensed units or sales of downstream products, or a combination of the two, but they are transparent and the same for every potential licensee. In contrast, although SDOs request that SEP owners offer licenses on nondiscriminatory terms, they do not specify what "nondiscrimination" means and SEP owners often negotiate different deals with licensees. Moreover, the deals are often protected by nonconfidentiality agreements, which makes compliance with nondiscrimination difficult or impossible to verify.

A requirement that owners of SEPs publish their terms for licenses would address the "nondiscrimination" prong of the FRAND commitment and help to promote license terms that are fair and reasonable.⁴³ An additional benefit from a uniform and transparent publication of SEP license terms is that the terms can prevent holdup if they are published before firms and consumers make investments that are specific to a standard. Suppose that a patent owner negotiates a bilateral license with an implementer before a standard has been certified. A nondiscrimination agreement would obligate the patent owner to offer the same terms to licensees after the standard issues. A public nondiscrimination commitment would allow patent licenses that are negotiated *ex ante* to protect against holdup that could occur after firms and consumers make investments that are specific to a standard.

A public nondiscrimination commitment is not perfect, though. It would discourage patent owners from negotiating better deals to entice reluctant implementers because the patent owner would have to offer the better deal to all licensees. A nondiscrimination requirement might also complicate the ability of patent owners to adjust royalty and licensing terms in response to changing patent values. Nonetheless, transparent and nondiscriminatory licensing terms have benefited both the owners of patents that participate in patent pools and their licensees. A similar

arrangement would have advantages over existing confidential FRAND agreements, which make it difficult to enforce reasonable licensing terms and assess compliance with nondiscrimination.

Sensible rules for patent damages can ensure that SEP license terms are fair and reasonable. Patent owners negotiate licensing terms in the shadow of infringement damages. Unfortunately, the law of patent damages has sometimes allowed patent owners to receive compensation for infringement that is unrelated to the economic contribution of the patented technologies.⁴⁴ Damages for infringement of a patented technology should reflect the economic contribution of the patented technology, not the value of the standard for which it is a component or an elevated royalty that a patent owner could demand because an implementer of the patented technology would have a high cost to switch to a technology that does not infringe the patent.⁴⁵ Patent damages should apportion the value of a standard to infringed patents that cover components of the standard. If 100 patents are clearly essential to practice a standard and there are no substitutes for any of the patents, then each patent accounts for 1 percent of the economic value of the standard. It is encouraging that courts have recently concluded that FRAND royalties should measure the economic contribution of the patented technologies, not the value added by the standard's adoption of the patented technology, and have endorsed the logic of apportionment for patent values.⁴⁶

A patent owner has more bargaining power if a court would approve a demand for an injunction or exclusion order that prevents the use of the patent. Reasonable rules for permitting injunctions and exclusion orders would limit their use to situations in which a potential licensee refuses to negotiate a license and monetary damages cannot adequately compensate the patent owner for infringement.⁴⁷

Robert Merges and Jeffrey Kuhn suggest the concept of "standards estoppel" to prevent attempts by patent holders to hold up licensees by capturing part of the cost of switching to a different standard.⁴⁸ Under this principle, the intentional non-assertion of a patent in the presence of its widespread adoption would create immunity from patent infringement. This would prevent the patent owner from delaying assertion to benefit strategically from irreversible investments that lock firms and consumers into compliance with a standard. The Rambus case discussed in this chapter would have been a candidate for their proposal.

© 2020 Massachusetts Institute of Technology

This work is subject to a Creative Commons CC-BY-NC-ND license.

Subject to such license, all rights are reserved.



The open access edition of this book was made possible by generous funding from Arcadia—a charitable fund of Lisbet Rausing and Peter Baldwin.



This book was set in Palatino by Westchester Publishing Services.

Library of Congress Cataloging-in-Publication Data

Names: Gilbert, Richard J., 1945- author.

Title: Innovation matters : competition policy for the high-technology economy / Richard J. Gilbert.

Description: Cambridge, Massachusetts : MIT Press, [2020] | Includes bibliographical references and index.

Identifiers: LCCN 2019039525 | ISBN 9780262044042 (hardcover)

Subjects: LCSH: High technology industries. | Competition. | Antitrust law--Economic aspects. | Consolidation and merger of corporations--Law and legislation--Economic aspects.

Classification: LCC HC79.H53 G56 2020 | DDC 338.8/2--dc23

LC record available at <https://lcn.loc.gov/2019039525>