STANDARD-ESSENTIAL PATENTS: THE U.S. ANTITRUST ENFORCEMENT EXPERIENCE

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Abstract: Many interoperability standards and patent licensing arrangements, especially those in information and communication technology sectors, are global in scale and scope. When standards incorporate and use patented technologies, the assertion of standard-essential patents in a single jurisdiction can potentially upset standard-specific investments made by implementers in numerous other jurisdictions around the world. Antitrust enforcement relating to standard-essential patents must therefore balance the rights and interests of innovators and implementers alike because both sets of actors play important roles in bringing the benefits of standardized products and services to consumers. Innovators who have made commitments to license their standard-essential patents are entitled to a reasonable rate of return for the use of their patented technologies in standards. What they may not do, however, is demand a higher rate of return by threatening to block the use of their technologies by implementers who are willing to enter into licenses for their patents. As the U.S. antitrust agencies have shown, sound antitrust enforcement in the standard setting arena should seek to preserve the incentives of innovators that contribute patented technology to standards as well as those of implementers that bring valuable products and services to market using those standards.

1. INTRODUCTION

Interoperability standards help create and shape markets all over the world. In many technology-intensive industries today—from telecommunications to electronic commerce—efforts to standardize key aspects of products and services take place on a global scale because of the substantial economics, efficiencies, and network effects that flow from attracting and connecting greater numbers of users and consumers. To the extent that standard-setting efforts incorporate innovative technologies and methods, they are likely to involve patent rights issued in various jurisdictions around the world. As a result, markets in various critical sectors like information and communication technology (“ICT”) are built on global patent licensing arrangements.

Against this backdrop, the conduct of patent holders during the standardization process, and in connection with the licensing activities that follow, can raise challenging questions at the

1 Former Chairwoman of the Federal Trade Commission. This article is adapted from remarks Ms. Ramírez delivered at the 8th Annual Global Antitrust Symposium at Georgetown University Law Center on September 10, 2014. Ms. Ramírez is grateful to Henry Su and Suzanne Munck for their assistance with this article.
intersection of antitrust and intellectual property for competition agencies around the globe. Licenses for standard-essential patents (“SEPs”) are often negotiated on an international, portfolio-wide basis. And the strategies firms employ during these negotiations can affect competition and innovation across jurisdictions. A SEP holder, for instance, can disrupt the dynamics of a global negotiation by seeking an injunction against an implementer in a single jurisdiction, with repercussions for incentives to implement the standard everywhere else. This behavior also can depress future demand for adoption of standards.

At the same time, antitrust enforcement activity that deprives SEP holders of a reasonable reward in one country can depress incentives to create technology for next-generation standards that will benefit consumers around the world. The consequences for competition and innovation resulting from enforcement that fails properly to take into account the rights of SEP holders can therefore be as harmful as SEP-holder behavior that distorts the competitive marketplace for interoperable products. In other words, because the incentives for standards-related innovation and standards implementation that drive these markets are established globally, national distortions can have a worldwide impact.

Antitrust enforcement can best advance competition and consumer welfare in standards-driven markets by protecting the rights of the key players in the standard-setting process. That includes both those that contribute patented technology to standards and those that invest to bring standard-compliant products to market. The challenge lies in finding the balance between the two that furthers the interests of consumers.

This article discusses the approach that has been taken in the United States by the U.S. antitrust agencies, in particular the U.S. Federal Trade Commission (“FTC”), to address these issues when examining the unilateral conduct of SEP holders. The agencies have focused on a particular competitive risk known as “patent hold-up.” The nature and extent of the risk and the mechanisms for preventing and mitigating it have been the subject of much discussion and debate. As discussed below, the agencies, in dealing with patent hold-up from the standpoint of antitrust enforcement, have attempted to strike a balance between the interests of SEP holders and standards implementers, and thereby minimize distortions to the global markets that rely on the standards and the patented technologies they incorporate.

2. The Intersection of Antitrust and IP Law

At the core of the U.S. agencies’ approach to competition enforcement in this area is the well-accepted view that antitrust and intellectual property are complementary bodies of law that promote innovation and consumer welfare.\(^2\) Antitrust law promotes innovation by

\(^2\) U.S. DEPT OF JUSTICE & FED TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 1.0 (2017),
protecting competition and the competitive process. Competition can be a powerful force that spurs firms to invest in research and development that will lead to new or improved products and services, or more efficient methods of production and distribution. Intellectual property law promotes innovation by rewarding the creative or inventive process. A robust intellectual property system encourages firms to engage in the often risky and uncertain process of discovery and experimentation and, at the same time, discourages firms from misappropriating or free-riding on the efforts of others. Consumers benefit when markets feature products and services not only at lower prices, but also in greater variety, with higher quality, and with more innovative features.

Properly applied, both bodies of law help maintain a vibrant and dynamic marketplace for consumers and competitors alike. Enforcing the antitrust laws against acts and practices that harm the competitive process generally does not undermine incentives of firms to invest in research and development. Likewise, strong intellectual property protection that ensures firms benefit from the fruits of their inventions typically does not run afoul of the antitrust laws.

Importantly, U.S. antitrust law generally does not impose liability for merely refusing to share intellectual property, or to license at a particular rate, recognizing that doing so would undercut the procompetitive advantages that a robust intellectual property system provides. Firms should be free to decide for themselves how best to maximize the value of their intellectual property and reap an appropriate return on their investment in research and development. For instance, a firm may conclude that retaining exclusive use of its patented technology to reduce production costs and undercut its rivals’ prices is a better business strategy than licensing the technology to others. Exclusive use of a patented technology may also allow a firm to offer consumers a unique and attractive product improvement that draws them away from competitors. Alternatively, a firm may determine that it does not want to undertake the expense and risk associated with product development and marketing, and that licensing its patented technology to other firms for downstream commercialization would be preferable. And, in the context of standardization, a firm may decide that the best


3 IP ANTITRUST GUIDELINES, supra note 1, § 2.1 (“The antitrust laws generally do not impose liability upon a firm for a unilateral refusal to assist its competitors, in part because doing so may undermine incentives for investment and innovation.”); IP ANTITRUST REPORT, supra note 1, at 6 (“Antitrust liability for mere unilateral, unconditional refusals to license patents will not play a meaningful part in the interface between patent rights and antitrust protections.”).
way to reap the rewards of its inventive efforts is to contribute the patented technology to a standard in exchange for a license on fair, reasonable, and nondiscriminatory (“FRAND”) terms. All of these scenarios can be valuable strategies for monetizing intellectual property that are generally consistent with the goals of competition law. Indeed, they are choices that U.S. antitrust law leaves largely to intellectual property owners, prospective licensees, private negotiations, and market forces. The individual outcomes of these choices simply become part of the diverse fabric of competition.

A related principle is that, under U.S. antitrust law, conduct involving intellectual property does not receive different or special treatment than conduct involving other forms of property. The fact that conduct under investigation involves a patent as opposed to, for example, a radiopharmacy or the manufacturing of pipe fittings does not make it any more or less problematic under the antitrust laws. That said, intellectual property does have certain attributes that are not present in other forms of private property. For example, it is more easily misappropriated, and certain measures to prevent its misappropriation may thus be justified and deemed to be reasonable restraints under the antitrust laws. However, antitrust analysis can properly take into account these attributes, and there is no need to devise special rules or principles to accommodate intellectual property.

3. PATENTS AND INTEROPERABILITY STANDARDS

The complementary nature of antitrust and intellectual property laws has guided U.S. competition policy and enforcement in the standard-setting context. Industry standards make up much of the backbone of the modern economy. In the ICT sector, for example, digital platforms and communications networks provide greater functionality and utility to consumers because of standards. Standardization provides a common template that can facilitate market entry and

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4 Unless the context otherwise requires, this article uses the acronyms “FRAND” and “RAND” interchangeably.

5 IP ANTITRUST GUIDELINES, supra note 1, § 2.1 (“The Agencies apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of property.”).

6 Id. 2.1 & 4.1.2; see also IP ANTITRUST REPORT, supra note 1, at 119 (“Exclusivity provisions, such as field-of-use or territorial restrictions, can ease the threat of misappropriation, which can mitigate competitive concerns over a potentially anticompetitive agreement.”).

7 IP ANTITRUST REPORT, supra note 1, at 33 (“Industry standards are widely acknowledged to be one of the engines driving the modern economy. Standards can make products less costly for firms to produce and more valuable to consumers.”); Lotes Co., Ltd. v. Hon Hai Precision Indus. Co., Ltd., 753 F.3d 395, 400 (2d Cir. 2014) (“On the pro-competitive side, common standards enable different firms to produce products that are compatible with one another, promoting innovation and competition.”); Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 876 (9th Cir. 2012) (“Standards provide many benefits for technology consumers, including not just interoperability but also lower product costs and increased price competition.”).
competition, allowing firms to tap into the same pool of consumers and to differentiate themselves from their rivals based on other dimensions that are not dictated by the standard.\(^8\) Strong patent rights can enhance the value of the standard by encouraging innovators to contribute their technologies and methods for consideration by a standard-setting organization (“SSO”).

At the same time, however, SSOs are typically comprised of product or technology market participants who often compete with one another. These firms have the technical expertise that makes standards development possible, and typically a financial stake in the outcome that is large enough to justify the cost of participation. Since both the private and public stakes can be high, and not necessarily aligned, there can be powerful incentives for anticompetitive behavior.\(^9\) Importantly, when these firms cooperate in the standard-setting process and jointly select a particular technology for inclusion, they necessarily exclude competing alternatives, which can have consequences for competition and consumers.\(^{10}\) Nevertheless, where standards are set according to fair and open procedures that protect the interests of consumers as well as of market participants, the benefits can be substantial.

Antitrust is therefore legitimately concerned about behavior that subverts the standard-setting process such that it advances the economic objectives of one firm to the detriment of the organization and the other participants. For example, the FTC has challenged the conduct of patent holders for allegedly deceiving an SSO into adopting their technology by failing to disclose their patent rights. This type of deception distorts the standard-setting process and calls into question the outcome because the SSO might have reached a different decision had it been aware of these rights.

Standards that incorporate patented technologies raise a particular competitive risk known as “patent hold-up.” Absent a licensing commitment, patent holders retain the legal right to exclude others from practicing their patent even after the underlying technology has been included in a standard. Accordingly, there is the risk that they will use the additional leverage that they acquire from the technology’s inclusion to demand higher royalty rates or other more favorable terms than they could have credibly demanded.

\(^8\) See Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 309 (3d Cir. 2007) ("The adoption of a standard does not eliminate competition among producers but, rather, moves the focus away from the development of potential standards and toward the development of means for implementing the chosen standard.").

\(^9\) See Allied Tube & Conduit v. Indian Head, 486 U.S. 492, 500 (1988) (“There is no doubt that the members of such associations often have economic incentives to restrain competition and that the product standards set by such associations have a serious potential for anticompetitive harm.”); Am. Soc’y of Mech. Eng’rs, Inc. v. Hydrolevel Corp., 456 U.S. 556, 571 (1982) (emphasizing that a standard-setting organization “can be rife with opportunities for anticompetitive activity”).

\(^{10}\) See, e.g., Allied Tube, 486 U.S. at 500 (noting that “an agreement on a product standard is implicitly, after all, an agreement not to manufacture, distribute, or purchase certain types of products”).
beforehand from implementers of the standard. This situation may be exacerbated by the fact that, when patent rights are asserted, implementers may have already made standard-specific investments relating to the patented technology that cannot be readily redeployed using substitute technologies.11

The standards that support markets in the ICT sector provide a good illustration of the problem. Before a standard has been adopted, many technologies may compete to perform a particular function integral, for example, to wireless communication between two mobile devices or the network communication between a client computer and server.12 Standardization, however, encourages the selection of technologies to perform complementary functions. A complex technical standard may incorporate thousands of selected technologies and take several years to complete. Because the selected technologies are designed to work together or with other technologies, it can be very difficult and costly to change them piecemeal after the fact, especially if an implementer has made capital or research and development investments in order to make use of specific technologies. Consequently, a patent holder can take advantage of the fact that an implementer is “locked in” to its patented technology as a result of standardization and may also face significant switching costs to change to a competing, non-infringing technology.

In the standard-setting context, hold-up can therefore deter competition and innovation by increasing the costs associated with implementation of an adopted standard and generating uncertainty as to whether an implementer will be able obtain a license that permits it to practice the standard without interference or limitation by the patent holder. Such a situation may harm consumers because the attendant costs and uncertainty may be passed on to them in the form of higher prices or perhaps a delay in the development of a new product. More broadly, hold-up can chill participation in standard-setting activities. Firms are less likely to be willing to invest the time and effort to support the work of an SSO if implementation of an adopted standard may be frustrated by a SEP holder’s hold-up behavior.

To reduce the risk of patent hold-up, many SSOs require participants to disclose patents that may read on a proposed standard, and to

11 IP ANTITRUST REPORT, supra note 1, at 35 (discussing “the potential for ‘hold up’ by the owner of patented technology after its technology has been chosen by the SSO as a standard and others have incurred sunk costs which effectively increase the relative cost of switching to an alternative standard”) & n.11 (observing that, “[i]n the standard-setting context, firms may make sunk investments in developing and implementing a standard that are specific to particular intellectual property” and “[t]o the extent that these investments are not redeployable using other IP, those developing and using the standard may be held up by the IP holders”).

12 See, e.g., Ericsson, Inc. v. D-Link Sys., 773 F.3d 1201, 1232 (Fed. Cir. 2014) (“Just like modern electronic devices, technological standards include multiple technologies... For example, the 802.11 standard encompasses numerous technologies to enable devices to communicate with each other via wireless network connection. This includes, among many other things, technologies on link establishment, security protocols, error control, and flow control.”).
If a patentee refuses, the SSO can select an alternate technology or change the direction for the standard before extensive switching costs accrue. But, when a patentee voluntarily agrees to license its technology on FRAND terms as a condition of winning a place in the standard, antitrust enforcers are legitimately concerned with a breach of that commitment that reintroduces the risk of patent hold-up. In particular, a breach may raise antitrust concerns if it threatens to deprive consumers of the procompetitive benefits that legitimize the standard-setting enterprise under the antitrust laws.

4. ANTITRUST ENFORCEMENT IN THE STANDARD-SETTING CONTEXT

Until the early 2000s, U.S. antitrust enforcement in the standard-setting context focused primarily on the dangers of concerted action when firms that are otherwise competitors collaborate under the auspices of a trade association, consortium, or other industry organization. Since then, however, the focus of enforcement has been on anticompetitive unilateral conduct by patent holders during the standard-setting process when a patent holder’s technology is under consideration by an SSO for inclusion in a standard, or in connection with licensing activities after a standard has been implemented.16

4.1 Deception During the Standard-Setting Process

As noted above, one way that many SSOs have tried to minimize the risk of patent hold-up is by requiring participants to disclose any patent and other intellectual property rights associated with technology under consideration for standardization. Disclosure during the standard-setting process, before a final standard is adopted, enables an SSO to assess the risk of hold-up ex ante and to consider competing alternatives to the patented technology, some of which may be unpatented


14 As discussed below, some argue that an equally harmful risk exists for patent holders that contribute their patented technology to a standard “reverse hold-up.” “Reverse hold-up” refers to the possibility that implementers may refuse to compensate the patent holder after its technology has been included in the standard.

15 See, e.g., cases cited in note 8 supra.

16 The focus of this article is on unilateral conduct, but mergers may also raise competitive concerns to the extent that they involve the acquisition of patent portfolios that include SEPs. See, e.g., Press Release, U.S. Dep’t of Justice, Antitrust Div., Statement of the Department of Justice’s Antitrust Division on Its Decision to Close Its Investigations of Google Inc.’s Acquisition of Motorola Mobility Holdings Inc. and the Acquisitions of Certain Patents by Apple Inc., Microsoft Corp. and Research in Motion Ltd. (Feb. 13, 2012), https://www.justice.gov/opa/pr/statement-department-justice-s-antitrust-division-its-decision-close-its-investigations.
or open source. If an SSO determines that the risks outweigh the benefits of including a firm’s patented technology in a standard, it can often choose a different technology that performs the same function in the standard.

In light of the importance of IP disclosure rules in mitigating the risk of hold-up, this has been an area of significant attention for the FTC. In 1996, the agency brought an action against Dell Computer Corporation alleging that it failed to disclose that it held a U.S. patent claiming a hardware configuration it asserted was integral to a Video Electronics Standards Association computer bus design standard.\(^{17}\) It was only months after the standard had been adopted and proven successful that Dell asserted that use of the standard infringed its patent and required a license.

The FTC charged that Dell had unreasonably restrained competition by hindering industry acceptance and use of the bus standard, and raising the costs of implementing the standard, in violation of Section 5 of the FTC Act. Dell settled these charges with a consent order that prohibited it from asserting its patent against any implementer of the bus standard.

Similarly, in 2003, the FTC sued Union Oil Company of California (“Unocal”), charging the company with making misrepresentations in connection with rulemaking proceedings before the California Air Resources Board (“CARB”) to develop a regulatory standard for reformulated, low-emissions gasoline.\(^{18}\) The FTC alleged that Unocal deceived CARB and industry participants into thinking that certain technical information relating to the production of low-emission gasoline was in the public domain when in fact Unocal was pursuing patent protection for that technology. The FTC argued that Unocal acquired monopoly power in the relevant technology market and would have been able to demand millions of dollar in royalties from refiners practicing CARB’s standard. The case settled in 2005 with a consent order in which Unocal agreed not to assert its patents against refiners.

Additionally, in 2002, the FTC filed a complaint against Rambus Inc. for allegedly subverting the Joint Electron Device Engineering Council’s (“JEDEC’s”) standard-setting process relating to dynamic random access memory (“DRAM”) technologies and products.\(^{19}\) The FTC alleged that Unocal deceived CARB and industry participants into thinking that certain technical information relating to the production of low-emission gasoline was in the public domain when in fact Unocal was pursuing patent protection for that technology. The FTC argued that Unocal acquired monopoly power in the relevant technology market and would have been able to demand millions of dollar in royalties from refiners practicing CARB’s standard. The case settled in 2005 with a consent order in which Unocal agreed not to assert its patents against refiners.

The FTC charged Rambus with unlawful monopolization of four technology markets in which its patented technologies would have competed with alternative technologies addressing the same technical issues that were before JEDEC.\(^{20}\) The agency alleged Rambus

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18 Union Oil Co. of Cal., 140 F.T.C. 123 (2005).
20 In contrast to Dell Computer and Union Oil Co., supra, in which the respondents, based on their alleged deceptive
improperly concealed from JEDEC and its members that it had a patent and several pending patent applications involving technologies proposed for and ultimately adopted in the standards. The FTC alleged further that Rambus’s conduct violated JEDEC’s own rules requiring the disclosure of relevant patent rights.

After an administrative trial, the FTC found Rambus liable for unlawful monopolization. Specifically, the Commission found "but for Rambus's deceptive course of conduct, JEDEC either would have excluded Rambus's patented technologies from the JEDEC DRAM standards, or would have demanded RAND assurances." On appeal, however, the D.C. Circuit Court of Appeals set aside the agency’s decision. The D.C. Circuit held that the FTC had failed to establish that Rambus had engaged in exclusionary conduct because the trial record left open the “likelihood” that JEDEC would have still standardized Rambus’s technologies, even had Rambus disclosed its patents and patent applications. The court also rejected the FTC’s alternative argument that Rambus’s deception, designed to avoid a RAND commitment, itself harmed competition.22

The D.C. Circuit’s holding—that the “loss of [a RAND] commitment is not a harm to competition”—fails to properly take into account the role of a RAND commitment in mitigating the risk of patent hold-up. As the Third Circuit Court of Appeals observed in Broadcom Corp. v. Qualcomm Inc., “[f]irms may become locked in to a standard requiring the use of a competitor’s patented technology” and “[t]he patent holder’s [rights], if unconstrained, may permit it to demand supracompetitive royalties.”23 The court concluded that, in those circumstances, “measures such as FRAND commitments become important safeguards against monopoly power.”24

As a result of these enforcement efforts by the FTC, as well as private litigation like the Broadcom case, there is now ample authority in the United States that a patent holder who deceives an SSO by failing to disclose relevant patents or applications distorts the competitive process and interferes with the ability of standard-setting participants to make informed

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22 Id. at 466 (holding that the loss of a RAND commitment is not a harm to competition in the relevant markets).
23 501 F.3d 297, 314 (3d Cir. 2007).
24 Id.; accord Lotes Co., Ltd. v. Hon Hai Precision Indus. Co., Ltd., 753 F.3d 395, 400 (2d Cir. 2014) (noting that RAND commitments guard against the risks that a patent holder will be able to extract supracompetitive royalties from industry participants).
choices from among alternative technologies that are vying for inclusion in a standard.\textsuperscript{25}

\textbf{4.2 Circumvention of FRAND Commitments in SEP Licensing}

Another way that SSOs have tried to minimize the risk of patent hold-up is by requiring patent holders to agree to license their patents on FRAND terms in exchange for the inclusion of their patented technology in a standard.\textsuperscript{26} Antitrust enforcement has more recently focused on the licensing activities of SEP holders in view of FRAND licensing commitments that they or their predecessors-in-interest have made to SSOs.

In 2008, for instance, the FTC brought an action against Negotiated Data Solutions (“N-Data”) alleging it had unlawfully reneged on a licensing commitment that its predecessor-in-interest, National Semiconductor, had made to the Institute of Electrical and Electronics Engineers (“IEEE”) in 1994, amounting to an unfair method of competition in violation of Section 5 of the FTC Act.\textsuperscript{27} National had proffered certain patented technology, known as “NWay,” for incorporation into a “Fast Ethernet” standard. To persuade IEEE to choose NWay over competing alternatives, National committed to license the patented technology to any requesting party for a one-time fee of $1,000. Despite the royalty cap, the arrangement benefited National by accelerating IEEE’s completion of the new standard and increasing demand for Fast Ethernet products, which National was designing for sale. N-Data settled the FTC’s complaint by entering into a consent order precluding it from enforcing the NWay patents against any company without first offering that company a license on the terms originally proposed by National.

In 2013, the FTC brought an action against Google Inc. and Motorola Mobility, Inc. (“MMI”). It alleged that MMI evaded FRAND commitments to license patents essential to implementing various cellular, video, and wireless LAN standards, by seeking or threatening district court injunctions and exclusion orders from the U.S. International Trade Commission (“ITC”) against willing

\textsuperscript{25} See Broadcom, 501 F.3d at 314 (holding that “[d]eception in a consensus-driven private standard-setting environment harms 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’’); see also George Cary et al., The Case for Antitrust Law to Police the Patent Holdup Problem in Standard Setting, 77 ANTITRUST L.J. 913, 935 (2011) (“Patent holdup where a patentee has deceived an SSO in order to secure a position in the standard harms consumers by exploiting the competition-reducing aspects of standard setting to their own private advantage.”); Joseph Farrell et al., Standard Setting, Patents, and Hold-Up, 74 ANTITRUST L.J. 603, 609 (2007) (“This is not merely a private contracting problem, but an antitrust problem. It concerns the inefficient acquisition of market power that harms consumers; more fundamentally, deceiving buyers or keeping them in the dark about the terms on which a technology will be available subverts the competitive process.”).

\textsuperscript{26} A royalty-free or capped licensing commitment achieves the same purpose, without the complexities of a FRAND commitment.

\textsuperscript{27} Negotiated Data Solutions LLC, No. C-4234, 2008 FTC LEXIS 119 (Sept. 22, 2008).
licenses. The FTC alleged further that Google, following its 2012 acquisition of Motorola, continued MMI’s conduct, thereby undermining the integrity and efficiency of the standard-setting process.

To resolve the FTC’s competitive concerns, Google entered into a consent order preventing it from seeking or threatening injunctions against those willing to accept a license on FRAND terms. Specifically, the FTC’s order requires Google to resolve disputes over FRAND licensing terms before a neutral third party prior to seeking an injunction. The order permits Google, however, to seek an injunction in limited circumstances, such as where the potential licensee is not subject to the jurisdiction of a U.S. court, or where it refuses to accept terms set by a neutral third party.

Critical to the Commission’s analysis was the voluntary nature of MMI’s licensing commitment. MMI had agreed to license its essential patents on FRAND terms in order to see its technology included in the standard. By making that commitment, it demonstrated it had determined for itself that it could monetize its patents by sharing the technology broadly with implementers on terms it knew would be constrained by the FRAND agreement. MMI made that decision in light of the alternatives it faced at the time, and the FTC’s enforcement action merely required MMI and Google to honor that commitment.

The U.S. Department of Justice (‘‘DOJ’’) has also taken a similar enforcement stance with respect to firms that have made FRAND commitments to SSOs. In 2014, the agency announced that it investigated Samsung Electronics Co. Ltd.’s use of its SEPs to obtain ITC exclusion orders to prevent certain Apple iPhone and iPad models from entering the United States. As explained in its press release, DOJ closed its investigation of Samsung’s hold-up behavior only after Ambassador Michael Froman, the U.S. Trade Representative, acting on behalf of President


28 Motorola Mobility LLC & Google Inc., No. C-4410, 2013 FTC LEXIS 97 (July 23, 2013) (complaint), available at http://www.ftc.gov/sites/default/files/documents/case s/2013/07/130724googlemotorolacompt.pdf. An exclusion order is an administrative order issued by the ITC blocking the importation of articles that are deemed “unfair practices in import trade.” 19 U.S.C. § 1337(d) (2012). Articles that are found to infringe a U.S. patent may warrant such relief if, among other things, the entry of an exclusion order is consistent with the “public interest.” Id An exclusion order has the same practical effect as an injunction, preventing the sale of the allegedly infringing products in the United States.

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Obama, vetoed an ITC exclusion order that would have barred the importation of Apple products that were found to infringe a FRAND-encumbered SEP owned by Samsung.\textsuperscript{32} In so doing, Ambassador Froman relied on a joint policy statement issued in 2013 by DOJ and the U.S. Patent & Trademark Office stating that the issuance of an exclusion order against a willing licensee for infringement of a FRAND-encumbered SEP is not in the public interest.\textsuperscript{33}

As these matters illustrate, in the standard-setting context, the risk of patent hold-up creates the type of competitive harm that falls properly within the scope of antitrust enforcement. The standard-setting process excludes competing alternative technologies from the standard and makes it highly costly, if not impracticable, for an implementer to switch from the patented technology to those alternatives after the fact. By threatening an injunction that can put a significant portion of the implementer’s business at risk, the SEP owner has the bargaining power to extract licensing terms that capture the profits from potential lost sales, which can be extraordinarily high for an implementer if there is no feasible design-around alternative. This conduct can lead to higher prices or the stifling of innovation. Even the uncertainty associated with hold-up can degrade the value of the standard-setting process for consumers by discouraging the investments required to develop or implement a standard.

However, a dispute between a patent holder and a willing licensee over royalty terms that does not take place under the threat of an injunction or a similar disruption to standard-specific investments is unlikely on its own to create the undue leverage that is the source of the competitive problem in the standard-setting context. The patent holder has the ability to pursue a license on FRAND terms, resorting to the aid of a court if necessary, but it should not be permitted to threaten an implementer’s entire business to obtain the license.

Some argue, however, that the greater risk in the standard-setting context is that of “reverse hold-up”\textsuperscript{34} a situation where implementers refuse to negotiate with or compensate the SEP holder for their use of its patented technology.\textsuperscript{35} Citing the potential for reverse


\textsuperscript{33} Id. at 1–2 (citing and discussing U.S. DEP’T OF JUSTICE & U.S. PAT. & TRADEMARK OFF., POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS (2013)), https://www.justice.gov/sites/default/files/atr/legacy/2014/09/18/290994.pdf [hereinafter DOJ-PTO POLICY STATEMENT].

\textsuperscript{34} “Reverse hold-up” is sometimes also referred to as “holdout.”

\textsuperscript{35} See Froman Letter, supra note 31, at 2 (defining “reverse hold-up” as a “constructive refusal to negotiate
hold-up, these critics question the propriety of antitrust enforcement predicated on concerns about patent hold-up. But, as the district court observed in Innovatio IP Ventures, LLC, the potential for reverse hold-up is not unique to SEP holders. Indeed, the Patent Act specifically allows for the grant of enhanced damages to patent holders whose patent rights have been willfully infringed. Additionally, to the extent that a SEP holder demonstrates that an implementer is unwilling to negotiate a FRAND license, injunctive relief may be warranted.

4.3 Other Anticompetitive Acts That Undermine Standard Setting

The FTC’s most recent enforcement action in the patent licensing arena is its recent lawsuit against Qualcomm Inc. Qualcomm is both a holder of SEPs relating to baseband processors used to enable cellular communications and a dominant supplier of certain types of processors. In its complaint, the FTC alleges that Qualcomm has used its dominant position in the markets for these chips to extract onerous and anticompetitive supply and licensing terms from cell phone manufacturers that weaken competitors and protect its monopoly.

In particular, the FTC alleges that Qualcomm has used its status as a dominant chip supplier, and the threat of supply disruption, to extract higher patent royalties than what Qualcomm could otherwise have obtained. According to the FTC’s complaint, Qualcomm refuses to supply chips to a handset device manufacturer unless the manufacturer first agrees to a SEP license on Qualcomm’s preferred terms which include elevated royalties that the manufacturer must pay Qualcomm when it chooses to purchase chips from Qualcomm’s competitors. The FTC is also challenging Qualcomm’s policy of not licensing its SEPs to rival chip manufacturers in violation of its FRAND commitments. The Commission contends that Qualcomm’s policies in effect place a “tax” on device manufacturers’ purchases of chips from

37 35 U.S.C. § 284 (2012); see also Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1932 (2016) (“The sort of conduct warranting enhanced damages has been variously described in our cases as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or –indeed- characteristic of a pirate.”). In Halo Electronics, the Court relaxed the standard for willful infringement previously adopted by the Federal Circuit, likely making it easier for patent holders to establish that an infringer’s conduct was willful.
38 See DOJ-PTO POLICY STATEMENT, supra note 32, at 7 (“An exclusion order may still be an appropriate remedy in some circumstances, such as where the putative licensee is unable or refuses to take a F/RAND license and is acting outside the scope of the patent holder’s commitment to license on F/RAND terms.”); Written Submission on the Public Interest of Chairwoman Edith Ramirez at 6–8, In re Certain 3G Mobile Handsets and Components Thereof, No. 337- TA-613 (Remand) (Int’l Trade Comm’n filed July 10, 2015) (arguing that allowing a SEP holder the opportunity to establish an implementer’s unwillingness to take a license “would also address any concerns about reverse hold-up”).
Qualcomm’s competitors. According to the Commission, this tax reduces demand for competitors’ chips, which in turn reduces competitors’ incentives to invest and innovate, and results in higher prices that are passed on to consumers. The FTC contends Qualcomm’s anticompetitive acts constitute unreasonable restraints of trade and unlawful monopolization in violation of Sections 1 and 2 of the Sherman Act respectively, which the FTC enforces through Section 5 of the FTC Act, as well as “standalone” violations of Section 5.

The FTC’s primary theory of liability rests on a traditional Section 2 claim of monopolization that Qualcomm is improperly maintaining its monopoly in chips through anticompetitive conduct that excludes or marginalizes its competitors. In particular, rather than directly raising rivals’ costs or foreclosing their entry and expansion, the Commission contends that Qualcomm is engaging in conduct that dampens a device manufacturer’s demand for competitors’ chips. This conduct, in turn, has the effect of making Qualcomm’s competitors less vigorous and effective.

The FTC also asserts that Qualcomm’s conduct violates Section 5 on a standalone basis. In other words, the FTC alleges that Qualcomm’s practices and policies, regardless of whether they constitute monopolization or unreasonable restraints of trade under the Sherman Act, nonetheless harm competition and the competitive process and therefore constitute “unfair methods of competition” prohibited by Section 5. The standalone Section 5 claim is based on the same exclusionary conduct that underlies the FTC’s Sherman Act claims. But it is noteworthy that the FTC has also alleged that Qualcomm, through its conduct, including its refusal to license its SEPs to rival chip manufacturers, has breached its FRAND commitments and thus harmed competition and the competitive process. While this charge is not necessary to establish liability given the FTC’s main theory of exclusionary harm, it is very much in line with the FTC’s prior enforcement actions against N-Data, Google/Motorola Mobility, and Bosch.

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40 See, e.g., id. par. 87. In addition to this conduct, the Commission challenges Qualcomm’s exclusive dealing arrangement with Apple Inc., which allegedly prevented Qualcomm’s competitors from becoming stronger by doing business with Apple.

41 In addition to alleged acts of monopolization, the FTC also charges that Qualcomm’s license agreements with device manufacturers, which are allegedly the product of Qualcomm’s exercise of its monopoly power, constitute unreasonable restraints of trade in violation of Section 1 of the Sherman Act.

42 Qualcomm complaint par. 147.


44 Qualcomm complaint pars. 112, 115.
5. DETERMINING THE MEANING OF FRAND

The FTC has generally sought to avoid defining a specific rate, or a range of rates, for a FRAND license in its enforcement actions. Disputes over FRAND rates have largely been left to the courts to decide, if the parties are unable to come to terms on their own. When asked to determine a FRAND rate, U.S. courts rely on traditional patent damages analysis and in particular on factors set out in the well known Georgia-Pacific case.45 These factors include the rates paid by other licensees, the rates the implementer has paid to license comparable patents, and the commercial relationship between the licensor and implementer. Georgia-Pacific also directs that the royalty determination be placed within the framework of a hypothetical negotiation, in order to assess the amount to which a licensor and willing licensee would have agreed in an arms-length negotiation.46

In its 2011 Report on the Evolving IP Marketplace, the FTC provided competition policy based guidance for courts to apply when calculating reasonable royalty damages in infringement cases.47 Among other recommendations, the Commission supported the concept of a hypothetical negotiation as the proper framework to determine reasonable royalties.48 The FTC also emphasized that the hypothetical negotiation should occur before the licensee has made significant investments to implement a technology. Otherwise, the outcome of a hypothetical negotiation will reflect the investments the licensee has made to implement the technology, rather than the ex ante market value of the patent.

In a competitive marketplace, a licensee looking to, for example, implement a new technology to reduce costs or improve its product will compare the benefits of the various available options. A firm will not be willing to pay a premium price for a technology where that premium is more than the additional value it provides over available alternatives—in other words, the incremental value (plus the cost of the substitute). If the patented technology allows the licensee to drastically reduce costs or increase sales over competing technologies, the licensee would be willing to pay more than if the patented technology faced many close substitutes that delivered similar value.

In the context of standard setting, the hypothetical negotiation should be deemed to take place before a particular standard has been adopted, when alternative technologies are being considered. Adopting the economically-

46 See 318 F. Supp. at 1120.
48 Id. at 191.
based framework urged by the FTC in determining FRAND royalties ensures that rates of return adequately compensate SEP holders for their invention, but do not also reflect an added increment resulting from patent hold-up.

Since the FTC’s 2011 Report, several federal district courts have weighed in on a framework for determining a reasonable royalty for FRAND-encumbered SEPs. These courts have employed various methodologies, including using a modified version of the Georgia-Pacific factors that accounts for the value the SEPs contribute to the standard, the importance of that standard to the infringing products, and the aggregate royalty demands facing firms implementing a complex standard with many essential patented technologies, typically known as the “royalty-stack.”

For example, in *Microsoft Corp. v. Motorola, Inc.*, Motorola demanded that Microsoft pay royalties in the amount of six to eight dollars per Xbox unit to license its SEPs relating to the 802.11 and H.264 wireless standards. After a bench trial to determine the RAND royalties for these portfolios, the district court set rates of 3.471 cents per unit for the 802.11 SEPs and 0.555 cents per unit for the H.264 SEPs. In making its determination, the *Microsoft* court took into account, among other factors, that “the parties to a hypothetical negotiation under a RAND commitment would consider alternatives that could have been written into the standard instead of the patented technology.”

In other words, the time frame for the hypothetical negotiation was the period before the standard was adopted and implemented.

This approach properly takes into account the problem of patent hold-up—the reality that an implementer is likely to be forced to pay more to use the patented technology if it has to negotiate during the period after the standard has been adopted. Importantly, the *Microsoft* court also acknowledged that “a RAND royalty should be set with the understanding that SSOs include technology intended to create valuable standards.” In other words, “[t]o induce the creation of valuable standards, the RAND commitment must guarantee that holders of valuable intellectual property will receive reasonable royalties on that property.”

The district court’s approach was subsequently upheld on appeal by the Ninth Circuit.

Another example is *Innovatio IP Ventures, LLC.* There, the court determined that the appropriate compensation to Innovatio for infringement of its portfolio of SEPs relating to

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49 See IP ANTITRUST REPORT, supra note 1, at 61 (“Royalty stacking occurs when access to multiple patents is required to produce an end product, forcing the manufacturer’s products ‘to bear multiple patent burdens,’ usually in the form of multiple licensing fees.”).


51 Id., 2013 U.S. Dist. LEXIS 60233 at 43.

52 Id.

the 802.11 standard was 9.56 cents per wireless chip sold to or used by device manufacturers. The court emphasized that the RAND rate needed to reflect, to the extent possible, the value of the underlying technology and not the hold-up value of standardization.\(^{54}\) However, the court also recognized that part of what may make a particular patented technology more valuable than its competing alternatives may be the ease with which it can be incorporated into a standard, and so the RAND rate should also account for that value.\(^{55}\)

Greater clarity on the terms of a FRAND license -like that provided by the Microsoft and Innovatio courts, among others- is likely to continue to facilitate private negotiations over FRAND rates. As noted above, however, a dispute over royalty terms, such as the rate or the base used, standing alone does not typically raise antitrust concerns. For example, absent the threat of an injunction or similar disruption to standard-specific investments, a dispute between a SEP holder and a putative licensee over royalty rates may simply drive the parties to court to seek a neutral third-party determination of FRAND terms. This is precisely what the Commission required in its Google/MMI order in the event that private negotiations fail. Anticompetitive concerns are unlikely to arise in such a setting.

6. CONCLUSION

The U.S. antitrust agencies have properly exercised their enforcement authority to address SEP licensing issues out of the recognition that standardization necessarily involves competitors jointly choosing a winning technology for a particular feature or function, supplanting a free market where customers and consumers have the ability to choose among competing technologies. As these issues are addressed by competition enforcers and regulators around the world, the consumer welfare-oriented approach taken by the U.S. antitrust agencies provides useful guidance, highlighting the need to carefully balance the rights and interests of both SEP holders and implementers in a way that secures the benefits of standardization and competition for consumers. Soundly administered, antitrust enforcement ensures that the incentives of both innovators who contribute patented technology to standards and implementers who utilize standards to bring valuable products and services to consumers are preserved.


7. BIBLIOGRAPHY


