

# Implementing the FRAND Commitment

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For many years, standard-setting organizations (SSOs) have required members to commit to license standard-essential patents (SEPs) on Fair, Reasonable and Non-discriminatory (FRAND) terms.<sup>1</sup> How FRAND terms can and should be interpreted has been the subject of extensive debate (as well as litigation in many jurisdictions). While we acknowledge other objectives behind these commitments, we focus here on their role as constraints on the ability of the holders of the SEPs to hold up implementers of such FRAND-encumbered patents, with potential anticompetitive effects.

In this article, we explain why, from a practitioner's perspective and given the economic goals of FRAND terms, a mere commitment to license on FRAND terms does not ensure that the *ex-post* negotiations will invariably satisfy the FRAND principles. We then describe when and how we believe FRAND commitments should be enforced to achieve the economic goals of FRAND terms and avoid anticompetitive effects.<sup>2</sup>

## Goals for FRAND terms

Although standards can have benefits, collaborative standard setting by an SSO can raise competitive concerns. Failure to restrain or mitigate the possibility of anticompetitive conduct by SSO participants can reduce or eliminate the benefits of standards.

FRAND commitments have the following economic goals in order to address potential anticompetitive problems. First, a royalty for a FRAND-encumbered SEP should reflect *ex ante* competitive conditions rather than the *ex post* market conditions. This is because once the relevant IP is included in the standard and an implementer has included it in its product, competitive alternatives within the standard are extinguished. This may give the owner of the SEP *ex post* market power and the ability (albeit not necessarily the incentive) to engage in "hold-up." Second, a non-discriminatory royalty should offer the same terms to all similarly situated licensees, thus ensur-

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<sup>1</sup> See FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 192 (2011) [hereinafter FED. TRADE COMM'N, EVOLVING MARKETPLACE], available at <http://www.ftc.gov/reports/evolving-ip-marketplace-aligning-patent-notice-remedies-competition>. ("Many SSOs attempt to address this [hold-up] problem through disclosure and licensing rules. Disclosure rules typically require participants to disclose patents or patent applications during the standard setting process before a standard is chosen. Licensing rules typically require that participants agree to license disclosed patents on RAND (Reasonable and Non-Discriminatory) or FRAND (Fair, Reasonable and Non-Discriminatory) terms." Internal citations omitted.). We are not aware of any substantive difference between RAND and FRAND requirements. To avoid confusion, we will use the term FRAND throughout this paper.

<sup>2</sup> For more detailed discussions on the economic goals of FRAND terms and of the problems of hold-up and royalty stacking, see, e.g., FED. TRADE COMM'N, EVOLVING MARKETPLACE, *supra* note 1, at 191–94; Dennis Carlton & Allan Shampine, *An Economic Interpretation of FRAND*, 9 J. COMPETITION L. & ECON. 531, 536–45 (2013) [hereinafter Carlton & Shampine, *Economic Interpretation*]; Daniel Swanson & William Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market*, 73 ANTITRUST L.J. 1 (2005); Mark Lemley & Carl Shapiro, *Patent Hold-Up and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); and Joseph Farrell, John Hayes, Carl Shapiro, & Theresa Sullivan, *Standard Setting, Patents and Hold-up*, 74 ANTITRUST L.J. 603 (2007).

ing a level playing field for competition in products implementing the standard.<sup>3</sup> Third, a fair and reasonable royalty should not subvert the SSO's goal of promoting wide adoption of a standard. That is, it would be helpful if it addressed the potential problem of royalty stacking or "Cournot complements."<sup>4</sup> And, finally, the royalties should ensure there are adequate incentives for innovation by all firms, including those using the standard, and for bringing intellectual property into a standard.<sup>5</sup>

### Why Can't Negotiations Alone Avoid Anticompetitive Problems?

The power of a FRAND commitment to influence behavior is determined in large part by its enforceability. To the extent the terms are well understood and parties can enforce them through the courts, one would certainly expect that the potential for recourse to the courts would impact negotiations. Indeed, it is generally the case that negotiations will be affected by the expected outcome of a possible litigation between the parties (e.g., if proposed terms are too different from what either party could expect to obtain through the courts, then parties have an incentive to go to court rather than accept the terms).<sup>6</sup> However, it is sometimes asserted that there is no need for the courts to intervene because a patent holder that has made a FRAND commitment will not offer terms that are inconsistent with FRAND. Or, alternatively, that FRAND commitments require only "good faith" negotiation, and are simple commercial negotiations in which the courts should not intervene barring some egregious show of "bad faith." We believe otherwise.

Just because a commitment is made does not mean that the commitment will necessarily be honored, any more than the existence of a contract means that contracting parties will never breach it. Unless there is a way to make a FRAND commitment concrete, there is no guarantee of it being honored. That is, a FRAND commitment must be defined so that courts can determine whether the commitment is being honored or not. Furthermore, a FRAND commitment should be defined to address the potential anticompetitive problems raised by the standard-setting process.

For example, if FRAND were interpreted to require only "good faith" negotiations, then, almost by definition, virtually any outcome of a bilateral negotiation could be deemed to meet the FRAND criteria. Such an interpretation would be economically vacuous. The patent holder would have the incentive to exploit whatever ability it may have to exercise hold-up, and a nebulous "good faith" requirement would provide no practical barrier to the ability to do so. One might argue that, if hold-up is not a significant problem, then the goal of providing incentives for innovation should take

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<sup>3</sup> More specifically, non-discrimination should keep SEP holders from using their acquired market power to impede rivals in downstream markets or expropriate returns from product-differentiating innovations by rivals (or non-rivals). One of the authors has previously written about the importance of non-discrimination and how it can be used to address many of these concerns, particularly where comparable, FRAND-compliant benchmarks are available. Carlton & Shampine, *Economic Interpretation*, *supra* note 2, at 546–49; see also Richard Gilbert, *Deal or No Deal? Licensing Negotiations in Standard-Setting Organizations*, 77 ANTITRUST L.J. 855, 858–59 (2011); Dennis Carlton & Allan Shampine, *Identifying Benchmarks for Applying Non-Discrimination in FRAND*, CPI ANTITRUST CHRON., Aug. 2014 (1), at 2 [hereinafter Carlton & Shampine, *Identifying Benchmarks*].

<sup>4</sup> Preserving *ex ante* competition and ensuring non-discrimination can be addressed even if it proves impractical to address royalty stacking. See Carlton & Shampine, *Economic Interpretation*, *supra* note 2.

<sup>5</sup> We recognize there is debate about whether rates set on an *ex ante* basis provide appropriate incentives. We believe that they do. For opposing viewpoints, see, e.g., Richard Epstein, Scott Kieff & Daniel Spulber, *The FTC, IP, and SSOs: Government Hold-Up Replacing Private Coordination*, 8 J. COMPETITION L. & ECON. 1 (2012); John Golden, *'Patent Trolls' and Patent Remedies*, 85 TEX. L. REV. 2111 (2007); Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?* 4 J. COMPETITION L. & ECON. 535 (2008).

<sup>6</sup> See, e.g., Carlton & Shampine, *Identifying Benchmarks*, *supra* note 3, at 3–6.

precedence and patent holders' negotiating ability should not be restricted. However, there is evidence to the contrary—that hold-up is a serious concern.<sup>7</sup>

Similar claims that licensing firms always have a self-interest to negotiate to a FRAND rate because of concerns about participation in future standards settings or repeated interactions with other SSO members are also belied by findings that rates demanded by licensors are at times multiple orders of magnitude above what is ultimately determined to be a FRAND rate.<sup>8</sup> Such claims also fail to consider the importance of other strategic incentives to offer non-FRAND terms. For example, other SEP owners might approve of excessive demands for licenses to FRAND-encumbered patents rather than retaliate against the SEP holder at some future time. This is especially so if the firm being asked to pay the excessive rate is a strong competitor of the other firms. Indeed, one concern with collective action amongst competitors is that a group of competitors may work together to disadvantage another group of competitors, e.g., later entrants or firms with no SEPs.<sup>9</sup> For example, if an entrant has been particularly successful competing against many SSO members, those firms might be more likely to reward the patent holder for seeking excessively high rates in future rounds of standard setting than to punish it. Similarly, different SSO members may have different incentives. Some may prefer to see precedents of high rates to be deemed as FRAND, so that they might themselves demand such rates in the future.

While any rate that parties agree on strikes some sort of “balance” between the licensor and licensee, we do not agree that the mere fact that a rate comes from a negotiation is enough to satisfy the strictures of FRAND. In particular, any agreement between a buyer and a monopolist exercising market power strikes a balance, but that balance reflects the exercise of market power. Hence, this *laissez-faire* interpretation of FRAND provides no meaningful restriction on the licensors' ability to exercise market power stemming from an inclusion in the standard. Nor does it offer a clear mechanism by which a potential licensee could challenge a rate as not being “reasonable” under FRAND. Neither party should be allowed to declare a rate to be FRAND without the other party having some mechanism to challenge that claim.

### Who Can Obtain a License?

We now provide suggestions on how FRAND should be implemented from a practical perspective to address the antitrust concerns created through the collective action of SSOs. First, any firm should be able to obtain a license to SEPs covered by a FRAND commitment. In particular, the patent holder should not be able to restrict licensing based on a firm's location in the supply chain. We note that, if a patent holder offers licenses to only downstream firms and refuses to license upstream firms, it presumably expects this strategy to be more profitable than licensing upstream or not offering a license. This scenario gives rise to a serious concern that the patent holder may be attempting, by exercising hold-up, to extract part of the downstream firms' profits from functionality unrelated to the patent holder's patented technology. As a practical matter, it is likely to

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<sup>7</sup> See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 at \*10–11 (W.D. Wash. Apr. 25, 2013) (Robarts, J.); *In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11-9308, 2013 WL 5593609, at \*8–9 (N.D. Ill. Oct. 3, 2013) (Holderman, J.); Lemley & Shapiro, *supra* note 2, at 2025–35; Fiona Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463, 482 (2014).

<sup>8</sup> See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013) (Robarts, J.); *In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11-9308, 2013 WL 5593609 (N.D. Ill. Oct. 3, 2013) (Holderman, J.).

<sup>9</sup> See, e.g., Carl Shapiro, *Setting Compatibility Standards: Cooperation or Collusion?*, in EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY 91, 91–92 (Rochelle Cooper Dreyfuss, Diane Leenheer Zimmerman & Harry First eds., 2001) (discussing examples of participants in a standard-setting process abusing that process to exclude competitors from the market).

be easier for the patent holder to exercise hold-up and strategic discrimination against end product manufacturers than against component manufacturers.<sup>10</sup> There are several reasons for this.

It would likely be more difficult for a judge or an arbitrator to determine whether the royalty claims of a SEP holder are reasonable when the end products are highly complex and contain multiple components, many of which may contain numerous SEPs. That is, attempting to determine the incremental value of patents for each end product manufacturer will likely be more costly and uncertain than determining that value to an upstream component manufacturer. Similarly, it may be more difficult for an end product manufacturer to use comparable licenses to avoid hold-up or discriminatory licensing terms because there is likely greater heterogeneity among end products than among components. Finally, the risks of litigating to obtain a FRAND rate may be greater for end product manufacturers than for component manufacturers because a trier of fact might be more willing to give a small royalty on a large base (the value of the end product) than a large royalty on a small base (the value of the component), even when the former results in a higher total payment. Hence licensing upstream potentially lowers the likelihood that the patent holder will try to exercise hold-up.<sup>11</sup>

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In any event, we believe that the FRAND commitment requires the SEP holder to license any firm using the standard and seeking a license, regardless of the level of production.<sup>12</sup> This is particularly important as upstream firms may be impacted by the SEP holders' actions downstream. For example, if a downstream manufacturer is sued for infringement by a SEP holder, the downstream manufacturer may seek indemnity from an upstream supplier. Even if it does not seek an indemnity, the upstream supplier will be impacted by the changes in demand for its products should a SEP holder exercise hold-up against downstream firms. If an upstream firm is denied a license of its own, it may thus be itself impacted by a hold-up and violation of FRAND, but have no recourse.

### **When Should Firms Be Allowed to Stop Negotiating and Go to Court?**

Either party should be able to go to court at any point to challenge a rate that is "on the table." If, alternatively, parties could not challenge rates during "ongoing" negotiations, then enforcing a FRAND commitment would be difficult.

To set up the issue, consider whether an opening offer (or even a couple of rounds of offers) made in "good faith" should be subjected to judicial scrutiny at a whim of either party.<sup>13</sup> Should not the parties be required, at a minimum, to wait until negotiations have completely broken down and only then have the final offers evaluated by the courts? However, an approach that immunizes any particular offer by a SEP holder undermines the utility of FRAND because it provides no guidance for identifying the point in time during the negotiations at which either party could seek a judi-

<sup>10</sup> We do not mean to suggest that end product manufacturers should not be licensed. Rather, we are concerned about situations where component manufacturers wish to take licenses and are not allowed to do so. In our view, a refusal to license a firm is inconsistent with FRAND.

<sup>11</sup> We recognize that there may be a trade-off between reducing the risk of hold-up and reducing the ability of the patent holder to engage in possibly economically efficient price discrimination (which may also be allowable under FRAND to the extent the end product manufacturers are not similarly situated). For further discussion of these trade-offs, see Carlton & Shampine, *Economic Interpretation*, *supra* note 2.

<sup>12</sup> Although it may be the case that there are efficiencies to negotiating licenses at a particular level of production, and, in the absence of any abuses, upstream firms may well not seek to obtain separate licenses.

<sup>13</sup> For further discussion of some of the economics of bargaining in such situations, see Janusz Ordovery & Ariel Rubinstein, *A Sequential Concession Game with Asymmetric Information*, Q.J. ECON. 879 (1986); and Ariel Rubinstein, *Choice of Conjectures in a Bargaining Game with Incomplete Information*, in *GAME-THEORETIC MODELS OF BARGAINING* 99 (Alvin E. Roth ed., 1985).

cial determination of the appropriate rate.<sup>14</sup> For example, if offers were not subject to evaluation, a SEP holder could make an initial offer reflecting substantial hold-up and then gradually reduce it over time but never to a level compliant with a FRAND commitment. Under this approach, the potential licensee would effectively be barred from challenging such a rate as being non-FRAND. The SEP holder could simply say that any particular challenged rate was part of an ongoing negotiation and so need not be constrained by FRAND. Similarly, a licensor must have an ability to eventually call off negotiations and seek enforcement of its patent rights.

In our view, interpreting FRAND as requiring only “good faith” negotiations is not an economically sound approach, nor one that can be readily evaluated from an economic perspective. The difficulty with an approach that relies on unrestricted negotiations can be illustrated by a licensee faced with an excessive royalty demand. If a licensee cannot go to the court while the patent holder is still “negotiating,” and there is no clear way to tell if negotiations have finally broken down, then the patent holder could derail a pending law suit at any time by making a new offer or claiming that it is still negotiating in good faith. Furthermore, once one party has gone to court for a ruling, allowing the other party to unilaterally derail the process by making a new offer that would require any challenge to be restarted would make it impractical to obtain relief through the court. It could also be very costly to society if such litigation were continuously started, stopped, and restarted.<sup>15</sup> This untethered negotiations approach offers no relevant constraint on the market power created by the standard-setting process.

In the same vein, a potential licensee should not be able to indefinitely defer payments through stonewalling in negotiations. A patent holder should be able to discontinue negotiations with a potential licensee and sue for damages resulting from infringement based on a FRAND-compliant royalty (i.e., seek a judicial determination of a FRAND rate that the licensee should pay). And once a rate has been determined, the patent holder should be able to have payment of that rate enforced by the court, as we describe below.

It follows from this discussion that rates offered by patent holders should be bounded by a FRAND commitment. That is, all offers should be consistent with FRAND principles. This does not mean that there is always a unique rate that is consistent with FRAND principles, or that the parties will necessarily agree as to the boundaries of FRAND compliant rates. A range of rates may be “reasonable” under FRAND principles.<sup>16</sup> Thus, it is entirely consistent with FRAND principles for an initial licensee to be given an offer that is FRAND-compliant and to bargain from there, potentially resulting in a final license at a lower, but still a FRAND-compliant, rate. (Similarly, the licensee may propose a lower rate and bargain from that to a higher rate.)

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<sup>14</sup> To be clear, in our view, the patent holder is obligated to offer a FRAND rate, and a licensee should be able to challenge a rate on the table. However, the patent holder should similarly be able to state that it believes the offer on the table is FRAND, and that a licensee should pay or be taken to court and forced to pay. Indeed, if there is a record of existing FRAND licenses, then a patent holder may not negotiate at all, but present non-discriminatory terms and inform the licensee that failure to accept those terms will result in litigation to enforce the patent holder's rights. Such litigation should, however, begin with an adjudication of the FRAND-compliant terms (i.e., we are not suggesting that a patent holder should be able to begin enforcement efforts with an injunction).

<sup>15</sup> If the parties can jointly reach an agreement to settle the litigation, then that is efficient from an economic perspective; but neither party should be able to unilaterally force the other party to abandon an effort to have the court settle the disagreement.

<sup>16</sup> There is a distinction between “reasonable” and “non-discriminatory.” An initial negotiation as to rates can occur over a range of “reasonable” numbers, but once a deal has been struck, that deal sets a benchmark for future deals through the “non-discriminatory” part of FRAND. However, as we discuss later, difficulties in comparing licenses, perhaps because of complicating factors such as cross-licenses, may require a court to engage in a hypothetical negotiation even when there are existing licenses.

However, explicitly allowing non-FRAND offers is problematic in several respects. As described above, doing so complicates, and potentially removes, the effectiveness of litigation as an enforcement mechanism. Also, a non-FRAND offer could be accepted, especially if non-acceptance can result in an injunction. That is, if a patent holder knowingly makes a non-FRAND offer, and a licensee accepts it (perhaps because its litigation costs are too high to make challenging the offer worthwhile, or perhaps because it lacks information to effectively assess the offer), it is implausible that the patent holder would subsequently inform the licensee that it was paying “too much,” and lower the royalty rate. Explicitly allowing a patent holder to ask for a non-FRAND rate would encourage patent holders to do so in the hope that a licensee will agree to that rate.

### **Should Defensive Suspension of Existing FRAND Licenses Be Allowed?**

Defensive suspension of FRAND licenses by patent holders can raise concerns about hold-up. An example of defensive suspension would be where a component manufacturer has a general license from a patent holder, but a customer of the component manufacturer sues the patent holder for infringement, at which point the patent holder suspends the license granted to the manufacturer with respect to the customer suing the patent holder. Such conduct can be, in effect, tantamount to a sabotage of the third party’s business which is denied access to the components that are essential to the pursuit of its business.

In our view, defensive suspension, by its nature, means that the patent holder anticipates obtaining more from the licensee than it was getting under the existing license. That fact alone is problematic under FRAND, both with respect to hold-up and to non-discrimination. In particular, in our view, two firms are not differently situated with respect to FRAND just because one of the two licensees is suing the patent holder. Some commenters have suggested that an exception should be made if one SEP holder that has already granted a FRAND license is being sued by another SEP holder for a non-FRAND rate.<sup>17</sup> Allowing defensive suspension in such a situation would be a form of fighting fire with fire—saying that if one party is not acting subject to FRAND, then the other party need not as well. More specifically, FRAND commitments sometimes contain reciprocity provisions where the commitment to provide a FRAND license is conditioned on obtaining a FRAND license from the firm seeking a license. While this may be an unobjectionable quid pro quo if neither party has an existing license from the other, complications may arise when one firm already has granted a FRAND-compliant license to the other firm’s SEPs, but has concluded that the other firm is asking for a non-FRAND rate. In such a situation, should the firm that has granted the prior license be able to suspend that license? To the extent that reciprocity is assumed under FRAND, such a suspension may be justifiable.

### **How Should Injunctions Be Treated in the Presence of a FRAND Commitment?**

Patent holders should not generally be allowed to obtain injunctions in the presence of a FRAND commitment. As a matter of economics, injunctions are inimical to some of the fundamental objectives of FRAND, such as fostering broad licensing of SEPs and adoption of the standard. The inclusion of a firm’s technology in the standard, based on a collective decision of the members of the SSO, bestows potentially very large economic benefits on the SEP holder, such as the ability to collect royalties on all standard-compliant products and the enlargement of the volume of the products subject to the license. At the same time, the assurance that the IP owner will not be able to revoke

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<sup>17</sup> See, e.g., Mark Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1156 (2013).

the license to its SEPs reduces the risks associated with developing products covered by the standard. Because the implementers of products under a standard are locked into the technology, the impacts of granting or denying an injunction in this context are extraordinarily asymmetric.

An injunction provides a means for a patent holder to exercise the additional market power gained by inclusion of a patent in a standard, and the threat of an injunction places at risk the investment and ongoing profits of firms using the standard. This allows the patent holder to engage in hold-up and ask for payment in excess of the *ex ante* value of the patent.

Granting an injunction could inflict serious harm to a potential licensee's business and could lead to irreversible harm to the potential licensee's brand that cannot be compensated monetarily. On the other hand, denying injunctive relief to the SEP owner results only in compensable monetary damages, bearing in mind that SEP holders have agreed to accept royalties from any party in exchange for use of the patented technologies implemented in the standard.

One might suggest that always or generally denying injunctions in the presence of a FRAND commitment denies IP owners the ability to enforce their IP rights. In our view, the proper starting point in the presence of a FRAND commitment is the imposition of damages—i.e., forcing the infringer to pay a reasonable and FRAND compliant royalty. Courts impose infringement damages all the time and enforce those rulings. Generally, injunctions or exclusion orders should be granted only if an infringer has refused to pay an adjudicated FRAND rate, and enforcement through an injunction is more practical than enforcement of a damages order. That is, granting an injunction would be sensible if a court could not enforce a damages verdict but could enforce an injunction. However, such circumstances seem relatively unlikely to arise. Given the large potential harms from granting injunctions and the unlikely nature of the exceptions, a general policy of not granting injunctions for SEPs in the presence of a FRAND commitment might be safest.

### **How Should a “Reasonable” Rate Be Determined Under a FRAND Commitment?**

Reasonable royalties under a FRAND commitment should be determined using the *ex ante* framework. Although standardization confers or enhances market power, this does not mean that the owner of FRAND-encumbered SEPs will actually convert this *de facto* monopoly into actual monopoly and engage in “excessive” licensing demands or other anticompetitive conduct. This decision is driven by the private incentives of the SEP owner. Inclusion in a standard lessens the competitive constraints facing the SEP holder and potentially gives it the ability to exercise market power and harm competition in a way that would not be possible if (as in the *ex ante* world) constraints from alternative technologies remained unaffected. The *ex ante* framework, although theoretical, provides a benchmark for the royalties and other terms that a SEP holder would be able to obtain if it had continued to face competition from alternative technologies, i.e., if it lacked the market power, in the relevant IP marketplace, that flows from its inclusion in the standard.

The *ex ante* framework for determining royalties under FRAND principles is widely, albeit not universally, accepted amongst economists. It has also been endorsed by the U.S. Federal Trade Commission.<sup>18</sup> We are not aware of any SSOs that have explicitly endorsed the *ex ante* approach;

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<sup>18</sup> See, e.g., FED. TRADE COMM'N, EVOLVING MARKETPLACE, *supra* note 1, at 22–23 (“A definition of RAND based on the *ex ante* value of the patented technology at the time the standard is chosen is necessary for consumers to benefit from competition among technologies to be incorporated into the standard.”); see also Carlton & Shampine, *Economic Interpretation*, *supra* note 2, at 545; Microsoft Corp. v. Motorola, Inc., No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013); Daniel Swanson & William Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market*, 73 ANTITRUST L.J. 1 (2005); Fiona Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463 (2014).

neither have they generally endorsed any other approach.<sup>19</sup> As we noted at the beginning, SSOs have generally left the interpretation of FRAND to lawyers, economists, and the courts.<sup>20</sup> When interpreting FRAND commitments, it is important to look at the underlying economics of the standard-setting process and the economic concerns, including competition policy concerns, which may arise as a result of the standard-setting process.

*The goal [of the ex ante framework] is to preserve the benefits of any competition that was actually or potentially present prior to the standard being set.*

To be clear, the *ex ante* framework asks what is the incremental value of the patented technology relative to the alternatives available prior to the standard being set. The goal is to preserve the benefits of any competition that was actually or potentially present prior to the standard being set.<sup>21</sup> This framework can be implemented through a hypothetical negotiation in accord with factors enumerated in *Georgia-Pacific*,<sup>22</sup> with appropriate modifications to reflect the FRAND commitment itself and, potentially, the possibility of royalty stacking. In this respect, we are dealing with a counterfactual exercise, and the relevant distinction is as to the timing of this counterfactual exercise: Is the hypothetical exercise done at the time when the IP embodied in the SEP is not in the standard (*ex ante*) or after it is in the standard (*ex post*)? The *ex ante* framework is not (or need not be) based on an actual negotiation that took place before the standard was set. If such a negotiation did take place, it would certainly be helpful to consider the results of that negotiation,<sup>23</sup> but such negotiations may not have occurred.<sup>24</sup> The *ex ante* framework simply asks what rate (or range of rates) would firms have agreed to, had the competitive alternatives to the SEP not been eliminated (and market power not been conferred or enhanced), by the standard-setting process?

As an illustration, consider that there is a standard for what a Martini cocktail consists of. Assume that the standard allows for any brand of gin, and that various brands of gin compete against each other for inclusion in the cocktail. Now assume that the official standard-compliant Martini requires brand X gin. This increases the market power of brand X (beyond the market power it may have had as a result of procompetitive product differentiation). In this setting, it may be relatively easy to ascertain the incremental value of the Martini standard if brand Y is swapped for brand X. Note that in this hypothetical exercise all other elements of the Martini standard remain unchanged. This allows us to isolate the incremental value of brand X gin within the standard. While there are certainly practical difficulties to conducting any counterfactual analysis, the widespread use of counterfactuals and the hypothetical negotiation construct indicates that these difficulties are not insurmountable.

<sup>19</sup> Some SSOs implement other approaches that are clearly defined, such as royalty-free licenses. We refer here to particular interpretations of FRAND commitments.

<sup>20</sup> One solution that has been advocated is for SSOs to precisely define FRAND. However, that has not yet occurred to our knowledge, and may be rendered moot to the extent that courts define FRAND in a way sufficient to avoid antitrust liability.

<sup>21</sup> Many standards do not become successful. By implementing an *ex ante* framework, SSOs can save themselves from the cost of having to conduct auctions or otherwise extensively investigate the relative prices and benefits of all possible alternatives. With the *ex ante* framework, that analysis can be done later only if the standard becomes successful, preserving the benefits of competition while conserving resources.

<sup>22</sup> See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013) (referring to *Georgia-Pacific Corp. v. US Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970)).

<sup>23</sup> If it exists, such a negotiation can provide a reference point for the non-discriminatory aspect of FRAND. See, e.g., Gilbert, *supra* note 3, Carlton & Shampine, *Identifying Benchmarks*, *supra* note 4.

<sup>24</sup> In principle, non-discrimination can moot much of this process if benchmark licenses exist. Once a rate has been set, all other parties can take advantage of it, and, to the extent possible, we strongly endorse the application of the non-discrimination portion of FRAND. In practice, we recognize that the existence of cross-licenses and other idiosyncratic terms may complicate the process of comparing licenses, necessitating some individual analyses.

The hypothetical negotiation/*ex ante* framework also allows for use of the non-discrimination provision and evaluation of total implied royalties (royalty stacking) as guiding principles that may be particularly important if it is difficult to determine the incremental value of the relevant patented technologies. It is very difficult to completely address the Cournot complements problem underlying royalty stacking (i.e., the cumulative royalty burden associated with a standard) without setting all rates at the same time and in a coordinated way.<sup>25</sup> However, courts should nonetheless recognize the existence of the royalty stacking problem and that it can exacerbate the problems of hold-up and strategic action.<sup>26</sup> In particular, royalty stacking revolves around having multiple patent holders each of which is trying to extract the entire available surplus. Courts should be wary of granting the entirety of the surplus, or even a majority of it, to a patent holder simply because that patent holder is the first to go to trial. We recognize, however, that this is perhaps the most difficult element to implement.

### What Royalty Base Should Be Used?

Most devices using standards have far greater functionality than just implementation of a particular standard. If profits from complementary innovations could have been achieved if some technology had been put into the standard other than an asserted SEP, then one should be concerned about the implementer being held up over those profits. In an *ex ante* negotiation, a patent holder's demand to share in the fruits of a manufacturer's innovative activities unrelated to the patent holder's contributions to the standard would not have succeeded. Thus, any such *ex post* demands are not "fair and reasonable." These concerns can be addressed in part by the choice of royalty base.

In considering the combined effect of the royalty base and rate, we do not want to imply that the mathematical trade-off between them creates indifference between the two elements of the formula. Rather, when both the base and rate vary significantly between heterogeneous products, it may become increasingly difficult to determine and apply FRAND-compliant royalty rates. One method we favor for dealing with product heterogeneity takes advantage of the fact that standards are sometimes embedded within particular components of downstream products such as, for cellular standards, baseband chipsets. Imposing royalties at the component level is attractive both for its relative simplicity and because it still rewards the innovator with increased revenues in the event of growth of the volume of sales or if the price of the component increases.<sup>27</sup> Another virtue is that charging a fee based on a component price ensures that the license terms can potentially be independent of the end use to which the chipset is put. Thus, unless the price of the component varies with the price of the mobile device, all devices will be burdened with the same license cost. This outcome is consistent with the non-discrimination provisions of FRAND.

Whether the base used is the price of a component or the price of a downstream product, the patent holder benefits from downstream innovation because such innovation increases sales of devices and, therefore, of components. Thus, although a component royalty base limits the patent holder's ability to obtain part of the profits flowing to the downstream manufacturers resulting from

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<sup>25</sup> For a discussion on some possible ways to address this problem, see Jorge Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 ANTITRUST L.J. 47 (2013).

<sup>26</sup> See, e.g., Lemley & Shapiro, *supra* note 2.

<sup>27</sup> We assume here that the relevant standard is fully implemented within the component. Negotiations at a patent portfolio level, particularly ones including non-SEPs, may well be more complicated, particularly when patented technologies appear in multiple components, or in the interaction between components.

their investments in innovation, it does allow the patent holder to benefit from the expansion in sales driven by those downstream innovations. In particular, using a royalty base of the component can help prevent hold-up when it is difficult to determine and apply FRAND-compliant rates across a highly differentiated range of devices. Often, devices that incorporate significant differentiating IP are highly heterogeneous, while components which implement standardized technology are less so. With respect to the value of the technology, the standard is implemented in the component. Our concern about using the price of the downstream device is that its market price can reflect a great deal of value to consumers derived from other sources—value that a SEP holder can try to expropriate through holdup.

That is, although some components of a device may work better in conjunction with a standard, many others are simply unrelated. It makes economic sense to collect the license fees from components that implement and directly benefit from the standard. To the extent that an end product is more valuable to consumers if it complies with a standard, this differential value is unlikely to be fully attributable to the SEPs. The portion of the incremental benefit that could be attributed specifically to a patent holder's intellectual property is the amount above the base level that could be obtained by using unpatented technology in the standard.<sup>28</sup> In any event, the appropriate compensation for SEPs that contribute an incremental improvement to a standard cannot be the entire amount that a customer would pay for the functionality of the entire standard.

As a practical matter, it may be easier to evaluate the contribution of a given piece of IP to the economic value of a component that embodies it rather than to the economic value of the final product. As a result, it could be easier to gauge the FRAND rate using the component, rather than the final product, as a base. In addition, scores of standards comprising thousands of declared SEPs are often incorporated in different devices. Because of the concern with royalty stacking (the Cournot complements problem) described earlier, the greater the number of SEP owners that attempt to collect royalties on their SEPs (no matter how small their contribution to one standard implemented in one component of the end product), the higher the total royalty burden is likely to be. This problem can be at least partially addressed by limiting the royalty base to the component. This approach is consistent with the FRAND principle that a SEP holder should earn reasonable compensation while still protecting against the exploitation of market power by the SEP holder attributed to standardization.

### What Are the Practical Challenges to Doing All This?

Often, it is not necessary to determine the precise boundaries of FRAND to decide whether a patent holder has stepped outside those boundaries, as the proposed rate is so far above the various benchmarks as to make the violation clear. For example, the courts in *Motorola v. Microsoft* and *Innovatio* found that the FRAND rates were orders of magnitude below the rates demanded by Motorola and Innovatio, respectively. It is commonly the case that qualitative statements are easier to make than quantitative (i.e., it is easy to look at something and say that it is bigger than a breadbox, while it would be more difficult to say by precisely how many inches is it bigger).

In any event, courts (and economists) deal successfully with such issues in patent litigation all the time. If they were entirely straightforward, the parties would likely not be in court. But the issues are resolvable, and courts do so regularly. To the extent that the FRAND analysis is different from

*[I]t may be easier to evaluate the contribution of a given piece of IP to the economic value of a component that embodies it rather than to the economic value of the final product.*

<sup>28</sup> The analysis is more complicated in the presence of patented alternatives. However, the key point that it should reflect the competition from the alternatives remains unchanged.

a typical royalty analysis, it is in some ways simpler. For example, the non-discrimination aspect of FRAND may render irrelevant many of the factors that come up in non-FRAND patent litigation.

### **Conclusion**

In our view, the goals of FRAND commitments should be to avoid hold-up, to address royalty stacking, to provide a level playing field between competing users of the standard, and to ensure adequate incentives for innovation and participation in the standard. In order for FRAND commitments to provide any discipline on SEP holders, it is necessary that the option of litigation be clearly available and has some teeth to it. We have explained how we believe these goals are best achieved. ●