

Recommendations Following the FTC's October 2018 Hearings on IP and Innovation

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On October 23-24, 2018, the U.S. Federal Trade Commission (FTC) held hearings on intellectual property (IP) and innovation as part of its broader ongoing hearings on Competition and Consumer Protection in the 21st Century.² The hearings focused on the role of IP protection in promoting innovation, as well as the foundational question of whether the FTC (and the government more broadly) should play a role in advancing or supporting innovation and, if so, what role. The Commission is seeking further public input through its consultation process on this important (and commendable) inquiry, including asking whether the FTC currently uses its enforcement and policy authority to advance innovation, and what factors it should consider in attempting to achieve this objective.³ The hearings also included sessions on the role of IP in business and investment decisions, emerging trends in patent quality and litigation, and industry and economic perspectives on current U.S. IP and innovation policy.⁴

This short article summarizes some of the major themes from these hearings and provides an economic and legal analysis of the relevant testimony. We conclude with recommendations for the FTC to consider when evaluating possible future enforcement and policy work in this area. Our recommendations focus primarily on certain concerning positions taken in the Commission's 2003 and 2011 IP Reports, namely with respect to patent quality and the recommendation that courts adopt an ex-ante incremental value approach when calculating patent damages.

I. COMMON THEMES

A. *The Relationship Between IP and Innovation*

A common theme amongst the panelists was that IP protection can provide critical incentives to innovate as intended by the patent system. The idea is that, by allowing innovators to obtain rents through exclusion rights, patent holders may be able to internalize externalities and overcome free-riding concerns. However, as several panelists noted, whether this aim has materialized is difficult to measure. Professor Michael Frakes explained that any attempt to approach empirically the question of whether the patent system incentivizes and/or results in

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² *FTC Hearing #4: Competition and Consumer Protection in the 21st Century*, FED. TRADE COMM'N, <https://www.ftc.gov/news-events/events-calendar/2018/10/ftc-hearing-4-competition-consumer-protection-21st-century>.

³ *See id.* (including the full list of consultation questions). The comment period runs through December 21, 2018.

⁴ The hearings and consultation also cover copyright law, including the question of how the current status of copyright law and current business practices should influence the FTC's enforcement and policy agenda. Copyright law is outside the scope of this short article.

innovation encounters notable obstacles, perhaps the most difficult of which is the construction of the necessary counterfactual. Nevertheless, despite these difficulties, panelists tended to agree that, as Dr. Anne Layne-Farrar explained, the economics literature taken as a whole suggests that the relationship between IP and innovation is an inverted-U shape, i.e., either too little or too much IP protection lowers innovation.

Our own analysis reveals that much of the economics literature finding an inverted-U shape relates to the relationship between innovation and *concentration* (as opposed to IP). While this literature may tell us something about the relationship between innovation and competition, it does not tell us about the relationship between IP and innovation. That said, in our view, IP rights likely shift any inverted-U curve (mapping the relationship between innovation and concentration) upward. Most concerns about IP harming innovation relate to incremental, sequential innovations, which may be deterred due to IP protection. However, it is crucial to keep in mind the fact that the initial innovation is an essential first step to any sequential innovation. Concerns about sequential innovation cannot justify reducing IP protections for initial innovations. As such, any refinements to the patent system should be aimed at fine-tuning the balance with respect to incremental, sequential innovations.

B. Recent Developments in Patent Law Have Affected Investment Decisions

Panelists discussed recent changes in U.S. patent law, including: U.S. Supreme Court decisions restricting patent eligible subject matter (2012 *Mayo* and 2014 *Alice* decisions)⁵ and weakening patentees' ability to obtain injunctive relief (2006 *eBay* decision)⁶; the high invalidity rate of patents following the 2011 American Invents Act and its creation of post-grant challenges through the Patent Trial and Appeal Board (PTAB), which has discretion to institute serial challenges against the same patents; and the general trend towards lower patent damages awards.

Panelists testified that, while investment has increased in recent years, the nature of investment has changed in response to recent developments in patent law. For example, venture advisor Greg Raleigh of New Enterprise Associates testified that investment has moved from

⁵ Recent decisions on Section 101 expanded the judicial exceptions to patent subject matter eligibility to the detriment of patent owners. For example, in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, the Supreme Court limited patent-eligible subject matter by holding that certain processes involved in a diagnostic medical test were unpatentable laws of nature. 566 U.S. 66 (2012). In *Alice Corp. Pty. Ltd. v. CLS Bank International*, the Court further limited subject matter eligible for a patent by concluding that certain claims regarding computer-implemented inventions were unpatentable abstract ideas. 134 S. Ct. 2347 (2014).

⁶ In *eBay Inc. v. MercExchange, L.L.C.*, the Court overruled the general rule, unique to patent disputes, providing that permanent injunctions would automatically issue once infringement and validity were found, and instead held that the traditional four-factor test applied by courts of equity when considering whether to award permanent injunctive relief applies to disputes arising under the Patent Act. 547 U.S. 388 (2006). Empirical studies have found that permanent injunctions have been denied in approximately one-third of patent cases post-*eBay*. See, e.g., Paul R. Michel & Matthew J. Dowd, *Understanding the Errors of eBay*, 2 CRITERION. J. ON INNOVATION 21, 27 (2017) (citing Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 IOWA L. REV. 1949, 1982-84 (2016) (reporting pre-*eBay* injunction grant rate of over 80 percent and a post-*eBay* grant rate of approximately 68 percent)); see also Kirti Gupta & Jay Kesan, *Studying the Impact of eBay on Injunctive Relief in Patent Cases*, (Hoover IP² Working Paper Series No. 17004, Jan. 10, 2017), <https://hooverip2.org/wp-content/uploads/ip2-wp17004-paper.pdf> (finding that that the overall rate of preliminary and permanent injunctions, as a percentage of the total number of patent cases filed, has decreased 86% and 66%, respectively post- *eBay*, and that the decrease is primarily due to fewer plaintiffs seeking injunctive relief).

wireless cellular technologies like 4-5G to consumer applications, consumer apparel, and other industries that do not require patents because any technology involved represents innovations as opposed to inventions.⁷

Panelists also debated recent trends in patent damages law, including whether damages should generally be based on the “smallest salable patent practicing unit” (SSPPU) as opposed to the end-product. Professor Nicole Morris testified that patent damages awards have been decreasing because courts have realized that patent holders should not be able to claim royalties based on the entire value of end-products when the patented feature at issue is related to a smaller component such as a \$3 chipset. Raleigh countered that the notion that patent holders should be limited to the value of their patent based on a \$1 chip as opposed to a \$1000 smartphone “motivates phone makers to crowd IP down to the chip level.” According to Raleigh, “the best way” to value patents is to ask what the market value of the end-device would be without the patented invention.

On this issue, in its 2011 IP Report, the FTC recommended that:

Courts should identify as the appropriate base that which the parties would have chosen in the hypothetical negotiation as best suited for accurately valuing the invention. The practical difficulty of identifying a royalty rate that accurately reflects the invention’s contribution to a much larger, complex product often counsels toward choosing the smallest priceable component that incorporates the inventive feature.⁸

The last sentence of this recommendation has been relied upon by implementers to contend that the FTC endorses their position that the SSPPU (e.g., a chipset as opposed to a mobile device) is the appropriate royalty base upon which to calculate patent royalties and damages.

In 2014, in *Ericsson v. D-Link*, the U.S. Court of Appeals for the Federal Circuit (which has nationwide jurisdiction over patent disputes) reiterated its prior statements from *LaserDynamics* that the SSPPU was created as an evidentiary rule “to help our jury system reliably implement the substantive statutory requirement of apportionment of royalty damages to the invention’s value.”⁹ The court went on to explain that:

Logically, an economist could do this [apportionment] in various ways—by careful selection of the royalty base to reflect the value added by the patented feature, where that differentiation is possible; by adjustment of the royalty rate so as to discount the value of a product’s non-patented features; or by a combination thereof. The essential requirement is that the

⁷ Some have described the distinction between “innovation” and “inventions” as the difference between creating something new (invention) and the concept of use of an idea or method (innovation).

⁸ FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 212 (Mar. 2011), [hereinafter FTC 2011 IP REPORT], <https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf> (internal citations omitted).

⁹ 773 F.3d 1201, 1226 (Fed. Cir. 2014).

ultimate reasonable royalty award must be based on the incremental value that the patented invention adds to the end product.¹⁰

The court ultimately held that juries may hear evidence about comparable licenses based on the end product rather than the SSPPU, reasoning that “[m]aking real world, relevant licenses inadmissible . . . would often make it impossible for a patentee to resort to license-based evidence.”¹¹

In 2016, the Federal Circuit, in *CSIRO v. Cisco Systems*, reiterated its holding from *Ericsson*, stating that “otherwise comparable licenses are not inadmissible solely because they express the royalty rate as a percentage of total revenues, rather than in terms of the smallest salable unit.”¹² In rejecting Cisco’s contention that all damages models must begin with the SSPPU (which the court described as an “untenable” position that conflicts with its prior approvals of a methodology that values the asserted patent based on comparable licenses), the court explained that such a position would “necessitate exclusion of comparable license valuations that—at least in some cases—may be the most effective method of estimating the asserted patent’s value.”¹³

As Dr. Anne Layne-Farrar and Koren Wong-Ervin have explained:

The SSPPU approach was designed as a step towards mitigating the risk of juries awarding damages that reflect more than the value conveyed by use of the asserted patents. However, for some technologies, using the SSPPU as the royalty base is likely to go too far and may undervalue the technology. For example, although some technology may technically be implemented by a single component part, that technology may provide the end product more value than is captured in the component itself. Relying on the end-user product as the royalty base can help to internalize such externalities.¹⁴

The authors went on to explain that “[a]s a matter of economics, it is the overall value assigned to the license that matters, and not its particular calculation method. Hence, a 1% rate applied to a \$100 end product yields the same royalty payment as a 10% rate applied to a \$10 component of that product. That being said, juries can be swayed by a relatively large end-product price and may view very small percentage rates as ‘unfair,’ but bench trials are likely to be well equipped to handle the pure mathematics.”¹⁵

¹⁰ *Id.*

¹¹ *Id.* at 1228.

¹² *Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1303 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 2530 (2016).

¹³ *Id.* at 1303-04.

¹⁴ Anne Layne-Farrar & Koren Wong-Ervin, *Methodologies for Calculating FRAND Damages: An Economic and Comparative Analysis of the Case Law from China, the European Union, India, and the United States*, JINDAL GLOBAL LAW SCHOOL L.R. 30 (Fall 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2985073 (page numbers to SSRN version).

¹⁵ *Id.* at 31.

C. The Importance of Continually Reexamining Policy Choices to Incorporate Economic Learnings

Panelists including former FTC Chairman William Kovacic emphasized the importance of “open-minded institutions,” particularly in areas such as IP and innovation in which there is an “inherent amount of experimentation” that naturally results in both success and failure. Kovacic encouraged the FTC to acknowledge the experimental nature of policy in this area, to continue to evaluate the consequences of its enforcement and policy decisions, and to make refinements (or even course-corrections) based upon economic evidence and industry feedback.

FTC Chief IP Counsel Suzanne Munck noted a common theme amongst panelists regarding the importance of empirical evidence and asked what the right balance is for the FTC given the lag time between changes in law, policy, and/or industry dynamics and empirical work on the effects of these changes. While the panelists did not provide answers to this critical question, we believe that government bodies, including the FTC, should generally refrain from making policy decisions in the absence of a robust body of empirical work, particularly in markets in which innovation is thriving. They should also reconsider existing policy choices that were issued in the absence of such evidence.

II. RECOMMENDATIONS GOING FORWARD

As an initial matter, the FTC might carefully reexamine its role in issuing guidance and making policy proposals to the courts and Congress on pure IP law and policy issues. For example, the FTC could consider the relative expertise and comparative advantages of other government bodies such as the U.S. Patent and Trademark Office (PTO) to make pronouncements on issues such as patent quality (a topic of the FTC’s 2003 IP Report¹⁶) and patent remedies (the topic of the FTC’s 2011 IP Report¹⁷). Should the FTC decide to continue its activity in this space, one option is to partner with the PTO on any policy recommendations or other initiatives.

As the FTC has aptly noted, enforcement and policy decisions should avoid unduly interfering with, or otherwise disrupting, free market forces—particularly in a way that puts a thumb on the scale in private, arms-length licensing negotiations. Along these lines, we urge the Commission to consider revising portions of its 2003 and 2011 Reports.

The 2003 Report, which concludes that poor quality or questionable patents “are a significant competitive concern and can harm innovation,”¹⁸ seemed to play into the troubling narrative that the patent system (at least as of 2003) was broken and required significant reform. The notion of patents as “probabilistic rights” has seemed to progress from probabilistic to spurious in order to justify sweeping changes such as the creation of the PTAB. The narrative is based on litigation statistics finding that roughly half of all litigated patents are found to be

¹⁶ FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (Oct. 2003) [hereinafter FTC 2003 IP REPORT], www.ftc.gov/sites/default/files/documents/reports/promote-innovation-proper-balance-competition-and-patent-law-and-policy/innovationrpt.pdf.

¹⁷ FTC 2011 IP REPORT, *supra* note 8.

¹⁸ FTC 2003 IP REPORT, *supra* note 16, at 5.

invalid. One problem with this premise is that it ignores the fact that the outcome of a handful of litigated cases says nothing about whether poor patent quality is a widespread problem for innovation, competition, or consumers. Indeed, economists have long understood the shortcomings of making inferences about a population from a sample of litigated cases.¹⁹

With respect to the 2011 Report, in addition to the recommendation on SSPPU discussed above, the Report includes a recommendation that courts adopt an ex-ante incremental value approach to patent valuation. Specifically, the FTC recommended that, with respect to patents subject to a commitment to license on fair, reasonable, and nondiscriminatory (or FRAND) terms, “[c]ourts should cap the royalty at the incremental value of the patented technology over alternatives available at the time the standard was defined.”²⁰

With respect to the incremental value portion of the FTC’s proposed standard, as Dr. Layne-Farrar and Wong-Ervin have explained:

The underlying theory is well-established, based on decades of pricing theory for physical goods. . . . The problem, however, is that determining an “incremental” value for intangible intellectual property is quite difficult than the incremental cost for a physical good in a number of ways. First, as Judge Robart observed [in *Microsoft v. Motorola*], two flaws in the approach are “its lack of real-world applicability” and “its impracticability with respect to implementation by courts.” Second, the approach crucially depends on the point of comparison: incremental value as compared to what? The state of the art prior to any standard solution emerging, which is often the starting point for innovators? The price or value of the “next best alternative” competing for inclusion in the standard? This latter approach entails valuing two intangible contributions instead of one, so the workload is far higher (reinforcing Judge Robart’s point of impracticability for courts).²¹

In addition to administrability, the primary problem with an ex-ante incremental value approach (at least with respect to cellular wireless technologies like 4-5G) is that it misunderstands the nature of technology development within standards-development organizations (SDOs). The notion that there are several similarly situated technologies available prior to standardization ignores that these technologies are developed over time. In other words, technological options do not just appear like mushroom after a rainstorm, but rather are collaboratively developed over significant time periods within SDOs. In equilibrium, once an SDO signals a specific direction (e.g., once a particular technology is selected for further development), competing technology holders will have no incentive to continue to develop alternative technologies. As such, an ex-ante incremental value approach could result in very high royalties given the likely large differential between the fully developed technology and any abandoned technologies at the time a standard is defined.

¹⁹ See, e.g., George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUDIES 1 (1984).

²⁰ FTC 2011 IP REPORT, *supra* note 8, at 194.

²¹ Layne-Farrar & Wong-Ervin, *supra* note 14, at 26 (internal citations omitted).

With respect to the notion that standard-essential patents (SEPs) should be valued based on their “inherent value” divorced from any value from standardization, it is important to understand that this approach excludes technology developers from sharing adequately in the full value of standardization. This is so even when the technology developers were significant contributors to (or even key drivers of) that value. As such, ex-ante value approaches prevent patent holders from recouping investments in risky R&D based on the fully realized potential of their technology. Ex-ante proponents argue that SEP holders already obtain some of the value of standardization in the form of volume (i.e., increased unit sales on which to earn royalties), as well as a potential competitive edge in product markets (assuming they compete in such markets). But, as Dr. David Teece et al. have explained, “higher unit sales are not the same as having rates determined under market conditions considering the technologies’ full contribution, in which royalty rates, product prices, and volumes are considered jointly. No volumes can compensate for unreasonably low *ex ante* rates.”²² This is because standardization boosts consumer willingness to pay and increases the volume of sales demanded at any product price. In other words, the demand curve shifts out, costs are reduced and the volume that can be produced for a given price increases, and the supply curve also shifts out, moving the market equilibrium point. The post-standardization price may be higher or lower than before standardization depending on whether demand or supply effects dominate.²³ As such, an ex-ante rate may undercompensate SEP holders while providing a windfall for implementers given that the passthrough rate to end-consumers is likely less than 100%. Given that firms ordinarily expect to share the gains from cooperative efforts, it is likely that it is the prospect of a share of the full incremental surplus that motivates developers to invest fixed amounts in technology and standardization. “Unless all groups are appropriately incentivized, some may reduce innovation and/or withdraw from standards setting, with general economic harm.”²⁴

²² David J. Teece et al., *Maintaining Ecosystem Innovation by Rewarding Technology Developers: FRAND, Ex Ante Rates and Inherent Value* at 6 (Tusher Initiative for the Management of Intellectual Capital, Working Paper No. 21, Apr. 24, 2017), <https://businessinnovation.berkeley.edu/wp-content/uploads/2017/04/Tusher-Center-Working-Paper-No.-21.pdf>.

²³ *Id.* at 26.

²⁴ *Id.* at 53. Additional troubling portions of the 2003 and 2007 IP Reports worthy of reexamination include statements on patent holdup and royalty stacking. For a discussion of these issues and recommendations for sound policy, see Layne-Farrar & Wong-Ervin, *supra* note 14, at 3-13 and Anne Layne-Farrar & Koren W. Wong-Ervin, *An Analysis of the Federal Circuit’s Decision in Ericsson v. D-Link*, CPI ANTITRUST CHRONICLE, March 2015 (1) at 5-7, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2669269.