

HOW AND WHY ALMOST EVERY COMPETITION REGULATOR WAS WRONG ABOUT STANDARD-ESSENTIAL PATENTS



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I. INTRODUCTION

Since approximately the mid-2000s, competition regulators in major jurisdictions around the world have almost universally pursued the theory that a handful of leading chip suppliers have burdened the smartphone market with an onerous royalty “tax” that has inflated prices, limited growth, and stunted innovation. The same view has been propounded through amicus briefs and other vehicles by some of the world’s largest technology companies, many of which are “net” patent licensees in the smartphone value chain.² Following this line of argument, the owners of critical patent-protected technologies can deploy at will a “patent holdup” strategy to extract exorbitant rates from device manufacturers and other intermediate users, ultimately harming end-users at the retail point of sale.

To address this perceived risk to consumer welfare, regulators have sought to deploy competition law to achieve three objectives: (1) to preclude owners of standard-essential patents (“SEPs”) from seeking injunctions against infringers; (2) to mandate that SEP owners assess royalties at the component, rather than the device, level; and (3) to limit (or encourage standard-setting organizations to limit³) the royalties payable by downstream implementers to upstream innovators. Regulators have succeeded in mostly achieving objective (1), have mostly been unable to secure objective (2), and, outside of China⁴, have generally not secured objective (3).

As illustrated most dramatically by the August 2020 decision of the Court of Appeals for the Ninth Circuit to reverse the district court’s ruling in favor of the government in *Federal Trade Commission v. Qualcomm*⁵, regulators and private plaintiffs (typically, actual or potential SEP licensees) have often struggled to meet the evidentiary demands appropriately set by courts when assessing proposed applications of competition law that would effectively reengineer the intricate network of licensing agreements that underlie global wireless markets that are widely viewed as a technological and economic success.

² For evidence on these points, see Jonathan M. Barnett, *Has the Academy Led Patent Law Astray?*, 32 Berkeley Technology Law Journal 1311, 1373-1375 (2017).

³ See, e.g. Renata Hesse, Deputy Assistant Attorney General, U.S. Department of Justice, Remarks as Prepared for the ITU-T Patent Roundtable: Six “Small” Proposals for SSOs Before Lunch 7-9 (Oct. 10, 2012), <https://www.justice.gov/atr/file/518951/download> (endorsing standard-setting organizations’ policies requiring disclosure of maximum royalty rates and most restrictive licensing terms and recommending that standard-setting organizations limit participants’ ability to pursue injunctive relief); Letter from Thomas O. Barnett, Assistant Attorney General, U.S. Department of Justice, to Robert A. Skitol, Esq., Drinker, Biddle & Reath, LLP (Oct. 30, 2006), <http://www.usdoj.gov/atr/public/busreview/219380.pdf> (issuing favorable business review letter to standard-setting organization that had adopted policy requiring participants to disclose maximum royalty rates and most restrictive licensing terms).

⁴ I am referring to the 2015 order that resolved the enforcement action brought by China’s competition regulator concerning Qualcomm’s licensing practices and mandated that Qualcomm lower the royalty rate paid by local device manufacturers. For discussion, see Jonathan M. Barnett, *Antitrust Overreach: Undoing Cooperative Standardization in the Digital Economy*, 25 Michigan Technology Law Review 163, 230-235 (2019).

⁵ No. 5:17-cv-00220-LHK (9th Cir. Aug. 11, 2020).

In this contribution, I explore how and why an intellectually aligned coalition of competition regulators, academic commentators, and well-resourced firms located at midstream and downstream points on the smartphone value chain have mostly failed to persuade courts to endorse far-reaching interventions that would have significantly curtailed the range of terms that are available to structure relationships between innovators and implementers in wireless communications markets. In particular, a string of recent court decisions in the U.S., the UK and the European Union, and policy statements by the Antitrust Division of the U.S. Department of Justice, have largely rejected attempts to apply competition law to the terms of these relationships. These developments illustrate the critical function of the rule of law in protecting a remarkably successful case of private ordering against regulatory overreach, academic speculation, and industry self-interest.

II. THE LEGAL UNRAVELING OF THE SEP-SKEPTICAL CONSENSUS

The reversal of the *Federal Trade Commission v. Qualcomm* decision has deservedly garnered extensive attention. Yet it is only one element in a sequence of regulatory pronouncements and judicial decisions since 2015, and accelerating starting in 2019, that have eroded a formerly blanket regulatory consensus in favor of deploying competition law to constrain substantially the enforcement and licensing capacities of SEP owners in wireless communications markets. To provide a point of reference for the rest of the discussion, the Table below sets forth selected regulatory and judicial actions that are representative of this policy shift.

Table 1. The Global Policy Shift on SEP Licensing (2015-Present)⁶

Date	Court or Regulator	Action or Statement
Sept. 2015	European Court of Justice	Permits SEP owners to seek injunctions in case of “unwilling licensee.”
Nov. 2017	DOJ Antitrust	Rejects view that SEPs pose high risk of patent holdup, given lack of evidence.
Mar. 2019	UK High Court	Issues injunction against SEP infringer on grounds of “holdout” behavior.
Dec. 2019	DOJ Antitrust, National Institute of Standards and Technology, U.S. Patent & Trademark Office	Rejects “no-injunction” rule for SEPs. Expresses concern over patent holdout.
May 2020	German Federal Court of Justice	Adopts “unwilling licensee” standard for SEP injunctions.
Aug. 2020	Court of Appeals for the Ninth Circuit	Overturns district court ruling in <i>FTC v. Qualcomm</i> .
Aug. 2020	UK Supreme Court	Adopts “unwilling licensee” standard for SEP injunctions.
Sept. 2020	Northern District of Texas	Dismisses antitrust suit against automotive 5G patent pool.

These judicial and regulatory actions have rejected, or expressed skepticism toward, the dominant view that the enforcement and licensing activities of SEP owners pose a high risk of patent holdup that warrants antitrust intervention. In particular, these judges and regulators have generally adopted two views that significantly constrain the role of antitrust in SEP licensing disputes.

⁶ For sources (in chronological order), see *Huawei Technologies Co. Ltd. v. ZTE Corp. and ZTE Deutschland GmbH*, Case No. 170/13 (CJEU 2015); U.S. Dept. of Justice, Assistant Attorney General Makan Delrahim Delivers Remarks at the USC Gould School of Law’s Center for Transnational Law and Business Conference, Nov. 10, 2017; U.S. Dept. of Justice, U.S. Patent and Trademark Office, and National Institute of Standards and Technology, Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments (2018); *TQ Delta v. ZyXEL*, UK High Court (Carr, J., Mar. 29, 2019); *Sisvel v. Haier*, FCJ docket no. KZR 36/17 (German Fed. Ct. J., May 5, 2020); *Federal Trade Commission v. Qualcomm, Inc.*, D.C. No. 5:17-cv-00220-LHK (9th Cir. Aug. 11, 2020); *Unwired Planet International Ltd. and another v. Huawei Technologies (UK) Ltd. and another*, [2020] UKSC 37 (26 August 2020); *Continental Automotive Systems, Inc. v. Avanci, LLC et al.*, No. 3:19-cv-02933-M (N.D. Tex. Sept. 10, 2020).

A. Contract Law, Not Antitrust Law

Some courts and regulators have expressed doubt whether competition law is even applicable in general to the enforcement of SEPs and especially to the interpretation of the “fair, reasonable and nondiscriminatory” (“FRAND”) commitment with which SEPs are typically associated. Following this view, claims of patent holdup typically fail to meet the “antitrust injury” standard (which requires injury to competition, as distinguished from injury solely to an individual competitor), in which case any legal issues relating to the enforcement of SEPs or the interpretation of the FRAND commitment fall within the realm of patent and contract law, respectively.⁷ **Notably, the decision in August 2020 by the Ninth Circuit reversing the district court in *FTC v. Qualcomm* and the decision in September 2020 by the Northern District of Texas dismissing an antitrust suit against the Avanci automotive 5G patent pool reflect this view, insofar as both courts stated that a purported violation of a FRAND obligation generally gives rise to a potential claim under contract, rather than antitrust, law.**⁸ (The statement made by the European Commission in November 2020 that it may intervene in licensing disputes between patent owners and vehicle manufacturers in the automotive market runs counter to this tendency.⁹)

B. Patent Holdout, Not Holdup

Some courts and regulators have expressed concern that a legal environment in which SEP owners have no plausible prospect of seeking an injunction against infringers would give rise to circumstances in which well-resourced infringers would have little incentive to negotiate or pay a licensing fee without first entering into a protracted and costly litigation process. As the UK Supreme Court observed in August 2020 in its *Unwired Planet* decision: “[I]f the patent-holder were confined to a monetary remedy, implementers who were infringing the patents would have an incentive to continue infringing until patent by patent, and country by country, they were compelled to pay royalties.”¹⁰ **Without a credible injunction threat, patent owners are inevitably exposed to “holdout” by infringers who have little economic reason to pay a license fee that can be contested, and perhaps more favorably negotiated, in the courtroom rather than the boardroom. Protracted and recurrent litigations between innovators and implementers in the SEP licensing market — which have intensified approximately at the same time as antitrust and patent law have constrained SEP owners’ ability to pursue injunctive relief — testify eloquently to the force of this assertion.**

III. THE INTELLECTUAL UNRAVELING OF THE SEP-SKEPTICAL CONSENSUS

One might wonder why courts, and at least one prominent competition regulator and patent office (namely, DOJ Antitrust and the USPTO), have not been persuaded by the widely accepted view that SEPs *do* pose a high level of anticompetitive risk, and therefore competition law should be applied to monitor and adjust the terms of exchange between SEP licensors and licensees. The short answer is that this view so far lacks any sound basis in the available body of relevant evidence. **Remarkably, the consensus view among other competition regulators, and much of the academic community, rests principally on what is still nothing more than a predictive statement about the *potential* risk posed by SEP owners in wireless communications markets.** While theoretical models can be useful tools in competition policy design, the credibility of this particular hypothesis must stand in considerable doubt since no systematic evidence has been found to support it, despite the relevant market having been in operation for over two decades.

A. Empirical Evidence

Empirical researchers who have tested the patent holdup hypothesis have found that real-world markets do not conform to its expectations. Specifically, multiple studies have shown that the “onerous” royalty rates attributed to patent owners are not especially high, both in absolute terms and in relative terms as a percentage of the total value generated by the smartphone value chain. Consider, for example, that empirical researchers have found that the total royalty fees estimated to be paid by 3G and 4G-enabled handset makers represent a single-digit percentage of the

7 U.S. Department of Justice, Assistant Attorney General Makan Delrahim Delivers Remarks at the Leadership Virtual Series, “Broke . . . but Not So More: Opening Remarks—Innovation Policy and the Role of Standards, IP, and Antitrust,” Washington, DC, Sept. 10, 2020, <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-leadership-virtual-series> (stating that “hold-up is fundamentally not an ‘antitrust’ injury, but rather a contract or fraud injury”).

8 *Continental Automotive Systems, Inc. v. Avanci, LLC, et al.*, No. 3:19-cv-02933-M, at 21 (N.D. Tex., Sept. 10, 2020); *Federal Trade Commission v. Qualcomm Inc.*, No. 5:17-cv-00220-LHK, at 39-40 (9th Cir., Aug. 11, 2020).

9 Chee, Foo Yun, “EU Commission to intervene in tech, carmakers’ patent dispute,” Reuters, Nov. 19, 2020.

10 *Unwired Planet International Ltd. and another v. Huawei Technologies (UK) Ltd. and another*, [2020] UKSC 37 (26 August 2020), at 56.

sale price,¹¹ as compared to an estimated 42 percent share enjoyed by Apple on the retail price of the iPhone 7.¹² This suggests that the royalties earned by IP owners are best understood not as a “monopoly tax” on device makers, but rather as a market-negotiated flow of remuneration to the firms that bear the high costs and risks of developing the technology, without which those devices would not be possible.

B. Market Reality

In retrospect, it may not be especially surprising that the theories of widespread (or, in more qualified iterations, imminently widespread) patent holdup have not fared well when subjected to empirical scrutiny. **By virtually every indicator of economic health, the wireless market represents a resounding success. Remarkably, this is true whether “economic health” is measured as a matter of static (short-term) or dynamic (long-term) efficiency. In static terms, the wireless market exhibits declining quality-adjusted prices over time,¹³ which likely explains the high penetration rates of mobile communications devices across a broad range of income segments. In dynamic terms, it is uncontroversial to observe that the mobile communications market has exhibited a continuous rate of breakneck innovation as it has moved from voice-only to voice-plus-text to voice-plus-text-plus-audio-plus-video transmission capacities within the space of two decades.**

The striking mismatch between consensus theory on the one hand and empirical evidence and on-the-ground reality on the other likely accounts for the recent pushback by some courts (and one of two U.S. antitrust regulators, now joined by the U.S. patent office) against attempts to implement that consensus through extensive antitrust intervention into contractual relationships between IP producers and IP users. **While it is always possible to devise a model under which even an apparently efficient market *may* mask a subtle anticompetitive practice that *may* yield some form of incipient market harm, a judiciary committed to upholding antitrust law’s appropriately rigorous evidentiary standards is unlikely to be convinced that such “what if” speculation supplies a reasonable ground for unraveling hundreds of licensing contracts representing billions of dollars of annual payment flows. Put differently: the consensus view on the antitrust risks purportedly posed by SEP enforcement and licensing has failed to pass the equivalent of the *Daubert* standard to which expert witness testimony is subject in civil litigation.¹⁴ Antitrust policymakers that seek to override apparently successful private-ordering arrangements must surely meet the same standard.**

IV. THE PERSISTENT MISUNDERSTANDING OF PATENT LICENSING

In retrospect, one might also wonder why regulators were so quick to adopt — and, in most cases, continue to largely adhere to — a theoretical assertion as the basis for pursuing policy objectives that, if implemented, would substantially alter the “rules of the game” in wireless licensing markets. The order issued by the district court in *FTC v. Qualcomm* illustrates the ambitious scope of this regulatory agenda. The court’s order required Qualcomm on a worldwide basis to renegotiate hundreds of existing licenses with OEMs (in order to license at the chip, rather than device level) and to enter into new licensing agreements with rival chip suppliers.¹⁵ Lacking a sound basis in any compelling evidence of anticompetitive harm, relying upon a doctrinally implausible application of the Supreme Court’s ruling in *Aspen Skiing Co. v. Aspen Highlands Corp.*¹⁶, and even suggesting that “unreasonably high” royalty rates could constitute a valid ground for finding an antitrust violation¹⁷, the order was appropriately reversed by the appellate court as an “improper excursion beyond the outer limits of the Sherman Act.”¹⁸

11 For a leading study, see Alexander Galetovic, Stephen Haber and Lew Zaretski, *An Estimate of the Average Cumulative Royalty Yield in the World Mobile Phone Industry: Theory, Measurement and Results*, 42 Telecommunications Policy 263, 266 (2018) (as of 2016, finding an estimated aggregate royalty rate in the smartphone industry of 3.3 percent of the average selling price). **For discussion and review of other relevant studies, see Jonathan M. Barnett, *Patent Groupthink Unravels*, Harvard Journal Law & Technology (forthcoming 2021); Barnett, *supra* note 2, at 1353-56.**

12 World Intellectual Property Organization, World Intellectual Property Report 2017: Intangible Capital in Global Value Chains 100 (2017).

13 Alexander Galetovic, Stephen Haber and Ross Levine, *An Empirical Examination of Patent Holdup*, NBER Working Paper No. 21090 (April 2015).

14 *Daubert v. Merrell Dow Pharmaceuticals Inc.*, 509 U.S. 579 (1993).

15 *Federal Trade Commission v. Qualcomm, Inc.*, 411 F.Supp. 658 (N.D. Cal. 2019), order stayed on appeal, *Federal Trade Commission v. Qualcomm, Inc.*, 935 F.3d 752 (9th Cir. 2019).

16 472 U.S. 585 (1985).

17 *Federal Trade Commission v. Qualcomm, Inc.*, 411 F.Supp. 658, 698, 744, 751 (N.D. Cal. 2019) (referring to Qualcomm’s “unreasonably high” royalty rates).

18 *Federal Trade Commission v. Qualcomm, Inc.*, No. 5:17-cv-00220-LHK (9th Cir. Aug. 11, 2020), citing *Federal Trade Commission v. Qualcomm, Inc.*, 935 F.3d 752, 757 (9th Cir. 2019).

This rush to judgment concerning the anticompetitive risks posed by Qualcomm’s SEP licensing practices may reflect more broadly an ongoing failure to appreciate the presumptively efficient function of patent licensing in general in technology markets. While both the 2017 and 1995 Antitrust Guidelines on the Licensing of Intellectual Property state that intellectual property licensing typically has procompetitive effects¹⁹, which implies a high bar for intervening in licensing transactions outside collusion scenarios, the antitrust agencies’ regulatory posture toward SEP licensors has often been inconsistent with that presumption. In particular, the agencies’ policies toward SEP licensing activities (excepting DOJ Antitrust policy since November 2017²⁰) generally have failed to consider seriously **how licensing-based structures for monetizing R&D generally promote competitive markets and, relatedly, generally have failed to anticipate how imposing constraints on licensing activities can raise entry barriers and promote industry concentration.**

A. What if the FTC Had Won in *FTC v. Qualcomm*?

To illustrate this argument, assume that the district court’s order in *Federal Trade Commission v. Qualcomm* had been upheld. The court’s decision, and the regulatory consensus upon which it rests, implicitly assumes by fiat that firms such as Qualcomm would continue to invest in R&D under the same licensing-based business model but would simply enjoy lower monopoly rents, yielding a net efficiency gain by continuing to incentivize the same or greater amount of innovation while imposing a reduced deadweight-loss burden on intermediate and end-users.

This outcome seems implausible. In a legal environment in which the wireless industry’s lead innovator must share its latest technological advances with direct competitors, it is unlikely to have any rational motivation to act as a public R&D utility for the remainder of the industry. Moreover, given the success of the agencies in largely precluding SEP owners from seeking injunctive relief against infringers, the innovator firm would be disadvantaged in negotiating royalty rates with well-resourced intermediate users. Absent the threat of an injunction, intermediate users would strategically shift the “negotiation” process to a federal district court, the Patent Trial & Appeals Board (in which patent validity can be separately contested), and multiple foreign courts and administrative venues. The resulting burden of legal and other transactional costs might lead the innovator firm to reconsider whether a licensing-based business model is still the most efficient strategy for extracting value from its R&D portfolio.

It is far more reasonable to expect that an innovator that is explicitly or implicitly treated as an “essential facility” and lacks any credible threat of injunctive relief against unauthorized users **would abandon its licensing-based model and vertically integrate forward into production and distribution or otherwise acquire “complementary assets” that can be used to monetize its R&D investment.** (In this context, the term “complementary asset” refers to any non-IP asset or capacity that a firm can use to capture value from its R&D investments.²¹) This could be achieved either by deploying the significant capital required to develop those non-IP-dependent capacities or, as is more likely, acquire (or be acquired by) another firm with an existing production and distribution infrastructure. (This rationale may in part have driven Nvidia’s attempted acquisition of Qualcomm in early 2018, during the height of Qualcomm’s litigations with Apple and the FTC.) **Like other vertically integrated firms in technology-intensive industries, this model would enable the innovator firm to earn returns on its R&D efforts through non-licensing-based business structures that are not exposed to any “duty to deal” or similar obligations that may arise as a matter of antitrust law.**

B. How Antitrust Constraints on Patent Licensing Constrain Competition

Consider the counterproductive consequence of this hypothetical antitrust intervention.

Under the market structure that existed prior to intervention, the absence of any significant antitrust constraints on patent licensing enables an industry-level division of labor in which certain firms specialize in innovating chip designs and then monetize that investment through licensing relationships with a broad population of device makers and other intermediate users. (This roughly describes the organizational structure of the wireless communications market today during the 2G through 4G/LTE technology generations.) Following antitrust intervention, the licensing “tax” has been eliminated but, precisely as a result, the market is largely reduced to a handful of firms that can sustain the exceptional costs required to maintain end-to-end production and distribution infrastructures. **In a legal environment in which patent licensing operates under the ongoing threat of antitrust scrutiny, informational assets cannot be transacted with sufficient security on the open market and firms**

19 U.S. Department of Justice and the Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property, January 12, 2017; U.S. Department of Justice and the Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property, April 6, 1995, at §2.2.

20 U.S. Dept. of Justice, Assistant Attorney General Makan Delrahim Delivers Remarks at the USC Gould School of Law’s Center for Transnational Law and Business Conference, Nov. 10, 2017.

21 For the classic source, see David J. Teece, “Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy,” 15 *Research Policy* 285 (1986).

must bring innovation and commercialization functions in-house. In turn, this means that entry may effectively be limited to the largest firms that can meet the high capital and technological requirements that are necessary to construct and maintain largely self-contained innovation and commercialization pipelines. Even if total industry R&D investment holds constant, the resulting market structure represents a step backwards from a competition policy perspective.

This possibility is not merely theoretical.

As I show in a forthcoming book,²² the industrial organization of U.S. technology markets since the late 19th century through the present has, with some regularity, responded in precisely this manner to significant reductions in the force of patent protections, whether implemented directly through patent or indirectly through antitrust law (usually a combination of the two). In environments in which patent protection is weak and antitrust-based licensing constraints are strict, R&D investment may remain robust but firms tend to monetize those investments through internal capital and information markets. By contrast, in environments in which patent protection is robust and antitrust-based licensing constraints are relaxed, the feasible range of business models expands to include vertically disintegrated structures in which innovation is monetized externally through licensing-based relationships with specialized third parties. This outcome has attractive effects from a competition policy perspective since IP licensors generally license to all interested users and, as historical and contemporary evidence from a variety of markets suggests, tend to do so at relatively modest rates in order to seed adoption, maintain usage, and, as a result, cultivate a large and stable user base from which to extract royalties over time.²³

V. CONCLUSION

The now-challenged regulatory consensus concerning the antitrust treatment of SEPs in wireless communications markets has pursued a counterproductive policy that would either discourage R&D investment or, if not, would induce increased vertical integration and, as a result, limit technology dissemination and exacerbate entry barriers. This regulatory misadventure provides an object lesson in the risks of resting antitrust policy on merely theoretical arguments that have not been subjected to thorough empirical scrutiny. In an environment in which regulators face heightened political pressures to act quickly, it is critical to apply rigorous evidentiary standards when considering even plausible theories of competitive harm that may ultimately lack any sound foundation in market realities.

²² Jonathan M. Barnett, *Innovators, Firms, and Markets: The Organizational Logic of Intellectual Property* (Oxford University Press 2021).

²³ For further discussion of this evidence, see *id.*



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