FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

FEDERAL TRADE COMMISSION, *Plaintiff-Appellee*, v. QUALCOMM INCORPORATED, A Delaware corporation, *Defendant-Appellant*, SAMSUNG ELECTRONICS COMPANY, LTD.; SAMSUNG SEMICONDUCTOR INC.; INTEL CORPORATION; ERICSSON, INC.; SAMSUNG ELECTRONICS AMERICA, INC.; MEDIATEK INC.; APPLE INC., *Intervenors*, NOKIA TECHNOLOGIES OY; INTERDIGITAL, INC.; LENOVO (UNITED STATES), INC.; MOTOROLA MOBILITY LLC, *Intervenors*.	No. 19-16122 D.C. No. 5:17-cv-00220-LHK OPINION

Appeal from the United States District Court
for the Northern District of California
Lucy H. Koh, District Judge, Presiding

Argued and Submitted February 13, 2020
San Francisco, California

Filed August 11, 2020

Before: Johnnie B. Rawlinson and Consuelo M. Callahan, Circuit Judges, and Stephen J. Murphy, III,* District Judge.

Opinion by Judge Callahan

SUMMARY**

Antitrust

The panel vacated the district court's judgment, and reversed the district court's permanent, worldwide injunction prohibiting several of Qualcomm Incorporated's core business practices.

The Federal Trade Commission ("FTC") contended that Qualcomm violated the Sherman Act, 15 U.S.C. §§ 1, 2, by unreasonably restraining trade in, and unlawfully monopolizing, the code division multiple access ("CDMA") and premium long-term evolution ("LTE") cellular modern chip markets.

---

* The Honorable Stephen J. Murphy, III, United States District Judge for the Eastern District of Michigan, sitting by designation.

** This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

Qualcomm has made significant contributions to the technological innovations underlying modern cellular systems, including CDMA and LTE cellular standards. Qualcomm protects and profits from its innovations through patents, which it licenses to original equipment manufacturers ("OEM"). Qualcomm's patents include cellular standard essential patents ("SEPs"), non-cellular SEPS, and non-SEPs. Because SEP holders could prevent industry participants from implementing a standard by selectively refusing to license, international standard-setting organizations require patent holders to commit to license their SEPs on fair, reasonable, and nondiscriminatory ("FRAND") terms before their patents are incorporated into standards.

The panel framed the issues to focus on the impact, if any, of Qualcomm's practices in the area of effective competition: the markets for CDMA and premium LTE modern chips.

The panel began by examining the district court's conclusion that Qualcomm had an antitrust duty to license its SEPs to its direct competitors in the modern chip markets pursuant to the exception outlined in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985). The panel held that none of the required elements for the *Aspen Skiing* exception were present, and the district court erred in holding that Qualcomm was under an antitrust duty to license rival chip manufacturers. The panel held that Qualcomm's OEM-level licensing policy, however novel, was not an anticompetitive violation of the Sherman Act.

The panel rejected the FTC's contention that even though Qualcomm was not subject to an antitrust duty to deal under *Aspen Skiing*, Qualcomm nevertheless engaged in anticompetitive conduct in violation of § 2 of the Sherman

Act. The panel held that the FTC did not satisfactorily explain how Qualcomm's alleged breach of its contractual commitment *itself* impaired the opportunities of rivals. Because the FTC did not meet its initial burden under the rule of reason framework, the panel was less critical of Qualcomm's procompetitive justifications for its OEM-level licensing policy—which, in any case, appeared to be reasonable and consistent with current industry practice. The panel concluded that to the extent Qualcomm breached any of its FRAND commitments, the remedy for such a breach was in contract or tort law.

The panel next addressed the district court's primary theory of anticompetitive harm: Qualcomm's imposition of an "anticompetitive surcharge" on rival chip suppliers via its licensing royalty rates. The panel held that Qualcomm's patent-licensing royalties and "no license, no chips" policy did not impose an anticompetitive surcharge on rivals' modem chip sales. Instead, these aspects of Qualcomm's business model were "chip-supplier neutral" and did not undermine competition in the relevant markers. The panel held further that Qualcomm's 2011 and 2013 agreements with Apple have not had the actual or practical effect of substantially foreclosing competition in the CDMA modem chip market. Also, because these agreements were terminated years ago by Apple itself, there was nothing to be enjoined.

COUNSEL

Thomas C. Goldstein (argued), Kevin K. Russell, and Eric F. Citron, Goldstein & Russell P.C., Bethesda, Maryland; Gary A. Bornstein, Antony L. Ryan, Yonatan Even, and M. Brent Byars, Cravath Swaine & Moore LLP, New York, New York; Robert A. Van Nest, Eugene M. Paige, Cody S. Harris, and Justina Sessions, Keker Van Nest & Peters LLP, San Francisco, California; Willard K. Tom, Morgan Lewis & Bockius LLP, Washington, D.C.; Geoffrey T. Holtz, Morgan Lewis & Bockius LLP, San Francisco, California; Richard S. Taffet, Morgan Lewis & Bockius LLP, New York, New York; Michael W. McConnell, Wilson Sonsini Goodrich & Rosati, Palo Alto, California; for Defendant-Appellant.

Brian H. Fletcher (argued), Special Counsel; Michele Arington, Assistant General Counsel; Heather Hippsley, Deputy General Counsel; Ian R. Conner, Deputy Director; Daniel Francis, Associate Director; Jennifer Milici, Chief Trial Counsel; Alexander Ansaldo, Joseph Baker, Wesley Carson, Geoffrey Green, Rajesh James, Kenneth Merber, and Mark Woodward, Attorneys, Bureau of Competition; Federal Trade Commission, Washington, D.C.; for Plaintiff-Appellee.

Michael F. Murray (argued), Deputy Assistant Attorney General; William J. Rinner, Chief of Staff and Senior Counsel; Daniel E. Haar, Acting Chief, Competition Policy and Advocacy Section; Jennifer Dixton, Patrick M. Kuhlmann, and Jeffrey D. Negrette, Attorneys; Antitrust Division, United States Department of Justice, Washington, D.C.; for Amicus Curiae United States.

Jonathan S. Massey, Matthew M. Collette, and Kathryn Robinette, Massey & Gail LLP, Washington, D.C., for Amicus Curiae Ericsson, Inc.

Amanda Tessar, Perkins Coie LLP, Denver, Colorado; Sarah E. Fowler, Perkins Coie LLP, Palo Alto, California; for Amicus Curiae Act | The App Association.

Henry C. Su, Ankur Kapoor and David Golden, Constantine Cannon LLP, Washington, D.C., for Amicus Curiae High Tech Inventors Alliance.

Steven C. Holtzman and Gabriel R. Schlabach, Boies Schiller Flexner LLP, San Francisco, California, for Amicus Curiae MediaTek Inc.

John J. Vecchione, Michael Pepson, and Jessica Thompson, Cause of Action Institute, Washington, D.C., for Amicus Curiae Cause of Action Institute.

Garrard R. Beeney and Akash M. Toprani, Sullivan & Cromwell LLP, New York, New York, for Amicus Curiae Dolby Laboratories, Inc.

Erik S. Jaffe, Schaerr Jaffe LLP, Washington, D.C., for Amici Curiae Antitrust and Patent Law Professors, Economists, and Scholars.

Matthew J. Dowd, Dowd Scheffel PLLC, Washington, D.C., for Amicus Curiae The Honorable Paul R. Michel (Ret.).

Andrew G. Isztwan, InterDigital Inc., Wilmington, Delaware, for Amicus Curiae InterDigital Inc.

Robert P. Taylor, RPT Legal Strategies PC, San Francisco, California, for Amicus Curiae Alliance of U.S. Startups & Inventors for Jobs (USIJ).

Jarod M. Bona, Aaron R. Gott, Luis Blanquez, and Luke Hasskamp, Bona Law PC, La Jolla, California; Alexander Shear, Bona Law PC, New York, New York; for Amici Curiae International Center for Law & Economics and Scholars of Law and Economics.

Ryan W. Koppelman, Alston & Bird LLP, Palo Alto, California, for Amicus Curiae Nokia Technologies Oy.

David W. Kesselman, Amy T. Brantly, and Monica M. Castillo Van Panhuys, Kesselman Brantly Stockinger, Manhattan Beach, California, for Amicus Curiae Professor Jorge L. Contreras.

Sandeep Vaheesan, Open Markets Institute, Washington, D.C., for Amicus Curiae Open Markets Institute.

Thomas G. Hungar and Nick Harper, Gibson Dunn & Crutcher LLP, Washington, D.C.; Joshua Landau, Computer & Communications Industry Association, Washington, D.C.; for Amicus Curiae Computer and Communications Industry Association.

Michael D. Hausfeld and Scott Martin, Hausfeld LLP, New York, New York; Ian Simmons, Benjamin J. Henricks, Brian P. Quinn, and Scott Schaeffer, O'Melveny & Myers LLP, Washington, D.C.; for Amici Curiae Law and Economics Scholars.

Charles Duan, R Street Institute, Washington, D.C., for Amicus Curiae R Street Institute.

Gregory P. Stone, Benjamin J. Horwich, Justin P. Raphael, and Stephanie G. Herrera, Munger Tolles & Olson LLP, San Francisco, California; Donald B. Verrilli Jr., Munger Tolles & Olson LLP, Washington, D.C.; for Amicus Curiae Intel Corporation.

Andrew J. Pincus, Mayer Brown LLP, Washington, D.C., for Amici Curiae Association of Global Automakers and Alliance of Automobile Manufacturers.

John ("Jay") Jurata Jr., Randall C. Smith, Thomas King-Sun Fu, and Emily Luken, Orrick Herrington & Sutcliffe LLP, Washington, D.C., for Amici Curiae Continental Automotive Systems Inc., and Denso Corporation.

Jean-Claude André and David R. Carpenter, Sidley Austin LLP, Los Angeles, California; Raymond A. Atkins and Joseph V. Coniglio, Sidley Austin LLP, Washington, D.C.; for Amicus Curiae Timothy J. Muris.

Randy M. Stutz, American Antitrust Institute, Washington, D.C., for Amici Curiae American Antitrust Institute and Public Knowledge.

David H. Herrington, and Alexandra K. Theobald, Cleary Gottlieb Steen & Hamilton LLP, New York, New York; Daniel P. Culley and Jessica A. Hollis, Cleary Gottlieb Steen & Hamilton LLP, Washington, D.C.; for Amicus Curiae Fair Standards Alliance.

OPINION

CALLAHAN, Circuit Judge:

This case asks us to draw the line between *anti*competitive behavior, which is illegal under federal antitrust law, and *hyper*competitive behavior, which is not. The Federal Trade Commission ("FTC") contends that Qualcomm Incorporated ("Qualcomm") violated the Sherman Act, 15 U.S.C. §§ 1, 2, by unreasonably restraining trade in, and unlawfully monopolizing, the code division multiple access ("CDMA") and premium long-term evolution ("LTE") cellular modem chip markets. After a ten-day bench trial, the district court agreed and ordered a permanent, worldwide injunction prohibiting several of Qualcomm's core business practices. We granted Qualcomm's request for a stay of the district court's injunction pending appeal. *FTC v. Qualcomm Inc*., 935 F.3d 752 (9th Cir. 2019). At that time, we characterized the district court's order and injunction as either "a trailblazing application of the antitrust laws" or "an improper excursion beyond the outer limits of the Sherman Act." *Id.* at 757. We now hold that the district court went beyond the scope of the Sherman Act, and we reverse.

I

A

Founded in 1985, Qualcomm dubs itself "the world's leading cellular technology company." Over the past several decades, the company has made significant contributions to the technological innovations underlying modern cellular systems, including third-generation ("3G") CDMA and fourth-generation ("4G") LTE cellular standards—the standards practiced in most modern cellphones and "smartphones." Qualcomm protects and profits from its technological innovations through its patents, which it licenses to original equipment manufacturers ("OEMs") whose products (usually cellphones, but also smart cars and other products with cellular applications) practice one or more of Qualcomm's patented technologies.

Qualcomm's patents include cellular standard essential patents ("SEPs"), non-cellular SEPs, and non-SEPs. Cellular SEPs are patents on technologies that international standard-setting organizations ("SSOs") choose to include in technical standards practiced by each new generation of cellular technology. SSOs—also referred to as standards development organizations ("SDOs")—are global collaborations of industry participants that "establish technical specifications to ensure that products from different manufacturers are compatible with each other." *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 875 (9th Cir. 2012) ("*Microsoft II*") (citing Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 Calif. L. Rev. 1889 (2002)). Cellular SEPs are necessary to practice a particular cellular standard. Because SEP holders could prevent industry participants from implementing a standard by selectively refusing to license, SSOs require patent holders to commit to license their SEPs on fair, reasonable, and nondiscriminatory ("FRAND") terms before their patents are incorporated into standards.[1]

[1] *See generally* Joshua D. Wright, *SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts*, 21 GEO. MASON L. REV. 791 (2014) (discussing the role of SSOs in the selection and enforcement of standards and whether antitrust law has, or should have, a role in regulating the SSO contracting processes).

Some of Qualcomm's SEPs and other patents relate to CDMA and premium LTE technologies—that is, the way cellular devices communicate with the 3G and 4G cellular networks—while others relate to other cellular and non-cellular applications and technologies, such as multimedia, cameras, location detecting, user interfaces, and more. Rather than license its patents individually, Qualcomm generally offers its customers various "patent portfolio" options, whereby the customer/licensee pays for and receives the right to practice all three types of Qualcomm patents (SEPs, non-cellular SEPs, and non-SEPs).

Qualcomm's patent licensing business is very profitable, representing around two-thirds of the company's value. But Qualcomm is no one-trick pony. The company also manufactures and sells cellular modem chips, the hardware that enables cellular devices to practice CDMA and premium LTE technologies and thereby communicate with each other across cellular networks.[2] This makes Qualcomm somewhat unique in the broader cellular services industry. Companies such as Nokia, Ericsson, and Interdigital have comparable SEP portfolios but do not compete with Qualcomm in the modem chip markets. On the other hand, Qualcomm's main competitors in the modem chip markets—companies such as MediaTek, HiSilicon, Samsung LSI, ST-Ericsson, and VIA

[2] Qualcomm's licensing and modem chip businesses are run out of two different divisions: (1) Qualcomm Technology Licensing, which is responsible for granting licenses to Qualcomm's patent portfolios and determining what royalty rates to charge for those licenses; and (2) Qualcomm CDMA Technologies, which is responsible for manufacturing, pricing, and selling Qualcomm's CDMA and premium LTE modem chips. *Id.* at 669–75.

Telecom (purchased by Intel in 2015)—do not hold or have not held comparable SEP portfolios.[3]

Like its licensing business, Qualcomm's modem chip business has been very successful. From 2006 to 2016, Qualcomm possessed monopoly power in the CDMA modem chip market, including over 90% of market share. From 2011 to 2016, Qualcomm possessed monopoly power in the premium LTE modem chip market, including at least 70% of market share. During these timeframes, Qualcomm leveraged its monopoly power to "charge monopoly prices on [its] modem chips." *Qualcomm*, 411 F. Supp. 3d at 800. Around 2015, however, Qualcomm's dominant position in the modem chip markets began to recede, as competitors like Intel and MediaTek found ways to successfully compete. Based on projections from 2017 to 2018, Qualcomm maintains approximately a 79% share of the CDMA modem chip market and a 64% share of the premium LTE modem chip market.[4]

B

Qualcomm licenses its patent portfolios exclusively at the OEM level, setting the royalty rates on its CDMA and LTE patent portfolios as a percentage of the end-product

[3] The now-defunct modem chip supplier ST-Ericsson presents the only partial exception to this general pattern. ST-Ericsson was a joint venture between Ericsson, which *does* have a large SEP portfolio, and STMicroelectronics. The company was dissolved in 2013. *See TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370 JVS(DFMx), 2018 WL 4488286, at *44 (C.D. Cal. Sept. 14, 2018), *rev'd in part, vacated in part*, 943 F.3d 1360 (Fed. Cir. 2019).

[4] According to Qualcomm, its market share in premium LTE modem chips dropped below 50% in 2017. Appellant's Opening Br. at 118.

sales price. This practice is not unique to Qualcomm. As the district court found, "[f]ollowing Qualcomm's lead, other SEP licensors like Nokia and Ericsson have concluded that licensing only OEMs is more lucrative, and structured their practices accordingly."[5] *Id.* at 754–55. OEM-level licensing allows these companies to obtain the maximum value for their patented technologies while avoiding the problem of patent exhaustion, whereby "the initial authorized [or licensed] sale of a patented item terminates all patent rights to that item." *Quanta Comput., Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 625 (2008); *see also Adams v. Burke*, 84 U.S. 453, 457 (1873) (when a patented item is "once lawfully made and sold, there is no restriction on [its] *use* to be implied for the benefit of the patentee or his assignees or licensees"). Due to patent exhaustion, if Qualcomm licensed its SEPs further "upstream" in the manufacturing process to competing chip suppliers, then its patent rights would be exhausted when these rivals sold their products to OEMs. OEMs would then have little incentive to pay Qualcomm for patent licenses, as they could instead

[5] According to Nokia and other companies, OEM-level licensing is now the industry norm. *See* Br. of Amicus Curiae Nokia Technologies Oy at 4 ("Requiring component-level licensing contravenes industry norms, leads to the ATIS and TIA IPR Policies being inconsistent with [other SSO policies], and could have unintended consequences for other SEP holders and the industry at large."); Br. of Amicus Curiae Dolby Laboratories, Inc. at 16 ("The consistent experience of Dolby, a licensor to thousands of licenses under SEPs, is that FRAND licensing of SEPs takes place at the end-product level."); *see also* Br. of Amici Curiae Continental Automotive Systems, Inc. and Denso Corporation at 1–2 ("[J]ust as in the smartphone industry, many cellular SEP-holders restrict their licensing in the automotive industry solely to the manufacturers of consumer goods (here, the Big Three and other automakers), meaning that upstream manufacturers like amici are left out in the cold.").

become "downstream" recipients of the already exhausted patents embodied in these rivals' products.[6]

Because rival chip manufacturers practice many of Qualcomm's SEPs by necessity, Qualcomm offers these companies what it terms "CDMA ASIC Agreements," wherein Qualcomm promises not to assert its patents in exchange for the company promising not to sell its chips to unlicensed OEMs.[7] These agreements, which essentially function as patent-infringement indemnifications, include reporting requirements that allow Qualcomm to know the details of its rivals' chip supply agreements with various OEMs. But they also allow Qualcomm's competitors to practice Qualcomm's SEPs royalty-free.

Qualcomm reinforces these practices with its so-called "no license, no chips" policy, under which Qualcomm

---

[6] The terms "upstream" and "downstream" refer to the manufacturing chain for consumer products such as cellphones that contain component parts produced by different companies that are sequentially installed until the end-product takes shape, at which point it is sold by an OEM (the most "downstream" manufacturer in the chain) directly to consumers. *See MEMC Elec. Materials, Inc. v. Mitsubishi Materials Silicon Corp.*, 420 F.3d 1369, 1372, 1374 (Fed. Cir. 2005) (describing the upstream and downstream manufacturing process in the context of silicon wafers used in semiconductors).

[7] *See Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014) ("Because the standard *requires* that devices utilize specific technology, compliant devices *necessarily* infringe certain claims in patents that cover technology incorporated into the standard."). Previously, in the 1990s, Qualcomm provided "non-exhaustive licenses" to rival chip suppliers, charging a royalty rate on their chipset sales. *Qualcomm*, 411 F. Supp. 3d at 673, 754. According to Qualcomm, these were actually "non-exhaustive, royalty-bearing agreements with chipmakers that explicitly did not grant rights to the chipmaker's [OEM] customers." Appellant's Opening Br. at 45.

refuses to sell modem chips to OEMs that do not take licenses to practice Qualcomm's SEPs. Otherwise, because of patent exhaustion, OEMs could decline to take licenses, arguing instead that their purchase of chips from Qualcomm extinguished Qualcomm's patent rights with respect to any CDMA or premium LTE technologies embodied in the chips. This would not only prevent Qualcomm from obtaining the maximum value for its patents, it would result in OEMs having to pay more money (in licensing royalties) to purchase and use a competitor's chips, which are unlicensed. Instead, Qualcomm's practices, taken together, are "chip supplier neutral"—that is, OEMs are required to pay a per-unit licensing royalty to Qualcomm for its patent portfolios regardless of which company they choose to source their chips from.

Although Qualcomm's licensing and modem chip businesses have made it a major player in the broader cellular technology market, the company is not an OEM. That is, Qualcomm does not manufacture and sell cellphones and other end-use products (like smart cars) that consumers purchase and use. Thus, it does not "compete"—in the antitrust sense—against OEMs like Apple and Samsung in these product markets. Instead, these OEMs are Qualcomm's *customers*.[8]

[8] Samsung presents the one exception to this rule, as it is both one of Qualcomm's OEM customers and one of its competitors in the modem chip markets (Samsung LSI is Samsung's modem chip division). 411 F. Supp. 3d at 746, 750. However, as Samsung LSI does not sell chips externally, "Samsung is not a competitor [of Qualcomm] to sell modem chips to external OEMs." *Id.* at 750.

C

Over the past several decades, as Qualcomm's licensing and modem chip businesses thrived and the company gained more and more market share, its OEM customers and rival chipmakers grew frustrated with the company's business practices. The targets of these complaints included Qualcomm's practice of licensing exclusively at the OEM level and refusing to license rival chipmakers, its licensing royalty rates, its "no license, no chips" policy, and Qualcomm's sometimes aggressive defense of these policies and practices. Qualcomm's customers occasionally attempted to "discipline" its pricing through arbitration claims, negotiations, threatening to change chip suppliers, and litigation. These maneuvers generally resulted in settlements and renegotiated licensing and chip-supply agreements with Qualcomm, even as OEMs continued to look elsewhere for less expensive modem chip options.

Qualcomm's competitors in the modem chip markets contend that Qualcomm's business practices, in particular its refusal to license them, have hampered or slowed their ability to develop and retain OEM customer bases, limited their growth, delayed or prevented their entry into the market, and in some cases forced them out of the market entirely. These competitors contend that this result is not just anticompetitive, but a violation of Qualcomm's contractual commitments to two cellular SSOs—the Telecommunications Industry Association ("TIA") and Alliance for Telecommunications Industry Solutions ("ATIS")—to license its SEPs "to all applicants" on FRAND terms.[9] Qualcomm argues that it has no antitrust duty to deal

[9] Under the TIA contract, Qualcomm agreed to make its SEPs "available to all applicants under terms and conditions that are

with its rivals, and in any case OEM-level licensing is consistent with Qualcomm's SSO commitments because only OEM products (*i.e.*, cellphones, tablets, etc.) "practice" or "implement" the standards embodied in Qualcomm's SEPs. Furthermore, Qualcomm argues that it substantially complies with the TIA and ATIS requirements by not asserting its patents against rival chipmakers.

In 2011 and 2013, Qualcomm signed agreements with Apple under which Qualcomm offered Apple billions of dollars in incentive payments contingent on Apple sourcing its iPhone modem chips exclusively from Qualcomm and committing to purchase certain quantities of chips each year. Again, rivals such as Intel—as well as Apple itself, which was interested in using Intel as an alternative chip supplier—complained that Qualcomm was engaging in anticompetitive business practices designed to maintain its monopolies in the CDMA and premium LTE modem chip markets while making it impossible for rivals to compete.[10] In 2014, Apple

reasonable and non-discriminatory . . . and only to the extent necessary for the practice of any or all of the Normative portions for the field of use of practice of the Standard." *FTC v. Qualcomm Inc.*, No. 17-CV-00220-LHK, 2018 WL 5848999, at *3 (N.D. Cal. Nov. 6, 2018). Under the ATIS contract, Qualcomm committed to making its SEPs "available to applicants desiring to utilize the license for the purpose of implementing the standard . . . under reasonable terms and conditions that are demonstrably free of any unfair discrimination." *Id.*

[10] Under the 2013 agreement, Qualcomm paid Apple a "marketing fund" (effectively a price rebate on chips) of $2.50 per iPhone sold with a Qualcomm chip and $1.50 per iPad sold with a Qualcomm chip, plus hundreds of millions of dollars in "incentive funds" contingent on Apple purchasing at least 100 million Qualcomm chips in 2015 and 2016. 411 F. Supp. 3d at 732. The agreement contained a "clawback provision" providing that if Apple sold devices without Qualcomm chips, then it would have to reimburse Qualcomm all or a large

decided to terminate these agreements and source its modem chips from Intel for its 2016 model iPhone.

D

In January 2017, the FTC sued Qualcomm for equitable relief, alleging that Qualcomm's interrelated policies and practices excluded competitors and harmed competition in the modem chip markets, in violation § 5(a) of the FTC Act, 15 U.S.C. § 45(a), and §§ 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2. After a ten-day bench trial, the district court concluded that "Qualcomm's licensing practices are an unreasonable restraint of trade under § 1 of the Sherman Act and exclusionary conduct under § 2 of the Sherman Act."[11] *Qualcomm*, 411 F. Supp. 3d at 812 (citing *United States v. Microsoft Corp.*, 253 F.3d 34, 58–59 (D.C. Cir. 2001)). The district court ordered a permanent, worldwide injunction prohibiting Qualcomm's core business practices. *Id.* at 820–24.

The district court's decision consists of essentially five mixed findings of fact and law: (1) Qualcomm's "no license, no chips" policy amounts to "anticompetitive conduct against OEMs" and an "anticompetitive practice[] in patent license negotiations"; (2) Qualcomm's refusal to license rival chipmakers violates both its FRAND commitments and

percentage of the per-unit marketing funds, as well as the incentive funds. *Id.*

[11] Because the district court concluded that Qualcomm violated the Sherman Act and thereby violated the FTC Act—which prohibits "[u]nfair methods of competition," including Sherman Act violations—it did not address whether Qualcomm's conduct constituted a standalone violation of the FTC Act. *Id.* at 683.

an antitrust duty to deal under § 2 of the Sherman Act;[12] (3) Qualcomm's "exclusive deals" with Apple "foreclosed a 'substantial share' of the modem chip market" in violation of both Sherman Act provisions; (4) Qualcomm's royalty rates are "unreasonably high" because they are improperly based on its market share and handset price instead of the value of its patents; and (5) Qualcomm's royalties, in conjunction with its "no license, no chips" policy, "impose an artificial and anticompetitive surcharge" on its rivals' sales, "increas[ing] the effective price of rivals' modem chips" and resulting in anticompetitive exclusivity. *Qualcomm*, 411 F. Supp. 3d at 697–98, 751–62, 766, 771–92 (citations omitted). "Collectively," the district court found, these policies and practices "create insurmountable and artificial barriers for Qualcomm's rivals, and thus do not further competition on the merits." *Id.* at 797.

The district court concluded that "[b]y attacking all facets of rivals' businesses and preventing competition on the merits, [Qualcomm's] practices 'harm the competitive process and thereby harm consumers.'" *Id.* (quoting

[12] The district court granted the FTC's pretrial motion for partial summary judgment on the issue of whether Qualcomm's SSO commitments contractually require it to license its SEPs on FRAND terms to competing modem chip suppliers. 2018 WL 5848999, at *1, 15. The district court concluded that "Ninth Circuit precedent establishes that Qualcomm's FRAND commitments include an obligation to license to all comers, including competing modem chip suppliers." *Id.* at *10 (citing *Microsoft II*, 696 F.3d at 876 (noting that "[m]any SSOs try to mitigate the threat of patent holdup by requiring members who hold IP rights in standard-essential patents to agree to license those patents to all comers on terms that are 'reasonable and nondiscriminatory,' or 'RAND.'" (quoting Lemley, *supra*, at 1902, 1906)); *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031 (9th Cir. 2015) ("*Microsoft III*") ("[An] SEP holder cannot refuse a license to a manufacturer who commits to paying the RAND rate.")).

Microsoft, 253 F.3d at 58). Accordingly, the district court held that the FTC met its burden under the Sherman Act of proving "market power plus some evidence that the challenged restraint harms competition." *Id.* at 804 (quoting *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018)). Furthermore, the district court held that it could "infer" a causal connection between Qualcomm's conduct and anticompetitive harm because that conduct "'reasonably appear[s] capable of making a significant contribution to . . . maintaining monopoly power.'" *Id.* at 804–05 (alterations in original) (quoting *Microsoft*, 253 F.3d at 79).

Qualcomm timely appealed. It asks us to reverse the district court's Sherman Act ruling, vacate the district court's injunction and summary judgment ruling on Qualcomm's SSO commitments, and remand the latter for trial. For the reasons that follow, we reverse the district court's Sherman Act ruling and its issuance of a worldwide injunction. Because our reversal does not depend on the district court's grant of partial summary judgment with respect to Qualcomm's contractual commitments to license its SEPs to rival chip suppliers, we vacate that order as moot without reaching its merits.[13]

[13] *See supra* note 12. Although the FTC discussed Qualcomm's FRAND commitments in its complaint and argued that "Qualcomm's refusal to license competing manufacturers of baseband processors, in contravention of its FRAND commitments, contributes to its ability to tax its competitors' sales and maintain its monopoly," the complaint itself only alleged antitrust violations and requested equitable relief "necessary to redress and prevent recurrence of Qualcomm's violations of" the FTC Act and Sherman Act.

II

Antitrust law, like patent law, is "aimed at encouraging innovation, industry and competition." *Atari Games Corp. v. Nintendo of Am., Inc.*, 897 F.2d 1572, 1576 (Fed. Cir. 1990) (citing *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 876–77 (Fed. Cir. 1985)). "Despite the opportunities for conflict . . . a central goal of both patent and antitrust law is the promotion of the public benefit through a competitive economy." *Int'l Wood Processors v. Power Dry, Inc.*, 792 F.2d 416, 427 (4th Cir. 1986); *see also Am. Express*, 138 S. Ct. at 2290 ("[I]t is '[t]he promotion of interbrand competition,' after all, that 'is . . . the primary purpose of the antitrust laws.'" (some alterations in original) (quoting *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 890 (2007))). Indeed, the Federal Circuit, which frequently examines cases at the intersection of patent and antitrust law, has commented that "[t]he patent and antitrust laws are complementary, the patent system serving to encourage invention and the bringing of new products to market by adjusting investment-based risk, and the antitrust laws serving to foster industrial competition." *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999) (citing *Loctite Corp.*, 781 F.2d at 866–67).

Among the antitrust laws, the Sherman Act, 15 U.S.C. §§ 1, 2, is particularly "important to the preservation of economic freedom and our free-enterprise system." *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 610 (1972). Enacted in 1890, when the emergence of trusts and monopolies with the power to suppress competition and completely control markets had become a matter of great public concern,

> [t]he Sherman Act was designed to be a comprehensive charter of economic liberty

> aimed at preserving free and unfettered competition as the rule of trade. It rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic political and social institutions.

N. Pac. Ry. Co. v. United States, 356 U.S. 1, 4 (1958). In pursuit of these goals, the Sherman Act protects "the freedom guaranteed each and every business . . . to compete—to assert with vigor, imagination, devotion, and ingenuity whatever economic muscle it can muster." *Topco Assocs.*, 405 U.S. at 610.

A

Section 1 of the Sherman Act prohibits "[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States." 15 U.S.C. § 1. The Supreme Court "has long recognized that, '[i]n view of the common law and the law in this country' when the Sherman Act was passed, the phrase 'restraint of trade' is best read to mean 'undue restraint.'" *Am. Express*, 138 S. Ct. at 2283 (alteration in original) (quoting *Standard Oil Co. of N.J. v. United States*, 221 U.S. 1, 59–60 (1911)); *see also State Oil Co. v. Khan*, 522 U.S. 3, 10 (1997) (noting that § 1 of the Sherman Act is understood "to outlaw only *unreasonable* restraints") (emphasis added) (citation omitted). Thus, "[t]o establish liability under § 1, a plaintiff must prove (1) the existence of an agreement, and (2) that the agreement was in *unreasonable* restraint of trade." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016) (emphasis added) (citing *Am. Needle, Inc. v. Nat'l Football League*, 560 U.S. 183, 189–90 (2010)).

"Restraints that are not unreasonable *per se* are judged under the 'rule of reason.'" *Am. Express*, 138 S. Ct. at 2283 (quoting *Business Elecs. Corp. v. Sharp Elecs. Corp.*, 485 U.S. 717, 723 (1988)). "The rule of reason requires courts to conduct a fact-specific assessment of 'market power and market structure . . . to assess the [restraint]'s *actual* effect' on competition." *Id.* (alterations in original) (emphasis added) (quoting *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768 (1984)); *see also In re Nat'l Football League's Sunday Ticket Antitrust Litig.*, 933 F.3d 1136, 1150 (9th Cir. 2019) ("Under this rule, we examine 'the facts peculiar to the business, the history of the restraint, and the reasons why it was imposed,' to determine the effect on competition in the relevant product market." (quoting *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 692 (1978))). "The goal is to 'distinguis[h] between restraints with anticompetitive effect that are harmful to the consumer and restraints stimulating competition that are in the consumer's best interest.'" *Am. Express*, 138 S. Ct. at 2284 (alteration in original) (quoting *Leegin Creative Leather Prods.*, 551 U.S. at 886).

In *Am. Express*, for example, the Supreme Court held that the plaintiffs failed to meet their burden to show that antisteering provisions in American Express's merchant agreements—which prohibit merchants from encouraging customers at the point of sale to use other credit cards, like Visa, with lower transaction fees—have anticompetitive effects that harm consumers. *Id.* at 2280, 2289–90. Instead, Amex's unique business model and the antisteering provisions it relies on have *increased* competition in the credit card transaction market by forcing rivals like Visa and Mastercard to adapt and innovate, which has ultimately benefited consumers by "increas[ing] the quality and quantity of credit-card transactions." *Id.* at 2290. In other words, what appeared at first to be *anti*competitive—Amex's unique business model and its use of antisteering clauses—was actually *pro*competitive and innovative. It just took a while for the market to adjust.

A plaintiff may prove that a restraint has anticompetitive effect either "directly or indirectly." *Am. Express*, 138 S. Ct. at 2284. Direct evidence includes "'proof of actual detrimental effects [on competition],'" *id.* (alteration in original) (quoting *FTC v. Ind. Fed'n of Dentists*, 476 U.S. 447, 460 (1986)), "such as reduced output, increased prices, or decreased quality in the relevant market," *id.* (citing 1 J. Kalinowski, Antitrust Laws and Trade Regulation § 12.02[2] (2d ed. 2017); *Craftsmen Limousine, Inc. v. Ford Motor Co.*, 491 F.3d 380, 390 (8th Cir. 2007); *Virgin Atl. Airways Ltd. v. British Airways PLC*, 257 F.3d 256, 264 (2nd Cir. 2001)). Indirect evidence involves "proof of market power plus some evidence that the challenged restraint harms competition." *Id.* (citing 1 Kalinowski § 12.02[2]; *Tops Markets, Inc. v. Quality Markets, Inc.*, 142 F.3d 90, 97 (2nd Cir. 1998); *Spanish Broadcasting Sys. of Fla. v. Clear Channel Commc'ns, Inc.*, 376 F.3d 1065, 1073 (11th Cir. 2004)).

Whereas § 1 of the Sherman Act targets *concerted* anticompetitive conduct, § 2 targets *independent* anticompetitive conduct. *Am. Needle, Inc.*, 560 U.S. at 190. The statute makes it illegal to "monopolize . . . any part of the trade or commerce among the several States." 15 U.S.C. § 2. To establish liability under § 2, a plaintiff must show:

"'(a) the possession of monopoly power in the relevant market; (b) the willful acquisition or maintenance of that power; and (c) causal antitrust injury.'" *Somers v. Apple, Inc.*, 729 F.3d 953, 963 (9th Cir. 2013) (quoting *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998 (9th Cir. 2010) ("*Allied Orthopedic*")). "The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not [itself] unlawful; [instead,] it is an important element of the free-market system." *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004) ("*Trinko*"). "The opportunity to charge monopoly prices—at least for a short period—is what attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth." *Id.*

"To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful [under § 2] unless it is accompanied by an element of anticompetitive *conduct.*" *Id.* Accordingly, plaintiffs are required to prove "anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market." *Allied Orthopedic*, 592 F.3d at 1000 (quoting *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 545–46 (9th Cir. 1983)); *see also United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966) (distinguishing "willful acquisition" of monopoly power from "development as a consequence of a superior product, business acumen, or historic accident"). "[T]o be condemned as exclusionary, a monopolist's act must have an 'anticompetitive effect'"—that is, it "must harm the competitive *process* and thereby harm consumers." *Microsoft*, 253 F.3d at 58. "In contrast, harm to one or more *competitors* will not suffice." *Id.*; *see also Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 458 (1993) (noting that the antitrust laws are directed "not against conduct which is competitive, even severely so, but [only] against conduct which unfairly tends to destroy competition itself").

Allegations that conduct "has the effect of reducing consumers' choices or increasing prices to consumers do[] not sufficiently allege an injury to competition . . . [because] [b]oth effects are fully consistent with a free, competitive market." *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1202 (9th Cir. 2012) (citations omitted); *see also Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 237 (1993) ("Where . . . output is expanding at the same time prices are increasing, rising prices are equally consistent with growing product demand."). Instead, in order to prove a violation of the Sherman Act, the plaintiff must show that diminished consumer choices and increased prices are the result of a less competitive market due to either artificial restraints or predatory and exclusionary conduct. *See Am. Express*, 138 S. Ct. at 2288 ("This Court will 'not infer competitive injury from price and output data absent some evidence that tends to prove that output was restricted or prices were above a competitive level.'" (quoting *Brooke Grp. Ltd.*, 509 U.S. at 237)).

Furthermore, novel business practices—*especially* in technology markets—should not be "conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use." *Microsoft*, 253 F.3d at 91 (citing *N. Pac. Ry. Co.*, 356 U.S. at 5). "Because innovation involves new products and business practices, courts['] and economists' initial understanding of these practices will skew initial likelihoods that innovation is anticompetitive and the proper subject of antitrust scrutiny." Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of*

Antitrust, 6 J. Comp. L. & Econ. 153, 167 (2010); *see also* Rachel S. Tennis & Alexander Baier Schwab, *Business Model Innovation and Antitrust Law*, 29 Yale J. on Reg. 307, 319 (2012) (explaining how "antitrust economists, and in turn lawyers and judges, tend to treat novel products or business practices as anticompetitive" and "are likely to decide cases wrongly in rapidly changing dynamic markets," which can have long-lasting effects particularly in technological markets, where innovation "is essential to economic growth and social welfare" and "an erroneous decision will deny large consumer benefits").

Regardless of whether the alleged antitrust violation involves concerted anticompetitive conduct under § 1 or independent anticompetitive conduct under § 2, the three-part burden-shifting test under the rule of reason is essentially the same. *See Standard Oil Co. of N.J.*, 221 U.S. at 61–62; *Microsoft*, 253 F.3d at 58–59. Under § 1, "the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market." *Am. Express*, 138 S. Ct. at 2284 (citing 1 Kalinowski § 12.02[1]; P. Areeda & H. Hovenkamp, Fundamentals of Antitrust Law § 15.02[B] (4th ed. 2017) (Areeda & Hovenkamp); *Capital Imaging Assoc., P.C. v. Mohawk Valley Med. Assocs., Inc.*, 996 F.2d 537, 543 (2nd Cir. 1993)). "If the plaintiff carries its burden, then the burden shifts to the defendant to show a procompetitive rationale for the restraint." *Id.* (citing 1 Kalinowski § 12.02[1]; Areeda & Hovenkamp § 15.02[B]; *Capital Imaging Assoc.*, 996 F.2d at 543). "If the defendant makes this showing, then the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means." *Id.* (citing 1 Kalinowski § 12.02[1]; *Capital Imaging Assoc.*, 996 F.2d at 543).

Likewise, "if a plaintiff successfully establishes a *prima facie* case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a 'procompetitive justification' for its conduct." *Microsoft*, 253 F.3d at 59 (citing *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 483 (1992)). "If the monopolist asserts a procompetitive justification—a nonpretextual claim that its conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal—then the burden shifts back to the plaintiff to rebut that claim." *Id.* If the plaintiff cannot rebut the monopolist's procompetitive justification, "then the plaintiff must demonstrate that the anticompetitive harm of the conduct outweighs the procompetitive benefit." *Id.*

The similarity of the burden-shifting tests under §§ 1 and 2 means that courts often review claims under each section simultaneously. If, in reviewing an alleged Sherman Act violation, a court finds that the conduct in question is *not* anticompetitive under § 1, the court need not separately analyze the conduct under § 2. *Williams v. I.B. Fischer Nev.*, 999 F.2d 445, 448 (9th Cir. 1993). However, although the tests are largely similar, a plaintiff may not use *indirect* evidence to prove unlawful monopoly maintenance via anticompetitive conduct under § 2. *See Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307–08 (3d Cir. 2007) (distinguishing between proving the existence of monopoly power through indirect evidence and proving anticompetitive conduct itself, the second element of a § 2 claim). In this respect, proving an antitrust violation under § 2 of the Sherman Act is more exacting than proving a § 1 violation, although courts have also held that the third element of a § 2 claim, the causation element, may be inferred. *See Microsoft*, 253 F.3d at 79.

B

A threshold step in any antitrust case is to accurately define the relevant market, which refers to "the area of effective competition." *Am. Express*, 138 S. Ct. at 2285 (citation omitted); *see also Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997) ("The relevant market is the field in which meaningful competition is said to exist." (citing *United States v. Continental Can Co.*, 378 U.S. 441, 449 (1964))). "[C]ourts usually cannot properly apply the rule of reason without an accurate definition of the relevant market." *Am. Express*, 138 S. Ct. at 2285. Otherwise, "'there is no way to measure [the defendant's] ability to lessen or destroy competition.'" *Id.* (alteration in original) (quoting *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965)). Furthermore, in assessing alleged antitrust injuries, courts must focus on anticompetitive effects "in the market where competition is [allegedly] being restrained." *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999). "Parties whose injuries, though flowing from that which makes the defendant's conduct unlawful, are experienced in another market do not suffer antitrust injury." *Id.*; *see Intergraph Corp.*, 195 F.3d at 1353 (noting that "[t]he prohibited conduct must be directed toward *competitors* and must be intended to injure competition" (emphasis added) (citing *Spectrum Sports*, 506 U.S. at 458)).[14]

[14] *But see Am. Ad Mgmt.*, 190 F.3d at 1057 n.5 (noting that the Supreme Court "has carved a narrow exception to the market participant requirement for parties whose injuries are 'inextricably intertwined' with the injuries of market participants" (citing *Blue Shield v. McCready*, 457 U.S. 465 (1982))).

Here, the district court correctly defined the relevant markets as "the market for CDMA modem chips and the market for premium LTE modem chips." *Qualcomm*, 411 F. Supp. 3d at 683. Nevertheless, its analysis of Qualcomm's business practices and their anticompetitive impact looked beyond these markets to the much larger market of cellular services generally. Thus, a substantial portion of the district court's ruling considered alleged economic harms to OEMs—who are Qualcomm's *customers*, not its competitors—resulting in higher prices to consumers. These harms, even if real, are not "anticompetitive" in the antitrust sense—at least not *directly*—because they do not involve restraints on trade or exclusionary conduct in "the area of effective competition." *Am. Express*, 138 S. Ct. at 2285.

The district court's consideration of anticompetitive impacts outside of the relevant markets is reflected in the way it framed and organized the issues. For example, the first, major portion of the district court's rule of reason analysis ("Anticompetitive Conduct Against OEMs and Resulting Harm") provides a detailed account of Qualcomm's "anticompetitive acts against OEMs" via the company's "no license, no chips" policy. *Qualcomm*, 411 F. Supp. 3d at 697–744. Yet when the district court set forth its primary theory of anticompetitive harm—that Qualcomm's licensing royalty rates "impose a surcharge on rivals' modem chips," thereby inhibiting free and fair competition in the relevant markets—it did so only in passing. *Id.* at 790–92.

Moreover, throughout its analysis, the district court failed to distinguish between Qualcomm's *licensing* practices (which primarily impacted OEMs) and its practices relating to *modem chip sales* (the relevant antitrust market). This was, no doubt, intentional: the district court characterized Qualcomm's various business practices as "interrelated" and mutually reinforcing, and it described their anticompetitive effects as "compounding" and "cycl[ical]." *Id.* at 797–98. But even if Qualcomm's practices are interrelated, actual or alleged harms to customers and consumers outside the relevant markets are beyond the scope of antitrust law.

III

Accordingly, we reframe the issues to focus on the impact, if any, of Qualcomm's practices in the area of effective competition: the markets for CDMA and premium LTE modem chips. Thus, we begin by examining the district court's conclusion that Qualcomm has an antitrust duty to license its SEPs to its direct competitors in the modem chip markets. We then consider Qualcomm's royalty rates, its "no license, no chips" policy, and its agreements with Apple in 2011 and 2013 to supply all or a substantial portion of the modem chips Apple used for its pre-2016 model iPhones.

Throughout our analysis, we review for clear error the district court's findings of fact and we review de novo its conclusions of law and any mixed questions of law and fact. *OneBeacon Ins. Co. v. Haas Indus., Inc.*, 634 F.3d 1092, 1096 (9th Cir. 2011).

A

"As the Supreme Court has repeatedly emphasized, there is 'no duty to deal under the terms and conditions preferred by [a competitor's] rivals[.]" *Aerotec Int'l*, 836 F.3d at 1184 (quoting *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 457 (2009) ("*linkLine*")). Likewise, "the Sherman Act 'does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.'" *Trinko*, 540 U.S. at 408 (alteration in original) (quoting *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)); *see linkLine*, 555 U.S. at 448 ("As a general rule, businesses are free to choose the parties with whom they will deal, as well as the prices, terms, and conditions of that dealing." (citing *Colgate*, 250 U.S. at 307)). This is because the antitrust laws, including the Sherman Act, "were enacted for 'the protection of *competition*, not *competitors*.'" *Brunswick Corp. v. Pueblo Bowl–O–Mat, Inc.*, 429 U.S. 477, 488 (1977) (emphasis added) (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962)). Or, as we recently put it, in a bit more colorful terms: "Competitors are not required to engage in a lovefest." *Aerotec Int'l*, 836 F.3d at 1184.

The one, limited exception to this general rule that there is no antitrust duty to deal comes under the Supreme Court's decision in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985). There, the Court held that a company engages in prohibited, anticompetitive conduct when (1) it "unilateral[ly] terminat[es] . . . a voluntary and profitable course of dealing," *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1132 (9th Cir. 2004); (2) "the only conceivable rationale or purpose is 'to sacrifice short-term benefits in order to obtain higher profits in the long run from the exclusion of competition,'" *Aerotec Int'l*, 836 F.3d at 1184 (quoting *MetroNet Servs.*, 383 F.3d at 1132); and (3) the refusal to deal involves products that the defendant already sells in the existing market to other similarly situated customers, *see MetroNet Servs.*, 383 F.3d at 1132–33. The Supreme Court later characterized the *Aspen Skiing* exception as "at or near the outer boundary of § 2 liability." *Trinko*, 540 U.S. at 409.

The district court's conclusion that Qualcomm's refusal to provide exhaustive SEP licenses to rival chip suppliers meets the *Aspen Skiing* exception ignores critical differences between Qualcomm's business practices and the conduct at issue in *Aspen Skiing*, and it ignores the Supreme Court's subsequent warning in *Trinko* that the *Aspen Skiing* exception should be applied only in rare circumstances. As a result, the FTC concedes error here. We agree.

First, the district court was incorrect that "Qualcomm terminated a 'voluntary and profitable course of dealing'" with respect to its previous practice of licensing at the chip-manufacturer level. *Qualcomm*, 411 F. Supp. 3d at 759–60 (quoting *MetroNet Servs.*, 383 F.3d at 1131). In support of this finding, the district court cited a single piece of record evidence: an email from a Qualcomm lawyer regarding 3%-royalty-bearing licenses for modem chip suppliers. But this email was sent in 1999, seven years before Qualcomm gained monopoly power in the CDMA modem chip market. Furthermore, Qualcomm claims that it never granted exhaustive licenses to rival chip suppliers. Instead, as the 1999 email suggests, it entered into "non-exhaustive, royalty-bearing agreements with chipmakers that explicitly did not grant rights to the chipmaker's customers." Appellant's Opening Br. at 45.

According to Qualcomm, it ceased this practice in response to developments in patent law's exhaustion doctrine, *see, e.g.*, *Quanta Comput.*, 553 U.S. at 625 (noting that "the initial authorized sale of a patented item terminates all patent rights to that item"), which made it harder for Qualcomm to argue that it could provide "non-exhaustive" licenses in the form of royalty agreements. Nothing in the record or in the district court's factual findings rebuts these claims. The FTC offered no evidence that, from the time

Qualcomm first gained monopoly power in the modem chip market in 2006 until now, it ever had a practice of providing exhaustive licenses at the modem chip level rather than the OEM level.

Second, Qualcomm's rationale for "switching" to OEM-level licensing was not "to sacrifice short-term benefits in order to obtain higher profits in the long run from the exclusion of competition," the second element of the *Aspen Skiing* exception. *Aerotec Int'l*, 836 F.3d at 1184 (internal quotation marks and citation omitted). Instead, Qualcomm responded to the change in patent-exhaustion law by choosing the path that was "far more lucrative," both in the short term *and* the long term, regardless of any impacts on competition. *Qualcomm*, 411 F. Supp. 3d at 753. The district court itself acknowledged that this was Qualcomm's purpose, observing: "Following Qualcomm's lead, other SEP licensors like Nokia and Ericsson have concluded that licensing only OEMs is more lucrative, and structured their practices accordingly." *Id.* at 754–55. Because Qualcomm's purpose was greater profits in both the short and long terms, the second required element of the *Aspen Skiing* exception is not present in this case.[15]

[15] Throughout its analysis, the district court conflated the desire to maximize profits with an intent to "destroy competition itself." *Spectrum Sports*, 506 U.S. at 458. As noted *supra*, the goal of antitrust law is not to force businesses to forego profits or even "[t]he opportunity to charge monopoly prices," which is "what attracts 'business acumen' in the first place." *Trinko*, 540 U.S. at 407. Here, Qualcomm's desire to maximize profits both in the short-term *and* the long-term undermines, rather than supports, the district court's finding of anticompetitive conduct under § 2. *See* Douglas H. Ginsburg et al., *Section 2 Mangled:* FTC v. Qualcomm *on the Duty to Deal, Price Squeezes, and Exclusive Dealing* 13 (Geo. Mason U. Law & Econ. Res. Paper Series, Paper

Finally, unlike in *Aspen Skiing*, the district court found no evidence that Qualcomm singles out any specific chip supplier for anticompetitive treatment in its SEP-licensing. In *Aspen Skiing*, the defendant refused to sell its lift tickets to a smaller, rival ski resort even as it sold the same lift tickets to any other willing buyer (including any *other* ski resort); moreover, this refusal was designed specifically to put the smaller, nearby rival out of business. 472 U.S. at 593–94. Qualcomm applies its OEM-level licensing policy equally with respect to all competitors in the modem chip markets and declines to enforce its patents against these rivals even though they practice Qualcomm's patents (royalty-free). Instead, Qualcomm provides these rivals indemnifications through the use of "CDMA ASIC Agreements"—the *Aspen Skiing* equivalent of refusing to sell a skier a lift ticket but letting them ride the chairlift anyway. Thus, while Qualcomm's policy toward OEMs is "no license, no chips," its policy toward rival chipmakers could be characterized as "no license, no problem." Because Qualcomm applies the latter policy neutrally with respect to *all* competing modem chip manufacturers, the third *Aspen Skiing* requirement does not apply.

As none of the required elements for the *Aspen Skiing* exception are present, let alone all of them, the district court erred in holding that Qualcomm is under an antitrust duty to license rival chip manufacturers. We hold that Qualcomm's

---

No. 19-21, 2019) ("The district court expands *Aspen Skiing* well beyond the 'outer boundary' of Section 2 by applying it to all contracts previously negotiated by the defendant firm and by inferring the firm was willing to sacrifice profits even in the face of evidence the firm had changed its business model to *increase* current profits.").

OEM-level licensing policy, however novel, is not an anticompetitive violation of the Sherman Act.

B

Conceding error in the district court's conclusion that Qualcomm is subject to an antitrust duty to deal under *Aspen Skiing*, the FTC contends that this court may nevertheless hold that Qualcomm engaged in anticompetitive conduct in violation of § 2. This is so, the FTC urges, because (1) "Qualcomm entered into a voluntary contractual commitment to deal with its rivals as part of the SSO process, which is itself a derogation from normal market competition," and (2) Qualcomm's breach of this contractual commitment "satisfies traditional Section 2 standards [in that] it 'tends to impair the opportunities of rivals and . . . does not further competition on the merits.'" Appellee's Br. at 69, 77 (quoting *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 894 (9th Cir. 2008)). We disagree.

Even if the district court is correct that Qualcomm is contractually obligated via its SSO commitments to license rival chip suppliers—a conclusion we need not and do not reach[16]—the FTC still does not satisfactorily explain how Qualcomm's alleged breach of this contractual commitment *itself* impairs the opportunities of rivals. It argues the breach "facilitat[es] Qualcomm's collection of a surcharge from rivals' customers." Appellee's Br. at 77. But this refers to a distinct business practice, licensing royalties, and alleged harm to OEMs, not rival chipmakers. In any case, Qualcomm's royalties are "chip-supplier neutral" because Qualcomm collects them from *all* OEMs that license its patents, not just "rivals' customers." The FTC argues that

[16] *See supra* notes 12 and 13.

Qualcomm's breach directly impacts rivals by "otherwise deterring [their] entry and investment." *Id.* But this ignores that Qualcomm's "CDMA ASIC Agreements" functionally act as de facto licenses ("no license, no problem") by allowing competitors to practice Qualcomm's SEPs (royalty-free) before selling their chips to downstream OEMs. Furthermore, in order to make out a § 2 violation, the anticompetitive harm identified must be to *competition itself*, not merely to competitors. *Microsoft*, 253 F.3d at 58. The FTC identifies no such harm to competition.

The FTC's conclusion that OEM-level licensing does not further competition on the merits is not only belied by MediaTek and Intel's entries into the modem chip markets in the 2015–2016 timeframe, it also gives inadequate weight to Qualcomm's reasonable, procompetitive justification that licensing at the OEM and chip-supplier levels simultaneously would require the company to engage in "multi-level licensing," leading to inefficiencies and less profit. Qualcomm's procompetitive justification is supported by at least two other companies—Nokia and Dolby—with similar SEP portfolios to Qualcomm's.[17] More critically, this part of the FTC's argument skips ahead

[17] *See* Br. of Amicus Curiae Nokia Technologies Oy at 18–19 (noting that "[t]here are good reasons for SEP owners to structure their licensing programs to license end-user products," including the reduction of "transaction costs and complexities associated with negotiating and executing licenses at multiple points in the supply chain," the avoidance of "overlapping and duplicative licensing," "expedite[d] access to SEPs for the entire supply chain," and "greater visibility to what products are actually licensed, for example, for auditing purposes"); Br. of Amicus Curiae Dolby Laboratories, Inc. at 28 ("Forcing SEP holders to license component suppliers would interfere with historical precedents and established practices, and produce significant inefficiencies and lack of transparency regarding whether products in the stream of commerce are in fact licensed.").

to an examination of Qualcomm's procompetitive justifications, failing to recognize that the burden does not shift to Qualcomm to provide such justifications unless and until the FTC meets its initial burden of proving anticompetitive harm. Because the FTC has not met its initial burden under the rule of reason framework, we are less critical of Qualcomm's procompetitive justifications for its OEM-level licensing policy—which, in any case, appear to be reasonable and consistent with current industry practice.

The FTC points to one case, *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3rd Cir. 2007), as support for its argument that a company's breach of its SSO commitments may rise to the level of an antitrust violation. But in that earlier antitrust action against Qualcomm, the alleged anticompetitive conduct was not Qualcomm's practice of licensing at the OEM level while not enforcing its patents against rival chip suppliers; instead, Broadcom asserted that Qualcomm intentionally deceived SSOs by inducing them to standardize one of its patented technologies, which it then licensed at "discriminatorily higher" royalty rates to competitors and customers using non-Qualcomm chipsets. *Id.* at 304. The *Broadcom* court held that Qualcomm's "intentionally false promise to license [its SEP] on FRAND terms . . . coupled with an SDO's reliance on that promise" and Qualcomm's subsequent discriminatory pricing sufficiently alleged "actionable anticompetitive conduct" under § 2 to overcome Qualcomm's motion to dismiss. *Id.* at 314.

Here, the district court found neither intentional deception of SSOs on the part of Qualcomm nor that Qualcomm charged discriminatorily higher royalty rates to competitors and OEM customers using non-Qualcomm chips. Instead, it is undisputed that Qualcomm's current royalty rates—which the district court found "unreasonably high" (a finding discussed in greater detail in the next section of our opinion)—are based on the patent portfolio chosen by the OEM customer regardless of where the OEM sources its chips. Furthermore, competing chip suppliers are permitted to practice Qualcomm's SEPs freely without paying any royalties at all. Thus, the Third Circuit's "intentional deception" exception to the general rule that breaches of SSO commitments do not give rise to antitrust liability does not apply to this case.[18]

Finally, we note the persuasive policy arguments of several academics and practitioners with significant experience in SSOs, FRAND, and antitrust enforcement, who have expressed caution about using the antitrust laws to remedy what are essentially contractual disputes between private parties engaged in the pursuit of technological innovation. The Honorable Paul R. Michel, retired Chief Judge of the Court of Appeals for the Federal Circuit, argues that it would be a mistake to use "the hammer of antitrust law . . . to resolve FRAND disputes when more precise scalpels of contract and patent law are effective." Amicus Curiae Br. of The Honorable Paul R. Michel (Ret.) at 23.

[18] *See* Wright, *supra* note 1, at 803 ("There is no empirical evidence that supports the proposition that breach of an SSO contract—even one resulting in higher royalty rates—is somehow analogous to the collusive interaction between rivals conventionally condemned by the antitrust laws, or that it generates similar economic effects. Furthermore, courts have uniformly rejected this view when interpreting and applying the Sherman Act. In particular, to date there does not appear to be a single case that finds breach of an SSO agreement without proof that deception resulted in acquisition of market power, a violation of the Sherman Act." (citing *Rambus Inc. v. FTC*, 522 F.3d 456, 466–67 (D.C. Cir. 2008), *cert. denied*, 555 U.S. 1171 (2009); *Broadcom*, 501 F.3d at 310–12)).

Judge Michel notes that "[w]hile antitrust policy has its place as a policy lever to enhance market competition, the rules of contract and patent law are better equipped to handle commercial disputes between the world's most sophisticated companies about FRAND agreements." *Id.* at 24. Echoing this sentiment, a former FTC Commissioner, Joshua Wright, argues that "the antitrust laws are not well suited to govern contract disputes between private parties in light of remedies available under contract or patent law," and that "imposing antitrust remedies in pure contract disputes can have harmful effects in terms of dampening incentives to participate in standard-setting bodies and to commercialize innovation." Wright, *supra* note 1, at 808–09.

In short, we are not persuaded by the FTC's argument that we should adopt an additional exception, beyond the *Aspen Skiing* exception that the FTC concedes does not apply here, to the general rule that "businesses are free to choose the parties with whom they will deal, as well as the prices, terms, and conditions of that dealing." *linkLine*, 555 U.S. at 448 (citing *Colgate*, 250 U.S. at 307). We therefore decline to hold that Qualcomm's alleged breach of its SSO commitments to license its SEPs on FRAND terms, even assuming there was a breach, amounted to anticompetitive conduct in violation of § 2.

C

We next address the district court's primary theory of anticompetitive harm: Qualcomm's imposition of an "anticompetitive surcharge" on rival chip suppliers via its licensing royalty rates. According to the district court,

> Qualcomm's unreasonably high royalty rates enable Qualcomm to control rivals' prices because Qualcomm receives the royalty even

> when an OEM uses one of Qualcomm's rival's chips. Thus, the "all-in" price of any modem chip sold by one of Qualcomm's rivals effectively includes two components: (1) the nominal chip price; and (2) Qualcomm's royalty surcharge.

Qualcomm, 411 F. Supp. 3d at 791. This central component of the district court's ruling is premised on the district court's findings that Qualcomm's royalty rates are (1) "unreasonably high" because they are improperly based on Qualcomm's monopoly chip market share and handset price instead of the "fair value of Qualcomm's patents," and (2) anticompetitive because they raise costs to OEMs, who pass the extra costs along to consumers and are forced to invest less in other handset features. *Id.* at 773–90, 795, 820–21. The FTC agrees with this aspect of the district court's ruling, pointing out that its "reasonableness" determination regarding Qualcomm's royalty rates is a factual finding subject to clear error review and arguing that this finding "was supported by overwhelming evidence." Appellee's Br. at 44 (citing *Faulkner v. Gibbs*, 199 F.2d 635, 639 (9th Cir. 1952)).

We hold that the district court's "anticompetitive surcharge" theory fails to state a cogent theory of anticompetitive harm. Instead, it is premised on a misunderstanding of Federal Circuit law pertaining to the calculation of patent damages, it incorrectly conflates antitrust liability and patent law liability, and it improperly considers "anticompetitive harms to OEMs" that fall outside the relevant antitrust markets. Furthermore, even if we were to accept the district court's conclusion that Qualcomm's royalty rates are unreasonable, we conclude that the district court's surcharging theory still fails as a matter of law and logic.

1

First, the district court's determination that Qualcomm's royalty rates are "unreasonable" because they are based on handset prices misinterprets Federal Circuit law regarding "the patent rule of apportionment" and the smallest salable patent-practicing unit ("SSPPU"). The district court observed "that 'it is generally required that royalties be based not on the entire product, but instead on the [SSPPU].'" *Qualcomm*, 411 F. Supp. 3d at 783 (quoting *LaserDynamics, Inc. v. Quanta Comput., Inc*., 694 F.3d 51, 67 (Fed. Cir. 2012)). The district court then cited an unpublished, district court case for the proposition that "the modem chip . . . 'is the proper [SSPPU]' in a cellular handset." *Id.* (quoting *GPNE Corp. v. Apple, Inc.*, No. 12-CV-02885-LHK, 2014 WL 1494247, at *13 (N.D. Cal. Apr. 16, 2014)).[19] Based on *LaserDynamics* and *GPNE*, the district court concluded that "Qualcomm is not entitled to a royalty on the entire handset." *Id.*

Even if we accept that the modem chip in a cellphone is the cellphone's SSPPU, the district court's analysis is still fundamentally flawed. No court has held that the SSPPU concept is a per se rule for "reasonable royalty" calculations; instead, the concept is used as a tool in jury cases to minimize potential jury confusion when the jury is weighing complex expert testimony about patent damages. *See Ericsson*, 773 F.3d at 1226 (explaining that the SSPPU concept is a flexible evidentiary tool, not an unyielding

[19] *GPNE* was presided over by the same district court judge that presided over this case.

substantive element of patent damages law); *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1327–28 (Fed. Cir. 2014) (same); *LaserDynamics*, 694 F.3d at 68 (same). As this case involved a bench trial, the potential for jury confusion was absent.

Moreover, the Federal Circuit rejected the premise of the district court's determination: that the SSPPU concept is *required* when calculating patent damages. *See Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1303 (Fed. Cir. 2015) ("The rule Cisco advances—which would require all damages models to begin with the [SSPPU]—is untenable [and] conflicts with our prior approvals of a methodology that values the asserted patent based on comparable licenses.") (citations omitted). The Federal Circuit has also observed that "'[s]ophisticated parties routinely enter into license agreements that base the value of the patented inventions as a percentage of the commercial products' sales price,' and thus '[t]here is nothing inherently wrong with using the market value of the entire product.'" *Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prods. Grp., LLC*, 879 F.3d 1332, 1349 (Fed. Cir. 2018) (some alterations in original) (quoting *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1339 (Fed. Cir. 2009)). These statements of law and current practice run counter to the district court's conclusion that patent royalties *cannot* be based on total handset price and that doing so exposes a firm to potential antitrust liability.

A second problem with the district court's "unreasonable royalty rate" conclusion is that it erroneously assumes that royalties are "anticompetitive"—in the antitrust sense—unless they precisely reflect a patent's current, intrinsic value and are in line with the rates other companies charge for their own patent portfolios. Neither the district court nor the FTC provides any case law to support this proposition, which sounds in patent law, not antitrust law. *See* 35 U.S.C. § 284 (entitling a patent owner to "damages adequate to compensate for the infringement, but in no event less than a *reasonable royalty* for the use made of the invention by the infringer" (emphasis added)). We decline to adopt a theory of antitrust liability that would presume anticompetitive conduct any time a company could not prove that the "fair value" of its SEP portfolios corresponds to the prices the market appears willing to pay for those SEPs in the form of licensing royalty rates.[20]

Finally, even assuming that a deviation between licensing royalty rates and a patent portfolio's "fair value" could amount to "anticompetitive harm" in the antitrust sense, the primary harms the district court identified here were to the OEMs who agreed to pay Qualcomm's royalty rates—that is, Qualcomm's *customers*, not its *competitors*. These harms were thus located outside the "areas of effective competition"—the markets for CDMA and premium LTE modem chips—and had no direct impact on competition in those markets. *See Rambus*, 522 F.3d at 464 (noting that if a practice "raises the price secured by a seller" or otherwise

[20] Qualcomm and several amici additionally argue that the district court committed reversible legal error by failing to apply the governing legal standard for determining whether a royalty is reasonable—that is, by "using the claimant's established royalties." Appellant's Reply Br. at 16–17 (quoting *U.S. Nat'l Bank of Portland v. Fabri-Valve Co. of Am.*, 235 F.2d 565, 568 (9th Cir. 1956)); *see also, e.g.*, Amicus Curiae Br. of The Honorable Paul R. Michel (Ret.) at 18–22 (discussing a long line of Federal Circuit cases emphasizing the "established royalty" rule and criticizing the district court's failure to even acknowledge this body of case law). Because our holding does not depend on the "reasonableness" of a licensor's royalties, a determination that sounds in patent law and not antitrust law, we need not decide whether the method the district court used to assess reasonableness in this case was erroneous.

harms customers, "but does so without harming competition, it is beyond the antitrust laws' reach"); *accord NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 136 (1998) (no Sherman Act violation where "consumer injury naturally flowed not so much from a less competitive market . . . as from the exercise of market power that is *lawfully* in the hands of a monopolist . . . combined with a deception worked upon the regulatory agency that prevented the agency from controlling [the monopolist's] exercise of its monopoly power").

2

Regardless of the "reasonableness" of Qualcomm's royalty rates, the district court erred in finding that these royalties constitute an "artificial surcharge" on rivals' chip sales. In *Caldera, Inc. v. Microsoft Corp.*, 87 F. Supp. 2d 1244 (D. Utah 1999), the primary case relied upon by the district court for its surcharging theory, Microsoft required OEMs "to pay [it] a royalty on every machine the OEM shipped regardless of whether the machine contained MS DOS or another operating system." *Id.* at 1249–50. This resulted in OEMs having to pay two royalties instead of one for a portion of their product base unless they chose to exclusively install Microsoft's operating system in their products. *Id.* at 1250. Microsoft's policy thus had "the practical effect of exclusivity," as it imposed a naked tax on rivals' software even when the end-product—an individual computer installed with a non-Microsoft operating system—contained no added value from Microsoft. *Id*. The *Caldera* court held that this hidden surcharge, combined with Microsoft's related practices that were designed to secure exclusivity, were sufficient to defeat Microsoft's motion for summary judgment on the question of whether its policy amounted to anticompetitive conduct in violation of § 2. *Id.* at 1250–51.

Qualcomm's licensing royalties are qualitatively different from the per-unit operating-system royalties at issue in *Caldera*. When Qualcomm licenses its SEPs to an OEM, those patent licenses have value—indeed, they are necessary to the OEM's ability to market and sell its cellular products to consumers—regardless of whether the OEM uses Qualcomm's modem chips or chips manufactured and sold by one of Qualcomm's rivals. And unlike *Caldera*, where OEMs who installed non-Microsoft operating systems in some of their products were required to pay royalties for both the actual operating system *and* MS DOS (which was not installed), here OEMs do not pay twice for SEP licenses when they use non-Qualcomm modem chips. Thus, unlike Microsoft's practice, Qualcomm's practice does not have the "practical effect of exclusivity." Even the FTC concedes that "this case differs from *Caldera* in [that] Qualcomm holds patents practiced by its rivals' chips, and no one disputes that Qualcomm is entitled to collect a royalty equal to the reasonable value of those patents." Appellee's Br. at 39.

In its complaint and in its briefing, the FTC suggests that Qualcomm's royalty rates impose an anticompetitive surcharge on its rivals' sales not for the reasons at play in *Caldera*, but rather because Qualcomm uses its licensing royalties to charge anticompetitive, ultralow prices on its own modem chips—pushing out rivals by squeezing their profit margins and preventing them from making necessary investments in research and development.**[21]** But this type of

[21] One of Qualcomm's main competitors, Intel, shares this theory. *See* Br. of Intel Corporation as Amicus Curiae at 3–4 (arguing that

"margin squeeze" was rejected as a basis for antitrust liability in *linkLine*. 555 U.S. at 451–52, 457. There, multiple digital subscriber line ("DSL") high-speed internet service providers complained that AT&T was selling them access to AT&T's must-have telephone lines and facilities at inflated wholesale rates and then shifting those increased profits to charge ultra-low rates for DSL services at retail, effectively squeezing these DSL competitors out of the market. *Id.* at 442–44. The Court rejected the plaintiffs' assertion of anticompetitive harm, holding that AT&T was under no antitrust duty to deal with its competitors on the wholesale level, and that the plaintiffs failed to introduce evidence of predatory pricing (that is, charging below cost) at the retail level.[22] *Id.* at 450–51.

Here, not only did the FTC offer no evidence that Qualcomm engaged in predatory pricing, the district court's entire antitrust analysis is premised on the opposite proposition: that Qualcomm "charge[s] monopoly prices on modem chips." *Qualcomm*, 411 F. Supp. 3d at 800. Indeed, the district court faulted Qualcomm for lowering its prices only when other companies introduced CDMA modem chips to the market to effectively compete. *Id.* at 688–89. We

---

Qualcomm "shift[s] part of its chip revenues into its royalty rates, overcharging on the patent royalty, while undercharging for chips . . . [which] destroys the normal competitive process in the chip market").

[22] The Court explained in *linkLine* that "to prevail on a predatory pricing claim, a plaintiff must demonstrate that: (1) 'the prices complained of are below an appropriate measure of its rival's costs'; and (2) there is a 'dangerous probability' that the defendant will be able to recoup its 'investment' in below-cost prices." 555 U.S. at 451 (quoting *Brooke Grp. Ltd.*, 509 U.S. at 222–24); *see also Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 340 (1990) ("Low prices benefit consumers regardless of how those prices are set, and so long as they are above predatory levels, they do not threaten competition.").

agree with Qualcomm that this is exactly the type of "garden-variety price competition that the law encourages," Appellant's Reply Br. at 43, and are aware of no authority holding that a monopolist may not lower its rates in response to a competitor's entry into the market with a lower-priced product.

D

As with its critique of Qualcomm's royalty rates, the district court's analysis of Qualcomm's "no license, no chips" policy focuses almost exclusively on alleged "anticompetitive harms" to OEMs—that is, impacts outside the relevant antitrust market. The district court labeled Qualcomm's policy "anticompetitive conduct against OEMs" and an "anticompetitive practice[] in patent license negotiations." *Qualcomm*, 411 F. Supp. 3d at 697–98. But the district court failed to identify how the policy directly impacted Qualcomm's competitors or distorted "the area of effective competition." *Am. Express*, 138 S. Ct. at 2285. Although OEMs consistently described Qualcomm's "no license, no chips" policy as "unique in the industry," none articulated a cogent theory of anticompetitive harm. Instead, they objected to Qualcomm's licensing royalty rates, which they have to pay *regardless* of whether they chose to purchase their chips from Qualcomm or a competitor (or else risk a patent infringement suit from Qualcomm).

Furthermore, it appears that OEMs have been somewhat successful in "disciplining" Qualcomm's pricing through arbitration claims, negotiations, threatening to move to different chip suppliers, and threatened or actual antitrust litigation. These maneuvers generally resulted in settlements and renegotiated licensing and chip-supply agreements with Qualcomm, even as OEMs continued to look elsewhere for cheaper modem chip options. A good example of this is Apple's 2014 decision to switch to Intel as its main chip supplier, demonstrating that Qualcomm's "no license, no chips" policy did not foreclose competition in the modem chip markets.

According to the FTC, the problem with "no license, no chips" is that, under the policy, "Qualcomm will not sell chips to a cellphone [OEM] like Apple or Samsung unless the OEM agrees to a license that requires it to pay a substantial per-phone surcharge *even on phones that use rivals' chips*." Appellee's Br. at 1 (emphasis in original).[23] But this argument is self-defeating: if the condition imposed on gaining access to Qualcomm's chip supply applies regardless of whether the OEM chooses Qualcomm or a competitor (in fact, this appears to be the essence of Qualcomm's policy), then the condition by definition does not distort the "area of effective competition" or impact competitors. At worst, the policy raises the "all-in" price that an OEM must pay for modem chips (chipset + licensing royalties) regardless of which chip supplier the OEM chooses to source its chips from. As we have already discussed, whether that all-in price is reasonable or unreasonable is an issue that sounds in patent law, not antitrust law. Additionally, it involves potential harms to Qualcomm's *customers*, not its competitors, and thus falls outside the relevant antitrust markets.

The district court stopped short of holding that the "no license, no chips" policy itself violates antitrust law. For

[23] *See also* Appellee's Br. at 9 ("Qualcomm uses its chip monopoly to force OEMs to pay Qualcomm a surcharge *even when they use its rivals' chips*.") (emphasis in original); *id.* at 35 ("[Qualcomm] forced customers to accept terms that raised the costs of using rivals' chips, as a condition of access to its own must-have chips.").

good reason: neither the Sherman Act nor any other law prohibits companies like Qualcomm from (1) licensing their SEPs independently from their chip sales and collecting royalties, and/or (2) limiting their chip customer base to licensed OEMs. As we have noted, "[a]s a general rule, businesses are free to choose the parties with whom they will deal, as well as the prices, terms, and conditions of that dealing." *linkLine*, 555 U.S. at 448 (2009) (citing *Colgate*, 250 U.S. at 307); *cf. Am. Express*, 138 S. Ct. at 2289–90 (holding that Amex's antisteering provisions did not unduly restrain trade). Indeed, the FTC accepts that this is the state of the law when it concedes that "Qualcomm holds patents practiced by its rivals' chips, and . . . is entitled to collect a royalty" on them. Appellee's Br. at 39.

In addition, the district court's criticism of "no license, no chips" treats that policy as if Qualcomm is making SEP licenses contingent upon chip purchases, instead of the other way around. If Qualcomm were to refuse to license its SEPs to OEMs unless they first agreed to purchase Qualcomm's chips ("no chips, no license"), then rival chip suppliers indeed might have an antitrust claim under both §§ 1 and 2 of the Sherman Act based on exclusionary conduct. This is because OEMs cannot sell their products *without* obtaining Qualcomm's SEP licenses, so a "no chips, no license" policy would essentially force OEMs to either purchase Qualcomm's chips or pay for *both* Qualcomm's and a competitor's chips (similar to the no-win situation faced by OEMs in the *Caldera* case). But unlike a hypothetical "no chips, no license" policy, "no license, no chips" is chip-neutral: it makes no difference whether an OEM buys Qualcomm's chip or a rival's chips. The policy only insists that, whatever chip source an OEM chooses, the OEM pay Qualcomm for the right to practice the patented technologies embodied in the chip, as well as in other parts of the phone or other cellular device.

This is not to say that Qualcomm's "no license, no chips" policy is not "unique in the industry" (it is), or that the policy is not designed to maximize Qualcomm's profits (Qualcomm has admitted as much). But profit-seeking behavior alone is insufficient to establish antitrust liability. As the Supreme Court stated in *Trinko*, the opportunity to charge monopoly prices "is an important element of the free-market system" and "is what attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth." *Trinko*, 540 U.S. at 407. The record suggests that this case is more like *Am. Express*, where a company's novel business practice at first appeared to be anticompetitive, but in fact was disruptive in a manner that was beneficial to consumers in the long run because it forced rival credit card companies to adapt and innovate. 138 S. Ct. at 2290. Similarly here, companies like Nokia and Ericsson are now "[f]ollowing Qualcomm's lead" with respect to OEM-level licensing, and beginning in 2015 rival chipmakers began to successfully compete against Qualcomm in the modem chip markets. We decline to ascribe antitrust liability in these dynamic and rapidly changing technology markets without clearer proof of anticompetitive effect.

E

Having addressed the primary components of the district court's antitrust ruling with respect to Qualcomm's general business practices, we now address the district court's more specific finding that from 2011 to 2015, Qualcomm violated both sections of the Sherman Act by signing "exclusive deals" with Apple that "foreclosed a 'substantial share' of the [CDMA] modem chip market." *Qualcomm*, 411 F.

Supp. 3d at 771–72 (quoting *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 327 (1961)).

"Exclusive dealing involves an agreement between a vendor and a buyer that prevents the buyer from purchasing a given good from any other vendor." *Allied Orthopedic*, 592 F.3d at 996. Because "[t]here are 'well-recognized economic benefits to exclusive dealing arrangements, including the enhancement of interbrand competition,'" an exclusive dealing arrangement is not per se illegal. *Id.* (quoting *Omega Envtl., Inc. v. Gilbarco, Inc.*, 127 F.3d 1157, 1162 (9th Cir. 1997)). Instead, such an arrangement violates the Sherman Act under the rule of reason only if "its effect is to 'foreclose competition in a substantial share of the line of commerce affected.'" *Id.* (quoting *Omega Envtl.*, 127 F.3d at 1162); *see also Caldera*, 87 F. Supp. 2d at 1251 ("[T]he competition foreclosed by the contract must be found to constitute a substantial share of the relevant market . . . [t]hat is to say, the opportunities for other traders to enter into or remain in that market must be significantly limited") (quoting *Tampa Elec.*, 365 U.S. at 328).

Qualcomm argues that its agreements with Apple were "volume discount contracts, not exclusive dealings contracts." Unlike exclusive dealing arrangements, "volume discount contracts are legal under antitrust law . . . [b]ecause the contracts do not preclude consumers from using other . . . services." *W. Parcel Express v. United Parcel Serv. of Am., Inc.*, 190 F.3d 974, 976 (9th Cir. 1999) (citing *Fedway Assocs., Inc. v. United States Treasury*, 976 F.2d 1416, 1418 (D.C. Cir. 1992)). Likewise, conditional agreements that provide "substantial discounts to customers that actually purchase[] a high percentage of their . . . requirements from" a firm are not exclusive dealing arrangements, de facto or actual, unless they "prevent[] the buyer from purchasing a given good from any other vendor." *Allied Orthopedic*, 592 F.3d at 996–97; *see also* XI Philip E. Areeda & Herbert Hovenkamp, Antitrust Law, ¶ 1807a at 129 (2d ed. 2000) (noting that "[d]iscounts conditioned on exclusivity in relatively short-term contracts are rarely problematic").

The district court concluded that the Apple agreements were not volume discount contracts, but rather "de facto exclusive deals" that "coerced '[Apple] into purchasing a substantial amount of [its] needs from [Qualcomm]'" and thereby "'substantially foreclosed competition' in the [CDMA modem chip] market." *Qualcomm*, 411 F. Supp. 3d at 763, 766 (some alterations in original) (quoting *Aerotec Int'l*, 836 F.3d at 1182; *Tampa Elec.*, 365 U.S. at 334). The FTC argues that these agreements "'easily' qualified as *de facto* exclusive-dealing agreements under *Tampa Electric*'s 'practical effect' test." Appellee's Br. at 87; *see Tampa Elec.*, 365 U.S. at 326 (holding that a contract is exclusive, even though it does not contain specific agreements not to use the goods of a competitor, if its "practical effect" is to prevent such use) (citation omitted).

There is some merit in the district court's conclusion that the Apple agreements were structured more like exclusive dealing contracts than volume discount contracts.[24]

[24] Of note, the agreements did not *just* provide substantial discounts to Apple in exchange for Apple "purchas[ing] a high percentage of [its] . . . requirements from" Qualcomm. *Allied Orthopedic*, 592 F.3d at 996. Instead, they sought to "prevent[] the buyer [Apple] from purchasing a given good [CDMA modem chips] from any other vendor," *id.*, by making volume discounts (or "incentive funds") contingent on exclusivity. Nor were these agreements "easily terminable," even though Apple did, in fact, terminate them. *See id.* at 997 (noting that "[t]he 'easy terminability' of an exclusive dealing arrangement 'negate[s] substantially [its] potential to foreclose competition'"

However, we do not agree that these agreements had the actual or practical effect of substantially foreclosing competition in the CDMA modem chip market, or that injunctive relief is warranted.

During the relevant time period (2011–2015), the record suggests that the only serious competition Qualcomm faced with respect to the Apple contracts was from Intel, a company from whom Apple had considered purchasing modem chips prior to signing the 2013 agreement with Qualcomm. The district court made no finding that any other specific competitor or potential competitor was affected by either of Qualcomm's agreements with Apple, and it is undisputed that Intel won Apple's business *the very next year*, in 2014, when Apple's engineering team unanimously recommended that the company select Intel as an alternative supplier of modem chips. The district court found that "Qualcomm's exclusive deals . . . delayed Intel's ability to sell modem chips to Apple until September 2016." *Id.* at 737. There is no indication in the record, however, that Intel was a viable competitor to Qualcomm prior to 2014–2015, or that the 2013 agreement delayed Apple's transition to Intel by any more than one year.[25] Given these undisputed facts, we conclude that the 2011 and 2013 agreements did

(quoting *Omega Envtl.*, 127 F.3d at 1163–64)). Clearly, the requirement that Apple forfeit or reimburse Qualcomm millions of dollars in incentive funds was a strong deterrent to termination.

[25] *See* Appellant's Opening Br. at 110 (pointing out that at trial, the FTC itself only contended "that the [2013] agreement foreclosed Intel from supplying chips for a mere five iPad models released over three years and 'perhaps' delayed Intel's ability to sell chips for the iPhone by one year").

not have the actual or practical effect of substantially foreclosing competition in the CDMA modem chip market.

Furthermore, "[a]s a general rule, '[p]ast wrongs are not enough for the grant of an injunction'; [instead,] an injunction will only issue if the wrongs are ongoing or likely to recur." *FTC v. Evans Prods. Co.*, 775 F.2d 1084, 1087 (9th Cir. 1985) (quoting *Enrico's, Inc. v. Rice*, 730 F.2d 1250, 1253 (9th Cir. 1984)); *see also* 15 U.S.C. § 53(b) (providing that the FTC "may" seek an injunction in federal district court only when the defendant "is violating, or is about to violate," one or more of the antitrust laws). Even if we were to agree with the district court that the Apple agreements were exclusive dealing contracts that substantially foreclosed competition in the relevant antitrust markets, it is undisputed that these agreements do not pose any current or future threat of anticompetitive harm. Despite the "clawback provisions," Apple itself terminated the agreements in 2015—two years before the FTC filed its action. Thus, while we agree with the district court that these were structured more like exclusive dealing contracts than volume discount contracts, they do not warrant the issuance of an injunction.

IV

Anticompetitive behavior is illegal under federal antitrust law. Hypercompetitive behavior is not. Qualcomm has exercised market dominance in the 3G and 4G cellular modem chip markets for many years, and its business practices have played a powerful and disruptive role in those markets, as well as in the broader cellular services and technology markets. The company has asserted its economic muscle "with vigor, imagination, devotion, and ingenuity." *Topco Assocs.*, 405 U.S. at 610. It has also "acted with sharp elbows—as businesses often do." *Tension Envelope Corp.*

v. JBM Envelope Co., 876 F.3d 1112, 1122 (8th Cir. 2017). Our job is not to condone or punish Qualcomm for its success, but rather to assess whether the FTC has met its burden under the rule of reason to show that Qualcomm's practices have crossed the line to "conduct which unfairly tends to destroy competition itself." *Spectrum Sports*, 506 U.S. at 458. We conclude that the FTC has not met its burden.

First, Qualcomm's practice of licensing its SEPs exclusively at the OEM level does not amount to anticompetitive conduct in violation of § 2, as Qualcomm is under no antitrust duty to license rival chip suppliers. To the extent Qualcomm has breached any of its FRAND commitments, a conclusion we need not and do not reach, the remedy for such a breach lies in contract and patent law. *Second*, Qualcomm's patent-licensing royalties and "no license, no chips" policy do not impose an anticompetitive surcharge on rivals' modem chip sales. Instead, these aspects of Qualcomm's business model are "chip-supplier neutral" and do not undermine competition in the relevant antitrust markets. *Third*, Qualcomm's 2011 and 2013 agreements with Apple have not had the actual or practical effect of substantially foreclosing competition in the CDMA modem chip market. Furthermore, because these agreements were terminated years ago by Apple itself, there is nothing to be enjoined.

We therefore **REVERSE** the district court's judgment and **VACATE** its injunction as well as its partial grant of summary judgment.