No. 19-16122

**IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

FEDERAL TRADE COMMISSION,
Plaintiff-Appellee,

v.

QUALCOMM INCORPORATED,
Defendant-Appellant.

On Appeal from the United States District Court
for the Northern District of California
No. 5:17-cv-00220-LHK
Hon. Lucy H. Koh

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INTRODUCTION

This case is about Qualcomm's long-running suppression of competition in the global markets for modem chips, the semiconductors that cellphones and a growing array of other products use to connect to cellular networks. For more than a decade, Qualcomm has had monopolies in two key modem-chip markets. After an eleven-day trial, the district court found that Qualcomm has maintained those monopolies through a suite of anticompetitive practices that have forced many rival chipmakers to exit the market and "hobbled" those that remain. 6ER1369.

The central feature of Qualcomm's scheme is a classic form of exclusionary conduct: It uses its monopoly to require customers to pay Qualcomm even when they deal with its rivals. Under its declared "no-license, no-chips" policy, Qualcomm will not sell chips to a cellphone original equipment manufacturer (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*. Qualcomm's monopoly on must-have chips leaves OEMs no choice but to accede to that demand. Once they do, the surcharge functions just like a tax on rivals' chips, with predictable consequences: It raises rivals' effective prices, prevents them from underbidding Qualcomm, and reduces their sales and margins.

Recognizing that a naked tax on rivals' sales would be obviously anticompetitive, Qualcomm instead labels the surcharge a "royalty" on its patents.

But Qualcomm's own documents reveal—and a mountain of evidence confirms—that the amount of Qualcomm's "royalty" has no relationship to the value of its intellectual property. Among other things, Qualcomm does not provide OEMs with patent lists, claim charts, or any of the other information that drives ordinary patent-license negotiations. Instead, OEMs agree to pay Qualcomm's royalties only because Qualcomm threatens to cut off their chip supply if they do not. As a result, Qualcomm's royalties of up to $20 per phone exceed those charged by holders of comparable patent portfolios to a "staggering" extent. 6ER1341-42. While a patentee is entitled to royalties that reflect the value of its patents, the district court found that Qualcomm's royalties also include a substantial chip-access surcharge that is economically and practically equivalent to a naked tax on rivals' sales. 6ER1349-52.

The district court further found that Qualcomm has reinforced that surcharge through three other anticompetitive practices. In its negotiations with OEMs, Qualcomm pairs the stick of the no-license, no-chips policy with the carrot of hundreds of millions of dollars in incentive funds that reduce the impact of the surcharge to the extent—and only to the extent—that OEMs buy chips from Qualcomm rather than its rivals. Qualcomm has also reneged on its binding commitments to cellular standard-setting organizations (SSOs) to license its patents to rival chipmakers on fair, reasonable, and nondiscriminatory terms. And

it has entered into exclusive-dealing agreements with Apple that foreclosed rivals from the largest and most important customer in the market for five years.

The district court found that all of those practices have suppressed competition and preserved Qualcomm's monopoly. It further determined, in findings that Qualcomm has not asked this Court to review, that none of Qualcomm's practices increase efficiency, improve quality, or otherwise constitute legitimate competition on the merits. 6ER1374. And because Qualcomm's anticompetitive conduct is ongoing and likely to continue as the market transitions to the next generation of cellular standards, the district court entered a permanent injunction.

Under the injunction, Qualcomm is perfectly free to charge market-based—even monopoly—prices for its chips. It is also perfectly free to charge whatever patent royalties result from negotiations conducted in the shadow of ordinary patent-law remedies. The injunction simply prohibits Qualcomm from linking the two negotiations, thereby thwarting those ordinary remedies and shifting part of the monopoly price for its chips into a surcharge that OEMs must pay even when they buy chips from its rivals.

On appeal, Qualcomm attacks a caricature of the district court's careful analysis and studiously ignores what transpired at trial. The district court, for example, grounded its factual findings in Qualcomm's own "internal,

contemporaneous documents," finding those documents "more persuasive than Qualcomm's trial testimony prepared specifically for this antitrust litigation." 6ER1178. Yet Qualcomm's presentation to this Court largely ignores its own documents and the other evidence supporting the district court's findings and instead pervasively relies on the very self-serving testimony the court declined to credit.

Qualcomm's legal arguments fare no better. After protesting at length that the district court failed to ground its surcharge holding in a legitimate theory of anticompetitive harm, Qualcomm is ultimately forced to concede (Br. 66) that a monopolist harms competition—indeed, "directly tip[s] the competitive balance"—if it imposes a fee on its rivals' sales. That is exactly what the district court found, as a factual matter, Qualcomm has done. Qualcomm also derides the district court for failing to precisely quantify the effect of the surcharge on rivals and consumers. But such proof has never been required in government enforcement actions seeking injunctive relief, and for good reason: The fact that a monopolist has made it impossible to reconstruct a hypothetical competitive market with precision is no reason to allow its anticompetitive conduct to continue.

Qualcomm places greatest emphasis on a secondary aspect of the district court's decision: The court's holding that Qualcomm's refusal to license its patents to competing chipmakers violated a general antitrust duty to deal with rivals. As

Qualcomm notes (Br. 26), the FTC does not argue that Qualcomm had a duty to deal under the heightened standard that applies to general duty-to-deal claims. But that heightened standard has no application where, as here, a monopolist subverts its own voluntary commitment to an SSO. Such a breach is instead evaluated under traditional antitrust standards. Here, the district court separately found—and Qualcomm could not plausibly dispute—that Qualcomm's breach of its commitments was anticompetitive under those standards. 6ER1356-59.

Finally, Qualcomm cannot show any abuse of discretion in the district court's decision to permanently enjoin its ongoing anticompetitive conduct. Worldwide injunctions are appropriate where, as here, anticompetitive conduct in global markets harms U.S. consumers. Qualcomm and the Department of Justice now object that the injunction is inconsistent with the decisions of foreign regulators and may threaten national security. But Qualcomm has forfeited those arguments by failing to advance them below. In any event, Qualcomm and DOJ have not explained how the injunction conflicts with any foreign regulatory action or threatens national security in any way—or how those considerations could justify allowing Qualcomm to continue to violate the Sherman Act. The district court's judgment should be affirmed.

STATEMENT OF JURISDICTION

The FTC concurs with Qualcomm's statement of jurisdiction. In addition, the district court had jurisdiction under 15 U.S.C. §§ 45(a) and 53(b).

STATEMENT OF THE ISSUES

1. Whether the district court correctly found that Qualcomm unlawfully maintained its monopoly power and restrained competition in the CDMA and premium LTE modem chip markets by imposing a surcharge on its rivals' modem chip sales.

2. Whether the district court correctly found that Qualcomm's breaches of its commitments to make standard-essential patent licenses available to modem-chip suppliers were anticompetitive.

3. Whether the district court correctly found that Qualcomm engaged in anticompetitive exclusive dealing with Apple.

4. Whether the district court properly exercised its discretion in entering a permanent injunction.

STATEMENT OF THE CASE

A. Factual Background

1. Cellular communications rely on modem chips

Cellular communications rely on networks that use standardized protocols. 6ER1168-69. Cellphones and other mobile products communicate with those networks through modem chips. 6ER1175. To communicate with a network, like those maintained by Verizon, T-Mobile, and Sprint, a cellphone must have a chip that complies with the network's standards. 6ER1175.[1]

Cellular standards have evolved over several generations. 6ER1169. Early standards supported only voice calls; later standards added data. Third generation (3G) standards (including CDMA) and fourth generation (4G) standards (LTE predominates) have supported increasingly faster data-transmission speeds. 6ER1169-70. To ensure full geographic coverage, modem chips often comply with multiple standards. 6ER1175.

Cellphones are made and sold by OEMs like Apple, Samsung, and LGE. Competition among OEMs has likewise evolved over time. Early phones offered only voice and text-messaging capability. Smartphones like the Apple iPhone and the Samsung Galaxy, which emerged in the late 2000s, are miniature computers

[1] Qualcomm's excerpts of record include two versions of the district court's decision: a public, redacted version (1ER2-234) and a sealed version (6ER1167-1399). This brief follows Qualcomm's practice of citing the sealed version.

that include cameras, touch-screen displays, powerful applications and graphics processors, and greater memory and storage. 6ER1335-37.

2. Qualcomm has monopoly power in two key chip markets

For more than a decade, Qualcomm has been the dominant supplier in the global markets for two key types of modem chips: (1) chips that comply with 2G or 3G CDMA standards, and (2) premium LTE chips. 6ER1190-1207. OEMs need CDMA chips for their cellphones to work on the networks of major global carriers like Verizon and Sprint, 6ER1192-93, and OEMs need premium LTE chips to make high-end smartphones—for instance, all iPhones contain premium LTE chips, 6ER1203-04.

Rival chipmakers like MediaTek and Intel have operated on the fringes of the CDMA and premium LTE markets but have been unable to displace Qualcomm from its dominant position. 6ER1195-98, 1204-05. Qualcomm's internal documents show that it had a 95% share of the worldwide CDMA chip market in 2010 and at least a 92% share in every year from 2014 until 2016. 6ER1194. Similarly, Qualcomm's documents show that it had an 89% share of the premium LTE chip market in 2014 and an 84% share in 2015, and projected that it would retain a 77% share in 2016 and a 64% share in 2017. 6ER1205.

3. Qualcomm uses its monopoly to impose a surcharge on rivals' chips through its no-license, no-chips policy

Like any monopolist, Qualcomm can use its monopoly position to extract additional money from OEMs that need CDMA and premium LTE chips. But unlike a typical monopolist, Qualcomm does not simply charge high prices for *its own* chips. Instead, Qualcomm uses its chip monopoly to force OEMs to pay Qualcomm a surcharge *even when they use its rivals' chips*. It does so through its "no-license, no-chips" policy, which denies Qualcomm's must-have chips to OEMs unless they accept payment obligations that Qualcomm styles as patent royalties, but that in fact incorporate a substantial chip-access surcharge.

a. Qualcomm holds standard essential patents practiced on modem chips that it has agreed to license on FRAND terms

Cellular standards are the product of industry-wide collaboration through SSOs. 1ER251-52; 6ER1171. Those SSOs define agreed-upon technical specifications, which ensure that cellular providers, OEMs, and modem-chipmakers develop networks, cellphones, and chips that can communicate with each other. 6ER1171.

Collaborative standard-setting carries competitive risks. Industry participants often hold patents covering technologies that may be incorporated into a standard. Patents so incorporated are known as standard-essential patents (SEPs). 6ER1171. "Because a SEP holder could prevent other industry participants from

implementing a cellular standard, SSOs require patent holders to commit to license their SEPs on fair, reasonable, and nondiscriminatory (FRAND) terms before SSOs will incorporate the patent into the cellular standard." 6ER1171; *see Microsoft Corp. v. Motorola, Inc*., 795 F.3d 1024, 1031, 1041 (9th Cir. 2015).

Qualcomm holds patents that it has declared essential to cellular standards, including CDMA and LTE. In other words, Qualcomm asserts that every CDMA and LTE modem chip practices its patents. In exchange for having its intellectual property included in these standards, Qualcomm made binding contractual commitments to the relevant SSOs that it will license its SEPs on FRAND terms. 1ER252-53; *see* 1ER261-623

b. Qualcomm applies a unique no-license, no-chips policy

Ordinarily, a manufacturer that holds patents practiced by one of its products recovers the value of its intellectual property through the product's price. Thus, for example, "when a consumer purchases a television, the consumer does not have to separately sign a license and pay royalties for any patents practiced by the television." 6ER1210.

In general, the cellphone industry works the same way. Aside from Qualcomm, every company that sells modem chips or other components includes the value of any of its patents practiced on that product in the product's price. 6ER1329-30. Qualcomm itself does the same thing when it sells components in

markets where it lacks market power, such as the market for WiFi chips. 6ER1254, 1330; *see* 2SER0527; 1SER0081:18-21. But in a practice that is "unique within Qualcomm and unique in the industry," Qualcomm has a declared policy of refusing to sell modem chips to an OEM unless the OEM first signs a separate agreement that Qualcomm styles as a patent license. 6ER1210; 2SER0281:2-14; 2SER0308; 2SER0315-16; 2SER0323-24; 1SER0234:3-6.

Qualcomm's separate agreement requires OEMs seeking to purchase its chips to pay substantial sums as "patent royalties"—typically, about 5% of the price of each cellphone up to $400, which translates to $20 per phone for premium phones. 6ER1173-74. Those sums vastly exceed the patent royalties charged by other entities with comparable cellular SEP portfolios. 6ER1341-42. And Qualcomm requires OEMs to pay those sums on *every* phone sold, including phones that use another supplier's modem chips. 6ER1211. Thus, an OEM that uses a rival supplier's modem chip in a $400 cellphone must pay an amount to Qualcomm (as a royalty) that may be roughly equal to or even greater than the amount paid to the rival (as a chip price). *See, e.g.*, 5SER1100.

c. The no-license, no-chips policy allows Qualcomm to impose a surcharge on rivals' chips

Qualcomm's "patent royalties" are not determined by, and do not reflect, the value of its cellular SEPs. Instead, the 5% payment that Qualcomm collects on each cellphone OEMs sell includes a substantial surcharge that OEMs agree to pay

only to maintain access to Qualcomm's chips. Qualcomm's chip monopoly means that it could have imposed that surcharge in another form—it could, for example, have simply demanded that OEMs pay an explicit "chip-access fee" for every phone sold. Instead, Qualcomm has used the no-license, no-chips policy to short-circuit the normal functioning of the patent system and conceal an economically equivalent chip-access surcharge in its purported patent royalties.

In ordinary circumstances, patent license negotiations are conducted "in the shadow" of judicial mechanisms. 1SER0246:23-48:7; *see* 6ER1345. Any OEM that believes that a SEP holder's royalty demands are unreasonable can challenge them, either in a patent-infringement action initiated by the SEP holder or in a declaratory-judgment action initiated by the OEM. 6ER1344; 2SER0328. Negotiations can thus be expected to yield royalties that approximate the reasonable (FRAND) royalty that would result from litigation. 1SER0247:17-48:7; *see* 6ER1344-45. Absent the no-license, no-chips policy, Qualcomm's patent royalty negotiations would work in exactly the same way.

The no-license, no-chips policy thwarts those ordinary patent-law mechanisms. 1SER0253:16-19. "Qualcomm threatens to withhold OEMs' chip supply until OEMs sign patent license agreements on Qualcomm's preferred terms." 6ER1210. Faced with the prospect of a crippling loss of access to chips for which Qualcomm is the key supplier, OEMs have no choice but to give in—they

cannot negotiate or challenge Qualcomm's rates through litigation. 6ER1210-11, 1344-48.

This dynamic has played out with virtually every OEM in the market. In 2013, for example, Lenovo "viewed Qualcomm's royalty rates as unreasonably high in comparison to the rates of other SEP licensors" and contemplated terminating its license to seek a lower rate. 6ER1239; 2SER0326. In response, Qualcomm did not provide Lenovo with any information about its patents to justify its royalty. 6ER1240. Instead, it simply threatened to cut off Lenovo's chip supply. 6ER1238-39; 2SER0327. That threat prevented Lenovo from challenging Qualcomm's royalties, because Lenovo's business depended on access to Qualcomm's chips. 6ER1239-40; 2SER0327-28. As a Lenovo executive put it, "you can't negotiate very effectively" when "the alternatives are agree or you're out of business." 2SER0328.

Similarly, Samsung's dependence on Qualcomm left it with "no choice but to enter into a license agreement with Qualcomm" despite what Samsung viewed as an "unreasonable" royalty. 6ER1226 (quoting 4SER0947). Samsung's internal notes recognized that Qualcomm's "high royalties" were "only possible because Qualcomm has a monopoly position in the chipset market and does not supply chips to manufacturers without licenses." 6ER1225-26 (quoting 3SER0690); *see* 5SER1013, 1015.

Critically, Qualcomm's chip-access surcharge does not have the usual effect of a monopolist's high price. Ordinarily, a monopolist charging high prices attracts rivals into the market who seek to gain share by undercutting the monopolist's price. But the no-license, no-chips policy thwarts that usual competitive effect, because OEMs have to pay Qualcomm's chip-access surcharge even when they buy chips from rival suppliers. 6ER1211. Qualcomm's no-license, no-chips policy thus "imposes an artificial surcharge on all sales of its rivals' modem chips." 6ER1349-50. Put differently, it forces OEMs to pay a portion of Qualcomm's monopoly price even when they buy from its rivals.

4. Qualcomm reinforces its no-license, no-chips policy with incentive funds

To induce OEMs to accept its surcharge on rivals' chips, Qualcomm paired the "stick" of the no-license, no-chips policy with a "carrot" in the form of hundreds of millions of dollars in incentive funds paid to OEMs. 6ER1239. Those incentives typically accrued only when OEMs purchased Qualcomm's chips. 6ER1352-53. If Qualcomm had simply reduced the surcharge included in its royalty, an OEM could have bought chips from either Qualcomm or a rival and "still [received] the benefit." 6ER1246 (quoting 2SER0323). Instead, Qualcomm offered OEMs license agreements that included its usual surcharge, but coupled them with incentive funds. 4SER0883, 0886; 4SER0935; 4SER0937-39; 4SER0940; 4SER0943; ; 4SER0852; 2SER0339-41; 1SER0222:14-0223:5. These

arrangements raised OEMs' cost of using *all* chips while softening that effect to the extent that OEMs used *Qualcomm* chips—thereby inducing OEMs to shift modem-chip purchases from rival suppliers to Qualcomm. 6ER1246, 1319-20.

5. Qualcomm maintains its monopoly by refusing to license rival chipmakers

Qualcomm used another tactic to reinforce its monopoly: Despite its FRAND commitments to license its SEPs on a nondiscriminatory basis, Qualcomm refused to license rival chipmakers. Rivals must practice Qualcomm's SEPs to make CDMA and LTE chips. But when rivals sought FRAND licenses, Qualcomm refused to grant them. Instead, it offered only limited covenants not to assert its SEPs—and even then, it conditioned those covenants on rivals' commitment to sell chips only to Qualcomm-approved OEMs and to comply with "onerous reporting requirements" that obliged rivals to give Qualcomm "sensitive business information" about the quantity of chips sold to each customer. 6ER1281; *see* 6ER1284, 1286.

Qualcomm recognized that this strategy hamstrung rivals by limiting their customer base to Qualcomm-approved OEMs. 6ER1281-82; 3SER0698. It also reinforced the no-license, no-chips policy: If Qualcomm had licensed its SEPs to a rival chipmaker like Intel, OEMs that purchased Intel's chips would not have needed to obtain a separate license to those SEPs from Qualcomm. 6ER1295.

6. Qualcomm makes exclusive-dealing agreements with Apple

Qualcomm also maintained its monopoly through exclusive-dealing arrangements with Apple, the most important OEM in the market. Apple emerged as a significant OEM following the success of the iPhone, and came to top Qualcomm's list of OEMs that "matter most." 6ER1261, 1256; 4SER0871-72. Although Apple was dependent on Qualcomm for chips in the short term, in the longer term it had the resources and the incentive to sponsor a rival's entry. 6ER1254-55, 1265; 1SER0220:5-21:19; 4SER0873.

To head off this threat, Qualcomm secured exclusivity with Apple through two agreements: a 2011 Transition Agreement (TA) and a 2013 First Amendment to Transition Agreement (FATA). 6ER1255-66. Both agreements provided that Qualcomm would pay Apple hundreds of millions of dollars to use only Qualcomm chips, and enforced that exclusivity commitment with clawback penalties specifying that Apple would have to repay "hundreds of millions in funds already received" if it used a rival's chips. 6ER1257-58; *see* 6ER1262-63. From 2011 to 2016, these exclusive-dealing agreements foreclosed the largest OEM and most promising path to entry for Qualcomm's modem-chip rivals. 6ER1313-17.

B. Proceedings Below

1. The FTC's complaint

In January 2017, the FTC sued Qualcomm under Section 5 of the FTC Act, 15 U.S.C. § 45, alleging that it unlawfully maintained its chip monopoly and

suppressed competition in the CDMA and premium LTE markets through (1) the no-license, no-chips policy; (2) incentive payments; (3) refusal to license cellular SEPs to competing chipmakers, in violation of its FRAND commitments; and (4) exclusive-dealing agreements with Apple. 8ER1770-1801. The FTC alleged that Qualcomm's conduct violated Sections 1 and 2 of the Sherman Act, and thus Section 5 of the FTC Act. *See FTC v. Cement Inst.*, 333 U.S. 683, 694 (1948).[2]

2. The district court's grant of partial summary judgment

Before trial, the district court granted the FTC's motion for partial summary judgment and held that Qualcomm's contractual FRAND commitments obligated it to make SEP licenses available to competing chip suppliers. 1ER249-74. Applying California contract law, the district court held that the plain language of Qualcomm's commitments required it to grant licenses to "all applicants" and prohibited discrimination against rival chipmakers. 1ER267. The court emphasized that Qualcomm itself had previously relied on the very same interpretation, demanding and receiving licenses from other SEP holders. 1ER269-70.

3. The trial and the district court's decision

In January 2019, the district court held an 11-day bench trial to address "both liability and remedy." 1ER248; 2SER0477-78. In May 2019, the court issued

[2] Section 1 of the Sherman Act prohibits "[e]very contract, combination … or conspiracy, in restraint of trade or commerce." 15 U.S.C. § 1. Section 2 makes it unlawful for a firm to "monopolize" a relevant market. 15 U.S.C. § 2.

a 233-page decision setting forth the findings of fact and conclusions of law supporting its determination that Qualcomm had violated Sections 1 and 2 of the Sherman Act. 6ER1167-1399.

a. Credibility findings

The court began by observing that Qualcomm's presentation at trial had "ignored Qualcomm's own contemporaneous documents." 6ER1178. The court found "Qualcomm's internal, contemporaneous documents more persuasive than Qualcomm's trial testimony prepared specifically for this antitrust litigation." *Id.* It emphasized that "many Qualcomm executives' trial testimony was contradicted by these witnesses' own contemporaneous emails, handwritten notes, and recorded statements." 6ER1179; *see* 6ER1179-83. And the court added that "some Qualcomm witnesses lacked credibility in other ways." 6ER1183. The court thus "largely discount[ed] Qualcomm's trial testimony." 6ER1184.[3]

b. Legal framework

The court next set forth the framework governing its analysis under Sections 1 and 2 of the Sherman Act. 6ER1184-87. Under Section 1, "the plaintiff has the initial burden to show that 'the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market.'" 6ER1186

[3] Although Qualcomm does not challenge any of these credibility findings, its brief pervasively relies on testimony from witnesses the district court declined to credit. *See, e.g.*, Br. 9-18, 44-45, 78-79, 91, 94-95, 97, 100, 120, 122, 127-28, 132.

(quoting *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018)). If the plaintiff makes that showing, "the burden shifts to the defendant to show a procompetitive rationale for the restraint." 6ER1186-87 (quoting *Am. Express*, 138 S. Ct. at 2284). If the defendant does so, "the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means." 6ER1187 (quoting *Am. Express*, 138 S. Ct. at 2284).

Under Section 2, the plaintiff must show that "the defendant possessed monopoly power in a relevant antitrust market." 6ER1187. After that, the analysis parallels Section 1: The plaintiff must show that the defendant acquired or maintained the monopoly "by engaging in exclusionary conduct 'as distinguished from growth or development … of a superior product, business acumen, or historic accident.'" *Id.* (quoting *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001) (en banc)). The burden then shifts to the monopolist to "proffer a 'procompetitive justification.'" *Id.* (quoting *Microsoft*, 253 F.3d at 59). The plaintiff must then "demonstrate that the anticompetitive harm of the conduct outweighs the procompetitive benefit." *Id.* (quoting *Microsoft*, 253 F.3d at 59).

c. Market definition and monopoly power

The district court found that CDMA and premium LTE modem chips are relevant antitrust markets. 6ER1191-92, 1199-1203. It also found that the "geographic boundaries" of both markets are "worldwide," a conclusion that

"Qualcomm d[id] not contest." 6ER1191; *see* 6ER1199. The district court further found that Qualcomm had monopoly power in both markets because it had dominant market shares; because there are significant barriers to entry; and because existing competitors lacked the ability to discipline Qualcomm's prices. 6ER1193-99, 1203-07. Qualcomm does not dispute the district court's market definitions or its finding of monopoly power.

d. Anticompetitive conduct and harm

The district court devoted the bulk of its decision to a painstaking analysis of Qualcomm's conduct, the economic impact, and the resulting harm to competition. 6ER1207-1382. At the outset, the court emphasized that neither possessing monopoly power nor charging high prices violates the antitrust laws. 6ER1207-08. Instead, "anticompetitive conduct is conduct that 'harms the competitive *process* and thereby harms consumers.'" 6ER1208 (quoting *Microsoft*, 253 F.3d at 58) (emphasis in original)) (brackets omitted). In other words, the court explained, "anticompetitive conduct is behavior that tends to impair the opportunities of rivals and either does not further competition on the merits or does so in an unnecessarily restrictive way." *Id.* (quoting *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 894 (9th Cir. 2008)) (brackets omitted). Applying that standard, the district court agreed with the FTC that Qualcomm's four challenged practices were anticompetitive.

i. *No-license, no-chips*

The district court began with the no-license, no-chips policy. It explained that "Qualcomm wields its chip monopoly power to coerce OEMs to sign patent license agreements." 6ER1210. In response to Qualcomm testimony and argument that it had never cut off chip supply or seriously threatened to do so, *see, e.g.*, 6ER1179-82; 1SER0003-07, the court made specific findings about Qualcomm's treatment of sixteen different OEMs (or groups of OEMs). 6ER1211-79. The court found that, among other things, Qualcomm has repeatedly "cut off OEMs' chip supply" and "threatened OEMs' chip supply" to coerce OEMs to sign license agreements on Qualcomm's preferred terms. 6ER1279. The court determined that those threats resulted in the imposition of "an artificial and anticompetitive surcharge on the price of rivals' modem chips." 6ER1211. The court's analysis proceeded in two steps.

First, the court found that the per-phone payment terms that Qualcomm imposed on OEMs using its no-license, no-chips policy substantially exceeded the FRAND rates for Qualcomm's intellectual property. 6ER1323-49. The court found based on extensive evidence that those payments are instead attributable to Qualcomm's chip monopoly.

That evidence included Qualcomm's own internal documents, in which "Qualcomm has repeatedly admitted that Qualcomm's monopoly chip market

share—not the value of Qualcomm's patents—sustains Qualcomm's royalty rates." 6ER1323. Other evidence reinforced that conclusion. The court found that, "by multiple metrics," Qualcomm "is not the leading contributor to standards." 6ER1332. To the contrary, the court found that Nokia's and Ericsson's SEP portfolios were of at least comparable value, yet their "royalty rates and licensing revenues are a fraction of Qualcomm's." *Id*. Indeed, the court emphasized that "OEMs uniformly testified that Qualcomm's royalty rates were disproportionately higher than the royalty rates OEMs owe other licensors." 6ER1340. An Apple executive, for example, testified that "Qualcomm charges us more than everybody else put together." *Id.* (quoting 1SER0219:2-6).

The district court also found that Qualcomm's royalty rates "have not been tested by litigation because Qualcomm's chip supply leverage insulates Qualcomm from legal challenges." 6ER1344. Qualcomm's own documents recognized that dynamic, and OEMs testified that the no-license, no-chips policy "precluded litigation over Qualcomm's royalty rates." 6ER1345.

Second, the court found that Qualcomm's agreements with OEMs are anticompetitive because they "impose a surcharge on rivals' modem chips." 6ER1349; *see* 6ER1349-52. The court emphasized that Qualcomm "charges its unreasonably high royalty rates anytime an OEM sells a handset, even when that handset contains a rival's modem chip." 6ER1349. The court explained that, as a

result, the price of a modem chip sold by one of Qualcomm's rivals "effectively includes two components: (1) the nominal chip price; and (2) Qualcomm's royalty surcharge." 6ER1351.

The court further found that this surcharge distorts the competitive process by raising rivals' effective prices. It "prevents rivals from underbidding Qualcomm, so that Qualcomm can maintain its modem chip market power." 6ER1351. Like a tax, "the surcharge 'places a wedge between the price that buyers pay and the price that sellers receive,' and demand for such transactions decreases." *Id.* (quoting N. GREGORY MANKIW, PRINCIPLES OF MICROECONOMICS 156 (7th ed. 2014)). As a result, "[r]ivals see lower sales volumes and lower margins, and consumers see less advanced features as competition decreases." *Id.*

ii. *Incentive payments*

The district court found that Qualcomm sustained its inflated royalty rates—and thus the surcharge on rivals' chips—by offering OEMs chip incentive funds and other side payments to induce them to accept its licensing terms. 6ER1210; *see* 6ER1211-79. The court found that because these incentive funds reduce the effective price of Qualcomm's chips while maintaining the surcharge on rival chips, they "exacerbate[] the effect of Qualcomm's surcharge on rivals' chips," 6ER1352, often "result[ing] in exclusivity," 6ER1354.

iii. *Refusal to license rivals*

The court then addressed Qualcomm's refusal to license its SEPs to rival chipmakers. It reiterated its summary-judgment holding that "Qualcomm's refusal to license rivals violates Qualcomm's FRAND commitments." 6ER1290. The court rejected as pretextual Qualcomm's assertion that its refusal to license rivals "reduces transaction costs" or is otherwise "more efficient" than licensing chipmakers and granting separate licenses to OEMs to the extent their phones practice any Qualcomm patents that are not practiced on the chips. 6ER1298. The court found that the testimony Qualcomm offered to support that justification was "not credible in multiple respects." *Id.*

The court found that Qualcomm's refusal to license rivals allows it to "reduce its rivals' customer base and sales" by controlling "to whom its rivals sell modem chips." 6ER1356-57. The court found, moreover, that the inability to obtain a SEP license from Qualcomm had delayed or deterred entry by rivals and "promote[d] rivals' exit." 6ER1356; *see, e.g.*, 6ER1282-83 (deterred entry by Project Dragonfly joint venture); 6ER1285-86 (delayed entry by Intel); 6ER1287-88 (promoted exit by Broadcom and Texas Instruments). And the court emphasized that "[r]efusing to license rivals not only blocks rivals, but also preserves Qualcomm's ability to demand unreasonably high royalty rates from OEMs." 6ER1358.

In addition to finding that Qualcomm's refusal to license rivals harmed competition and reinforced its broader anticompetitive scheme, the district court separately held that Qualcomm had a "duty under the Sherman Act to license its SEPs to rival modem chips." 6ER1300-01. The court reached that conclusion by applying the standard for duty-to-deal claims set forth in *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004), and *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 586 (1985). *See* 6ER1300-07.

iv. *Exclusive dealing with Apple*

The district court found that Qualcomm substantially foreclosed competitors for five years by entering into *de facto* exclusive supply arrangements with Apple. 6ER1307-23. The court concluded that the TA and FATA "were de facto exclusive deals because both coerced '[Apple] into purchasing a substantial amount of [its] needs from Qualcomm.'" 6ER1308 (quoting *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1182 (9th Cir. 2016)). The court found that the agreements had that effect because they imposed "substantial penalties if Apple purchased *any* modem chips from a Qualcomm rival." *Id.*; 6ER1257-58, 1263. For example, Qualcomm calculated in June 2015 that Apple would incur penalties of $645 million if it were to launch a new product with a non-Qualcomm chip before February 2016. 6ER1267; 3SER0568.

The district court explained that an exclusive-dealing arrangement violates Section 1 if it "foreclose[s] competition in a substantial share of the market." 6ER1310 (quoting *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp.*, 592 F.3d 991, 996 (9th Cir. 2010)). And a monopolist's use of exclusive-dealing agreements "may give rise to a § 2 violation even though the contracts foreclose less than the roughly 40% or 50% share usually required in order to establish a § 1 violation." *Id.* (quoting *Microsoft*, 253 F.3d at 70). The court found that Qualcomm's TA and FATA met these standards because they foreclosed rivals from the largest customer in the market and prevented them from obtaining the "positive network effects of working with Apple." 6ER1307; *see* 6ER1313-14.

e. Cumulative anticompetitive effect

"Collectively," the district court concluded, "the harms caused by Qualcomm's anticompetitive practices take repeated aim at the elements necessary for a rival modem supplier to compete in the market." 6ER1359. The court explained that, by suppressing rivals' sales and margins, Qualcomm "forecloses rivals from the revenue necessary to invest in research and development and acquisitions to develop new technology." 6ER1360. This leaves rivals "unable to produce competitive modem chips." 6ER1368. The court further found that "[t]he modem chip market reflects the cumulative anticompetitive harm of Qualcomm's practices." 6ER1369. It explained that "[m]any of Qualcomm's rivals have exited

the market," and that the remaining rivals "are hobbled by Qualcomm's practices." 6ER1372.

Under the circumstances, the court concluded that there was "plentiful 'evidence that the challenged restraint harms competition.'" 6ER1374 (quoting *Am. Express*, 138 S. Ct. at 2284). The court explained that it had "already rejected" all of Qualcomm's purported procompetitive justifications as "pretextual," and that those justifications were in any event outweighed by the "severe" anticompetitive harms. *Id.*

Finally, the court noted that its conclusions were reinforced by evidence of Qualcomm's intent. 6ER1374-82. The court explained that contemporaneous documents showed that Qualcomm "knew its licensing practices could lead to antitrust liability, knew its licensing practices violated FRAND, and knew its licensing practices harm competition, yet continued anyway—even in the face of government investigations" around the world. 6ER1374.

f. Remedy

The district court then addressed the appropriate remedy for Qualcomm's violations of Sections 1 and 2. 6ER1382-99. It found that an injunction was warranted because "Qualcomm's anticompetitive conduct is ongoing," and, in any event, likely to recur. 6ER1384; *see* 6ER1384-89. Among other things, the court found that Qualcomm's remaining rivals in the market for premium LTE chips are

"hobbled by Qualcomm's practices," 6ER1372, and that "Qualcomm is likely to replicate its market dominance during the transition to 5G, the next generation of modem chips," 6ER1387.

The court therefore entered an injunction with three principal provisions. First, it prohibits Qualcomm from maintaining its no-license, no-chips policy and requires it "negotiate or renegotiate license terms with customers" free from the threat of lack of access to modem-chip supply. 6ER1393. Second, it requires Qualcomm to "make exhaustive SEP licenses available to modem-chip suppliers" on FRAND terms. 6ER1395. And third, it prohibits Qualcomm from entering into exclusive-dealing and de facto exclusive-dealing agreements. 6ER1395-96.

4. Appeal

Qualcomm appealed. 2ER347. On August 23, 2019, this Court stayed the first two of the injunction's provisions pending an expedited appeal. 2ER275-82.

SUMMARY OF ARGUMENT

Qualcomm has maintained its longstanding monopolies in key chip markets through a combination of anticompetitive practices that erect "insurmountable and artificial barriers for Qualcomm's rivals" without reducing prices, improving quality, or otherwise furthering competition on the merits. 6ER1359. The district court's finding that those practices violate the Sherman Act was firmly grounded in the trial record and consistent with settled principles of antitrust law. The court

also acted well within its broad remedial discretion by enjoining Qualcomm's anticompetitive practices and unshackling competition in modem-chip markets.

1. The crux of the district court's decision was its determination that Qualcomm has suppressed competition in the CDMA and premium LTE modem-chip markets by imposing a surcharge on rivals' chips. That holding was grounded in a long-recognized mechanism of competitive harm: As Qualcomm itself concedes (Br. 66) a monopolist's use of its monopoly power to require customers to pay a fee when they deal with rivals has obvious anticompetitive effects. Here, the district court found, as a factual matter, that Qualcomm's patent royalties conceal just such a surcharge. It further determined—again, in factual findings entitled to clear-error review—that the surcharge has harmed competition by raising the effective price of rivals' chips, preventing them from underbidding Qualcomm, and reducing their sales and margins.

As it did at trial, Qualcomm largely ignores the evidence supporting those findings, including its own contemporaneous documents. Its various quibbles with secondary aspects of the district court's factual analysis are unpersuasive, and certainly do not establish clear error. And in demanding more—such as a precise quantification of the surcharge or the degree to which it was borne by rival chipmakers or passed on to their customers—Qualcomm seeks a standard of proof that no court has required.

2. The district court also correctly found that Qualcomm harmed competition by breaching its voluntary commitments to license its SEPs to rivals. The court's holding that Qualcomm's commitments to make licenses available to all applicants on FRAND terms extend to rival chipmakers was compelled by the commitments' plain language—and matched the position previously taken by Qualcomm itself. The district court also correctly found that Qualcomm's breach of its commitments to license rivals has harmed competition by, among other things, reinforcing the surcharge and impairing its rivals' ability to compete. Qualcomm has not seriously argued otherwise.

Instead, Qualcomm asserts that the district court erred in finding that its refusal to license rivals violates an antitrust duty to deal under *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), and *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004). The FTC does not argue that Qualcomm has a duty to deal with its rivals under the heightened *Aspen*/*Trinko* standard. But that heightened standard for claims challenging a simple refusal to deal has no application where, as here, a monopolist's refusal to license its rivals breaches its own voluntary commitments made to induce SSOs to include its patented technology in industry-wide standards. Such a breach subverts a mechanism designed to safeguard against the inherent anticompetitive risks of collaborative standard-setting. And while a monopolist's breach of a FRAND

commitment does not necessarily violate the Sherman Act, neither is it shielded by the *Aspen*/*Trinko* standard where, as here, it is anticompetitive under traditional Section 2 standards.

3. The district court also correctly held that Qualcomm's TA and FATA with Apple were anticompetitive exclusive-dealing agreements. Those agreements used hundreds of millions of dollars in incentives and clawback penalties to prevent rivals from winning business from the largest and most important customer in the premium LTE market from 2011 until 2016. Indeed, Qualcomm's own documents recognized that Apple was responsible for between 40% and 60% of the premium LTE market and that winning Apple's business was the most likely path for a rival's successful entry. Agreements foreclosing such a quantitatively and qualitatively significant portion of the market readily satisfy the established criteria for unlawful exclusive-dealing arrangements. And in asserting that those criteria do not apply because its agreements with Apple involved only "discounts," Qualcomm ignores the drastic clawback penalties that prevented rivals from winning Apple's business even if they offered better chips at lower prices.

4. Finally, the district court properly entered a permanent injunction. Where, as here, the FTC proves that a defendant has violated the antitrust laws, a district court has broad discretion to fashion a remedy that will end the violation and prevent its recurrence. For more than a decade, Qualcomm has maintained its

monopoly position through a series of technology cycles, repeatedly deploying the same anticompetitive practices to preserve its initial technological advantage. The district court correctly found that Qualcomm is poised to repeat the pattern as the market transitions to 5G, and the court was not required to stay its hand until those predictable anticompetitive harms come to fruition.

Nor is there any merit to the belated claims by Qualcomm and DOJ that the district court's injunction improperly interferes with foreign regulation or somehow threatens national security. It is entirely appropriate for a U.S. court to enjoin a U.S. defendant's anticompetitive conduct in global markets when that conduct harms U.S. consumers—particularly where, as here, the injunction does not actually conflict with any foreign regulation. And the purported national security concerns rest not on any objection to the specific terms of the injunction, but instead on the generalized proposition that anything that reduces Qualcomm's profits could threaten its technological leadership. The assertion that the injunction will have such an effect is purely speculative. And even if it were not, it would have no place here: The Sherman Act reflects Congress's determination that competition serves the public interest, and it precludes inquiry into whether competition is good or bad in particular contexts. If preserving Qualcomm's profits serves the national interest, Congress and the Executive Branch have ample means

to pursue that policy—but that does not mean that Qualcomm should be given a license to continue violating the Sherman Act.

STANDARD OF REVIEW

1. Findings of fact and conclusions of law: Following a bench trial, the trial judge's findings of fact, including findings related to competitive effects, are reviewed for clear error. *O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049, 1061, 1070 (9th Cir. 2015). Review is "deferential," and the trial court's findings should be accepted unless there is a "definite and firm conviction that a mistake has been committed." *Id*. "Special deference is paid to a trial court's credibility findings." *Exxon Co. v. Sofec, Inc*., 54 F.3d 570, 576 (9th Cir. 1995), *aff'd*, 517 U.S. 830 (1996). The trial court's conclusions of law are reviewed de novo. *O'Bannon*, 802 F.3d at 1061.

2. Summary judgment: The Court reviews a district court's grant of summary judgment de novo. *FTC v. Network Servs. Depot, Inc*., 617 F.3d 1127, 1138 (9th Cir. 2010).

3. Trial management: Challenges to the district court's trial management, including rulings on whether to bifurcate a trial, are reviewed for abuse of discretion. *Exxon*, 54 F.3d at 575; *Zivkovic v. S. Cal. Edison Co*., 302 F.3d 1080, 1088 (9th Cir. 2002).

4. Injunctive relief: "[T]his [C]ourt reviews a district court's grant of equitable relief under the FTC Act only for abuse of discretion or the erroneous application of legal principles." *Network Servs. Depot*, 617 F.3d at 1141; *see FTC v. Grant Connect, LLC*, 763 F.3d 1094, 1101 (9th Cir. 2014).

ARGUMENT

I. THE DISTRICT COURT CORRECTLY FOUND THAT QUALCOMM HAS HARMED COMPETITION BY IMPOSING A SURCHARGE ON RIVALS' CHIPS

The district court found that Qualcomm's no-license, no-chips policy, its incentive funds, and its refusal to license rivals work in combination to require OEMs to pay Qualcomm a substantial surcharge each time they use a chip supplied by a rival chipmaker. Although Qualcomm labels that surcharge a component of a "patent royalty," the district court found that it is not attributable to Qualcomm's patents, and instead reflects Qualcomm's chip monopoly power. OEMs agree to pay the per-chip surcharge to get and keep access to Qualcomm's must-have chips, but they are forced to pay it to Qualcomm even when they buy chips from Qualcomm's rivals.

The district court found that Qualcomm's imposition of that surcharge on rivals' sales has predictable anticompetitive effects. It raises the costs that rivals and OEMs incur to do business with each other, prevents rivals from underbidding Qualcomm, and ultimately preserves Qualcomm's monopoly by excluding rivals

from the market. And the court also determined—in a finding that Qualcomm has not challenged—that there is no procompetitive justification or legitimate business purpose for the surcharge or the practices that allow Qualcomm to impose it.

Qualcomm is thus profoundly wrong to protest that the district court faulted it simply for using its modem chip monopoly to charge prices that are "too high." (Br. 7-8). In fact, had Qualcomm simply charged high prices for its own chips, it would have *encouraged* entry and expansion by its chip rivals, and substitution to rivals' chips by OEMs. PHILLIP E. AREEDA, HERBERT HOVENKAMP, ET AL., ANTITRUST LAW ¶¶ 634a, 720a (4th ed. 2015) (AREEDA & HOVENKAMP). And had Qualcomm simply charged high royalties for a license to its patents, customers could have challenged those royalties (including through infringement litigation), and Qualcomm's chip rivals would have faced no improper disadvantage.

Here, though, Qualcomm pursued neither strategy. Instead, it forced customers to accept terms that raised the costs of using rivals' chips, as a condition of access to its own must-have chips. By doing so, it entrenched and maintained its chip monopoly, harming competition and consumers alike.

A. The District Court Correctly Held That A Monopolist's Imposition Of A Surcharge On Rivals' Sales Is Anticompetitive

1. Under Section 2 of the Sherman Act, "[a]nticompetitive conduct is behavior that tends to impair the opportunities of rivals and either does not further

competition on the merits or does so in an unnecessarily restrictive way." *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 894 (9th Cir. 2008). Courts have thus long recognized that a monopolist's conduct is anticompetitive if it raises its rivals' costs without lowering prices, improving quality, or otherwise benefiting consumers—that is, without competing on the merits. *See Forsyth v. Humana, Inc.*, 114 F.3d 1467, 1478 (9th Cir. 1997) (collecting cases) (overruled on other grounds by *Lacey v. Maricopa County*, 693 F.3d 896 (9th Cir. 2012)); *see generally* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 235-62 (1986).

One way a monopolist can raise rivals' costs without competing on the merits is by coercing customers or suppliers to refrain from dealing with rivals, by penalizing them when they deal with rivals, or by forcing them to deal with rivals only on unfavorable terms. A monopolist might, for example, refuse to sell to customers that buy from rivals, *see, e.g.*, *Lorain Journal Co. v. United States*, 342 U.S. 143, 152-53 (1951), or deny supply or rebates to distributors that carry rivals' products, *see, e.g.*, *McWane, Inc. v. FTC*, 783 F.3d 814, 832 (11th Cir. 2015); *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 195 (3d Cir. 2005).

Another long-recognized means of raising rivals' costs is requiring customers to pay a financial penalty to the monopolist when they deal with its rivals. In *United Shoe Machinery Corp. v. United States*, 258 U.S. 451 (1922), for

example, the Supreme Court condemned a monopolist's conditioning leases of machinery to shoe manufacturers on manufacturers' agreement to pay "royalties" on all shoes, including those made on rivals' machines. *Id.* at 456-58. Similarly, in *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100 (1969), the Court concluded that a patentee commits patent misuse and may violate the Sherman Act by "using [its patent] monopoly to coerce an agreement to pay a percentage royalty on [non-infringing] merchandise." *Id.* at 139-40.

The paradigmatic modern example of such conduct was Microsoft's use of "per processor" licenses in the 1980s and 1990s, when it had a monopoly in the market for computer operating systems. Microsoft demanded that computer OEMs, as a condition of access to Microsoft's operating system, agree to licenses that required them to pay Microsoft a royalty on each computer they sold, even when the computer included only a rival system. *Caldera, Inc. v. Microsoft Corp.*, 87 F. Supp. 2d 1244, 1249-50 (D. Utah 1999). "The effect of such an arrangement was that an OEM who chose to install [a rival operating system] would pay two royalties on the same machine." *Id.* at 1250.

A competitor and the Department of Justice brought separate suits challenging Microsoft's conduct. In denying Microsoft's motion for summary judgment in the private action, a district court held that the per-processor license scheme was exclusionary because it raised OEMs' cost of dealing with rivals.

Caldera, 87 F. Supp. 2d at 1250-51. The Department of Justice similarly argued that the per-processor royalties acted as a "penalty" or "tax" that deterred OEMs from licensing and promoting rival operating systems, diminished rivals' ability to compete, and raised the cost of personal computers for consumers. Complaint ¶¶ 21-22, 36-37, *United States v. Microsoft Corp.*, No. 94-cv-1564 (D.D.C. July 15, 1994), *available at* https://www.justice.gov/atr/complaint-us-v-microsoft. The D.C. Circuit ultimately approved a consent decree barring Microsoft from entering into per-processor licenses. *See United States v. Microsoft Corp.*, 56 F.3d 1448, 1452, 1462 (D.C. Cir. 1995).

2. This case involves the same mechanism of anticompetitive harm. The district court found that, like Microsoft, Qualcomm uses its monopoly power to require OEMs to pay an "artificial surcharge" when they purchase its rivals' products. 6ER1349; *see* 6ER1351 (emphasizing that *Caldera* involved "a similar royalty surcharge"). Like Microsoft's per-processor fee, Qualcomm's surcharge acts as a penalty or tax on OEMs' purchase of rival chips. And the district court found that, like a tax, the surcharge raises the "all-in" (tax-inclusive) prices that OEMs must pay to use rivals' chips, reduces the prices rivals receive for those chips, and reduces the quantity of rival chips sold. 6ER1349-51. Like Microsoft's per-processor fee, therefore, the surcharge "result[ed] in exclusivity." 6ER1352.

Of course, this case differs from *Caldera* in one respect: 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. But the district court found, based on Qualcomm's own documents and a thorough review of its negotiations with OEMs, that Qualcomm's royalties far exceed the reasonable value of its patents. 6ER1323-48. That excess—the surcharge—is attributable not to Qualcomm's patents, but to its chip monopoly. It is a "patent royalty" in name only.[4]

The district court correctly held that Qualcomm's concealment of that surcharge in patent royalties makes no practical or legal difference. Antitrust law eschews "formalistic distinctions" that do not reflect "actual market realities." *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 466-67 (1992). Firms thus cannot shield anticompetitive surcharges from antitrust scrutiny by camouflaging them as compensation for complementary services. As in other contexts, courts look past labels to economic substance.

For example, both the Fourth and Seventh Circuits condemned an agreement between a contractor association and a union that required *any* contractor hiring

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[4] A reasonable royalty collected by a patent holder on use of its rivals' products may provide the patent holder a competitive advantage over its product-market rivals. *Cf.* Br. 83-84. But that advantage, unlike the one created by Qualcomm's surcharge, is a legitimate reward for the patent holder's innovative activity.

union employees—even a contractor that did not belong to the association—to contribute 1% of its gross payroll to an association-controlled fund. *See Nat'l Elec. Contractors Ass'n v. Nat'l Constructors Ass'n*, 678 F.2d 492 (4th Cir. 1982); *Premier Elec. Constr. Co. v. Nat'l Elec. Contractors Ass'n*, 814 F.2d 358 (7th Cir. 1987). The defendant association argued that the contributions simply compensated the fund for bargaining and administrative services, but both the Fourth and Seventh Circuits rejected the argument and held that the contributions unlawfully enabled the association to "raise[] its rivals' costs, and thereby raise[] the market price to its own advantage." *Premier*, 814 F.2d at 368 (citing Krattenmaker & Salop, *supra*); *see Nat'l Elec.*, 678 F.2d at 496-97, 501.

So too here. Qualcomm and the *Premier* defendants faced a common problem: They sought to set supra-competitive prices, but feared that competitors (rival chipmakers in this case, nonmember contractors in *Premier*) would undercut those prices and thus erode their market share. Qualcomm and the *Premier* defendants hit on a common solution: use their market power to impose a surcharge on competitors' sales, and disguise the surcharge as a payment for complementary services (patent royalties in this case, fees for bargaining services in *Premier*).[5]

[5] Qualcomm notes (Br. 65) that *Premier* involved concerted action rather than a monopolist's unilateral conduct. But *Premier*'s analysis of the anticompetitive

3. Qualcomm insists (Br. 57-67) that the district court failed to ground its surcharge analysis in any valid theory of anticompetitive harm. But while the specifics of Qualcomm's scheme to impose a surcharge on its rivals' sales may be novel, the proposition that such a surcharge is anticompetitive is beyond controversy. Qualcomm cites no decision suggesting (much less holding) that the antitrust laws allow a monopolist to demand that its customers pay for its products even when they purchase rivals' products instead. To the contrary, Qualcomm itself ultimately acknowledges—indeed, embraces—*Caldera*'s holding that such conduct is anticompetitive (Br. 66). And Qualcomm's description of *why* the per-processor license in *Caldera* distorted the competitive process applies equally here—one need only change the names of the party and the product:

> This fee directly tipped the competitive balance, because a manufacturer choosing which [chip] to include on its [phones] had a large incentive to choose [Qualcomm] over the competitor's [chips]. Selecting the competitor's [chip] would require the manufacturer to pay twice—the [Qualcomm surcharge] plus the separate fee for the alternative [chip].

Br. 66; *see* DOJ Br. 17-18 (similar).

Nor does Qualcomm identify any other legally relevant distinction between the mechanism of anticompetitive harm in *Caldera* and the one the district court

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effect of the conduct remains equally applicable. Indeed, this Court and others have relied on *Premier* in defining monopolization standards. *See, e.g.*, *Forsyth*, 114 F.3d at 1478; *Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, Inc.*, 63 F.3d 1540, 1553 n.12 (10th Cir. 1995).

found here. Qualcomm argues (Br. 63) that its license fees are "non-discriminatory." Even if that were true,[6] Microsoft also did not "charge higher royalties if the OEM use[d] a rival's [operating system]" (Br. 67). Instead, as in this case, the problem was that Microsoft required customers to pay the fee even when they used rivals' products. *See Caldera*, 87 F. Supp. 2d at 1249-50. Even where the amount is the same, such a fee affects the monopolist and its rivals in fundamentally different ways: When customers buy from the monopolist, the fee is part of the price the monopolist receives; in contrast, when customers buy from rivals, the fee is a tax owed to a third party that represents an "increase[d] … cost[] of doing business." *Premier*, 814 F.2d at 368.

Also like Qualcomm, Microsoft imposed its per-processor fee on its OEM customers, not directly on rivals. Qualcomm's heavy emphasis (Br. 58-60) on the fact that OEMs pay its surcharge is thus a red herring. As *Caldera* illustrates, and as the district court found, the economic and competitive effect of a surcharge on

[6] In fact, Qualcomm sometimes expressly charged higher royalties on phones that used rivals' chips. 6ER1215-16, 1229. And even when it did not, its provision of incentive funds to offset its license fees when OEMs bought its chips effectively resulted in a discriminatory surcharge. *See supra* 14-15.

rivals' sales is exactly the same "regardless of whether a surcharge is imposed on OEMs or directly on … rivals." 6ER1351.[7]

Qualcomm's embrace of *Caldera* reveals that, despite its overheated rhetoric (Br. 43, 57-58), its quarrel with the district court's surcharge holding is at bottom factual, not legal. Qualcomm asserts that in this case, "the OEM does not pay twice for the same product" because it "does not also pay for Qualcomm's chips when it buys the rival's chip." Br. 67. But the district court specifically found that an OEM *does* "pay for Qualcomm's chips when it buys the rival's chip" because Qualcomm's patent royalties include a substantial surcharge that OEMs agree to pay only to secure access to Qualcomm's chips. 6ER1349. Similarly, Qualcomm denies that its surcharge has had "the practical effect of exclusivity." Br. 67

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[7] The district court's finding was supported by the FTC's economic expert, who analogized the surcharge to a tax and explained that whether Qualcomm collects the surcharge from rivals or from OEMs is economically "immaterial"—a conclusion he described as a "standard textbook result." 1SER0034:21-1SER0035:7; *see* 1SER0105:12-1SER106:10. Qualcomm asserts (Br. 59-60) that the economics textbook cited by the district court and *Fulton Corp. v. Faulkner*, 516 U.S. 325 (1996), contradict the court's finding. Neither does. Both the textbook and *Fulton* explain that the "incidence" of a tax—how buyers and sellers ultimately share its economic burdens—depends on the "elasticities of supply and demand." N. GREGORY MANKIW, PRINCIPLES OF MICROECONOMICS 156 (7th ed. 2014); *see Fulton*, 516 U.S. at 341. But both explicitly recognize that the incidence does *not* depend on the tax's initial placement. *See* MANKIW, *supra*, at 156 ("The impact of a tax on a market outcome is same whether the tax is levied on buyers or sellers of a good."); *Fulton*, 516 U.S. at 331-32 (explaining that a "sales tax" collected from the seller and a "use tax" collected from the buyer impose "equivalent burdens").

(quoting *Caldera*, 87 F. Supp. 2d at 1250). Again, the district court specifically found otherwise, citing *Caldera*. 6ER1352. And as the sections that follow demonstrate, those factual findings were not clearly erroneous. To the contrary, they were supported by an extensive trial record, including Qualcomm's own ordinary-course documents and strikingly consistent testimony from its rivals and customers.

B. Ample Evidence Supports The District Court's Finding That Qualcomm's Royalties Conceal A Substantial Chip-Access Surcharge

The district court found that Qualcomm's royalties are "unreasonably high"—that is, that they conceal a substantial chip-access surcharge—because they "are set by its monopoly chip market share rather than the value of its patents." 6ER1323. That factual finding was supported by overwhelming evidence, which Qualcomm largely ignores. Qualcomm's objections to some secondary aspects of the court's analysis are unpersuasive, and certainly do not demonstrate clear error.[8]

[8] Qualcomm repeatedly asserts that the district court "erred as a matter of law" in finding that its royalties exceed the reasonable value of its patents. Br. 91; *see* Br. 85, 86, 98. But that is a quintessential factual finding subject to clear error review. *Cf. Faulkner v. Gibbs*, 199 F.2d 635, 639 (9th Cir. 1952) ("What is a reasonable royalty is a question of fact.").

1. Extensive evidence supported the district court's finding that the surcharge reflected Qualcomm's chip monopoly, not the value of its patents

The district court's finding rested primarily on evidence revealing the economic substance behind Qualcomm's "patent royalty" payments, including both Qualcomm's internal documents and direct evidence from the OEMs on the other side of the negotiating table. Qualcomm all but ignores that evidence.

1. The district court based its finding that Qualcomm's royalties are unreasonably high "primarily [on] Qualcomm's own documents." 6ER1349. As the court found, those documents show that Qualcomm has "repeatedly admitted that Qualcomm's monopoly chip market share—not the value of Qualcomm's patents—sustains Qualcomm's royalty rates." 6ER1323. In 2007, for example, when Qualcomm was considering splitting its licensing business (QTL) from its chip business (QCT), QTL's president wrote that "[w]ithout chip business, more licensees/potential licensees might fight QTL license demands." 6ER1324 (quoting 3SER0574). Qualcomm's then-president agreed, writing that "the combination of QCT with QTL greatly enhances QTL's success" because "OEMs will remain reliant on us for continued supply and will need to maintain positive relationships with us." *Id*. (quoting 3SER0576). And when Qualcomm considered a split again in 2015, a senior executive emphatically reiterated the direct connection between "modem (chip) share" and "royalty rate sustainability":

> Where we have low chip share we are seeing challenges with compliance and maintaining the royalty rate. … If [modem-chip] share falls … we lose that important element to sustaining our royalties. SO IT'S CRITICAL THAT WE MAINTAIN HIGH MODEM SHARE TO SUSTAIN LICENSING.

6ER1326 (quoting 4SER0944); *see* 6ER1323-27 (compiling similar Qualcomm analyses); 4SER0833; 3SER0760; 3SER0587.

Although these documents were the primary basis for the district court's finding, Qualcomm relegates them to a single footnote. It asserts (Br. 99 n.18) that its internal analyses found only that its chip monopoly was necessary to "ensuring that current licensees comply with *existing* license agreements," not to maintaining its royalty rates going forward. But the district court found otherwise, and with good reason: Qualcomm's documents expressly recognize that its chip monopoly was essential to *both* "licensing compliance" *and* "royalty rate sustainability." 6ER1326 (quoting 4SER0944); *see* 3SER0587. Those documents also recognized that without the chip monopoly, both current and "potential" licensees would be more likely to "fight QTL license demands." 6ER1324 (quoting 3SER0574). As the district court found, Qualcomm's attempt in this litigation to disclaim the plain import of its own contemporaneous documents is not credible. 6ER1323.

2. The other principal basis for the district court's finding that the surcharge is attributable to Qualcomm's chip monopoly was direct evidence from OEM witnesses, who consistently testified that they agreed to substantially inflated

royalties because Qualcomm threatened to cut off their chip supply if they did not. *See, e.g.*, 6ER1215 (LG); 6ER1224-26 (Samsung); 6ER1245 (Blackberry); 6ER1274 (Wistron); 6ER1275 (Pegatron); 6ER1345 (Lenovo); 6ER1346 (Motorola). As the district court found, those threats were powerful because a potential disruption of Qualcomm's chip supply posed an "existential threat" to an OEM's handset business. 6ER1241; *see* 2SER0306-07, 0310; 4SER0875-77; 2SER0327-28. Indeed, contemporaneous OEM documents explicitly attributed Qualcomm's royalty rate to Qualcomm's "monopoly power." 6ER1240 (quoting 5SER1038).

Based on that evidence, the court credited the testimony of the FTC's licensing expert, who concluded that Qualcomm's chip-supply threats "result[ed] in a disproportionately high royalty rate" that does not reflect the value of its patents. 6ER1346 (quoting 1SER0248:24-25). Indeed, the court found that, "unlike other patent holders," Qualcomm "refuses to provide patent lists and patent claim charts to OEMs during patent license negotiations"—information that would have been indispensable if negotiations had truly turned on Qualcomm's patents rather than its chip monopoly. 6ER1327-28; *see* 2SER0311; 2SER0329-30.

The district court found that, while the "stick" of "cutting off chip supply has been more than sufficient to coerce OEMs into signing … license agreements" that include an anticompetitive surcharge, "Qualcomm has also used the 'carrot' of

… incentive funds … to induce OEMs to agree to Qualcomm's licensing terms." 6ER1210. The court catalogued instances in which Qualcomm offered incentive funds to eight different OEMs to induce them to accept licenses on Qualcomm's preferred terms. 6ER1215-18, 1223-24, 1226-27, 1235-38, 1240-46, 1271-73, 1278-79. The district court found that, while Qualcomm's licensing division financed these incentive-fund agreements, the agreements typically afforded OEMs incentives that "accrue[d] on OEMs' purchases of [Qualcomm] chips." 6ER1210; *see* 4SER0886 (last bullet point); 5SER1093, 1096. These incentive funds mitigated the impact of the surcharge only to the extent that OEMs purchased chips from Qualcomm, leaving OEMs' burden unmitigated when they purchased from rivals instead.

Qualcomm asserts (Br. 101-02) that the district court "made no findings that the outcome of any license negotiations between Qualcomm and an OEM would have been different but for" Qualcomm's threats and incentive funds. But the court specifically found, based on a careful review of Qualcomm's license negotiations with more than a dozen OEMs, that chip-supply threats and incentive funds "generate and sustain Qualcomm's unreasonably high royalty rates." 6ER1211; *see* 6ER1211-80. That *is* a finding that—as economics and common sense suggest—the outcome of the license negotiations would have been different had they not been dominated by Qualcomm's ability to threaten a crippling loss of chip supply.

2. Qualcomm's various attacks on secondary aspects of the district court's analysis are unpersuasive

Rather than grappling directly with the key evidence supporting the district court's finding, Qualcomm challenges (Br. 85-99) various secondary aspects of the court's analysis. Those arguments are unpersuasive even on their own terms, and they certainly do not establish any clear error in the court's findings.

1. Qualcomm objects (Br. 91-96) to the district court's comparison of its licensing rates to those of the other major cellular SEP holders, Nokia and Ericsson. The court explained that "Qualcomm's own documents" show that "Nokia and Ericsson have made comparable or even greater contributions to cellular standards than Qualcomm." 6ER1331.[9] The court also noted that Qualcomm and Ericsson negotiated an even royalty split when valuing their cellular SEP portfolios for purposes of distributing revenue from a joint licensing program. 6ER1334.[10] Given that evidence of portfolio parity, the court properly

[9] Qualcomm critiques (Br. 92-93) the district court's reference to portfolio-value proxies such as standards contributions, but "Qualcomm *itself* internally charts the major players in standards" using the same metrics. 6ER1331-32. And the court did not view those metrics uncritically; it recognized that they are "imperfect" and used them only as rough proxies. 6ER1332.

[10] In asking this Court to ignore this evidence (Br. 94 n.16), Qualcomm cites its own executive Fabian Gonell's testimony for the proposition that its arms-length agreement with Ericsson "did not reflect Qualcomm's view of the relative strength of its portfolio." The district court properly rejected this implausible testimony from a witness it had repeatedly found not credible. *See* 6ER1182-83, 1219, 1298-1300.

found it significant that Nokia and Ericsson's royalty rates "are a fraction of Qualcomm's." 6ER1332.

Qualcomm asserts (Br. 91) that the district court's royalty analysis was flawed because the court did not conduct a "comprehensive analysis" establishing that Nokia's and Ericsson's patents are "technologically and economically comparable." But in arguing that such exhaustive analyses were required, Qualcomm relies on decisions addressing damages awards in patent litigation. Here the district court was not fixing a specific royalty for Qualcomm's patents; it was simply employing benchmarks to "confirm[] Qualcomm's own statements," 6ER1331, that its royalties reflect its chip monopoly, not the value of its patents. In so doing, the court emphasized that the gap separating Nokia's and Ericsson's royalty rates and revenues from Qualcomm's was not close, but "staggering." 6ER1341-42 (emphasis added); *see* 6ER1342 (identifying specific rates). No patent-by-patent parsing was required to assign probative weight to "staggering" disparities in the royalties charged on roughly comparable portfolios.

Qualcomm also contends (Br. 93-96) that its patents are more valuable than Nokia's and Ericsson's. But the record does not support that contention. As the district court emphasized, "none of Qualcomm's witnesses assessed the relative value of Qualcomm's patent portfolio or testified about Qualcomm's royalty rates." 6ER1332-33. In making that observation, the district court did not

improperly shift the burden of proof to Qualcomm (Br. 90 n.14). It simply highlighted Qualcomm's failure to rebut the ample evidence that its royalties reflect the value of access to its monopoly chips, not of its patents.

Finally, Qualcomm complains (Br. 89, 93) that the district court "erred in limiting its analysis to cellular SEPs" because Qualcomm's licenses also include other patents. But the court's approach matched Qualcomm's own licensing practices: The amount of royalty revenue that Qualcomm collects for its non-standard essential patents is de minimis. 1SER0260:18-1SER0261:3; *see also* 5SER1009:10-21.

2. Qualcomm asserts (Br. 86-91) that the district court should have used certain Qualcomm licenses as a benchmark for the reasonable value of its patents. That argument rests on the testimony of Qualcomm's expert, Dr. Aviv Nevo, whom the district court deemed unreliable—in part because "Dr. Nevo was contradicted by Qualcomm's own documents." 6ER1343; *see* 1SER0069:5-17; 1SER0071:19-1SER0072:18; 1SER0021:1-1SER0032:24 (identifying other flaws in Dr. Nevo's analysis). The trial record amply supports the district court's conclusion that the licenses on which Dr. Nevo relied were inappropriate benchmarks.

Qualcomm invokes (Br. 87) licenses "entered into at times when the FTC did not allege that Qualcomm had market power." Dr. Nevo simply assumed that,

because the FTC's complaint did not allege that Qualcomm had monopoly power in CDMA chips before 2006 and did not address WCDMA chips, Qualcomm could not apply chip leverage in negotiating these licenses. But Dr. Nevo never tested either assumption, and both are wrong. *See* 1SER0023:21-1SER0026:4; 1SER0027:8-1SER0028:17; 3SER0631, 0641 (Qualcomm had WCDMA "leadership among merchant supply"); 6ER1230 (describing Qualcomm exercise of WCDMA chip-supply leverage); 3SER0601; 6ER1214, 1223 (describing Qualcomm exercise of CDMA chip-supply leverage in 2001 and 2004).[11]

Qualcomm also invokes (Br. 86) licenses with OEMs that "did not buy any chips from Qualcomm." The district court appropriately declined to rely on these licenses as benchmarks. In some cases, the OEM was buying chips from suppliers that were contractually bound to sell only to Qualcomm licensees. 6ER1281, 1284; 1SER0030:22-1SER0032:24. In others, Qualcomm was found to have coerced the OEM through other means. 1SER0028:22-1SER0030:21; 1SER0065:20-1SER0066:16.

Qualcomm claims (Br. 88-91) that the district court rejected Qualcomm's established rates as a benchmark only because Qualcomm's "SEP share has

[11] Moreover, the district court found that "Qualcomm's monopolies in premium LTE and CDMA modem chip markets" also affected its "other license negotiations," including WCDMA license negotiations. 6ER1392; *see, e.g.*, 1SER0235:2-1SER0237:10; 1SER0238:15-1SER0039:10.

declined with successive standards," 6ER1339 (quoting 3SER0606), and argues that an analysis of value (not share) was required. But the "[m]ost important" reason offered by the district court for rejecting the claims Qualcomm asserts is that they were contradicted by "Qualcomm's own admissions." 6ER1343. Moreover, the district court addressed other evidence of value. The district court found that Qualcomm's "4G patent portfolio is lower in value" than its "3G patent portfolio." 6ER1339 (citing 3SER0608); *see* 6ER1339-40; 2SER0320-21; 4SER0888. And Qualcomm can scarcely fault the district court for considering its number (or share) of SEPs as one relevant proxy for value (among many others), because Qualcomm itself does the same thing. *See, e.g.*, Br. 2, 88.

3. Qualcomm also faults the district court (Br. 96-98) for concluding that Qualcomm's application of a 5% royalty rate to the entire value of the cell phone was unreasonable. But the court correctly found that Qualcomm's ability to secure a constant royalty rate, despite the relative "decline in the importance of modem chips" as cellphones became miniature computers incorporating many other valuable technologies, was further evidence that its royalties reflect its chip monopoly power. 6ER1335-38; *see* 3SER0690; 3SER0639; 1SER0252:1-14; *cf.* *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226 (Fed. Cir. 2014) ("[T]he ultimate combination of royalty base and royalty rate must reflect the value attributable to the infringing features of the product, and no more.").

C. Ample Evidence Supports The District Court's Finding That Qualcomm's Surcharge Harms Competition In The Markets For Modem Chips

Section 1 requires "proof of market power plus some evidence that the challenged restraint harms competition." *Am. Express*, 138 S. Ct. at 2284; *see FTC v. Actavis, Inc.*, 570 U.S. 136, 157-58 (2013) (restraints that "prevent the risk of competition" effect "the relevant anticompetitive harm"). Similarly, Section 2 requires proof that the defendant "engaged in anti-competitive conduct that reasonably appears to be a significant contribution to maintaining monopoly power." *Dentsply*, 399 F.3d at 187; *see Microsoft*, 253 F.3d at 79.

Economic logic and common sense suggest that when a monopolist uses its monopoly power to force customers to pay a significant penalty when they buy from rivals, it reinforces its monopoly and harms competition and consumers. Here, the district court found that Qualcomm's surcharge had exactly that effect. Like a tax, the surcharge increases the effective or "all-in" price of rivals' modem chips, which includes both the stated chip price (paid to the rival) and the surcharge (paid to Qualcomm). 6ER1351. To the extent rivals seek to pass the surcharge through to OEMs by maintaining their prices, the surcharge reduces their sales and "prevents rivals from underbidding Qualcomm." *Id.* And to the extent rivals absorb the surcharge by lowering their chip prices, the surcharge leads to "lower margins." *Id.* In the long run, the surcharge reduces rivals' incentive and

ability to make the investments required to compete: "Qualcomm's suppression of rivals' sales deprives rivals of revenue to invest in research and development and acquisitions to develop new technology, which prevents the emergence of new rivals" and "hampers rivals already in the market." 6ER1364; *see* 1SER0096:9-1SER0110:18.

Qualcomm dismisses those findings as "inference." Br. 69; *see* Br. 69-84. But they were amply supported by the record, and Qualcomm certainly has not shown that they were clearly erroneous. To the extent that Qualcomm demands more—like precise quantifications of the effect of its surcharge on prices and margins, or a demonstration that particular rivals would have succeeded but for its actions—it seeks a level of proof that the antitrust laws have never required.

1. The district court correctly found that the surcharge raises the effective price of rivals' chips, reducing their sales and margins

The district court found that the effective or "all-in" price that an OEM must pay to use a rival's modem-chip includes both the "nominal price" (paid to the rival) and "the surcharge" (paid to Qualcomm), and that the surcharge, by raising the all-in price, diminishes OEMs' demand for rivals' chips. 6ER1351. Qualcomm asserts that these findings lack evidentiary support and "make[] no economic sense" (Br. 77-78). It is wrong on both counts.

1. Start with the evidence. When considering chip supply, an OEM—like any rational economic actor—weighs differences in the total costs of using those chips, which include both nominal chip prices and royalties. *See* 6ER1246 (BlackBerry compared "total cost" of using Qualcomm's and rivals' chips, including royalty costs); 1SER0264:3-15 (Apple considers the "total cost of ownership," including intellectual-property licensing costs); 2SER0281:6-2SER0283:25 (Intel testimony that "all-in" price typically includes intellectual property).

By raising the total cost of using rivals' chips, the surcharge predictably diminishes OEMs' demand for those chips. For example, Brian Chong, an executive at OEM Wistron, testified that the "surcharge on rivals' chips … limited Wistron's ability to use a MediaTek modem chip that Wistron preferred." 6ER1358 (citing 2SER0347). Chong testified that Wistron initially planned to introduce phones with MediaTek chips, but ultimately "decided to stay Qualcomm" on realizing that, "even [when] using non-Qualcomm chips, [Wistron] would still have to pay the onerous royalty that Qualcomm dictated." *Id.;* 2SER0347.

Qualcomm's own witnesses and documents confirmed that it had exactly the same understanding of how the surcharge affects demand for rivals' chips. When asked to explain the rationale for its "no-license, no-chips" policy, Qualcomm

licensing executive Fabian Gonell testified that, when selecting modem chips, OEMs consider the nominal chip price paid to the chip supplier *and* the associated royalty paid to Qualcomm—what the district court called the "all-in" price. 1SER0078:6-1SER0080:16. Calling Qualcomm's nominal chip price "X" and its preferred royalty "Y," Gonell explained that OEMs understand that, when they select Qualcomm's chips, they will "have to pay X plus Y." 1SER0078:21-1SER0079:6. Because of Qualcomm's no-license, no-chips policy, OEMs also understand that "[w]hen they're considering somebody else's chip, … they have to pay Y" as well. 1SER0079:7-10. Absent that policy, Gonell testified, OEMs could challenge Qualcomm's royalties before a court or arbitrator, which would not award Qualcomm "more than Y" and might give Qualcomm "less than Y." 1SER0079:11-1SER0080:5. As a result, OEMs would face "a choice where … the Qualcomm offering is X plus Y, and the competing offering is X plus Y later, or maybe less than Y later." 1SER0080:6-13. In that event, "*all other things being equal, the other offering is going to be more attractive*." *Id.* (emphasis added). That is, absent Qualcomm's chip-access surcharge, OEMs would find rivals' chips more attractive—which would compel Qualcomm to "adjust its price." 1SER0080:14-16.

Qualcomm's internal documents likewise confirm that OEMs compare the "total costs" of using Qualcomm's and rivals' modem chips; that these "total

costs" include both modem-chip prices and the surcharge; that any reduction in the payments that an OEM must make to Qualcomm when using a rival's modem chips would cause the OEM to "perceive [Qualcomm] chips to be more expensive"; and that this "total cost difference" would translate into "[Qualcomm] losing share" to rivals. 3SER0550-51.

2. The "all-in" price recognized by OEMs and Qualcomm alike also makes clear "economic sense" (Br. 78)—as the FTC's economic expert explained. 1SER0098-104. Qualcomm now asserts that "there is no reason" to suspect that the surcharge would raise OEMs' costs of using rivals' chips because the effects of the surcharge "would be spread thinly across *all* suppliers" of cellphone components. But the surcharge is part of the price that OEMs pay to maintain access to Qualcomm's modem chips, so it is entirely logical to analyze it as a cost of chips rather than, say, cameras or screens. And only rival chip suppliers have to compete against Qualcomm, for whom the surcharge is revenue rather than a cost. 6ER1351. Qualcomm itself recognizes this point a few pages earlier: Exactly the same "spreading" argument could have been made in *Caldera*, but Qualcomm correctly acknowledges that Microsoft's per-processor fee "require[d] the manufacturer to pay twice" for the operating system—not other components. Br. 66 (citing *Caldera*, 87 F. Supp. 2d at 1250).

2. The district court was not required to quantify the extent to which rivals pass on the surcharge to OEMs

Qualcomm faults the district court (Br. 80) for failing to quantify how much of the surcharge rivals absorbed through reduced sales and margins and how much they passed on to OEMs in the form of higher chip prices. Qualcomm apparently presumes that only the former could be a source of anticompetitive harm. In fact, the district court correctly found that both effects harm competition.

Qualcomm is liable for its anticompetitive exclusion—that is, its harm to the competitive *process*—regardless of how the harms of that exclusion are distributed between competitors (in the form of lower margins and/or lost sales) and consumers (in the form of higher prices and/or forgone purchases). Both excluded rivals and overcharged customers suffer injuries "'of the type that the antitrust statute was intended to forestall.'" *Bhan v. NME Hosps., Inc.*, 772 F.2d 1467, 1469-70 (9th Cir. 1985) (excluded rival); *Blue Shield of Va. v. McCready*, 457 U.S. 465, 482 (1982) (overcharged customer). When rivals pass the surcharge on to OEMs, the surcharge harms competition by raising the effective price of using rivals' chips and impairing rivals' ability to discipline Qualcomm's prices; Qualcomm can thereby maintain high prices without losing market share. *See* AREEDA & HOVENKAMP ¶ 651b5; *see* 6ER1351; 1SER0109-10. And Qualcomm can scarcely deny that higher prices resulting from a less competitive market are a cognizable harm: Since the Sherman Act became law, "'protecting consumers from

monopoly prices' has been 'the central concern of antitrust.'" *Apple, Inc. v. Pepper*, 139 S. Ct. 1514, 1525 (2019) (quoting 2A AREEDA & HOVENKAMP ¶ 345, at 179 (4th ed. 2014)).[12]

Nor was the district court required to specify how much of the surcharge rivals absorbed through reduced sales and margins and how much rivals passed on to OEMs in the former of higher effective prices. Qualcomm cites no decision requiring such quantification, and courts routinely affirm findings of monopolization without it. *See, e.g.*, *Dentsply*, 399 F.3d at 191-96; *McWane*, 783 F.3d at 835-40.

3. The district court correctly found that the surcharge diminished rivals' ability and incentive to undertake R&D investments

Qualcomm asserts (Br. 81-82) that there was no evidence to support the district court's finding that its surcharge adversely affected its rivals' research and development efforts. Having found that Qualcomm improperly raised its rivals' costs, the court did not need to identify the specific ways those higher costs

[12] DOJ errs in arguing (Br. 5-6, 10-11) that *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128 (1998), and *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008), suggest otherwise. *NYNEX* distinguished high prices flowing "from a less competitive market" from high prices flowing from "the exercise of market power that is *lawfully* in the hands of a monopolist," 525 U.S. at 136, and *Rambus* concluded that the Commission's factual findings had failed to distinguish between the two, 522 F.3d at 465. Here, the district court found that higher prices flow from Qualcomm's anticompetitive conduct.

impaired rivals' competitiveness. *See Microsoft*, 253 F.3d at 79. In any event, ample evidence, including evidence from Qualcomm's own documents, links the surcharge's reduction of rivals' sales and margins to diminution of their ability and incentive to undertake R&D investments.

Competing in the markets for CDMA and premium-LTE modem chips requires substantial upfront investments. 6ER1196-97, 1206-07. Modem-chip suppliers' willingness to make these investments is "very sensitive" to the sales and revenues they anticipate those investments will yield. 6ER1362-63; 2SER0337. Thus, Intel acquired CDMA technology only in 2015, when it anticipated that it could recoup the investment through sales to Apple. 6ER1315; 2SER0296:9-2SER0297:20. Similarly, poor sales and revenue projections led MediaTek to curtail investments in developing premium-LTE chips. 6ER1206-07. Qualcomm's documents and its executives' testimony recognize the importance of a large customer base in providing the revenue necessary "'to make R&D investments to support customers and develop technology.'" 6ER1362-63 (quoting 2SER0280:6-10).

In its internal documents, Qualcomm recognized that reducing rivals' sales and margins would diminish their R&D investments and prospects for developing into effective competitors. The 2009 strategic plan for Qualcomm's modem-chip division recognized that Qualcomm's licensing practices, by limiting MediaTek's

customer base and "destroy[ing] MTK's 2G margin & profit," could "Take away the $$ that MTK can invest in 3G." 1ER197 (quoting 3SER0698).[13] Safeguarding innovation from exclusionary conduct is a critical function of the antitrust laws, and "it would be inimical to the purpose of the Sherman Act to allow monopolists free rein to squash nascent, albeit unproven, competitors at will—particularly in industries marked by rapid technological advance." *Microsoft*, 253 F.3d at 79.

4. There is no basis for Qualcomm's demand for additional proof of harm to competition

Qualcomm asserts (Br. 70-75) that the district court applied an improperly low standard of proof because it misread the D.C. Circuit's decision in *Microsoft*. In fact, it is Qualcomm that misinterprets *Microsoft* and advocates a standard of proof that no court has required.

1. In the relevant portion of its opinion, the D.C. Circuit rejected Microsoft's argument that the government had not "established a causal link between [its] anticompetitive conduct" and "the maintenance of its monopoly," because the government had not shown that Microsoft's rivals would have been viable competitors absent the challenged conduct. *Microsoft*, 253 F.3d at 78. The D.C. Circuit rejected that argument, explaining that it had found "no case …

[13] In relying on this document, the district court did not improperly impose liability based on Qualcomm's "desire to extinguish [its] rivals." Br. 82 n.12 (citation omitted). It simply relied on Qualcomm's own recognition of the competitive effect of its reduction in its rivals' sales and margins.

standing for the proposition that, as to § 2 *liability* in an equitable enforcement action, plaintiffs must present direct proof that a defendant's continued monopoly power is precisely attributable to its anticompetitive conduct." *Id.* at 79 (emphasis in original). The D.C. Circuit emphasized that a government plaintiff seeking injunctive relief should not be required to "reconstruct the hypothetical marketplace absent a defendant's anticompetitive conduct." *Id.* Instead, the D.C. Circuit held that courts may "infer 'causation' from the fact that a defendant has engaged in anticompetitive conduct that 'reasonably appears capable of making a significant contribution to maintaining monopoly power.'" *Id.* (citation omitted).

The district court applied the same principle here. It quoted the D.C. Circuit's decision in setting forth the applicable legal standard. 6ER1209. And like the D.C. Circuit, the district court returned to that point in rejecting Qualcomm's argument that the FTC had not introduced sufficient evidence that its rivals would have succeeded absent Qualcomm's conduct: "[T]he Court need not conclude that Qualcomm's anticompetitive licensing practices are the sole reason for any particular rival's exit." 6ER1371.

2. Qualcomm acknowledges (Br. 72) that the FTC "did not need to prove facts showing that the [defendant's] monopoly would have dissipated without the challenged conduct." But Qualcomm insists (*id.*) that Section 2 liability encompasses distinct "anticompetitive effects" and "causation" elements, and that

the "anticompetitive effects" element requires some greater (but ill-defined) quantum of proof that was absent here. That is not so.[14]

Qualcomm cites no authority requiring the sort of additional proof it appears to demand, whether as a matter of "causation" or "anticompetitive effects." The D.C. Circuit's opinion in *Microsoft* indicates that it regarded "causation" as simply another way of expressing the requirement that a defendant's conduct result in harm to competition. *See* 253 F.3d at 78-79. Consistent with that understanding, courts have long used the same "reasonably appears capable" formulation as the standard for proof of anticompetitive conduct under Section 2. *See, e.g.*, *McWane*, 783 F.3d at 837; *Dentsply*, 399 F.3d at 187; *Taylor Publg. Co. v. Jostens, Inc.*, 216 F.3d 465, 475 (5th Cir. 2000).[15]

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[14] The parameters of Qualcomm's proposed evidentiary standards are difficult to discern. Qualcomm complains at various points that the district court did not base its findings on "actual evidence" (*e.g.*, Br. 30, 69), but even a cursory of review of the district court's opinion reveals that that is not true—unless "actual evidence" excludes, among other things, Qualcomm's documents and the testimony of its executives. Qualcomm also suggests that the drawing of inferences is impermissible (*e.g.*, Br. 73). But drawing inferences from evidence is a fundamental aspect of factfinding, and Qualcomm acknowledges that competitive effects may be shown either directly or indirectly (Br. 70-71). The only concrete criticisms that Qualcomm levels against the evidence on which the FTC and the district court relied pertain to absence of quantification (*e.g.*, Br. 76).

[15] Qualcomm errs in asserting (Br. 71) that *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004), supports its position. The portion of the opinion on which Qualcomm relies is a general discussion about the

Here, the district court found, based on extensive record evidence, that Qualcomm's anticompetitive conduct did have an actual and significant anticompetitive effect: That is, it burdened rivals in ways that hindered their efforts to challenge Qualcomm's chip monopoly. 6ER1349-52. Neither *Microsoft* nor any other decision requires more. In *Microsoft*, for example, the D.C. Circuit found that numerous Microsoft practices were anticompetitive despite the absence of anything resembling the sort of quantitative evidence Qualcomm seems to demand. *See* 253 F.3d at 58-78. For example, the court held that various Microsoft policies had the requisite "anticompetitive effect" simply because they "prevent[ed] OEMs from taking actions that could increase rivals' share of usage." *Id.* at 62.[16]

Nor is *Microsoft* an outlier in this regard. In *Dentsply*, for example, the Third Circuit determined that exclusive contracts between a monopolist manufacturer of artificial teeth and its dealers were anticompetitive because they raised the costs of distribution for competing manufacturers, and thereby enabled the monopolist both

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potential hazards of false positives in Section 2 cases, not standards of proof. *Id.* at 414.

[16] *Rambus*, cited by Qualcomm (Br. 83), does not hold otherwise. The *Rambus* panel expressly adopted the legal standards approved by the *Microsoft* en banc court, but viewed the Commission's factual findings as failing to address whether the monopolist's "conduct impaired rivals in a manner tending to bring about or protect [the respondent's] monopoly power." 522 F.3d at 464 (contrasting *Microsoft*); *see also supra* note 12. Here, the district court's factual findings squarely address the anticompetitive tendencies of and harm to competition from Qualcomm's misconduct. 6ER1371-74.

to capture additional sales and to raise its prices—but it did not quantify the cost increase, the diversion of sales, or the resulting price increase. 399 F.3d at 191-97.

D. *linkLine* and *Doe* Are Inapposite

Qualcomm (Br. 38-39) and DOJ (Br. 15-16) err in suggesting that the FTC's surcharge theory in this case amounts to the sort of "price squeeze" claim precluded by *Pacific Bell Telephone Co. v. linkLine Communications, Inc.*, 555 U.S. 438 (2009), and *John Doe 1 v. Abbott Laboratories*, 571 F.3d 930 (9th Cir. 2009). *linkLine* and *Doe* hold that the antitrust laws do not require vertically integrated firms to price their wholesale products sufficiently low and their retail products sufficiently high to afford their unintegrated retail rivals a "'fair' or 'adequate' margin." *linkLine*, 555 U.S. at 449. That principle is not remotely relevant here.

1. The only conduct that the *linkLine* and *Doe* plaintiffs challenged was the defendants' setting prices for their own products and services. *See linkLine*, 555 U.S. at 451 (challenging "too high" price for wholesale internet services and "too low" a price for retail internet services); *Doe*, 571 F.3d at 935 ("too high" price for one drug and "too low" price for related drug).

Here, Qualcomm did not just set two prices for its own products. Instead, it used its chip monopoly power to coerce chip customers to agree to pay a fee to Qualcomm when they buy from chip competitors. Qualcomm thereby imposed a

surcharge on rivals' chips that is a "patent royalty" in name only. This coercive conduct lies at the core of the district court's liability finding. Neither *linkLine* nor *Doe* featured similar conduct, and courts have sensibly declined to extend *linkLine* and *Doe* to conduct that involves more than the setting of two prices. *See, e.g.*, *ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254, 278 (3d Cir. 2012); *Church & Dwight Co. v. Mayer Labs., Inc.*, No. C-10-4429, 2011 WL 1225912, at *8-10 (N.D. Cal. Apr. 1, 2011).

2. The antitrust theories that the plaintiffs in *linkLine* and *Doe* advanced also differ markedly from the antitrust principles on which the district court's judgment rests. The plaintiffs in *linkLine* and *Doe* contended that the antitrust laws require vertically integrated firms to afford their unintegrated retail rivals "a 'fair' or 'adequate' margin." 555 U.S. at 449. By contrast, the district court's judgment rests on the uncontroversial principle that a monopolist may not use its monopoly to impose a financial penalty on its customers' use of rivals' products. 6ER1351-52. And under the injunction, Qualcomm remains free to seek high royalties for its patents and to offer low prices for its chips, without regard to whether those royalties and prices leave rivals a "fair" or "adequate" margin. 6ER1393-99.

3. Were Qualcomm's construction of *linkLine* accepted, it would provide a roadmap for monopolists to raise their rivals' costs while evading antitrust scrutiny. *Cf. Pepper*, 139 S. Ct. at 1523 (rejecting theory that "would provide a

roadmap for monopolistic retailers to structure transactions" to "evade antitrust claims" and "thwart effective antitrust enforcement"). A monopolist could maintain its monopoly, as United Shoe Machinery and Microsoft did, by conditioning supply of its monopoly product on its customers' agreement to pay a penalty each time they used a rival's products. The monopolist could evade antitrust scrutiny, however, by following Qualcomm's example: It could label the penalty—which customers pay to maintain access to the monopolist's *products*—a royalty for the monopolist's *patents*. The Court should decline Qualcomm's invitation to open such a gaping loophole in antitrust enforcement.

II. THE DISTRICT COURT CORRECTLY FOUND THAT QUALCOMM'S BREACH OF ITS COMMITMENTS TO LICENSE COMPETITORS WAS ANTICOMPETITIVE

To induce two SSOs to incorporate its patented technologies into their cellular standards, Qualcomm committed to make licenses to its SEPs available to all applicants on FRAND terms. At the summary judgment stage, the district court held that those voluntary commitments unambiguously extend to licensing rival chipmakers. 1ER273. That holding was compelled by the plain language of the FRAND commitments, and Qualcomm provides no sound reason to question it.

Following trial, the district court further found that Qualcomm's breach of its commitment to license rivals was anticompetitive because, as a factual matter, it facilitated Qualcomm's imposition of a surcharge on rivals' chips and otherwise

impaired rivals' opportunities. 6ER1290, 1356-59. And the court found that the ostensibly procompetitive justifications that Qualcomm proffered for breaching its FRAND commitments were "self-serving and pretextual." 6ER1298-1300. Qualcomm has not challenged those findings on appeal.

To be clear, the FTC does not contend that any breach of a FRAND commitment is a Sherman Act violation. But Section 2 liability is appropriate when, as here, a monopolist SEP holder commits to license its rivals on FRAND terms, and then implements a blanket policy of refusing to license those rivals on any terms, with the effect of substantially contributing to the acquisition or maintenance of monopoly power in the relevant market.

Qualcomm objects (Br. 44-56) to the district court's separate holding that its refusal to license rival chipmakers violated an "antitrust duty to deal" under *Aspen Skiing*, 472 U.S. 585 (1985), and *Trinko*, 540 U.S. 398 (2004). *See* 6ER1300-07. The FTC does not argue that Qualcomm had a duty to deal with its rivals under the *Aspen*/*Trinko* standard. But that heightened standard does not apply here, because—unlike the defendants in *Aspen*, *Trinko*, and the other duty-to-deal precedents on which it relies—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 although the district court applied a different approach, this Court "may affirm on any ground finding support

in the record." *Cigna Prop. & Cas. Ins. Co. v. Polaris Pictures Corp.*, 159 F.3d 412, 418-19 (9th Cir. 1998) (internal quotation marks omitted).

A. Qualcomm's FRAND Commitments Require It To License Rival Chipmakers

The district court held on summary judgment that Qualcomm's FRAND commitments to TIA and ATIS, two U.S.-based standard-setting organizations (SSOs), require it to make SEP licenses available to modem-chip suppliers. Summary judgment was appropriate because, "after considering the language of the contract[s] and any admissible extrinsic evidence, the meaning of the contract[s] is unambiguous." 1ER261, 273 (quoting *Miller v. Glenn Miller Prods., Inc.*, 454 F.3d 975, 990 (9th Cir. 2006)).

1. The plain language of the FRAND commitments requires Qualcomm to license modem-chip suppliers

1. As the district court recognized, the relevant contractual language is straightforward. The TIA commitments require Qualcomm to make FRAND licenses available "to all applicants … to the extent necessary for the practice of any or all of the Normative portions" of the standard. 1ER262 (quoting 4ER1038-39).[17] By definition, standard-compliant modem chips "practice" some of the

[17] "Normative portions" refers to (and extends the policy's coverage to) all of the mandatory, optional, and alternate elements of the standard. 2SER0461 (TIA Engineering Manual).

"Normative portions" of the TIA standards. An applicant seeking a license to manufacture such chips thus falls within the policy's plain language.

Similarly, the ATIS commitments require Qualcomm to make licenses available "to applicants desiring to utilize the license for the purpose of implementing the standard." 1ER262 (quoting 4ER1031). The "purpose" of using SEP technology in a modem chip is to enable the chip to provide standard-defined functionality to a phone—that is, to "implement[] the standard." Qualcomm itself has explained that modem chips are "based on" cellular standards and identifies chips by reference to standards they implement. 1ER272-73 (citing 2SER0350). A chip "based on" and touted by reference to a standard is made and sold "for the purpose of implementing" that standard.

2. Qualcomm scarcely acknowledges the text of the FRAND commitments, quoting only a single word from each. It insists (Br. 133-35) that a standard-compliant modem chip does not fully "practice" or "implement" the standard, because only a cellphone or base station can do that. But the commitments are not limited to applicants who practice or implement an *entire* standard. Again, the TIA commitment explicitly extends to applicants who seek to practice "any or all of the Normative portions" of the standard. 1ER262. And the ATIS commitment requires only that the applicant seek a license "for the purpose of implementing the standard." 1ER262.

Instead of addressing this language, Qualcomm asserts (Br. 133-34) that the district court failed to consider extrinsic evidence supporting a purported "technical or specialized meaning" of the terms "implement" and "practice." That is a red herring. Qualcomm's extrinsic evidence at best supports its assertion (Br. 134-35) that modem chips do not "implement" or "practice" entire standards. But the district court held that the FRAND commitments are not limited to "applicants who themselves 'practice' or 'implement' whole standards." 1ER271-72. Qualcomm's extrinsic evidence has no bearing on that holding, which does not turn on the meaning of "practice" or "implement."

3. Qualcomm criticizes the district court (Br. 131-32) for relying on this Court's discussion of other FRAND commitments with "almost identical language." 1ER266. This Court emphasized that the language "admits of no limitations as to who or how many applicants could receive a license." *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 884 (9th Cir. 2012). It was perfectly appropriate for the district court to confirm its interpretation of the commitments' plain language by referencing this Court's prior interpretation of similar language. *See, e.g.*, *O'Neill v. United States*, 50 F.3d 677, 683 (9th Cir. 1995).

Qualcomm also asserts (Br. 132) that the district court erred in concluding that Qualcomm's reading would frustrate the "stated purposes" of the FRAND commitments by allowing an SEP holder like Qualcomm to "embed its technology

into a cellular standard and then prevent other modem chip suppliers from selling modem chips." 1ER268-69. Qualcomm maintains that the court's "premise was simply wrong" because (Qualcomm claims) it "does not assert its SEPs against modem chipmakers." Br. 132. But under Qualcomm's interpretation, that is purely voluntary forbearance: Qualcomm claims *the right* to assert its SEPs against other chipmakers whenever and however it pleases, free from any obligation to license on reasonable terms. As the district court recognized, that would create a gaping loophole in the FRAND commitments, perpetuating the very problem they were designed to solve.

2. Qualcomm's extrinsic evidence does not create any material dispute

Qualcomm also relies (Br. 135-39) on three other types of extrinsic evidence. The district court correctly held that none prevented the entry of summary judgment.

1. Qualcomm first invokes (Br. 136-37) a purported industry practice of licensing only OEMs, not chipmakers. An industry practice can inform interpretation of a contract if it is "uniform" and so "generally known and notorious" as to be presumptively known to the parties. *Webster v. Klassen*, 109 Cal. App. 2d 583, 589 (1952). Even then, industry practice cannot "vary or contradict" the unambiguous terms of a written contract. *Varni Bros. Corp. v. Wine*

World, Inc., 35 Cal. App. 4th 880, 889 (1995). Qualcomm's proffered evidence, even taken as true, fails to meet these requirements.[18]

Qualcomm introduced evidence that several cellular SEP holders now generally license OEMs, not chipmakers. But that practice was not "uniform" in the industry. Undisputed evidence showed that several of those same industry participants—including Qualcomm—have previously sought to enforce *the district court's* interpretation of the FRAND commitments. Qualcomm itself argued in litigation that the TIA FRAND commitment required Ericsson to grant Qualcomm a license to practice Ericsson's cellular SEPs in Qualcomm's chips. 1ER270-71. In so doing, Qualcomm "trumpeted the same non-discrimination principles it attempts to reject here," arguing that the FRAND commitment "ensures that *all* industry participants will be able to develop, manufacture, and sell products compliant with the relevant standard." 1ER270 (quoting 2SER0359).[19] Similarly, Nokia argued to

[18] Qualcomm argues that its evidence of industry practice should be treated like evidence of the course of performance under a contract, which can shed light on the "intent of the parties." *Crestview Cemetery Ass'n v. Dieden*, 356 P.2d 171, 178 (Cal. 1960). But unlike the course-of-performance evidence in the decisions on which it relies, Qualcomm's evidence reflects only the unilateral actions of SEP holders—it sheds no light on the intent of TIA or ATIS, the other parties to the contracts.

[19] Qualcomm notes that its suit against Ericsson sought licenses for its then-existing phone business, in addition to its modem-chip business. But Qualcomm does not deny that it argued Ericsson was required to grant FRAND licenses for *all*

the European Commission "that Qualcomm's termination of a modem chip license agreement" violated its "duty to license on FRAND terms." 1ER271 (quoting 2SER0394).

In addition, Qualcomm does not deny that it has received chip-level licenses from over 120 companies—including Ericsson, a "major SEP licensor" (Br. 136). *See* 1ER269-70; 8ER1750:5-10. As the district court explained, "Qualcomm's own extensive receipt of SEP licenses to supply modem chips" rebuts its claim of a uniform industry practice of licensing only phones. 1ER270. Other modem chip suppliers have likewise received cellular SEP licenses. 1ER269; *see also* 5SER1019-33 (Intel submission listing licenses from multiple industry players).

Qualcomm implies (Br. 137) that all of its chip-level licenses were "cross-licenses." They were not. 2SER0387 (Qualcomm "acquired licenses from its licensees *and others*") (emphasis added). And however acquired, Qualcomm's scores of chip-level licenses refute its claim of a uniform industry practice "of licensing only OEMs." Br. 136.

2. Qualcomm next asserts (Br. 137-38) that its FRAND commitments to a different SSO, the European Telecommunications Standards Institute (ETSI), do not require chip-level licensing, and that ETSI's licensing policy is "compatible"

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of Qualcomm's SEP-infringing products, "including modem chips." Br. 132 n.26; *see* 1ER270-71.

with those of ATIS and TIA (according to yet another SSO group, 3GPP). Even if that were true of the ETSI commitments (which the FTC does not concede), it would not affect the proper interpretation of Qualcomm's FRAND commitments here. The ETSI policy contains substantially different language, and a different policy issued by a different SSO is not relevant extrinsic evidence because it is not "related to the 'circumstances surrounding the making'" of the commitments at issue here. 1ER273 (quoting *Pac. Gas & Elec. Co. v. G.W. Thomas Drayage & Rigging Co.*, 69 Cal. 2d 33, 40 (1968)). Nor has Qualcomm shown how the district court's interpretation could create any incompatibility. The ETSI policy plainly *permits* chip-level licensing, even if it does not mandate it.

3. Finally, Qualcomm cites (Br. 139) a 2018 decision by the American National Standards Institute (ANSI), which accredits other SSOs. The district court correctly determined that the decision is not relevant extrinsic evidence on the meaning of the relevant FRAND commitments, which predate the ANSI decision by between six and twenty-three years. 1ER273; *see* 2SER0397-412 (1999-2012 ATIS commitments); 2SER0413-56, 465-73 (1995-2012 TIA commitments). Regardless, the decision is entirely consistent with the district court's interpretation: It merely found that the ANSI patent policy does not *prohibit* an SSO from adopting a policy guaranteeing licenses only for products that

implement "*all* normative elements" of the standard, so long as the SSO "make[s that] clear in its own patent policy." 4ER891-92 (emphasis added); *see* 4ER908.

B. Qualcomm's Breach Of Its FRAND Commitments Was Anticompetitive Under Traditional Section 2 Standards.

Qualcomm has thus breached its contractual FRAND commitments by refusing to license rival chipmakers. Of course, a breach of contract, "standing alone," does not "give rise to antitrust liability." *City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1368 (9th Cir. 1992); *cf.* Br. 52 n.6. Instead, a monopolist's conduct that breaches such a contractual commitment is anticompetitive only when it satisfies traditional Section 2 standards—that is, only when it "tends to impair the opportunities of rivals and either does not further competition on the merits or does so in an unnecessarily restrictive way." *Cascade Health*, 515 F.3d at 894. The district court's factual findings demonstrate that Qualcomm's breach of its SSO commitments satisfies both elements of that traditional test.

First, Qualcomm's breach impairs the opportunities of rivals by facilitating Qualcomm's collection of a surcharge from rivals' customers and by otherwise deterring rivals' entry and investment. Qualcomm executives informed the IRS that Qualcomm's refusal to license rival modem-chip suppliers protects its modem-chip business from competitors. 6ER1304 (citing 7ER1483:15-20). Qualcomm recognized that, if it made SEP licenses available to rival chipmakers (against whom it could not leverage its chip market power), it would impair its ability to

collect "unreasonably high" royalties (*i.e.*, a surcharge) from OEMs. 6ER1295-96. Qualcomm's refusal to make licenses available to its modem-chip rivals also had other anticompetitive effects. Rivals' inability to secure SEP licenses from Qualcomm prompted some to abandon their plans to compete with Qualcomm in chip markets, and prompted others to enter into agreements with Qualcomm that imposed onerous reporting obligations and restrictions on sales. 6ER1280-85, 1290; 2SER0315, 0317. Qualcomm presents no serious challenge to these findings.

Second, the district court's factual findings establish that Qualcomm's breach of its SSO commitments "does not further competition on the merits." *Cascade Health*, 515 F.3d at 894. A procompetitive justification is a "nonpretextual claim that [the monopolist's] conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal." *Microsoft*, 253 F.3d at 59. Here, the only procompetitive justification that Qualcomm proffers in support of breaching its SSO commitments is that honoring those commitments would require Qualcomm to engage in "multi-level licensing"—that is, licensing both chipmakers and phone OEMs. Br. 54-55. According to Qualcomm, that would be complicated and inefficient. *Id.* But Qualcomm simply ignores the district court's factual findings that this purported justification was "self-serving and pretextual," and that the testimony that Qualcomm offered to support this justification was "not credible in

multiple respects." 6ER1298, 1300. As the district court explained, substantial record evidence supported this conclusion. 6ER1298-1300.

Even if multi-level licensing were inefficient, Qualcomm's proffered justification would make little sense. Qualcomm's FRAND commitments require only that it *offer* licenses to chipmakers. Multi-level licensing would occur only if modem-chip suppliers requested licenses from Qualcomm—something that would not happen if, as Qualcomm asserts, it would be more efficient for rivals' OEM customers to negotiate with Qualcomm directly. 1SER0092:13-1SER0093:8.

C. Qualcomm's Breach Of Its Voluntary FRAND Commitments Should Not Be Assessed Under Heightened Section 2 Standards

In *Aspen* and *Trinko*, the Supreme Court established a heightened standard for Section 2 claims that seek to impose on a monopolist a generalized duty to deal with its rivals. The district court assumed that the *Aspen*/*Trinko* standard applies here, and Qualcomm contends (Br. 44-56) that the district court erred in holding that it was satisfied. But the *Aspen*/*Trinko* standard does not apply where, as here, a monopolist subverts voluntary, competitively significant commitments to deal made to industry-wide SSOs. The Supreme Court has recognized the essential role of antitrust law in policing private standard setting. *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492 (1988). And none of the Court's reasons for

imposing a heightened standard in *Aspen* and *Trinko* apply in this very different context.

1. "[A]s a general matter, the Sherman Act 'does not restrict the long recognized right of [a] trader or manufacturer … freely to exercise his own independent discretion as to parties with whom he will deal.'" *Trinko*, 540 U.S. at 408 (quoting *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)). In *Aspen*, the Supreme Court recognized an exception to that general rule, holding that the defendant's termination of a joint sales arrangement with a rival ski resort violated Section 2. 472 U.S. at 610-11. In so doing, the Court emphasized that the defendant's refusal to renew a profitable arrangement even on favorable terms showed that it had elected to "forgo" short-run profits "because it was more interested in reducing competition" by "harming its smaller competitor." *Id.* at 608; *see id.* at 610-11; *see also Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (considering profit-sacrifice); *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1134 (9th Cir. 2004) (same).

In *Trinko*, the plaintiff claimed that Verizon had violated the antitrust laws by providing inadequate assistance to rival telephone-service providers that sought to access Verizon's network. 540 U.S. at 404-05. Verizon had never volunteered to provide such assistance, and the Court declined to impose a positive duty to provide it under the antitrust laws, explaining that the plaintiff's claim did not "fit

within the limited exception recognized in *Aspen Skiing*." *Id.* at 409. In so doing, the Court emphasized that the plaintiff had not "allege[d] that Verizon voluntarily engaged in a course of dealing with its rivals." *Id.*

2. This case is fundamentally different from *Aspen* and *Trinko* because Qualcomm voluntarily committed to license its SEPs to rivals on FRAND terms as a condition of having its intellectual property included in relevant standards. Neither *Aspen* nor *Trinko* involved a breach of such a commitment. And unlike the duty to deal that the plaintiffs sought to impose in those cases, requiring a monopolist to comply with its SSO commitments does not impair the monopolist's "'exercise of [its] own independent discretion as to parties with whom [it] will deal.'" *Trinko*, 540 U.S. at 408 (citation omitted). Such a requirement respects that exercise, and "simply requir[es] those making promises to keep them." *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031, 1048 (9th Cir. 2015) (citation and internal quotation marks omitted) (addressing *Noerr-Pennington* doctrine). And none of the three concerns behind the *Aspen*/*Trinko* standard apply in this very different context.

First, *Trinko* reasoned that "[c]ompelling … firms to share the source of their advantage is in some tension with the underlying purpose of the antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest." 540 U.S. at 407-08; *see MetroNet*, 383 F.3d at 1131. But there is no similar risk of

discouraging investment where, as here, the antitrust duty is coterminous with the monopolist's own voluntary commitment to share. *Cf. Int'l Wood Processors v. Power Dry, Inc.*, 792 F.2d 416, 429 (4th Cir. 1986) (subjecting a patentee's breach of a license agreement to Sherman Act scrutiny would not "discourage innovative activity" because a patentee "[s]urely … does not contemplate that as part of his reward he will be able to grant and to revoke licenses at will, despite contractual obligation to the contrary").

Second, *Trinko* explained that "[e]nforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing." 540 U.S. at 408; *see MetroNet*, 383 F.3d at 1131. But again, the "terms of dealing" here have already been agreed upon by the monopolist itself. And enforcing the terms on which Qualcomm committed to make licenses available to rivals does "not require [the] court[] to play a larger role in setting the terms of dealing than the role that courts *already* play in determining appropriate royalties in patent cases" and FRAND litigation. *FTC v. Qualcomm Inc.*, No. 17-CV-00220-LHK, 2017 WL 2774406, at *22 (N.D. Cal. June 26, 2017); *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 314 n.8 (3d Cir. 2007).[20]

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[20] Qualcomm asserts (Br. 54-55) that requiring it to license rival chipmakers would "give rise to endless disputes about which entity (chipmaker or OEM) should be paying what proportion of the royalties." But that just repeats

Third, *Trinko* cautioned that "compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion." 540 U.S. at 408; *see MetroNet*, 383 F.3d at 1131. But that concern obviously does not apply where, as here, the relevant negotiation has already happened, and the antitrust violation lies in the failure to act as agreed.[21]

3. In fact, when a firm has made FRAND commitments to an SSO, requiring the firm to comply with its commitments *mitigates* the risk that the collaborative standard-setting process will harm competition. Product standards—implicit "agreement[s] not to manufacture, distribute, or purchase certain types of products"—"have a serious potential for anticompetitive harm." *Allied Tube*, 486 U.S. at 500 (citation and footnote omitted). Accordingly, private SSOs "have traditionally been objects of antitrust scrutiny," and the antitrust laws tolerate private standard-setting "only on the understanding that it will be conducted in a nonpartisan manner offering procompetitive benefits," and in the presence of "meaningful safeguards" that prevent the standard-setting process from falling prey

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Qualcomm's assertion that multi-level licensing would be inefficient, which the district court specifically declined to credit. 6ER1298-1300.

[21] In *Trinko*, the Court also deemed it significant that the defendant in that case was subject to an extensive telecommunications regulatory structure, which was "designed to deter and remedy anticompetitive harm." 540 U.S. at 412. "No such regulatory framework exists" to police commitments made to private SSOs. *Broadcom*, 501 F.3d at 316-17.

to "members with economic interests in stifling product competition." *Id.* at 500-01, 506-07; *see Broadcom*, 501 F.3d at 310, 314-15 (collecting cases).

FRAND commitments are among the "meaningful safeguards" that SSOs have adopted to mitigate this serious risk to competition. *Microsoft*, 795 F.3d at 1031. Absent FRAND commitments or other safeguards, the incorporation of patented technologies into a cellular standard would potentially allow every SEP owner a veto over its rivals' development, manufacture, and sale of standard-compliant products. *See id*. The owner of a single SEP could invoke that SEP to deny product-market rivals access to the standard or to raise its rivals' costs. *Id*

Courts have therefore recognized that conduct that breaches or otherwise "side-steps" these safeguards is appropriately subject to conventional Sherman Act scrutiny, not the heightened *Aspen*/*Trinko* standard.[22] Of particular relevance here, the Third Circuit held that a rival chipmaker had adequately alleged that Qualcomm itself violated Section 2 because it falsely promised an SSO that it would license its technology on FRAND terms, "but then breached those agreements." *Broadcom*, 501 F.3d at 304; *see id.* at 313. The Third Circuit declined to apply the *Aspen*/*Trinko* test, emphasizing that the case "d[id] not involve a refusal to deal." *Id.* at 316; *see Research In Motion Ltd. v. Motorola,*

[22] As noted above, while subject to scrutiny, breaches of FRAND commitments do not always violate the Sherman Act.

Inc., 644 F. Supp. 2d 788, 796 (N.D. Tex. 2008) (following *Broadcom*). Such conduct implicates antitrust law's historical concern "with the risk of one or a small number of participants capturing the economic power of an industry-wide standard and turning the SSO into a source of exclusionary power." *Broadcom*, 501 F.3d at 312 n.5 (citation omitted). By "hijacking or capturing an SSO" in this manner, "a single industry player can magnify its power and effectuate anticompetitive effects on the market in question." *Id.* It would thus be inappropriate to apply the heightened *Aspen*/*Trinko* standard to a monopolist's exploitation of the SSO process to reinforce its anticompetitive conduct.

While this Court has long afforded firms latitude to "deal or refuse to deal with whomever [they] please[] without fear of violating the antitrust laws," *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1300 (9th Cir. 1978) (citing *Colgate*, 250 U.S. at 307), it, too, has applied traditional antitrust standards to breaches of voluntary commitments made to mitigate antitrust concerns. In *Mount Hood Stages, Inc. v. Greyhound Corp.*, 555 F.2d 687 (9th Cir. 1977), this Court upheld a judgment holding that Greyhound violated Section 2 by refusing to interchange bus traffic with a competing bus line after voluntarily committing to do so in order to secure antitrust approval from the Interstate Commerce Commission for proposed

acquisitions. *Id.* at 697[23]; *see also, e.g., Biovail Corp. Int'l v. Hoechst Aktiengesellschaft*, 49 F. Supp. 2d 750, 759 (D.N.J. 1999) (breach of commitment to deal in violation of FTC merger consent decree exclusionary under Section 2).

III. THE DISTRICT COURT CORRECTLY FOUND THAT QUALCOMM ENGAGED IN ANTICOMPETITIVE EXCLUSIVE DEALING WITH APPLE

Qualcomm's agreements with Apple used hundreds of millions of dollars in incentives and clawback penalties to prevent rivals from winning business from the largest and most important customer in the premium LTE market from 2011 until 2016. The district court correctly determined that those agreements were *de facto* exclusive-dealing arrangements prohibited by the Sherman Act. 6ER1308-19. Qualcomm's contrary arguments contradict established precedent and the court's well-supported factual findings.

A. The District Court Correctly Found That Qualcomm's Agreements With Apple Were *De Facto* Exclusive-Dealing Agreements

1. Courts have long recognized that exclusive-dealing agreements can unlawfully impair competition, particularly when a monopolist uses them to foreclose rival suppliers from critical business opportunities. *See, e.g.*, *ZF Meritor*, 696 F.3d at 270; *Aerotec*, 836 F.3d at 1180-81. The Supreme Court has made clear

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[23] The Supreme Court vacated this Court's initial decision for reasons pertaining to tolling of the statute of limitations. 437 U.S. 322 (1978). This Court reinstated its initial decision on remand. *See* 616 F.2d 394 (9th Cir. 1980).

that this principle reaches not only contracts that expressly require exclusivity, but also those that have the "practical effect" of inducing a customer to purchase exclusively from a dominant seller. *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 326 (1961). This Court has not had occasion to "explicitly recognize a 'de facto' exclusive dealing theory," but it has likewise explained that, in some circumstances, "discounts and rebates conditioned on a promise of exclusivity … may be understood as 'de facto' exclusive dealing contracts because they coerce buyers into purchasing a substantial amount of their needs from the seller." *Id.*; *see* 2 AREEDA & HOVENKAMP ¶ 1807b1, at 133 (3d. ed. 2011).

2. In this case, the district court correctly found that Qualcomm's February 2011 TA and January 2013 FATA with Apple "easily" qualified as *de facto* exclusive-dealing agreements under *Tampa Electric*'s "practical effect" test. 6ER1307-08. Qualcomm made hundreds of millions of dollars of payments to Apple conditioned upon 100% exclusivity. If Apple made any commercial sales of a new iPhone or iPad product incorporating a non-Qualcomm chip, Qualcomm could immediately terminate the agreement, make no further payments, and claw back hundreds of millions of dollars in rebates already earned and paid. 6ER1257-58, 1262-63; 7ER1560, 1563-65; *see* 5SER1046. Because each agreement lasted three or more years and conditioned Apple's retention of funds paid early in the contract term on 100% exclusivity in subsequent years, even limited use of rival

chips late in the contract term could trigger massive financial penalties. For example, in June 2015 Qualcomm calculated that Apple would incur penalties of $645 million if it launched a new product with a non-Qualcomm chip before February 2016. 6ER1267; 3SER0568.

The district court found that Qualcomm developed the TA and FATA in response to competitive threats from Intel and others, and that Qualcomm structured the agreements to ensure that Apple would "purchase modem chips exclusively from Qualcomm." 6ER1261; *see* 6ER1256-57, 1260-63; 4SER0894; 5SER1060, 1067; 5SER1128; 3SER0808, 0810; 3SER0800; 5SER1135. The court further found that the agreements worked as Qualcomm intended: The clawback and termination provisions "effectively precluded Apple from working with any of Qualcomm's rivals" for a full five years, from 2011-2016. 6ER1263; *see* 6ER1258, 1263-67, 1308-09; *see* 4SER0873-74; 4SER0891; 1SER0223-33; 1SER0268-73; 2SER0286-94.[24]

[24] Qualcomm emphasizes (Br. 105) that Apple ultimately chose to forgo some of the financial incentives under the FATA by using Intel chips in 2016. But that was only after the expiration of the more significant clawback penalties that would have forced Apple to refund hundreds of millions of dollars had it used Intel chips in 2013, 2014, or 2015. 3SER0568; 7ER1563-64. These clawbacks deterred Apple from launching with an Intel chip before 2016. *See, e.g.*, 4SER0892 (Apple executive noting that "there is no way that we would forego otherwise earned incentives" by using Intel chips in 2015).

Other courts have likewise treated arrangements that impose substantial financial penalties if a customer fails to purchase exclusively from the monopolist as *de facto* exclusive deals. *See, e.g.*, *McWane*, 783 F.3d at 820-21, 833-34; *ZF Meritor*, 696 F.3d at 265; *Masimo Corp. v. Tyco Health Care Grp., L.P.*, No. CV 02-4770 MRP, 2006 WL 1236666, at *5-6 (C.D. Cal. Mar. 22, 2006), *aff'd*, 350 F. App'x 95 (9th Cir. 2009).

3. Qualcomm asserts (Br. 105-06) that the TA and FATA were not exclusive-dealing agreements, but "volume discount contracts" that left Apple "free to switch to any competing chip supplier without violating the contract." That characterization ignores, among other things, the drastic clawback penalties, which meant that competing chipmakers could not win Apple's business merely by "offer[ing] a better product or a better deal" on future purchases. Br. 106 (citation omitted). Such a proposal still would not induce Apple to switch suppliers, because it would have to repay hundreds of millions of dollars to Qualcomm if it did. In economic substance and practical effect, the TA and FATA were equivalent to contracts requiring exclusivity and imposing large financial penalties for a violation.

The clawback penalties are thus "something more" than mere discounts conditioned on volume or market share. *Allied Orthopedic*, 592 F.3d at 997. And they distinguish this case from the decisions on which Qualcomm relies (Br. 105-

07), none of which involved remotely comparable financial penalties. *See Allied Orthopedic*, 592 F.3d at 997 (emphasizing the contracts' "easy terminability"); *W. Parcel Express v. United Parcel Serv. Am. Inc.*, 65 F. Supp. 2d 1052, 1064-65 (N.D. Cal. 1998) (customers could terminate without penalty on less than a month's notice), *aff'd*, 190 F.3d 974 (9th Cir. 1999).

B. Proof Of Below-Cost Pricing Is Not Required To Establish That Qualcomm's Exclusive Dealing Was Anticompetitive

Qualcomm also asserts (Br. 107-09) that even if the Apple agreements amounted to exclusive dealing, they are lawful under the Sherman Act because if pricing is the predominant method of exclusion, then liability only attaches if the contracts "involve below-cost pricing." That is doubly wrong.

1. As an initial matter, this Court has never required a showing of below-cost pricing for exclusive-dealing claims. In *Cascade Health*, 515 F.3d 883, the Court adopted such a test in the bundled-pricing context. But the Court also indicated that "the test would be inappropriate 'outside the bundled pricing context, for example in tying or exclusive dealing cases.'" *Masimo Corp. v. Tyco Health Care Grp., L.P.*, 350 F. App'x 95, 99 (9th Cir. 2009) (Bea, J., concurring) (quoting *Cascade Health*, 515 F.3d at 916 n.27); *see also Church & Dwight*, 2011 WL 1225912, at *10 ("Courts have long recognized many forms of exclusionary conduct that do not involve below-cost pricing," including exclusive dealing).

That distinction makes sense. The price-cost test represents a departure from standard rule-of-reason analysis, and courts have invoked that test only in cases that threaten to chill aggressive price competition. Predatory-pricing cases, which "impose antitrust liability for prices that are too low," pose such a threat. *linkLine*, 555 U.S. at 451. Exclusive-dealing cases, which impose liability for conditions that link rebates or penalties to exclusivity, do not.

Predatory pricing and exclusive dealing harm competition in different ways. A monopolist engaged in predatory pricing *lowers the price of its own products* in hope of driving its rivals from the market. Derek W. Moore & Joshua D. Wright, *Conditional Discounts and the Law of Exclusive Dealing*, 22 Geo. Mason L. Rev. 1205, 1214 (2015). A monopolist engaged in unlawful exclusive dealing, by contrast, ordinarily harms competition by *raising the cost of using its rivals' products*. A customer calculating the cost of purchasing incremental units from a rival must weigh not only the price it must pay for those units, but also the penalties, forgone rebates, and other costs it would incur by not dealing exclusively with the monopolist. And because a monopolist engaged in unlawful exclusive dealing "can raise rivals' costs without pricing its goods below cost," price-cost tests are inappropriate in exclusive-dealing cases. *Id.* at 1209, 1244; *see also* Steven C. Salop, *The Raising Rivals' Cost Foreclosure Paradigm, Conditional*

Pricing Practices, and the Flawed Incremental Price-Cost Test, 81 Antitrust L.J. 371, 378-79 (2017).

The trial record confirms that here, as in most unlawful exclusive-dealing cases, the primary mechanism of exclusion was not price; instead, exclusion was achieved through explicit exclusivity provisions tied to large lump-sum penalties. These provisions excluded Intel although it offered chips of a similar quality to Qualcomm's at a *substantially lower price*. An Apple executive testified, for example, that Intel's "performance was similar and their price was much less," but that the clawback nonetheless made choosing Intel a "losing proposition." 1SER0273:4-14; *see also* 6ER1267 (FATA prevented Apple from choosing the most competitive modem chip); 4SER0905;1SER0274.

2. This Court is not bound by the out-of-circuit decisions on which Qualcomm relies (Br. 108). In any event, none of them support application of a price-cost test here.

In *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039 (8th Cir. 2000), the Eighth Circuit analyzed the exclusive-dealing claim under the usual Sherman Act standards. *Id.* at 1058-60. It addressed below-cost pricing only in analyzing a separate "unfair pricing" theory. *Id*. at 1060-63. Even then, the court did not treat above-cost pricing as a *per se* bar to liability. To the contrary, it emphasized that,

unlike the clawback provisions at issue here, the agreement left customers "free to walk away from Brunswick's discounts at any time" without penalty. *Id.* at 1063.

In *ZF Meritor*, the Third Circuit *rejected* the argument that a price-cost test should apply to a *de facto* exclusive-dealing arrangement that involved financial penalties and risk of loss of supply for breach of exclusivity, recognizing that price was not "the clearly predominant mechanism of exclusion." *ZF Meritor,* 696 F.3d at 277. Like Qualcomm's clawback provisions, those threats of "financial penalties" or "supply shortages" created a situation where customers were not "free to walk away if a competitor offered a better price." *Id*. And the Third Circuit has since explicitly distinguished cases involving such "penalties" from those involving mere "lost discount[s]." *Eisai, Inc. v. Sanofi Aventis U.S., LLC*, 821 F.3d 394, 406-07 (3d Cir. 2016).[25]

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[25] Even if a price-cost test were applicable here, the district court found that "Qualcomm sacrificed profits for exclusivity," 6ER1266, and Qualcomm's conduct thereby satisfied the test. Qualcomm recognized that "[e]conomically, [its] best outcome" would have involved supplying the bulk of Apple's modem-chip requirements while allowing Apple to turn to Intel for the remainder. 6ER1261 (quoting SER0800). "*Strategically*," however, Qualcomm was "better off keeping [Apple] on our stuff" *Id*. (emphasis added). "[K]eeping 100 percent share," while strategically optimal, did not "maximize profit." 3SER0803; *see id.* ("That last bit of share is expensive."). If the cost of "buy[ing] exclusivity," 6ER1259 (quoting 3SER0808), were allocated to the chips that Intel would otherwise have supplied to Apple, the cost of those chips would exceed their sales price. *Cf.* 1SER0131-40 (testimony of FTC expert confirming that payments subject to clawback or forfeiture on Apple's use of a non-Qualcomm chip far exceeded Qualcomm's margins on contestable sales and thus were associated with "a big loss").

C. The District Court Correctly Found Substantial Foreclosure And Harm To Competition

The district court correctly found that Qualcomm's exclusive deals with Apple harmed competition by foreclosing a substantial share of the market, both quantitatively and qualitatively.

1. Qualcomm's own documents showed that Apple represented between 40% and 60% of the actual and then-forecasted premium-LTE chip market.[26] Even measured in purely quantitative terms, therefore, the foreclosure at issue here satisfied the "40% to 50%" threshold Qualcomm invokes. Br. 110.

Qualcomm's assertion (Br. 110-11) that the agreements foreclosed less than 5% of Apple's sales is obviously incorrect. Foreclosure "depends on the market share involved," and courts doing a quantitative analysis of exclusivity agreements look to the foreclosed customer's share of the market. *Omega Envtl., Inc. v. Gilbarco, Inc.*, 127 F.3d 1157, 1162 (9th Cir. 1997); *see, e.g.*, *McWane*, 783 F.3d at 837. The district court found, based on extensive documentary and testimonial

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[26] *See* 4SER0816; *see also* 2SER0523 (Qualcomm 2016 strategic plan showing actual 2014 and projected 2015 Apple premium-tier shares of 48.8% (169/346) and 56% (209/373)). All Apple models launched from the fall of 2012 onward used premium-LTE modem chips. 1SER0265:17-1SER0267:2. *See also* 6ER1202 ("premium LTE modem chips are those modem chips sold for use in premium tier handsets," as tracked by "Qualcomm's own documents"); 1SER0123:11-21 (FTC expert testimony).

evidence, that rivals were foreclosed from *all* Apple products from 2011 until 2016, so the quantitative foreclosure was 40-60%. 6ER1255-71.[27]

2. Even if the district court's substantial-foreclosure finding were not so plainly supported by admitted market share evidence, Qualcomm's objection would lack merit. "Whether an exclusive dealing arrangement substantially forecloses competition cannot be determined by a rigid mathematical analysis alone; the analysis must take into account other factors." *Theme Promotions, Inc. v. News Am. Mktg. FSI*, 546 F.3d 991, 1002-03 (9th Cir. 2008); *see Omega*, 127 F.3d at 1162.

In particular, it is well-settled that "[b]ehavior that might otherwise comply with antitrust law may be impermissibly exclusionary when practiced by a monopolist." *Dentsply*, 399 F.3d at 187. Accordingly, courts have long recognized that "a monopolist's use of exclusive contracts ... may give rise to a § 2 violation even though the contracts foreclose less than the roughly 40% or 50% share usually required in order to establish a § 1 violation." *Microsoft*, 253 F.3d at 70;

[27] Testimony from the FTC's economic expert related to "contestable" sales, *see supra* note 25, is not to the contrary. The expert determined which Apple sales were "contestable" by Intel at a particular point in time. That was not a foreclosure analysis, and exclusive-dealing arrangements have never been assessed by the percentage of "contestable" sales foreclosed. Moreover, insofar as Qualcomm proposes to limit the foreclosure analysis to contestable sales, then *all* available sales were foreclosed.

see Jonathan M. Jacobson, *Exclusive Dealing, "Foreclosure," and Consumer Harm*, 70 Antitrust L.J. 311, 349 (2002) ("the percentage of the market 'foreclosed' by an exclusive arrangement is rarely determinative and, often, not even interesting"). The proper inquiry in a Section 2 case thus de-emphasizes foreclosure percentage and places greater weight on other factors relevant to assessing the harm to competition.

Here, the district court's careful qualitative analysis properly examined all relevant circumstances, including Qualcomm's monopoly power, the degree of market foreclosure, the importance of the foreclosed customer, and the duration of the exclusive deals. 6ER1312-21. In particular, the court emphasized that the TA and FATA were intended to, and did, exclude competitors from a uniquely important customer. Qualcomm documents recognized that there were "significant strategic benefits" in exclusivity with Apple, "as it [was] unlikely that there [would] be enough standalone modem volume to sustain a viable competitor" without Apple business. 6ER1313 (quoting 4SER0821). Qualcomm's agreements with Apple thus exemplify a recognized anticompetitive tactic in which a monopolist relies on "strategically placed exclusive dealing contracts" to "slow a rival's expansion." *ZF Meritor*, 696 F.3d at 271 (quoting AREEDA & HOVENKAMP

¶ 1802c (2d ed. 2002)); *see, e.g.*, *E.I. du Pont de Nemours & Co. v. Kolon Indus.*, 637 F.3d 435, 452 (4th Cir. 2011).[28]

The district court went on to find that foreclosure of Apple's business harmed competition by increasing barriers to entry; denying rivals critical revenues, customer relationships, and technological development opportunities; delaying Intel's entry into the market; and contributing to Qualcomm's "hobbling" of rivals though its broader course of conduct. 6ER1270, 1313-17, 1368. And the court also carefully considered Qualcomm's proffered procompetitive justifications and found them to be "pretextual and contradicted by Qualcomm's own documents"—a finding that Qualcomm does not challenge. 6ER1323.

3. Finally, Qualcomm objects (Br. 113) to the district court's observation that its use of incentive funds to discourage other OEMs from buying rivals' chips exacerbated the anticompetitive effect of the Apple agreements by "further restrict[ing] the market available to rival modem chip suppliers." 6ER1321.

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[28] Although Qualcomm has not challenged the district court's market definition or market power holdings, it suggests (Br. 113 & n.21) that foreclosure of Apple purchases is "wholly unrelated" to broader chip markets because Apple used a particular type of chip ("thin modems"). But Qualcomm's strategic plans show that, before signing the TA, Qualcomm considered competitors' thin modems to be the principal threat to its chip business. 4SER0820. Had Intel won Apple's business earlier, it would have been better positioned to win business at other OEMs. 2SER0295:5-17. That is why Qualcomm's internal documents state that a deal with Apple would have "significant strategic benefits" by foreclosing "standalone modem volume" and competitor entry. 6ER1313; 4SER0821.

Qualcomm asserts (Br. 114-15) that the court should not have "relied in any respect on Qualcomm's discounting agreements with OEMs other than Apple" because Qualcomm "was never given the opportunity to explain these other agreements or defend against the claim that they violate the Sherman Act."[29]

Qualcomm's argument misunderstands the role of the incentive agreements in the district court's analysis. The court did sometimes refer to those agreements as "exclusive dealing," in the sense that they helped ensure that other customers, too, dealt exclusively with Qualcomm. And the court properly enjoined Qualcomm from using incentive funds going forward—a decision that was amply supported by the court's finding that the chip-incentive funds played a critical role in reinforcing Qualcomm's anticompetitive surcharge. *See supra* 14-15, 23, 47-48. Contrary to Qualcomm's implication, however, the court did not find that its agreements with other OEMs independently satisfied the *Tampa Electric* standard for unlawful exclusive-dealing arrangements. Instead, its exclusive-dealing analysis considered those other agreements solely as context for its assessment of

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[29] Qualcomm's related argument (Br. 103-04) that the FTC "abandoned" its challenge to the TA with Apple is incorrect. See 2ER365 (closing argument); 4SER0990-94 (closing argument demonstratives). In support of its "abandonment" claim, Qualcomm cites only a single line of cross-examination of an FTC expert, in which the expert clarified that the scope of one of his analyses focused on the FATA. The FTC presented, and the district court credited, additional evidence regarding the anticompetitive nature and effects of the TA. *See* 6ER1255-58, 1308-09, 1313-17.

the legality of Qualcomm's agreements with Apple, explaining that the Apple agreements "cannot be viewed in isolation." 6ER1319.

The district court properly considered Qualcomm's incentive deals with other OEMs as part of its analysis of the competitive landscape. Those incentive deals were challenged in the FTC's complaint and a significant focus of the trial, and Qualcomm cites no decision suggesting that a party is entitled to some special notice before a district court considers relevant evidence in the trial record in assessing a legal claim.

IV. THE DISTRICT COURT PROPERLY GRANTED AN INJUNCTION

Remedies in an antitrust case should end the unlawful conduct, prevent its recurrence, and undo its anticompetitive consequences. *See Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 697 (1978). "If th[e] decree accomplishes less than that, the Government has won a lawsuit and lost a cause." *Int'l Salt Co. v. United States*, 332 U.S. 392, 401 (1947). A district court has "large discretion" to fashion a remedy that accomplishes these aims. *Ford Motor Co. v. United States*, 405 U.S. 562, 573 (1972). That discretion includes the power to impose a remedy that "goes beyond a simple proscription against the precise conduct previously pursued." *Prof'l Eng'rs*, 435 U.S. at 698. Instead, "those 'caught violating' the FTC Act 'must expect some fencing in.'" *Grant Connect*, 763 F.3d at 1105 (quoting *FTC v. Nat'l Lead Co.*, 352 U.S. 419, 431 (1957)). This Court reviews the

district court's choice of remedy only for abuse of discretion or legal error. *Network Servs. Depot,* 617 F.3d at 1141.

Here, the district court appropriately enjoined Qualcomm from continuing to engage in practices that violate the antitrust laws. Qualcomm's claims that the court abused its discretion in fashioning that relief are without merit.

A. The District Court Correctly Found That Qualcomm's Anticompetitive Conduct Is Ongoing Or Likely To Recur

Section 13(b) of the FTC Act authorizes a district court to issue a permanent injunction "after proper proof." 15 U.S.C. § 53(b). An injunction is appropriate "if the wrongs are ongoing or likely to recur." *FTC v. Evans Prods*. Co., 775 F.2d 1084, 1087 (9th Cir. 1985); *see United States v. W.T. Grant Co.*, 345 U.S. 629, 633 (1953) ("some cognizable danger of recurrent violation"). Here, the district court found, and Qualcomm does not dispute, that Qualcomm's exclusionary practices are ongoing. 6ER1384-87. Indeed, Qualcomm's no-license, no-chips strategy and its refusal to make licenses available to rival chipmakers are company policy. 3ER575:7-10, 586:6-15; 7ER1465:7-17, 1504:6-8; 2SER0313. Qualcomm nevertheless asserts (Br. 116-21) that injunctive relief is inappropriate. According to Qualcomm, the district court was required to, but did not, find that it will continue to have monopoly power in chip markets in the future. Qualcomm is wrong on both counts.

1. The premise of Qualcomm's argument (Br. 116) is that Section 13(b) "provides for the issuance of a permanent injunction only when the defendant 'is violating, or is about to violate,' the antitrust laws." But the language Qualcomm quotes does not apply here. It is the standard for *initiating* an enforcement action by bringing suit—which in any event requires only that the FTC have "reason to believe" that a violation is about to occur. 15 U.S.C. § 53(b). Permanent injunctions are governed by the separate provision of Section 13(b) requiring "proper proof," and the standard for such proof is the one the district court applied: A showing that the wrongdoing is either "ongoing" or "likely to recur." *Evans Prods.*, 775 F.2d at 1087; *see* 6ER1387.

Qualcomm itself relies (Br. 121) on a decision that recognizes that very distinction, explaining that the "is violating" or "is about to violate" standard is a "pleading requirement." *FTC v. Shire ViroPharma, Inc.*, 917 F.3d 147, 157-58 (3d Cir. 2019). The Third Circuit relied on that requirement to uphold the dismissal of an FTC complaint filed five years after the alleged anticompetitive conduct had ceased. *Id.* at 159-60. But the Third Circuit expressly recognized that the less-demanding "likelihood of recurrence" standard governs "the FTC's entitlement to an injunction" at the end of a case, after a violation has been proven. *Id.* at 159.

Qualcomm cites no decision supporting its assertion that Section 13(b) makes a finding of future monopoly power a prerequisite for an injunction.[30]

2. In any event, the district court found that, absent an injunction, "Qualcomm is likely to replicate its market dominance during the transition to 5G." 6ER1387. The record—including "Qualcomm's internal documents and public statements," *id.*—amply supports that finding. In January 2018, for example, Qualcomm told shareholders that it was "12-24 months ahead of our merchant competitors in the transition to 5G," *id.*; 3SER0704, and that "[n]o other company comes close to Qualcomm on 4G LTE Advanced or on 5G," 3SER0705. A Qualcomm presentation explained that its combination of "Chips + licensing" and strong presence in standard-setting have given it a time-to-market advantage in transitions to next-generation technologies, and that Qualcomm expected to keep that advantage in the transition to 5G. 3SER073337. OEMs and rival modem chip suppliers confirmed that Qualcomm is expected to have a "substantial gap" on its

[30] Other cases Qualcomm cites (Br. 116, 121) are inapposite. In two of them, the courts exercised their discretion to deny an injunction because—unlike here—the defendants had taken meaningful steps to remedy the challenged practices. *See FTC v. Merch. Servs. Direct, LLC*, 2013 WL 4094394, at *3 (E.D. Wash. Aug. 13, 2013); *FTC v. Amazon.com, Inc.*, 2016 WL10654030, at *3-6 (W.D. Wash. July 22, 2016). In the third, the court found that the defendants had engaged in just two instances of anticompetitive conduct and emphasized that there was no evidence of "a pattern or practice" that was likely to recur. *FTC v. AbbVie Inc.*, 329 F. Supp. 3d 98, 145 (E.D. Pa. 2018), appeal pending, No. 18-2621 (3d Cir.).

competitors in the transition to 5G. 6ER1389 (quoting 5SER10011:1-5); *see, e.g.*, 5SER1040; 2SER0344-45.

Rather than confronting its own ordinary-course documents, Qualcomm cites self-serving testimony by its executives in which they downplayed its prospects for 5G chip dominance. As in other contexts, however, the district court reasonably found Qualcomm's documents to be more credible than its executives' "testimony prepared specifically for this litigation." 6ER1184. The record shows that competition amongst modem chip suppliers in 5G is not likely to be materially different from the competitive environment for 2G CDMA, 3G CDMA, and 4G LTE modem chips, all of which Qualcomm was found to have monopolized.[31]

Qualcomm also argues (Br. 117-19) that recent changes in the CDMA and premium LTE chip markets make an injunction unnecessary. But the record tells a different story. The district court found, based on an exhaustive review of the evidence, that "Qualcomm's rivals that remain in the market are hobbled by Qualcomm's practices." 6ER1372. That finding was not clearly erroneous. In any

[31] Qualcomm chides the district court (Br. 117-18) for excluding evidence of "market conditions" that post-dates the March 2018 close of discovery. But the court determined that some of that evidence was already in the record, and that the rest should be excluded under Federal Rule of Evidence 403 because the prejudice to the FTC from Qualcomm's cherry-picked post-discovery evidence outweighed its probative value. 1ER239-48. Qualcomm has not shown that the court committed a "clear abuse of discretion" in applying Rule 403's balancing test. *Trevino v. Gates*, 99 F.3d 911, 922 (9th Cir. 1996).

event, as Qualcomm's own documents note, Qualcomm's time-to-market advantage is "strongest at [the] onset" of a new standard. 3SER0772; *see* 2SER0304:3-14. The evidence at trial showed that Qualcomm has repeatedly abused its early dominance in a new technology cycle to delay rivals' incursions in the market, leaving them to play perpetual catch-up while Qualcomm reaps the benefits of its exclusionary practices to gain an advantage in the next generation of technology—where it then repeats the pattern. *See* 2SER0344 ("Qualcomm resets … ahead of the competitor" and it takes "several years for [rivals] to catch up"); 4SER0910. This tried-and-tested playbook left little room for doubt about the fate of competition in 5G absent remedial intervention.

There is no clear error in the district court's factual finding that, absent an injunction, Qualcomm is likely to perpetuate its anticompetitive practices, creating the same roadblocks to competition in the future that it has in the past. And neither precedent nor common sense support Qualcomm's assertion that the FTC and the courts are powerless to act until those predictable anticompetitive effects materialize again.[32]

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[32] Qualcomm (Br. 125 n.25) and DOJ (Br. 30-31) complain that the injunction reached chip markets other than the CDMA and premium LTE markets, but the district court did not abuse its discretion in enjoining Qualcomm's anticompetitive practices without exception. There is ample record evidence, for example, supporting the district court's conclusion that Qualcomm should be subject to a general prohibition on conditioning chip supply on license status. That evidence

B. The District Court Properly Assessed The Equities

There is likewise no merit to Qualcomm's claim (Br. 122-25) that the district court improperly refused to "weigh the equities." The court properly noted that no court has required a balancing of public and private equities at the permanent injunction stage of an FTC enforcement action. 6ER1383.[33] In a government antitrust action, "courts are authorized, indeed required, to decree relief effective to redress violations, whatever the adverse effect of such a decree on private interests." *United States v. E.I. du Pont de Nemours & Co.*, 366 U.S. 316, 326 (1961). The only issue left to resolve is whether the court abused its discretion in tailoring a remedy to restore competition that serves the public interest. It did not.

1. The court's injunction is not in conflict with any identified national security interests

Qualcomm argues (Br. 123-24) that the district court failed to consider purported harm to national security in fashioning a remedy. But the court can hardly be faulted for failing to consider that issue, because Qualcomm abandoned

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includes Qualcomm's use of its CDMA market power to influence WCDMA license negotiations, the fact that Qualcomm primarily sells multi-mode chips that embody more than one standard, and Qualcomm's likely dominance in 5G modem chip supply. 6ER1392; *see* 1SER0076A:2-6; 1SER0070:9-13; 6ER1387-90. In any event, it is appropriate to require fencing-in of Qualcomm's anticompetitive practices. *Grant Connect*, 763 F.3d at 1105.

[33] Once again, Qualcomm cites inapposite cases (Br. 121-22). Both *FTC v. H.N. Singer, Inc.,* 668 F.2d 1107 (7th. Cir. 1982), and *FTC v. Consumer Def.,* 926 F.3d 1208 (9th Cir. 2019), address the standard for preliminary injunctions in an FTC action, not permanent injunctions.

it: Although Qualcomm alluded in passing to national security in a pretrial filing, it introduced no evidence on the topic. 7ER1706-07, 1711-12.[34]

In any event, challenges to the injunction based on purported national security concerns do not withstand scrutiny. Qualcomm relies on declarations submitted by DOJ for the first time on appeal. Even if it were proper to consider those extra-record materials, *but see United States v. Elias*, 921 F.2d 870, 874 (9th Cir. 1990), they would provide no reason to conclude that the district court abused its discretion. The declarations state, at a high level of generality, that Qualcomm plays a key role in the U.S. telecommunications industry and that national security could suffer if Qualcomm were unable to supply the government with modem chips, invest in R&D, or participate in standard setting. 1ER312-24. But the injunction does not prohibit any of those activities, and neither the declarations nor DOJ's brief explain how it would interfere with them. Indeed, contrary to Qualcomm's characterization (Br. 123-25), the declarations do not even definitively state that the injunction *will* harm national security. 1ER312-24.

[34] Likewise, DOJ has no grounds to complain about the district court's omission of national security considerations because it failed to make its concerns known at the appropriate time. DOJ has not suggested that it was unaware of this litigation, or that it failed to realize that the trial would address both liability and remedy. It also has not explained why it waited until three months after the end of the trial to file a Statement of Interest asking to be heard on the prospective remedy—or why, even then, it did not mention any concerns about national security. 2ER350-56.

Instead, the declarations seem to imply that the injunctions could lead to Qualcomm becoming less profitable, thereby imperiling its technological leadership. That argument is pure speculation. Nothing in the remedy portends catastrophic financial impact to Qualcomm. It remains free to charge market-based prices for its products and to collect royalties that reflect the "fair value of [its] patents." 6ER1395. And neither DOJ nor Qualcomm provides any reason to think that the injunction will deprive Qualcomm of the financial means to continue its investment in R&D.[35]

In any event, even if there were some reason to think that Qualcomm cannot sustain a sufficient level of R&D investment without engaging in the enjoined practices, that would not be a legitimate reason for allowing it to continue to violate the antitrust laws—a point that DOJ itself now seems to concede (Br. 32 n.10). In enacting the Sherman Act, Congress determined that competition furthers the public interest. *See United States v. Nutri-Cology, Inc.*, 982 F.2d 394, 398 (9th Cir. 1992). That congressional judgment "precludes inquiry into the question whether competition is good or bad" in particular contexts. *Prof'l Eng'rs*, 435 U.S. at 695. And for the same reason, the antitrust laws are not an appropriate vehicle

[35] Indeed, Qualcomm spends more on stock buybacks and dividends than it does on R&D. 3SER0797-98 (showing 2015-2017 R&D of $16.13 billion versus combined stock buybacks and dividends of $25.63 billion).

for "supporting national champions" or "enhancing national security."[36] Those may be laudable policy goals, but they should be pursued through other means. Here, for example, if legitimate national security objectives require subsidizing Qualcomm, Congress is free to do that—or even to exempt it from the antitrust laws. But an argument that the free competition mandated by the Sherman Act would undermine other policy interests has no place in an antitrust enforcement proceeding.[37]

2. The district court did not abuse its discretion in matching the scope of the injunction to the scope of the markets

Qualcomm contends (Br. 125-29) that the injunction is overly broad because it prohibits Qualcomm's anticompetitive licensing practices without geographic limitation. But given the undisputed global scope of modem chip markets, it is unclear how an effective injunction would have been geographically limited—and

[36] Remarks of Dep. Ass't Att'y Gen. Roger Alford, 2019 China Competition Policy Forum (May 7, 2019), *available at* https://www.justice.gov/opa/speech/deputy-assistant-attorney-general-roger-alford-delivers-remarks-2019-china-competition.

[37] DOJ's apparent concern that the injunction will impair innovation (Br. 34) is similarly misplaced because the policy judgment underlying the antitrust laws is that an industry will be *more* innovative and efficient if freed from anticompetitive constraints. *See Prof'l Eng'rs*, 435 U.S. at 695 ("[C]ompetition will produce not only lower prices, but also better goods and services."). DOJ also briefly asserts (Br. 31-32) that the district court failed to consider whether the injunction harms the public interest "by changing … efficient licensing practices." But the district court found that those claimed efficiencies were pretextual. 6ER1298, 1322-23, 1330-31, 1356. Neither DOJ nor Qualcomm challenges that finding.

in any event, such an order would have permitted Qualcomm to continue to benefit from the fruits of its illegal conduct and to exclude competition to the detriment of American consumers and some American rivals.

1. Qualcomm has never disputed that modem chip markets are global. 6ER1191, 1200. Qualcomm, for example, designs modem chips in the United States and India; has them fabricated in Taiwan and South Korea; and ships them to China and other countries, where manufacturers assemble them into phones destined for the United States and other countries around the world. 3SER0794-95, 0097. And Qualcomm conditions the availability of these chips on license agreements that grant rights to patents issued in the United States and dozens of other countries. 3SER0794A. Because U.S. and foreign commerce are inextricably intertwined, Qualcomm is simply wrong to assert (Br. 34) that the injunction reaches "wholly foreign commerce." For much the same reason, it is unclear how an effective injunction could have been limited to the United States. Qualcomm certainly never identified a more limited alternative. The district court did not abuse its discretion by declining to adopt limits that Qualcomm never proposed and that would not be workable or effective in any event.

In addition, Qualcomm's conduct harms competition in part by denying rivals opportunities to realize necessary economies of scale. The district court found that economies of scale are important for effective participation in

worldwide modem chip markets. 6ER1261, 1363, 1372.[38] When conduct excludes rivals from worldwide markets by denying them scale, imposition of an injunction with commensurate geographic reach is within the trial court's discretion.

2. Courts have long issued injunctions with similar scope. In *Zenith Radio Corp. v. Hazeltine Research*, 395 U.S. 100 (1969), the Supreme Court reinstated a district court's injunction against the defendants' participation in foreign patent pools, holding that that the plaintiff was entitled to injunctive relief barring similar conduct "in other world markets" beyond those in which liability had been established. *Id.* at 132-33. Similarly, in *Polypore Int'l, Inc. v. FTC*, 686 F.3d 1208 (11th Cir. 2012), the Eleventh Circuit upheld an order that a merged firm divest a manufacturing facility in Austria because the Commission had offered "reasonable considerations" for its determination that doing so would facilitate restored competition in a North American market. *Id.* at 1219; *see also, e.g.*, *Timken Roller Bearing Co. v. United States*, 341 U.S. 593, 604 (1951) (approving injunction that required manufacturers in different countries to terminate joint ventures adjudged to constitute illegal geographic market

[38] *See also* 1SER0087:18-1SER0089:14, 0211:13-0212:8 (FTC economic expert testimony discussing economies of scale); 1SER077:6-:18 (Qualcomm executive testimony regarding how scale helps Qualcomm); 1SER0074:14-21 (Qualcomm expert admission that denial of scale can harm competition); 1SER0075:19-23 (Qualcomm expert statement that economies of scale are closely related to R&D intensity).

allocations); *Lamb-Weston, Inc. v. McCain Foods, Ltd.*, 941 F.2d 970, 974 (9th Cir. 1991) (affirming worldwide preliminary injunction, even though alleged victim did not compete in all markets, and explaining that "a district court has considerable discretion in fashioning suitable relief and defining the terms of an injunction").[39]

Qualcomm offers no case in which an injunction was vacated simply because it governed conduct outside of the United States. The cases that it does cite are largely inapposite because they address whether, under the Foreign Trade Antitrust Improvements Act (FTAIA), predominantly foreign conduct or foreign injury is sufficient to state a claim or confer subject matter jurisdiction under the Sherman Act. The FTAIA concerns the substantive reach of the Sherman Act, not the scope of proper remedies. *See United States v. Hui Hsiung*, 778 F.3d 738, 751 (9th Cir. 2015). Qualcomm does not—and could not plausibly—contend that the

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[39] Contrary to assertions by Qualcomm and DOJ, the district court's injunction is entirely consistent with FTC and DOJ guidelines, which provide that the agencies will seek a remedy that includes foreign conduct to the extent necessary "to effectively redress harm or threatened harms to U.S. commerce and consumers." U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Guidelines For International Enforcement And Cooperation* at 47 (Jan. 13, 2017). DOJ itself has taken nearly identical positions in the past. Indeed, it has sought criminal sanctions for violations of decrees governing international conduct, explaining that a "worldwide" decree may be necessary to "protect competition in the United States." DOJ Brief in *United States v. Smith Int'l, Inc.*, 2000 WL 145129, at *1, 2000 U.S. Dist. LEXIS 434, (D.D.C. Jan. 13, 2000).

FTAIA allows it to escape liability in this case, and neither the FTAIA nor any other authority limits the geographic reach of a permanent injunction once liability is established.

3. Qualcomm's comity argument is both forfeited and meritless

Qualcomm asserts (Br. 126-29) that the district court's injunction is inconsistent with principles of comity because it is purportedly at odds with the actions of foreign regulators. Qualcomm "never presented this argument to the district court, and it is therefore waived." *Rodriguez v. Cty. of Los Angeles*, 891 F.3d 776, 808 (9th Cir. 2018). Qualcomm does not even acknowledge its failure to raise the issue below, much less identify any sound reason to overlook its waiver.

In any event, Qualcomm's belated comity argument is meritless. In claiming that the district court's injunction "conflicts with the decisions of foreign regulators" (Br. 128), Qualcomm ignores numerous determinations by foreign regulators that have consistently deemed its conduct anticompetitive. *See* 6ER1176-78. Instead, it offers just two examples, arguing (Br. 128) that Chinese and Taiwanese regulators have not *required* Qualcomm to make licenses available to modem chip suppliers. But it does not argue that any foreign regulator or law *prohibits* Qualcomm from doing so. Furthermore, the district court found that "Qualcomm was able to avoid" more stringent relief in China due to payments to the Chinese government. 6ER1178, 1386. And Qualcomm's reported settlement

with Taiwanese regulators occurred after the discovery cut-off and is outside of the record.[40] Qualcomm's comity argument thus reduces to the assertion that a U.S. district court, applying U.S. law, cannot enjoin a U.S. company from conduct that harms U.S. consumers if foreign regulators have not found that the same conduct violates foreign law.

Qualcomm cites no precedent requiring such a result, and its reliance on *Mujica v. AirScan Inc.*, 771 F.3d 580 (9th Cir. 2014), illustrates the lack of support for its position. That was a wrongful death suit brought by Colombian plaintiffs based on conduct by the Colombian military in Colombia. *Id.* at 584. The issues had already been litigated in Colombia, and both the United States and Colombia "explicitly requested" that the court decline to hear the case in deference to Colombia's interests. *Id.* at 615. This case, in contrast, is an enforcement action by a federal agency against a U.S. defendant whose anticompetitive conduct has harmed U.S. consumers, and no sovereign has raised any comity concern.

C. The District Court's Exclusive-Dealing Injunction Is Not Unduly Vague

There is no validity to Qualcomm's passing argument (Br. 115) that the order's prohibition of "de facto exclusive chip-sale agreements" is impermissibly

[40] Qualcomm has forfeited any challenge to the exclusion of post-discovery evidence regarding this settlement because it did not seek the admission of that evidence. Qualcomm only sought the admission of select post-discovery evidence relating to its recent licenses and OEMs' recent procurement decisions. 1ER235.

vague. This Court "will not set aside injunctions under Rule 65(d) unless they are so vague that they have no reasonably specific meaning." *Fortyune v. Am. Multi-Cinema, Inc.*, 364 F.3d 1075, 1087 (9th Cir. 2004) (internal quotation marks omitted). Here, the injunction makes clear what it means by "de facto exclusive-dealing agreements" by identifying specific agreements. 6ER1396 ("This remedy addresses … de facto exclusive dealing agreements with LGE, BlackBerry, Samsung, and VIVO; and offers of de facto exclusive dealing agreements to Motorola and Lenovo."). The court's opinion describes in considerable detail the nature of these agreements, including the critical feature that rendered them anticompetitive: They were not merely garden-variety discounts, but rather incentives conditioned on OEMs' acceptance of licensing terms that "helped maintain Qualcomm's unreasonably high royalty rates and surcharge on rivals' chips." 6ER1355. *See also* 6ER1216-18, 1245-46, 1226-28, 1272-73, 1235-42. The court's detailed discussion of these agreements places Qualcomm on fair notice of the prohibited actions.

D. The District Court Did Not Err In Declining To Hold A Second Evidentiary Hearing To Address The Remedy

Finally, the Court should reject DOJ's invitation (Br. 34-35) to vacate the injunction based on a procedural challenge that Qualcomm never raised below. The court made it clear throughout the proceedings that the trial would address both liability and remedy, and Qualcomm never objected. *See* 2SER0513 ("The

parties do not seek bifurcation of any issues."); 2SER0477-78; 1ER248 (trial will address "both liability and remedy").[41] That Qualcomm chose not to address arguments DOJ belatedly wishes to present does not make the process afforded to Qualcomm an abuse of discretion. As the court explained, unlike *Microsoft*, this case does not involve a situation in which the district court denied the defendant the opportunity to present evidence regarding any "acute factual disagreements" about a specific remedy that the plaintiff first proposed after trial. *Microsoft*, 253 F.3d at 98-99, 101; *see* 6ER1392-93. Neither Qualcomm nor DOJ cites any precedent requiring a separate remedial hearing in circumstances like these. The district court committed no abuse of discretion in its management of the trial.

[41] Qualcomm raised the possibility of bifurcation in a footnote in a case-management statement asking for additional trial days. 2SER0490 at 10 n.3. The court added additional trial days but rejected the suggestion of a separate hearing on remedy, and Qualcomm never argued that it would be prejudiced by trying the issues together. *See* 2SER0477-78.

CONCLUSION

The Court should affirm the district court's judgment.

November 22, 2019

Respectfully submitted,

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STATEMENT OF RELATED CASES

The FTC concurs with Qualcomm's statement of related cases.

CERTIFICATE OF COMPLIANCE

This brief contains 26,118 words, excluding the items exempted by Federal Rule of Appellate Procedure 32(f). The brief's type size and typeface comply with Federal Rule of Appellate Procedure 32(a)(5) and (6). I certify that this brief is accompanied by a motion to exceed the type-volume limits under Ninth Circuit Rule 32-2(a).

November 22, 2019

/s/ *Brian H. Fletcher*
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CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing brief using the appellate CM/ECF system on November 22, 2019. All participants in the case are registered CM/ECF users, and service will be accomplished by the CM/ECF system.

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