

FOR PUBLICATION

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

In re: Google Play Store Antitrust
Litigation

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EPIC GAMES, INC., a Maryland
Corporation,

Plaintiff - Appellee,

v.

GOOGLE LLC; GOOGLE
IRELAND, LTD.; GOOGLE
COMMERCE, LTD.; GOOGLE
ASIA PACIFIC PTE, LTD.;
GOOGLE PAYMENT CORP.,

Defendants - Appellants.

EPIC GAMES, INC.,

Plaintiff - Appellee,

v.

No. 24-6256

D.C. Nos.
3:21-md-02981-JD
3:20-cv-05671-JD

OPINION

Nos. 24-6274
25-303

D.C. No.
3:20-cv-05671-JD

GOOGLE LLC; GOOGLE
IRELAND, LTD.; GOOGLE
COMMERCE, LTD.; GOOGLE
ASIA PACIFIC PTE, LTD.;
GOOGLE PAYMENT CORP.,

Defendants - Appellants.

Appeal from the United States District Court
for the Northern District of California
James Donato, District Judge, Presiding

Argued and Submitted February 3, 2025
San Francisco, California

Filed July 31, 2025

Before: M. Margaret McKeown, Danielle J. Forrest, and
Gabriel P. Sanchez, Circuit Judges.

Opinion by Judge McKeown

SUMMARY*

[Antitrust]

The panel affirmed a jury verdict and the district court's entry of a permanent injunction against Google in Epic

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

Games, Inc.’s antitrust lawsuit filed in response to Google’s removal of Epic’s *Fortnite* video game from the Google Play Store for noncompliance with its terms of service.

Google removed *Fortnite* from the Play Store after Epic embedded secret code into the app’s software so that players making in-app purchases would bypass the required payment-processing systems by which Google then charged 30% commission.

The jury found that Epic had proven the relevant product markets for Android app distribution and Android in-app billing services and a relevant geographic market of “worldwide excluding China.” The jury also found that Google violated both federal and California antitrust law by willfully acquiring or maintaining monopoly power in those markets, unreasonably restraining trade, and unlawfully tying use of the Play Store to Google Play Billing. The district court entered a three-year injunction that prohibits Google from providing certain benefits to app distributors, developers, original equipment manufacturers, or carriers in exchange for advantaging the Play Store.

The panel rejected Google’s claim that a decision in Apple’s favor in a lawsuit Epic filed at the same time against Apple precludes Epic from defining the market differently in this case.

The panel held that the district court did not abuse its discretion in proceeding with a jury trial on Epic’s equitable claims and Google’s damages counterclaims.

The panel held that the district court did not abuse its discretion in declining to give a single-brand aftermarket jury instruction or in its framing of a Rule of Reason instruction.

The panel held that the injunction was supported by the jury's verdict as well as the district court's own findings.

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OPINION

McKEOWN, Circuit Judge:

In the world of adrenaline-fueled survival that epitomizes the video game *Fortnite*, winners are decided in blazes of destruction and glory. By contrast, the outcome of this case—centered on *Fortnite*’s developer, Epic Games, and the Google Android platform—turns on longstanding principles of trial procedure, antitrust, and injunctive remedies.

In 2018, videogame developer Epic Games released its immensely popular cross-platform game *Fortnite* as a smartphone app. For two years, Epic sought to distribute the game through direct mobile downloads from its website and through Samsung’s Galaxy Store. In 2020, after Epic “realized that Google Play was the only hope that [Epic] had for actually reaching users,” Epic reluctantly decided to offer the *Fortnite* app on both the Google Play Store (which operates on the Android operating system) and the Apple App Store (which operates on the iOS operating system). *Fortnite* is offered as a free download; the game generates revenue for Epic via players’ purchase of special in-game features.

Shortly after *Fortnite*’s launch on the Apple App Store and Google Play Store, Epic embedded secret code into the app’s software so that players making in-app purchases would bypass the required payment-processing systems by which Apple and Google then charged 30% commission. Epic dubbed these circumvention efforts “Project Liberty,” part of its ongoing—and soon highly publicized—protest against mainstream app stores’ restriction of developers’ and users’ choices for app distribution and in-app billing.

Almost immediately, Google and Apple removed *Fortnite* from the Play Store and App Store for noncompliance with their terms of service. Epic responded by filing antitrust suits against both Apple and Google. The two suits proceeded separately. The suit against Apple was resolved in Apple’s favor.

Epic’s suit against Google followed. After a 15-day trial involving 45 witnesses, the jury found that Google had violated federal and state antitrust laws in the markets for Android app distribution and Android in-app billing services. The district court held extensive post-trial proceedings and then entered a permanent injunction against Google to restore market competition. We affirm the jury’s verdict and uphold the district court’s injunction.¹

Background

Smartphones have two key components: the physical hardware and the operating system. The operating system manages the interaction between the phone’s hardware resources and separate software applications (or “apps”) like TikTok and WhatsApp. Google and Apple own two popular operating systems: Android and iOS, respectively. Apple’s iOS system is tied to the Apple hardware and is designed to prevent independent modification, creating a “walled garden.” By contrast, Google’s Android system is publicly available and free for anyone to access, modify, and distribute. Google itself engineered and produced a line of smartphones that run on the Android system. But in

¹ In connection with these proceedings, we received amicus curiae briefs from an array of interested parties, including federal agencies, nonprofit organizations, corporations, and professional associations. The briefs were helpful to our understanding of this case, and we thank amici for their participation.

addition, Google also licenses Android to hundreds of original equipment manufacturers (“OEMs”) that make smartphones. Companies like Samsung and Motorola, for example, negotiate licenses to have Android pre-installed onto their products. As a result, Android runs on a variety of smartphones that are not Google-brand devices. All non-Apple smartphones sold worldwide, excluding China, use Android.

Apps are offered and installed separately from the operating system. But an app can only be installed on a device if it is compatible with that device’s operating system. Thus, iOS apps work only on Apple iPhones that run on iOS; Android apps work only on Android smartphones. The applicable operating system creates an “ecosystem” of app development, distribution, maintenance, and security.

Google, in addition to owning and primarily developing the Android operating system, owns and operates the Google Play Store (“Play Store”), a platform for distributing apps to Android users. The Play Store has an enormous catalog of more than two million apps. In two-sided markets like this one—where Android users and Android app developers (the “two sides”) rely on the platform as an intermediary for user-developer transactions—the platform benefits from significant network effects wherein “the value of the services that a two-sided platform provides increases as the number of participants on both sides of the platform increases.” *Ohio v. Am. Express Co.*, 585 U.S. 529, 535 (2018). Users are attracted to large catalogs, and developers are attracted to large user bases.

Google magnified these network effects and entrenched its dominant position in Android app distribution by its intentional efforts to frustrate users’ access to and use of

alternatives to the Play Store, such as developer websites as well as other Android app stores.

Although an Android app developer can enable potential users to download its apps directly from a developer-specific website (“direct downloading” or, as Google refers to it, “sideloading”), Google’s Android operating system creates “friction” that deters Android users from completing downloads this way. First, Android’s default settings disable direct downloading. Even those users savvy enough to change the default settings must then click through a series of “scare screens”—sometimes as many as 14—to complete a direct download. Some of these screens notified the user that the app was being downloaded from an “unknown source,” that the software could harm their device, and that the user was taking responsibility for any damage that might result from completing the download. Android’s scare screens do not reflect any security assessment of the intended download sources; these screens appear whether the intended download source is a trusted developer’s website or a hypothetical “illstealyourinfo.com.” Thus the “scare screens” operate as a deterrent to downloading apps other than directly via the Play Store.

Efforts to download *Fortnite* illustrate the practical import of barriers erected by Google. Android users had to successfully navigate more than 15 steps to complete a direct download of *Fortnite*. Such “friction” “degrad[ed] the quality of the download experience” from websites like Epic’s. Epic found that, of the Android users who initiated the process to download *Fortnite* directly, 35% abandoned the process after encountering Google’s “warning messages.”

In its dealings with OEMs, Google also sought to obstruct access to alternative app stores. Google's mobile contract, the Mobile Application Distribution Agreement ("MADA"), effectively required Android OEMs to preinstall the Play Store on the default home screen of their smartphones. Google's revenue-sharing agreements with a "premier tier" of these OEMs had the added effect of making the Play Store the *only* preinstalled app store on their phones. And Google's proposal to Samsung, denominated "Project Banyan," would have compensated an especially formidable OEM/app-distribution competitor to "drive down" its app-distribution market share and turn the Samsung Galaxy Store into a throughway for more Play Store traffic. Samsung's representatives expressly understood that the purpose of "Project Banyan" was to "[p]revent unnecessary competition [with the] store." As Epic's expert testified about these revenue-sharing arrangements, "these provisions, this conduct, disincentivizes" OEMs from competing with the Play Store.

When Epic suddenly posed a threat to the Play Store's dominance, Google went further still. In 2018, Epic initially told Google that it would not be introducing an Android version of *Fortnite* on the Play Store. Google feared that the game's off-Play launch could "legitimize" another Android app store and create "contagion" leading other software developers to leave the Play Store. To defend against that scenario, Google initiated Project Hug: a series of special agreements with 22 top game developers, including Activision (creator of the popular video game *Call of Duty*), under which the developers received cash payments and other benefits not to launch on any Android app store other than the Play Store.

Network effects, default settings and scare screens to deter direct downloads, plus strategic deals to limit the use of alternative stores proved a potent cocktail: As of 2020, the Play Store accounted for 95% of all Android app downloads in the United States, and more than 80% around the world (excluding China).

Google leveraged its significant market share in app distribution to maximize its profits from the Play Store. For instance, all developers offering apps on the Play Store are required by a Developer Distribution Agreement (“DDA”) to process in-app purchases using Google Play Billing and pay a hefty commission on nearly all in-app transactions.² As of 2021, the Play Store was turning a 71% operating profit.

Convinced that Google was abusing its power in the Android app distribution and in-app billing markets, Epic sued Google shortly after *Fortnite* was removed from the Play Store in August 2020 for violations under the Sherman Act, California’s Cartwright Act, and California’s Unfair Competition Law (“UCL”). Google counterclaimed for breach of the DDA. Between 2020 and 2023, additional claimants—other developers, consumers, and state attorneys general—sued Google for antitrust violations. All these related claims were consolidated into a single multidistrict litigation.

In 2021, the district court decided that all jury-triable issues common to the parties’ legal and equitable claims would be decided in a single jury trial. In April 2023, the

² Google originally set its 30% commission to match Apple’s service fee. Seven months after Epic filed its lawsuit, Google introduced programs that lowered the fee to 15% in limited circumstances.

court set a November 2023 trial date. But, between April and November, every plaintiff other than Epic settled, leaving for trial only Epic's antitrust claims for equitable relief and Google's counterclaims for damages. Epic's UCL claims were held for later ruling by the court, per the parties' joint submission.

On December 11, 2023, the jury returned a unanimous verdict in favor of Epic. On the antitrust claims, the jury found that Epic had proven the relevant product markets for Android app distribution and Android in-app billing services and a relevant geographic market of "worldwide excluding China." And the jury found that Google violated both federal and California antitrust law by willfully acquiring or maintaining monopoly power in those markets, unreasonably restraining trade, and unlawfully tying use of the Play Store to Google Play Billing. Although Google's counterclaims for damages initially were part of the trial, during trial the parties withdrew these claims from the jury and later settled them.

Remedies proceedings followed the trial, with extensive briefing and two evidentiary hearings. On October 7, 2024, the district court entered a permanent injunction and an explanatory order that also resolved Epic's UCL claim ("Order re: UCL Claim and Injunctive Relief"). The three-year injunction prohibits Google from providing certain benefits to app distributors, developers, OEMs, or carriers in exchange for advantaging the Play Store. It also mandates that Google allow developers offering apps on the Play Store to provide users with information about and access to alternative app billing, pricing, and distribution channels.

Apropos of the claims, the injunction includes "catalog sharing" and "app-store distribution" provisions. The first

requires that Google “permit third-party Android app stores to access the Google Play Store’s catalog of apps,” and the second requires Google to allow “the distribution of third-party Android app distribution platforms or stores through the Google Play Store.” Google was given eight months to comply with the catalog sharing and app-store distribution requirements. To review and resolve any issues that arose during that implementation process, the injunction also directed the creation of a three-person Technical Committee comprising members selected by both parties. Google appeals both the liability verdict³ and the injunction.⁴

Analysis

We begin with Google’s claim, which we reject, that the decision in the *Epic v. Apple* litigation precludes Epic from defining the market differently in this case. We then move to the jury issues, confirming that the district court did not abuse its discretion in proceeding with a single jury trial on Epic’s equitable claims and Google’s damages

³ In addition to challenging antitrust liability, Google argues that the UCL liability relies on the antitrust verdicts and thus rises or falls with those claims. Not so. The UCL forbids not only “unlawful” but “unfair” conduct, thus allowing for liability even when there is a failure to prove an antitrust claim, as we held in *Epic Games, Inc. v. Apple Inc.*, 67 F.4th 946, 1001 (9th Cir. 2023) (“Neither Apple nor any of its *amici* cite a single case in which a court has held that, when a federal antitrust claim suffers from a *proof deficiency*, rather than a *categorical legal bar*, the conduct underlying the antitrust claim cannot be deemed unfair pursuant to the UCL.”). Google’s attempt to tether the UCL claim to the antitrust claims is “foreclosed by California law.” *Id.* at 1001. The UCL claim survives independently of any antitrust liability.

⁴ Google filed a motion to stay the permanent injunction pending appeal. The district court granted a partial stay pending our resolution of that motion. The stay motion on appeal is denied as moot in light of our decision.

counterclaims. Nor did the district court abuse its discretion in declining to give a single-brand aftermarket jury instruction or in its framing of the Rule of Reason instruction. Finally, we affirm the district court's injunction, which was supported by the jury's verdict as well as the district court's own findings.

I. The *Epic v. Apple* Litigation Findings Are Not Preclusive

Market definition is a central and hotly contested aspect of nearly every antitrust case. Little wonder, then, that the parties have diametrically opposed views on this issue. Google claims that the relevant market determination in Epic's prior suit against Apple binds Epic here, whereas Epic maintains that there is no preclusive effect.

Reviewing *de novo*, we agree with the district court that the market definition in Epic's suit against Apple is not preclusive in this litigation. *Jacobs v. CBS Broad., Inc.*, 291 F.3d 1173, 1176 (9th Cir. 2002) (reviewing *de novo* district court's determination of preclusion). Google homes in on the finding in *Epic v. Apple* that Apple and Google are competitors in the market for "digital mobile gaming transactions." *See Epic Games, Inc. v. Apple Inc.*, 559 F. Supp. 3d 898, 921 (N.D. Cal. Sept. 10, 2021), *aff'd* 67 F.4th 946, 981 (9th Cir. 2023) (affirming on the issue of market definition).⁵ That single determination, however, does not

⁵ Google's issue-preclusion argument bookended its advocacy before the district court. Before trial, the district court determined that Google's preclusion argument was untimely and without "good cause excusing the delay." The court emphasized that the matter should have been raised on summary judgment but concluded that issue preclusion was not appropriate in any event. Google does not challenge these rulings on

preclude an independent analysis of the very different relationship between Epic and Google, the relevant submarket in the Android platform, or the distinct market-definition issues in the two suits.

A. The *Apple* Litigation: Trial and Appeal

Filed on the same day as Epic’s case against Google, Epic’s case against Apple proceeded first in time before Judge Gonzalez Rogers in the Northern District of California. The two parties offered competing definitions of the relevant market, with Epic arguing for Apple’s total monopoly power in “an antitrust market of one,” and Apple proposing a broader market including “all digital video games.” *Apple*, 559 F. Supp. 3d at 921.

The district court ultimately ascertained a market of “digital mobile gaming transactions.” *Id.* at 921, 954–55, 1021–26. From there, the court found that Apple exercised a “considerable” but not necessarily monopolistic level of market power, in part because the company had to compete with Google. *Id.* at 1030–32. These determinations supported the conclusion that Apple was not liable on any of the federal antitrust causes of action, though the court found that Apple violated California’s UCL and entered an injunction against Apple’s use of anti-steering provisions to keep consumers from transacting outside the App Store’s payment processing systems. *Id.* at 1052–59.

Epic and Apple cross-appealed, and we affirmed on all substantive issues. *Apple*, 67 F.4th at 966. Though we agreed with Epic that the district court erred in categorically rejecting its proposed iOS foremarket, we deemed that error

appeal. Google’s timely post-trial motion under Rule 52 preserved the preclusion issue.

harmless in light of Epic’s failure to demonstrate consumers’ lack of awareness about the alleged aftermarket restrictions. *Id.* at 978, 979, 980–81. Importantly, “Apple offered non-pretextual, legally cognizable procompetitive rationales for its app-distribution and [billing] restrictions.” *Id.* at 985. And, as we held, “[e]ven assuming Apple has monopoly power, Epic failed to prove Apple’s conduct was anticompetitive.” *Id.* at 999. Apple’s challenges to the UCL ruling and remedy fell short. We further held that federal antitrust doctrine did not preclude liability for anti-steering provisions under state law; that the district court did not clearly err in finding that Epic had suffered irreparable harm; and that a nationwide injunction did not constitute an abuse of discretion “because the scope [wa]s tied to Epic’s injuries.” *Id.* at 1002–03. We reversed only with regard to Epic’s contractual obligations to pay attorneys’ fees. *Id.* at 1003–04.⁶

B. Issue Preclusion Requirements Are Not Met

Google now seeks to preclude Epic’s suit in light of the *Apple* judgment and decision. Issue preclusion requires that “(1) the issue at stake was identical in both proceedings; (2) the issue was actually litigated and decided in the prior proceedings; (3) there was a full and fair opportunity to litigate the issue; and (4) the issue was necessary to decide the merits.” *Love v. Villacana*, 73 F.4th 751, 754 (9th Cir. 2023) (citation and internal quotation marks omitted). Google’s preclusion argument fails at both the first and

⁶ On April 30, 2025, the district court issued an order finding that Apple had failed to comply with the injunction and that “Apple’s continued attempts to interfere with competition will not be tolerated.” Order Granting Epic Games, Inc.’s Motion to Enforce Injunction, 4:20-CV-05640-YGR, 2025 WL 1260190, at *1 (N.D. Cal. Apr. 30, 2025).

second steps because the market definition question was neither identical to the issue in this case nor litigated and decided in *Apple*. The difference in the market-definition issues is the death knell for Google’s argument.

It is well established that the relevant market “can be determined only after a factual inquiry into the ‘commercial realities’ faced by consumers.” *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 482 (1992) (citing *United States v. Grinnell Corp.*, 384 U.S. 563, 572 (1966)). This case-by-case inquiry underlies the principle that relevant markets are not independent, freestanding entities defined in a vacuum. Our sister circuits recognize that “the nature of the claim can affect the proper market definition” and counsel that courts “remember[] to ask, in defining the market, *why* we are doing so: that is, what is the antitrust question in this case that market definition aims to answer?” *United States Healthcare, Inc. v. Healthsource, Inc.*, 986 F.2d 589, 598 (1st Cir. 1993). Recently, we endorsed this principle in concluding that the “market definition must be relevant to the theory of harm at issue.” *Teradata Corp. v. SAP SE*, 124 F.4th 555, 570 (9th Cir. 2024) (internal quotation marks omitted).

It follows from the logic of *Kodak* and *Teradata* that the market-definition issue in Epic’s two lawsuits was not “identical” for the purposes of issue preclusion, because Epic’s claims against Apple involved meaningfully different commercial realities and theories of harm from its claims against Google. In short, we conclude that “the issue at stake” was not identical in the two cases.

To begin, the commercial realities are different. Apple’s “walled garden” is, as the district court in *Apple* noted, markedly different from Google’s “open distribution”

approach. 559 F. Supp. 3d at 1036–40. Google admits as much, noting that “Android’s open philosophy offers users and developers wider choices” than iOS does, even as that openness “limit[s] Google’s ability to directly protect users from encountering malware and security threats when they download apps.” As a consequence of its business model, Apple does not license iOS to other OEMs in the way that Google licenses Android to Samsung, Motorola, and other smartphone manufacturers. Indeed, because Apple manufactures its own phones, Apple effectively has no relationship with other OEMs. Apple’s “walled garden” also creates different dynamics in app distribution channels. Apple’s iPhones do not support any third-party app stores, and iOS disables direct downloads of apps from the web. *See id.* at 1005 (“Apple currently prevents direct distribution from the web using technical measures.”).

The theories of harm in the two cases are also different. Epic articulated theories of harm against Apple that it did not bring against Google. Because Apple vertically integrates its hardware, iOS operating system, and app store, a consumer locked in through any one part of the stack is, in effect, locked into the entire system. Therefore, numerous Apple-unique product features were relevant to Epic’s theory of harm—from the “stickiness” of iMessage to the overall “speed and reliability provided by iPhones”—because those features increased consumers’ switching costs. *Id.* at 957–60 (“Apple’s evidence strongly suggests that low switching between operating systems stems from overall satisfaction with existing devices, rather [than] any ‘lock-in.’”); *see also, e.g.*, 4:20-cv-05640-YGR, Dkt. #616 (Epic’s opening statement), p. 11–13. Epic also complained that Apple’s agreements with developers precluded Epic from distributing or creating third-party app stores—conduct

not at issue in the Google litigation. At the time of trial, there were no competing app stores on iOS.

The difference in the markets also led Epic to articulate theories of harm against Google that were not brought against Apple. For example, Epic alleged that Google’s conduct—requiring OEMs to install Google Play on the home screen of every device the OEM makes—had harmed Epic. Because Apple does not license its operating system to other OEMs, this type of alleged anticompetitive behavior was simply not at issue in the *Apple* litigation. Epic also alleged that Google made deals to keep other app stores off OEMs’ home screens. Because Apple’s iPhones preclude third-party app stores altogether, these strategic dealings were not at issue. As Google’s attorney articulated in a 2023 hearing before the district court: “For . . . iPhones, there’s only one App Store. There always has been only one App Store. That’s not true in Android. So there’s a difference that already exists, a fundamental difference, an important difference for this case.” Nor—for much the same reason—was there evidence in the *Apple* litigation of alleged monopolistic agreements with app developers to refrain from offering their apps on any other app store, or evidence of Apple manipulating its operating system to deter direct downloads.

These are not fringe issues. These are the issues that formed the core of the market definition in each suit. As the district court noted, “[Epic] took a wholly different approach for the antitrust claims against Google, and offered wholly different evidence about relevant markets than that offered in the case against Apple.” Even Google’s own digital markets expert did not initially seek to define a market analogous, let alone identical, to the one that Apple sought

in *Apple* or the market defined by the district court in that case.

It is of little consequence that Apple and Google were previously found to compete in the market for “digital mobile gaming transactions” in the *Apple* litigation. 559 F. Supp. 3d at 921. The Google trial focused on gaming *within* the Android ecosystem. That the markets in this case—for Android app distribution and Android in-app billing—overlap with or may constitute submarkets of the “digital mobile gaming transactions” market does not make them identical markets. Recognizing distinctions between overlapping markets is not “inherently contradictory.” *Olin Corp. v. FTC*, 986 F.2d 1295, 1301 (9th Cir. 1993) (establishing a relevant submarket for chemical compounds was not inconsistent with a broader market for pool sanitizers).

This framing also conforms to the real-world experience of overlapping markets and submarkets. For example, McDonald’s might compete against Chick-fil-A in the fast-food market yet not compete against Chick-fil-A in the *hamburger* fast-food market (and instead compete with Wendy’s, Burger King, Sonic, and In-N-Out Burger). Although Google and Apple compete for mobile-gaming downloads and mobile-gaming in-app transactions, they do not compete in the Android-only app distribution and in-app billing markets, where Google competes against Samsung, Amazon, and others.

Google’s argument is further at odds with Section 2 of the Sherman Act, which prohibits monopolization of submarkets—“any *part* of the classes of things” forming U.S. trade or commerce—as much as it prohibits monopolization of broader markets. *Ind. Farmer’s Guide*

Publ'g Co. v. Prairie Farmer Publ'g Co., 293 U.S. 268, 279 (1934) (emphasis added). As the Department of Justice (“DOJ”) Antitrust Division and the Federal Trade Commission (“FTC”) emphasize in their amicus brief, “[j]ust because parties compete in one market does not mean, as a matter of law, that there cannot be a narrower or overlapping market in which the parties do not compete.” This lesson follows Supreme Court guidance that “within [a] broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes.” *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). To conclude otherwise would effectively render a court’s definition of a given market a universal ban on antitrust action in any market within or overlapping that market. Consistent with the Supreme Court’s interpretation of the Sherman Act, we decline to hamstring antitrust jurisprudence in this way.

At bottom, Google’s preclusion argument fails due to the absence of an identical issue.⁷ The *Apple* litigation involved market realities and theories of anticompetitive harms that were separate and distinct from those involved in this case. Epic’s allegations against Google required an independent analysis to determine the relevant market. And the harm-

⁷ Even if issue preclusion were available, we would review for abuse of discretion the district court’s decision not to apply the doctrine. *SEC v. Stein*, 906 F.3d 823, 828 (9th Cir. 2018). Despite the parties’ heated debates over market definition, and the fact that the appeal in *Apple* was decided on April 24, 2023, Google waited until less than six weeks before trial to raise issue preclusion. Given that expert testimony and other fact evidence on the critical issue of market definition had been fully developed by that time, this delay amply supports the district court’s exercise of its discretion to decline application of issue preclusion.

specific market definition applicable here was not “actually litigated” or “decided” in *Apple. Love*, 73 F.4th at 754.

II. Denying Google’s Motion to Bifurcate and Holding a Jury Trial Was Not an Abuse of Discretion

Throughout the litigation, both sides repeatedly changed their positions on the availability and propriety of a jury trial and whether the trial should be bifurcated into separate jury and bench trials. What remained constant was the district court’s message that there would be one jury trial for all common issues and that there was considerable overlapping evidence on equitable and legal issues: “I have said from Day One, there will not be multiple jury trials. It’s going to be one and done for everything.” Just before trial was set to begin, Google asked for a bench trial on Epic’s antitrust claims but maintained its demand for a jury trial on its counterclaims. Google now claims the court erred in holding a single jury trial. We conclude that the district court did not abuse its discretion in declining to bifurcate the trial and holding a combined jury trial on both the legal and equitable issues.

A. The Winding Road to the Jury Trial

Epic’s complaint against Google sought only injunctive relief. In response, Google filed contract counterclaims seeking damages and demanded a jury trial on all jury-triable claims. Epic’s Answer to Google’s Counterclaims denied Google’s entitlement to a jury trial.

During the discovery period, the parties had ongoing discussions regarding the configuration of trial. For example, as early as December 16, 2021, Epic suggested it should have a partially separate trial from the other plaintiffs. The district court rejected that approach.

The parties, which then included numerous plaintiffs, eventually coalesced around the idea of a jury trial on virtually all claims, including Epic’s antitrust claims. In May 2023, the parties filed a Joint Submission Regarding Trial Proposal agreeing “that all claims by all Plaintiffs are triable to a jury” (except for certain state law claims) and that Google’s counterclaims against Epic should be tried to the same jury. At this stage, the litigation included plaintiffs like Match that, unlike Epic, sought damages.

In July 2023, Epic and Match filed a motion to bifurcate Google’s counterclaims and hold a separate trial on those claims. Google opposed bifurcation, arguing substantial overlap in evidence between its counterclaims and its defenses against Epic’s antitrust claims. Siding with Google, the district court denied the motion to bifurcate.

Prior to October 2023, as the litigation rolled on, some plaintiffs settled with Google. On October 12, the States and the putative consumer class settled, leaving only Match and Epic asserting claims against Google. During a hearing that same day, Google raised the prospect of a bench trial on Epic’s claims if a settlement with Match was reached, though Google reiterated its demand for a jury trial on its counterclaims against Epic. The district court held a pretrial conference on October 19 and, in its order on October 20, confirmed the case would proceed by jury trial, directing the parties to submit updated jury instructions by October 25.

On Halloween, less than two weeks later, Google alerted the district court that it had settled with Match. The district court immediately ordered briefing on the impact of the settlement on the jury trial. Google’s Statement on a Non-Jury Trial argued for a bench trial on Epic’s claims and defenses. Google also stated it had offered to consent to a

bench trial on its counterclaims, but Epic declined to consent. Given Epic's refusal, Google thus sought bifurcation, arguing its counterclaims should be tried to a jury first, followed by a bench trial on Epic's claims. Epic argued for a jury trial on its antitrust claims based on Google's implied consent, Epic's reliance on Google's earlier representations regarding a jury trial, how "factually intertwined" the antitrust claims were with the jury-triable counterclaims, and the prejudice Epic would face in altering its "ongoing preparation of its case and witnesses" at the last minute. On November 2, 2023, the district court denied Google's request for bifurcation.

The jury trial began on November 6, 2023. The jury heard evidence regarding both Epic's antitrust claims and Google's counterclaims. However, during the final stretch of trial, the parties stipulated that Epic had violated the DDA agreement with the Play Store by incorporating its own payment solution into *Fortnite* during "Project Liberty" and therefore Epic owed "\$398,931.23 in fees that Google" would otherwise have received. Thus, when instructed by the district court on December 11, the jury was told not to consider the counterclaims. On August 19, 2024, long after the trial had concluded, Epic agreed to pay Google to resolve the counterclaims.

B. The District Court Had Discretion to Deny the Motion to Bifurcate

Because Google's counterclaims were headed to the jury, but Google wanted Epic's claims and defenses tried to the bench, Google's Statement on a Non-Jury Trial is best construed as a motion to bifurcate. In pressing for a bifurcated trial, Google urged that a jury trial on Epic's antitrust claims was improper because Google had

withdrawn consent to a jury on those claims. That argument runs into several roadblocks due to the intersection of three federal rules of civil procedure: Rule 38(b)—Right to a Jury Trial; Rule 39—Trial by Jury or by the Court; and Rule 42(b)—Consolidation; Separate Trials. Ultimately, under the circumstances here, Google’s demand for a bench trial fails because its claims are so factually intertwined with Epic’s equitable claims.

Under Rule 38(b), a jury trial demand may be made “[o]n any issue triable of right by a jury.” Fed. R. Civ. P. 38(b). At the outset of the case, Google made a proper jury demand on its counterclaims under Rule 38. The counterclaims sought damages for alleged breach of contract, making them quintessential legal claims triggering the right to a jury. *See Dairy Queen, Inc. v. Wood*, 369 U.S. 469, 477–78 (1962). About six months before trial, the parties jointly proposed that all the plaintiffs’ federal claims and Google’s counterclaims be tried to the same jury. Both Epic and Google reiterated that position in the pretrial conference, as reflected in the court’s October 20 pretrial order. That order confirmed a jury trial and deadlines for submission of jury instructions.

Having made a proper jury demand under Rule 38(b), Google was bound by the strictures of the rule. Rule 38(d) provides that such a demand “may be withdrawn *only if the parties consent*.” Fed. R. Civ. P. 38(d) (emphasis added). But here there was no consent. Although Google sought at the last minute to withdraw its demand for a jury and try its counterclaims to the bench, Epic was within its rights under Rule 38(d) to decline to consent to this change.

Though Google emphasizes that it withdrew its consent to a jury trial on Epic’s antitrust claims, its counterclaims

against Epic for damages remained subject to the earlier jury demand. Importantly, the operative question under the federal rules is whether a jury trial has been demanded for a particular *issue*. Fed. R. Civ. P. 38(b) (“issue triable of right by a jury”), (c) (“may specify the issues”), 39(a) (“all issues so demanded”), (b) (“jury trial on any issue”), (c) (“try any issue by a jury”). Although Rule 39(a) suggests that, once a jury demand is made, the entire action is to be docketed as a “jury action,” it also clarifies that a jury trial will be held on the “issues so demanded,” and that the court can decline a jury demand as to any issues on which it finds there is no right to a jury on “some or all of th[e] issues.” Fed. R. Civ. P. 39(a); *see also* Fed. R. Civ. P. 39(b) (providing that even where a jury demand is not made, the court may “order a jury trial on any issue for which a jury might have been demanded”). Holistically, the civil rules implement the constitutional right to jury trial on a claim-by-claim basis. *See* Fed. R. Civ. P. 38 advisory committee’s note to 1937 amendment (stating Rules 38 and 39 preserve the Seventh Amendment right to a jury).⁸

⁸ Google’s citation to cases stating a party can unilaterally withdraw its consent to a jury trial under Rule 39(c)(2)—which assumes an action *not* triable of right by a jury—is inapposite, given Google’s jury demand on the issues underlying both its counterclaims and Epic’s antitrust claims. Additionally, in each of the cases cited by Google, by the time of trial, all that remained were equitable issues. *See FN Herstal SA v. Clyde Armory Inc.*, 838 F.3d 1071, 1089 (11th Cir. 2016) (“When no right to a jury trial exists and where no prejudice will result, a party may unilaterally withdraw its consent to a jury trial.”); *Kramer v. Banc of Am. Sec., LLC*, 355 F.3d 961, 968 (7th Cir. 2004) (allowing a defendant to withdraw consent when there was no right to jury trial); *CBS Broad., Inc. v. EchoStar Commc’ns Corp.*, 450 F.3d 505, 517 n.25 (11th Cir. 2006) (concluding it was not reversible error to strike a jury trial demand days

Confronted with a jury demand on the counterclaims, which presented issues closely intertwined with Epic’s antitrust claims, the district court faced a choice about how to proceed. And its decision is reviewed in part for its conformity to the “usual practice” under the federal rules, a principle recently reiterated by the Supreme Court: “when a factual dispute is intertwined with the merits of a claim that falls under the Seventh Amendment, that dispute should go to a jury.” *Perttu v. Richards*, 605 U.S. ----, No. 23-1324, 2025 WL 1698783, at *6 (U.S. June 18, 2025). Addressing an affirmative defense “intertwined” with the merits, the Court harkened back to *Dairy Queen, Inc.*, in which “the district judge erred in refusing . . . [a] demand for a trial by jury” where the plaintiff brought legal and equitable claims based on “common” “factual issues.” 369 U.S. 469, 479 (1962). As the Court held in *Beacon Theaters*, the right to have a jury decide legal issues cannot be compromised by a court first deciding equitable issues, absent extraordinary circumstances. 359 U.S. 500, 510 (1959). This principle is salient to our reading of the federal rules and of the district court’s decision here to follow “the usual practice of the federal courts in cases of intertwinement” and “send common issues to the jury.” *Perttu*, 2025 WL 1698783, at *10.

This was a classic case of intertwinement. The factual issues underlying Google’s legal counterclaims overlapped and intertwined extensively with the factual issues underlying Epic’s equitable antitrust claims. Google itself

before trial where the plaintiffs sought purely equitable relief and no legal claims remained in the case). That was not the posture here, where there were equitable claims, legal claims, and a jury trial demand on factual issues underlying both sets of claims.

had previously taken the position that it would “present much of the same evidence” on its counterclaims as it would in “defending against Plaintiffs’ antitrust case.” This evidence included Google’s justifications for requiring the use of Google Play Billing for all developers offering apps on the Play Store, as well as the “trust and safety concerns” motivating “the notifications and consent screens that are displayed when users attempt to” directly download apps “rather than download them from an app store.” Google argued that its counterclaims turned on the same facts regarding in-app billing and app-distribution that were the underpinning of Epic’s antitrust claims. In Google’s words, “the factual overlap between the counterclaim evidence and the antitrust claims” was “extensive.”

Most prominently, Epic’s illegality defense to Google’s counterclaims centered on the issues of whether Google’s contracts had violated the antitrust laws and whether Google had sufficient procompetitive justifications for its conduct. These same issues were at the core of Epic’s antitrust claims. The district court’s decision thus fully conformed with the “usual practice” outlined in *Perttu* and *Dairy Queen*.

Again, the district court was thus presented with a decision on the eve of trial: to bifurcate and hold two trials—deciding in a bench trial those issues that were not jury-demanded—or send Epic’s antitrust claims together with Google’s counterclaims to the jury. (Despite Google’s opposition to a jury hearing Epic’s antitrust claims, Google never asked for the jury to be advisory only—under Rule 39(c)(1)—to address its concern: it was bifurcation or bust.)

Rule 42(b) permits, but does not require, separate trials “[f]or convenience, to avoid prejudice, or to expedite and economize.” Fed. R. Civ. P. 42(b). It has long been the case

that while “[t]he jury and nonjury issues may be tried separately . . . that is not required The matter is within the trial court’s discretion as long as the order of trial is arranged so that it preserves the jury right on the jury triable issues.” Wright & Miller, *Fed. Prac. & Proc.* § 2337; see also *Beacon Theatres*, 359 U.S. at 508–10 (noting the trial court’s discretion to arrange cases so long as the jury right is preserved); *Ammesmaki v. Interlake S. S. Co.*, 342 F.2d 627, 631 (7th Cir. 1965) (“A single trial tends to lessen delay, expense, and inconvenience. The granting of separate trials rests in the discretion of the trial judge. Rule 42(b) obviously is not mandatory. For this reason [defendant] cannot now be heard to complain about the district court’s denial of the motion for separate trials.”). By sending all the issues to a jury, the district court ensured that no jury right was jeopardized—and simultaneously managed the trial in the spirit of economy.

Trial bifurcation is a question soundly within the district court’s judgment: “We review for abuse of discretion the district court’s rulings on whether to bifurcate a trial,” and “we usually affirm a trial judge’s decision.” *Huizar v. City of Anaheim (Estate of Diaz)*, 840 F.3d 592, 601 (9th Cir. 2016) (citation omitted). The district court was well within its discretion to deny bifurcation because of the overlap in factual disputes raised by the counterclaims and antitrust claims explained above. The court’s decision is supported by Google’s own representations. In its earlier opposition to bifurcation, Google argued that Match and Epic failed to “carry their burden to show that bifurcation would promote efficiency.” The district court agreed with Google that bifurcation was unwarranted and thus found it “particularly significant” that on the eve of trial Google made a complete about-face to argue *for* bifurcation, after having “expressly

represented to the Court that the facts underlying plaintiffs’ antitrust claims and Google’s counterclaims overlap in substantial measure” only a few months before. Google never explains what facts changed to suddenly invert the equation and render bifurcation most efficient. Fed. R. Civ. P. 42(b) (allowing bifurcation “to expedite and economize”). And Google would be hard pressed to offer a credible justification: the focus of the antitrust claims and Epic’s illegality defense to the counterclaims centered on many of the same facts and arguments.

By the time of trial, the litigation had long proceeded on the understanding that a single trial would take place, to which both Epic and Google had explicitly agreed. And the district court declined to conduct separate proceedings on the parties’ claims because it concluded that Google did not effectively withdraw its prior consent to a jury trial on Epic’s equitable claims. We do not need to address this additional withdrawal-of-consent issue. The district court’s ultimate decision was consistent with “the usual practice of the federal courts in cases of intertwinement.” *Perttu*, 2025 WL 1698783, at *10. For that reason, we conclude that the district court did not abuse its broad discretion in denying Google’s request to bifurcate.

III. The District Court Did Not Err in Instructing the Jury

A. A Jury Instruction on Single-Brand Aftermarkets Was Not Warranted

This case was never framed by either party as involving single-brand aftermarkets. So, it is no surprise that the district court declined to instruct the jury on this principle when Google raised it well into trial. Although we review de novo whether a jury instruction accurately states the law,

“whether an instruction should be given in the first place depends on the theories and evidence presented at trial” which “is mostly a factual inquiry” that “we typically review . . . for abuse of discretion.” *United States v. Heredia*, 483 F.3d 913, 921 (9th Cir. 2007). Under either standard, the district court did not err in declining to give the proposed instruction.

A single-brand aftermarket is a market in which a consumer is “locked in” with a single brand and “demand for a good is entirely dependent on the prior purchase of a durable good in a foremarket.” *Apple*, 67 F.4th at 976 (emphasis removed). The seminal example comes from *Kodak*, where once customers purchased Kodak photocopiers or other equipment in the foremarket, they were “locked in” to an aftermarket of Kodak parts and servicing. 504 U.S. at 476.

Google requested a jury instruction explaining the burdens a plaintiff must carry⁹ to prove a single-brand aftermarket. But a single-brand aftermarket theory was not presented at trial. Not only did Epic never argue for single-brand aftermarkets, but Google also never framed the market this way. Instead, Google’s expert testified, “what this market is about is that app developers and app users want their . . . digital interactions[] to go well.” As the district court pointed out, “[n]obody in this case . . . has said a word about it, including [Google’s] own experts . . . none of your

⁹ “[T]o establish a single-brand aftermarket, a plaintiff must show: (1) the challenged aftermarket restrictions are ‘not generally known’ when consumers make their foremarket purchase; (2) ‘significant’ information costs prevent accurate life-cycle pricing; (3) ‘significant’ monetary or non-monetary switching costs exist; and (4) general market-definition principles regarding cross-elasticity of demand do not undermine the proposed single-brand market.” *Apple*, 67 F.4th at 977.

experts . . . said a peep about a proposed relevant market being based on a for[e]-market and after-market theory.” Because that theory lacks a “foundation in the evidence,” Google was not entitled to the instruction. *Heredia*, 483 F.3d at 922. It was also “within the district court’s discretion to refuse to give the requested instruction because the instruction could have confused the jury.” *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 917 (9th Cir. 2008).

The same evidentiary void sinks the proposed instruction under de novo review. Regardless of the parties’ framing or terminology, the facts presented at trial do not meet the legal definition of a single-brand aftermarket so as to warrant Google’s proposed instruction. The foremarket of durable goods in this case would be the market for smartphones that run the Android operating system. The “undisputed evidence showed at trial” that these durable goods “are manufactured by many companies, including Google, Samsung, Motorola, OnePlus, Xiaomi, and other OEMs.”

Multiple brands are also at play in the aftermarkets for app distribution and in-app payments on Android-compatible smartphones. The district court summarized that “[s]ubstantial evidence was presented at trial that multiple Android app stores can be, and on occasion have been, available to consumers.” Indeed, “Google’s efforts to suppress rival app stores” like Samsung’s Galaxy Store, and maintain Play Store dominance, were a focal point during trial. Because Google licenses the Android operating system directly to OEMs rather than consumers, and because Play Store alternatives exist for Android app distribution and in-app payments, the reality is that consumers might not transact with Google in either the foremarket or aftermarket, making it difficult to argue that they are “locked in” to that brand.

By contrast, Apple’s vertical integration made it a strong candidate for a single-brand aftermarket theory, as Epic explicitly argued in the *Apple* litigation. 67 F.4th at 978. Consumers using iOS have necessarily purchased an Apple product (*i.e.*, iPhone) from Apple and are then locked into a “walled garden” with Apple’s App Store. In that litigation, however, Epic failed to meet the burden imposed on plaintiffs asserting a single-brand aftermarket, including proving that consumers were unaware of aftermarket restrictions. *Id.* at 980–81. Google now argues for imposing those same burdens here in hopes of receiving the same result, but we are comparing *Apple* to oranges: Epic never argued for a single-brand Google aftermarket, nor does Android operate the same way as Apple.

Advocating for single-brand aftermarkets is another attempt by Google to flatten the entire Android ecosystem into one brand that competes against one other brand—Apple. But the crux of this case is Google’s anticompetitive conduct vis-à-vis many different brands *within* the Android ecosystem. Given that the markets for Android app distribution and in-app payment systems are not single-brand aftermarkets, and no such theory was proposed by either party during trial, the district court did not err in denying Google’s request for a single-brand aftermarket instruction.

B. The Rule of Reason Does Not Require Consideration of Procompetitive Benefits Across Markets

In its effort to cast this case as a Google-versus-Apple struggle for market share, Google tries to sidestep the focus of the case presented to the jury, namely that Google improperly monopolized and restrained trade within the

Android app markets. This theme resurfaces in another jury instruction dispute. It has long been understood that “the Rule of Reason is the presumptive mode of analysis” for both Section 1 and Section 2 of the Sherman Act. Irving Scher & Scott Martin, *Antitrust Adviser* § 2:12 (5th ed. 2023). The rule requires the plaintiff to first show the challenged conduct had an adverse effect on competition and then considers whether any procompetitive benefits are outweighed by anticompetitive effects. *Id.* Google argues that the jury instruction for Rule of Reason Step 2 improperly limited the jury’s consideration of procompetitive benefits of the challenged conduct to the “relevant market,” instead of allowing the jury to also consider *related* markets.¹⁰ Yet again, Google’s concern is that its competition with Apple should have been a focus for the jury, despite Epic defining Android-only markets.

Specifically at issue is an instruction directed only to the Section 2 Sherman Act (monopolization) claim. If the jury determined at Step 1 of the Rule of Reason that Epic proved Google’s conduct caused substantial harm to competition in a relevant market, then the jury should decide “whether Google has justified its conduct by proving that its conduct was reasonably necessary to achieve competitive benefits for *consumers in that relevant market.*” We review *de novo* whether that jury instruction accurately states the law. *Spencer v. Peters*, 857 F.3d 789, 797 (9th Cir. 2017)

¹⁰ Google also argues the instructions improperly allowed the jury to balance pro- and anticompetitive effects at Step 3 of the Rule of Reason, rather than proceeding to a fourth Step. But “Google acknowledges that [our precedent in *Apple*] forecloses this argument before [this] panel.” *See also* 67 F.4th at 993–94 (“Supreme Court precedent neither requires a fourth step nor disavows it” and the Rule of Reason steps are not a “rote checklist.”). The district court did not err in its balancing instruction.

(quoting *Wilkerson v. Wheeler*, 772 F.3d 834, 838 (9th Cir. 2014)).

To begin, it is not settled case law that a jury is required to consider cross-market procompetitive benefits when conducting Rule of Reason analysis. In *Apple* we concluded that “[t]he Supreme Court’s precedent on this issue is not clear,” citing cases going both ways, and noting that “[o]ur court’s precedent is similar” and “we have never expressly confronted this issue.” 67 F.4th at 989. Google itself acknowledges that “the Supreme Court has recently indicated that the question [of cross-market procompetitive justifications] remains open,” citing *National Collegiate Athletic Association v. Alston*, 594 U.S. 69, 87 (2021), where the Court “express[ed] no views” on the issue. *Id.* Because consideration of cross-market competitive benefits is an open question and not an established legal requirement, it was not error for the district court to exclude it from the jury instruction.

In any event, should the Supreme Court ultimately impose such a rule, any error in the instruction was harmless. *See Swinton v. Potomac Corp.*, 270 F.3d 794, 805–06 (9th Cir. 2001) (holding that reversal is not warranted where “the error is more probably than not harmless.”) (citation omitted). Throughout trial, Google presented the position that its restrictive practices were justified by its competitive battle with Apple. The Section 1 Sherman Act (restraint of trade) instruction imposed no limit on procompetitive considerations in other markets. It would be illogical to divine that the jury would have viewed the monopolization claim differently than it viewed the restraint-of-trade claim, on which the jury found against Google. *See FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (Rule of Reason analysis “essentially the same” for the two claims).

Jury instructions must be reviewed “as a whole.” *Skidmore v. Led Zeppelin*, 952 F.3d 1051, 1065 (9th Cir. 2020) (en banc). Under that standard, given the jury’s verdict and the strength of the evidence, any claimed error was harmless.

IV. The Permanent Injunction Is Valid

Following the jury’s verdict on December 8, 2023, the district court commenced post-trial proceedings that allowed each side “a virtually unlimited opportunity to present its views about the scope and content of an injunction.” Epic submitted a proposed injunction; Google responded with its objections; and the court extensively queried both parties and their many fact and expert witnesses. After two evidentiary hearings, twenty written submissions from the parties, and vigorous argument by counsel, the court entered a permanent injunction and issued findings of fact and conclusions of law in a separate order, which was supplemented by the court’s earlier denial of Google’s JMOL motion.

A. The Injunction’s Provisions

The injunction balances Epic’s proposals to remedy the antitrust violations against Google’s concerns about overbreadth, security, and implementation. Adopting a nationwide scope and halving Epic’s proposed six-year timeline to a period of three years, the injunction commenced on November 1, 2024, and extends for three years to November 1, 2027.¹¹

¹¹ Only one of the injunction’s provisions—prohibiting Google from paying smartphone manufacturers not to preinstall Play Store competitors on their devices—has taken effect. All other provisions were stayed pending appeal.

The court's order began by prohibiting anticompetitive arrangements that insulated the Play Store and Google Play Billing from competition. The injunction prohibits Google from sharing Play Store revenue with actual or prospective entrants in the Android app-distribution market, just as Google earlier sought to compensate Samsung with "Project Banyan" to "[p]revent unnecessary competition" between the Samsung Galaxy Store and Play Store. The injunction next prohibits Google from engaging counterparties in restrictive deals that condition payment or access to the Play Store on (1) an agreement to launch apps first or exclusively on the Play Store, or (2) an agreement to preinstall the Play Store and not any other app store in any specific location on an Android smartphone. Finally, the injunction prohibits Google from continuing to require Google Play Billing for all apps distributed on the Play Store. The district court explained that these remedies "closely track the evidence of anticompetitive conduct at trial." On appeal, Google does not directly challenge these prohibitions on anticompetitive arrangements, though it folds them into its broader attacks on the factual findings and Epic's standing to seek a nationwide injunction.

In addition to these restrictions on Google's prior anticompetitive conduct, the injunction also seeks to restore competition in the Android app-distribution market with the catalog-access and app-store-distribution remedies. The catalog-access remedy requires Google to "permit third-party Android app stores to access the Google Play Store's catalog of apps," so that competing app stores can offer users a comparable library of software products. On the other side of the market, the app-store-distribution remedy forbids Google from banning "third-party Android app distribution platforms or stores through the Google Play Store," so that

the same platforms can access Android smartphone users who are currently accustomed to downloading all their apps through the Play Store. Together these provisions allow other app stores to compete in this two-sided market by letting them offer the apps and reach the users on the Play Store platform. The district court gave Google an eight-month timeline to develop the systems needed to comply with both the catalog-access and app-store-distribution remedies. Responding to Google's concerns about the safety of products offered on the Play Store, the injunction permits Google to adopt "reasonable measures" and charge "a reasonable fee . . . based on Google's actual costs" to ensure user security and privacy.

Finally, anticipating disputes over implementation, the court ordered the formation of a three-person Technical Committee composed of one member selected by Epic, another member selected by Google, and a third member selected by those two representatives. In the event of a disagreement, Google bears the burden of showing that its technical requirements are "strictly necessary to achieve safety and security for users and developers." The district court maintains control, since any unresolved issues are to be referred to the court. We uphold the injunction in full.

B. The District Court Had Broad Discretion to Craft the Antitrust Injunction

Google raises a number of objections to the injunction. "Because '[a] district court's decision to grant a permanent injunction involves factual, legal, and discretionary components,' we evaluate such a decision under three different standards of review." *Scott v. Pasadena Unified Sch. Dist.*, 306 F.3d 646, 653 (9th Cir. 2002) (citation omitted). "[W]e review factual findings for clear error, legal

conclusions de novo, and the scope of the injunction for abuse of discretion.” *United States v. Wash.*, 853 F.3d 946, 962 (9th Cir. 2017) (citing *id.*).

Equitable relief in private antitrust actions is governed by Section 16 of the Clayton Act, which grants that “[a]ny person, firm, corporation, or association shall be entitled to . . . injunctive relief . . . against threatened loss or damage by a violation of the antitrust laws.” 15 U.S.C. § 26. Though “caution is key,” *Alston*, 594 U.S. at 106, the Supreme Court has repeatedly endorsed the principle that district courts are “clothed with ‘large discretion’ to fit the decree to the special needs of the individual case”—not just to “unfetter a market from anticompetitive conduct,” but also to “pry open to competition a market that has been closed by defendants’ illegal restraints.” *Ford Motor Co. v. United States*, 405 U.S. 562, 573, 577–78 (1972) (cleaned up). These equitable powers animate Section 16, because “the purpose of giving private parties . . . injunctive remedies was not merely to provide private relief, but was to serve as well the high purpose of enforcing the antitrust laws.” *Zenith Radio Corp. v. Hazeltine Rsch., Inc.*, 395 U.S. 100, 130–31 (1969). As a result, Epic “need only demonstrate a significant threat of injury from an impending violation of the antitrust laws or from a contemporary violation likely to continue or recur,” and the district court may “restrain acts which are of the same type or class as unlawful acts which the court has found to have been committed or whose commission in the future unless enjoined, may fairly be anticipated from the defendant’s conduct in the past.” *Id.* at 130, 132 (citation omitted).

Echoing the Supreme Court’s guidance, we recently concluded that where a defendant has been found to violate federal antitrust laws, “the available injunctive relief is

broad, including to ‘terminate the illegal monopoly, deny to the defendant the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the future.’” *Optronic Techs., Inc. v. Ningbo Sunny Elec. Co.*, 20 F.4th 466, 486 (9th Cir. 2021) (citation omitted). Enacting extensive Section 16 relief requires a “clear indication of a significant causal connection between the conduct enjoined or mandated and the violation found.” *Optronic*, 20 F.4th at 486 (cleaned up); 3 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 653b, at 92 (1996). Importantly, “the reviewing court only asks if the relief is a reasonable method of eliminating the consequences of the illegal conduct.” *Optronic*, 20 F.4th at 486 (cleaned up).

We start our analysis with Google’s challenges to the two remedies directed at unwinding the consequences of Google’s anticompetitive conduct: catalog access and app-store distribution. As part of our discussion of these remedies, we also address Google’s objections to the formation of the Technical Committee. Then, we proceed to Google’s broader efforts to vacate the entire injunction and contest its nationwide effect.¹² In recognition of the discretion historically afforded to the entry of equitable

¹² Beyond contesting the injunction’s factual basis, geographic scope, and Epic’s Article III standing, Google does not challenge the district court’s prohibitions on its prior anticompetitive arrangements. Because the district court clearly outlined its factual and legal bases for concluding that anticompetitive conduct had occurred and acted within its authority to “restrain acts which are of the same type or class as unlawful acts which the court has found to have been committed,” we conclude that those measures survive review. *Zenith Radio*, 395 U.S. at 132.

antitrust remedies, we conclude that the injunction should be affirmed.

C. Catalog Access

We begin with the catalog-access approach to restoring competition in Android app distribution. We agree with the FTC and DOJ that our review must account for “the particular characteristics of digital markets, which can allow monopolists that achieved or maintained dominance through exclusionary conduct to perpetuate entry barriers and maintain monopoly power long after that conduct has stopped.” Given these realities, we recognize the district court’s “large discretion” to meet the “special needs” of the case, which must include the nature of the market. *Ford Motor*, 405 U.S. at 573, 577–78 (cleaned up).

The district court repeatedly emphasized that the catalog-access remedy is intended to ameliorate consequences “intertwined with the network effects” that Google has enjoyed as a monopolist in a two-sided platform market. Specifically, the court cited evidence about the Play Store’s advantaged position between a critical mass of app developers and a critical mass of app users, quoting directly from Google’s internal presentations that “Users come to Play because we have by far the most compelling catalog of apps/games”; “Developers come to Play because that’s where the users are”; and even formidable competitors like “Amazon will struggle to break those network effects.” As the district court explained, the catalog-access remedy seeks to “overcome” the Play Store’s illegally amplified network effects by “giv[ing] rival stores a fair opportunity to establish themselves” with a competitive catalog of software applications. The provision temporarily opens up the Android app-distribution market, by giving app stores a

three-year window to access the singular catalog that Google accumulated and leveraged during the Play Store's dominance of the market. As the district court put it, "[a]ll that the catalog access does is level the playing field for a discrete period of time so that rival app stores have a fighting chance of getting off the ground."

Google objects to the catalog-access provision on the grounds that (1) it illegally imposes a duty-to-deal requirement "to design new products and services tailor-made for [Google's] competitors"; and (2) it imposes that requirement without identifying a "significant causal connection" to Google's anticompetitive conduct.

Neither of these challenges carries the day, and together they misconstrue our longstanding deferential approach to equitable antitrust remedies. In light of the digital two-sided market at issue, the remedy represents "a reasonable method of eliminating the consequences of [Google's] illegal conduct" that we must affirm as the reviewing court. *Optronic*, 20 F.4th at 486 (quoting *Nat'l Soc'y of Pro. Eng'rs v. United States*, 435 U.S. 679, 698 (1978)).

1. No Impermissible Duty to Deal

To start, it is not true that courts cannot and have never compelled antitrust defendants to deal with rivals, notwithstanding Google's attempt to characterize catalog access as an impermissible "duty to deal." Google's reliance on the Supreme Court's *Trinko* decision for the proposition that "forced sharing" creates "tension with the underlying purpose of antitrust law" is misplaced. *Verizon Commc'ns. Inc. v. Law Off. of Curtis v. Trinko, LLP*, 540 U.S. 398, 407–08 (2004). That case addressed the question of whether a unilateral refusal to deal with rivals violates Section 2 of the Sherman Act—not the legality of compelling a defendant

already found liable under that statute to deal with its competitors. We accept *Trinko*'s lesson that a single entity's decision not to deal with competitors can be legal under the Sherman Act, but it is well established that antitrust remedies can and often must proscribe otherwise lawful conduct to unwind and further prevent violators' anticompetitive activity. See, e.g., *Nat'l Soc'y of Pro. Eng'rs*, 435 U.S. at 697–98 (“In fashioning a remedy, the District Court may, of course, consider the fact that its injunction may impinge upon rights that would otherwise be constitutionally protected, but those protections do not prevent it from remedying the antitrust violations.”). No wonder, then, that the Court in *Ford Motor* affirmed an order forcing Ford not only to divest an illegally acquired spark-plug manufacturer, but thereafter to “purchase one-half of its total annual requirement of spark plugs from the divested plant.” 405 U.S. at 572. More recently, in *Optronic*, we also upheld an order requiring a telescope manufacturer to service a designer and marketer of telescopes on non-discriminatory terms. 20 F.4th at 486–87. These cases underscore that, after establishing liability, the district court had within its basket of remedial powers the authority to require Google to deal with parties harmed by its anticompetitive conduct, including its competitors.

Google tries to differentiate these previously upheld injunctions by claiming that the district court improperly ordered Google to “design *new* products” (emphasis added), rather than “sell existing products.” As a practical matter, this argument mischaracterizes what exactly the catalog-access remedy asks Google to do—which is to allow app-store developers to access *existing* data and data-processing resources that, until now, Google restricted the developers

from accessing.¹³ Google is not being asked to develop a new product or service from scratch. Notwithstanding its complaints about the burden of implementing the catalog-access remedy—*i.e.*, in having “to create entirely new infrastructure to serve as the backend administrator for any number of third-party app stores”—the record confirms that Google can make the existing Play Store’s app catalog available to other app stores at a cost of under \$1 million, by using existing metadata servers and technical procedures.¹⁴ As Epic’s expert explained, “Google already has the catalog data on hand stored in an accessible server.” Google’s expert not only agreed with the practicability of modifying these systems—“I’m not disputing the feasibility”—but also offered a six-to-nine-month estimate for implementation, in keeping with the injunction’s eight-month timeline.

¹³ Google’s purported distinction between having to offer “existing” and “new” services appears to reflect the distinction between *prohibitory* injunctions (seeking to preserve the status quo) and *mandatory* injunctions (requiring parties to perform certain acts). But the Supreme Court has expressly declined to read such a distinction into the scope of equitable relief available under Section 16. *Cal. v. Am. Stores Co.*, 495 U.S. 271, 279–84 (1990) (observing that prior decisions have “upheld injunctions issued pursuant to § 16 regardless of whether they were mandatory or prohibitory in character”). That the district court simply required Google to configure its services differently is a permissible form of relief. *Id.* at 283 (citing *Silver v. N.Y. Stock Exch.*, 373 U.S. 341, 345, 365 (1963) (reinstating judgment compelling defendants to install private wire connections)).

¹⁴ The court extensively questioned experts from both parties about the so-called “Alley Oop” process that Google has already made available to select developers. That scalable process “embed[s] a button that will enable the installation of an app from the Play Store” in a way that could conform to the demands of the catalog-access remedy. Google’s expert did not contest that “they already have mechanisms to put that in place.”

2. Significant Causal Connection

Google also objects that the district court committed a legal error by failing to make a specific finding that “the company’s competitive advantage—here, network effects—would have existed even without the anticompetitive conduct.” Google highlights its first-mover status in the Android app-distribution market to claim that some of the Play Store’s network effects must owe to “that lawful advantage,” rather than any illegal conduct. Neither we nor the district court discount this argument. Nonetheless, it fails.

First, initial innovation notwithstanding, a first mover is “not entitled to maintain and magnify” the relevant network effects by entrenching its dominance through anticompetitive conduct.

Second, Google misconstrues the responsibility of the district court. The district court was obligated to ensure only that the conduct enjoined or mandated by the catalog-access provision (here, Google’s technical and contractual exclusion of other app-store developers from the Play Store) had a significant causal connection to “*the violation found*” (here, the creation or maintenance of a monopoly). *Optronic*, 20 F.4th at 486 (emphasis added) (quoting *United States v. Microsoft Corp.*, 253 F.3d 34, 105 (D.C. Cir. 2001)). The district court fulfilled that obligation when it stated: “[T]he question is whether Google engaged in anticompetitive conduct that had the consequence of entrenching and maintaining its monopoly power in a two-sided market. The jury answered that question in the affirmative.” *Optronic* does not require that an injunction only touch the consequences of a defendant’s conduct. Rather, it asks for a “reasonable method” of redressing

problems with a “significant causal connection to that conduct.” *Id.* As the district court pointed out, Google is barking up the wrong tree.

Likewise, Google’s objection that the catalog access provision lacks a significant causal nexus falls short. The court plainly stated: “Google unfairly enhanced its network effects in a way that would not have happened but for its anticompetitive conduct.” This is an unambiguous finding of a “significant causal connection” between Google’s illegal conduct and the strength of the network effects benefiting Google in the app-distribution market. *Id.* at 486 (citation omitted).

Google does not argue that the district court clearly erred in its factual findings on causation. For good reason. The record was replete with evidence that Google’s anticompetitive conduct entrenched its dominance, causing the Play Store to benefit from network effects. The district court established that, as Google “erect[ed] barriers to insulate the Play Store from competition,” it did so with the awareness that “to get more developers, Amazon needs more users.” Google was specifically interested in preventing Amazon from “break[ing] those network effects.” Its anticompetitive conduct was forward-looking, with the purpose—and ultimately the consequence, according to the jury’s verdict—of preserving the market dominance that led to those network effects. The court’s citations to Google’s own internal communications illustrate how “benefits from network effects” motivated and flowed from anticompetitive activity “entrenching and maintaining” the Play Store’s dominant position in a two-sided market. Far from a “plainly weak” causal relationship, 3 Areeda & Hovenkamp, *Antitrust Law* ¶ 653c4, at 97, the record demonstrates substantial support for the district court’s finding that

Google’s anticompetitive conduct caused the creation or maintenance of its monopoly power and “unfairly enhanced” the relevant network effects.

Once the court established, based on the trial evidence, that network effects were among the consequences of Google’s anticompetitive conduct, the court was permitted to shape relief targeted to those effects. Section 16 authorizes courts to “deny to the defendant the fruits of its statutory violation.” *Optronic*, 20 F.4th at 486 (quoting *Microsoft Corp.*, 253 F.3d at 103). The network effects that resulted from Google’s entrenchment of the Play Store in the two-sided app-distribution market are among those fruits. Because the catalog-access remedy ultimately offers a “reasonable method” of counteracting the Play Store’s dominance and reducing the network effects it enjoys by temporarily lowering barriers to entry, we uphold that provision. *Optronic*, 20 F.4th at 486 (citation omitted).

D. App-Store Distribution

The district court’s injunction also restricts Google from “prohibit[ing] the distribution of third-party Android app distribution platforms or stores through the Google Play Store,” in direct response to Google’s practice of freezing other app stores out of the Play Store and barring them from users. Google is still entitled to charge a “reasonable fee” for any “reasonable measures” it takes to ensure that the app stores distributed on its platform “are safe from a computer systems and security standpoint, and do not offer illegal goods or services . . . , or violate Google’s content standards.”

Google raises the same two challenges here as it did with respect to the catalogue-access provision—that the district court exceeded its authority, and that it failed to make a

causation finding. For the same reasons discussed above, we disagree with Google's causation argument. And for many of the same reasons as the catalog-access provision, we hold that the app-store-distribution remedy was within the district court's authority.

In its discussion about Google's "unfairly enhanced" network effects, the district court laid bare how market entrants faced hurdles on *both* ends of the two-sided market for Android app distribution. The yin and yang of this symbiotic relationship locked other app stores out of the Play Store, while app developers and users were locked in. Google knew that competitors would "struggle" not just because "their catalog of apps/games is very limited," but also because "they don't have users." That is why Google worked in various ways to keep users tied to the Play Store, by making it difficult to download apps outside of the platform and by engaging OEMs to install the Play Store as the default app store on Android smartphones. It also explains why the court sought to "undo the consequence of Google's ill-gotten gains" on that side of the market, by giving competitors a chance to reach users now anchored to the Play Store.

As the explanatory order put it, app-store distribution "lower[s] the barriers for rival app stores to get onto users' phones by enjoining Google from prohibiting the presence of rival app stores in the Google Play Store." The remedy enables this intervention while still permitting Google to charge a "reasonable fee" for any security measures that are "comparable to the measures Google is currently taking for apps proposed to be listed in the Google Play Store." Taken together, the district court's approach represents a "reasonable method of eliminating the consequences of [Google's] illegal conduct" on the user side of the Android

app-distribution market, just as the catalog-access remedy did on the developer side. *Optronic*, 20 F.4th at 486 (quoting *Nat'l Soc'y of Pro. Eng'rs*, 435 U.S. at 698). So again, we affirm.

Google's complaints about these "duties to deal" are even less convincing here than in the context of the catalog-access remedy. By ordering Google to allow rival app stores from Amazon, Samsung, or any other competitor onto the Play Store, the injunction only compels that Google treat those software products the same way that it treats other products already offered on the platform. "App stores are themselves just a type of app," as Epic notes, and some third-party app stores were already carried on the Play Store before Google updated its terms to have them excluded. Though Google may decry the inconvenience of having to design "new protocols" to address the security risks of carrying app stores, its own expert conceded that Google would be able to meet these difficulties with the same technological criteria it uses for other third-party software applications already on the Play Store.

Google offers an additional challenge to the app-store-distribution remedy's pricing clause, which provides: "Google may require app developers and app store owners to pay a reasonable fee" for its security procedures. Google asks that we follow our decision in *Image Technical Services v. Eastman Kodak* to modify the provision about "reasonable prices" and require only "nondiscriminatory pricing." 125 F.3d at 1195, 1225 (9th Cir. 1997). This argument is unconvincing because there our intervention was motivated by a concern about Kodak's intellectual property assets and its attendant "right to earn monopoly profits." *Id.* Google cannot explain why it is similarly "entitled" to charge supracompetitive prices for security reviews. *Id.* While

Google seeks to transform *Kodak* into a “legal rule” that prohibits “direct price administration,” it overlooks *Kodak*’s recognition that pricing is “*generally* [*i.e.*, not always] considered beyond our function.” *Id.* (emphasis added). Indeed, the Supreme Court has expressly approved “reasonable” pricing restrictions in remedial orders. *See, e.g., United States v. Glaxo Grp. Ltd.*, 410 U.S. 52, 62 (1973) (requiring defendant “to grant patent licenses at reasonable-royalty rates”); *Int’l Boxing Club of N.Y., Inc. v. United States*, 358 U.S. 242, 261, 255 (1959) (affirming a “compulsory leasing provision” requiring defendants to lease their premises for a “fair and reasonable” rental rate); *United States v. Nat’l Lead Co.*, 332 U.S. 319, 349–50 (1947) (affirming decree ordering defendants to grant patent licenses for a “reasonable royalty,” reasoning, “that conception is one that already has been recognized both by Congress and by this Court”).

We conclude that the district court not only acted within its discretion to mandate a “reasonable fee,” but also chose the right price level to ensure the pro-competitive function of the app-store distribution remedy. Whereas *Kodak* determined that the modified, “nondiscriminatory pricing” would work just as well to keep the defendant in that case from harming competitors and charging exorbitant fees, here that standard could still allow Google to keep third-party app stores off the Play Store by charging them all the same unreasonably high price. *Id.* at 1225. The FTC and DOJ warn against this possibility in their amicus brief, where they argue that the reasonable-fee provision “plainly prevents Google from undermining the decree by charging rival app stores exorbitant rates that could undermine their competitiveness.” Google objects that it has “no established history of [] abusing the pricing of [its security procedures]

to restrain trade,” but that does not answer the question whether it could instrumentalize that price lever in the future, when Google is enjoined from excluding third-party app stores simply as a matter of policy.¹⁵

The Supreme Court put this point bluntly: “The District Court is not obliged to assume, contrary to common experience, that a violator of the antitrust laws will relinquish the fruits of [its] violation more completely than the court requires.” *Int’l Salt Co. v. United States*, 332 U.S. 392, 400 (1947). As Epic explains, “Google has not been and does not want to be in the business of carrying app stores at all.” So now that the jury found Google liable for restraining trade through other means, it falls squarely within the district court’s discretion to “ensure that there remain no practices likely to result in monopolization in the future.” *Optronic*, 20 F.4th at 486 (citation omitted). Because that discretion encompasses the power to craft “forward-looking” restraints like the reasonable-fee provision, and because that provision enhances the restorative and pro-competitive effect of the app-store-distribution remedy without causing undue harm to Google or its business, it survives our review. *Mass. v. Microsoft Corp.*, 373 F.3d 1199, 1215 (D.C. Cir. 2004).

E. Rule 65 Vagueness and the Technical Committee

We next consider whether the injunction meets the procedural requirements of Rule 65(d), which sets out that every injunctive order must: “(A) state the reasons why it

¹⁵ Google’s counsel was queried at oral argument and offered no procompetitive reason why a non-discriminatory pricing restraint would be workable, where a reasonable one would not. Oral Argument at 1:00:20 (No. 24-6256), ca9.uscourts.gov/media/video/?20250203/24-6256/.

issued; (B) state its terms specifically; and (C) describe in reasonable detail . . . the act or acts restrained or required.” Fed. R. Civ. P. 65(d)(1). We follow the Supreme Court’s guidance in considering whether the injunction provides “fair and precisely drawn notice of what the injunction actually prohibits.” *Fortyune v. Am. Multi-Cinema, Inc.*, 364 F.3d 1075, 1087 (9th Cir. 2004) (emphasis removed) (quoting *Granny Goose Foods, Inc. v. Bhd. of Teamsters*, 415 U.S. 423, 444 (1974)). However, and in keeping with the statutory requirement for “reasonable detail,” we do not set aside injunctive provisions “unless they are so vague that they have no reasonably specific meaning.” *United States v. Holtzman*, 762 F.2d 720, 726 (9th Cir. 1985). Here, on de novo review, the district court’s injunction easily clears that bar.

Google also invokes Rule 65 in objecting to the district court’s decision to set up the framework for a Technical Committee, contending that (1) these injunctive provisions leave open too many questions about compliance, and (2) the Technical Committee is an inappropriate mechanism for clearing up those ambiguities. We disagree on both counts. The district court not only used clear language to put Google on notice of “what the injunction actually prohibits,” *Fortyune*, 364 F.3d at 1087, but in the remedy also took additional pains to establish a reasonably clear process for “review[ing] disputes or issues relating to [] technology and processes.”

1. Catalog Access and App-Store Distribution are Clear Remedies

We attend first to the terms of the challenged remedies. The catalog-access remedy states that “Google will permit third-party Android app stores to access the Google Play

Store’s catalog of apps so that they may offer the Play Store apps to users.” This language articulates the reason for the order (*i.e.*, so third-party app stores “may offer the Play Store apps”) and explains in plain terms what Google is “restrained or required” to do. Fed. R. Civ. P. 65(d)(1). For those downloads that will be processed by Google Play, Google must “permit users to complete the download” of apps available only on the Play Store “on the same terms as” if that download were made directly from the platform. Google must “provide developers with a mechanism for opting out of inclusion in catalog access for any particular third-party Android app store.” And Google must develop “the technology necessary to comply with this provision” within eight months. Rather than identify any ambiguity rendering the catalog-access provision “too vague to be enforceable,” *Del Webb Cmtys., Inc. v. Partington*, 652 F.3d 1145, 1150 (9th Cir. 2011), Google points to outstanding questions about app-store “eligibility criteria” and technological implementation, such as “what metadata . . . Google must make available” and “how often to refresh that data.” These practical specifics go well beyond the “reasonable detail” required by Rule 65(d), since the district court need not “elucidate *how* to enforce the injunction” or “provide [Google] with explicit instructions on the appropriate means to accomplish this directive.” *Fortyune*, 364 F.3d at 1087. The injunction provides details that stem from the evidence, and the district court cannot be expected to give Google a cookbook on the specifics of complying with the injunction. Were the court to take that approach, Google would squawk that the injunction was too overbearing.

The same necessary detail can also be found in the app-store distribution remedy. That provision sets forth in clear

terms that “Google may not prohibit the distribution of third-party Android app distribution platforms or stores through the Google Play Store,” but allows Google to take “reasonable measures to ensure that the platforms or stores, and the apps they offer, are safe from a computer systems and security standpoint.” Google objects that it does not know which app stores fall within the scope of the order or what “technical and content requirements” may be imposed. But what is it about “third-party Android app distribution platforms or stores” that Google doesn’t get? The parties intimately understand what the injunction covers, and a quick review of the remedial hearings reveals the backdrop in excruciating detail.¹⁶ Again, Google’s desire for extra detail does not demonstrate that the app-store-distribution remedy is missing so much information as to have no “reasonably specific meaning.” *Holtzman*, 762 F.2d at 726 (citation omitted). The provision gives fair notice that Google cannot turn away app-distribution platforms that meet its technical requirements, and that those technical requirements must be benchmarked against existing ones (*i.e.*, by making them “comparable to the measures Google is currently taking for apps”). That level of “reasonable

¹⁶ The language that Google complains about in the app-store distribution remedy actually reflects the district court’s concession to Google’s position, where there was much discussion about whether technical security procedures for third-party app stores should differ from those already in place for other third-party apps. Epic pushed for consistency between how Google vets Android app stores on and off the Play Store; Google insisted, “we would want the level of safety for these third-party app stores to be [] close to the Google Play safety.” The injunction adopts Google’s stance by allowing “reasonable measures to ensure that the platforms or stores, and the apps they offer, are safe,” so long as they are “comparable to the measures Google is currently taking for apps.”

detail” meets the specificity requirements set forth by Rule 65(d).

2. The Technical Committee is Proper

The injunction’s directive to form a three-person Technical Committee does nothing to compromise the integrity of the catalog-access and app-store-distribution remedies. The Technical Committee offers a helpful resource to attend to the “nuts-and-bolts issues” that Google raises in this challenge, which the district court identified as too “granular” for the injunction and beyond its level of technical expertise. The Technical Committee is hardly a backstop for the injunction. It comports with federal courts’ long history of utilizing appointed experts and provides a process to review and resolve inevitable disputes between the parties—ideally without further need for judicial intervention.

This arrangement is not at all uncommon in disputes that demand a high degree of specialized knowledge, as this one certainly does, and both we and our sister circuits have sanctioned the appointment of technical advisors and special masters. *See, e.g., A&M Recs., Inc. v. Napster, Inc.*, 284 F.3d 1091, 1097 (9th Cir. 2002) (upholding injunction under Rule 65 and deeming proper the district court’s use of a technical advisor); *Ass’n of Mexican-Am. Educators v. Cal.*, 231 F.3d 572, 590 (9th Cir. 2000) (“In those rare cases in which outside technical expertise would be helpful to a district court, the court may appoint a technical advisor.”); *Chi. Bridge & Iron Co. v. FTC*, 534 F.3d 410, 441 (5th Cir. 2008) (endorsing FTC divestment order that “carefully” appointed a third-party monitor “to determine how assets must be divided to effectuate the order and its general remedial purpose”). One court reviewing the establishment

of such a committee observed that “the Government’s ability to enforce the decree is clearly strengthened, not diminished,” by that body. *Microsoft Corp.*, 373 F.3d at 1244.

Google’s assertion that “no U.S. court has *ever* imposed a technical committee by judicial fiat” is a fiction, as is its suggestion that the district court’s Technical Committee “violates not just Rule 65, but basic principles of Article III adjudication.” The Supreme Court upheld a similar arrangement in *Besser Manufacturing Co. v. United States*, another monopolization case. 343 U.S. 444, 447–48 (1952). There, against defendants’ objection that the injunction “deprive[d] them of their property without due process,” the Court affirmed the district court’s use of a committee to fix royalty rates for patent licenses. *Id.* at 448. The committee structure paralleled that of the Technical Committee here, being composed of members selected by each party, plus an additional member selected by those members. *Id.* What’s more, just as the district court in that case retained its authority to resolve any “deadlock,” *id.* at 449, the district court has done so here by acknowledging that “[i]f the Technical Committee cannot resolve a dispute or issue, a party may ask the Court for a resolution.”¹⁷ We are confident that the district court has not abdicated its Article III function, and we see no reason to depart from *Besser*’s assessment that this kind of arrangement represents an “entirely reasonable and fair” mechanism for dispute resolution. *Id.* Nor does supplementing the injunction with the Technical Committee undermine the sufficiency of the

¹⁷ The injunction also curtails the Technical Committee’s power to “extend any deadline set in this order,” allowing only that it “may recommend that the Court accept or deny a request to extend.”

catalog-access and app-store-distribution remedies under Rule 65.

F. Sufficient Factual Findings Underlie the Injunction

Having addressed the arguments targeted specifically at the catalog-access and app-store-distribution remedies, we turn to Google’s attempt to vacate the entire injunction. Google disputes the factual findings underlying the remedy, using that frame to gather various claims that the district court: (1) failed to explain why it did not impose less burdensome contractual restrictions; (2) declined to consider Google’s settlement agreement with the States; and (3) overlooked the security and intellectual property interests of non-parties.

Before addressing each of these claims, we reiterate that our standard of review for factual findings is clear error. *Wash.*, 853 F.3d at 962. We also add that there is little precedent for this sort of factual-basis challenge, in that injunctions have been modified or vacated for reasons *related* to specific factual matters, but rarely due to insufficient findings alone.¹⁸ Here, though, there is no oversight resulting in a “clear error of judgment.” *La Quinta*, 762 F.3d at 879 (citation omitted). The district court based its determinations on a vast record built throughout the

¹⁸ For example, in the trademark case *La Quinta Worldwide LLC v. Q.R.T.M., S.A.de C.V.*, we vacated an injunction after holding that a factual omission “le[ft] us uncertain whether the district court considered all relevant factors in assessing the balance of hardships.” 762 F.3d 867, 880 (9th Cir. 2014). There, the court failed to weigh a key consideration related to the circumstances in which the parties would be able to continue doing business under their names in the United States and Mexico. Google points to no analogous absence of factfinding here.

trial and remedial hearings, and the injunction reflects due consideration of “all relevant factors.” *Id.* at 880.

Again, we emphasize that the district court conducted extensive proceedings before issuing the injunction and the accompanying order. Courts crafting Section 16 relief are “usually in a superior position to appraise and weigh the evidence,” and this case is no exception. *Zenith Radio*, 395 U.S. at 123 (reviewing factual findings under the appropriate “clearly erroneous” standard and reversing the appellate court’s decision to set aside parts of a treble-damage award). In addition to the jury’s specific findings on liability under Sherman Act Section 1, corresponding to paragraphs four through ten of the injunction, the district court supported the liability verdict with further findings of fact and law in the JMOL order. The court also gave the parties ample opportunity to state and refine their positions on the appropriate remedy. Over several months, the court reviewed Google’s “blunderbuss of comments and complaints” in 90-plus pages of objections to the proposed injunction. The court also held evidentiary hearings with the parties’ experts; received statements from the parties’ economists, technology experts, and engineers; accepted an amicus brief from the FTC; and heard closing arguments on the remedy. We pay heed to all this evidence—and the district court’s proximity to it.

1. The Contractual Restrictions Need No Further Explanation

Google’s first complaint about unduly burdensome contractual restrictions is without merit. The thrust of Google’s argument is that the district court failed to explain why it did not adopt certain modifications proposed by Google and did not consider ways to redress Google’s

anticompetitive agreements without imposing unnecessary constraints. For starters, just because Google didn't get something that it proposed is no basis to upend the injunction. The district court did not blindly adopt all of Epic's proposals either, and instead crafted an injunction that responded to the evidence. The court followed our precedent by using the parties' proposals to tailor a remedy that would "terminate the illegal monopoly, deny to the defendant the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the future." *Optronic*, 20 F.4th at 486 (citation omitted).

Google specifically protests: (1) how the restriction on conditional agreements "prohibits certain incentives to OEMs regarding Play's specific placement on Android devices, even if the incentive places no condition on whether the OEM deals with Play's app distribution rivals or the OEM itself is an Android app distribution rival"; and (2) how the prohibitions on revenue sharing apply to lump-sum payments and not just agreements to share a percentage of Play Store revenue. But these provisions help unwind the Play Store's monopolization of the Android app-distribution market and prevent "acts which are of the same type or class as unlawful acts . . . found to have been committed." *Zenith Radio*, 395 U.S. at 132. The prohibition on OEM incentives lowers barriers to entry by keeping Google from using its clout to have the Play Store pre-downloaded on Android smartphones. The revenue-sharing provision ensures that Google does not simply enhance advantages that it previously obtained by allocating fixed sums instead of percentages of its Play Store revenue. Neither remedy constitutes a "clear error of judgment" on the part of the district court. *La Quinta*, 762 F.3d at 879 (citation omitted).

2. The State Settlement Was Duly Considered

As for Google’s pretrial settlement with the States, the district court was well aware of that development. An expert statement detailed why the States’ settlement “d[id] not fully prohibit the conduct found to be anticompetitive at trial” or “attempt to undo the effects of Google’s past anticompetitive conduct,” and the court plainly resolved that the injunction would be “the floor” dictating the settlement’s baseline—not the other way around. That approach was entirely appropriate and within the court’s remedial discretion: The States made a considered decision to settle and accept equitable relief plus a payment of \$700 million. The district court was under no obligation to let the settlement cabin the injunction following the finding of liability against Google, nor was the court required to pay lip service to the settlement as a proxy for the public interest. Google’s suggestion that the States’ settlement somehow should have driven the terms of the injunction simply has no basis in law or fact. Even more to the point, Google offers no concrete explanation why the coexistence of the State settlement and the injunction harms the public interest.

3. The Injunction Weighs Non-Parties’ Intellectual Property and Security Interests

Google’s final two fact-based arguments do not accord with the record or the terms of the injunction, in that they raise intellectual property and security concerns that the court was quite cognizant of and addressed in its remedy. With respect to non-parties’ intellectual property interests, the court heard expert testimony about those rare “one-in-a-million situations,” wherein an Android app developer might not want its products to be distributed over app stores other than Google Play. Google proposed an opt-in mechanism,

whereas Epic offered the opt-out mechanism that the court ultimately adopted: “Google will provide developers with a mechanism for opting out of inclusion in catalog access for any particular third-party Android app store.” This approach reflects due consideration of developers’ intellectual property interests as one of the many “relevant factors” in crafting the injunction. Google swats at a gnat and misses in its effort to bring down the injunction. *La Quinta*, 762 F.3d at 880.

The same is true with respect to the injunction’s treatment of non-parties’ security interests. Even setting aside amici’s arguments that Google’s fear mongering around security is “pretextual”—or that a more open Android ecosystem could bring long-term security *benefits*—the court had before it a robust record on the potential security risks attendant to the catalog-access and app-store distribution remedies.¹⁹ As the explanatory order laid out, that is why the injunction explicitly addresses these risks in the app-store-distribution remedy, by allowing

¹⁹ Amicus briefs weighed in on both sides of the security issues. Former national security officials warned that the injunction would “drastically lower[] the barriers for potentially malicious third-parties to gain access to the Google Play Store,” and the Chamber of Progress and other interest groups worried that it “does not address what security protections Google can provide for the new services it has been ordered to supply.” In contrast, however, Microsoft proffered that “the idea that Google’s restrictive practices are necessary to address [security] risks is untenable,” noting that regulatory intervention in Europe has already forced Google to permit in-app payment methods other than Google Play Billing “without a security or privacy catastrophe.” The Electronic Frontier Foundation went even further, suggesting that Google’s “feudal” security model would be improved by the injunction in the long run, because “the security offered by a monopolist is more fragile than what a competitive market can provide.”

Google “to ensure that the platforms or stores, and the apps they offer, are safe from a computer systems and security standpoint.” It is also why the district court established the Technical Committee to review and resolve “technical issues about security and the like.” Again, these remedial measures offer plainly articulated responses to the relevant factor of non-parties’ security interests. They reflect an engagement with the evidence presented in the record and, like all the injunction’s remedies, a clear basis in that extensive factual record.

G. Epic Has Standing

Lastly, Google misses the mark by challenging Epic’s Article III standing to seek nationwide injunctive relief, including the provisions that address catalog access, app-store distribution, and the billing and anti-steering policies that prohibit the Play Store from requiring or otherwise favoring Google Play Billing. This argument goes to the scope of the injunction, despite Google’s efforts to cloak it as a jurisdictional issue and rope it into the current controversy surrounding nationwide injunctions, recently addressed by the Supreme Court in *Trump v. CASA, Inc.*, 606 U.S. ----, No. 24A884, 2025 WL 1773631, at *4 (U.S. June 27, 2025). Google’s framing departs from the case law, and the scope of a permanent injunction following a finding of antitrust liability is hardly comparable to that of a preliminary injunction on a constitutional question. *CASA*’s holding about district courts’ authority under the Judiciary Act of 1789 has no bearing on whether the district court here exceeded its equitable powers under Section 16 of the Clayton Act. The *CASA* court remarked at the outset that individual plaintiffs’ standing was not at issue in that case. *Id.* at n.2. It also clarified that a restriction on “universal injunctions” does nothing to change the fact that “a

traditional, parties-only injunction can apply beyond the jurisdiction of the issuing court.” *Id.* at n.1 (citing *Steele v. Bulova Watch Co.*, 344 U.S. 280, 289 (1952)).

The redressability element of standing—which Google challenges here—is a question of “the relief that federal courts are *capable* of granting.” *Kirola v. City & Cnty. of S.F.*, 860 F.3d 1164, 1176 (9th Cir. 2017); *see also Seattle Pac. Univ. v. Ferguson*, 104 F.4th 50, 63 (9th Cir. 2024) (“[A plaintiff] need only show that the court could fashion an injunction that could redress its injuries.”). This determination is distinct from the merits determination. *Kirola*, 860 F.3d at 1175 (“[Article III’s] standards exist apart from the merits, and are well established.”). Google’s citations to *Murthy* are inapposite; unlike that situation, no one contends that this injunction would be “unlikely to affect the [alleged wrongdoer’s] decisions.” *Murthy v. Mo.*, 603 U.S. 43, 74 (2024).

As for Google’s suggestion that Epic has shown no risk of repeated injury caused by Play Store’s billing policies because “Epic has not distributed apps on Play for years,” we note that it was precisely Epic’s attempt to launch *Fortnite* on the Play Store that led to this litigation. And Google’s argument about the anti-steering provision is foreclosed by *Apple*. 67 F.4th at 972 (upholding injunction against anti-steering provision “because Epic is a competing games distributor and would earn additional revenue but for Apple’s restrictions”). Contrary to Google’s contentions, the district court specifically noted trial evidence showing “the anticompetitive nature of these anti-steering restrictions.” Those anticompetitive effects, if the restrictions were not enjoined, would continue to harm competition in the defined markets of Android in-app billing and Android app distribution, in which Epic is undisputedly a player. Nothing

more is needed to fulfill the constitutional minimum for standing.

The ultimate scope of an injunction is reviewed for abuse of discretion and is based on the merits—“not redressability.” *Seattle Pac.*, 104 F.4th at 63. To the extent that Google challenges the district court’s exercise of discretion in crafting the injunction, we disagree. The nationwide prohibitions fit squarely within the district court’s “large discretion” to craft equitable antitrust remedies. *Ford Motor*, 405 U.S. at 573 (citation omitted). These remedies and their scope are supported by the record and the nature of the market, and we uphold them along with the liability verdict and the entire injunction.

AFFIRMED.