

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO**

**IN RE GOOGLE PLAY STORE
ANTITRUST LITIGATION**

Case No. 3:21-md-02981-JD

THIS DOCUMENT RELATES TO

Epic Games, Inc. v. Google LLC et al.,
Case No. 3:20-cv-05671-JD

STATEMENT OF B. DOUGLAS BERNHEIM

APRIL 11, 2024

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I. Overview

- (1) This Statement contains my opinions regarding potential remedies for Google’s anticompetitive conduct found to be illegal in *In re Google Play Store Antitrust Litigation*.¹ The scope of my engagement in this matter focuses on remedies for Google’s anticompetitive practices in Android app distribution. I understand that Epic has asked Dr. Tadelis to address remedies for Google’s unlawful tie between app distribution and Google Play Billing.
- (2) In Section II below, I explain the economic principles that guide my analysis of potential remedies in this matter, and discuss generally how Epic’s proposed injunction aligns with them. I also explain why aspects of the settlement reached between Google, plaintiff States, and class consumers (the “States’ Settlement”) do not align with these principles.² In Section III, I discuss in more detail each provision of Epic’s proposed injunction that is within the scope of my opinion, and why these provisions are consistent with the principles I describe in Section II.

¹ Jury Verdict, *In re Google Play Store Antitrust Litigation*., No. 21-md-02981-JD (N.D. Cal. December 11, 2023), ECF Dkt. No. 606 [hereinafter, “Jury Verdict”].

² Stipulation and [Proposed] Order re Deadlines in Consumers’ and States’ Actions in Light of Tentative Settlement, *In re Google Play Store Antitrust Litig.*, No. 21-md-02981-JD (N.D. Cal. September 5, 2023), ECF Dkt. No. 596; *see also* Settlement Agreement and Release, *State of Utah v. Google LLC*, No. 3:21-cv-05227-JD (N.D. Cal. Dec. 18, 2023), ECF Dkt. No. 522-2 [hereinafter, “States’ Settlement”].

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II. Principles for an effective remedy

- (3) The jury found that Google “willfully acquired or maintained monopoly power by engaging in anticompetitive conduct” in the markets for (i) Android app distribution and (ii) Android in-app billing services for digital goods and services transactions.³ The jury also found that several specific agreements Google entered into were “unreasonable restraint(s) of trade”⁴ and “that Google unlawfully tied the use of the Google Play Store to the use of Google Play Billing.”⁵
- (4) As an economic matter, fixing the damage to the Android app distribution market caused by Google’s conduct requires both (a) preventing Google from engaging in future anticompetitive conduct and (b) undoing the effects of Google’s past anticompetitive conduct. I analyzed Google’s conduct as well as competition in the Android app distribution market more broadly while preparing my testimony in this matter. I draw from that analysis as well as my background as an economist specializing in industrial organization, including antitrust and public policy, to offer opinions about an effective remedy here.
- (5) At minimum, any remedy for Google’s anticompetitive practices must prohibit the conduct that allowed it to acquire and maintain monopoly power, including any practice that was deemed either an “unreasonable restraint of trade” or an unlawful tie. However, a remedy that does no more than narrowly prohibit the specific anticompetitive practices undertaken by Google in the past invites evasion.⁶ An *effective* remedy must therefore also preclude related conduct that could yield substantially similar outcomes.

³ Jury Verdict, 3:19–25. The jury found the geographic market for each of these markets to be “Worldwide excluding China.” Jury Verdict, 3:2–15.

⁴ Specifically, the jury found the following agreements to be “unreasonable restraint(s) of trade” in accordance with the given instructions: “DDA Agreements,” “Agreements with Google’s alleged competitors or potential competitors under Project Hug or Games Velocity Program,” and “Agreements with OEMs that sell mobile devices (including MADA and RSA agreements).” Jury Verdict, 5:14–23.

⁵ Jury Verdict, 7:3–8.

⁶ Concerns about narrowly tailored remedies that can be evaded are not just theoretical. Excessive narrowness of remedies has already prevented efforts in other jurisdictions to remedy anticompetitive conduct related to app distribution from being effective. For example, in 2021, Korea passed a new telecommunications law that allowed app developers to use third-party payment options for in-app purchases. Apple and Google responded to the law by charging new fees for developers using alternative payment systems. “Changes to Google Play’s Billing Requirements for Developers Serving Users in South Korea,” Google Play Console Help, accessed April 4, 2024, <https://support.google.com/googleplay/android-developer/answer/11222040?hl=en;v>; Kate Park, “Google, Apple Face Fines in South Korea for Breaching In-App Billing Rules,” TechCrunch, updated October 6, 2023, <https://techcrunch.com/2023/10/06/google-apple-face-fines-in-south-korea-for-breaching-in-app-billing-rules>. In addition, Apple reduced the functionality of apps using alternative payment systems, forbidding them from also using the Apple payment system and adding the following warning message: “all purchases in this app will be managed by developer ‘<Developer Name>’. You will no longer be transacting with Apple. Your stored App Store payment method and related features, such as subscription management, Ask to Buy, Family Sharing, and refund requests, will not be available. Apple is not responsible for the privacy or security of transactions made with this developer.” Underneath that message was a link to “learn more” and a button to cancel the transaction. Both Google and Apple have subsequently been fined for violations of the law. “Distributing apps using a third-party payment provider in South Korea,” Apple Developer Support, accessed April 9, 2024, <https://developer.apple.com/support/storekit-external-entitlement-kr/>.

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- (6) Further, to be effective in restoring competition, a remedy must give rivals an opportunity to compete on the merits with the Google Play Store despite the competitive advantages Google acquired from its anticompetitive conduct. This aspect of the remedy is particularly important given the strong network effects in the Android app distribution market.
- (7) Finally, to the extent possible, a remedy should also avoid inhibiting Google’s ability to compete on the merits by improving its products or pricing, or by addressing legitimate security concerns.⁷
- (8) Below, I review the categories of anticompetitive conduct and agreements I identified during my trial testimony. In each case, I reference Google’s past conduct, explain its anticompetitive effects, and describe the varieties of conduct an effective remedy would need to preclude. I also explain that, because app distribution is characterized by strong network externalities, an effective remedy must address past harms to competition by leveling the playing field. Then I discuss the States’ Settlement and explain why it does not constitute an effective remedy.
- (9) Following this discussion of applicable principles, in Section III I address more specifically, on a provision-by-provision basis, each portion of Epic’s proposed injunction that falls within the scope of my assignment.

II.A. An effective remedy must prevent Google from foreclosing, impairing, and/or disincentivizing preinstallation through agreements with OEMs

- (10) Evidence presented at trial showed that Google’s agreements with OEMs enhanced Google’s ability to monopolize the relevant markets by foreclosing, impairing, and/or disincentivizing pre-installation of alternative app stores. In addition, the jury found “[a]greements with OEMs that sell mobile devices (including MADA and RSA agreements)” to be unreasonable restraints of trade.⁸ Specifically:

⁷ Epic’s Proposed Permanent Injunction [hereinafter, “Proposed Injunction”]. I discuss in more detail in Section III below why the Proposed Injunction does not prevent Google from competing on the merits.

⁸ Jury Verdict, 5:14–23.

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- RSA 3.0 “Premier Tier” agreements entirely prevent OEMs from preloading⁹ competing app stores on certain devices.¹⁰ Google targets these agreements primarily at OEMs that have developed their own app stores.¹¹
- Some RSA 3.0 agreements with OEMs include Google Play revenue sharing provisions.¹² Google targets these provisions, as well as the most generous revenue-sharing terms, primarily at OEMs that have developed their own app stores.¹³ This conduct directly disincentivizes the distribution of competing app stores; it amounts to “buying off” rivals.¹⁴ Note that Project Hug agreements, which are with developers rather than OEMs, similarly contain provisions that disincentivize the creation of competing app distribution platforms.¹⁵ I discuss the remedy as it relates to developer agreements in more detail in Section II.B. below.

⁹ Preloaded apps and app stores are apps that are installed and licensed on new devices as part of the “out-of-the-box experience.” Kolotouros Testimony, Tr. 1135:6–12. Throughout this Statement, I use “preloaded” and “preinstalled” interchangeably. Kolotouros Testimony, Tr. 1091:13–15.

¹⁰ See Lam Testimony, Tr. 980:10–14 (OEMs who receive premier tier revenue share payments cannot preinstall any app store other than Google Play); Kolotouros Testimony, Tr. 1053:20–24, 1071:20–24 (in order to qualify for the premier tier, an OEM may not install any app store other than Google Play); 1091:10–1092:2 (discussing Exhibit 627, the premier tier requirements document, confirming that it prevents an OEM from preinstalling an app store other than Google Play); Pichai Testimony, Tr. 1382:3–7 (OEMs are prohibited from installing a competing app store on devices that are enrolled in the premier tier); Gennai Testimony, Tr. 2950:13–18 (the terms of the RSA 3.0 premier tier agreement were that OEMs wouldn’t preload another app store); see also Opening Expert Report of B. Douglas Bernheim, Ph.D., October 3, 2022 [hereinafter, “Bernheim Report”], ¶¶ 298–299, 395–399; Reply Expert Report of B. Douglas Bernheim, Ph.D., December 3, 2022 [hereinafter, “Bernheim Reply Report”], ¶¶ 320, 334–343; Bernheim Testimony, Tr. 2396:25–2397:7.

¹¹ See Kolotouros Testimony, Tr. 1077:11–1083:24 (discussing Exhibit 624, a presentation which was presented to the Business Council about RSA 3.0 to “protect Google from key strategic risks,” listing Chinese OEMs who “were all rapidly growing OEMs at the time” outside of China); Bernheim Report, ¶¶ 396–99; Bernheim Reply Report, ¶ 320; Bernheim Testimony, Tr. 2398:5–20 (“So a very large fraction of the phones associated with the OEMs who actually had competing app stores, they had to stop putting those app stores on the phones.”), 2408:11–21 (“Q. Which OEMs got the most generous revenue sharing terms from Google? . . . you can see at the top of the list are Xiaomi, Oppo, and Vivo. These are the OEMs that had competitive preinstalled app stores, setting aside Samsung and setting aside the two that essentially disappeared. So what we see here is aggressive revenue sharing being given not to potential competitors but to actual competitors.”).

¹² See Lam Testimony, Tr. 980:3–6 (“Q. And under those RSA 3.0 agreements, you understand that Google pays Google Play revenue share to OEMs who elect their devices into the Premier Tier of that program, right? A. That’s correct.”); Bernheim Report, ¶¶ 396–99; Bernheim Reply Report, ¶ 320. Bernheim Testimony, Tr. 2407:16–2408:10.

¹³ See Kolotouros Testimony, Tr. 1083:25–1086:1 (discussing Exhibit 624, a presentation which was presented to the Business Council about RSA 3.0, describing Google “offering up to 16 percent Google Play revenue shares to OEMs”, “[a]nd the way that’s going to be spent, it says, is that was going to go to key Chinese OEMs” compared to “more like 4 to 8 percent revenue share for Google Play for smaller OEMs”); Bernheim Report, ¶¶ 396–99; Bernheim Reply Report, ¶ 320.

¹⁴ Bernheim Testimony, Tr. 2396:3–2397:7; see also Bernheim Testimony, Tr. 2398:5–2400:15 (premier tier agreements are targeted at OEMs with significant preinstallation of their competing app stores); 2407:14–2408:10; 2411:5–2412:3 (discussing Exhibit 624 at -018, a slide from a Google presentation, discussing Revenue Sharing Agreements as complementing Projects Hug and Banyan); 3189:20–3190:14 (the problem was not with revenue sharing generally, but instead that Google Play shared profits with its competitors, which disincentivizes competition); Kolotouros Testimony, Tr. 1082:19–23, 1083:16–24 (RSA 3.0 was a risk-mitigation strategy to protect Google Play from competition on the Android platform); 1072:21–1076:12 (discussing Trial Exhibit 623, an email from Tanu Raja forwarded by Mr. Kolotouros, which said that Google could use RSAs to “help[] stem the tide of emerging app stores”); Bernheim Report ¶¶ 348–349, 395–399.

¹⁵ The “Games Velocity Program” is synonymous with Project Hug; in this Statement, I refer to it as “Project Hug.”

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- (11) An effective remedy for this conduct must limit Google’s ability to restrict preloading of competing app stores and prevent Google from sharing Google Play revenue with competing or potentially competing app distributors. It must also prevent Google from using its control of Android to impair competing app stores in other ways once these modes of conduct are proscribed. As discussed further below, Epic’s proposed remedy addresses these requirements in three ways:
- Paragraph II.A.1 prohibits conduct that prevents or disincentivizes OEMs or carriers from preinstalling or granting install permission to competing app stores.¹⁶ This provision addresses the RSA 3.0 premier-tier exclusivity provisions and the RSA 3.0 Google Play revenue-sharing provisions. It would also preclude efforts to stifle competing app stores by depriving them of install privileges. Paragraph II.A.1 also prohibits conduct that prevents or disincentivizes OEMs or carriers from preinstalling apps that are not app stores, in order to prevent Google from restricting the availability of preinstallation as a means of distributing individual apps.
 - Paragraph II.A.2 prohibits Google from creating or enforcing agreements that require or incentivize potential or actual competing distributors to decrease or refrain from increasing investment in, or abandon altogether, distribution of Android apps or entry into the distribution of Android apps.¹⁷ It also requires Google, in any agreement with a competing distributor, to include a “clear and express statement” that the terms of the agreement are not in any way conditional on “use, development, preinstallation, launch, or placement” of an alternative app distribution channel. The purpose of these provisions is, in part, to preclude Google from circumventing the preceding prohibitions by creating other disincentives for OEMs to launch their own app stores.¹⁸
 - Paragraph II.C.1 prevents Google from disrupting alternative distribution channels and impairing apps downloaded from them by denying or impeding Google-Play-equivalent access to Android functionality and/or APIs or features.¹⁹ The purpose of this provision is to preclude Google from circumventing the preceding prohibitions by withholding key Android functionalities from competing app stores or apps distributed outside of Google Play.
- (12) In addition to prohibiting the specific agreements discussed at trial, Epic’s proposed remedy is broad enough to cover similar agreements Google might reach with OEMs as well as alternative strategies for impairing rival app stores, without impairing legitimate efforts by Google to compete.

¹⁶ Proposed Injunction, ¶ II.A.1.

¹⁷ Proposed Injunction, ¶ II.A.2.

¹⁸ Bernheim Testimony, Tr. 2409:5–2410:7; *see also* Bernheim Report, Section V.B.4.c.

¹⁹ Proposed Injunction, ¶ II.C.1.

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II.B. An effective remedy must prevent Google from impairing rival app distribution methods through agreements with developers

- (13) As I explained in my expert report and at trial, network externalities help Google sustain dominance in Android app distribution: the vast majority of consumers use the Google Play Store because virtually all developers distribute their apps through it, and virtually all developers distribute their apps through the Google Play Store because the vast majority of consumers use it (typically to the exclusion of other stores).²⁰ In such settings, a rival usually cannot compete effectively merely as a “we have most of the same stuff” platform.²¹ Instead, the best strategy for overcoming network externalities is usually to offer something distinctive.²² In the current context, a rival might hope to gain a foothold in the app distribution market by carrying content that is not available on the Google Play Store, such as exclusive games or unique content within prominent games.²³
- (14) Evidence presented at trial showed that Google’s Project Hug agreements with large developers enhanced its ability to monopolize the relevant markets by preventing rival app stores from offering distinctive content.²⁴ Such deals generally include the following terms:
- Release parity: developers are required to release their apps on the Google Play Store at the same time or earlier than on other app stores.
 - Quality and promotion parity: developers are required to offer the same core content and features on other app stores as on the Google Play Store, and cannot promote their content more aggressively on other app stores.
 - Non-removal: developers cannot remove their apps from the Google Play Store without Google’s permission.²⁵

²⁰ See, e.g., Bernheim Testimony, Tr. 2401:3–7 (“In the context of Google Play, you’ve got users going to – smartphone users going to Google Play because the apps are there, and you’ve got developers putting their apps on Google Play because users are going there, and it’s all kind of reinforcing.”); Bernheim Report, ¶¶ 247–248; Bernheim Reply Report, ¶¶ 319–321.

²¹ Bernheim Testimony, Tr. 2400:20–2401:15; see also Bernheim Report, ¶ 436.

²² Bernheim Testimony, Tr. 2401:7–10 (“[T]o break into that [Google Play’s dominance], you need to offer the consumer a compelling reason to do something else. And the way that that’s typically done in these types of markets is to offer some sort of exclusive content....”).

²³ Bernheim Testimony, Tr. 2401:9–15.

²⁴ Bernheim Testimony, Tr. 2401:16–22 (Project Hug provisions prevent competing app stores from offering exclusive content); 2403:7–2404:11 (Project Hug provisions prevent competitors’ differentiation, which blocks the main viable entry strategy into the industry and discourages them from developing new content); 3188:17–3190:14 (Project Hug parity provisions discourage competitive investments); see also Koh Testimony, Tr. 442:18–443:18, 444:10–18 (Project Hug sim ship and feature parity requirements reduce Google Play’s risk of losing out to other app stores); Bernheim Report, ¶¶ 339–342, 436–443. In addition, the jury found “[a]greements with Google’s alleged competitors or potential competitors under Project Hug or Games Velocity Program” to be unreasonable restraints of trade. Jury Verdict, 5:14–21.

²⁵ Koh Testimony, Tr. 467:20–469:16 (confirming the non-removal requirement in Exhibit 153, the ABK Hug agreement); 482:13–483:9 (confirming the non-removal requirement in Exhibit 162, the Riot Games Hug agreement); see also

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- (15) Additionally, evidence presented at trial showed that Google viewed key developers as threats to enter the app distribution market with their own stores and to distribute off Google Play. The Project Hug agreements with those developers disincentivized competition in Android app distribution by, effectively, paying potential rivals not to develop competing app distribution methods.²⁶
- (16) An effective remedy for this conduct must remove the artificial impediments to offering differentiated content, and also preclude agreements that directly disincentivize large developers from offering competing app stores. Epic’s proposed remedy addresses this requirement in three ways:
- As noted in the previous section, Paragraph II.A.2. prohibits Google from creating or enforcing agreements that require or incentivize potential or actual competing distributors to decrease or refrain from increasing investment in, or abandon altogether, distribution of Android apps or entry into the distribution of Android apps. It also requires Google, in any agreement with a competing distributor, to include a “clear and express statement” that the terms of the agreement are not in any way conditional on “use, development, preinstallation, launch or placement” of an alternative app distribution channel. The purpose of these provisions is, in part, to prevent Google from reaching agreements with developers, such as Google’s Project Hug initiatives,²⁷ that require or incentivize developers to limit their investment in competing app distribution channels.²⁸

Bernheim Report, ¶ 335; Bernheim Testimony, Tr. 2403:7–2404:11, 3189:10–19.

²⁶ Bernheim Testimony, Tr. 2409:5–2410:7 (Project Hug payments reduced competitors’ incentives to enter); 2411:2–2412:3 (Exhibit 624 describes Project Hug as a risk mitigation strategy and refers to incentive mechanisms that discourage competition); 2511:10–2512:3 (Project Hug payments are not simple discounts but instead are conditional on Google getting something in exchange that allows it to block successful entry); Gennai Testimony, Tr. 2928:7–2936:14 (discussing Exhibits 136 and 591, which show Google Play’s growth in its business model faced risk in increasing competition from OEMs and third-party app stores, and Google could avoid a race to the bottom on pricing with something like Project Hug); Koh Testimony, Tr. 422:4–6 (“[c]ompetition attracting more developers and more users was—it’s a—one of the key considerations for Project Hug”); 428:7–435:17 (discussing Exhibit 136, which describes contagion risk to Google from competing Android app distribution platforms and requests Business Council funding for Project Hug to prevent loss of top developers to those other platforms); 439:9–441:10 (some of the Project Hug developers specifically told Google that they were considering starting their own competing Android app stores, and Google specifically assumed that other developers targeted by Project Hug could also have the capabilities to launch their own stores); 455:6–459:13 (discussing Exhibit 148, in which Karen Beatty writes that ABK preferred to enter into a Hug deal rather than compete with Google); 477:11–482:1 (discussing Exhibit 156, in which Lawrence Koh explains that Project Hug payments to Riot Games were money well spent towards the objective of making sure that Riot did not launch its own app store); 485:8–13 (by the time Lawrence Koh left Google, Project Hug was working in that all Project Hug developers were meeting the sim ship and feature parity requirements and keeping titles on Google Play); Marchak Testimony, Tr. 629:12–15 (One criterion for selecting developers for Project Hug was that Google believed they may forego Google Play); Kochikar Testimony, Tr. 776:24–777:3 (One of the justifications for Project Hug deals was the risk that developers would launch titles outside of Google Play); 806:18–810:5 (If Google could secure a Project Hug deal with ABK, then it would disincentivize ABK from investing in an alternative app store or finding other ways to distribute its apps on Android); 811:10–812:12 (Google “pulled out the stops” to get a Project Hug deal “to get Riot Games to stop their in-house app store effort”); Harrison Testimony, Tr. 1892:3–1895:22 (discussing Exhibit 8019, Harrison advocated for a Project Hug deal with ABK with the rationale that it would mitigate the risk that ABK would launch its own distribution platform); *see also*, Bernheim Report, ¶ 350.

²⁷ Bernheim Testimony, Tr. 2409:5–2410:7; Bernheim Report, Section V.B.4.c.

²⁸ Proposed Injunction, ¶ II.A.2. This provision would not prevent Google from incentivizing developer investment in Google Play by lowering Google Play’s price or improving its quality. The Proposed Injunction specifically allows Google to engage in “bona fide competition on the merits with respect to the distribution of apps on Android,” which

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- Paragraph II.A.4 prevents Google from placing restrictions on developers’ ability to offer differentiated content on competing app stores.²⁹
 - Paragraph II.A.5 prevents Google from prohibiting the withdrawal of apps from the Google Play Store without Google’s consent.³⁰
- (17) An effective remedy must also preclude alternative strategies through which Google could potentially achieve the same objective if parity provisions are disallowed. One possibility is that Google might enter into agreements with developers that require the exclusive distribution on Android of key Android apps and content through the Google Play Store. Paragraph II.A.3 explicitly precludes that conduct.³¹
- (18) A second possibility is that Google might use its control of Google Android functionalities and key Android-related products and services to punish developers who explore alternative app distribution methods.³² The proposed remedy addresses this possibility in two ways:
- Paragraph II.C.1 mandates that Google provide parity access to Android functionalities for alternative Android app distribution channels, or apps downloaded through those channels.³³
 - Paragraph II.C.2 prevents Google from conditioning the use of Google products or services on a developer’s actual or intended use of an alternative app distribution channel.³⁴

II.C. An effective remedy must prevent Google from imposing frictions on “off-Play” app installations

- (19) Evidence presented at trial showed that Google’s restrictions on direct downloading and downloading from third-party app stores enhanced its ability to monopolize the Android app distribution market.³⁵

includes “[m]aking price or quality improvements to the Google Play Store to differentiate it from Alternative Android App Distribution Channels...” Proposed Injunction, 10.

²⁹ Proposed Injunction, ¶ II.A.4.

³⁰ Proposed Injunction, ¶ II.A.5; *see also*, Koh Testimony, Tr. 467:20–469:16 (confirming the non-removal requirement in Exhibit 153, the ABK Project Hug agreement); 482:13–483:9 (confirming the non-removal requirement in Exhibit 162, the Riot Games Project Hug agreement); Bernheim Report, ¶ 335.

³¹ Proposed Injunction, ¶ II.A.3.

³² I discuss the importance to app developers of access to APIs generally, and to Google’s proprietary Android APIs specifically, in Bernheim Report, ¶¶ 33–47.

³³ Proposed Injunction, ¶ II.C.1.

³⁴ Proposed Injunction, ¶ II.C.2.

³⁵ Bernheim Testimony, Tr. 2389:1–2393:19 (discussing evidence of effects of Google installation frictions from Epic installation funnel data and OnePlus preinstallations, and concluding that Google’s degradation of the download experience enhances Google Play’s market power in the market for app distribution); Morrill Testimony, Tr. 169:21:170:6 (testifying that 11 percent of users who tried to download the Amazon Appstore through the unknown sources install flow actually succeeded); Rosenberg Testimony, Tr. 1216:23–1217:2 (discussing Exhibit 682, a slide deck showing how Google recognized that as a result of the unknown sources warning the hurdles were too high for

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As I discussed in my report, such restrictions “diminished the success of competing app distribution initiatives.”³⁶

- (20) While Google should not be prevented from imposing legitimate security warnings to protect the safety of Android users, such warnings should not discriminate among apps based on the app store from which users download them, or discriminate against stores based on whether they are pre-loaded or obtained from the web. Prof. Mickens testified at trial that Google’s unknown sources flow imposes frictions that are not commensurate with the risk from directly downloaded apps.³⁷ He proposed an alternative involving (i) a one-time user permission for an installer app to download other apps, and (ii) a warning plus an option to abort the download of any app that has not passed an automated malware check.³⁸ He also testified that Google could ensure app security by notarizing apps itself in a manner similar to the mechanism used by Apple on Mac computers, or by using third-party verification services such as those Google already employs for secure communication through its Chrome browser, Gmail, and other web services.³⁹ Finally, he testified that his proposals would make Android no less secure than it currently is, and might make it safer.⁴⁰
- (21) Paragraphs II.B.1 and II.B.2 address this conduct by prohibiting Google from imposing unnecessary frictions to disincentivize users from obtaining apps outside of the Google Play Store, while still allowing Google the flexibility to block or impose frictions on apps or app stores that are known malware or are associated with developers who do not obtain proper notarization.⁴¹

most users to install the Amazon Appstore); Kochikar Testimony, Tr. 746:3–752:11 (discussing Exhibit 5718, which describes an 18-step process for installing the Amazon Appstore through the unknown sources install flow); 752:20–756:3 (discussing Exhibit 1517, her email to Jamie Rosenberg in which she described the experience of getting Fortnite on Android via direct downloading as “frankly abysmal” due in part to the 15 steps required); 759:10–761:10 (discussing Exhibit 917, a document she authored that says that “we know that [the install friction] will dramatically limit [Epic’s] reach”); 762:19–763:2 (explaining how where there is friction, people fall out and do not complete purchases); Pichai Testimony, Tr. 1360:19–1362:24 (testifying that the steps involved in direct downloading are examples of frictions; the more friction there is, the less likely the user completes the flow).

³⁶ Bernheim Report, Section VI.B.3.

³⁷ Mickens Testimony, Tr. 2114:10–15.

³⁸ Mickens Testimony, Tr. 2148:18–2157:5.

³⁹ Mickens Testimony, Tr. 2157:6–2163:2.

⁴⁰ Mickens Testimony, Tr. 2163:3–2164:1. Similarly, Google’s Dave Kleidermacher testified that (i) trusted third parties could authenticate apps, (ii) Google has introduced a security review badge on the Google Play Store for certain apps that undertake voluntary security review with the App Defense Alliance, and (iii) Google can or could use various technological tools to distinguish safe apps from malware. Kleidermacher Testimony, Tr. 1706:22–1712:1.

⁴¹ Proposed Injunction, ¶¶ II.B.1 and II.B.2.

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II.D. An effective remedy must reestablish an even playing field to compensate for past harms to competition

- (22) As discussed in Section II.B, network effects in app distribution tend to reinforce and perpetuate the market power Google acquired and maintained illicitly.⁴² Consequently, even if a remedy broadly prevented Google from engaging in the types of anticompetitive conduct the jury found to be illegal, Google’s past conduct would still have a substantial and continuing impact on competition in Android app distribution. Mitigating the future effects of Google’s past conduct requires additional remedial measures.
- (23) Competing app stores face a chicken-and-egg problem: enticing a significant number of users to consider an alternative to Google Play is challenging without a comparably comprehensive catalog of apps, and compiling such a catalog is challenging without a large base of users.⁴³ An app store can certainly attempt to build its user base through preload deals, direct downloading, and agreements with developers to offer exclusive content. However, all these measures are limited: the effects of preload deals are gradual because users tend to keep their mobile phones for several years; even simplified forms of direct downloading are considerably less convenient than preloading; and the benefits of offering exclusive content are transitory.⁴⁴ Given the market power that Google has maintained for years, a small app store faces hurdles for building a large and stable user base over a relatively short time frame, and its value proposition for developers is difficult to establish. And without the engagement of developers, the likelihood of building the user base becomes even more remote.
- (24) Epic’s proposed remedy attempts to address these difficulties in three ways. For a period of six years:
- Paragraph II.D.1 allows competing app stores to access Google Play’s app catalog “through a background process similar to the Alley Oop integration offered by Google to certain third-party Developers.”⁴⁵ Google Play would still be allowed to earn revenue from its apps distributed in this way.⁴⁶

⁴² I discussed network effects in my expert report. *See* Bernheim Report, ¶ 455.

⁴³ Bernheim Report, ¶ 455.

⁴⁴ Preloading on new devices is not likely to have widespread immediate effect on competition as users replace their phones every 2-3 years and preloads are not available on old devices. *See* Bernheim Testimony, Tr. 2434:2-11 (testifying that people buy a new phone “on average once every 2.7 years”); *see also* Lockheimer Testimony, Tr. 1500:3-7 (testifying that people replace phones every two or three years).

⁴⁵ Proposed Injunction, ¶ II.D.1.i. I understand that Alley Oop denotes a mechanism by which Google Play acts as the backend to another developer’s app-distribution efforts, *e.g.*, through an in-app ad. *See, e.g.*, Exhibit 136-043. Google describes Alley Oop as an “inline install solution powered by [Google] Play.” Exhibit 1546-007. For a period of 15 months (six-month agreement extended by nine months), Google allowed Facebook to install its apps and others’ apps outside of Google Play using Alley Oop. Exhibit 1546-007. *See also*, Bernheim Report, n. 1117; Bernheim Reply Report, n. 1238.

⁴⁶ Apps distributed in this way “shall be governed by the Google Play Store’s distribution agreements with Developers,”

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- Paragraph II.D.2 allows distribution of competing app stores on the Google Play Store.⁴⁷
 - Paragraph II.D.3 prohibits Google agreements with OEMs or carriers that mandate or incentivize placement of the Google Play Store in any specific location on an Android device.⁴⁸
- (25) The first portion is critical because it ameliorates the chicken-and-egg problem by uncoupling the two sides of the market. The Alley Oop strategy allows rival app stores, for a limited period of time, to offer comprehensive catalogs on day one, and consequently lowers an obstacle (which was exacerbated by Google’s past conduct) to those rival app stores’ being able to compete for users on a more even playing field. A store that succeeds in acquiring users through attractive pricing, superior search features, user-friendly interfaces, and the like, will then be well-positioned to engage developers directly and persuade them to launch their apps in the store’s own catalog. The network externalities that sustain Google Play’s dominance would thereby be mitigated at least to some degree. At the end of six years, the stores that offer the best value propositions have a better prospect of attaining sufficient user bases and proprietary catalogs to compete without further access to the Google Play catalog.
- (26) The second portion of this remedy streamlines the process of acquiring new users but does not directly address the network externalities that protect the market power Google acquired and maintained illicitly. While distribution competitors can under the terms of the proposed injunction self-distribute their stores, Google’s years of imposing frictions on direct downloads have trained users to rely on the Google Play Store to the exclusion of direct downloads, and as a result it will likely take some time to make them comfortable with direct downloading. Similarly, while distribution competitors ought to be able to reach agreements with OEMs to preinstall their app stores, that process would only impact the app distribution market with some delay—the large installed base of existing phones relative to new phones means that a substantial portion of Android users would be initially inaccessible through preloading deals. To make competing stores more readily accessible and visible to users, the Proposed Injunction requires Google, for a limited period, to make these stores available through the Google Play Store. Though the Google Play Store’s policy of refusing to distribute competing app stores is not part of the conduct that the jury found to be illegal, and there are good reasons to be cautious about requiring the Google Play Store to carry competing stores in perpetuity, this temporary remedy for Google’s other misconduct will help accelerate the transition to a more competitive Android app distribution market.
- (27) The third portion provides competing app stores with temporary and limited opportunities to offset the Google Play Store’s illicitly acquired incumbency advantages with users by negotiating

but Users can transfer update ownership to a third-party app store if and when an app becomes available there. Proposed Injunction, ¶ II.D.1.i, ii.

⁴⁷ Proposed Injunction, ¶ II.D.2.

⁴⁸ Proposed Injunction, ¶ II.D.3.

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comparable or more prominent placement. It does not, however, prohibit an OEM from placing the Google Play Store prominently if, in its judgement, its mobile phone offerings are thereby improved.

- (28) An important feature of these remedies is that they neutralize some of the advantages Google acquired through past anticompetitive conduct by enhancing the value competing app stores can offer users and developers, rather than by meaningfully impairing Google's ability to serve these constituencies. The benefit to users and developers is therefore direct with no significant risk of negative consequences to their interests.

II.E. Impact of States' Settlement

- (29) Before the trial began, plaintiff States and a class of app consumers reached a settlement with Google regarding Google's anticompetitive conduct. I have reviewed the States' Settlement to determine whether it adequately accomplishes the goals of preventing Google from engaging in future anticompetitive conduct and undoing the effects of Google's past anticompetitive conduct. On the first point, the States' Settlement does not fully prohibit the conduct found to be anticompetitive at trial; neither does it adequately prevent Google from modifying that conduct to achieve the same anticompetitive objectives in a somewhat different way. On the second point, the States' Settlement makes no attempt to undo the effects of Google's past anticompetitive conduct.
- (30) With regard to preventing Google from "foreclosing, impairing, and/or disincentivizing pre-installation of alternative app stores through agreements with OEMs" (Section II.A. above), the States' Settlement does not preclude the full menu of anticompetitive provisions that Google has deployed or could deploy in its agreements with OEMs. The States' Settlement prohibits agreements with OEMs that (i) secure preload or home screen exclusivity for the Google Play Store,⁴⁹ (ii) prevent OEMs from granting installer rights to preloaded applications,⁵⁰ or (iii) require OEMs to obtain Google's permission to preload a third-party app store.⁵¹ That is, if an OEM decides to develop an alternative app distribution channel, the States' Settlement prohibits some, but not all, of the strategies through which Google could hamstring that initiative. Specifically, the States' Settlement does not prevent Google from signing agreements, such as the RSA 3.0 revenue-sharing provisions, that disincentivize OEMs from preloading or featuring alternative app stores.⁵² Furthermore, it does not explicitly prevent Google from penalizing an OEM for pre-loading a third-party app store by

⁴⁹ States' Settlement, Section 6.6.

⁵⁰ States' Settlement, Section 6.7.

⁵¹ States' Settlement, Section 6.8.

⁵² The States' Settlement also allows Google to enter into or enforce existing agreements with OEMs that provide it with non-exclusive placement rights on the home screen or any other screen. *See* States' Settlement, Sections 6.6.

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restricting access to Android functionality or restricting access to other important Google products or services.

- (31) With regard to preventing Google from “impairing rival app distribution methods through agreements with developers” (Section II.B. above), the States’ Settlement would allow Google to enter into some agreements with developers that would limit competition in Android app distribution. For instance, though the States’ Settlement forbids contractual agreements between Google and developers that contain broad parity provisions (though for only four years), it does not prevent Google from reaching such agreements with respect to individual apps.⁵³ Because relatively few apps are popular enough to drive user engagement with alternative app stores, Google would likely be able to suppress competition just as effectively through more narrowly targeted restrictions. The States’ Settlement also exempts (after two years) parity agreements referencing alternative app stores controlled by companies with revenues exceeding \$100 billion.⁵⁴ This exemption is ill-conceived. Many of the likely entrants into Android app distribution are large companies such as Amazon, Microsoft, and Samsung, and vulnerability to network externalities is not primarily a function of a rival’s resources. In addition, the States’ Settlement does not prevent Google from signing agreements with developers to exclusively list their apps on the Google Play Store.⁵⁵ It also does not prevent Google from signing contracts with developers that disincentivize them from developing their own app distribution channels, which was a feature of some Project Hug agreements. Finally, it does not explicitly prevent Google from penalizing a developer that distributes through a competing app store by restricting access to Android functionality or restricting access to other important Google products or services.
- (32) With regard to preventing Google from “imposing frictions on “off-Play” app installations” (Section II.C above), the States’ remedy falls short of the Proposed Injunction’s requirements concerning parity for off-Play installations, which could allow Google to technologically hinder off-Play distribution channels.⁵⁶ In addition, the States’ Settlement is limited to certain Android versions.⁵⁷ The States’ Settlement permits Google latitude to impose restrictions on direct downloading for “security and privacy,” but Google has claimed this rationale as justification of its current imposition of excessive frictions on the direct downloading process.⁵⁸ Moreover, the States’ Settlement would allow

⁵³ In the States’ Settlement, Google commits not to enter into any price parity agreements with developers requiring them to offer equal or more favorable prices on Google Play’s billing system as they offer on other billing systems or other means of distribution on mobile devices. In addition, Google agrees not to enter into any title launch or feature parity agreements with developers that commit them to launch their titles at the same time or earlier, or with the same or better features, on Google Play relative to any other app stores for mobile devices. However, this commitment contains an explicit exception for agreements reached on an app-by-app basis. *See* States’ Settlement, Sections 6.4–6.5.

⁵⁴ States’ Settlement, Section 6.5.2.

⁵⁵ States’ Settlement, Section 6.5.2.

⁵⁶ Google commits to certain revisions of the default flow for directly downloaded apps for five years. States’ Settlement, Section 6.10.

⁵⁷ States’ Settlement, Section 6.9.

⁵⁸ States’ Settlement, Sections 6.10.2; *see also* Pichai Testimony, Tr. 1364:16–19 (“Q. Okay. Now, Google claims that these warning screens are intended to protect users from downloading malicious apps; fair? A. That’s correct.”);

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Google to impose new technological frictions on the installation and use of directly downloaded app stores after only four years.⁵⁹

- (33) A further broad problem with the States’ Settlement as a means of preventing Google from engaging in future anticompetitive conduct is that it includes a number of vague carve-outs that may effectively permit Google to continue its anticompetitive activities even with respect to the specific conduct the States’ Settlement purports to address. For example, the States’ Settlement:
- Allows Google to impose limitations on several of the remedies provided for in the States’ Settlement based on “security and privacy.”⁶⁰ Such carve-outs would permit Google to circumvent the remedies simply by citing security or privacy concerns as a justification.
 - Allows Google to impose preinstallation restrictions on carriers as opposed to OEMs.⁶¹
 - Limits numerous provisions to a short time period.⁶²
- (34) Finally, concerning the need to “reestablish an even playing field to compensate for past harms to competition” (Section II.D. above), in contrast to the Proposed Injunction, the States’ Settlement contains no provision to address the effects of Google’s past anticompetitive conduct. Without additional remediation of this kind, potential competing app stores would be unlikely to provide robust competition to Google Play in a timely manner, thus substantially undercutting the effectiveness of the States’ Settlement.

Kleidermacher Testimony, Tr. 1771:20–1772:2 (claiming that “sideloading warnings” are “an important part of security”); Qian Testimony, Tr. 2223:20–2224:2 (concluding that “sideloading consent screens in Android” are “prudent and consistent with industry best practices and the security principles that are well established”). Section 6.10.3 of the States’ Settlement notes that any restrictions that the Settlement imposes on changes to Google’s “Sideloading Flow” do not apply to “other security features such as Google Play Protect or the Advanced Protection Program.” States’ Settlement, Section 6.10.3.

⁵⁹ Google commits to maintain particular functionalities for directly downloaded app stores for four years. States’ Settlement, Section 6.9.

⁶⁰ *See, e.g.*, States’ Settlement, Sections 6.2, 6.3, 6.7, 6.8, 6.10 and 6.11. For example, Section 6.7 of the States’ Settlement prohibits Google from entering into any new agreement or enforcing any existing agreement that prevents OEMs from granting installer rights to preloaded apps on their mobile devices but permits Google to take reasonable steps to protect “user privacy or security.” States’ Settlement, Section 6.7.1.

⁶¹ States’ Settlement Sections 6.7 and 6.8.

⁶² *See, e.g.*, States’ Settlement, Sections 6.4, 6.5, 6.6, 6.7, 6.8 and 6.10.

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III. Detailed description of remedy proposal

(35) So far, I have limited my comments concerning Epic’s proposed remedy for conduct impacting Android app distribution to broad observations concerning its consistency with general principles. Next, I evaluate the specific provisions of that proposal in greater detail. This section follows the proposal’s organization, reproducing passages in bold for the sake of convenience before commenting on their purpose and appropriateness.

(36) Section II of Epic’s proposal begins with an articulation of Google’s general responsibilities under the remedy:

II. ANDROID APP DISTRIBUTION MARKET: Google is enjoined from enforcing contractual provisions, guidelines or policies, or otherwise imposing technical restrictions, usage frictions, financial terms or in-kind benefits that (i) restrict, prohibit, impede, disincentivize or deter the distribution of Android apps⁶³ through an Android app distribution channel other than the Google Play Store (an “Alternative Android App Distribution Channel”), including but not limited to, app stores other than the Google Play Store (“Third-Party App Stores”),⁶⁴ direct distribution via a web browser, pre-installation on an Android device, or any other means; (ii) have the effect of impeding or deterring competition among Android app distributors (including competition between Alternative Android App Distribution Channels and the Google Play Store); and/or (iii) otherwise discriminate against or disadvantage Android app distribution through any Alternative Android App Distribution Channel. To effectuate the injunctive relief, the Court orders the following specific remedies addressing Google’s conduct in the Android App Distribution Market.

(37) This high-level articulation of the proposed remedy indicates that its general purpose is to prohibit the types of conduct the jury considered anticompetitive and unlawful. Comments on specific provisions follow. I discuss their necessity, their impact on the market, and why they are not unduly burdensome.

⁶³ Distribution includes both supply of apps by Developers and acquisition of apps by Users unless otherwise specified.

⁶⁴ For avoidance of doubt, Third-Party App Stores include but are not limited to app stores owned and operated by mobile network carriers (“Carriers”), by original equipment manufacturers (“OEMs”) or by Developers.

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III.A. No agreements not to compete

- (38) Section II.A of the proposed remedy generally prohibits Google from entering agreements with OEMs, carriers, and/or competing distributors of the type the jury found to be illegal, as well as related agreements that would have similar effects on the Android app distribution market.

II.A No Agreements Not To Compete: Google is prohibited from engaging in the following conduct.

II.A.1 Placement and Preinstallation Terms for Third-Party App Stores: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that prohibits, limits or disincentivizes the placement of, preinstallation of, and/or grant of installation permissions (“Installation Permissions”) by a Carrier or an OEM to, any Android app or Third-Party App Store, including on the basis of the availability or non-availability of such app or Third-Party App Store on the Google Play Store.

II.A.1.i For the avoidance of doubt, Google shall not require or incentivize a carrier or OEM to introduce any additional steps for a User to enable or access a preinstalled Third-Party App Store beyond the steps required to access the Google Play Store when it is preinstalled.

- (39) Evidence and testimony presented at trial established that preloading potentially offers competing app stores a channel for achieving customer acceptance, but that the contractual restrictions on preloading Google contrives through RSA 3.0 severely limit the strategic viability of this option.⁶⁵ As discussed in Section II of this statement, the jury found these preloading restrictions to be unlawful.
- (40) Paragraph II.A.1 would prohibit Google from limiting or disincentivizing the preinstallation of Android apps or third-party app stores. This provision would prevent Google from utilizing the pertinent RSA 3.0 restrictions, or conduct that replicates its effects, to foreclose opportunities for preload deals between competing app stores and either OEMs or carriers. It would also help maintain the ability of developers to use preloading as a viable distribution method for their apps.
- (41) Paragraph II.A.1.i prohibits an alternate path through which Google might try to limit the preloading of app stores. It prevents Google from creating additional usage frictions for pre-installed third-party app stores. Without this prohibition, Google could nominally comply with Paragraph II.A.1 and allow preloading of third-party app stores but make them harder to use than the Google Play Store.

⁶⁵ Bernheim Testimony, Tr. 2394:6–17.

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- (42) In addition to prohibiting conduct the jury considered unlawful, this provision would prevent Google from undermining preload opportunities for third-party app stores in other ways. Consequently, it would enhance the viability of pro-competitive preloading agreements. However, the provision does not prevent Google from engaging in legitimate competition by reaching agreements with OEMs or carriers to preload the Google Play Store or other Google apps.

II.A.2 Agreements with Actual or Potential Competing Distributors: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that requires or incentivizes—including through the provision of any pecuniary or in-kind benefits, or through the imposition of any financial term or economic loss—any potential or actual competing provider of an Alternative Android App Distribution Channel (a “Competing Distributor”) to scale back, refrain from increasing investment into, or abandon its distribution of Android apps or its entry into the distribution of Android apps, including, but not limited to, incentivizing Competing Distributors not to invest in Alternative Android App Distribution Channels. For the avoidance of doubt, this clause includes but is not limited to the following:

II.A.2.i Google shall not offer any Competing Distributor a share of revenues from, or related to, the Google Play Store.

II.A.2.ii Google shall not offer any Competing Distributor any share of revenues, from any source, that is tied to, related to, or conditioned on the development, preinstallation, launch or placement of any Alternative Android App Distribution Channel, including a Competing Distributor’s abstention from any of the foregoing.

II.A.2.iii In any agreement with a Competing Distributor, Google shall include a clear and express statement that the terms of that agreement, including the provision of any benefit or financial term, is not in any way conditional on the Competing Distributor’s use, development, preinstallation, launch or placement of any Alternative Android App Distribution Channel, including a Competing Distributor’s abstention from any of the foregoing.

- (43) Evidence and testimony presented at trial demonstrated that Google “buys off” actual and potential app distribution competitors through Project Hug payments to developers who are poised to promote the growth of alternative distribution channels, and by sharing Google Play revenues with OEMs through RSA 3.0 agreements.⁶⁶ As discussed in Section II, the jury found these agreements to be unlawful.

⁶⁶ Bernheim Testimony, Tr. 2404:12–2406:19. *See also* Bernheim Report, Section VI.B.1.

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- (44) Paragraph II.A.2 would prevent Google from entering or enforcing agreements that require or incentivize potential or actual Android app distribution rivals from competing with the Google Play Store. Paragraphs II.A.2.i and II.A.2.ii provide examples of such contracts. Paragraph II.A.2.iii mandates that Google include in any agreement with a competing distributor an express statement that the agreement is not conditional on that distributor's relationship with any alternative Android app distribution channel. These provisions clarify that Google cannot give competing distributors a share of the Google Play Store's revenues under any circumstances, and that Google cannot share revenue from any other sources if the payments are conditional on its relationship with a competing channel of app distribution.
- (45) Prohibiting Google from "buying off" actual and potential competitors in Android app distribution will increase the incentives for rivals to compete with the Google Play Store. Conversely, nothing in Paragraph II.A.2, or indeed in any other part of the remedy, prevents Google from competing with rivals through strategies that enhance the value users and developers derive from its own offerings, for example by lowering the prices it charges for Google Play Store services or by investing in quality improvements.

II.A.3 No Exclusivity: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that requires or incentivizes the distribution of any Android app, or of any content available in or through an Android app, exclusively on the Google Play Store.

II.A.3.i For the avoidance of doubt, any monetary benefit offered to a Developer to distribute any Android app through the Google Play Store in lieu of, or in parallel with, self-distribution of the same Android app, is prohibited by this Paragraph II.A.3.

- (46) Paragraphs II.A.3 and II.A.3.i would prevent Google from requiring exclusive distribution of any app or app content through the Google Play Store. Because the existing Project Hug agreements do not include such requirements, these provisions go beyond prohibiting the conduct the jury deemed illegal at trial. Their purpose is to prevent Google from adopting alternative strategies for preserving the breadth-of-catalog advantages it derives from past anticompetitive conduct. By pursuing such strategies, Google could extinguish incipient competition from other app stores before it developed.
- (47) This provision does not prevent developers from distributing solely through the Google Play Store if they choose, as long as Google does not elicit that exclusivity through financial incentives.

II.A.4 No MFNs/Limits on Differentiated Content: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that sets a Developer's timing of the release of any Android app on the Google Play

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Store, or the pricing or content of any app so released—or that incentivizes any of the foregoing to be set—in reference to the timing of the launch of such app, or the pricing or content thereof, on any Alternative Android App Distribution Channel, including, but not limited to, enforcing any sim-ship, most-favored nation (“MFN”), content parity or pricing parity requirement in any of Google’s Project Hug agreements.

- (48) As discussed in Section II.D of this statement, network externalities help Google Play sustain dominance in Android app distribution. In such settings, a rival cannot usually compete effectively as a “we have most of the same stuff” platform. Instead, the best strategy for overcoming network externalities is to offer distinctive content not available on the Google Play Store. Evidence and testimony at trial demonstrated that Google’s Project Hug agreements with large developers enhanced its ability to monopolize the relevant markets by preventing rival app stores from pursuing this strategy.⁶⁷ The jury declared these agreements unlawful.
- (49) Paragraph III.A.4 would prevent Google from entering into contracts with developers that require parity between the Google Play Store and alternative distribution channels with respect to the features, prices, and release timing of apps. Enforcement of this provision would foster competition in Android app distribution by providing Google Play’s rivals with opportunities to engage users through the provision of unique content. It does not prevent Google from encouraging developers to distribute through the Google Play Store by offering better terms or higher quality app distribution services.

II.A.5 No Restrictions on Removal of Developer Apps from the Google Play Store: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that prohibits the withdrawal of any Android app from the Google Play Store without Google’s consent, including, but not limited to, enforcing the non-removal requirement in certain of Google’s Project Hug agreements.

- (50) Paragraph II.A.5 forbids Google from prohibiting the withdrawal of apps from the Google Play Store without Google’s consent.⁶⁸ This provision augments paragraph II.A.4 by allowing developers to distribute apps exclusively through rivals’ app stores or other alternative channels even after the apps become available through the Google Play Store. It thereby expands the scope for rivals to provide unique content, making it easier for them overcome the network externalities that protect Google Play’s illicitly acquired dominance.

⁶⁷ Bernheim Testimony, Tr. 2403:7–2404:11. *See also* Allison Testimony, Tr. 213:7–215:25; Bernheim Report, Section VI.B.4.

⁶⁸ Proposed Injunction, ¶ II.A.5. *See also*, Koh Testimony, Tr. 467:20–469:16 (confirming the non-removal requirement in Exhibit 153, the ABK Hug agreement); 482:13–483:9 (confirming the non-removal requirement in Exhibit 162, the Riot Games Hug agreement). *See also* Bernheim Report, ¶ 335.

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- (51) This provision narrowly targets particular features of some Project Hug agreements, as well as substantially similar provisions.

III.B. No undue restrictions on direct downloading

- (52) Paragraph II.B of the proposed remedy generally prohibits Google from discouraging app distribution through direct downloading by contriving artificial frictions such as unnecessarily complex procedures and excessive warnings, a practice the jury declared anticompetitive. The provision does not prevent Google from taking legitimate steps to protect Android users.

II.B. Download Remedies: With respect to direct distribution and download outside of the Google Play Store, Google is enjoined from each of the following.

II.B.1 Parity of Install Flow Regardless of Source: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that prohibits or disincentivizes—through any technical, contractual, financial, or other means—the downloading, granting of permissions, installation and/or updating of any Android app through any Alternative Android App Distribution Channel. To implement the foregoing:

II.B.1.i With respect to downloading from Third-Party App Stores, Google shall not impose, require, encourage or incentivize the imposition of any prompts, warnings, reminders, settings screens or other “friction” steps on the download of apps from Third-Party App Stores beyond the frictions associated with the downloading of apps from the Google Play Store itself.

II.B.1.ii With respect to downloading outside of a Third-Party App Store, Google shall not impose, require, encourage or incentivize the imposition of any prompts, warnings, reminders, settings screens or other “friction” steps on devices, other than (a) a single one-tap screen asking in neutral language that the user confirm intent to proceed with the app installation or (b) as set forth in Paragraph II.B.2 below.

II.B.1.iii On any given device, Google shall be required to display prompts, warnings, reminders, settings screens or other “friction” steps in connection with the installation of an app from the Google Play Store that are commensurate with those that are imposed (whether by Google, an OEM or a Carrier) in connection with installation from an Alternative Android App Distribution Channel.

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II.B.2 Notwithstanding the above Paragraph II.B.1:

II.B.2.i Google may include a single one-tap screen asking the user to allow a web browser or Third-Party App Store downloaded from an Alternative Android App Distribution Channel to install other apps upon the first installation attempt from such web browser or Third-Party App Store.

II.B.2.ii Google may impose additional frictions and/or block the installation of apps/stores from the web or an app store for (i) apps/stores whose developers declined to subject their apps/stores to a generally available, distribution-channel-agnostic notarization-like process or (ii) apps/stores that are known malware.

- (53) The potential for users to download apps, including app stores, directly from developers' websites represents an important opportunity for Google Play's app distribution rivals. Evidence and testimony at trial established that Google discourages direct downloading by contriving artificial frictions.⁶⁹ As discussed in Section II.C above, the jury found this practice to be unlawful because it impairs competition that would otherwise operate through that distribution channel.
- (54) Paragraph II.B would prohibit Google from contriving disproportionate download frictions that impair rivals' ability to distribute apps and app stores to users. It would thereby help to create a level playing field between the Google Play Store and alternative app distribution channels.
- (55) At the same time, these provisions will not degrade or otherwise change the functionality of the Google Play Store. Nor will the relief degrade the value of Android, since it explicitly allows Google to protect users by providing legitimate security warnings. More specifically, Paragraph II.B.1 simply ensures that the download process for rival app stores on Android is not inferior to the process for the Google Play Store and direct downloading is not subject to frictions beyond basic user consent.⁷⁰ In other words, it levels the playing field through a parity requirement rather than by imposing limits on security measures. Under this provision, Google is free to determine the security measures most appropriate for protecting the integrity of Android, and Google will have economic incentives to do

⁶⁹ See, e.g., Morrill Testimony, Tr. 161:12–162:14 (“Q. Okay. In 2013 on a compatible Android device how many clicks did it take to get to the Google Play Store? A. One. Q. And in 2013 on a compatible Android device how many clicks did it take to download an app store, other than the Google Play Store? A. Again, as written and per the process that was gone through in furtherance of this document, at least ten steps. Q. In 2013 what did Amazon experience was the effect, if any, the sideloading process had on whether users downloaded app stores that competed with Google Play Store? A. As stated, our position is that is discouraged, strongly discouraged users from using the app store or I should say discovering the app store, not using, discovering and installing”).

⁷⁰ Specifically, Paragraph II.B.1.i prevents Google from imposing additional frictions when downloading an app from a Third-Party App Store as compared to the Google Play Store. Paragraph II.B.1.ii recognizes that user consent is required to direct download an app outside of an app store but prevents Google from imposing additional frictions. Paragraph II.B.1.iii prevents Google from allowing OEMs and Carriers to disadvantage other app stores compared to the Google Play Store.

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so. Paragraph II.B.2.i allows Google to establish installation procedures involving a single one-tap screen on which Android users would authorize a third-party app store to install other apps. Significantly, Paragraph II.B.2.ii allows Google to block or impose additional frictions upon the download process for apps and app stores that are known malware or that are associated with developers who do not obtain proper notarization to ensure they are safe for users. Requiring the notarization process to be distribution-channel-agnostic ensures that Google cannot use the process to put rival apps and app stores at a disadvantage relative to Google apps and the Google Play Store.

III.C. No undue restrictions on access to Android or other Google products or services

- (56) Paragraph II.C of the proposed remedy prohibits Google from degrading the quality of apps distributed through channels other than the Google Play Store (e.g., rival app stores and direct downloading) by denying them access to functionalities, APIs, Google apps, or features that are important for the functioning of apps on Android smartphones. Its objective is to foreclose anticompetitive strategies through which Google might achieve the same or similar outcomes as with the conduct the jury declared unlawful.

II.C. Remedies Concerning Access to Android and Other Google Products or Services: With respect to access to Android’s functionality and other Google products or services, Google is enjoined from each of the following.

II.C.1 Parity of Access to Android Functionality Regardless of Source: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that denies or impedes any Alternative Android App Distribution Channel, or any Android app that was downloaded through any Alternative Android App Distribution Channel, from having access to Android functionality and/or APIs and features (whether such functionality, APIs or features are considered part of Android Open Source Project (“AOSP”) or Google Mobile Services (“GMS”)) that is equivalent to the access had by any non-Google Android app downloaded through the Google Play Store.

II.C.1.i For avoidance of doubt, Google shall grant equal access to Android operating system and platform features, including APIs like the PACKAGE_INSTALLER API, to Developers without discriminating based on the Developers’ choice of app distribution channel. Google may not claim that features which are traditionally part of an operating system or platform are instead part of the Google Play Store.

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- (57) According to evidence and testimony presented at trial, the functionality of apps on Android smartphones depends critically on access to key application program interfaces (APIs) and other features of the Android operating system.⁷¹ Google Android’s developer services include Google Play Services, which are the APIs and SDKs in GMS comprising the set of supporting background software that helps provide basic functionalities for all Android applications. These services allow app developers to access functionalities such as Google Maps data and location services. The Google Android APIs for certain important functionalities, such as location services APIs, are higher quality than the corresponding AOSP APIs.
- (58) Google might attempt to circumvent the other features of the proposed remedy by denying critical APIs and services for apps downloaded through distribution channels other than the Google Play Store. To ensure that Google does not undermine the remedy through such strategies, Paragraph II.C.1 goes beyond prohibiting the conduct the jury deemed illegal at trial by preventing Google from impairing an app’s access to key Android functionalities based on the channel through which it is distributed.
- (59) Significantly, these provisions do not prevent Google from improving its APIs or otherwise enhancing the functionality of Android as long as such enhancements are equally accessible to apps distributed through channels other than Google Play. Nor do these provisions prevent Google from improving the functionality of its own apps.

II.C.2 No Access Restrictions to Other Google Products or Services: Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that conditions or impedes access to, restricts the use of, or conditions the terms of access to any of Google’s products or services (other than its Google Play Billing (“GPB”) service) on the basis of a Developer’s actual or intended use of any Alternative Android App Distribution Channel.

II.C.2.i For the avoidance of doubt, prohibiting or disincentivizing the inclusion of a link to download or install any Android app through any Alternative Android App Distribution Channel in an advertisement for such an app that is handled or facilitated by Google Search, Google Ads, or similar services would be deemed a violation of this Paragraph II.C.2.

- (60) Paragraph II.C.2 prevents Google from maintaining its monopoly power in app distribution by conditioning access to Google products or services on a developer’s actual or intended use of an app distribution channel other than the Google Play Store. This remedy is related to but broader than the one in Paragraph II.C.1, which focuses specifically on preventing Google from using its monopoly power in Android, including its control of associated APIs and apps, to maintain its monopoly in app

⁷¹ Kolotouros Testimony, Tr. 1059:8–1060:7. *See also* Bernheim Report, § II.B.

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distribution. Paragraph II.C.2 recognizes that Google has a broad suite of apps and services, such as Google Search, Google Ads or other similar services, that it could use to degrade app distribution through channels other than the Google Play Store or to punish developers who use or promote those channels. If Google could continue to limit the availability of these and other Google products and services to apps that are distributed on the Google Play Store, it would make distribution outside of the Google Play Store a less viable competitive alternative. To ensure a level playing field for all app distribution channels on Android smartphones, Google must not be permitted to place its rivals at a disadvantage relative to Google Play by withholding or degrading those other products or services.

III.D. Addressing the continuing effects of past anticompetitive conduct in Android app distribution

- (61) As explained in Section II.D of this statement, network effects in app distribution ensure that, even if a remedy broadly prevented Google from engaging in the types of anticompetitive conduct the jury found to be illegal, Google's past conduct would still have a substantial and continuing impact on competition in Android app distribution. Attempting to neutralize the future effects of Google's past conduct requires additional remedial measures. Paragraph II.D of the remedy serves this purpose.

II.D Remedies To Promote Competition in Android App Distribution: Google must undertake the conduct below in order to address the cumulative continuing effects of the conduct found to be unlawful and thereby restore competition in the Android App Distribution Market.

II.D.1 Google Play Store Catalog Access and Library Porting: For a period of six (6) years, Google shall provide Third-Party App Stores access to the Google Play Store app catalog.

II.D.1.i On Android-compatible phones that preload what is currently named the GMS suite ("GMS Devices") or any similar package of Google apps and APIs made available to OEMs, Google shall allow Third-Party App Stores to access the Google Play Store's catalog of apps not then available on those Third-Party App Stores. If a Third-Party App Store's User wishes to download and install an app not then available on that Third-Party App Store, Google shall have the Google Play Store download and install those apps on the devices of a Third-Party App Store's Users through a background process similar to the Alley Oop integration offered by Google to certain third-party Developers. Such apps installed by the Google Play Store shall be governed by the Google Play Store's distribution agreements with Developers, and Google may require the Third-Party App Stores to clearly indicate this to Users.

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II.D.1.ii Google shall allow Users to provide Third-Party App Stores with access to a list of apps installed by the Google Play Store on the User’s GMS Device. Google shall provide Users with the ability, subject to a one-time User permission, to change the ownership for any or all of those apps such that the Third-Party App Store becomes the update owner for those apps when those apps are directly distributed by the Third-Party App Store.

- (62) The provisions in Paragraph II.D.1 would allow competing app stores to access the Google Play catalog through a process similar to Google’s Alley Oop app distribution process, in which Google Play acts as the back end to another app store’s consumer-facing front end.⁷² Paragraph II.D.1.i details this process. Paragraph II.D.1.ii allows for a smooth transition from Alley Oop-like distribution to full distribution through a competing app store once that competing app store establishes a direct relationship with a developer.
- (63) Providing rival app stores with access to the Google Play Store app catalog mitigates the network externalities that insulate Google’s illicitly acquired market power. It jump-starts the competitive process by decoupling the user side of the market from the developer side. In effect, it provides rival app stores with immediate scale on the developer side, allowing them to compete for users on the merits without confronting a chicken-and-egg problem. An immediate consequence is that rival app stores would have an opportunity to develop more robust preloading and placement relationships with OEMs. While the rival app stores will benefit strategically from the ability to offer a comprehensive app catalog, revenues from apps distributed through the Alley Oop mechanism will continue to flow to Google.
- (64) Developers will become increasingly willing to establish direct relationships with a rival app store as it builds its user base. Once a direct relationship exists, Paragraph II.D.1.ii allows users to transfer the responsibility of updating apps that were originally downloaded from the Google Play Store to the third-party app store such that the third-party app store would be responsible for automatic updates of apps (and would from that point forward be entitled to any ongoing revenues from the developer). Rival app stores may choose to incentivize these transitions. The resulting competition between Google Play and its rivals will directly benefit users.
- (65) The provision will be in effect for six years. Because a six-year period corresponds to roughly two phone-purchase cycles,⁷³ it will, in combination with other provisions of the proposed remedy (such as those that prevent Google from foreclosing opportunities for rival app stores to reach preloading

⁷² See, e.g., Exhibit 136-043. Google describes Alley Oop as an “inline install solution powered by [Google] Play.” Exhibit 1546-007. For a period of 15 months (six-month agreement extended by nine months), Google allowed Facebook to install its apps and others’ apps outside of Google Play using Alley Oop. Exhibit 1546-007. See also, Bernheim Report, n. 1117; Bernheim Reply Report, n. 1238.

⁷³ See Bernheim Testimony, Tr. 2434:2–11 (testifying that people buy a new phone “on average once every 2.7 years”).

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agreements with OEMs) give app stores with attractive value propositions a chance to reach sustainable scale among users and developers.⁷⁴ The temporary nature of these provisions ensures that such stores will be highly motivated to promptly engage developers directly.

II.D.2 Google Play Store Distributing Third-Party App Stores: For a period of six (6) years, Google shall allow distribution of competing Third-Party App Stores on the Google Play Store.

II.D.2.i The download process of Third-Party App Stores from the Google Play Store shall be identical in all respects to the download process of any other app from the Google Play Store, except that in connection with the first attempt to install an app from a Third-Party App Store downloaded from the Google Play Store, Google may present the User of a downloaded Third-Party App Store with a single one-tap screen asking the User to allow the Third-Party App Store to install other apps.

II.D.2.ii Google shall not impose any fees in connection with the distribution of Third-Party App Stores on the Google Play Store pursuant to this Paragraph II.D.2 (including any fees on any sales made by such app stores or in apps distributed directly (*i.e.*, not through the access mechanism in II.D.1) by these app stores).

- (66) The provisions in Paragraph II.D.2 allow Google Play's rivals to distribute their app stores through the Google Play Store for a limited period of time. Paragraph II.D.2.i clarifies that downloading app stores distributed in this way should not be unduly burdensome relative to downloading other apps through the Google Play Store. However, as with direct downloads (discussed in Paragraph II.B), it allows Google to present a one-tap screen requesting install permissions. Paragraph II.D.2.ii clarifies that Google cannot charge any fees for such distribution. The purpose of this provision is to prevent Google from unduly limiting the viability of this distribution channel for app distribution competitors.
- (67) Creating opportunities for Google Play's rivals to distribute app stores through the Google Play Store helps address the fact that Google Play's past anticompetitive conduct has conditioned most users to seek apps only through Google Play. If third-party app stores were not available through Google Play, many users would not know where to find them or even to look for them at all. This temporary remedy would give third-party app stores a degree of visibility that Google's past anticompetitive conduct would otherwise deny them, and thereby assist them in competing immediately and more effectively for all Android users. Without this remedy, the benefits of emerging rivalry in app distribution could be frustrated by users' inability to find competing stores. This remedy complements Paragraphs II.A and II.B, discussed above, which remove obstacles to distributing competing app stores through preloading and direct downloading, respectively.

⁷⁴ Lockheimer Testimony, Tr. 1500:3–7 (testifying that people replace phones every two or three years).

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- (68) I understand that a firm’s decision not to deal with its rivals can be a legitimate competitive strategy (and that the Court ruled that Google was not obligated as a matter of antitrust law to carry other app stores on Google Play), but I believe it appropriate here to require Google to carry competing stores on Google Play—for a limited period of time—as a remedy for Google’s other conduct that was anticompetitive, and that would otherwise continue to impair competition in Android app distribution. Like Paragraph II.D.1, this provision goes beyond prohibiting the specific conduct, or substantially similar conduct, that was at issue in the trial, in order to counter the persistent impact of Google’s past anticompetitive conduct.
- (69) As with Paragraph II.D.1, these provisions will be in effect for six years, or roughly two phone purchase cycles. Their temporary nature ensures that competing app stores will be highly motivated to develop and deploy other strategies for obtaining users such as preloading and direct downloading.

II.D.3 Mandating Placement of the Google Play Store: For a period of six (6) years, Google shall not enforce any existing agreement, enter into any new agreement or otherwise engage in any conduct that mandates or incentivizes the placement of the Google Play Store in any specific location on an Android device, including but not limited to the default home screen.

- (70) The purpose of this provision is to provide competing app stores with temporary and limited opportunities to offset the Google Play Store’s illicitly acquired incumbency advantages with users. In focusing on agreements involving placement, it goes beyond prohibiting the conduct the jury deemed illegal at trial.
- (71) Because of the Google Play Store’s past dominance, users are generally far more familiar with it and accustomed to using it than the alternatives. It is therefore the default choice in the vast majority of cases. More prominent placement for the Google Play Store than for rivals reinforces this default status. Conversely, more prominent placement for a rival undermines the Google Play Store’s default status, which translates into a greater potential for competitive success.⁷⁵ Paragraph II.D.3 introduces opportunities for the latter to occur. It accomplishes this objective by prohibiting Google from requiring or incentivizing OEMs or carriers to place the Google Play Store in a specific location on an Android device, such as at the top of the default home screen.
- (72) Under this provision, Google would still be free to mandate that an OEM or carrier include the Google Play Store and other Google apps on its devices. Critically, Paragraph II.D.3 does not prevent an OEM or carrier from choosing to place the preloaded Google Play Store or Google apps anywhere on a device, so long as that choice is not mandated or incentivized through a Google agreement. An

⁷⁵ Bernheim Report, ¶ 289, n. 635.

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OEM that believes users will value prominent placement of the Google Play Store will be free to act on that belief.

- (73) This provision is limited to six years, or roughly two phone replacement cycles. In other words, the remedy provides rival app stores with a limited amount of time to weaken Google Play's incumbency advantage and associated default status.

III.E. Google allowed to compete on the merits

- (74) Section II of the Proposed Injunction, which covers competition in the Android app distribution market, concludes with the following statement:⁷⁶

Notwithstanding the preceding prohibitions, nothing in this section shall prohibit Google from engaging in bona fide competition on the merits with respect to the distribution of apps on Android, such as:

- 1. Making price or quality improvements to the Google Play Store to differentiate it from Alternative Android App Distribution Channels; and/or**
- 2. Communicating to OEMs, Carriers, Developers and Users regarding any purported quality or price advantages of the Google Play Store over Alternative Android App Distribution Channels, or otherwise publicly promoting the Google Play Store.**

As I discussed at trial and in my expert report, economists recognize key differences between anticompetitive exclusionary practices and competition on the merits.⁷⁷ Under competition on the merits, firms vie for customers and profits by improving their product offerings, for example by lowering prices and improving quality, increasing economic efficiency and consumer welfare in the process. The proposed remedies do not restrict or discourage Google from competing on the merits in Android app distribution by improving the Google Play Store, as opposed to limiting competition from alternative distribution channels through the anticompetitive and exclusionary practices identified at trial, in my expert reports, and in this statement.

⁷⁶ Section III of the Proposed Injunction is outside the scope of this statement. I understand that Professor Tadelis is addressing that section of the Proposed Injunction in his statement.

⁷⁷ Bernheim Testimony, Tr. 2376:8–2377:13. *See also* Bernheim Report Section V.A.

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B. Douglas Bernheim

April 11, 2024

Date