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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

EPIC GAMES, INC.,

Plaintiff,

VS.

APPLE INC.,

Defendant

Case No. 4:20-CV-05640-YGR

**PLAINTIFF EPIC GAMES, INC.'S
NOTICE OF MOTION AND MOTION
FOR A PRELIMINARY INJUNCTION
AND MEMORANDUM OF POINTS AND
AUTHORITIES IN SUPPORT THEREOF**

Date: September 28, 2020 at 9:30 a.m. (via Zoom Platform)

Courtroom: 1, 4th Floor

Judge: Hon. Yvonne Gonzalez Rogers

1 **NOTICE OF MOTION AND MOTION**

2 **TO ALL PARTIES HEREIN AND THEIR ATTORNEYS OF RECORD:**

3 PLEASE TAKE NOTICE THAT on September 28, 2020, at 9:30 a.m., in the United
4 States District Court for the Northern District of California, before the Honorable Yvonne
5 Gonzalez Rogers, Plaintiff Epic Games, Inc. (“Epic”) will move this Court pursuant to Federal
6 Rule of Civil Procedure 65 for a Preliminary Injunction: (1) restraining Defendant Apple Inc.
7 (“Apple”) from removing, de-listing, refusing to list or otherwise making unavailable the app
8 *Fortnite* or any other app on Epic’s Team ID ’84 account in Apple’s Developer Program,
9 including any update of such an app, from the App Store on the basis that *Fortnite* offers in-app
10 payment processing through means other than Apple’s In-App Purchase (“IAP”) or on any
11 pretextual basis; (2) restraining Apple from taking any adverse action against Epic, including but
12 not limited to restricting, suspending, or terminating any other Apple Developer Program
13 account of Epic or its affiliates, on the basis that Epic enabled in-app payment processing in
14 *Fortnite* through means other than IAP or on the basis of the steps Epic took to do so;
15 (3) restraining Apple from removing, disabling, or modifying *Fortnite* or any code, script,
16 feature, setting, certification, version or update thereof on any iOS user’s device; and
17 (4) requiring Apple to restore Epic’s Team ID ’84 account in Apple’s Developer Program.

18 This motion is made on the grounds that: (1) Epic is likely to succeed on the merits of its
19 claims that Apple’s conduct violates the Sherman Act; (2) absent a preliminary injunction, Epic
20 is likely to suffer irreparable harm; (3) the balance of harms tips sharply in Epic’s favor; and
21 (4) the public interest supports an injunction.

22 This motion is based upon the Complaint in this action, this Notice of Motion, the
23 Memorandum of Points and Authorities filed herewith, the Proposed Order Granting Plaintiff’s
24 Motion for a Preliminary Injunction, the Declaration of Timothy Sweeney (“Sweeney Decl.”)
25 along with its accompanying exhibits, the Declaration of Nicholas Penwarden (“Penwarden
26 Decl.”), the Declaration of Andrew Grant (“Grant Decl.”) along with its accompanying exhibits,
27 the Declaration of M. Brent Byars (“Byars Decl.”) along with its accompanying exhibits, the
28

1 Declaration of David Evans (“Evans Decl.”), all matters with respect to which this Court may
2 take judicial notice, and such oral and documentary evidence as may be presented to the Court.

3 Plaintiff hereby requests, pursuant to FRCP 65 and Civil Local Rules 7-2 and 65-2, that
4 the Court issue a preliminary injunction.

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PRELIMINARY STATEMENT¹

Apple is a monopolist. It controls all app distribution on iOS. It controls all in-app payment processing for digital content on iOS. It unlawfully maintains these two monopolies by explicitly prohibiting any competitive entry in either market. It is highly likely to lose this case.

On this motion, however, all Epic seeks is for the Court to stop Apple from retaliating against Epic for daring to challenge Apple’s misconduct. As set out in more detail in the Complaint, on August 13, 2020, Epic ceased complying with one of Apple’s anti-competitive rules: it offered players of its popular game, *Fortnite*, the option of lower prices on in-app purchases using a competing payment processor. This was a necessary first step on the long road to freeing consumers and developers from Apple’s decade-long monopolistic grip over app distribution and in-app payment processing on iOS.

Apple retaliated with ferocity. Not only did it remove *Fortnite* from the App Store, which Epic anticipated, but it also declared it would terminate every one of Epic's Apple Developer Program accounts and cut off Epic's access even to software tools that are widely available to the public. This was a clear warning to any other developer that would dare challenge Apple's monopolies: follow our rules or we will cut you off from a billion iOS consumers—challenge us and we will destroy your business.

In short, accused of antitrust violations for misusing its power to create and maintain two monopolies, Apple used that same power to try to coerce Epic to abide by its unlawful restrictions. The Court should not allow Apple to enforce these restrictions. “The authorities from the earliest time to the present unanimously hold that no court will lend its assistance in any way towards carrying out the terms of an illegal contract.” *McMullen v. Hoffman*, 174 U.S. 639, 654 (1899). That result is mandated by strong public policy considerations: “In such cases the aid of the court is denied, not for the benefit of the [non-complying party], but because public policy demands that it should be denied.” *Cont'l Wall Paper Co. v. Louis Voight & Sons Co.*, 212 U.S. 227, 262 (1909). More recently, the Supreme Court has explained, “our cases leave no

¹ Unless otherwise noted, all emphasis is added and all internal quotation marks and citations are omitted.

1 doubt that illegal promises will not be enforced in cases controlled by the federal law". *Kaiser*
 2 *Steel Corp. v. Mullins*, 455 U.S. 72, 77 (1982). The Ninth Circuit has stated simply, "'Unclean
 3 hands' has not been recognized as a defense to an antitrust action for many years." *Memorex*
 4 *Corp. v. Int'l Bus. Mach. Corp.*, 555 F.2d 1379, 1382 (9th Cir. 1977). This principle has been
 5 applied in analogous preliminary injunction contexts. *See, e.g., Acquaire v. Canada Dry Bottling*
 6 *Co.*, 24 F.3d 401, 411(2d Cir. 1994) (affirming preliminary injunction despite antitrust
 7 defendant's argument that "any irreparable harm to the [plaintiffs] was self-inflicted in that
 8 [defendant] withheld product only from those [plaintiffs] who elected to participate in the
 9 [challenged] program but refused to abide by its [allegedly unlawful] terms").

10 Epic is ideally situated to challenge Apple's restrictions. Epic is a would-be direct
 11 competitor of Apple in the relevant markets, ready to offer competitive app distribution and
 12 competitive payment processing on iOS. Epic demonstrated its readiness by offering a
 13 competitive alternative to Apple's payment processing, giving choice to consumers and
 14 delivering the benefit of lower prices to the users who chose it over Apple's offering. To enable
 15 Epic to carry out this challenge without suffering irreparable harm from Apple's retaliation in the
 16 interim, Epic respectfully requests that the Court grant its motion for a preliminary injunction to
 17 stop Apple from retaliating further and to undo Apple's retaliation to date.

18 First, Epic is likely to succeed on the merits. Apple controls a software platform—the
 19 iOS operating system—that gives it substantial market power over app developers and a billion
 20 consumers. Using that power, it has designed a set of restrictions through which it acquired and
 21 maintains monopolies in two downstream markets where competition can and should thrive: app
 22 distribution and in-app payment processing. In the app distribution market, but for Apple's
 23 restrictions, developers would have a choice of how to distribute their iOS apps, consumers
 24 would have a choice of how to obtain them, and Apple's App Store would have to compete by
 25 offering better quality and/or lower prices. Other successful operating systems, like Microsoft's
 26 Windows or Apple's own macOS, offer such a choice to consumers and developers. Likewise,
 27 in the in-app payment processing market, but for Apple's restrictions, iOS app developers
 28 offering in-app purchases of digital content could choose which processor to use, just as they do

1 when their apps sell physical goods to iOS users. Instead, Apple absolutely prohibits *any*
 2 competition in either market, leaving Apple free to impose distribution and processing terms
 3 unchecked by competitive forces. To be clear, Epic does not seek to force Apple to provide
 4 distribution and processing services for free, nor does Epic seek to enjoy Apple's services
 5 without paying for them. What Epic wants is the freedom *not* to use Apple's App Store or IAP,
 6 and instead to use and offer *competing* services.

7 *Second*, without injunctive relief, Apple's actions will cause irreparable harm to Epic, as
 8 well as harm to countless third parties and the public interest. In this case, these two factors of
 9 the preliminary injunction standard are closely related. Epic was willing to stand up to Apple
 10 because it was the right thing to do, and because Epic believed it was better positioned than
 11 many other companies to weather the storm. But Epic is not immune from irreparable harm.
 12 And Epic's willingness to challenge an unlawful monopoly is not a basis on which to discount its
 13 harm under the long line of Supreme Court precedent quoted above. In fact, granting the
 14 injunction would promote the public policies favoring competitive markets and disfavoring
 15 enforcement of anti-competitive contract terms.

16 *Fortnite* is more than just a game. It is an intensely social community whose value to its
 17 users depends in large part on the ability to connect with other users. Epic has built a community
 18 that people rely on. By removing *Fortnite* from the App Store, Apple has cleaved millions of
 19 users from their friends and family in the *Fortnite* community, which entirely depends on
 20 connectivity. The user outcry has been deafening, showing real harm to the public interest.
 21 Daily active users on iOS have declined by over 60% since *Fortnite*'s removal from the App
 22 Store. And removal already has resulted in a loss of goodwill and irreparable damage to Epic's
 23 reputation. The continued loss of *Fortnite* as a gathering place for users on all platforms will
 24 lead Epic's customers to defect. Epic may never see these users again. It will also be denied the
 25 opportunity to access even a single new user among the one-billion-plus iOS users for at least the
 26 next year. The removal of *Fortnite* from iOS also substantially impedes a major Epic
 27 initiative—evolving *Fortnite* into a full-fledged “metaverse”, a multi-purpose, persistent,
 28 interactive virtual space. Harm like this to Epic's flagship app cannot be calculated in damages.

1 And then there is *Unreal Engine*. Apple has attacked *Unreal Engine*, Epic’s three-
 2 dimensional environment engine on which millions of third-party developers rely in fields from
 3 gaming to medicine, from movie production to space flight—as well as other parts of Epic’s non-
 4 *Fortnite* business. If Apple can cut off Epic’s ability to continue updating *Unreal Engine* for
 5 iOS and macOS, both Epic and the millions of developers using *Unreal Engine* would be
 6 harmed. Developers who have invested in creating projects for iOS and macOS would have to
 7 change course or simply end their work. Going forward, developers are questioning whether
 8 *Unreal Engine* would remain a viable platform on which to build their applications. There is no
 9 way to estimate the loss to Epic from an industry-wide shift away from *Unreal Engine*. Only a
 10 preliminary injunction can bring the level of certainty that developers need, and that Epic
 11 therefore needs to protect its business.

12 *Third*, the balance of harms tips strongly in Epic’s favor. If the injunction is denied and
 13 Epic ultimately prevails, Epic will suffer the irreparable harm described above. If the injunction
 14 is granted and Epic ultimately loses, Apple would at most lose some commissions from Epic,
 15 which could easily be compensated in damages. Apple’s purported concern that every developer
 16 would follow Epic’s lead if *Fortnite* returned to iOS with Epic direct pay is speculative and
 17 implausible; few developers can risk the wrath of Apple, and developers would have little
 18 incentive to take the risk (and bear the expense of doing so) while this action is pending.
 19 Further, should Apple prevail, it could still easily be made whole with damages. In any event,
 20 Apple’s fear that developers will flee IAP if given the chance is further evidence that developers
 21 use IAP only because Apple prevents competition and forces developers to do so. And with
 22 respect to *Unreal Engine*, Apple would lose nothing at all if Epic continues to use iOS and
 23 macOS development tools to support it during the litigation. Moreover, Apple does *not* assert
 24 that the agreements governing the tools used to sustain *Unreal Engine* and many other Epic
 25 businesses were breached—and the apps for *Unreal Engine* and the other businesses are
 26 registered under different Apple Developer Program accounts than the account that registers
 27 *Fortnite* for distribution on iOS. Thus, Apple’s attack on these other businesses is pure
 28 retaliation to pressure Epic and deter others from challenging Apple’s anti-competitive conduct.

FACTUAL BACKGROUND

1 **A. Fortnite**

2 *Fortnite* is a multifaceted online videogame that has attracted over 350 million registered
 3 users, becoming a global cultural phenomenon. (Sweeney Decl. ¶ 3.) *Fortnite* has three main
 4 game modes, including the wildly popular *Battle Royale*. (*Id.* ¶ 4.) *Battle Royale* is an
 5 elimination and survival match involving up to 100 players marooned on an island in which
 6 storylines, challenges, and other major changes to gameplay are periodically released in the form
 7 of “chapters” and “seasons”. (*Id.* ¶¶ 4, 6, 9.) Chapters and seasons introduce new gameplay
 8 features and content, which requires users to have the same up to date version of *Fortnite* to play
 9 together online. (*Id.* ¶ 9.) Players greatly value *Fortnite*’s regularly refreshed content. (*Id.*)
 10 Players with an outdated version of the game may play only with other players with the same
 11 outdated version. (*Id.*) *Fortnite* is one of the first videogames to offer full “cross-platform”
 12 play, meaning that *Fortnite* players on different platforms can play together in the same virtual
 13 space, even though their underlying software and hardware is different. (*Id.* ¶ 8.) In fact, Epic
 14 was instrumental in convincing the major gaming console manufacturers to support cross-
 15 platform play, which also benefited other game developers. (*Id.*) Prior to August 13, *Fortnite*
 16 was available on Sony’s PlayStation 4, Microsoft’s Xbox One, Nintendo’s Switch, personal
 17 computers (“PCs”) and Macs, and Android and Apple mobile devices. (*Id.* ¶ 3.)
 18

19 *Fortnite* is also a home for vibrant social community, creativity, and expression. (*Id.*
 20 ¶¶ 4-5.) Players can meet up with their friends to talk and socialize; build new worlds, structures
 21 and environments; dance and play with one another; experience film releases together; attend
 22 concerts with others; and spend time together engaging with exclusive content from providers
 23 like ESPN and Discovery. (*Id.*) *Fortnite* has even hosted a series of discussions on racial
 24 equality in America. (*Id.* ¶ 5.)

25 *Fortnite* is free to download and update, and the *Battle Royale* mode is free to play. (*Id.*
 26 ¶ 7.) Epic sells in-app content, such as digital avatars, costumes, and dances. (*Id.*) These items
 27 can be bought individually or through a subscription model. (*Id.*)
 28

1 **B. Unreal Engine**

2 Aside from *Fortnite*, Epic has other lines of business, including the *Unreal Engine*.
 3 (Sweeney Decl. ¶ 2.) *Unreal Engine* is a software tool for developing digital three-dimensional
 4 environments for multiple uses. (*Id.*; Penwarden Decl. ¶¶ 2-3.) *Unreal Engine* users enjoy free
 5 access to products and services developed by Epic affiliates, including Quixel Megascans, an
 6 online scan library of photorealistic three-dimensional content, and Twinmotion, architectural
 7 visualization tools. (Sweeney Decl. ¶ 29.) Epic also offers the *Unreal Engine* Marketplace, an
 8 e-commerce platform through which developers can create and sell art, animation, textures, and
 9 other assets to use with *Unreal Engine* projects. (*Id.*) With millions of developers relying on it,
 10 *Unreal Engine* has been called the most successful videogame engine in history. (*Id.* ¶¶ 30, 34.)
 11 It powers popular videogames like *PlayerUnknown's Battlegrounds* ("PUBG"), which has
 12 hundreds of millions of mobile device users (*id.* ¶ 30; *see* Penwarden Decl. ¶ 4). It also has a
 13 broad range of other applications, including training astronauts, generating visual effects for
 14 television, helping brain surgeons prepare for operations, and televising the Olympics.
 15 (Sweeney Decl. ¶ 31.) Developers can use *Unreal Engine* commercially on a royalty model or
 16 negotiated license, and it is free for non-commercial use. (*Id.* ¶ 32.) *Unreal Engine* powers
 17 games and other products on all major platforms. (*Id.* ¶ 33.)

18 **C. Apple and iOS**

19 At a market cap of over \$2 trillion, Apple is the most highly valued publicly traded
 20 corporation in history. Apple's empire is vast, and extends to personal computers, smartphones
 21 and tablets, music sales and streaming, wearable devices, digital messaging, digital storage, web
 22 browsing, creativity and productivity software, credit cards, television programming, and more.

23 Apple controls iOS, one of the world's most widely used operating systems ("OS"), used
 24 solely in mobile devices that Apple sells. (Evans Decl. ¶ 16.) An OS is software that supplies
 25 basic functionality to users of computers, including personal computers and mobile devices such
 26 as smartphones and tablets. (*Id.* ¶ 6.) On mobile devices, consumers' OS options are effectively
 27 limited to a choice between devices that run on Google's Android OS and Apple devices running
 28 iOS. (*Id.* ¶ 16.)

1 Applications, or apps, are software programs that users install on smart mobile devices to
 2 provide added functionality. Most apps are not developed by the creator of the OS; they are
 3 developed by third parties for distribution on mobile devices. (Byars Decl., Exs. V, AA.) OS
 4 developers make available software tools needed to create applications for their OS (mobile or
 5 otherwise). (Penwarden Decl. ¶ 5; Evans Decl. ¶¶ 6, 8.) Mobile apps add enormous value to a
 6 mobile OS; users generally do not buy smartphones with few available apps. (*See* Evans Decl.
 7 ¶ 7.) And vice versa—most developers do not develop apps for OSs that have few users. (*Id.*)

8 On many OSs, the platform provider does not control the distribution of apps or other
 9 third-party software. (Grant Decl. ¶ 14; Evans Decl. ¶ 9.) For example, on personal computers
 10 running Microsoft’s Windows or Apple’s macOS, users can download software from third-party
 11 stores or directly from developers’ websites. (Grant Decl. ¶ 14; Evans Decl. ¶ 9.)

12 On iOS, however, the only approved way to make a consumer app available for
 13 distribution is through Apple’s App Store. (Grant Decl. ¶ 14; Sweeney Decl. ¶ 12.) Through a
 14 variety of technical and contractual restrictions, Apple expressly prevents any alternative means
 15 to distribute consumer apps. (Sweeney Decl. ¶ 12; *see* Argument § II.B below.)

16 Another restriction that Apple imposes on iOS is to mandate use of IAP, Apple’s
 17 payment processor, for all in-app purchases of in-app digital content. (Sweeney Decl. ¶ 13.)
 18 Many mobile app developers, including Epic, generate revenue by offering users in-app digital
 19 content. To enable these transactions, developers need payment processing services. (Evans
 20 Decl. ¶ 60.) A payment processor coordinates the various steps that take place between the time
 21 a consumer pays a merchant, *e.g.*, with a credit card, through the time the merchant gets funds
 22 deposited into its account. (*Id.* ¶ 62.) Payment processors typically charge less than 5% of a
 23 purchase price. (*Id.* ¶ 65 n.92; Byars Decl., Ex. CC.) Apple’s IAP takes 30%. (Byars Decl.,
 24 Ex. M § 3.4.)

25 Apple’s Developer Program License Agreement (the “PLA”) and App Store Review
 26 Guidelines, an extension of the PLA, decree different rules for in-app purchases of digital
 27 content and other in-app purchases. Apps that offer in-app purchases of physical goods or
 28 services consumed outside of the app are not required to use IAP; they may offer other payment

1 processors. (*Id.* Ex. P § 3.1.5(a).) By contrast, the App Store Review Guidelines explain that
 2 “you must use” IAP for purchases of in-app content. (*Id.* Ex. P § 3.1.1; *see also id.* Ex. K
 3 § 3.3.3.)

4 **D. Epic’s Challenge to Apple’s Monopolistic Conduct**

5 *Fortnite* launched on iOS in April 2018 and remained available until it was removed by
 6 Apple on August 13, 2020. (Sweeney Decl. ¶¶ 3, 20.) Throughout that period, due to Apple’s
 7 control of iOS, Epic was forced to comply with Apple’s anti-competitive restrictions; thus,
 8 *Fortnite* was distributed on iOS *only* through the App Store, and in-app purchases made within
 9 *Fortnite* were processed *only* using IAP. (*Id.* ¶¶ 12-13.) On June 30, 2020, Epic’s founder and
 10 CEO, Timothy Sweeney, reached out to Apple, asking that Apple allow competing app stores
 11 and competing payment processing on iOS. (*Id.* ¶ 14.) Mr. Sweeney explained his desire to
 12 make “software sales and distribution on the iOS platform as open and competitive as it is on
 13 personal computers.” (*Id.* Ex. A at 1.) He asked that Apple “make these options equally
 14 available to *all* iOS developers”. (*Id.* (emphasis added).) On July 10, 2020, an Apple lawyer
 15 responded with an unequivocal no. (*Id.* ¶ 15, Ex. B at 2.)

16 On the morning of August 13, 2020, the *Fortnite* iOS app began offering users the choice
 17 of making in-app purchases using either Epic direct payment or Apple’s IAP. (*Id.* ¶ 18.)
 18 Because Epic’s direct payment does not bear the 30% “app tax” imposed by IAP, Epic offered
 19 reduced pricing to users that chose Epic direct payment. (*Id.* ¶¶ 18-19.)

20 **E. Apple’s Retaliation**

21 Within hours, Apple removed *Fortnite* from the App Store and posted a notice to Epic’s
 22 Developer Program account explaining Apple’s purported reasons for removal. (Grant Decl.
 23 ¶¶ 25-26, Ex. B.) Later that day, Epic filed its Complaint challenging Apple’s anti-competitive
 24 actions. Apple then intensified its retaliation, through a second notice. (*Id.* ¶ 27, Ex. C;
 25 Penwarden Decl. ¶ 6.) In this second notice, Apple stated it would terminate Epic’s membership
 26 in Apple’s Developer Program and take certain other steps unless Epic complied with its
 27 demands, including by providing a version of *Fortnite* that used only IAP. (Grant Decl., ¶ 27,
 28 Ex. C.) Specifically, Apple stated that Epic would “no longer [be allowed to] submit apps to the

1 App Store” and its “apps still available for distribution will be removed”. (*Id.*) Apple also stated
 2 it would cut off Epic’s access to “[a]ll Apple software, SDKs [software development kits], APIs
 3 [application programming interfaces], and developer tools”, as well as “[p]re-release versions” of
 4 iOS, macOS and other Apple OSs. (*Id.*) Finally, Apple stated that unless Epic capitulated,
 5 Apple would also end “[e]ngineering efforts to improve hardware and software performance of
 6 Unreal Engine on Mac and iOS hardware [and] optimize Unreal Engine on the Mac for creative
 7 workflows.” (*Id.*)

8 As a result of Apple’s removal of *Fortnite* from the App Store, no new users can
 9 download the app on iOS, and users who already downloaded it can no longer receive updates.
 10 (Sweeney Decl. ¶ 21.) Because *Fortnite* players must have the same software version to play
 11 online together, this has “broken” *Fortnite*. (*Id.*) As of August 27, 2020, when *Fortnite*’s
 12 version 14.0 was released on other platforms, *all* iOS *Fortnite* users became stranded, unable to
 13 play the game with their friends and family who updated the game on non-iOS platforms. (*Id.*
 14 ¶ 22.)

15 Apple’s decision to block Epic from accessing the freely available suite of tools all
 16 developers use to make software for Apple products was a direct attack on all of Epic’s
 17 businesses, including *Unreal Engine*. (*Id.* ¶¶ 36-37; Penwarden Decl. ¶¶ 6-7.) Epic cannot
 18 continue developing the engine for use on iOS and macOS devices without access to those tools.
 19 (Penwarden Decl. ¶ 8.) Many third-party developers who rely on *Unreal Engine* to power their
 20 software on Apple devices will not choose *Unreal Engine* if it is incompatible with Apple OSs.
 21 (Sweeney Decl. ¶¶ 39-40.) Epic has released 25 updates to *Unreal Engine 4* since 2014 (*id.*
 22 ¶ 33), but those development efforts would have to cease for Apple products (Penwarden Decl.
 23 ¶ 8). Epic would also be unable to make *Unreal Engine* compatible with new versions of
 24 Apple’s software as it is released, like iOS 14, which is set for release this fall. (*Id.*) Going
 25 forward, this will make *Unreal Engine* not viable for developers that have released or intend to
 26 release software on Apple platforms, which will decrease *Unreal Engine* use on *all* platforms
 27 because many projects are intended for use across multiple OSs. (Sweeney Decl. ¶¶ 39-40;
 28 Byars Decl., Ex. S.) This will drive developers away from *Unreal Engine* and toward its

1 competitors. (Sweeney Decl. ¶ 40.)

2 Apple's threatened retaliation implicates many agreements that were not breached.
 3 These agreements include (a) freely accessible tool agreements that are entered into by
 4 individual programmers, as well as (b) PLAs that govern separate Developer Program accounts
 5 held by separate entities. Specifically, Epic and five of its affiliated entities had several separate,
 6 integrated PLAs with Apple, each governing a separate Developer Program account with Apple.
 7 Each such account had a distinct "Team ID" number, and each account paid a separate \$99
 8 annual fee. (Byars Decl., Ex. N.)² *Fortnite* was submitted to the App Store through an Epic
 9 Games, Inc. account with Team ID ending '84 (Byars Decl., Ex. N), and the PLA governing that
 10 account is the ***only*** agreement that Apple claims that Epic breached.

11 Most of Epic's non-*Fortnite* apps were released by other accounts, governed by separate
 12 PLAs, which were not breached. For example, apps associated with the *Unreal Engine* are
 13 submitted through a separate account with Team ID ending '3Y, which is owned by Epic Games
 14 International S.à r.l. ("Epic International"). (Grant Decl. ¶ 7.) Apple admits that Epic and Epic
 15 International have separate PLAs governing separate accounts. (ECF No. 37, ¶ 6 ("Schiller
 16 Decl.").) Similarly, the *Houseparty* app was released under yet another account, governed by yet
 17 another PLA and owned by another Epic affiliate, Life on Air, Inc. (Grant Decl. ¶ 8.)
 18 Nevertheless, Apple extended its termination to cover all accounts of Epic and its affiliates.
 19 Moreover, Apple said it would terminate even those accounts that released apps, like those
 20 related to *Unreal Engine*, that do not offer in-app purchases, precluding the possibility that a
 21 feature like Epic direct payment could be introduced. (*Id.* ¶ 7, Ex. C.)

22 F. Procedural History

23 The breadth and illegality of Apple's retaliation led Epic to seek redress in this Court.
 24 On August 17, 2020, Epic filed a Motion for Temporary Restraining Order and Order To Show
 25 Cause Why a Preliminary Injunction Should Not Issue. After a hearing on August 24, 2020, this
 26 Court granted Epic's motion in part, temporarily restraining Apple "from taking adverse action

27 ² In addition, two Epic affiliates are parties to a Developer Enterprise Program License
 28 Agreement with a \$299 annual fee relating to applications for Epic's internal use, as opposed to
 apps for the App Store. (Grant Decl. ¶¶ 3, 5-6, 9; Byars Decl., Ex. N.)

1 against Epic Games with respect to restricting, suspending or terminating any affiliate of Epic
 2 Games from Apple's Developer Program, including as to *Unreal Engine*, on the basis that Epic
 3 Games enabled in-app payment processing in *Fortnite* through means other than IAP or on the
 4 basis of the steps Epic took to do so". (ECF No. 48 at 8 ("TRO Op.").)

5 On August 28, 2020, Apple terminated Epic's Developer Program account (Team
 6 ID '84), stating "Apple is exercising its right in Apple's sole discretion to terminate your status
 7 as a registered Apple Developer pursuant to the Apple Developer Agreement and is terminating
 8 the Developer Agreement and the [PLA] pursuant to their terms [W]e will deny your
 9 reapplication to the Apple Developer Program for at least a year". (Grant Decl. ¶ 35, Ex. H.)

10 As a result, *Fortnite* and other apps associated with the Team ID '84 account—*Battle*
 11 *Breakers*, *Spyjinx*, and *Infinity Blade Stickers*—have been removed from the App Store, and
 12 *Shadow Complex Remastered* has been removed from the Mac App Store. (*Id.* ¶ 36.) These
 13 apps can no longer be updated and will soon become obsolete. (*Id.*)

14 Epic has been inundated with customer complaints expressing frustration and confusion
 15 at not being able to download the latest version of Epic's apps from the App Store, as well as
 16 disappointment and anger at Epic. (Sweeney Decl. ¶¶ 25-26, Exs. E-F.) Yet, Epic does not
 17 control the customer service relationship on iOS, and cannot refund users because of Apple's
 18 contractual restrictions. (*Id.* ¶ 13; *id.* ¶¶ 25-26, Exs. E-F; Byars Decl., Ex. K attach. 2 § 3.4.)

19 ARGUMENT

20 I. LEGAL STANDARD

21 "A plaintiff seeking a preliminary injunction must establish that he is likely to succeed on
 22 the merits, that he is likely to suffer irreparable harm in the absence of preliminary relief, that the
 23 balance of equities tips in his favor, and that an injunction is in the public interest." *hiQ Labs,*
 24 *Inc. v. LinkedIn Corp.*, 938 F.3d 985, 992 (9th Cir. 2019) (quoting *Winter v. Nat. Res. Def.*
 25 *Council, Inc.*, 555 U.S. 7, 20 (2008)). Under the Ninth Circuit's "'sliding scale' approach to
 26 these factors", "when the balance of hardships tips sharply in the plaintiff's favor, the plaintiff
 27 need demonstrate only 'serious questions going to the merits'". *Id.* Epic meets each factor, and
 28 a preliminary injunction should issue.

II. EPIC IS HIGHLY LIKELY TO SUCCEED ON THE MERITS OF ITS ANTITRUST CLAIMS.

As alleged in Epic’s Complaint, Apple engages in wide-ranging anti-competitive conduct in violation of both Section 1 and Section 2 of the Sherman Act. Apple’s anti-competitive conduct begins with preventing all competitive alternatives to its App Store, leading to its complete monopolization of the iOS App Distribution Market. (Compl. ¶¶ 35-102.) Apple then exacerbates this harm by extending its monopoly over distribution, through a naked tie, into a monopoly in the downstream iOS In-App Payment Processing Market. (*Id.* ¶¶ 103-55.)

Because Apple’s monopoly power in the iOS App Distribution Market is the foundation of its misconduct in both markets, Epic begins there. It briefly explains how Apple unlawfully maintains its monopoly in that market and then focuses on the illegality of the restriction that Epic defied, Apple’s tying of in-app payment processing to its distribution monopoly, and the resulting monopolization of the iOS In-App Payment Processing Market.

To grant a preliminary injunction, the Court does *not* need to find a likelihood of success on Epic’s claims in both markets. A likelihood of success on Epic’s tying claim alone would be sufficient to support the relief Epic seeks. But if Apple were correct that app distribution and in-app payment processing are a single product, then a likelihood of success on Epic’s broader monopoly maintenance claim in the iOS App Distribution Market would support its requested relief, as one important step in addressing Apple’s overarching misconduct.

A. **Apple Has a Monopoly in the iOS App Distribution Market.**

1. Market Definition. iOS is an OS that Apple developed and that it installs on Apple-branded hardware like iPhones and iPads. Like other OSs, iOS allows third-party software developers to write apps that run on the platform and make the platform more attractive to users. (See ECF No. 36 at 4 (“TRO Opp’n”); Evans Decl. ¶ 17) Once an app is developed, the developer needs to distribute it to users. Thus, there is a relevant product market for the distribution of apps compatible with iOS to users of mobile devices: the iOS App Distribution Market. (Evans Decl. ¶ 54.) This market includes all the ways by which app developers could (absent Apple’s restrictions) distribute apps to users of an iOS device. (*Id.* ¶¶ 52-45.)

The product market is properly limited to the distribution of iOS-compatible apps. Apps,
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1 including app stores, are programmed to run on a specific OS and will not run on a different OS.
 2 (Grant Decl. ¶ 14.) Thus, app stores for different OSs lack the “actual or potential ability to
 3 deprive” participants in the iOS App Distribution Market of significant business. *Newcal Indus., Inc.* v. *Ikon Office Sol.*, 513 F.3d 1038, 1045 (9th Cir. 2008). The geographic market for the iOS
 4 App Distribution Market is likely global. (Evans Decl. at 10 n.37.)

5 Contrary to Apple’s position (TRO Opp’n 17-19), the iOS App Distribution Market is a
 6 proper single brand market. “[T]he law permits an antitrust claimant to restrict the relevant
 7 market to a single brand of the product at issue”. *Newcal*, 513 F.3d at 1048; *see Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 481-82 (1992). Courts in the Ninth Circuit
 8 typically consider four aspects of the alleged market to determine if it is a single brand market.
 9 *See Newcal*, 513 F.3d at 1049-50. Each aspect favors Epic.

10 *First*, app distribution on iOS is an “aftermarket” that is “wholly derivative from and
 11 dependent on the primary market”, *id.* at 1049, which is smartphone (or tablet) OSs. Without the
 12 OSs, there would be no market for app distribution on iOS.³

13 *Second*, the “illegal restraints of trade and illegal monopolization relate only to the
 14 aftermarket, not to the initial market”. *Newcal*, 513 F.3d at 1050. Epic does not challenge
 15 Apple’s practices in the sale of smartphone (or tablet) OSs; the restraints at issue apply only to
 16 the aftermarket.

17 *Third*, Apple “does not achieve market power in the aftermarket through contractual
 18 provisions that it obtains in the initial market” but instead “its market power . . . flows from its
 19 relationship with its consumers”. *Id.* When purchasing iOS devices, consumers do not
 20 contractually agree to obtain apps only through the App Store. (*See* Byars Decl., Exs. X-Y.)
 21 Rather, Apple’s control over iOS gives it “special access to its consumers” that enables it to
 22 ensure that consumers have no other choice. *See Newcal*, 513 F.3d at 1050.

23 *Fourth*, “[c]ompetition in the initial market . . . does not necessarily suffice to discipline
 24 anti-competitive practices in the aftermarket[s]”. *Id.* Apple enjoys significant market power in

25 ³ For this reason, *Apple Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190 (N.D. Cal. 2008), on
 26 which Apple has relied (TRO Opp’n 17-18), is off point. The alleged market at issue there was
 27 the primary market for Mac OS, not a derivative aftermarket. *Psystar*, 586 F. Supp. 2d at 1197.

any appropriately defined antitrust market for smartphone (or tablet) OSs. Apple is at least a duopolist in such a market (along with Google). Through the sale of iOS devices, Apple has approximately 50-60% of global premium smartphone revenue, and for years, has captured over 60% of all operating profits flowing from global sales of smartphones. (Evans Decl. ¶ 35; Byars Decl., Ex. EE.) In addition, once consumers opt into the iOS ecosystem by purchasing their first iPhone or iPad, they face substantial switching costs. Economist David Evans identifies eight reasons why switching costs are high, including that users face the cost of learning a new OS; they commit to iOS on a household basis and by purchasing multiple Apple devices; and Apple's ecosystem is heavily integrated and networked. (Evans Decl. ¶ 46.) Consumers also face significant information costs that make Apple's anti-competitive practices insufficiently salient to affect primary market competition. (*Id.* ¶ 44 n.65.) Most consumers do not know of Apple's anti-competitive practices; in fact, Apple *prevents* consumers from knowing about the anti-competitive practices. (See Byars Decl., Ex. BB; *id.* Ex. P § 3.1.1 ("Apps . . . may not . . . direct customers to purchasing mechanisms other than in-app purchase"), § 3.1.3 (prohibiting developers from discouraging use of IAP).) In any event, Apple's anti-competitive practices would not incentivize consumers to purchase a mobile device running a competing OS because the other duopolist for mobile OSs—Google—maintains similar anti-competitive practices. Therefore, competition for smartphone (or tablet) OSs cannot discipline Apple's conduct in the aftermarket. (Evans Decl. ¶ 50.) Nor can developers discipline Apple by refusing to develop for iOS; no developer can realistically afford to forgo one billion iOS users. (Evans Decl. ¶¶ 41-42.)

2. *Monopoly Power.* "To demonstrate market power circumstantially, a plaintiff must", along with defining the relevant market, (1) "show that the defendant owns a dominant share of that market"; and (2) "show that there are significant barriers to entry and show that existing competitors lack the capacity to increase their output" in the short run. *Aya Healthcare Servs., Inc. v. AMN Healthcare, Inc.*, 2018 WL 3032552, at *20 (S.D. Cal. June 19, 2018) (quoting *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995)). Both prongs are easily met here. Apple's market share in iOS app distribution is 100%, as the App Store is the *only* approved means by which developers may distribute consumer apps. And the restrictions Apple

1 imposes in the distribution market, described below, completely foreclose any prospect of entry,
 2 thereby unlawfully maintaining Apple's monopoly.

3 **B. Apple Unlawfully Maintains a Monopoly in the iOS App Distribution
 Market.**

4 To establish liability under Section 2, "a plaintiff must show: (a) the possession of
 5 monopoly power in the relevant market; (b) the willful acquisition or maintenance of that power;
 6 and (c) causal antitrust injury". *FTC v. Qualcomm Inc.*, 2020 WL 4591476, at *8, __ F.3d __
 7 (9th Cir. Aug. 11, 2020). Epic is highly likely to establish that liability here. The first element,
 8 monopoly power, is above. To maintain that power, Apple deploys a web of technical and
 9 contractual ties that ensures the App Store is the only approved way to distribute consumer apps:
 10

11 Technical restrictions: Apple has designed restrictions into iOS that prevent users from
 12 downloading apps or competing app stores directly from websites. (Grant Decl. ¶ 14.) The
 13 result is that the only viable distribution channel is the pre-installed App Store. (*Id.*)

14 Contractual restrictions: Apple conditions all app developers' access to iOS on the
 15 developers' agreement to distribute their apps to iOS users solely through the App Store. Apple
 16 effects this condition by requiring all iOS developers to enter into the PLA, a contract of
 17 adhesion, which prohibits distribution of consumer apps through channels other than the App
 18 Store. (*See* Byars Decl., Ex. K § 3.2(g) (providing that consumer applications "may be
 19 distributed only if selected by Apple (in its sole discretion) for distribution via the App Store").)
 20 In addition, Apple conditions app developers' access to iOS on their agreement not to distribute
 21 third-party iOS app stores. (*Id.* Ex. K § 3.3.2 (prohibiting "Application[s]" that "create a store or
 22 storefront for other code or applications"); *see also id.* Ex. P § 3.2.2(i) (it is "unacceptable" to
 23 create "an interface for displaying third-party apps, extensions, or plug-ins similar to the App
 24 Store or as a general-interest collection").)

25 Apple's conduct does not just harm competition in the iOS App Distribution Market—
 26 competition is completely eliminated.

27 **C. Apple's Tying of the App Store and IAP Per Se Violates Section 1.**

28 Epic is highly likely to succeed on the merits of its claim that Apple's contractual tying of

1 the App Store and IAP is *per se* unlawful. “For a tying claim to suffer per se condemnation, a
 2 plaintiff must prove: (1) that the defendant tied together the sale of two distinct products or
 3 services; (2) that the defendant possesses enough economic power in the tying product market to
 4 coerce its customers into purchasing the tied product; and (3) that the tying arrangement affects a
 5 not insubstantial volume of commerce in the tied product market.” *Cascade Health Sols. v.*
 6 *PeaceHealth*, 515 F.3d 883, 913 (9th Cir. 2008).⁴ Epic can readily show each element even now,
 7 before discovery has commenced.

8 **1. Apple Ties Two Separate Products.**

9 **a. Apple Ties IAP to the App Store.**

10 Apple conditions use of the tying product, app distribution through the App Store, on use
 11 of the tied product, in-app payment processing for digital content through IAP. A tie requires a
 12 “condition linked to a sale”. *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178
 13 (9th Cir. 2016). Apple’s App Store Review Guidelines, an extension of the PLA, explain that
 14 “you must use” IAP for purchases of in-app content. (Byars Decl., Ex. P § 3.1.1; *see also id.*
 15 Ex. K § 3.3.3). That is, to avoid being banned from the App Store, Apple requires developers to
 16 use Apple’s IAP for in-app purchases of digital content. This is a naked tie.

17 **b. App Distribution and In-App Payment Processing for Digital
 18 Content Are Separate Products.**

19 To assess whether a tie involves separate products, courts apply the purchaser demand
 20 test, which “examines direct and indirect evidence of consumer demand”. *Teradata Corp. v.*
 21 *SAP SE*, 2018 WL 6528009, at *12 (N.D. Cal. Dec. 12, 2018). “Direct evidence of demand
 22 includes ‘whether, when given a choice, consumers purchase the tied good from the tying good
 23 maker, or from other firms.’” *Id.* (quoting *Rick-Mik Enters., Inc. v. Equilon Enters. LLC*,

24 ⁴ Ignoring this binding precedent, Apple argued in its TRO Opposition that the rule of reason
 25 should govern its tie because it is a tech company with “novel business practices”. (TRO
 26 Opp’n 2, 17 (citing *Qualcomm Inc.*, 2020 WL 4591476, at *9; *United States v. Microsoft Corp.*,
 27 253 F.3d 34, 91 (D.C. Cir. 2001)).) But Apple’s cited authorities are inapposite. *Qualcomm* did
 28 not even involve tying. The *Microsoft* court did not question the line of “Supreme Court tying
 cases” that apply the *per se* standard to “contractual ties”. *See Microsoft*, 253 F.3d at 89-95. In
Microsoft, the defendant technologically integrated its operating system with its web browser,
 and the court declined to condemn this technologically integrated product as *per se* unlawful for
 fear of chilling product innovation. *Id.* Apple, however, ties IAP to the App Store purely
 through contracts. There is nothing innovative about such an arrangement.

1 532 F.3d 963, 975 (9th Cir. 2008)).

2 Contrary to Apple’s argument in its TRO Opposition (at 19-20), direct evidence proves
 3 that the App Store and IAP are separate. Here, users generally have not been “given a choice”
 4 about where to procure payment processing services for digital in-app content purchases. But in
 5 closely analogous situations, absent Apple’s tie, developers incorporate, and consumers choose
 6 to use, alternative in-app payment processors provided separately from app distribution services.

7 *First*, on iOS itself, Apple does *not* condition access to the App Store on use of IAP if the
 8 in-app purchases are for physical products or for services consumed outside the app. (Byars
 9 Decl., Ex. P § 3.1.5(a).) Thus, popular apps like Uber (for ride-hailing) or Grubhub (for
 10 takeout)—which sell only physical products or services consumed in the physical world—may
 11 offer an array of competing in-app payment systems. Nearly all of these apps opt to procure
 12 payment processing services from sources *other* than Apple, *i.e.*, separately from the distribution
 13 services they are forced to obtain from the Apple App Store. (Byars Decl., Ex. U). If given the
 14 choice, developers who sell in-app digital content would do the same.

15 *Second*, on other platforms besides iOS, there are separate markets for distribution
 16 services and for payment processing services. Developers can and do distribute apps through the
 17 Epic Games Store for personal computers while using payment processing for in-app purchases
 18 of digital content that is not provided by those stores. (Sweeney Decl. ¶ 10.) Similarly, app
 19 developers often distribute their own apps for personal computers using third-party payment
 20 processing for in-app purchases of digital content. Thus, the demand for payment processing is
 21 separate from the demand for distribution services.

22 *Third*, consumers’ reaction to Epic direct pay on iOS proves that there is separate
 23 consumer demand for distribution and payment processing. From August 13, 2020 to August 27,
 24 2020 (essentially the period during which users could choose between Epic direct pay and IAP),
 25 53.4% of users who made an in-app purchase used Epic’s direct payment, while 46.6%
 26 continued to use only Apple’s IAP. (Sweeney Decl. ¶ 20.)

27 Functionally, in-app payment processing is also separate from the distribution services
 28 offered by the App Store. In-app purchases may occur months or even years after an app has

been downloaded onto a mobile device—long after distribution of the app has been completed.

2. Apple's Market Power in the iOS App Distribution Market Coerces Developers into Using IAP.

Apple wields its market power in the iOS App Distribution Market to coerce developers into using IAP. “[F]orcing (or coercion) is likely if the seller has power in the tying product market”. *CollegeNet, Inc. v. Common Application, Inc.*, 355 F. Supp. 3d 926, 955 (D. Or. 2018) (quoting *Robert’s Waikiki U-Drive, Inc. v. Budget Rent-a-Car Sys., Inc.*, 732 F.2d 1403, 1407 (9th Cir. 1984)). Here, Apple clearly has the requisite power in the upstream distribution market, as discussed in Section II.A above.

3. The Tying Affects a Not Insubstantial Amount of Commerce in the iOS In-App Payment Processing Market.

Finally, Apple’s tie affects the requisite level of commerce in the market for the tied product. There is a relevant product market for the processing of payments for digital in-app content on devices running iOS: the iOS In-App Payment Processing Market. (Evans Decl. ¶ 74.) This market comprises all the processing solutions iOS developers could use (absent Apple restrictions) for in-app purchases of such content for their apps. (*Id.*)

The iOS In-App Payment Processing Market is a proper antitrust market. As an initial matter, purchases outside an app are not substitutes for in-app purchases because navigating to a website outside the app, or making a telephone call to a call center, is far less convenient than purchasing in-app. This is especially so for purchases of digital content, which are often inexpensive micro-transactions, time-sensitive or both—meaning that users who had to leave the app would be very unlikely to make the purchase. (Sweeney Decl. ¶ 7.) Therefore, developers who offer in-app purchases of digital content are especially reliant on in-app payment processing. This is also evidenced by the fact that Apple treats them differently from developers that offer real-world goods and services. In-app purchases of digital must be processed with IAP, which charges 30%. (Byars Decl., Ex. P § 3.1.1; *id.* Ex. M § 3.4.) By contrast, in-app purchases of real-world goods and services may be processed with other options, which typically charge less than 5%. (*Id.* Ex. P § 3.1.5(a); *id.* Ex. T; Evans Decl. ¶ 68.)

Apple's ability to exclude third-party payment processors and raise prices on developers

1 who offer in-app purchases of digital content shows that the iOS In-App Payment Processing
 2 Market is properly defined. *See* (Evans Decl. ¶ 74); *U.S. Anchor Mfg., Inc. v. Rule Indus., Inc.*,
 3 7 F.3d 986, 999 (11th Cir. 1993) (finding that “the ability to discriminate against a distinct group
 4 of customers by charging higher prices for otherwise similar products demonstrates the existence
 5 of market power with respect to that group”); *State of Ill. ex rel. Hartigan v. Panhandle E. Pipe*
 6 *Line Co.*, 730 F. Supp. 826, 900 (C.D. Ill. 1990), *aff’d*, 935 F.2d 1469 (7th Cir. 1991) (defining
 7 market “by reference to the capabilities of different types of end-users [of oil and gas]” to resist
 8 the exercise of monopoly power, leading to price discrimination). The geographic market for the
 9 iOS In-App Payment Processing Market is likely global. (Evans Decl. at 10 n.37.)

10 Just as the iOS App Distribution Market is a valid single-brand antitrust market, the iOS
 11 In-App Payment Processing Market is as well, for similar reasons. (*See* Section II.A. above.)

12 Apple’s tie easily affects the requisite level of commerce in the iOS In-App Payment
 13 Processing Market. “[N]ormally the controlling consideration is simply whether a total amount
 14 of business, substantial enough in terms of dollar-volume so as not to be *merely de minimis*, is
 15 foreclosed to competitors by the tie”. *Datagate, Inc. v. Hewlett-Packard Co.*, 60 F.3d 1421,
 16 1425 (9th Cir. 1995). Apple’s conduct forecloses Epic and all similarly situated developers from
 17 offering alternative in-app payment processing services on more than one billion iOS devices.
 18 There can be no question that this element is satisfied.⁵

19 **D. Apple’s Tying Unreasonably Restains Trade and Unlawfully Maintains Its**
 20 **Monopoly in the iOS In-App Payment Processing Market.**

21 Epic is also likely to show that Apple’s tying of the App Store and IAP violates Section 1
 22 and Section 2 of the Sherman Act under a rule of reason analysis. Under Section 1, “[t]he rule of
 23 reason analysis requires the fact-finder to ‘analyze the anti-competitive effects along with any
 24 pro-competitive effects to determine whether the [arrangement] is unreasonable on
 25 balance’”. *W. Power Sports, Inc. v. Polaris Indus. Partners L.P.*, 951 F.2d 365 (9th Cir. 1991).
 26 A Section 2 “claim for monopolization of trade has two elements: ‘the possession of monopoly
 27

28 ⁵ For *per se* tying, the Court need not “consider whether competition was in fact unreasonably restrained”. *See Digidyne Corp. v. Data Gen. Corp.*, 734 F.2d 1336, 1338 (9th Cir. 1984).

1 power in the relevant market and . . . the acquisition or perpetuation of this power by illegitimate
 2 ‘predatory’ practices””. *Coal. For ICANN Transparency, Inc. v. VeriSign, Inc.*, 611 F.3d 495,
 3 506 (9th Cir. 2010). “Section 2 plaintiffs must also establish antitrust injury.” *Image Tech.
 4 Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997).

5 **1. Apple’s Conduct Has Substantial Anti-Competitive Effects in the iOS
 6 In-App Payment Processing Market and Injures Epic.**

7 Apple’s conduct exploiting its market power in the iOS App Distribution Market to tie
 8 the App Store to IAP has clear anti-competitive effects in the iOS In-App Payment Processing
 9 Market. Just as Apple’s conduct in the iOS App Distribution Market completely eliminates all
 10 competition in that market, the conduct here completely forecloses all competition in the iOS In-
 11 App Payment Processing Market. Apple’s actions here are illustrative. Epic offered a
 12 competing payment platform that delivered savings to consumers. (Sweeney Decl. ¶¶ 18-20.)
 13 Apple immediately removed *Fortnite* from the App Store. (*Id.* ¶ 20.) Apple has since blocked
 14 each and every *Fortnite* build offered by Epic, on the ground that these versions offered the same
 15 competitive payment processor. (Grant Decl. ¶¶ 25-34.) When Epic did not capitulate by
 16 Apple’s two-week deadline, Apple terminated Epic’s Team ID ‘84 account and banned its games
 17 from the App Store for at least a year. (*Id.* ¶ 35, Ex. H.) Apple also threatened to destroy
 18 multiple other Epic businesses. (*Id.* ¶ 27, Ex. C.) That is clear anti-competitive harm to Epic, a
 19 putative competitor in payment processing; to all other competitors, who are likewise unable to
 20 enter; and to developers and users who are denied all competitive options and the innovation and
 21 lower prices they could deliver. (*See* Sweeney Decl. ¶¶ 14, 20, 43.)

22 **2. There Are No Procompetitive Justifications for Apple’s Conduct.**

23 Apple has put forth two purported justifications for its illegal tie: user security and
 24 Apple’s ability to get paid. Both are unavailing.

25 Any security justification for requiring all in-app purchases to go through IAP is facially
 26 pretextual. *Eastman Kodak*, 125 F.3d at 1223 (“A plaintiff may rebut an asserted business
 27 justification by demonstrating . . . that the justification is pretextual.”). Apple does *not* mandate
 28 use of IAP for in-app purchases of physical goods or services to be consumed outside of the app

1 (Byars Decl., Ex. P § 3.1.5(a)); nor does it mandate use of IAP for digital content purchased on
 2 Mac computers (*see* Sweeney Decl. ¶ 10; Byars Decl., Ex. K § 7). IAP is not necessary to
 3 maintain the security of users of Apple devices.

4 As for Apple’s ability to get compensated, in its TRO Opposition, Apple argued that
 5 “IAP is the fundamental mechanism by which Apple, like many other transaction platforms,
 6 implements its business model and recoups its substantial investment in the platform.” (TRO
 7 Opp’n 23.) But labeling a tie a “business model” does not remove it from the purview of the
 8 antitrust laws. Moreover, Apple’s claim rings hollow: Apple’s tie is *not* necessary to ensure
 9 payment (*see* Sweeney Decl. ¶ 10)—it is necessary only to ensure Apple’s continued monopoly.

10 As relevant here, Apple does three separate things: it develops and maintains the iOS
 11 operating system; it distributes apps through the App Store; and it processes in-app payments for
 12 digital content through IAP. For the development and maintenance of iOS, like other platform
 13 developers, Apple gets paid in a host of ways not at issue here, including primarily through its
 14 sale of iOS devices. But creating the iOS platform does not also entitle Apple to compensation
 15 for app distribution and in-app payment processing services. Apple can get paid for those
 16 services if it competes successfully; if Apple offers competitive distribution or payment
 17 processing services, developers would choose to use them and agree to pay Apple. But Apple
 18 may not use its market power in the primary market—stemming from its control of iOS—to
 19 compel the use of its services in the aftermarkets for distribution and payment processing, and
 20 then suggest it must be paid for the services it forces developers and consumers to use.

21 Granting the requested preliminary injunction would *not* cause Apple to “give[] away its
 22 products for free”. (TRO Op. 6.) Apple would still be compensated handsomely for the
 23 development of the iOS platform. In 2019 alone, iPhone hardware sales generated more than
 24 \$142 billion in revenue. (Byars Decl., Ex. W at 37.) That revenue reflects Apple’s investment in
 25 iOS, as well as the value provided to the iOS ecosystem by many thousands of developers who,
 26 through their innovation, make the iOS ecosystem more attractive to users—and more lucrative
 27 for Apple. (*See* TRO Opp’n 4; Byars Decl., Ex. V at 3 (Apple CEO testifying that Apple
 28 “giv[es] every developer access to the very latest technology” “not out of obvious financial

1 interest, but because we realize that we have a long-term stake in the health, dynamism and
 2 vitality of the whole system").⁶ These benefits are not unique to iOS; operating system
 3 providers regularly facilitate platform access by providing development tools for free or for a
 4 nominal fee, recognizing that products created by third parties for the platform make the
 5 platform more valuable to users—and therefore to the platform provider. (Byars Decl., Ex. O;
 6 Evans Decl. ¶ 8.)⁷

7 But Epic does not want or need Apple to provide it with distribution or payment
 8 processing services, for free or otherwise. Epic wants to utilize its own competing services, for
 9 its own apps and for others. If and when Epic prevails, Apple would no longer provide it with
 10 either service, and therefore would not be entitled to any payment from Epic. And of course,
 11 there are many ways that Apple could get paid for distribution that do not foreclose the iOS In-
 12 App Payment Processing Market, such as charging a flat fee or a per-download fee. *See also*
 13 *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (“If the defendant [shows a
 14 procompetitive rationale], then the burden shifts back to the plaintiff to demonstrate that the
 15 procompetitive efficiencies could be reasonably achieved through less anticompetitive means.”).
 16 But so long as it holds market power in the iOS App Distribution market, Apple cannot tie its
 17 distribution services and payment processing services, even if the tie simplifies Apple’s
 18 collection efforts. *See Digidyne*, 734 F.2d at 1344 (finding “restructured prices” were a “less
 19 restrictive alternative . . . to recoup [defendant’s] investment costs and maintain its incentive for
 20 further innovation” than a tie); *Image Tech. Serv., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 619
 21 (9th Cir. 1990), *aff’d sub nom. Eastman Kodak*, 504 U.S. 451 (“[I]t is a less restrictive alternative

22
 23 ⁶ See also David S. Evans & Richard Schmalensee, *Matchmakers: The New Economics of Multisided Platforms* 123 (2016) (detailing how Apple “invested great effort in stoking the supply of third-party apps, touting how many they had, and making it easy for users to get them”, leading to “explosive growth”).

24
 25 ⁷ Apple has argued that “many video game digital marketplaces” “have similar fees and requirements to use the marketplace’s official in-app purchase functionality”. (TRO Opp’n 5.)
 26 But iOS is not a “video game digital marketplace”. It is a critical platform for developers of all sorts, and an essential tool for users in multiple aspects of their daily lives. As Apple itself trumpets, vast swaths of economic and social activity are funneled through iOS. And unlike the gaming consoles to which Apple points, which are typically sold at a loss in a competitive market (Byars Decl., Ex. GG), iOS is an inescapable member of an upstream duopoly with extraordinary power over developers and users alike.

1 for [defendant] to structure its prices for equipment, parts, and service so that the price for which
 2 [defendant] sells each of these reflects [its] investment costs in that area”).

3 **III. IRREPARABLE HARM & PUBLIC INTEREST: APPLE’S RETALIATION
 4 WILL IRREPARABLY HARM EPIC AND MILLIONS OF ITS CUSTOMERS.**

5 The second and fourth inquiries under *Winter* involve, respectively, the harm to Epic and
 6 the harm to third parties. 555 U.S. at 20. Here, the two are closely related, as the harm to Epic
 7 flows from the harm that Apple has inflicted, and has threatened to further inflict, on Epic’s
 8 customers. Epic therefore addresses these inquiries jointly below.

9 **A. Epic’s Decision To Defy Anti-Competitive Restrictions Does Not Require
 10 Discounting the Harm to Epic or Its Customers.**

11 On August 13, 2020, Epic took a stand against Apple’s anti-competitive practices, which
 12 for over a decade have restricted competition and drained billions of dollars from consumers and
 13 developers. (Sweeney Decl. ¶ 17.) Epic did so for the purpose of opening up the iOS
 14 ecosystem—a major gateway into the digital economy—not just for itself, but for *all* app
 15 distributors, developers, and users. (*Id.* ¶¶ 17, 43.) Under the law, Epic should not be penalized
 16 for defying Apple’s monopolistic edicts. Nor should Epic’s willingness to fight Apple’s
 17 monopoly be used to undercut its showing of irreparable harm.

18 Apple has argued that Epic is not entitled to relief “because it has unclean hands”. (TRO
 19 Opp’n 23.) But “[u]nclean hands” has not been recognized as a defense to an antitrust action for
 20 many years.” *Memorex*, 555 F.2d at 1381. Indeed, a long line of Supreme Court cases going
 21 back over a century encourages private attorneys general to enforce the antitrust laws against
 22 monopolists, including by disregarding anti-competitive contractual provisions that monopolists
 23 impose. In *McMullen*, 174 U.S. at 654, the defendant ceased to perform under an anti-
 24 competitive contract, and the Court refused to enforce the contract, writing: “The authorities
 25 from the earliest times to the present unanimously hold that no court will lend its assistance in
 26 any way towards carrying out the terms of an illegal contract.” *See also Kaiser Steel*, 455 U.S.
 27 at 77 (“our cases leave no doubt that illegal promises will not be enforced in cases controlled by
 28 the federal law”); *Perma Life Mufflers, Inc. v. Int’l Parts. Corp.*, 392 U.S. 134, 139 (1968) (“The
 purposes of the antitrust laws are best served by insuring that private action will be an ever-

1 present threat to deter anyone contemplating business behavior in violation of the antitrust
 2 laws.”); *Continental Wall Paper*, 212 U.S. at 262 (noting that if an anti-competitive restriction is
 3 breached, “the aid of the court [in enforcing the restriction] is denied, not for the benefit of the
 4 [non-complying party], but because public policy demands that it should be denied”).

5 This Court correctly noted that *Kaiser Steel*, *Memorex*, and *Perma Life* involved
 6 affirmative defenses. (TRO Op. 5 n.2.) But the same principle that prevents unclean hands from
 7 being a defense to an antitrust claim *also* prevents it from being a basis to find lack of irreparable
 8 harm—the law does not penalize parties that cease to comply with illegal contract provisions.
 9 As the court observed in *Memorex*, this concept arises in various doctrinal contexts, but whatever
 10 anti-competitive contract restrictions the plaintiff may have breached, the court “continue[s] to
 11 side with the goal of vigorous enforcement of our antitrust laws”. 555 F.2d at 1383.

12 Moreover, the principle has been applied in analogous situations. In *Acquaire v. Canada*
Dry Bottling Co., the defendant mandated resale prices for its distributors, and retaliated against
 13 distributors who refused to comply by withholding product from them. 24 F.3d at 411. The
 14 distributors sought a preliminary injunction to prevent the defendant from withholding product,
 15 even as the distributors continued to defy the resale price requirements. *Id.* The court granted
 16 the preliminary injunction, rejecting the defendant’s argument that “any irreparable harm to the
 17 distributors was self-inflicted in that [the defendant] withheld product only from those
 18 distributors who elected to participate in the promotional program but refused to abide by its
 19 terms”. *Id.* *Acquaire* is directly on point here. Epic has demonstrated the viability of a
 20 competitive alternative, the user demand for one, and the urgency in fighting Apple’s anti-
 21 competitive practices. Just as the distributors in *Acquaire* were entitled to protection from
 22 retaliation (without adhering to the illegal scheme) while the case was pending, so too Epic
 23 should be protected from retaliatory acts intended to make it succumb to Apple’s unlawful rules.
 24 See also, e.g., *Milsen Co. v. Southland Corp.*, 454 F.2d 363, 368-69 (7th Cir. 1971) (reversing
 25 denial of preliminary injunction because courts “have refused to permit a party to benefit from
 26 contractual rights when the contract is an instrument of restraint of trade”); *Germon v. Times*
 27 *Mirror Co.*, 520 F.2d 786, 788 (9th Cir. 1975) (“A termination might be enjoinable even if done

1 pursuant to contract, if the contractual clause relied upon were being used to foster an unlawful
 2 anticompetitive scheme.”).

3 Finally, “[w]here the contractual right is alleged to violate the antitrust laws, the public
 4 interest in antitrust enforcement and preservation of competition outweighs the interest in
 5 freedom of contract.” *trueEX, LLC v. MarkitSERV Ltd.*, 266 F. Supp. 3d 705, 726 n.143
 6 (S.D.N.Y. 2017); *see Regents of Univ. of California v. Am. Broad. Companies, Inc.*, 747 F.2d
 7 511, 521 (9th Cir. 1984) (“the public interest is served by preserving the competitive influence of
 8 consumer preference”). Thus, by refusing to follow Apple’s anti-competitive contractual
 9 restrictions, Epic is furthering the public interest.⁸

10 B. **Epic and Its Customers Will Suffer Irreparable Harm if Apple Is Permitted**
 11 **To Continue Its Retaliation.**

12 In the absence of a preliminary injunction, Apple’s termination of Epic’s and its
 13 affiliates’ Developer Program accounts, including as to *Unreal Engine*, and removal of *Fortnite*
 14 and other apps from the App Store, will splinter millions of *Fortnite* customers from their social
 15 network, jeopardize the projects of millions of developers relying on *Unreal Engine*, harm Epic’s
 16 reputation and competitive standing and cripple *Unreal Engine*. (Sweeney Decl. ¶¶ 38-41;
 17 Penwarden Decl. ¶¶ 9-13.) These harms have already begun to occur, and will materialize fully
 18 well before this case is adjudicated. “[T]he public interest inquiry primarily addresses impact
 19 on non-parties”. *LinkedIn*, 938 F.3d at 1004. Here, the ire of those harmed third parties—
 20 *Fortnite* players and *Unreal Engine* developers—will be directed, at least in part, at Epic.
 21 Moreover, the industry-wide concern about the continued viability of *Unreal Engine* will force
 22 existing and potential customers to choose alternative tools. “Evidence of threatened loss of
 23 prospective customers or goodwill certainly supports a finding of the possibility of irreparable
 24 harm.” *Stuhlbarg Int’l Sales Co. v. John D. Brush & Co.*, 240 F.3d 832, 841 (9th Cir. 2001); *see*
 25 *also Collins Inkjet Corp. v. Eastman Kodak Co.*, 781 F.3d 264, 279 (6th Cir. 2015) (“It is

26 ⁸ To be clear, Epic does not argue on this motion that the entire PLA or all of the App Store
 27 Review Guidelines are unenforceable. The unlawful provisions tying app distribution to in-app
 28 payment processing and requiring distribution of consumer apps through the App Store may
 easily be severed (*see* Byars Decl., Ex. K § 14.6) from the remainder of the contract, which
 would continue to be in force.

appropriate to use a preliminary injunction to avoid harms to goodwill and competitive position"); *trueEX*, 266 F. Supp. 3d at 726-28 ("a threatened loss of good will and customers, both present and potential" can "constitute irreparable harm").

1. Apple's Retaliation Against *Fortnite* Has Harmed Millions of Consumers and Will Irreparably Harm Epic.

On August 13, 2020, Apple removed *Fortnite* from the App Store. (Grant Decl. ¶¶ 25-26, Ex. B; Sweeney Decl. ¶ 20.) Apple says it was concerned about the security of Epic’s competitive payment processor (*see* TRO Opp’n 4, 6, 21), but if that were so, Apple could have blocked *Fortnite* from launching on the devices of existing users. It did not. Instead, Apple demanded that Epic publicly capitulate and provide it with a *Fortnite* build that complies with its illegal in-app payment restrictions—or else Apple would terminate *all* Epic Developer Program accounts and cut off Epic’s access to all iOS and macOS development tools. Epic declined to capitulate.

On August 27, 2020, the new season of *Fortnite* was released. (Sweeney Decl. ¶ 22.) iOS users are unable to download the new season because *Fortnite* is no longer on the App Store. Moreover, since Apple has acted on its threats (as modified by this Court’s TRO), macOS users also have lost access to the latest season of *Fortnite*. Thus, millions of iOS and macOS users have been splintered off from the *Fortnite* community. (*Id.*) Apple has said this ban on *Fortnite* will last at least a year. (Grant Decl. ¶ 35, Ex. H.)

Apple’s actions will wreak havoc on the existing *Fortnite* community. Daily active *Fortnite* users on iOS have already declined by more than 60% since Apple began its retaliatory campaign through September 2, 2020. (Sweeney Decl. ¶ 22.) Those that continue to play or socialize on *Fortnite* are doing so for significantly fewer hours per week. (*Id.*) Friends and family are disappearing. People prefer *Fortnite* over other games in part because *Fortnite* facilitates a community. When millions of players are forced to drop from the community overnight, *Fortnite* itself becomes less attractive, not only to the players who now cannot join but also to every other player. (*Id.*) *Fortnite* is also one of the world’s largest event venues. (*Id.* ¶ 5.) Travis Scott’s in-game concert in April 2020 drew over 2 million iOS users. (*Id.*) Since

1 then, three of Christopher Nolan's films were virtually screened in *Fortnite*; exclusive episodes
 2 of ESPN's *The Ocho* and the Discovery Channel's *Tiger Shark King* aired in the game; and *We*
 3 *the People*, a series of discussions on racial equality and voter suppression in America, was
 4 likewise held within the *Fortnite* universe. (*Id.*) Particularly during the COVID-19 pandemic,
 5 such events are critical to connecting friends and families worldwide. Apple has driven a stake
 6 in the *Fortnite* community.

7 Some iOS users can afford to gain access to *Fortnite* through other means, such as
 8 gaming consoles or Windows PCs. But for many users, an iPhone is the only way to access the
 9 *Fortnite* universe; simply put, neither consoles nor PCs (let alone PCs strong enough for gaming)
 10 are anywhere near as ubiquitous as iPhones. 63% of *Fortnite* users on iOS access *Fortnite only*
 11 on iOS. (*Id.* ¶ 3.) The harm to these users is meaningful. In the time since Apple removed
 12 *Fortnite*, Epic has received countless customer complaints expressing customers' discontent.
 13 Many of these customers blame Epic for being cut off from access to *Fortnite*. (*Id.* ¶¶ 25-26,
 14 Exs. E-F.) These are the words of regular people: parents seeking to spend time in *Fortnite* with
 15 their children, players who invested time and money in the game, and people seeking a forum to
 16 connect with others worldwide. (*Id.*; Byars Decl., Ex. Q.) These complaints have likely been
 17 driven at least in part by Apple's notice to users who tried to update *Fortnite* that "[t]he
 18 developer has removed this app from the App Store". (Grant Decl. ¶ 25, Ex A.) This is false—it
 19 is Apple that removed *Fortnite*, not Epic.

20 Courts also routinely recognize complaints from customers as irreparable harm to the
 21 company. *See, e.g.*, *Go Daddy Operating Co. v. Ghaznavi*, 2018 WL 1091257, at *14 (N.D. Cal.
 22 Feb. 28, 2018) (declaration that plaintiff "has received numerous customer complaints"); *Home*
 23 *Comfort Heating & Air Conditioning, Inc. v. Ken Starr, Inc.*, 2018 WL 3816745, at *9 (C.D. Cal.
 24 July 24, 2018) (same); *see also trueEX*, 266 F. Supp. 3d at 728 (irreparable harm where
 25 "customers will have no choice but to resort to using a substitute product to meet their needs");
 26 *Hawaii ex rel. Anzai v. Gannett Pac. Corp.*, 99 F. Supp. 2d 1241, 1253-54 (D. Haw.), *aff'd sub*
 27 *nom. State of Hawaii v. Gannett Pac. Corp.*, 203 F.3d 832 (9th Cir. 1999) (irreparable harm to
 28 where antitrust defendants' actions threatened "the elimination of a significant forum for the

1 airing of ideas and thoughts”).

2 Moreover, Apple’s removal of *Fortnite* from the App Store will stunt Epic’s efforts to
 3 compete on a new technological frontier that is rapidly becoming a key focus of research and
 4 development among digital innovators: the creation of the metaverse. A metaverse is a multi-
 5 purpose, persistent, interactive virtual space. (Sweeney Decl. ¶ 24.) *Fortnite* already bears many
 6 characteristics of the metaverse; it “fosters deep community; it’s an immersive experience
 7 centered around lasting social connection; it’s a playground to be anybody, yet it’s the most
 8 authentic expression of our true authentic selves”. (Byars Decl., Ex. DD.) The communal
 9 experience of the *Fortnite* platform, the free flow of thoughts and ideas within the game’s many
 10 virtual spaces, and the game’s utility as an outlet for social connection, have led *Fortnite* to be
 11 considered a challenger and substitute for Facebook, Snapchat, and others. (*Id.*; Sweeney Decl.
 12 ¶ 24.)

13 Right now, major tech companies are focusing on the metaverse frontier and have made
 14 significant investments, and *Fortnite* puts Epic ahead in this race. (Byars Decl., Ex. HH.) But
 15 the success of *Fortnite*’s evolution into a metaverse depends on having a large userbase, which
 16 will make interacting on the metaverse a better experience for potential new users. (Sweeney
 17 ¶ 24.) Mobile users in particular are critical because mobile devices allow consumers to access
 18 the metaverse wherever they are. (*Id.*) Over 116 million registered users have accessed *Fortnite*
 19 through iOS—more than any other platform. (*Id.* ¶ 3.) They have spent more than 2.86 billion
 20 hours in the app. (*Id.*) By eliminating many of these players from *Fortnite*, and blocking
 21 *Fortnite*’s ability to access over a billion iOS users, Apple is irreparably harming Epic’s chances.

22 **2. Apple’s Termination of Developer Accounts and Developer Tools
 23 Would Irreparably Harm Epic and Its Customers.**

24 In its TRO Opinion, this Court held that “Epic Games made a preliminary showing of
 25 irreparable harm as to Apple’s actions related to the revocation of the developer tools” because
 26 “if Epic Games succeeded on the merits, it could be too late to save all the projects by third-party
 27 developers relying on the engine that were shelved while support was unavailable”. (TRO
 28 Op. 6.) “Indeed, such a scenario would likely lead to nebulous, hard-to-quantify questions, such

1 as, how successful these other projects might have been, and how much in royalties would have
 2 been generated". (*Id.*)

3 These findings were amply supported. Without access to Apple's development tools,
 4 "Epic would be unable to develop future updates to the *Unreal Engine* for . . . iOS and macOS",
 5 all but ensuring that "third-party developers who rely on Epic's engine and support" would be in
 6 jeopardy. (Sweeney Decl. ¶¶ 38, 40; Penwarden Decl. ¶¶ 8-13.) Apple leveled "an existential
 7 threat to the *Unreal Engine*" that will be, in the words of one commenter, "catastrophic for far
 8 more developers than just Epic". (Byars Decl., Ex. R at 10.) This is a problem *right now*.
 9 Indeed, evidence of this has been bolstered since the TRO papers were filed. Developers making
 10 apps for multiple platforms or specifically for Apple devices will choose alternatives to
 11 *Unreal Engine* to ensure their programs work on Apple products. Epic already has received
 12 dozens of complaints from developers raising concerns about the future of *Unreal Engine*, some
 13 of whom are contemplating the need to move their business elsewhere. (Penwarden Decl. ¶ 11;
 14 Byars Decl., Ex. S ¶¶ 3-4.) Anything short of a preliminary injunction would devastate these
 15 developers, deny Epic future customers, and upend *Unreal Engine*. Epic could not be made
 16 whole through a victory at trial. *See trueEX*, 266 F. Supp. 3d at 728 ("trueEX is likely also to
 17 suffer irreparable harm . . . [as] some [customers] have threatened to stop doing business with
 18 trueEX Another client sought to accelerate a number of planned trades . . . suggesting that
 19 the client did not believe it could do business with trueEX in the future").

20 **IV. THE BALANCE OF HARMS TIPS SHARPLY IN EPIC'S FAVOR.**

21 The balance of harms strongly favors Epic. If the Court does not grant the requested
 22 preliminary injunction, the harm to Epic will be significant, and Epic's refusal to abide by
 23 Apple's unlawful agreements should not be held against Epic. (*See* Section III above.)

24 By contrast, Apple would suffer little to no harm if the preliminary injunction is granted.
 25 Requiring Apple to restore Epic's Team ID '84 account, which is governed by a PLA and
 26 registered various game apps including *Fortnite*, would not "set off a flood" "threaten[ing] the
 27 entire App Store ecosystem". (TRO Opp'n 2.) Apple's swift and far-reaching retaliation was
 28 widely publicized, most developers cannot brook such retaliation (*see* Byars Decl., Ex. CC), and

1 few if any would have the appetite or incentive to test Apple when Epic is litigating their cause.
 2 Further, Apple's fear that developers will drop IAP is additional evidence that developers use
 3 IAP only because Apple forces them to do so. A preliminary injunction would, at most, cause
 4 Apple to lose commissions for a short time, which is harm easily compensable by damages.

5 The balance favors Epic even more with respect to Epic's other agreements with Apple,
 6 which govern the developer tools downloaded by its individual programmers and the various
 7 Developer Program accounts entered into by its affiliates. These tools and accounts are
 8 necessary to support many of Epic's products on iOS and macOS, including but not limited to
 9 *Unreal Engine*, and are covered by *separate* integrated agreements that indisputably were not
 10 breached. (TRO Op. 5-6; *see also* TRO Reply Br. 3-8.) Further, some of the apps on the other
 11 Developer Program accounts do not even support in-app purchases (Grant Decl. ¶ 7), so Apple
 12 cannot be concerned that Epic will offer its own payment processor in those apps. Apple will not
 13 be harmed *at all* by continuing to allow Epic access to developer tools or accounts that are
 14 widely available; it would simply lose some leverage it was hoping to improperly gain. Apple
 15 should not be able to retaliate against a company with which it has multiple contractual
 16 relationships by unilaterally terminating each and every one of them. That Apple may have
 17 previously retaliated more broadly against other developers (Schiller Decl. ¶ 16) does not justify
 18 Apple doing so now. To the contrary, Apple's practice of retaliating across the entirety of a
 19 developer's business further explains why Epic is one of a handful of companies that have dared
 20 challenge Apple's conduct—and is dramatic evidence of Apple's unlawful monopoly
 21 maintenance. This further undercuts any claim of hardship, as “[t]here is no hardship to a
 22 defendant when [an] . . . injunction would merely require the defendant to comply with law”.
 23 *Deckers Outdoor Corp. v. Ozwear Connection Pty, Ltd.*, 2014 WL 4679001, at *13 (C.D. Cal.
 24 Sept. 18, 2014).

25 CONCLUSION

26 For the reasons set forth above, the Court should grant Epic's motion for a preliminary
 27 injunction.
 28

Dated: September 4, 2020

Respectfully submitted,

By: s/ Katherine B. Forrest

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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

EPIC GAMES, INC.,

Plaintiff.

APPLE INC.,

vs.

Defendant.

No. 4:20-CV-05640-YGR

**[PROPOSED] ORDER GRANTING
PLAINTIFF'S MOTION FOR A
PRELIMINARY INJUNCTION**

Date: September 28, 2020 at 9:30 a.m. (via Zoom Platform)

Courtroom: 1, 4th Floor

Judge: Hon. Yvonne Gonzalez Rogers

1 On September 28, 2020, this Court heard Plaintiff Epic Games, Inc.’s (“Epic”)
 2 Motion for a Preliminary Injunction against Apple Inc. (“Apple”). Having considered the parties’
 3 briefs, the record in this matter, and the arguments of counsel, the Court hereby GRANTS
 4 Plaintiff’s Motion for a Preliminary Injunction.

5 “A plaintiff seeking a preliminary injunction must establish that he is likely to
 6 succeed on the merits, that he is likely to suffer irreparable harm in the absence of preliminary
 7 relief, that the balance of equities tips in his favor, and that an injunction is in the public interest.”
 8 *hiQ Labs, Inc. v. LinkedIn Corp.*, 938 F.3d 985, 992 (9th Cir. 2019) (quoting *Winter v. Nat. Res.
 9 Def. Council, Inc.*, 555 U.S. 7, 20 (2008)). Under the Ninth Circuit’s “‘sliding scale’ approach to
 10 these factors”, “when the balance of hardships tips sharply in the plaintiff’s favor, the plaintiff
 11 need only demonstrate ‘serious questions going to the merits.’” *Id.*

12 Epic meets all four requirements for the entry of its requested preliminary
 13 injunction. *First*, Epic is likely to succeed on the merits of the antitrust claims relevant to this
 14 Motion: Epic will likely be able to show that Apple’s requirement that apps distributed by the
 15 Apple App Store use exclusively Apple’s own in-app payment processing for digital content
 16 constitutes (1) a tying arrangement that unreasonably restrains trade, in violation of Section 1 of
 17 the Sherman Act, 15 U.S.C. § 1, and (2) an act of monopoly maintenance, in violation of
 18 Section 2 of the Sherman Act, 15 U.S.C. § 2. Epic will also likely be able to show that Apple’s
 19 actions disallowing any consumer apps to be distributed on iOS devices through any means other
 20 than the Apple App Store constitute unlawful monopoly maintenance in violation of 15 U.S.C.
 21 § 2. *Second*, Epic is likely to suffer irreparable harm in the absence of preliminary relief, in the
 22 form of harm to reputation, loss of consumer goodwill, injury to its competitive standing, and
 23 unquantifiable loss of future business. *Third*, the balance of the equities tips in favor of Epic.
 24 Apple would suffer little to no harm from entry of the injunction, but Epic would be irreparably
 25 damaged. *Fourth*, the public interest favors entry of an injunction that would prevent substantial
 26 harm to millions of third parties, including *Fortnite* users as well as game developers and others
 27 who rely on Epic’s *Unreal Engine*, and would further the robust enforcement of the antitrust laws.
 28

Accordingly, Apple, its officers, agents, servants, employees and attorneys, and all persons in active concert or participation with Apple, are:

1. Restrained from removing, de-listing, refusing to list or otherwise making unavailable the app *Fortnite* or any other app on Epic’s Team ID ‘84 account in Apple’s Developer Program, including any update of such an app, from the App Store on the basis that *Fortnite* offers in-app payment processing through means other than Apple’s In-App Purchase (“IAP”) or on any pretextual basis;

2. Restrained from taking any adverse action against Epic, including but not limited to restricting, suspending, or terminating any other Apple Developer Program account of Epic or its affiliates, on the basis that Epic enabled in-app payment processing in *Fortnite* through means other than IAP or on the basis of the steps Epic took to do so;

3. Restrained from removing, disabling, or modifying *Fortnite* or any code, script, feature, setting, certification, version or update thereof on any iOS user's device; and

4. Required to restore Epic's Team ID '84 account in Apple's Developer Program.

This Preliminary Injunction shall take effect immediately and shall remain in effect until entry of judgment in this action or further order of this Court.

IT IS SO ORDERED.

Dated: _____, 2020 at ____a.m./p.m.

Hon. Yvonne Gonzalez Rogers
United States District Judge

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

OAKLAND DIVISION

)
)
EPIC GAMES, INC.,) Case No. 4:20-CV-05640-YGR
)
)
Plaintiff,) Date: September 28, 2020
)
v.) Courtroom: 5, 17th Floor
)
APPLE INC.,) Judge: Hon. Yvonne Gonzalez
Defendant.) Rogers
)

Declaration of Dr. David S. Evans

September 4, 2020

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I. Introduction

1. My name is David S. Evans. I'm the Chairman of Global Economics Group, LLC, based in its Boston office, and the Co-Executive Director of the Jevons Institute for Competition Law and Economics at University College London where I am also a Visiting Professor. I have BA, MA, and Ph.D. degrees in economics from the University of Chicago. As an economist, I specialize in the field of industrial organization, which concerns the behavior of firms and their interactions. I have authored, sometimes with co-authors, six major books and more than 100 scholarly articles, which have been widely read and cited, including by the Supreme Court in its *Ohio v. American Express*¹ decision.² A substantial portion of my research, writing, and teaching concern platform-based businesses and the digital economy, including smartphones. My curriculum vitae is attached as Appendix A.

2. Over the last 30 years, I have taught classes on antitrust economics and related topics at the University of Chicago Law School, University College London Faculty of Laws, and Fordham University Law School. I have testified before federal courts, state courts, and administrative law courts in the US and before the European General Court and the Supreme People's Court of China. In addition, I have testified before several committees of the US Congress, including the Senate Banking Committee, the House Financial Services Committee, and the House Oversight Committee, and before the House of Lords in the United Kingdom.

3. Counsel for Epic Games, Inc. ("Epic") asked me to address two topics related to their motion for a preliminary injunction:

1. Is it likely that, based on further research and analysis, I will conclude that Apple has substantial market power in an antitrust market for the distribution of iOS-compatible apps?
2. Is it likely that, based on further research and analysis, I will conclude that there is material demand for using payment processing for in-app purchases separate from that provided by the app distributor?

¹ 138 S. Ct. 2274, 2280-81, 2285-89, 2300 (2018).

² As of July 2020, I ranked among the top two percent of published economists according to quality-weighted citations by IDEAS/RePEC which tracks publications and citations by economists worldwide. See Top 10% Authors, as of June 2019, <https://ideas.repec.org/top/top.person.all.html>.

4. This declaration explains my basis for answering both of these questions affirmatively based on my preliminary research and information from Epic and its counsel, as well as my general expert knowledge as an economist. I try to do so succinctly by focusing on the key considerations. The opinions expressed in this declaration are based on information available to me at this time. My work in this matter is ongoing and I reserve the right to revise or supplement my opinion if any additional information makes that appropriate, or to correct any inadvertent errors.

II. Software Platforms and App Distribution for Smartphones

A. Background

5. This section provides a brief overview of software platforms for computing devices generally, and the distribution of applications for them, and then focuses on smartphones.

1. Software Platforms

6. A “software platform” is an operating system for computing devices that enables developers to write applications for compatible computing devices that have that software platform installed. It thereby enables consumers to use those applications on those devices.³ Software platforms expose application programming interfaces (APIs) that enable developers to access built-in capabilities of the device as well as to obtain other software services provided by the platform.⁴ Typically, software platforms are not compatible with each other, such that applications written for one platform do not work on the other. A developer must have separate code for each platform and a consumer cannot use applications for one software platform on another.

³ For a general introduction to software platforms, see Evans, David, Andrei Hagiu, and Richard Schmalensee (2006) *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, MIT Press, at Chapters 1-2, and the references cited there. See also Gagne, Greg, Peter Galvin, and Abraham Silberschatz (2014) *Operating System Concepts Essentials*, 2nd Edition, Wiley, at p. 3 (“An operating system is a program that manages a computer’s hardware. It also provides a basis for application programs and acts as an intermediary between the computer user and the computer hardware.”). Some operating systems, unlike the ones discussed here, do not support third-party applications and therefore do not provide a software platform for developers and users.

⁴ David Orenstein, “Application Programming Interface,” Computerworld, January 10, 2000, <https://www.computerworld.com/article/2593623/application-programming-interface.html>.

7. Software platforms, such as Microsoft's Windows, are two-sided businesses that facilitate connections between consumers who want to use applications and developers who want to write applications for those consumers.⁵ Economists use the term “positive indirect network effects” to refer to the situation in which the addition of one type of participant to a network increases the value received by the other type of participant on that network. Users value software platforms that have more developers writing applications they would like to use; developers value software platforms that provide them access to more potential customers.⁶ There are therefore positive indirect network effects for both users (who benefit from more developers) and developers (who benefit from more users). It is widely accepted that there are substantial positive indirect network effects for software platforms.

8. Software platform providers typically make money from users by, for example, licensing the software platform to original equipment manufacturer (OEMs) that manufacture the computing devices on which the software platform is loaded (such as Microsoft Windows) or selling their own devices with the software platform included (such as Apple macOS). Software platform businesses usually provide software development kits (SDKs) and other tools that help developers write applications that work with that platform, which they provide for free or charge nominal fees. That is a common two-sided pricing strategy for stimulating indirect network effects and driving platform growth. Encouraging app development results in more users, which in turn stimulates more app development, which leads to more users.

2. Application Distribution and Stores

9. Software developers can distribute their applications for a software platform to consumers that use that platform in several ways, as seen from the experience in personal

⁵ Rochet, Charles and Jean Tirole (2003) “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4), pp. 990-1029 at pp. 992, 1015-1016; Choudary, Sangeet, Geoffrey Parker, and Marshall Van Alstyne (2016) *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You*, W. W. Norton & Company, at p. 30 (Kindle Edition).

⁶ Rochet, Charles and Jean Tirole (2003) “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4), pp. 990-1029 at pp. 992, 1015-1016; Choudary, Sangeet, Geoffrey Parker, and Marshall Van Alstyne (2016) *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You*, W. W. Norton & Company, at p. 21 (Kindle Edition); Cusumano, Michael, Annabelle Gawer, and David Yoffie (2019) *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power*, HarperCollins, at pp. 16-17, 94-95, 221 (Kindle Edition); Evans, David, Andrei Hagiu, and Richard Schmalensee (2006) *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, MIT Press, at pp. 55-56.

computers. (1) Developers can distribute the application directly. For example, a consumer can sign up for and download TurboTax, for either the Windows or macOS software platforms, from TurboTax's website.⁷ (2) Developers can enter into a deal with the maker of a computing device to pre-install the software on the device. For example, personal computers and smartphones often come with applications pre-installed. (3) Developers can distribute their applications through online stores or, in some cases, through brick-and-mortar stores⁸ that distribute applications. Valve, for example, operates an online store called Steam for distributing PC gaming applications.⁹ In all cases, application distribution occurs downstream from the software platform.

10. Application stores, like other stores, make applications available to consumers, allow them to search and browse applications, and provide relevant information to them, supply marketing and promotion support to developers, among other things. Stores that distribute applications, like stores in general, can provide a wide array of applications or specialize in a particular category. In addition, stores that distribute applications, such as Amazon, may be parts of larger stores that sell a variety of products. Application stores can make money by charging the developer a commission on sales or charging the consumer a markup on the wholesale price. They can also make money in other ways, such as by selling advertising or providing other promotional efforts on their stores. As is the case with distributors generally, application stores operate downstream from the software platform.

11. Software platforms and application distributors are not interchangeable for users or developers. Developers and users rely on the software platform for computer code that provides a standard application environment. Developers and users rely on application stores, or other methods, for application distribution. Over the years, for example, many application stores have operated separately from software platforms. These include PC gaming application stores such

⁷ TurboTax, "Which TurboTax CD/Download product is right for you?" <https://turbotax.intuit.com/personal-taxes/cd-download/>.

⁸ To simplify the exposition, the term "store" in this declaration refers to an entity that distributes products for multiple sellers unless otherwise noted. In practice, some sellers operate their own stores for their own products.

⁹ Steam, "About," <https://store.steampowered.com/about/>; PC Magazine, "Steam Review," August 14, 2020, <https://www.pc当地.com/reviews/steam-for-pc>.

as Steam¹⁰, Epic Games Store¹¹, GOG.com¹², and Facebook Gameroom,¹³ as well as stores such as Amazon¹⁴ and GameStop.¹⁵ There is therefore material demand, by users and developers, for application distributors that is separate from the demand for software platforms.

12. Some software platforms have decided to vertically integrate downstream into application stores. Apple, for example, has sold software applications for macOS in its online store since at least 2000, in its physical stores since 2001, and in the Mac App Store that is included with the macOS operating system starting in 2011, which was 27 years after launching the Mac.¹⁶ Microsoft has sold software applications for Windows in its online store since at least 2004 and in its Windows Store that is included with the Windows operating system starting in 2012, which was 27 years after launching Windows.¹⁷ In addition to vertically integrating into application stores, Apple and Microsoft both eventually included their stores as self-supplied applications for their respective personal computer software platforms. In both cases, users and developers can also rely on other application stores and direct distribution to

¹⁰ Steam, “About,” <https://store.steampowered.com/about/>.

¹¹ Epic Games, “Epic Games Store,” <https://www.epicgames.com/store/en-US/>.

¹² GOG.com, “About,” https://www.gog.com/about_gog.

¹³ Facebook, “Facebook Gameroom,” <https://www.facebook.com/gameroom/download/>.

¹⁴ Amazon, “Video Games,” https://www.amazon.com/gp/browse.html?node=468642&ref_=nav_em_cvg_0_2_13_10.

¹⁵ GameStop, “Video Games,” <https://www.gamestop.com/video-games>.

¹⁶ Apple launched the Mac computer in January 1984. See Erik Sandberg-Diment, “Hardware Review: Apple Weighs In With Its Macintosh,” The New York Times, January 24, 1984, <https://www.nytimes.com/1984/01/24/science/personal-computers-hardware-review-apple-weighs-in-with-macintosh.html>. Archived screenshots of Apple’s online store in 2000 featured MacOS applications. See Internet Archive, “The Apple Store (U.S.),” as of October 27, 2000, <https://web.archive.org/web/20001027145012/http://www.store.apple.com/1-800-MY-APPLE/WebObjects/AppleStore>. The first Apple brick-and-mortar store opened in 2001, offering “over 300 third-party software titles for professionals and consumers, including some of the best educational titles for kids.” See Apple, “Apple to Open 25 Retail Stores in 2001,” May 15, 2001, <https://www.apple.com/newsroom/2001/05/15Apple-to-Open-25-Retail-Stores-in-2001/>. The Mac App Store launched in 2011. See PCMag Staff, “Apple’s Mac App Store: Hands On,” PC Magazine, January 6, 2011, <https://www.pcmag.com/archive/apples-mac-app-store-hands-on-258979>.

¹⁷ Microsoft, “Windows Marketplace Opens for Business; Consumers Can Easily Discover A World of Products That Work With Windows,” October 12, 2004, <https://news.microsoft.com/2004/10/12/windows-marketplace-opens-for-business-consumers-can-easily-discover-a-world-of-products-that-work-with-windows/>; PCMag Staff, “13 New Features In Windows 8 Consumer Preview,” PC Magazine, February 29, 2012, <https://www.pcmag.com/archive/13-new-features-in-windows-8-consumer-preview-294819>; Samuel Gibbs, “From Windows 1 to Windows 10: 29 years of Windows evolution,” The Guardian, October 2, 2014, <https://www.theguardian.com/technology/2014/oct/02/from-windows-1-to-windows-10-29-years-of-windows-evolution>.

obtain software from sources other than the software platform owner—the store supplied by the software platform owner is not the only option.

13. For smartphones, as for personal computers, software platform providers operate upstream and application distributors operate downstream. By listing the applications on their virtual shelves and providing information, the application stores facilitate the distribution of the applications to users. An application store provides distribution services as an input to the application developers.¹⁸

3. Smartphone Software Platforms¹⁹

14. Smartphones are relatively small, portable computing devices that consumers use in conjunction with a subscription to a mobile carrier.²⁰ They provide Internet access over the carrier’s mobile broadband network as well as over Wi-Fi. They also provide calling over the carrier’s voice network. The manufacturer of the smartphone installs a smartphone software platform.

15. Like other software platforms, those for smartphones enable developers to write applications, and for consumers to use those applications, for computing devices with that smartphone software platform installed. Applications for smartphones are usually referred to as “apps” and the stores for those apps as “app stores”.²¹ Many apps rely on the Internet to provide services to smartphone users. Although the app runs locally on the smartphone, it is connected over the Internet to software running on remote servers.

16. Nowadays, almost all smartphones have software platforms provided by Apple (iOS) or Google (Android).²² These two companies accounted for the software platforms installed on nearly all smartphones sold between 2016 to 2020.²³ Almost all smartphone apps are written

¹⁸ They rely on this input because that is where consumers may go to get apps.

¹⁹ Smartphone software platforms are also used, with some modifications, on tablets. In the interest of brevity, this declaration discusses smartphones and notes the role of tablets in footnotes when relevant.

²⁰ PC Magazine Encyclopedia, “smartphone,” <https://www.pc当地.com/encyclopedia/term/smartphone>.

²¹ PC Magazine Encyclopedia, “app,” <https://www.pc当地.com/encyclopedia/term/app>.

²² Apple bundles iOS with iPhones, which it designs and uses entities such as Foxconn to manufacture. Google licenses its version of Android to handset makers such as Samsung.

²³ Calculations based on IDC, “IDC Quarterly Mobile Phone Tracker”.

for one or both of these software platforms. Putting China aside, other software platforms for smartphones have largely exited the business and there has been no meaningful entry in recent years.²⁴

17. Apple and Google provide developers access to APIs that enable these developers to integrate with the software code and obtain services provided by their respective software platforms.²⁵ They also provide developers access to tools for writing and testing apps for their respective platforms. These tools include software applications that help developers manage and catalog versions of their code and design and test user interfaces without having to write the underlying code. They also offer code debugging assistance, advanced code completion, and suggested corrections for common coding mistakes.²⁶

18. As is the case with other software platforms, developers pay Apple and Google nothing or nominal fees for access to tools developers rely on to write compatible smartphone apps.

²⁴ Handset makers formed a joint venture to create the Symbian operating system for mobile devices. The last Symbian-based smartphone was released in 2012, and Nokia subsequently transitioned to the Windows mobile operating system. Nokia shut off Symbian developers' ability to make changes to existing apps or publish new ones on the Nokia Store in 2014. *See* Matt Warman, "Nokia ends Symbian era," The Telegraph, January 24, 2013, <https://www.telegraph.co.uk/technology/nokia/9824179/Nokia-ends-Symbian-era.html>; Liam Tung, "Nokia says final sayonara to Symbian and MeeGo apps as store freezes updates," ZDNet, January 2, 2014, <https://www.zdnet.com/article/nokia-says-final-sayonara-to-symbian-and-meego-apps-as-store-freezes-updates/>. Microsoft introduced a version of Windows that ran on mobile phones and supported apps. Microsoft ended service for its mobile operating system in January 2020. *See* Liam Tung, "Microsoft gives Windows 10 Mobile a little extra time before the end", ZDNet, December 17, 2019, <https://www.zdnet.com/article/microsoft-gives-windows-10-mobile-a-little-extra-time-before-the-end/>. Blackberry used its own operating system for its business-oriented devices that provided secure e-mail. Blackberry switched to using the Android operating system for its smartphones and announced that support for the Blackberry operating system would end in 2019. Blackberry subsequently announced it would continue limited support beyond 2019. *See* Blackberry, "Supporting BB10 and BBOS Customers and Rewarding Your Loyalty," December 14, 2017, <https://blogs.blackberry.com/2017/12/supporting-bb10-and-bbos-customers-and-rewarding-your-loyalty>; Blackberry, "Our Commitment to BB10 and Some Changes to BlackBerry Legacy Services," July 31, 2019, <https://blogs.blackberry.com/en/2019/08/our-commitment-to-bb10-and-some-changes-to-blackberry-legacy-services>. Samsung's Tizen operating system has not been formally discontinued for smartphones, but there hasn't been a new Tizen smartphone since May 2017, and Samsung has discontinued a key Tizen app. *See* Sumit Adhikari, "My Galaxy Discontinuation on Tizen Phones the Final Nail in the Coffin?" SAM Mobile, January 31, 2019, <https://www.sammobile.com/2019/01/31/samsung-discontinue-my-galaxy-tizen-series/>. (Samsung continues to use Tizen for smart TVs and other non-smartphone devices.) Amazon has discontinued its Fire smartphones but continues to produce and support Fire tablets. *See* NDTV Correspondent, "Amazon Fire Phone Discontinued," Gadgets360, September 10, 2015, <https://gadgets.ndtv.com/mobiles/news/amazon-fire-phone-discontinued-738395>.

²⁵ Apple Developer, "Technologies," <https://developer.apple.com/documentation/technologies>; Android Developers, "Android 10 features and APIs," <https://developer.android.com/about/versions/10/features>.

²⁶ Apple Developer, "Xcode IDE," <https://developer.apple.com/xcode/features/>; Android Developers, "Android Studio Features," <https://developer.android.com/studio/features>.

Apple makes access to its software development kits available for free. For access to its developer program, which provides additional rights, Apple charges an annual fee of \$99 (or \$299 for an enterprise account intended for the distribution of apps for internal use within an organization).²⁷

19. Apple's revenues from its iOS software platform come primarily from selling iPhones (and iPads), which run on iOS, to users. In 2019, Apple had \$146.4 billion in iPhone sales and \$20.5 billion in iPad sales, for a total of \$166.9 billion.²⁸ Apple's App Store revenues in 2019 were approximately \$16.6 billion.²⁹ Thus, approximately 91 percent ($166.9/(166.9+16.6)$) of Apple's iOS related revenues come from selling iPhones and iPads. Google makes money from Android primarily by bundling its ad-supported apps with Google Android phones, acquiring attention from users, and then giving advertisers access to that attention.³⁰

²⁷ Apple, "Enrollment – Support – Apple Developer," <https://developer.apple.com/support/enrollment/>.

²⁸ Apple, SEC Form 10-K for the Fiscal Year Ended September 28, 2019, at p.19; Apple, SEC Form 10-Q for the Fiscal Quarter Ended December 29, 2018, at p. 25; Apple, SEC Form 10-Q for the Fiscal Quarter Ended December 28, 2019. In addition to iPhone and iPad sales, Apple also receives revenues from sales of Apple Watches, AirPods, and other accessories that depend in part on ownership of iPhones and iPads.

²⁹ In January 2020, Apple reported it had paid out \$155 billion to developers since the launch of App the Store in 2008, with a quarter of that \$155 billion, or \$38.8 billion, having been paid in 2019. Assuming a 30/70 revenue split between Apple and the developers, this would imply revenues for Apple of $\$38.8 \text{ billion} \times (30/70) = \16.6 billion . Accounting for those developer payments that were made based on a 15/85 split, which are not reported separately, would result in a lower estimate of Apple's App Store revenues. See Apple, "Apple rings in new era of Services following landmark year," January 8, 2020, <https://www.apple.com/newsroom/2020/01/apple-rings-in-new-era-of-services-following-landmark-year/>. Assuming that the \$155 billion paid to developers consists of revenue paid to third-party developers, this estimate of Apple's App Store revenues would not include revenues for Apple's proprietary apps. Apple also receives revenues from the relatively modest fees it charges for access to its developer program.

³⁰ European Commission, "COMMISSION DECISION of 18.7.2018 relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union (the Treaty) and Article 54 of the EEA Agreement (AT.40099 – Google Android)," https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf, at p. 111 ("Google's strategy is to ensure that Google Android is installed on as many smart mobile devices as possible as a way to ensure market penetration for its services and the collection of data used for the purposes of search advertising. As stated in an internal presentation to the Google Board of Directors [Google Executive], '[Google internal communications on business strategy]'"), and fn 519 citing Liz Laffan, "[Report] A new way of measuring openness, from android to webkit the open governance index [updated]," ("Google has made Android available at 'less than zero' cost, since Google's core business is not software or search, but driving eyeballs to ads. As is now well understood, Google's strategy has been to subsidise Android such that it can deliver cheap handsets and low-cost wireless Internet access in order to drive more eyeballs to Google's ad inventory.").

4. Smartphone App Distribution

20. An “app store” specializes in distributing apps for smartphones.³¹ Amazon, for example, operates the Amazon Appstore for Android.³² A consumer can download the Amazon Appstore on his or her Android phone. The Amazon Appstore itself is similar to Amazon’s “book store”. The consumer can search, see product reviews, and make purchases. As with personal computers, the “app store” is distinct from the smartphone software platform. Other app stores generally operate similarly.

21. As with the macOS, Apple operates an applications store, the App Store, for iOS-compatible apps created by developers who have used iOS’s SDKs and software tools to create iOS-compatible apps.³³ Apple pre-installs the Apple iOS App Store, along with other apps provided by Apple, on each iPhone and the icon for the App Store appears on the home screen.³⁴

22. Unlike the macOS, Apple requires that developers make their apps available to iPhone owners exclusively through the Apple iOS App Store.³⁵ In addition, unlike applications for macOS, Apple does not allow software developers to distribute their apps directly to consumers and does not permit alternative app stores to run on iOS-based devices.³⁶

³¹ PC Magazine Encyclopedia, “app store,” <https://www.pc当地.com/encyclopedia/term/app-store>.

³² PC Magazine Encyclopedia, “Amazon Appstore,” <https://www.pc当地.com/encyclopedia/term/amazon-appstore>.

³³ Apple, “App Store Principles and Practices,” <https://www.apple.com/ios/app-store/principles-practices/>.

³⁴ For example, in iOS 12, the App Store was pre-installed on the home screen. See T-Mobile, “Pre-installed apps: Apple iPhone & iPad on iOS 12,” <https://www.t-mobile.com/support/devices/apple/apple-ios-12/pre-installed-apps-apple-iphone-and-ipad-on-ios-12>. The App Store has been pre-installed on iOS since the release of iPhone 3G in July 2008 with iOS 2.0. See Apple, “iPhone 3G On Sale Tomorrow,” July 10, 2008, <https://www.apple.com/newsroom/2008/07/10iPhone-3G-on-Sale-Tomorrow/>. Discussion in this declaration of Apple’s App Store or the iOS App Store refer to Apple’s iOS App Store unless otherwise noted. Apple also operates an Apple App Store for macOS.

³⁵ Complaint for Injunctive Relief, Exhibit A, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 1 at 81 (August 12, 2020) (“Applications for iOS Products, Apple Watch, or Apple TV developed using the Apple Software may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store, Custom App Distribution, for beta distribution through TestFlight, or through Ad Hoc distribution as contemplated in this Agreement.”).

³⁶ Apple, “App Store Review Guidelines,” at 3.2.2(i), <https://developer.apple.com/app-store/review/guidelines/#unacceptable> (deeming as “unacceptable” the creation of “an interface for displaying third-party apps, extensions, or plug-ins similar to the App Store or as a general-interest collection.”). In addition to native mobile apps, developers can also provide web apps, which are mobile-optimized web pages that are intended to look like an app and which can be distributed outside of the iOS App Store by clicking on a link in a

23. As a result, Apple's App Store accounts for all downstream distribution of apps for the iOS software platform.

B. Analysis of Market Definition and Market Power for Smartphone Software Platforms³⁷

24. To analyze the possibilities for market power in the downstream distribution of apps, we need to start with the market constraints on smartphone software platforms that serve users and developers.

1. Smartphone Software Platforms

25. Users and developers do not have good substitutes for smartphone software platforms.³⁸

26. From the standpoint of the user, many apps are not available on personal computers or other devices in part because these apps rely on unique aspects of smartphones as mobile, always-connected computers. For some apps, the developer offers similar applications for personal computers, gaming consoles, or other platforms. Many consumers around the world rely on smartphones as their primary computing device. Many of these consumers do not own

web page. More advanced versions of web apps are called progressive web apps. Web apps have a number of limitations compared to native apps, especially on iOS (which places more limitations on what web apps can do than does Android). On iOS, web apps can only store up to 50 Mb offline, and iOS will delete the apps' files after a few weeks of disuse. Web apps have no ability to use Bluetooth, Beacons, Touch ID, Face ID, ARKit, altimeter sensor, battery information, background execution, contacts, background location, native social apps, push notifications, icon badge integration, or Siri integration. See Maxilmiliano Firtman, "Progressive Web Apps on iOS are here," Medium, March 30, 2018, <https://medium.com/@firt/progressive-web-apps-on-ios-are-here-d00430dee3a7>; Flavio Copes, "The Complete Guide to Progressive Web Apps," January 25, 2018, <https://flaviocopes.com/progressive-web-apps/>. As a result of these limitations, even major supporters of web apps such as the Financial Times have switched to using native apps. Financial Times, "FT iOS app returns to the Apple App Store," August 17, 2017, <https://aboutus.ft.com/en-gb/announcements/ft-ios-app-returns-to-the-apple-app-store/>.

³⁷ Software platform developers often make apps available in many countries and users get apps from developers who operate in different geographies. App stores and payment processors generally operate across many countries as well. It is likely, based on further development of information and analysis, that I will find that it is appropriate to consider that the relevant geographic markets discussed below for software platforms, iOS app distribution, and payment processing services for in-app purchases of digital content for iOS apps are essentially global. The smartphone business in China is very different than the rest of the world, however, and it is possible that I will conclude that it is not appropriate to include China in one or more of the relevant geographic markets. I have not had the opportunity to develop sufficient information or analyze the relevant details concerning China for the purposes of this declaration.

³⁸ The following discussion describes the situation in the pre-pandemic world and what I would expect to be the post-pandemic world. People are less mobile during the pandemic and are relying more on any non-mobile devices they have at home.

one of these other devices and some can't afford to do so. In addition, the consumers who do have these alternative devices may not have access, or convenient access, to these devices, for parts of their days when they want to use applications.³⁹

27. From the standpoint of the developer, the smartphone software platform is likely the only way they can reach smartphone users during times when consumers might want to use the app and don't have good substitutes. Even when consumers can use an app on another computing device, they would place less value on an app that was not available for their smartphone.⁴⁰ For example, in response to increased use of mobile devices to access their

³⁹ GSMA and AT Kearney (2013) "The Mobile Economy 2013," <https://www.gsma.com/newsroom/wp-content/uploads/2013/12/GSMA-Mobile-Economy-2013.pdf>, at pp. 7, 48 ("Smartphones are increasingly taking their place at the centre of people's lives. They enable us to access content at any time from almost anywhere - something many now take for granted. . . . Increasingly consumers are using their mobile as their primary device with which to access the Internet, in particular for communication and entertainment services due to the "always on' nature of mobile phones."); IDC (2013), "Always Connected: How Smartphones and Social Keep Us Engaged," *IDC Research Report, Sponsored by Facebook*, <https://www.nu.nl/files/IDC-Facebook%20Always%20Connected%20%281%29.pdf>, at pp. 3, 5, 9-10 ("Social has become so engrained in our behavior that we engage with it even when doing every day activities. Using Facebook throughout the day is a given for most smartphone owners. The multitude of ways we use social, and specifically Facebook, (one-on-one, one-to-many, private, public, synchronous, asynchronous, etc.) allow it to fit easily and seamlessly throughout our days."); Think With Google, "Digital Video Upfronts: Putting YouTube On The Modern-Day Media Plan," October 2015, <https://www.thinkwithgoogle.com/intl/en-gb/consumer-insights/digital-video-upfronts-putting-youtube> ("Thanks to increasing smartphone penetration and the roll-out of 4G, digital video consumption is escalating through the roof – since March 2014 the number of daily YouTube watchers has grown 40% year over year. These people are seeking entertainment, information and inspiration while out and about, seated at their desks or relaxing at home."); Giancarlo Saldana, "Why mobile games are so popular," GamesRadar+, January 7, 2014, <https://www.gamesradar.com/why-mobile-games-are-so-popular/> ("Perhaps one of the easiest reasons mobile games are so popular is because they're easily accessible. . . . To add to all the happy people, mobile games are portable right out of their nonexistent box and can be enjoyed pretty much anywhere. Whether you're waiting for a bus or want to make that trip to the toilet a little more fun (trust me, people play on the can), games like Angry Birds or Hero Academy are there to the rescue."); Business Matters, "How did mobile gaming get so popular?" March 5, 2019, <https://www.bmmagazine.co.uk/business/how-did-mobile-gaming-get-so-popular/> ("[T]he main reason why mobile gaming has become so popular is that they can be easily accessed by everyone and at any time. . . . Equally, Mobile gaming can be played from anywhere and anytime. As you well know, a smartphone is portable and you can easily carry it from one place to another. You can play games on your mobile while in the kitchen, bathroom, outside watching birds or just doing what you love. You can be on a bus traveling and busy playing your favorite game. Because of this, mobile gaming has taken over and in the near future, it is going to beat all the online gaming platforms because of their portability."). Consumers view laptops and tablets as inferior to smartphones when on the go. Toney Bradley, "5 Ways Smartphones Are Better than Laptops or Tablets," PC World, January 6, 2012, https://www.pcworld.com/article/247388/5_ways_smartphones_are_better_than_laptops_or_tablets.html; Tag Mobile, "7 Reasons Smartphones Are Better than Laptops," June 3, 2016, <https://www.tagmobile.com/blog/7-reasons-why-smartphones-are-better-than-laptops/>.

⁴⁰ For instance, Snapchat has explained that its users substantially rely on on-the-go cellular connectivity. See Snapchat SEC Form S-1 Registration Statement (Third Amendment), filed February 24, 2017 at p. 15. Instagram initially launched as a smartphone app and did not offer a website that could be accessed on web browsers until a limited website was offered two years later. See Alexia Tsotsis, "Mobile First, Web Second: Instagram Finally

products, popular social media companies Facebook and Twitter altered their development priorities towards mobile devices and shifted to describing themselves as “mobile first” companies.⁴¹ The companies launched new mobile-oriented features for users such as live video streaming.⁴²

28. Not surprisingly, given these advantages, the amount of time the average adult smartphone user in the US spent using apps or the web on smartphones increased six-fold from 2011 to 2019, while the amount of time using personal computers online has remained roughly constant.⁴³ Apps that were widely used on personal computers are now mainly used on smartphones. For example, consumers use Facebook, Google, and YouTube primarily on mobile devices.⁴⁴

Lets Users Have Functional Web Profiles”, Tech Crunch, November 5, 2012, <https://techcrunch.com/2012/11/05/mobile-first-web-second-instagram-finally-lets-users-have-functional-web-profiles/>. In the past, Facebook reported the number of monthly active users who access Facebook through mobile devices. The most recent reporting was in 2016 Q4 when 94 percent of Facebook’s monthly active users accessed Facebook through mobile devices (up from 51 percent in 2011 Q4) and 62 percent *solely* accessed Facebook through mobile devices (up from 7 percent in 2011 Q4). See Facebook, “Facebook Q4 2016 Results,” https://s21.q4cdn.com/399680738/files/doc_presentations/FB-Q4'16-Earnings-Slides.pdf, at pp. 5-7; Facebook, “Facebook Q4 2012 Results,” at pp. 3, 5-6, <https://www.slideshare.net/kitseeborg/fb-q412-investordeck>.

⁴¹ Brian Chen, “Facebook Reorients Itself for a Small-Screen World,” The New York Times, August 23, 2012, <https://www.nytimes.com/2012/08/24/technology/facebook-rewrites-its-code-for-a-small-screen-world.html>; Alistair Barr, “Facebook’s Zuckerberg says mobile first priority,” Reuters, May 11, 2012, <https://www.reuters.com/article/net-us-facebook-roadshow/facebook-s-zuckerberg-says-mobile-first-priority-idUSBRE84A18520120512>; Tim Bradshaw, “Twitter is now a mobile-first company, says CEO,” Financial Times, June 29, 2012, <https://www.ft.com/content/c2bdd947-9c82-3f12-b782-48a39b7fc2e9>.

⁴² Ian Sherr, “Facebook jumps into the live video streaming craze,” CNET, August 5, 2015, <https://www.cnet.com/news/facebook-jumps-into-the-live-video-streaming-craze>; Vadim Lavrusik, “Expanding Live Video to More People,” Facebook Newsroom, January 28, 2016, <https://newsroom.fb.com/news/2016/01/expanding-live-video>; Sara Haider, “Go Live on Twitter,” Twitter, December 14, 2016, https://blog.twitter.com/official/en_us/a/2016/go-live-on-twitter.html.

⁴³ Based on comparisons of the average time spent per adult user of each medium during the fourth quarter of the respective years. Nielsen began tracking smartphone time usage during 2011 Q4. See Nielsen, “The Cross-Platform Report March 2014,” at p. 9 (Exhibit 1); Nielsen, “The Nielsen Total Audience Report April 2020” at p. 10. Exhibit 1 of the 2014 Nielsen report is based on users of each medium. See Nielsen, “The Cross-Platform Report March 2014,” at p. 23. Data on smartphone usage by children are not as readily available, but it is likely that smartphone usage by children has grown similarly, if not more so, over the past decade.

⁴⁴ In 2015, Google announced that its mobile search volume overtook desktop volume in 10 countries including the US and Japan. See Google Inside AdWords, “Building for the next moment,” May 5, 2015, <https://adwords.googleblog.com/2015/05/building-for-next-moment.html>. In 2017, media measurement and analytics company Comscore estimated that 70 percent of the time spent on YouTube in the U.S. was accounted for by mobile devices. See Comscore, “Unlocking Mobile Measurement for YouTube in the U.S.,” February 23, 2017, <https://www.comscore.com/Insights/Infographics/Unlocking-Mobile-Measurement-for-YouTube-in-the-US>. Facebook doesn’t disclose the breakdown of time spent by consumers on their mobile versus their desktop app.

29. Given these considerations it is likely that further economic analysis, based on additional quantitative and qualitative evidence, would support the conclusion that a hypothetical monopolist of smartphone software platforms would not face significant competitive constraints. As a result, generally accepted methods for assessing the boundaries of the relevant antitrust market would likely conclude that smartphone software platforms is a relevant market.

30. As a practical matter outside of China, that market consists of Apple's iOS software platform and Google's Android software platform.⁴⁵ It is a duopoly market.

2. Apple's Market Power in the Smartphone Software Platform Market

31. There is a strong presumption, based on the economics of industrial organization, that each duopolist in the smartphone software platform market—Apple and Google—has substantial market power. Each provider would tend to tacitly coordinate its market decisions with the other provider, which would temper competition between them. The Horizontal Merger Guidelines incorporate these economic principles.⁴⁶ The antitrust authorities typically do not permit a 3 to 2 merger because the merger would likely significantly increase the market power of the merging firms and result in a duopoly market that would have a concentration score of at least 5,000 as measured by the Herfindahl-Hirschman Index (HHI), a standard index for measuring market concentration. The Horizontal Merger Guidelines characterize any market with an HHI score above 2,500 as highly concentrated.⁴⁷

However, Facebook's advertising revenue, which is broken out by desktop and mobile, provides a reasonable proxy because advertising sales are roughly proportional to viewing. As of 2019 Q3, Facebook reported that 94 percent of its advertising revenue came from mobile. See Facebook, "Facebook Reports Third Quarter 2019 Results," <https://investor.fb.com/investor-news/press-release-details/2019/Facebook-Reports-Third-Quarter-2019-Results/default.aspx>.

⁴⁵ It is possible that, based on an analysis of switching costs and other considerations, that iOS and Google's Android each could be considered separate relevant markets for the purposes of addressing the claims in this matter. For present purposes, the potential further narrowing of the software platform market would not affect my conclusions with respect to the iOS downstream markets discussed below.

⁴⁶ Horizontal Merger Guidelines, US Department of Justice and Federal Trade Commission, Section 7, August 19, 2010, <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

⁴⁷ Under the DOJ and FTC's Horizontal Merger Guidelines, a merger will be presumed to be anticompetitive if the post-merger concentration is above 2,500 and the increase in HHI is more than 200. In 3-2 mergers, the post-merger concentration is at least 5,000 because the HHI measure is smallest when all firms in a market are the same

32. To assess whether Apple has substantial market power in the smartphone software platform market, I have considered four sources of economic evidence.

a. Market Share Indicators

33. The market power of a software platform provider over users and developers depends on the extent to which users engage with apps, as opposed to using other phone features, and the extent to which these users are a source of direct or indirect revenue to the developer.

Smartphone users vary in the extent to which they use the smartphone's software platform for using apps. Some people use smartphones primarily for making phone calls or sending text messages, while others use them as their main device for using apps online.

34. Apple has chosen to specialize in high-end smartphones compared to the average Android smartphone seller.⁴⁸ While there are high-end Android phones, the average iPhone has more capabilities relevant for consuming apps than the average Android phone and therefore likely appeals to people who tend to use apps more. Some Android smartphone makers have specialized in inexpensive handsets that have high penetration in lower-income countries with more limited Internet connectivity.

35. These considerations are reflected in the data on smartphone shares. From 2016 Q1 to 2020 Q1, Apple had a 40 percent revenue share of all smartphones sold worldwide excluding

size and the HHI for a duopoly with each firm having a 50 percent share is 5,000. The increase in HHI will be more than 200 unless the firms are small enough that the geometric average of the merging firms' pre-merger shares is 10 percent or less, which is true if the product of the merging firms' shares is 100 or lower (for example, the merging firms have market shares of 10 percent or less each, or they have shares that are less than 20 percent and 5 percent respectively). Thus, all 3-2 mergers involving merging firms of appreciable size "will be presumed to be likely to enhance market power" under the merger guidelines. See US Department of Justice and Federal Trade Commission, "Horizontal Merger Guidelines," Section 5.3, August 19, 2010, https://www.ftc.gov/system/files/documents/public_statements/804291/100819hmg.pdf; see also Lee Van Voorhis and Roxane Busey, "U.S. Trends in Antitrust Enforcement of Cartels and Mergers in a Global Environment," Baker McKenzie, January 25, 2016, <https://globalcompliancenews.com/u-s-trends-in-antitrust-enforcement-of-cartels-and-mergers-in-a-global-environment/> ("Generally, there have been consistent challenges by antitrust enforcement agencies to mergers where the number of competitors was reduced from 4 to 3, 3 to 2, or 2 to 1 or by competitors with large market shares").

⁴⁸ Vlad Savov, "The entire history of iPhone vs. Android summed up in two charts," The Verge, June 1, 2016, <https://www.theverge.com/2016/6/1/11836816/iphone-vs-android-history-charts>; Daniel Dilger, "IDC data shows 66% of Android's 81% smartphone share are junk phones selling for \$215," Apple Insider, November 12, 2013, <https://appleinsider.com/articles/13/11/12/idc-data-shows-66-of-androids-81-smartphone-share-are-junk-phones-selling-for-215>.

China, while its unit share was 17 percent.⁴⁹ These differences between revenue and unit shares result because almost all of Apple's iPhones sell for \$300 or more, with iPhones having an average selling price of \$790 during this period.⁵⁰ Among smartphones that sold for \$300 or more, Apple had a 57 percent revenue share and a 49 percent unit share.⁵¹

36. Users with high-end smartphones are of much greater importance to app developers.⁵² Consumers who are interested in using their smartphones extensively are likely to buy higher priced devices that are more advanced technologically, with faster processors, more memory and larger screens.⁵³ Consumers who buy higher-priced smartphones are more likely to have

⁴⁹ Apple had a 36 percent revenue share and 14 percent unit share globally, including China. I have access to tablet sales data globally and for the US during the same period. Apple had a 37 percent revenue share and 16 percent unit share of smartphone and tablet sales globally, including China. Calculations based on IDC, "IDC Quarterly Mobile Phone Tracker"; IDC, "IDC Quarterly Personal Computing Device Tracker".

⁵⁰ Figures reported are on a global basis, excluding China. From 2016 to 2020, 98 percent of Apple's iPhone units sold globally, excluding China, had average sales prices of \$300 or more. Including China, 98 percent of Apple's iPhone units sold globally had average sales prices of \$300 or more. Including China, 99 percent of Apple's iPad units sold globally had average sales prices of \$300 or more. Calculations based on IDC, "IDC Quarterly Mobile Phone Tracker"; IDC, "IDC Quarterly Personal Computing Device Tracker".

⁵¹ Figures reported are on a global basis, excluding China. Among smartphones that sold for \$300 or more, Apple had a 71 percent revenue share and a 69 percent unit share in the US, had a 54 percent revenue share and a 46 percent unit share in Western Europe, and had a 51 percent revenue share and a 41 percent unit share globally, including China. Among smartphones and tablets that sold for \$300 or more, Apple had a 71 percent revenue share and a 71 percent unit share in the US and had a 53 percent revenue share and a 44 percent unit share globally, including China. Among all smartphones, Apple had a 63 percent revenue share and a 41 percent unit share in the US and had a 46 percent revenue share and a 27 percent unit share in Western Europe. Among all smartphones and tablets, Apple had a 63 percent revenue share and a 40 percent unit share in the US. Calculations based on IDC, "IDC Quarterly Mobile Phone Tracker"; IDC, "IDC Quarterly Personal Computing Device Tracker".

⁵² Snapchat SEC Form S-1 Registration Statement (Third Amendment), filed February 24, 2017 at pp. 2, 64, 69, ("Our products often require intensive processing and generate high bandwidth consumption by our users. As a result, our users tend to come from developed countries with high-end mobile devices and high-speed cellular internet. . . . We often create new technologies and high engagement products that often require high-end mobile devices and high-speed cellular internet, and consequently the majority of our users come from developed markets. . . . We expect growth to continue to come from developed markets with readily available high-speed cellular internet and high-end mobile devices because we prioritize our investment in product innovation that often requires a lot of bandwidth and intensive processing.").

⁵³ Snapchat SEC Form S-1 Registration Statement (Third Amendment), filed February 24, 2017 at p. 120 ("Our focus on innovative camera experiences means that many of our products are data intensive and work better on high-end mobile devices. This is because camera products involve rich formats like video, which use a lot of cellular bandwidth when used for communication and content consumption. Additionally, our products often use technologies that demand a lot of processing power and don't work as well on lower-end devices, like the technology behind Lenses. This means that unlike many other free mobile applications, the majority of our users tend to be located in markets with high-end mobile devices and high-speed cellular internet."); Sarah Perez, "iOS App Launches Nearly Double That Of Android; Apps Used For Twice As Long," Techcrunch, November 18, 2014, <https://techcrunch.com/2014/11/18/ios-app-launches-nearly-double-that-of-android-apps-used-for-twice-as-long/> ("While both iOS and Android are now used by mainstream consumers, Android offers a range of devices that extend from high-quality hardware into low-end phones that are sometimes barely an upgrade from feature

more income to spend on app content.⁵⁴ By several metrics discussed next, Apple's share of app usage—and therefore software platform activity—is similar to its share of higher-end smartphones and its revenue share of all smartphones, and dissimilar to its unit share of all smartphones.

37. iPhone users are valuable to app developers to the extent developers can make money directly or indirectly from them. As one indication of their value, iPhone users tend to spend more on apps and on purchases within apps than Android users. iPhone users, globally, spent 90 percent more in the iOS App Store than Android users spent in the Google Play Store in 2020 H1.⁵⁵ That is, in terms of spending by consumers for paid apps and for in-app purchases of digital content, Apple had almost twice the revenue of Google. Other studies have also confirmed that iPhone users typically spend more than Android users on purchases of physical as well as digital goods.⁵⁶ It is likely that the same is true for the use of apps to purchase physical goods, and for advertising revenues earned from apps, for the same reasons.

38. The iOS software platform has been an important source of new players for Fortnite. Of the new players who created an account on mobile between April 21, 2020 (when Fortnite became available on the Google Play Store) and August 12, 2020 (the last full day before Fortnite was removed from the iOS App Store) more than 61 percent created their account on

phones. These low-end devices may be in the hands of those who aren't as interested in the app ecosystem, and merely needed the cheapest phone upgrade available from their carrier. These users also, understandably, would be careful about spending unnecessarily on paid apps, in-app purchases, and even on data usage itself.”).

⁵⁴ Mark Gurman, “Google’s Next Android Overhaul Will Embrace iPhone’s ‘Notch’,” Bloomberg, February 12, 2018, <https://www.bloomberg.com/news/articles/2018-02-12/google-s-next-android-overhaul-is-said-to-embrace-iphone-notch> (“While Android dominates the middle and low-end of the global smartphone market, Apple controls much of the high-end with users who spend more on apps and other services.”). This is consistent with Epic’s experience as the average iOS Fortnite user spends significantly more on in-app purchases than the average Android Fortnite user. See Complaint for Injunctive Relief, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 1 at ¶ 46 (August 12, 2020).

⁵⁵ SensorTower, “Global App Revenue Reached \$50 Billion in the First Half of 2020, Up 23% Year-Over-Year,” June 30, 2020, <https://sensortower.com/blog/app-revenue-and-downloads-1h-2020>. Other sources report similar shares. For example, App Annie reports that global app store spending in 2020 Q1 was 81 percent higher in the iOS App Store than in Google Play. App Annie, “Weekly Time Spent in Apps Grows 20% Year Over Year as People Hunker Down at Home,” April 2, 2020, <https://www.appannie.com/en/insights/market-data/weekly-time-spent-in-apps-grows-20-year-over-year-as-people-hunker-down-at-home/>.

⁵⁶ Martin Meany, “Do iPhone Users Spend More Online Than Android Users?”, Moz, October 11, 2017, <https://moz.com/blog/apple-vs-android-aov>; Apps Flyer, “Lifetime Value: The Cornerstone of App Marketing (2018 LTV Benchmarks),” https://cdn2.hubspot.net/hubfs/597489/LTV%20Facebook%20Study%202006.2018/Lifetime_Value_The_Cornerstone_of_App_Marketing.pdf.

iOS.⁵⁷ So iOS accounted for about 61 percent of new Fortnite users who created an account on mobile over a period that is skewed toward more sign ups on Android because Fortnite had only recently become available on the Google Play Store while it had been available on the Apple App Store for more than two years.

39. These indicia are consistent with Apple having substantial market power in the smartphone software platform market. It has a large share of users that are valuable to developers and the only way for developers to access these users is through the iOS software platform. That drives developers to write apps for the iOS software platform, which increases the value to users of the iOS software platform.

b. Substitution Possibilities for Users and Developers

40. iPhone users often lack good substitutes for using iOS apps. In some cases, the developer may have created an application providing similar services for a software platform running on another computing device, such as a personal computer. Some iPhone users may not own that other device. And if they did own it, they may not have that device available when they have the time for and interest in using the iOS app.⁵⁸ In many cases, the developer has not written a similar application for another computing device, so iPhone users have no alternative.

41. Meanwhile, developers do not have meaningful substitutes for making their apps available to iPhone users other than using the iOS platform.⁵⁹ Developers would lose access to the active installed base of around 1 billion iPhones.⁶⁰ Developers that provide versions of their

⁵⁷ Based on data provided by Epic. I restrict the time period to start after Fortnite became available to Android users on the Google Play Store (in addition to via sideloading and Samsung's Galaxy Store) to avoid overstating the importance of iOS to Fortnite among smartphone platforms. Fortnite had already been available to iOS users for over two years, so the 61 percent iOS share of users who first made their account on mobile is lower during this period than it was prior to Fortnite's launch on the Google Play Store.

⁵⁸ See fn 39.

⁵⁹ As discussed in fn 36, developers can also provide web apps, but these web apps have a number of limitations compared to native apps, especially on iOS.

⁶⁰ Apple reported its iPhone active installed base as being over 900 million in January 2019 and as having increased by almost 75 million over the prior twelve months. S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ1 2019 Earnings Call Transcripts," January 29, 2019, at p. 7. Continued growth since January 2019 at a similar rate would put the active installed base of iPhones at over 1 billion. Apple has stated that its iPhone active installed base has continued to grow since January 2019 but has not reported a specific growth rate or level. See S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ2 2019 Earnings Call Transcripts," April 30, 2019, at p. 7; S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ3 2019 Earnings Call Transcripts," July 30, 2019, at p. 7; S&P

apps on other devices, such as gaming consoles, would lose the opportunities for interacting with users who don't have those devices or who don't have them during situations in which they have the time for and interest in using the app.

42. Apple's CFO, Luca Maestri, has emphasized the importance of the company's installed base on the success of the App Store and Apple's Services⁶¹ segment:

And it's important to understand what is driving the growth of the [Services] business. First of all, it's our installed base. As we just told you, the installed base continues to grow very nicely. It has reached 1.4 billion active devices [of which more than 900 million were iPhones] at the end of December, and really, very little of our Services revenue is driven by what we sell in the last 90 days.⁶²

Therefore, the evidence is consistent with Apple having substantial market power over users and developers for the installed base of iPhone owners. Developers require access to this installed base, and users require access to the stock of apps.

c. Costs of Switching to Android for Installed Base of iOS Users

43. Even though iOS users and developers have to use the iOS software platform to interact with each other, it might be claimed that substantial numbers of iOS users would switch to Android in response to an attempt by Apple to exercise market power over users and developers. If they would, then this would reduce Apple's market power over developers, and therefore the software platform overall. It is unlikely, however, that the ability to switch to Android, the only other alternative, would prevent Apple from having substantial market power in the smartphone software platform market.

⁶¹ Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ4 2019 Earnings Call Transcripts," October 30, 2019, at p. 7; S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ1 2020 Earnings Call Transcripts," January 28, 2020, at p. 7; S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ2 2020 Earnings Call Transcripts," April 30, 2020, at p. 7; S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ3 2020 Earnings Call Transcripts," July 30, 2020, at p. 5.

⁶² Apple's Services segment includes the Company's digital content stores and streaming services, AppleCare, Advertising, and other services. See Apple Inc. SEC Form 10-Q for the quarterly period ended June 27, 2020, at p. 8.

⁶² S&P Capital IQ, "Apple Inc. NasdaqGS:AAPL FQ1 2019 Earnings Call Transcript," January 29, 2019 at p. 10.

44. Consumers have invested in purchasing a smartphone that they generally keep for over two years.⁶³ Apple's annual iPhone sales in 2019 were about one fifth of its total installed base of iPhone active users.⁶⁴ At any given time, the substantial majority of Apple's installed base of active iPhone users are not in the market for a new device.⁶⁵

45. A consumer who did decide to replace her current iPhone would incur costs of switching to an Android device. Once a consumer has made her first purchase of an iPhone, and increasingly relies on iOS apps, she faces material costs of switching to an Android smartphone. As one smartphone purchasing guide for consumers noted:

When buying a phone, we generally recommend sticking with the same platform your current phone uses. At a minimum, switching entails learning the quirks of a new interface and potentially losing access to purchased apps, app-specific data, or even photo and data services... We generally recommend against [switching smartphone operating systems]. By the time you've used a phone for a couple of years, you've spent a lot of time learning its quirks, and you've probably invested a decent amount of money into apps, games, music, or videos that you may have to rebuy if you switch.⁶⁶

46. I identify eight sources of switching costs that, while they do not preclude people from changing smartphone software platforms, make it less likely they will do so in the face of an exercise of market power which causes a substantial increase in the cost, or decrease in the quality, of using the iOS software platform overall.

1. Users switching to Android have to learn how to use a new mobile operating system. Users who have used iPhones for many years have become accustomed to the interface and the functionality on iPhones, which differs from that on Android smartphones.

⁶³ Abigail Ng, "Smartphone users are waiting longer before upgrading — here's why," CNBC, May 16, 2019, <https://www.cnbc.com/2019/05/17/smartphone-users-are-waiting-longer-before-upgrading-heres-why.html>.

⁶⁴ IDC estimated that Apple sold 191 million iPhones in 2019. Calculations based on IDC, "IDC Quarterly Mobile Phone Tracker". Apple reported its iPhone active installed base as being over 900 million in January 2019 and as having increased by almost 75 million over the prior twelve months. Apple has stated that its iPhone active installed base has continued to grow since January 2019 but has not reported a specific growth rate or level. See fn 60.

⁶⁵ It is unlikely that the cost of in-app purchases would be a material factor in deciding between iOS and Android based smartphones because the expected lifetime cost of these purchases, which could include some pass-on of commission costs, would likely be a small share of the overall cost and benefits of the smartphone and its associated software platform and apps.

⁶⁶ Andrew Cunningham, "iPhone vs. Android: Which Is Better for You?" The New York Times, October 31, 2019, <https://www.nytimes.com/wirecutter/reviews/ios-vs-android/>.

2. Users have paid to download apps in Apple's App Store and would not be able to use those apps on an Android smartphone. Users switching to Android would lose access to their iOS apps and may lose access to data on those apps. Those apps might not be available on Android and, if they were, would likely need to be installed, and purchased where applicable, a second time.⁶⁷
3. Setting up a new iPhone, including migrating data, is much easier for an existing iPhone user than setting up an Android smartphone.⁶⁸ By contrast, while there are tools that Android OEMs offer to attempt to facilitate switching from iPhones, they are generally viewed as more complicated.⁶⁹
4. Many iPhone users have networks of family and friends with whom they communicate using proprietary Apple technologies that would not be available on Android. For example, iMessage provides an enhanced version of text messaging that only works on Apple devices and is highly valued by iPhone users.⁷⁰ Other apps, such FaceTime

⁶⁷ Andrew Cunningham, "iPhone vs. Android: Which Is Better for You?" The New York Times, October 31, 2019, <https://www.nytimes.com/wirecutter/reviews/ios-vs-android/> ("When buying a phone, we generally recommend sticking with the same platform your current phone uses. At a minimum, switching entails learning the quirks of a new interface and potentially losing access to purchased apps, app-specific data, or even photo and data services"); Michelle Yan, "Here's why it's so hard to switch from Apple to Android," Business Insider, June 10, 2019, <https://www.businessinsider.com/apple-to-android-switch-new-phone-stuck-ecosystem-2019-6> ("And speaking of apps, you may have trouble transferring those too. For the most part, you'll have to redownload them individually, and you might need to repurchase iOS apps on the Play Store."); JR Raphael, "iPhone to Android: The ultimate switching guide," Computer World, February 7, 2020, <https://www.computerworld.com/article/3218067/how-to-switch-from-iphone-to-android-ultimate-guide.html> ("The bad news: Any apps you've installed on your iPhone won't automatically transfer over to Android, and any apps you've paid for on iOS will likely have to be purchased again."). In the case of apps that are available on both iOS and Android, an iPhone user switching to Android would retain access to pre-purchased content if that content were synchronized across platforms by the developer.

⁶⁸ An existing iPhone user who has iOS 12.4 or later on her current and new iPhone can use Apple's iPhone migration to transfer all of her data wirelessly from the previous device to the new one. An existing iPhone user who has iOS 11 or later can use Quick Start to set up her new device by using her Apple ID or Bluetooth. The Quick Start process includes the choice of restoring apps, data, and settings from the user's most recent iCloud backup if they are connected through Wi-Fi.

⁶⁹ Gordon Gotsegen, "How to Switch From Android to iOS (and Vice Versa)," Wired, October 6, 2015, <https://www.wired.com/2015/10/how-to-switch-android-ios/> ("Switching between different OSes is more complicated than upgrading to the newest iPhone/Galaxy from your old one."); JR Raphael, "iPhone to Android: The ultimate switching guide," Computer World, February 7, 2020, <https://www.computerworld.com/article/3218067/how-to-switch-from-iphone-to-android-ultimate-guide.html> ("Of course, these all-in-one [iPhone-to-Android switching systems] methods aren't available for every phone, and they don't always work flawlessly or across all of the areas relevant to your needs.").

⁷⁰ Joanna Stern, "Ugh, Green Bubbles! Apple's iMessage Makes Switching to Android Hard," The Wall Street Journal, October 18, 2018, <https://www.wsj.com/articles/ugh-green-bubbles-apples-imessage-makes-switching-to-android-hard-1539867600> ("That is still what makes blue-bubble [iMessage] conversations so much better than green-bubble [SMS text message] ones. Not only do you get more functionality inside the messaging window, you can pick up the conversation from one device to the next—iPhone to MacBook to Apple Watch. It also means things turn into a nightmare hell ride whenever I assign my phone number to a non-Apple phone."); Andrew Cunningham, "iPhone vs. Android: Which Is Better for You?" October 31, 2019, The New York Times, <https://www.nytimes.com/wirecutter/reviews/ios-vs-android/> ("You also won't be able to communicate with iOS

(which provides video and audio communications), Find My (which allows for the tracking of the location of Apple devices), and AirDrop (which allows the transfer of files among supported Mac computers and iOS devices without using e-mail or a mass storage device) allow users to connect with their friends and family, but can't be used on Android smartphones.⁷¹

5. iPhone users who are connected to Apple services, such as iCloud Photos, iCloud Drive, Apple News, and Apple TV+, would effectively lose access to those services if they switched to an Android smartphone.⁷² A user who had stored all her family photos on iCloud would need to download and transfer them to an Android smartphone that is likely unfamiliar to her. These frictions pose significant costs to everyday smartphone users.⁷³
6. iPhone users who have other Apple devices, such as iPads and MacBooks, use Apple apps and services across their Apple devices, such as iMessage, FaceTime, AirDrop, Find My, iCloud Photos, iCloud Drive, Apple News, and Apple TV+. For example, a user can have the same iMessage conversation and view the same iCloud Photo libraries

users using iMessage or FaceTime, which can be a big sticking point if you have a lot of iPhone-using friends and family.”).

⁷¹ Apple, “Find My,” <https://www.apple.com/icloud/find-my/> (“The new Find My app combines Find My iPhone and Find My Friends into a single, easy-to-use app on iOS, iPadOS, and now macOS.”); Apple, “FaceTime,” <https://apps.apple.com/us/app/facetime/id1110145091>, (“This app is available only on the App Store for iPhone and iPad.”). Apple, “How to use AirDrop on your iPhone, iPad, or iPod touch,” <https://support.apple.com/en-us/HT204144> (“Use AirDrop to share and receive photos, documents, and more with other Apple devices that are nearby.”); Michelle Yan, “Here’s why it’s so hard to switch from Apple to Android,” Business Insider, June 10, 2019, <https://www.businessinsider.com/apple-to-android-switch-new-phone-stuck-ecosystem-2019-6> (“[I]t’s hard to say goodbye to AirDrop. You’ll no longer be able to conveniently send files from your iPhone to your MacBook, to your iPad, or to another person’s Apple device. . . . Switching to Android also means losing all of Apple’s preinstalled apps. There may be a good chunk you don’t use, but think about FaceTime. You’ll have to use another app to video call people, like Facebook Messenger or Google Duo, which also means getting whoever you want to call to use those apps as well.”).

⁷² Less functional access to iCloud Photos and Apple TV+ is available through a browser-based application on Android. See Andrew Cunningham, “iPhone vs. Android: Which Is Better for You?”, The New York Times, October 31, 2019, <https://www.nytimes.com/wirecutter/reviews/ios-vs-android/> (“Apple Music aside, Apple makes it difficult to impossible to use iCloud services or access your media on non-Apple devices.”); Daniel Nations, “How to Access Your iCloud Photos From Apple, Windows, and Android Devices,” Lifewire, April 27, 2020, <https://www.lifewire.com/access-your-icloud-photos-4160237>; David Nield, “Get more from AppleTV+ with these easy tricks,” Popular Science, February 5, 2020, <https://www.popsci.com/story/diy/appletv-tips/>; Phillip Prado, “How to use Apple iCloud on your Android device,” Android Authority, February 5, 2020, <https://www.androidauthority.com/how-to-use-icloud-for-android-1080681/>.

⁷³ Michelle Yan, “Here’s why it’s so hard to switch from Apple to Android,” Business Insider, June 10, 2019, <https://www.businessinsider.com/apple-to-android-switch-new-phone-stuck-ecosystem-2019-6> (“There’s no iCloud app for Android, meaning there’s no easy way for you to transfer all of your iCloud data to your Android.”).

on her iPhone, iPad, or MacBook. She would lose that functionality if she switched to an Android smartphone.⁷⁴

7. iPhone users switching to Android would lose the use of all or much of the functionality of many peripherals they had previously purchased. For example, an Apple Watch cannot be connected to an Android smartphone and AirPods have significantly less functionality when used with an Android smartphone.⁷⁵ And the stock of lightning cables that many families have accumulated would not be useful for an Android smartphone.
8. Apple provides for family sharing of purchased apps and content, Apple Music (streaming music), Apple TV+ (streaming video content), iTunes content (downloadable music and video), Apple Books (e-books), Apple Arcade (gaming apps), iCloud storage, and shared family photos.⁷⁶ Up to six family members can share content on their iPhones and other Apple devices. If one family member switches from an iPhone to an Android smartphone, she loses access to that content.⁷⁷

d. Entry Barriers

47. Entry, or the threat of entry, into the smartphone software platform market would not likely constrain Apple's market power. Nowadays, there are significant barriers to entry.

48. Because of fixed costs of developing and marketing apps, most app developers will only write for smartphone software platforms that have enough users. And most consumers will only use smartphone software platforms that have a large enough number of apps to ensure availability of the apps they will want to use. Most users have already made sunk cost

⁷⁴ Michelle Yan, "Here's why it's so hard to switch from Apple to Android," Business Insider, June 10, 2019, <https://www.businessinsider.com/apple-to-android-switch-new-phone-stuck-ecosystem-2019-6> ("[I]t's hard to say goodbye to AirDrop. You'll no longer be able to conveniently send files from your iPhone to your MacBook, to your iPad, or to another person's Apple device.").

⁷⁵ Sydney Butler, "Can you use an Apple Watch with Android phones?," 9to5Google, December 2, 2019, <https://9to5google.com/2019/12/02/how-to-use-apple-watch-android/>; Karissa Bell, "AirPods Pro and Android: Is it worth it?," Mashable, November 2, 2019, <https://mashable.com/article/do-airpods-pro-work-with-android/>.

⁷⁶ Apple, "Family Sharing," <https://www.apple.com/family-sharing/>. Family Sharing requires an iCloud Storage subscription with at least 200GB.

⁷⁷ Some Apple content, such as most apps from the App Store, Apple TV+, Apple Arcade, and iTunes content, can be shared with family members with no additional charges beyond the Family Sharing subscription. Other content requires an additional fee, but it is less than the fee for a second standalone subscription. For example, for Apple Music, an individual subscription costs \$9.99 monthly, while a family sharing subscription costs \$14.99 monthly, so removing a family member from the plan saves no money if two or more family members remain on the plan, and only \$5 if there is only one remaining family member who then converts to the individual plan. In-app purchases, some third-party subscriptions, and some apps from the App Store are not available for family sharing. See Apple, "Apple Music," <https://www.apple.com/apple-music>; Apple, "What types of content can I share with my family using purchase sharing?" <https://support.apple.com/en-us/HT203046>.

investments into handsets for the two incumbent providers. These facts make successful new entry difficult because the entrant has to try to bring enough members of both sides (users and developers) on board simultaneously in the face of sunk investments by the current installed base.

49. Competing smartphone platforms have exited largely because they could not attract enough users and developers to make the platform compelling for either. And there has been no material entry in recent years. It is not likely that entry, or the threat of entry, would prevent Apple from having significant market power over users and developers in the upstream relevant antitrust market for smartphone software platforms.

e. Preliminary Conclusion on Market Power in Smartphone Software Platforms

50. It is likely that I will conclude, based on further economic analysis of this and other evidence, that Apple has substantial market power over iOS users and developers who want to write apps for these users in the market for smartphone software platforms.

C. Analysis of Market Definition and Market Power for App Distribution

51. With this background concerning Apple's market power in smartphone software platforms, I turn to the downstream distribution of apps.

1. Market Definition for App Distribution

52. Consider the situation in which there are several app stores available on iOS devices that developers could rely on to distribute iOS apps and that iOS users could use to obtain iOS apps.⁷⁸ Those iOS app stores would likely not face substantial competitive constraints on their prices, or the quality of the services to users and developers, from app stores for Android apps.

53. The developers would not be able to use Android app stores to reach iOS users and iOS users would not be able to rely on Android app stores to obtain iOS-compatible apps.⁷⁹ iOS users would also incur significant costs of switching to an Android device that would enable

⁷⁸ The market for iOS app distribution may also include ways in which apps could be directly distributed to consumers other than through app stores.

⁷⁹ See Sections II.A.1, II.A.4.

them to use an Android app from an Android app store.⁸⁰ Other software platforms would not provide substantial competitive constraints either.⁸¹

54. It is therefore likely that a hypothetical monopolist of iOS app distribution would be able to raise the overall costs, or reduce the overall quality, of app distribution services to users and developers. That is especially likely if developers cannot distribute iOS apps directly to iOS users. Therefore, there is a relevant antitrust market for app distribution for iOS apps.⁸²

2. Apple's Market Power over App Distribution for the iOS Software Platform

55. As a result of Apple's restrictions, the Apple App Store is a monopoly supplier of iOS app distribution. The Apple App Store is the only way that iPhone users can obtain iOS-compatible apps and is the only way that developers can distribute apps to iPhone users. Developers cannot avoid using the Apple App Store to interact with the approximately 1 billion iPhone users worldwide and therefore many potential customers. Users cannot avoid using the Apple App Store to obtain iOS apps. Given the lack of interchangeability of iOS and Android for users and developers, switching costs from iOS to Android, and entry barriers in the upstream market for smartphone software platforms, it does not appear likely that Apple faces material competitive constraints on its monopoly power in app distribution for the iOS software platform.

56. Apple's ability to impose terms and conditions on app developers is consistent with its having monopoly power over app distribution for iOS apps. Apple requires all developers of digital content apps that wish to use its App Store, the only allowed method of distributing apps on iOS devices, to use exclusively Apple's own payment processing platform for all in-app purchases and prohibits the developer from redirecting consumers to payment options outside

⁸⁰ See Section II.B.2.c.

⁸¹ See Section II.B.2.

⁸² The participants in this app distribution market could operate two-sided marketplaces that rely on indirect network effects between buyers and sellers, or they could operate more traditional retail stores for which indirect network effects are not substantial. In addition, it is possible that this app store market could include direct app distribution as an element. Further analysis would need to consider the importance of indirect network effects and the relative importance of stores that follow two-sided versus single-sided models. My preliminary conclusions are unlikely to depend on whether the app distribution market is treated as two-sided, single-sided, or a hybrid or on considering users and developers together or separately. At least in terms of prices, the interests of users and developers are aligned as a result of the pass-through of developer distribution costs to users.

of the app.⁸³ Apple enforces these terms as evidenced when Apple threatened to remove Spotify's app from the App Store for advertising free trials to its customers.⁸⁴ Additionally, Apple has rejected gaming apps from Microsoft and Facebook because the apps did not meet Apple's terms, which require games be submitted individually for review and appear in charts and search.⁸⁵

57. Given these considerations, it is likely that I will conclude, based on further economic analysis of this and other evidence, that Apple has monopoly power in the market for distribution of iOS apps.

III. In-App Payment Processing is a Separate Product from the App Store

58. iOS developers can decide to make their iOS app available to iOS users for free (that is, there is no upfront charge for the app). The consumer presses a “GET” button and authenticates her identity if asked, after which the app is installed. iOS developers can also decide to make

⁸³ Complaint for Injunctive Relief, Exhibit A, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 1 at 81 (August 12, 2020) (Apple Developer Program License Agreement at 3.2(g)) (“Applications for iOS Products, Apple Watch, or Apple TV developed using the Apple Software may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store, Custom App Distribution, for beta distribution through TestFlight, or through Ad Hoc distribution as contemplated in this Agreement.”); Apple, “App Store Review Guidelines,” <https://developer.apple.com/app-store/review/guidelines/>, at 3.1.1 (“If you want to unlock features or functionality within your app, (by way of example: subscriptions, in-game currencies, game levels, access to premium content, or unlocking a full version), you must use in-app purchase. Apps may not use their own mechanisms to unlock content or functionality, such as license keys, augmented reality markers, QR codes, etc. Apps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than in-app purchase.”); *id.* at 1.1.3(b) (“You must not directly or indirectly target iOS users to use a purchasing method other than in-app purchase, and your general communications about other purchasing methods must not discourage use of in-app purchase.”). There is a very limited exception to this requirement. See Nick Statt, “Apple now lets some video streaming apps bypass the App Store cut,” The Verge, April 1, 2020, <https://www.theverge.com/2020/4/1/21203630/apple-amazon-prime-video-ios-app-store-cut-exempt-program-deal> (“Apple has an established program for premium subscription video entertainment providers to offer a variety of customer benefits — including integration with the Apple TV app, AirPlay 2 support, tvOS apps, universal search, Siri support and, where applicable, single or zero sign-on,’ the company said. ‘On qualifying premium video entertainment apps such as Prime Video, Altice One and Canal+, customers have the option to buy or rent movies and TV shows using the payment method tied to their existing video subscription.’”).

⁸⁴ Spotify, “A Timeline: How We Got Here,” <https://www.timetoplayfair.com/timeline/>.

⁸⁵ Nick Statt, “Apple confirms cloud gaming services like xCloud and Stadia violate App Store guidelines,” The Verge, August 6, 2020, <https://www.theverge.com/2020/8/6/21357771/apple-cloud-gaming-microsoft-xcloud-google-stadia-ios-app-store-guidelines-violations>; Seth Schiesel, “Facebook Gaming Finally Clears Apple Hurdle, Arriving in App Store,” The New York Times, August 7, 2020, <https://www.nytimes.com/2020/08/07/technology/facebook-apple-gaming-app-store.html>.

their iOS apps available to iOS users for a fee (that is, there is an upfront charge).⁸⁶ The consumer presses a purchase button displaying the amount of the upfront charge, authenticates her identity if asked, and pays using the App Store’s payment processing method, after which the app is installed.

59. For some apps, developers sell products and services while the consumer is using the app on the software platform. There are three main circumstances in which this happens.⁸⁷ “Physical apps”, such as Uber, enable app users to purchase physical goods and services while using the app. “Digital content apps,” such as Fortnite, enable app users to purchase digital content and services while using the apps. “Ad-supported apps,” such as Instagram, serve ads to users while they are using the app and charge advertisers for that service.

60. In the case of physical and digital content apps, the app developer needs to provide a payment processing mechanism that enables the user of the app to complete a transaction while using the app. Physical apps typically rely on third-party payment processors to handle payments. In the case of digital content apps, however, Apple requires that the developer use Apple’s In-App Purchase (IAP) payment processing for in-app transactions, with very limited exceptions.⁸⁸

61. This section explains the basis for my preliminary conclusion that the provision of payment processing of in-app transactions is a separate product for which there is material demand by developers of apps with in-app transactions.

⁸⁶ Apple, “Choosing a Business Model,” <https://developer.apple.com/app-store/business-models/>.

⁸⁷ Apple, “Choosing a Business Model,” <https://developer.apple.com/app-store/business-models/>; Apple, “App Store Review Guidelines,” Section 3, <https://developer.apple.com/app-store/review/guidelines/#business>.

⁸⁸ Apple, “App Store Review Guidelines,” Section 3, <https://developer.apple.com/app-store/review/guidelines/#business>; Nick Statt, “Apple now lets some video streaming apps bypass the App Store cut,” The Verge, April 1, 2020, <https://www.theverge.com/2020/4/1/21203630/apple-amazon-prime-video-ios-app-store-cut-exempt-program-deal> (“Apple has an established program for premium subscription video entertainment providers to offer a variety of customer benefits — including integration with the Apple TV app, AirPlay 2 support, tvOS apps, universal search, Siri support and, where applicable, single or zero sign-on,’ the company said. ‘On qualifying premium video entertainment apps such as Prime Video, Altice One and Canal+, customers have the option to buy or rent movies and TV shows using the payment method tied to their existing video subscription.’”).

A. Payment Processing

62. In general, a number of steps take place between when a consumer pays a merchant with a card until the merchant gets funds deposited into its bank account. At a high level, a payment processor is a business that coordinates those steps and instructs its bank to pay the merchant. Various businesses, such as the card networks, that are involved in these steps charge fees. The payment processor charges these fees, along with its own fee for serving as an intermediary, to the merchant.

63. Special payment processing considerations arise when purchases are made using a web browser or in smartphone apps. Unlike physical merchants, website and software developers are interacting with customers through software, often on a global basis. Developers look for processors that offer a simple and efficient onboarding and integration process, support multiple currencies and local acquiring and processing relationships, support the mix of payment methods that consumers have available to them and like to use, offer fraud protection, comply with regulatory and data security and privacy requirements, have modern chargeback and dispute policies and technology, and deposit funds into their accounts quickly.⁸⁹

64. Dealing with these and other considerations has resulted in the emergence of payment processors that specialize in online transactions by consumers using web browsers or mobile apps. Significant innovations have occurred in this area to meet the needs of the digital economy. Some of these new processors, such as Stripe and Braintree, specialize in payment processing for mobile apps.⁹⁰ Payment processors also include platforms, such as PayPal, which enable consumers to store their payment card credentials securely and then process transactions for online merchants using these credentials.

⁸⁹ Tom Ewer, “How to Select a Payment Processor for Your Online Store,” Woo Commerce, <https://woocommerce.com/posts/online-store-payment-processor/>; BigCommerce, “How to Choose a Payment Processor,” <https://www.bigcommerce.com/ecommerce-answers/how-choose-payment-processor/>; The Digital Merchant, “How to Find the Best Payment Processor for Your Online Business,” <https://thedigitalmerchant.com/how-to-find-the-best-payment-processor/>.

⁹⁰ Miguel Helft, “How John and Patrick Collison Built Stripe into the PayPal of the Mobile Era,” Forbes, January 4, 2016, <https://www.forbes.com/sites/miguelhelft/2016/01/04/cashiers-of-the-internet/>; Amit Chodhry, “eBay Buys Braintree For \$800 Million To Accelerate Its Mobile Payments Revenue,” Forbes, September 26, 2013, <https://www.forbes.com/sites/amitchowdhry/2013/09/26/ebay-buys-chicago-based-braintree-for-800-million/>.

65. Website and software developers may rely on several payment processors to give consumers more choice in how they pay (for example, using a Visa card or a PayPal account). In the case of in-app payments, the app developer typically uses an API from the payment processor to integrate payment acceptance and processing into its app. The payment processor then takes care of in-app payments.⁹¹ Like any processor, it reimburses the developer minus applicable fees.⁹²

66. The existence of this vibrant third-party payment processing industry demonstrates the existence of material demand for these services by developers.

B. Separate Product Analysis

67. Both Apple and Google allow developers whose apps can be used to make purchases of physical goods and services to use payment processors chosen by the developer for those transactions.⁹³ Additionally, Google allows developers of non-gaming apps that enable users to buy digital goods that can also be consumed outside of the app to use payment processors chosen by the developer for those transactions.⁹⁴ Apple provides an even more limited exception for movies and TV shows sold by premium subscription video entertainment providers.⁹⁵

⁹¹ In general, aside from the API, which provides a link to the payment processor, and the registration of payment credentials, payment processing takes place entirely off of the smartphone software platform and associated device. SignifyD, “How Online Payments Work,” <https://www.signifyd.com/resources/fraud-101/how-online-payments-work/>.

⁹² The total fees vary but are typically less than 5 percent of the purchase price. The following sources provide the range for payment processing for the web and in-app purchases. Joe Resendiz, “Best Online Credit Card Processing in 2020,” ValuePenguin, June 23, 2020, <https://www.valuepenguin.com/credit-card-processing/best-online-credit-card-processing>; Braintree, “Pricing,” <https://www.braintreepayments.com/braintree-pricing>; PayPal, “Fees for Selling and Accepting Payments,” <https://www.paypal.com/us/webapps/mpp/merchant-fees>; Magdalena Brych, “Micropayments: How They Can Work Within Your App,” Espeo Software, <https://espeo.eu/blog/micropayments/>. My understanding is that the effective rate paid to payment processors by Epic in 2019 was less than 5 percent of revenues.

⁹³ Apple, “App Store Review Guidelines,” <https://developer.apple.com/app-store/review/guidelines/>; Google, “Play Console Help, Policy Center, Payments,” <https://support.google.com/googleplay/android-developer/answer/9858738>.

⁹⁴ Google, “Play Console Help, Policy Center, Payments,” <https://support.google.com/googleplay/android-developer/answer/9858738>.

⁹⁵ Nick Statt, “Apple now lets some video streaming apps bypass the App Store cut,” The Verge, April 1, 2020, <https://www.theverge.com/2020/4/1/21203630/apple-amazon-prime-video-ios-app-store-cut-exempt-program-deal> (“Apple has an established program for premium subscription video entertainment providers to offer a variety of

68. Where there are no restrictions imposed by Apple or Google, app developers typically rely on payment processing that are not supplied by Apple or Google.⁹⁶ The following are examples of payment processors used for in-app purchases of physical goods and services for both iOS and Android: PayPal provides payment processing for Grubhub and Wish;⁹⁷ Braintree provides in-app payment processing for Snapfish, Stubhub, and Uber,⁹⁸ and Stripe provides in-app payment processing for DoorDash, Lyft, Instacart, and PostMates.⁹⁹ Other major apps used for the purchase of physical goods and services that use payment processors other than that provided by the app store include apps from major e-commerce firms such as Amazon, Walmart, eBay, and Target.¹⁰⁰

69. For digital goods, app developers also choose payment processors that are provided separately from the app store when permitted. In the case of the Google Play Store, which allows for sellers of digital goods that can be consumed outside of the app to use alternative payment processors, the following are examples of apps that use payment processors other than that provided by the app store for in-app purchases of digital content: Disney+, HBO Max, Hulu, Netflix, Pandora, and Spotify.¹⁰¹ Apple also provides an exception that enables “qualifying premium video entertainment apps such as Prime Video, Altice One and Canal+” to charge movies and TV shows using their own payment processor, which they do.¹⁰²

customer benefits — including integration with the Apple TV app, AirPlay 2 support, tvOS apps, universal search, Siri support and, where applicable, single or zero sign-on,’ the company said. ‘On qualifying premium video entertainment apps such as Prime Video, Altice One and Canal+, customers have the option to buy or rent movies and TV shows using the payment method tied to their existing video subscription.”’).

⁹⁶ The following list of apps is taken from customer lists posted on each processor’s website. Just because an app developer is a customer of a payment processor, it does not necessarily follow that it uses that payment processor for its mobile app (because both the app provider and the payment processor are multiplatform businesses). Therefore, I directed my staff to verify that each of these apps allows a payment mechanism other than Google’s in-app payment solution on an Android smartphone and other than Apple’s in-app payment solution on an iPhone.

⁹⁷ PayPal, “PayPal Commerce Platform for enterprises,” <https://www.paypal.com/us/business/enterprise>.

⁹⁸ Braintree, “Braintree Merchants,” <https://www.braintreepayments.com/learn/braintree-merchants>.

⁹⁹ Stripe, “Customers,” <https://stripe.com/customers>.

¹⁰⁰ Staff under my direction confirmed that a non-Apple payment option was available on the iOS version of these apps and a non-Google payment option was available on the Android version of these apps.

¹⁰¹ Staff under my direction confirmed that a non-Google payment option was available on Android for each of these apps. For Hulu and Spotify, see also PayPal, <https://www.paypal.com/us/business/enterprise>.

¹⁰² The Verge, “Apple now let’s some video streaming apps bypass the App Store cut,” April 1, 2020, <https://www.theverge.com/2020/4/1/21203630/apple-amazon-prime-video-ios-app-store-cut-exempt-program-deal>

70. There is therefore material demand by developers to use third-party payment processing services for in-app transactions in the absence of restrictions.

71. For in-app purchases of digital content, Apple requires, other than for the just-mentioned exception, that developers use its IAP payment processor. Using the card (or other payment method) that the iOS user has registered with Apple, Apple processes the transaction and reimburses the developer minus applicable fees. In effect, Apple requires that the developer, for apps that offer in-app purchases of digital content, use Apple's payment processing method rather than the developer's own method which relies on third-party payment processors. This requirement has the further effect of making Apple the merchant, and the user Apple's customer, for that transaction for the purpose of anything related to payments.¹⁰³

72. Developers who are subject to these restrictions have expressed their interest in using third-party processors or their own payment processing solutions for in-app purchases of digital content rather than Apple's IAP payment processor.¹⁰⁴ That further supports the existence of material demand for using third-party payment processors for in-app transactions.

(“Apple on Wednesday confirmed the existence of a program for streaming video providers that allows those platforms to bypass its standard 30 percent App Store fee when selling individual purchases, like movie downloads and TV show rentals. The program first became public earlier today when Amazon updated its Prime Video iOS and Apple TV apps to allow in-app purchases for the first time... ‘Apple has an established program for premium subscription video entertainment providers to offer a variety of customer benefits — including integration with the Apple TV app, AirPlay 2 support, tvOS apps, universal search, Siri support and, where applicable, single or zero sign-on,’ the company said. ‘On qualifying premium video entertainment apps such as Prime Video, Altice One and Canal+, customers have the option to buy or rent movies and TV shows using the payment method tied to their existing video subscription.’”); The Wall Street Journal, “How App Makers Break Their Apps to Avoid Paying Apple,” June 28, 2020, <https://www.wsj.com/articles/how-app-makers-break-their-apps-to-avoid-paying-apple-11593349200> (“On iPhones, the notable exception is Amazon Prime Video. The app historically circumvented commissions by not offering entertainment rentals or purchases to iOS users. In April, Amazon began using its own payment system to fulfill the purchases. According to Apple, Amazon is in a program for ‘premium video providers’ permitted to use the payment method tied to customers’ existing video subscriptions. Two European entertainment companies, Altice One and Canal+, are also in the program.”).

¹⁰³ HEY, “Our CEO’s take on Apple’s App Store payment policies, and their impact on our relationship with our customers,” June 19, 2020, <https://hey.com/apple/iap/> (“When someone signs up for your product in the App Store, they aren’t technically your customer anymore - they are essentially Apple’s customer . . . You can no longer help the customer who’s buying your product with the following requests: Refunds, credit card changes, discounts, trial extensions, hardship exceptions, comps, partial payments, non-profit discounts, educational discounts, downtime credits, tax exceptions, etc. You can’t control any of this when you charge your customers through Apple’s platform. So now you’re forced to sell a product - with your name and reputation on it - to your customers, yet you are helpless and unable to help them if they need a hand with any of the above.”).

¹⁰⁴ Daniel Ek, “Consumers and Innovators Win on a Level Playing Field,” Spotify Newsroom, March 13, 2019, <https://newsroom.spotify.com/2019-03-13/consumers-and-innovators-win-on-a-level-playing-field>; Reed Albergotti and Tony Romm, “Tinder and Fortnite criticize Apple for its ‘App Store monopoly’,” The Washington

73. Therefore, in the absence of Apple's restrictions, there would likely be material demand by iOS developers for using third-party processors to provide payment processing services for in-app purchases of digital content. As an economic matter, payment processing for in-app transactions in iOS apps is a separate and distinct product from the App Store.^{105, 106}

C. Market Definition

74. It is likely that I will conclude, based on further economic analysis of this and other evidence, that Apple has monopoly power in a relevant market of payment processing services for in-app purchases of digital content for iOS apps. Apple's restrictions prevent third-parties from offering payment processing services for in-app purchases of digital content for iOS apps so that those alternatives cannot constrain Apple's monopoly power in this market.¹⁰⁷ In the absence of Apple's restrictions, I would expect that third-party payment processors would compete, along with Apple's IAP payment processing solution, to provide payment processing

Post, June 16, 2020, <https://www.washingtonpost.com/technology/2020/06/16/apple-antitrust-european-commission/>.

¹⁰⁵ In its opposition to Epic's motion for a temporary restraining order, Apple appears to argue, citing my book with Richard Schmalensee, that distribution and payment processing cannot be separate products because the App Store is a two-sided transaction platform. *See Defendant Apple Inc.'s Opposition to Epic Games, Inc.'s Motion for a Temporary Restraining Order and Order to Show Cause Why a Preliminary Injunction Should Not Issue, Epic Games, Inc. v. Apple, Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 36, at 19 (August 21, 2020). A two-sided transaction platform, just like a single-sided retail store, provides check-out involving payment processing. But, whether a transaction platform is one sided or two-sided, payment processing is an input that the business relies on to facilitate payment. The issue of whether there is material demand for payment processing for in-app transactions does not turn, in any apparent way, on whether the store itself is deemed to be two-sided or one-sided. For example, PayPal used to be part of eBay, a two-sided marketplace, and served as the exclusive payment processing method for eBay transactions. When it was part of eBay, it also provided the same payment processing services to online third-party merchants, many of whom were traditional retailers, that were not on eBay. Now it's not part of eBay and provides payment processing to online merchants regardless of whether they have a traditional or two-sided business model. And eBay relies on other payment processors to process payments. There was, and is, material demand for PayPal's payment processing service separate from the two-sided marketplaces or retailers it works with.

¹⁰⁶ Apple might argue that it couldn't offer digital content apps that provide in-app purchases in the absence of these restrictions and therefore the provision of App Store services to these developers is not a viable product. At least as an economic matter, this does not appear compelling. Apple chooses not to charge anything for most apps likely because doing so helps drive its device sales. While digital content developers could theoretically avoid paying the App Store by offering their apps for free and then selling things in-app, they can do the same thing under Apple's rules right now by offering their apps for free and earning revenue from in-app advertising.

¹⁰⁷ US Department of Justice and Federal Trade Commission, "Horizontal Merger Guidelines," August 19, 2010, Sections 3, 4.1.4, https://www.ftc.gov/system/files/documents/public_statements/804291/100819hmg.pdf ("If a hypothetical monopolist could profitably target a subset of customers for price increases, the Agencies may identify relevant markets defined around those targeted customers, to whom a hypothetical monopolist would profitably and separately impose at least a SSNIP.").

services for in-app purchases of digital content for iOS apps. At a minimum, these alternative sources of supply include Amazon Pay, Authorize.net, Braintree, Chase Merchant Services, PayPal, Square, Stripe, and Xsolla.¹⁰⁸

¹⁰⁸ Amazon Pay, “A solution for web and mobile,” <https://pay.amazon.com/how-it-works/web-mobile>; Authorize.net, “Mobile Payments,” <https://www.authorize.net/payments/mobile-payments.html>; Braintree, “Braintree Direct,” <https://www.braintreepayments.com/products/braintree-direct>; Chase Merchant Services, “Integrated Solutions,” <https://merchantservices.chase.com/payment-solutions?tab=integrated-solution>; PayPal, “Accept credit cards online,” <https://www.paypal.com/us/webapps/mpp/accept-credit-cards>; Square, “Secure online payments services,” <https://squareup.com/us/en/payments/online-payments>; Stripe, “One platform to cover your payment needs” <https://stripe.com/payments/features#mobile>; Xsolla, “Pay Station,” <https://xsolla.com/products/paystation>.

Pursuant to 28 U.S.C. § 1746, I, David S. Evans, declare under penalty of perjury that the foregoing is true and correct and that I executed this declaration on September 4, 2020 in Marblehead, Massachusetts.

A handwritten signature in black ink, appearing to read "DSE". It is written in a cursive style with some loops and variations in letter height.

APPENDIX A: CURRICULUM VITAE

David S. Evans

Curriculum Vitae Competition Policy and Regulation

Contact Details

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SSRN: [SSRN Home Page for David S. Evans](#)
IDEAS: [IDEAS Home Page for David S. Evans](#)

Professional Summary

My academic work has focused on industrial organization, including antitrust economics, with a particular expertise in multisided platforms, digital economy, information technology, and payment systems. I have authored six major books, including two award winners, and more than 100 articles in these areas. I have developed and taught courses related to antitrust economics, primarily for graduate students, judges and officials, and practitioners, and have authored handbook chapters on various antitrust subjects.

My expert work has focused on competition policy and regulation. I have served as a testifying or consulting expert on many significant antitrust matters in the United States, European Union, and China. I have also made submissions to, and appearances before, competition and regulatory authorities with respect to mergers and investigations in those and other jurisdictions. I have worked on litigation matters for defendants and plaintiffs, on mergers for merging parties and intervenors, and for and in opposition to competition authorities.

Representative Matters

T-Mobile acquisition of Sprint. Submitted declaration to the FCC concerning the dynamic effects of the proposed merger on cellular data prices and capacity, the competitive investment of other carriers, and the likely value of 5G capacity.

Apple v. Qualcomm. Testimony on behalf of Qualcomm to assess the economic impact of modern cellular technologies on the growth of the smartphone ecosystem, the economic

relevance of the value of modern cellular technologies for licensing negotiations concerning patents involving modern cellular technologies that are subject to a fair, reasonable, and non-discriminatory (FRAND) commitment under European Telecommunications Standards Institute (ETSI) intellectual property rights (IPR) policies, and to evaluate the impact of modern cellular technologies on Apple's revenues and the profits. Expert reports and deposition testimony (October 2018).

Federal Trade Commission v. 1-800 Contacts. Testimony on behalf of the FTC concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. Expert report and trial testimony on the economics of search engines and search advertising, market definition, and competitive effects. (April 2017).

Comcast's Proposed Acquisition of Time Warner Cable. On behalf of Netflix, submitted multiple declarations to the Federal Communications Commission in opposition to the merger and made appearances before the Federal Communications Commissions and U.S. Department of Justice. (July 2014-April 2015).

Qihoo 360 v. Tencent. Written testimony in support of Tencent before the Supreme People's Court, People's Republic of China, concerning Qihoo 360's market definition and abuse of dominance claims against Tencent. This was the first antitrust matter decided under the Anti-Monopoly Law by the Supreme Court of China. (September 2013)

Federal Reserve Board Debit Card Interchange Fees and Routing Rulemaking Procedure. Written submissions on behalf of a group of financial institutions concerning the Federal Reserve Board's preliminary proposed rules concerning debit interchange fees. (January – June 2011).

European Commission v. Microsoft. Oral testimony and written submissions before the Grand Chamber, European Court of First Instance (now the European General Court) on behalf of Microsoft concerning economic aspects of the European Commission's Decision that Microsoft had abused its dominant position with respect to media players and server interoperability. Made several appearances of various topics over five days. (April 2006).

Professional Positions

Global Economics Group (2011-present)
Chairman

Market Platform Dynamics (2004-present)
Founder

Competition Policy International (2004-present)
CEO/Publisher

University College London (2004-present)
Executive Director, Jevons Institute for Competition Law and Economics
Visiting Professor in the Faculty of Laws

University of Chicago Law School (2006-2016)
Lecturer

LECG, LLC (2004-2011)
Vice Chairman, LECG Europe
Head, Global Competition Policy Practice
Member of the Boards of Directors of various subsidiaries

NERA Economic Consulting (1988-2004)
Senior Vice President
Member of the Management Committee
Member of the Board of Directors

Fordham University (1983-1995)
Professor of Law, Fordham University Law School (1985-1995)
Associate Professor of Economics (1983-1989) (tenured as of 1988)

Charles River Associates (1975-1979)
Senior Consultant

Education

Ph.D., MA Economics, University of Chicago, 1983

B.A. Economics, University of Chicago, 1975 (completed first year of graduate program)

Teaching and Editorships

Teaching

University College London: “Multisided Platforms: Business Economics & Competition Policy,” intensive course taught annually since 2014; “Digital Economy: Economics, Antitrust & Regulation,” intensive course taught annually since 2016 at University College London; “The Role of Economics in Competition Law and Economics”, annual course taught 2005-2011.

University of Chicago, “EC Competition Law and Economics,” Spring quarter seminar course taught 2006-2016.

Competition Policy International, “Antitrust Economics,” 32 lecture online course, offered in 2013-2014.

Training for Judges and Officials

Training courses on antitrust law and economics for Chinese Supreme Court and High Court Judges, sponsored by Ministry of Industry and Information Technology, 2013-15; lectures on market definition, tying, platforms, dynamic competition and innovation, and antitrust of online industries.

Faculty, Training courses on antitrust law and economics for European Judges, sponsored by University College London and University of Toulouse, 2009-2010; lectures on basic economics and antitrust and intellectual property.

Honors and Rankings

Gold Medal Winner, Economics, 2017 Axiom Business Books Awards, for *Matchmakers: The New Economics of Multisided Platforms* (with R. Schmalensee)

Winner of the Business, Management & Accounting category in the 2006 Professional/Scholarly Publishing Annual Awards presented by the Association of American Publishers, Inc. for *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries* (with R. Schmalensee).

Top 2% of economists, IDEAS/RePEC, based on quality-weighted citations (November 2019)

Keynote, 2019 Competition Law and Policy Institute of New Zealand, 2019.

Baxt Lecture, University of Melbourne, October 2018.

Special Keynote, CRESSE 2018 Conference on Advances in the Analysis of Competition Policy and Regulation, Crete, Greece, June 2018.

Keynote, Competition Law Conference, Singapore Academy of Law and Competition Commission of Singapore, August 2014.

Beesley Lecture, London Business School, October 2007.

Appearances in Competition and Regulatory Matters

Trial Testimony (including all matters in last four years)

Seoul High Court Case No. 2017u48 (Claim for cancellation of corrective order imposed by Korea Fair Trade Commission on Qualcomm). Written testimony in support of Qualcomm before the Seoul High Court concerning the KFTC's claims of abuse of dominance. (Written testimony filed July 5, 2019).

In the Matter of 1-800 Contacts, Before the Federal Trade Commission, Office of Administrative Law Judges, Docket No. 9372. Testified in support of the Federal Trade Commission, concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. (April 2017).

In the Matter of the Application of Securities Industry and Financial Markets Association For Review of Actions Taken by Self-Regulatory Organizations Administrative Proceeding File No. 3-15350. Testified in support of the Securities Industry and Financial Markets Association (SIFMA), concerning whether securities exchanges face significant competitive constraints in setting their fees for depth-of-book data products. (April 2015).

Qihoo 360 v. Tencent. Written testimony in support of Tencent before the Supreme People's Court, People's Republic of China, concerning Qihoo 360's market definition and abuse of dominance claims against Tencent. (Written testimony filed for September 2013 trial). Also testified before the Guangdong High Court. (Written submission, April 2012)

Presidential Emergency Board No. 243, National Mediation Board, Case Nos. A-13569, A-13570, A-13572, A-13573, A-13574, A-13575, and A-13592. Testified in support of the National Railway Labor Conference concerning wages, benefits, and work rules for railroad workers. (October 2012).

Case T-201/04, *Microsoft v. Commission of the European Communities.* Testified in support of Microsoft before the Grand Chamber, Court of the First Instance of the European Union concerning the Commission's determination that Microsoft had abused its dominant position by refusing to license certain information regarding its operating system and by tying a media player to its Windows operating system. (April 2006).

Case T-201/04, *Microsoft v. Commission of the European Communities.* Testified before the President, Court of the First Instance of the European Union in support of Microsoft's application for a suspension of remedies during its appeal of a Commission decision. (October 2004).

Case T-201/04, *Microsoft v. Commission of the European Communities.* Testified before Hearing Officer of the European Commision concerning the Commission's determination that Microsoft had abused its dominant position by refusing to license certain information regarding its operating system and by tying a media player to its Windows operating system. (October 2003).

Deposition Testimony (including all matters in last four years)

J Thompson, et al., v. 1-800 Contacts, Inc., et al., Case No. 2:16-CV-1183-TC. Testified for class plaintiffs, concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. (February 2020).

In re Qualcomm Antitrust Litigation, Case No. 5:17-md-2773-LHK. Rebuttal testimony on behalf of Qualcomm addressing, from the standpoint of antitrust and intellectual property

economics, whether the methodology and calculations presented by Plaintiffs were relevant or reliable. (December 2018).

Apple, Inc. v. Qualcomm, Incorporated, Case No. 17-cv-0108-GPC-MDD. Testified for Qualcomm concerning the economic impact of modern cellular technologies on the growth of the smartphone ecosystem, its economic relevance to licensing negotiations concerning patents involving modern cellular technologies that are subject to a fair, reasonable, and non-discriminatory (FRAND) commitment under European Telecommunications Standards Institute (ETSI) intellectual property rights (IPR) policies, and to evaluate the impact of modern cellular technologies on Apple's revenues and the profits. (October 2018).

In the Matter of 1-800 Contacts, Before the Federal Trade Commission, Office of Administrative Law Judges, Docket No. 9372. Testified for the Federal Trade Commission, concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. (March 2017).

MarchBanks Truck Service, Inc., et al. v. Comdata Network, Inc., et al., Case No. 07-1078-JKG. Testified for defendant concerning allegations of anticompetitive behavior with respect to Comdata's agreements with certain truck stop chains. (August 2013).

Meredith Corporation et al. v. SESAC, Case No. 09 Civ. 9177 (PAE). Testified for defendant concerning allegations of anticompetitive behavior with respect to the blanket licensing of local television music performance rights. (May 2013).

Other Significant Antitrust Matters

T-Mobile/Sprint Transaction, WT Docket 18-197, Federal Communications Commission, submitted declaration to the FCC concerning the dynamic effects of the proposed merger on cellular data prices and capacity, the competitive investment of other carriers, and the likely value of 5G capacity.

Comcast/Time Warner Cable Transaction, MB Docket No. 14-57, Federal Communications Commission, Economists Roundtable, January 2015, as well as several presentations to FCC senior staff and officials.

U.S. v. Visa et al. concerning alleged exclusionary rules and duality and *U.S. v. Visa et al.* concerning alleged tying of credit and debit cards. On behalf of Visa, lead consulting economics team and worked with testifying experts.

U.S. v. Microsoft concerning alleged monopolization. On behalf of Microsoft, lead consulting economics team, including recruiting and working with testifying experts, for the 1998-1999 original trial and the 2002 trial concerning remedies.

U.S. v. AT&T concerning alleged monopolization. On behalf of the U.S. Department of Justice, lead consulting economics team, and worked with testifying expert, on rebuttal economics testimony.

Amicus Briefs

Brief of Amici Curiae of David S. Evans and Richard Schmalensee in Support of Respondents, *State of Ohio, et al., v. American Express Company, et al.* U.S. Supreme Court, 2018.

Brief of Amici Curiae of David S Evans and Richard Schmalensee in Support of Appellants-Cross Appellees, *US Airways v. Sabre Holdings Corp.*, 2nd Circuit, 2017.

Brief of Amici Curiae Economists in Support of Petitioners, *Bell Atlantic v. Twombly*, U.S. Supreme Court, 2007 (Principal Author and Signatory).

Brief of Amici Curiae Economists in Support of Petitioners, *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, U.S. Supreme Court, 2007 (Contributor and Signatory)

Appearances and Submissions Before Competition and Regulatory Authorities

Australian Competition and Consumer Commission

Competition Commission of Singapore

Directorate General for Competition, European Commission

Federal Cartel Office, Germany

Korean Fair Trade Commission

Ministry of Commerce, People's Republic of China

National Development and Reform Commission, People's Republic of China

U.K. Competition and Market Authority

U.S. Federal Reserve Board

U.S. Department of Justice

U.S. Federal Communications Commission

U.S. Federal Trade Commission

U.S. Securities and Exchange Commission

Publications

Books

Antitrust Analysis of Platform Markets: Why the Supreme Court Got It Right in *American Express* (Boston, MA: Competition Policy International, 2019), with R. Schmalensee.

Matchmakers: The New Economics of Multisided Platforms (Cambridge, MA: Harvard Business School Press, 2016), with R. Schmalensee. Published or pending translations in Azerbaijani, Chinese, French, Japanese, Korean, Spanish, Vietnamese. Gold Medal Winner, Economics, 2017 Axiom Business Book Awards.

Platform Economics: Essays on Multi-Sided Businesses, (Boston, Competition Policy

International, 2011), with R. Schmalensee, M. Noel, H. Chang, and D. Garcia-Swartz. (Published in Chinese in 2016 by Economic Science Press.)

Interchange Fees: The Economics and Regulation of What Merchants Pay for Cards, (Boston, Competition Policy International, 2011), with R. Schmalensee, R. Litan, D. Garcia-Swartz, H. Chang, M. Weichert, A. Mateus.

Trustbusters: Competition Authorities Speak Out (Boston: Competition Policy International, 2009), co-editor with F. Jenny.

Catalyst Code: The Strategies of the World's Most Dynamic Companies (Massachusetts: Harvard Business School Press, 2007), with R. Schmalensee. Translated into Chinese, Korean, Polish, and Russian.

Invisible Engines: How Software Platforms Drive Innovation and Transform Industries, (Massachusetts: MIT Press, 2006), with A. Hagiu and R. Schmalensee. Translated into Chinese and Korean. Winner of the Business, Management & Accounting category in the 2006 Professional/Scholarly Publishing Annual Awards presented by the Association of American Publishers, Inc.

Paying with Plastic: The Digital Revolution in Buying and Borrowing (Massachusetts: MIT Press, first edition 1999, second edition 2005), with R. Schmalensee. Translated into Chinese.

Microsoft, Antitrust and the New Economy: Selected Essays (New York: Kluwer Academic Publishers, 2002), editor.

The Economics of Small Businesses: Their Role and Regulation in the U.S. Economy (New York: Holmes and Meier, 1986), with W. Brock.

Breaking Up Bell: Essays on Industrial Organization and Regulation (New York: Elsevier, 1983), editor and co-author of eight of ten chapters.

Articles, Book Chapters, and Working Papers

(Note: links to most of my publications since 2001 appear on my SSRN Home page and links to most of my publications before 2001 appear on my IDEAS Home page.)

“The Economics of Attention Markets,” Working Paper, 2019.

“What Caused the Smartphone Revolution?,” (with H. Chang and S. Joyce) Working Paper, 2019.

“Deterring Bad Behavior on Digital Platforms,” Working Paper, 2019.

“Basic Principles for the Design of Antitrust Analysis for Multisided Platforms,” *Journal of Antitrust Enforcement*, Vol. 7, Iss. 3 (2019).

“Two-Sided Red Herrings,” (with R. Schmalensee), *Antitrust Chronicle*, October 2018.

“The Role Of Market Definition in Assessing Anticompetitive Harm in *Ohio v. American Express*,” (with R. Schmalensee) *Antitrust Chronicle*, June 2019.

“Attention Platforms, the Value of Content, and Public Policy,” *Review of Industrial Organization* Vol. 54 (June 2019).

“What *Times-Picayune* Tells Us About the Antitrust Analysis of Attention Platforms,” *Competition Policy International Antitrust Chronicle*, April 2019

“Ignoring Two-Sided Business Reality Can Also Hurt Plaintiffs,” (with R. Schmalensee), *Antitrust Chronicle*, April 2018.

“Applying the Rule of Reason to Two-Sided Platform Businesses,” *University of Miami Business Law Review* (with R. Schmalensee), Vol. 26, Iss. 2 (2018).

“Multi-Sided Platforms,” *New Palgrave Dictionary of Economics Online*, 2017 (with R. Schmalensee) (forthcoming).

“Economic Findings Concerning the State of Competition for Wired Broadband Provision to U.S. Households and Edge Providers,” Working Paper, 2017.

“Network Effects: March to the Evidence, Not to the Slogans,” *Antitrust Chronicle*, September 2017 (with R. Schmalensee).

“Why the Dynamics of Competition for Online Platforms Leads to Sleepless Nights, But Not Sleepy Monopolies,” in N. Charbit, ed., *Douglas H. Ginsburg Liber Amicorum: An Antitrust Professor on the Bench*, 2017.

“The Emerging High-Court Jurisprudence on the Antitrust Analysis of Multisided Platforms,” *Antitrust Chronicle*, February 2017. Also in D. Gerard, E. Morgan de Ribery and Bernd Meyring, *Dynamic Markets, Dynamic Competition and Dynamic Enforcement* (Brussels: Bruylants, 2018)

“The Businesses That Platforms Are Actually Disrupting,” *Harvard Business Review*, September 21, 2016 (with R. Schmalensee).

“Mobile Advertising: Economics, Evolution, and Policy,” *Antitrust Chronicle*, June 2016.

“A Deep Look Inside Apple Pay’s Matchmaker Economics,” *Harvard Business Review*, June 17, 2016 (with R. Schmalensee).

“The Best Retailers Combine Bricks and Clicks,” *Harvard Business Review*, May 30, 2016 (with R. Schmalensee).

“What Platforms Do Differently than Traditional Businesses,” *Harvard Business Review*, May 11, 2016 (with R. Schmalensee).

“Why Winner-Takes-All Thinking Doesn’t Apply to the Platform Economy,” *Harvard Business Review*, May 4, 2016 (with R. Schmalensee).

“Some of the Most Successful Platforms Are Ones You’ve Never Heard Of,” *Harvard Business Review*, March 28, 2016 (with R. Schmalensee).

“How We Learned (Almost) Everything That’s Wrong with U.S. Census Data,” *Harvard Business Review*, March 11, 2016 (with R. Schmalensee).

“Multisided Platforms, Dynamic Competition and the Assessment of Market Power for Internet-based Firms,” *Competition Policy International*, Spring 2016.

“The Move to Smart Mobile and Its Implications for Antitrust Analysis of Online Market,” *UC Davis Business Law Journal*, 2016 (with Hemant Bhargava and Deepa Mani).

“An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most,” *Review of Network Economics*, 2015.

“The Impact of the U.S. Debit Card Interchange Fee Caps on Consumer Welfare: An Event Study Analysis,” (with H. Chang and S. Joyce), *Journal of Competition Law and Economics*, 2015.

“The Antitrust Analysis of Multi-Sided Platform Businesses,” (with R. Schmalensee), in *Oxford Handbook on International Antitrust Economics*, R. Blair and D. Sokol, eds., Oxford: Oxford University Press, 2015.

“Assessing Unfair Pricing Under China’s Anti-Monopoly Law for Innovation-Intensive Industries,” University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 678. *Competition Policy International*, Spring 2014. Chinese version published in the NDRC Price Journal (with V. Zhang and X. Zhang).

“Economic Aspects of Bitcoin and Other Decentralized Public-Ledger Currency Platforms,” University of Chicago Coase-Sandor Institute for Law and Economics Research Paper No. 685, May 2014.

“The Antitrust Analysis of Rules and Standards for Software Platforms,” *Competition Policy International*, Autumn 2014.

“Market Definition Analysis in Latin America with Applications to Internet-Based Industries,” (with E. Mariscal), Working Paper (University of Chicago Law School and Centro de Investigacion y Docencia Economica), 2013.

“Paying with Cash: A Multi-Country Analysis of the Past and Future Use of Cash for Payments by Consumers,” (with K. Webster, G. Colgan, and S. Murray), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2013.

“Payments Innovation and the Use of Cash,” (with K. Webster, G. Colgan, and S. Murray), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2013.

“The Consensus Among Economists on Multisided Platforms and Its Implications for Excluding Evidence that Ignores It,” *Antitrust Chronicle*, 2013, 6(1).

“Analyzing Competition among Internet Players: Qihoo 360 v. Tencent,” (with V. Y. Zhang and H. Chang), *Antitrust Chronicle*, 2013, 5(1).

“Attention Rivalry among Online Platforms”, *Electronics Intellectual Property, MIIT China*, 2013, 9, 30-41(in Chinese).

“Attention Rivalry among Online Platforms and Its Implications for Antitrust Analysis,” *Journal of Competition Law and Economics*, 2013, 9(2), 313-357.

“Economics of Vertical Restraints for Multi-Sided Platforms,” *Competition Policy International*, 2013, 9(1).

“The Role of Keyword Advertising in Competition among Rival Brands,” (with Elisa Mariscal). *Antitrust Chronicle*, 2012, 12(1).

“Will the Wheatley Recommendations Fix LIBOR?” (with R.M. Abrantes-Metz). *Antitrust Chronicle*, 2012, 11(2).

“Governing Bad Behavior by Users of Multi-Sided Platforms,” *Berkeley Technology Law Journal*, 2012, 27(2).

“Replacing the LIBOR with a Transparent and Reliable Index of Interbank Borrowing: Comments on the Wheatley Review of LIBOR Initial Discussion Paper,” (with R.M. Abrantes-Metz), University of Chicago Institute for Law and Economics Olin Research Paper No. 620, 2012.

“Two-Sided Markets,” in *Market Definition in Antitrust: Theory and Case Studies*, 2012.

“Why Come Platform Businesses Face Many Frivolous Antitrust Complaints and What to Do About It,” *Competition Policy International*, 2012, 8(2).

“Lightening Up on Market Definition,” in *Research Handbook on the Economics of Antitrust Law*, E. Elhauge, ed., New York: Edward Elgar, 2012.

“Payments Innovation and Interchange Fees Regulation: How Inverting the Merchant-Pays Business Model Would Affect the Extent and Direction of Innovation,” Working Paper (University of Chicago Law School), 2011.

“How Changes in Payment Card Interchange Fees Affect Consumers Fees and Merchant Prices: An Economic Analysis with Applications to the European Union,” with A.M. Mateus, Working Paper (University of Chicago Law School and New University of Lisbon), 2011.

“Economic Analysis of Claims in Support of the ‘Durbin Amendment’ to Regulation Debit Card Interchange Fees,” with H.H. Chang and M.M. Weichert, Working Paper (University of Chicago Law School, Global Economics Group, and Market Platform Dynamics), 2011.

“The Antitrust Economics of Free.” *Competition Policy International*, 2011, 7(1).

“Conversations with Jon Leibowitz and Joaquin Almunia,” (with Jon Leibowitz and Joaquin Almunia). *Competition Policy International*, 2011, 7(1).

“The Economic Principles for Establishing Reasonable Regulation of Debit-Card Interchange Fees that Could Improve Consumer Welfare,” (with R.E. Litan and R. Schmalensee), Working Paper (University of Chicago Law School, AEI-Brookings Joint Center for Regulatory Studies, and MIT), 2011.

“The Regulation of Interchange Fees by the U.S. Federal Reserve Board: A Primer on Economic Principles, II,” *Antitrust Chronicle*, 2011, 12(2).

“AT&T/T-Mobile: Does Efficiency Really Count?” (with H. Chang & R. Schmalensee) *Antitrust Chronicle*, 2011, 10(2).

“Net Neutrality Regulation and the Evolution of the Internet Economy,” *Antitrust Chronicle*, 2011, 8(2).

“A Presentation on Assessment of Market Power and Dominance,” *Antitrust Chronicle*, 2011, 6(1).

“Economic Analysis of the Effects of the Federal Reserve Board’s Proposed Debit Card Interchange Fee Regulations on Consumers and Small Businesses,” (with R.E. Litan and R. Schmalensee), Working Paper (University of Chicago Law School, AEI-Brookings Joint Center for Regulatory Studies, and MIT), 2011.

“Essays on the Economics of Two-Sided Markets: Economics, Antitrust and Strategy,” Working Paper (University of Chicago Law School), 2010.

“Failure to Launch: Critical Mass in Platform Businesses,” (with Richard Schmalensee). *Review of Network Economics*, 2010, 9(4).

“The Effect of the Consumer Financial Protection Act of 2009 on Consumer Credit,” *Loyola Consumer Law Review*, 2010, 22(3).

“The Web Economy, Two-Sided Markets, and Competition Policy,” Working Paper (University of Chicago Law School), 2010.

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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

EPIC GAMES, INC.,

No. 4:20-CV-05640-YGR

Plaintiff,

VS.

APPLE INC.

Defendant

**DECLARATION OF ANDREW
GRANT IN SUPPORT OF PLAINTIFF
EPIC GAMES, INC.'S MOTION FOR
PRELIMINARY INJUNCTION**

Date: September 28, 2020, 9:30 a.m. (via Zoom Platform)

Courtroom: 1, 4th Floor

Judge: Hon. Yvonne Gonzalez-Rogers

1 I, Andrew Grant, declare as follows:

2 1. I am a Technical Director of Engineering at Epic Games, Inc. (“Epic”). I submit
 3 this declaration in support of Epic’s Motion for a Preliminary Injunction. The contents of this
 4 declaration are based on my personal knowledge. If called as a witness, I could and would
 5 competently testify thereto.

6 2. I have worked as a Technical Director of Engineering at Epic for five years. In
 7 this role, I oversee the coding and programming of various projects at Epic. Prior to working at
 8 Epic, I worked at Lucasfilm for more than six years supervising software engineering projects. In
 9 total, I have 22 years of experience working as a software engineer, and I have worked on
 10 engineering projects for iOS and macOS for the last 12 years.

11 **Epic’s Developer Accounts**

12 3. In order to develop and distribute apps for iOS, a software developer must set up a
 13 Developer Program account with Apple. For each account, Apple requires that the developer
 14 enter into (1) an Apple Developer Agreement, and (2) an Apple Developer Program License
 15 Agreement (“PLA”) (or in the case of the Developer Enterprise Program account, a Developer
 16 Enterprise Program License Agreement). The developer also must pay Apple an annual \$99 fee
 17 for a Developer Program account (or \$299 for a Developer Enterprise Program account).

18 4. Up until August 28, 2020, Epic had a Developer Program account with Apple with
 19 a “Team ID” ending in ’84. Epic first opened the Team ID ’84 account in September 2010 and
 20 published its first apps using the account, *Epic Citadel* and *Infinity Blade*, in September and
 21 December 2010, respectively. Epic entered into its current Developer Agreement for the Team
 22 ID ’84 account on September 5, 2019, and a renewal of its PLA for the Team ID ’84 account on
 23 June 30, 2020. Apple terminated the Team ID ’84 account on August 28, 2020. As of the
 24 termination, the Team ID ’84 account was associated with five consumer-facing apps: *Fortnite*,
 25 *Battle Breakers*, *Spyjinx*, *Infinity Blade Stickers* and *Shadow Complex Remastered*.

26 5. Epic currently has a Developer Enterprise Program account with a Team ID
 27 ending in ’RR. Epic first opened the Team ID ’RR account in May 2018. Epic entered into its
 28 current Developer Agreement for the Team ID ’RR account on September 5, 2019, and a renewal

1 of its Developer Enterprise Program License Agreement for the Team ID 'RR account on June
2 30, 2020. Developer Enterprise Program accounts are not used for distributing apps through the
3 App Store. Instead, Epic uses the Team ID 'RR account to develop and distribute apps internally
4 at Epic.

5 6. Five of Epic's affiliates also have separate Developer Program and Developer
6 Program Enterprise accounts pursuant to separate agreements with Apple.

7 7. Epic Games International S.à r.l. ("Epic International") has a Developer Program
8 account with a Team ID ending in '3Y. Epic International first opened the Team ID '3Y account
9 in 2010 and published its first app using the account, *UDK Remote*, in November 2010. Epic
10 International entered into its current Developer Agreement with Apple for the Team ID '3Y
11 account on October 21, 2016, and a renewal of its PLA for the Team ID '3Y account on June 30,
12 2020. The Team ID '3Y account is currently associated with five non-consumer-facing apps:
13 *Unreal Remote 2*, *Unreal Match 3*, *Action RPG Game Sample*, *Unreal Remote*, and *Live Link
Face*. These apps assist developers using or learning how to use the *Unreal Engine*, and they do
15 not offer in-app purchases.

16 8. Life on Air, Inc. ("Life on Air"), formerly YEVVO Entertainment Inc., has two
17 Developer Program accounts with Team IDs ending in 'RG and 'TS. Life on Air entered into its
18 current Developer Agreement with Apple for the Team ID 'RG account on September 2, 2020,
19 and a renewal of its PLA for the Team ID 'RG account on June 25, 2020. The Team ID 'RG
20 account is associated with the *Houseparty* app for iOS and macOS. Life on Air entered into its
21 current Developer Agreement with Apple for the Team ID 'TS account on September 10, 2015,
22 and a renewal of its PLA for the Team ID 'TS account on August 31, 2020. There are currently
23 no apps distributed through the App Store associated with the Team ID 'TS account.

24 9. Life on Air currently has a Developer Enterprise Program account with a Team ID
25 ending in 'Y8. Life on Air entered into its current Developer Agreement for the Team ID 'Y8
26 account on May 7, 2018, and a renewal of its Developer Enterprise Program License Agreement
27 for the Team ID 'Y8 account on July 14, 2020. Life on Air does not distribute any apps through
28 the App Store with the Team ID 'Y8 account because it is a Developer Enterprise Program

1 account.

2 10. Ka-Ra S.A.S. has a Developer Program account with a Team ID ending in 'JU.
 3 Ka-Ra S.A.S. entered into its current Developer Agreement with Apple for the Team ID 'JU
 4 account on October 21, 2016, and a renewal of its PLA for the Team ID 'JU account on June 30,
 5 2020. There are currently no apps distributed through the App Store associated with the Team ID
 6 'JU account.

7 11. Psyponix LLC ("Psyponix") has a Developer Program account with a Team ID
 8 ending in 'TY. Psyponix entered into its current Developer Agreement with Apple for the Team
 9 ID 'TY account on November 14, 2019, and a renewal of its PLA for the Team ID 'TY account
 10 on June 29, 2020. There are currently no apps distributed through the App Store associated with
 11 the Team ID 'TY account.

12 12. Epic Games Sweden Scanning AB ("Epic Sweden"), formerly Quixel AB, has a
 13 Developer Program account with a Team ID ending in 'T4. Epic Sweden entered into its current
 14 Developer Agreement with Apple for the Team ID 'T4 account on March 5, 2020, and a renewal
 15 of its PLA for the Team ID 'T4 account on July 15, 2020. There are currently no apps distributed
 16 through the App Store associated with the Team ID 'T4 account.

17 13. To access Apple development tools for both iOS and macOS, including Software
 18 Development Kits ("SDKs") and other tools, Apple requires that a developer enter into a separate
 19 Xcode and Apple SDKs Agreement. Programmers individually accept this agreement either by
 20 clicking "agree" or simply by downloading Apple software or using Apple services covered by
 21 the agreement. Epic and certain of its affiliates have entered into separate Xcode and Apple SDK
 22 Agreements with Apple. These separate agreements are not tied to any of the Developer Program
 23 or Developer Enterprise Program accounts of Epic or its affiliates.

App Distribution and Updates on iOS Devices

25 14. Apps, including app stores, are programmed to run on a specific operating system
 26 and will not run on a different operating system. The only approved way to make an iOS app
 27 available for commercial distribution is through Apple's App Store. Unlike on a PC or Mac, an
 28 iOS user cannot download an app from a web browser. This is not just Apple's stated policy—it

1 is the result of specific technical restrictions that Apple has built into iOS. In order for an app to
2 run on an iOS device, it must be signed with a certificate issued by Apple. Apple offers several
3 different types of certificates to developers with a developer account. The type of certificate
4 depends on how a developer intends to distribute its app. For example, Apple makes available
5 certain types of certificates for the purpose of developing and testing iOS apps prior to wider
6 distribution. These certificates are subject to various restrictions that limit the scope of use and
7 distribution of the app. Apple also offers a certificate to developers with a Developer Enterprise
8 Program account that developers can use to distribute internal-use-only apps to employees within
9 large organizations. But if a developer wants to distribute its app to consumers, then the
10 developer must receive a certificate from Apple through an ordinary Developer Program account.
11 This certificate enables developers to sign apps and submit them to the App Store for distribution.
12 Apple pre-installs the App Store on all iOS devices and prevents users from disabling it.

13 15. Before Apple will allow an app to be distributed on its App Store, the app must be
14 reviewed and approved by Apple. This process applies to new apps and to app updates including
15 new code. Nevertheless, app developers can and do make real-time changes to an approved app
16 without adding new code and without requiring users to download a new update from the App
17 Store. There are a number of names and methods for this process including feature flag, hot
18 patch, bug flag, hotfix, feature toggle and server-based update, but each describes the same
19 process. For the purpose of this discussion, I will refer to the process generally as a “hotfix”,
20 which is how the process is typically referred to within Epic.

21 16. Hotfixes work by coding the app to check for new content that is available on the
22 developer’s server or new instructions on what to make accessible in the app. Hotfixes are
23 commonplace, including for apps designed to run on Apple’s mobile devices.

24 17. Many apps run a check for hotfixes as part of their normal startup process.

25 18. A developer can use hotfixes to make accessible content or features in an app that
26 are in the code but are not initially available to users. The content or feature is accessible only
27 after the app checks the developer’s server and is “notified” by the server to display the new
28 content or feature. For example, game developers often include new characters, new items, or

1 new levels in the code submitted to Apple, which are not initially available to users but become
 2 accessible at a later date, once the app is “notified” by the game developer’s server that it should
 3 make these features accessible.

4 19. As discussed in more detail below, hotfixes are normal features of many apps in
 5 the App Store and a common feature in app design. Many apps, including games, connect to the
 6 developer’s servers upon startup in order to obtain new content and accessibility instructions. I
 7 believe Apple is aware of this hotfix process occurring in numerous apps, including *Fortnite*.
 8 *Fortnite* has used hotfixes to enable hundreds of new features and content elements since it was
 9 first added to the App Store. Many of these hotfixes were not enabled in builds that were
 10 submitted to Apple for review or approval, and to my knowledge, Apple has never objected to the
 11 use of this process in *Fortnite* in the past. I am not aware of Apple objecting to the use of
 12 hotfixes for other apps either.

13 20. Using a hotfix has various benefits to an app developer. For example, hotfixes
 14 permit developers to test new features or content, and to easily roll out additional features to
 15 users.

16 21. The *Fortnite* app has included a hotfix check upon startup since it was first
 17 submitted to Apple. When *Fortnite* is opened on an iOS device, the application connects to
 18 Epic’s servers to check for new content to download or for “notice” to make pre-existing
 19 functionality or content accessible. Since *Fortnite* was launched on the App Store three years
 20 ago, Epic has used hotfixes to make all sorts of content and features accessible to players,
 21 including: concerts, season ending features, special seasonal promotions, and others.

22 22. Hotfixes are so commonplace that there are companies that specialize in
 23 developing software to assist app developers in implementing them, such as Optimizely and
 24 CloudBees.

25 **Fortnite Version 13.40**

26 23. On August 3, 2020, Epic submitted Version 13.40 of *Fortnite* for review by Apple
 27 for distribution through the App Store. This version of *Fortnite* included a payment process
 28 interface that could provide users with multiple options for processing in-app payments. During

1 the startup process, Version 13.40 queried Epic’s servers for information about which payment
 2 processing options were available. If the server informed the app that only one option was
 3 available, then users making in-app purchases would see a screen with that option and continue
 4 with the purchase using that option. If the server instead informed the app that more than one
 5 option was available, then users making in-app purchases would see a screen asking them to
 6 select a payment processor.

7 24. Beginning on the morning of August 13, 2020, when the *Fortnite* app on iOS
 8 devices queried Epic’s servers as to how many payment processing options were available, the
 9 servers informed the app that there were two options—Apple’s In-App Purchase and Epic’s direct
 10 payment. Accordingly, the *Fortnite* app displayed to users making in-app purchases a screen
 11 giving them that choice. Epic made this choice of payment processors accessible to users through
 12 a commonplace hotfix: the code performed the same server check that it had done previously and
 13 upon receiving notice of the two payment options, the code made both options accessible to users.
 14 Epic did not download any executable code or interpreted code to the *Fortnite* app as part of the
 15 hotfix that made the payment options available.

16 **Apple’s Retaliation**

17 25. Later on the morning of August 13, 2020, Apple removed *Fortnite* from the App
 18 Store. As a result, iOS users who tried to download *Fortnite* for the first time were not able to
 19 find the app because it was no longer available in the App Store. Meanwhile, iOS users who tried
 20 to update *Fortnite* were prompted with a message which incorrectly stated that “[t]he developer
 21 has removed this app from the App Store”. Epic, in fact, had not removed the app from the App
 22 Store. Attached hereto as **Exhibit A** is a true and correct copy of the message iOS users received
 23 when attempting to update *Fortnite* on the Apple App Store.

24 26. Apple then posted two notices to the Resolution Center in App Store Connect,
 25 which is the platform through which Apple communicates with software developers who are
 26 members of Apple’s Developer Program—one on August 13 and another on August 14. That
 27 notice, which was posted at 11:22 a.m. Pacific time on August 13, 2020, stated: “We have
 28 determined that your app is in violation of the App Store Review Guidelines detailed below. For

1 these reasons, your app has been removed from the App Store until we receive an update that is
 2 compliant with the App Store Review Guidelines.” Attached hereto as **Exhibit B** is a true and
 3 correct copy of Apple’s August 13, 2020 notice.

4 27. The second notice, which was posted at 12:04 a.m. Pacific time on August 14,
 5 2020, stated that Apple “identified several violations of the Apple Developer Program License
 6 Agreement” and that Epic’s “membership in the Apple Developer Program is suspended”. The
 7 notice also stated that Epic’s “Apple Developer Program account will be terminated if the
 8 violations set forth below are not cured within 14 days”, and that if Epic’s account is terminated,
 9 it “may no longer submit apps to the App Store” and “apps still available for distribution will be
 10 removed”. And, although the notice was posted to the Epic Developer account that submitted
 11 *Fortnite*, the notice stated that upon termination of Epic’s account, Epic will “lose access . . . [to
 12 a]ll Apple software, SDKs, APIs, and developer tools”, and specifically referenced harm to Epic’s
 13 development of the *Unreal Engine*, which is handled through a separate Apple Developer
 14 Program account. Attached hereto as **Exhibit C** is a true and correct copy of Apple’s August 14,
 15 2020 notice.

16 28. On August 14, 2020, Epic submitted a new *Fortnite* build, Version 13.40.2. In this
 17 build, Epic indicated in the “Release notes” submitted to Apple describing “What’s New” that the
 18 build included “[a]dditional payment options”, “new drivable cars” and lower water levels to
 19 reveal an in-game location. Epic voluntarily withdrew its initial submission of Version 13.40.2
 20 before Apple reviewed it upon discovering a minor issue with the build. Later that day, Epic
 21 resubmitted Version 13.40.2 with identical “Release notes”. Attached hereto as **Exhibit D** is a
 22 true and correct copy of the text of Epic’s August 14, 2020 “Release notes” for Version 13.40.2.

23 29. On August 14, 2020, at 11:46 p.m. Pacific time, Apple rejected *Fortnite* build
 24 Version 13.40.2, claiming multiple violations of the App Store Review Guidelines and the Apple
 25 Developer Program License Agreement. Apple stated that Version 13.40.2 violated App Store
 26 Review Guideline 3.1.1 because “users are able to purchase digital goods with external purchase
 27 mechanisms in your app with the ‘Epic direct payment feature’”. Attached hereto as **Exhibit E** is
 28 a true and correct copy of Apple’s August 14, 2020 rejection notice for Version 13.40.2.

1 30. Apple also claimed that Version 13.40.2 violated App Store Review Guidelines
 2 2.3.12 by including “nondescript, temporary, or incomplete information in your app’s ‘What’s
 3 New’ text,” which was “identical” to the “last six ‘What’s New’ text submissions.” Ex. E. In
 4 fact, however, Epic’s “What’s New” text submission disclosed “[a]dditional payment options”.

5 31. In addition, Apple claimed that Version 13.40.2. violated App Store Review
 6 Guidelines 2.3.1 and 2.5.2 by “contain[ing] hidden features” and “download[ing], install[ing], or
 7 execut[ing] code which introduced changes to features and functionality in your app”. *Id.* Apple
 8 also cited Apple Developer License Agreements Sections 3.2.2 and 3.3.3 which prohibit
 9 “download[ing] or install[ing] executable code” which “change[s] the primary purpose of the
 10 Application” and “unlock[ing] or enabl[ing] additional features or functionality through
 11 distribution mechanisms other than the App Store”. *Id.* But as explained above, Epic’s “‘direct
 12 payment’ feature” did not require the downloading or installing or executing of any code. The
 13 content was retrieved from Epic’s server during the normal start-up check for server-side content
 14 that has occurred in *Fortnite* for years.

15 32. Apple also reiterated in its rejection notice that Epic had 14 days from Apple’s
 16 initial notice on August 14, 2020 to cure the violations in 13.4.0 and submit a compliant version
 17 of 13.40.2 which removed the “Epic Direct Payment Feature” or “Apple will exercise its right to
 18 terminate your Developer Program membership”. *Id.*

19 33. On August 25, 2020, Epic submitted to Apple for review *Fortnite* build Version
 20 14.00, which featured the new Chapter 2, Season 4. The new season was set for release on all
 21 platforms on August 27, 2020. Epic separately emailed Apple about the new submissions,
 22 explaining as follows: “This build continues to offer customers the choice of in-app purchases
 23 through either Apple’s payment solution or through Epic direct payment. Epic is submitting this
 24 version in case Apple wishes to restore Fortnite to the App Store in time for Season 4 launch”.
 25 Attached hereto as **Exhibit F** is a true and correct copy of Epic’s August 25, 2020 email to Apple.

26 34. On August 26, 2020, at 10:57 a.m. Pacific time, Apple rejected *Fortnite* build
 27 Version 14.00. Apple cited the same violations of the App Store Review Guidelines and Apple
 28 Developer Program License Agreement that it relied upon in its August 14 rejection notice, even

1 though Epic once again disclosed that Epic direct payment was being provided to users. With
 2 respect to App Store Review Guidelines 2.3.1, Apple noted that “your submission yesterday
 3 finally disclosed the presence of the ‘Epic direct payment feature’”. And with respect to App
 4 Store Review Guidelines 2.3.12, which supposedly concerns “Accurate Metadata”, Apple
 5 claimed that Epic’s “What’s New” text did not “address or solve Epic’s original lack of candor
 6 with Apple, nor the disruption that lack of candor caused when Epic unilaterally implemented this
 7 undisclosed feature”. Attached hereto as **Exhibit G** is a true and correct copy of Apple’s August
 8 26, 2020 rejection letter.

9 35. On August 28, 2020, at 11:40 a.m. Pacific time, Apple terminated Epic’s Team ID
 10 ’84 account that was associated with *Fortnite* and certain other Epic games for iOS devices.
 11 Apple stated in its August 28, 2020 termination notice that Epic had violated the Apple Developer
 12 Agreement, the Apple Developer Program License Agreement, and the App Store Review
 13 Guidelines. Apple also told Epic that “we will deny your reapplication to the Apple Developer
 14 Program for at least a year”. Attached hereto as **Exhibit H** is a true and correct copy of Apple’s
 15 August 28, 2020 termination notice.

16 36. In addition to *Fortnite*, Apple removed from the App Store Epic’s other iOS
 17 games and apps associated with the Team ID ’84 account, specifically *Battle Breakers*, *Spyjinx*
 18 and *Infinity Blade Stickers*. Apple also removed *Shadow Complex Remastered* from the Mac App
 19 Store because it was associated with the same account. Not only are these apps no longer
 20 available for download, but they also cannot be updated, meaning they will soon be obsolete. The
 21 termination of Epic’s developer accounts also has prevented users who had previously purchased
 22 *Fortnite* or the other affected iOS apps from redownloading them from the “Purchased” section of
 23 their App Store account. As a consequence, iOS users also will not be able to re-download these
 24 apps on any new or replacement devices.

25 37. Apple’s actions also have prevented Epic from continuing to offer *Fortnite* and
 26 other games for macOS. The Team ID ’84 account terminated by Apple supplied the certificate
 27 used to sign the macOS version of *Fortnite*. Although it is technically possible to distribute apps
 28 for macOS without an Apple certificate, that is not a viable option for large commercial apps such

1 as *Fortnite*. If Epic were to attempt to distribute *Fortnite* now that its developer account has been
2 revoked, the process of running the game for users would be both challenging and alarming. A
3 macOS user who attempted to run a version of *Fortnite* created without an Apple certificate could
4 not, in the normal course, run the application, and any attempt to do so would trigger an alert that
5 *Fortnite* “cannot be opened because the developer cannot be verified—macOS cannot verify that
6 this app is free from malware”. The notice provides no guidance on how to nevertheless run an
7 unsigned application. Users would thus have to figure out for themselves how to navigate a series
8 of steps and permissions in their devices’ security settings that would permit the application to be
9 run notwithstanding the above security warnings. Given the confusion and increased customer
10 support this will add to the user experience on macOS, it is an untenable way for Epic to continue
11 to distribute *Fortnite* or other games on Mac computers.

12 Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true
13 and correct and that I executed this declaration on September 4, 2020, in Holly Springs, North
14 Carolina.

15
16 
17 /s/ [Andrew Grant \(Sep 4, 2020 21:33 EDT\)](#)
18 Andrew Grant
19
20
21
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Exhibit A

Account

Done

Personalized Recommendations

UPCOMING AUTOMATIC UPDATES

Update All

1



Fortnite
Aug 10,

Splash down into the
Storm in the afternoons.

"Fortnite" No Longer Available

The developer has removed this app from the App Store.

UPDATE

OK

UPDATED RECENTLY



Redfin Buy & Sell Real Estate
Today

OPEN

Thanks for using Redfin for your home search! At Redfin, we're always looking for ways to improve the real estate experience for consumers. [more](#)



Airbnb
Today

OPEN

Exhibit B

From:  Apple
Date: 8/13/20, 2:22 PM

Hello Epic Games team,

We have determined that your app is in violation of the [App Store Review Guidelines](#) detailed below.

For these reasons, your app has been removed from the App Store until we receive an update that is compliant with the App Store Review Guidelines. Customers who have previously downloaded this app will continue to have access to it on their devices and will have access to any available in-app purchase products.

Specifically, we found your app is in violation of the following:

Guideline 3.1.1 - Business - Payments - In-App Purchase

Your app unlocks or enables additional functionality with mechanisms other than the App Store, which is not appropriate for the App Store.

Specifically, we found that users are able to purchase digital goods with external purchase mechanisms in your app with the "Epic direct payment" feature.

See the attached screenshots for details.

Next Steps

To resolve this issue, please remove the "Epic direct payment" feature from your app.

Guideline 2.3.1 - Performance

We discovered that your app contains hidden features. Attempting to hide features, functionality or content in your app is considered egregious behavior and can lead to removal from the Apple Developer Program.

Specifically, we found that your app includes an "Epic direct payment" feature, which provides access to external payment mechanisms and enables the purchase of content, services, or functionality by means other than the in-app purchase API.

Next Steps

- Review the Performance section of the [App Store Review Guidelines](#).
- Ensure your app, as well as any third-party code and SDKs implemented in your app, are compliant with all sections of the [App Store Review Guidelines](#) and the [Terms & Conditions](#) of the Apple Developer Program.
- Revise or remove the hidden features from your app. Once your app is fully compliant, resubmit your app for review.

Guideline 2.5.2 - Performance - Software Requirements

During review, your app downloaded, installed, or executed code which introduced changes to features and functionality in your app, which is not permitted on the App Store.

Specifically, your app enabled the “Epic direct payment” feature.

Next Steps

- Review the Software Requirements section of the [App Store Review Guidelines](#).
- Ensure your app is compliant with all sections of the [App Store Review Guidelines](#) and the [Terms & Conditions](#) of the Apple Developer Program.
- Once your app is fully compliant, resubmit your app for review.

Guideline 2.3.12 - Performance - Accurate Metadata

We noticed you have included nondescript, temporary, or incomplete information in your app’s “What’s New” text.

Specifically, the last six “What’s New” text submissions are identical and do not describe new features and product changes present in your app.

Aside from simple bug fixes, security updates, and performance improvements, apps must clearly describe new features and product changes in their “What’s New” text.

Next Steps

To resolve this issue, please revise your app’s “What’s New” text to include clear descriptions of any significant changes, including new features or product changes.

Using a generic statement such as, “We’re always improving our app to bring you the best experience” is not an appropriate use of your app’s “What’s New” text. Instead, you should highlight what has changed within your app, such as new features or significant changes. If your update simply addresses bug fixes, security updates, or performance updates, stating so generically in your app’s “What’s New” text is sufficient. For example, “Bug fixes and performance improvements.”

In order to return your app to the App Store, you will need to submit an updated version for review which addresses all these issues.

Submitting apps designed to mislead or harm customers or evade the review process may result in the termination of your Apple Developer Program account. Review the [Terms & Conditions](#) of the Apple Developer Program to learn more about our policies regarding termination.

If you have any questions about this information, please reply to this message to let us know.

Best regards,

App Store Review

Exhibit C

From:  Apple
Date: 8/14/20, 3:04 AM

Hello,

Upon further review of the activity associated with your Apple Developer Program membership, we have identified several violations of the Apple Developer Program License Agreement. Therefore, your Apple Developer Program account will be terminated if the violations set forth below are not cured within 14 days.

We found that your app is in direct violation of the [Apple Developer Program License Agreement](#), which states:

Section 6.1: “If You make any changes to an Application (including to any functionality made available through use of the In-App Purchase API) after submission to Apple, You must resubmit the Application to Apple. Similarly all bug fixes, updates, upgrades, modifications, enhancements, supplements to, revisions, new releases and new versions of Your Application must be submitted to Apple for review in order for them to be considered for distribution via the App Store or Custom App Distribution, except as otherwise permitted by Apple.” Your app violates Section 6.1 by introducing new payment functionality that was not submitted to or reviewed by App Review. As you know, Apple reviews every app and app update to ensure that apps offered on the App Store are safe, provide a good user experience, adhere to our rules on user privacy, and secure devices from malware and threats. You must submit your app to App Review in order to cure this breach.

Section 3.2.2: “Except as set forth in the next paragraph, an Application may not download or install executable code. Interpreted code may be downloaded to an Application but only so long as such code: (a) does not change the primary purpose of the Application by providing features or functionality that are inconsistent with the intended and advertised purpose of the Application as submitted to the App Store, (b) does not create a store or storefront for other code or applications, and (c) does not bypass signing, sandbox, or other security features of the OS.” Your app violates Section 3.2.2 by downloading new code that changes the purpose of your app by adding an unauthorized payment system. This payment model is not authorized under the App Store Review Guidelines, and must be removed from your app in order to cure this breach.

Section 3.3.3: “Without Apple’s prior written approval or as permitted under Section

3.3.25 (In-App Purchase API), an Application may not provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store, Custom App Distribution or TestFlight.” Your app violates Section 3.3.3 by allowing end users to purchase digital items within the app without using the In-App Purchase API. This payment model is not authorized under the App Store Review Guidelines, and must be removed from your app in order to cure this breach.

As of now, your membership in the Apple Developer Program is suspended. When you accepted the Apple Developer Program License Agreement, you expressly agreed in Section 3.1(c) to “comply with the terms of and fulfill Your obligations under this Agreement...” and in Section 3.2(f) to “not, directly or indirectly, commit any act intended to interfere with the Apple Software or Services, the intent of this Agreement, or Apple’s business practices including, but not limited to, taking actions that may hinder the performance or intended use of the App Store, Custom App Distribution, or the Program.” As you have breached your obligations under the Apple Program Developer License Agreement, Apple will exercise its right to terminate your Developer Program membership under Section 11.2 if the violations described above are not cured within 14 days.

If your membership is terminated, you may no longer submit apps to the App Store, and your apps still available for distribution will be removed. You will also lose access to the following programs, technologies, and capabilities:

- All Apple software, SDKs, APIs, and developer tools
- Pre-release versions of iOS, iPad OS, macOS, tvOS, watchOS
- Pre-release versions of beta tools such as Reality Composer, Create ML, Apple Configurator, etc.
- Notarization service for macOS apps
- App Store Connect platform and support (for example, assistance with account transition, password reset, app name issues)
- TestFlight
- Access to provisioning portal for certificate generation, and provisioning profile generation
- Ability to enable Apple services in-app (i.e. Apple Pay, CloudKit, PassKit, Music Kit, HomeKit, Push Notifications, Siri Shortcuts, Sign in with Apple, kernel extensions, FairPlay Streaming)
- Access to Apple-issued keys for connecting to services such as MusicKit, DeviceCheck, APNs, CloudKit, Wallet
- Access to Developer ID signing certificates and Kernel Extension signing certificates
- Developer Technical Support

- Participation in Universal App Quick Start Program, including the right to use the Developer Transition Kit (which must be returned to Apple)
- Engineering efforts to improve hardware and software performance of Unreal Engine on Mac and iOS hardware; optimize Unreal Engine on the Mac for creative workflows, virtual sets and their CI/Build Systems; and adoption and support of ARKit features and future VR features into Unreal Engine by their XR team

We hope that you are able to cure your breaches of the Apple Program License Agreement and continue to participate in the program. We value our developers and we want to see them all achieve success on the App Store. The breaches outlined above, however, if not cured, will force us to terminate your membership in the program.

You can appeal this decision with the App Review Board [App Review Board](#) at any time over the next 14 calendar days. When submitting your appeal, be sure to select "I would like to appeal an app rejection or app removal" from the drop-down menu on the Contact the App Review Team page.

Best regards,

App Store Review

Exhibit D

Release notes:

What's New

- *Water levels have lowered to reveal Coral Castle*
- *Joy Ride includes new drivable cars*
- *Additional payment options*

Exhibit E

iOS Versions > Resolution Center

App Review

13.40.2 Binary Rejected Aug 15, 2020

Hello Epic Games team, We have determined that your app remains in violation of the App Store Review Guidelines and the activity

13.40.1 Policy Notification Aug 14, 2020

Hello, Upon further review of the activity associated with your Apple Developer Program membership, we have identified several violations

Beta App Review

12.10 (11595381) Binary Rejected Feb 25, 2020

Guideline 2.1 – Performance – App Completeness We discovered one or more bugs in your app when reviewed on iPhone running iOS 13.3.1 on

12.41.0 (12687507) Binary Rejected Apr 13, 2020

Guideline 2.1 – Performance – App Completeness We discovered one or more bugs in your app when reviewed on iPad running iOS 13.4.1 on

Aug 15, 2020 at 2:46 AM
From Apple

3. 1.1 Business: Payments - In-App Purchase

Hello Epic Games team,

We have determined that your app remains in violation of the [App Store Review Guidelines](#) and the activity associated with your Apple Developer Program account remains in violation of the [Apple Developer Program License Agreement](#) as previously communicated and detailed again below.

To be clear, we found that both your app in review, version 13.40.2, and the app users have previously downloaded to their devices from the App Store, are in violation of the App Store Review Guidelines and the Apple Developer Program License Agreement. The breaches outlined below, if not cured, will force us to terminate your membership in the program. In order to return your app to the App Store, you will need to submit an updated version for review which addresses all of these violations within 14 days of transmission of the notice of termination of your Apple Developer Program License Agreement, dated August 14, 2020.

Specifically, we found that your app is in violation of the following App Store Review Guidelines:

Guideline 3.1.1 - Business - Payments - In-App Purchase

Your app unlocks or enables additional functionality with mechanisms other than the App Store, which is not appropriate for the App Store.

Specifically, we found that users are able to purchase digital goods with external purchase mechanisms in your app with the "Epic direct payment" feature.

See the attached screenshots for details

Aug 15, 2020 at 2:46 AM

From Apple

- 3. 1.1 Business: Payments - In-App Purchase

Hello Epic Games team,

We have determined that your app remains in violation of the [App Store Review Guidelines](#) and the activity associated with your Apple Developer Program account remains in violation of the [Apple Developer Program License Agreement](#) as previously communicated and detailed again below.

To be clear, we found that both your app in review, version 13.40.2, and the app users have previously downloaded to their devices from the App Store, are in violation of the App Store Review Guidelines and the Apple Developer Program License Agreement. The breaches outlined below, if not cured, will force us to terminate your membership in the program. In order to return your app to the App Store, you will need to submit an updated version for review which addresses all of these violations within 14 days of transmission of the notice of termination of your Apple Developer Program License Agreement, dated August 14, 2020.

Specifically, we found that your app is in violation of the following App Store Review Guidelines:

Guideline 3.1.1 - Business - Payments - In-App Purchase

Your app unlocks or enables additional functionality with mechanisms other than the App Store, which is not appropriate for the App Store.

Specifically, we found that users are able to purchase digital goods with external purchase mechanisms in your app with the "Epic direct payment" feature.

See the attached screenshots for details.

Next Steps

To resolve this issue, please remove the "Epic direct payment" feature from your app.

Guideline 2.3.1 - Performance

We discovered that your app contains hidden features. Attempting to hide features, functionality or content in your app is considered egregious behavior and can lead to removal from the Apple Developer Program.

Specifically, we found that your app includes an "Epic direct payment" feature, which provides access to external payment mechanisms and enables the purchase of content, services, or functionality by means other than the in-app purchase API.

Next Steps

- Review the Performance section of the [App Store Review Guidelines](#).
- Ensure your app, as well as any third-party code and SDKs implemented in your app, are compliant with all sections of the [App Store Review Guidelines](#) and the [Terms & Conditions](#) of the Apple Developer Program.
- Revise or remove the hidden features from your app. Once your app is fully compliant, resubmit your app for review.

Guideline 2.5.2 - Performance - Software Requirements

During review, your app downloaded, installed, or executed code which introduced changes to features and functionality in your app, which is not permitted on the App Store.

Specifically, your app enabled the “Epic direct payment” feature.

Next Steps

- Review the Software Requirements section of the [App Store Review Guidelines](#).
- Ensure your app is compliant with all sections of the [App Store Review Guidelines](#) and the [Terms & Conditions](#) of the Apple Developer Program.
- Once your app is fully compliant, resubmit your app for review.

Guideline 2.3.12 - Performance - Accurate Metadata

We noticed you have included nondescript, temporary, or incomplete information in your app’s “What’s New” text.

Specifically, the last six “What’s New” text submissions are identical and do not describe new features and product changes present in your app.

Aside from simple bug fixes, security updates, and performance improvements, apps must clearly describe new features and product changes in their “What’s New” text.

Next Steps

To resolve this issue, please revise your app’s “What’s New” text to include clear descriptions of any significant changes, including new features or product changes.

Using a generic statement such as, “We’re always improving our app to bring you the best experience” is not an appropriate use of your app’s “What’s New” text. Instead, you should highlight what has changed within your app, such as new features or significant changes. If your update simply addresses bug fixes, security updates, or performance updates, stating so generically in your app’s “What’s New” text is sufficient. For example, “Bug fixes and performance improvements.”

Furthermore, we found that your app is in direct violation of the [Apple Developer Program License Agreement](#), which states:

Section 6.1: "If You make any changes to an Application (including to any functionality made available through use of the In-App Purchase API) after submission to Apple, You must resubmit the Application to Apple. Similarly all bug fixes, updates, upgrades, modifications, enhancements, supplements to, revisions, new releases and new versions of Your Application must be submitted to Apple for review in order for them to be considered for distribution via the App Store or Custom App Distribution, except as otherwise permitted by Apple." Your app violates Section 6.1 by introducing new payment functionality that was not submitted to or reviewed by App Review. As you know, Apple reviews every app and app update to ensure that apps offered on the App Store are safe, provide a good user experience, adhere to our rules on user privacy, and secure devices from malware and threats. You must submit your app to App Review in order to cure this breach.

Section 3.2.2: "Except as set forth in the next paragraph, an Application may not download or install executable code. Interpreted code may be downloaded to an Application but only so long as such code: (a) does not change the primary purpose of the Application by providing features or functionality that are inconsistent with the intended and advertised purpose of the Application as submitted to the App Store, (b) does not create a store or storefront for other code or applications, and (c) does not bypass signing, sandbox, or other security features of the OS." Your app violates Section 3.2.2 by downloading new code that changes the purpose of your app by adding an unauthorized payment system. This payment model is not authorized under the App Store Review Guidelines, and must be removed from your app in order to cure this breach.

Section 3.3.3: "Without Apple's prior written approval or as permitted under Section 3.3.25 (In-App Purchase API), an Application may not provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store, Custom App Distribution or TestFlight." Your app violates Section 3.3.3 by allowing end users to purchase digital items within the app without using the In-App Purchase API. This payment model is not authorized under the App Store Review Guidelines, and must be removed from your app in order to cure this breach.

As of now, your app has been removed from the App Store and your membership in the Apple Developer Program is suspended. When you accepted the Apple Developer Program License Agreement, you expressly agreed in Section 3.1(c) to "comply with the terms of and fulfill Your obligations under this Agreement..." and in Section 3.2(f) to "not, directly or indirectly, commit any act intended to interfere with the Apple Software or Services, the intent of this Agreement, or Apple's business practices including, but not limited to, taking actions that may hinder the performance or intended use of the App Store, Custom App Distribution, or the Program." As you have breached your obligations under the Apple Program Developer License Agreement, Apple will exercise its right to terminate your Developer Program membership under Section 11.2 if the violations described above are not cured within 14 days of transmission of the notice of termination of your Apple Developer Program License Agreement, dated August 14, 2020.

We hope that you are able to cure your breaches of the Apple Program License Agreement and continue to participate in the program. We value our developers and we want to see them all achieve success on the App Store. The breaches outlined above, however, if not cured, will force us to terminate your membership in the program.

You can appeal this decision with the App Review Board [App Review Board](#) at any time within 14 calendar days of transmission of the notice of termination of your Apple Developer Program License Agreement, dated August 14, 2020. When submitting your appeal, be sure to select "I would like to appeal an app rejection or app removal" from the drop-down menu on the Contact the App Review Team page.

If you have any questions about this information, please reply to this message to let us know.

Best regards,

App Store Review

Exhibit F



Alec Shobin [REDACTED]@epicgames.com>

14.00 iOS Build Submission

Nathaniel Parkinson [REDACTED]@epicgames.com>

Tue, Aug 25, 2020 at 4:56 PM

To: Luke Micono [REDACTED]@apple.com>, Spiro Kouretas [REDACTED]@apple.com>, Mike Schmid [REDACTED]@apple.com>, Mark

Grimm [REDACTED]@apple.com>, Paddy Laws [REDACTED]@apple.com>

Cc: Release-team [REDACTED]@epicgames.com>, Alec Shobin [REDACTED]@epicgames.com>

Hello,

Fortnite build v14.0 with the new Season 4 has been uploaded through App Store Connect.

This build continues to offer customers the choice of in-app purchases through either Apple's payment solution or through Epic direct payment. Epic is submitting this version in case Apple wishes to restore Fortnite to the App Store in time for Season 4 launch.

Thanks

Exhibit G

Aug 26, 2020 at 1:57 PM

From Apple

- 3. 1.1 Business: Payments - In-App Purchase

Hello Epic Games team,

Our previous correspondence has been clear that the "Epic direct payment" feature is in violation of the [App Store Review Guidelines](#) and the [Apple Developer Program License Agreement](#). As we explained in our correspondence of August 14, Epic is welcome to restore Fortnite to the App Store in time for your Chapter 2 Season 4 launch, and prevent termination of the Epic Games, Inc. Apple Developer Program account on August 28, 2020, by simply removing this feature and resubmitting your app in compliance with the same requirements that apply to all developers.

As you know, on August 24, Judge Yvonne Gonzalez Rogers denied your motion for an order requiring that Apple reinstall a version of Fortnite that contains the non-compliant "Epic direct payment" feature and to accept future versions of Fortnite that include this feature. Therefore, we were surprised and disappointed to receive another submission of the app from you within 24 hours of the Court's ruling that included the "Epic direct payment" feature.

When Apple sent its Notice of termination to Epic on August 14, it provided Epic 14 days to cure its breach so that Fortnite could be reinstated on the App Store even though Apple had the right to terminate Epic immediately. It has been our hope that Epic would choose to submit a version that complied with Epic's contractual agreements with Apple so that new versions of Fortnite would remain available to Apple customers. Epic has until August 28 to cure its breach and avoid any further disruption to Apple's Fortnite-playing customers, and we remain hopeful that Epic will choose this path.

We have determined that the app you submitted on August 25 remains in violation of the [App Store Review Guidelines](#) and the activity associated with your Apple Developer Program account remains in violation of the [Apple Developer Program License Agreement](#) as previously communicated and detailed again below.

To be clear, we found that both your app in review, version 14.00, and the app users have previously downloaded to their devices from the App Store, are in violation of the [App Store Review Guidelines](#) and the [Apple Developer Program License Agreement](#). As previously

explained, the breaches outlined below, if not cured, will force us to terminate your membership in the program. In order to return your app to the App Store, you will need to submit an updated version for review which addresses all of these violations within 14 days of transmission of the notice of termination of your [Apple Developer Program License Agreement](#), dated August 14, 2020.

Specifically, we found that your app is in violation of the following [App Store Review Guidelines](#):

Guideline 3.1.1 - Business - Payments - In-App Purchase

Your app unlocks or enables additional functionality with mechanisms other than the App Store, which is not appropriate for the App Store.

Specifically, we found that users are able to purchase digital goods with external purchase mechanisms in your app with the "Epic direct payment" feature.

See the attached screenshots for details.

Next Steps

To resolve this issue, please remove the "Epic direct payment" feature from your app.

Guideline 2.3.1 - Performance

We discovered that your app as submitted on August 3 contained hidden features. Attempting to hide features, functionality or content in your app is considered egregious behavior and can lead to removal from the Apple Developer Program.

While your submission yesterday finally disclosed the presence of the "Epic direct payment" feature, this feature, which provides access to external payment mechanisms and enables the purchase of content, services, or functionality by means other than the in-app purchase API, is in violation of your contracts with Apple.

Next Steps

- Review the Performance section of the [App Store Review Guidelines](#).

- Ensure your app, as well as any third-party code and SDKs implemented in your app, are compliant with all sections of the [App Store Review Guidelines](#) and the [Terms & Conditions](#) of the Apple Developer Program.
- Revise or remove the hidden features from your app. Once your app is fully compliant, resubmit your app for review.

Guideline 2.5.2 - Performance - Software Requirements

During review, your app downloaded, installed, or executed code which introduced changes to features and functionality in your app, which is not permitted on the App Store.

Specifically, your app enabled the “Epic direct payment” feature.

Next Steps

- Review the Software Requirements section of the [App Store Review Guidelines](#).
- Ensure your app is compliant with all sections of the [App Store Review Guidelines](#) and the [Terms & Conditions](#) of the Apple Developer Program.
- Once your app is fully compliant, resubmit your app for review.

Guideline 2.3.12 - Performance - Accurate Metadata

As described in Apple’s August 14, 2020 correspondence, Epic failed to disclose its “Epic direct payment” feature in the “What’s New” text submission that accompanied the August 3 submission, which was the first to include the direct payment feature. Instead, you included only nondescript, temporary, or incomplete information. In fact, to that point the last six “What’s New” text submissions are identical and do not describe new features and product changes present in your app. Epic’s most recent submission, which includes the statement that the latest submission “[c]ontinues to offer customers the choice of in-app purchases using either Apple’s payment solution or Epic direct payment” does not address or solve Epic’s original lack of candor with Apple, nor the disruption that lack of candor caused when Epic unilaterally implemented this undisclosed feature.

Furthermore, we found that your app is in direct violation of the [Apple Developer Program License Agreement](#), which states:

Section 6.1: “If You make any changes to an Application (including to any functionality made available through use of the In-App Purchase API) after submission to Apple, You must resubmit the Application to Apple. Similarly all bug fixes, updates, upgrades, modifications, enhancements, supplements to, revisions, new releases and new versions of Your Application must be submitted to Apple for review in order for them to be considered for distribution via the App Store or Custom App Distribution, except as otherwise permitted by Apple.” Your app violates Section 6.1 by introducing new payment functionality that was not originally submitted to or reviewed by App Review. As you know, Apple reviews every app and app update to ensure that apps offered on the App Store are safe, provide a good user experience, adhere to our rules on user privacy, and secure devices from malware and threats. As you also know, the apps you have submitted which contain the Epic direct payment feature directly violate the express terms of your contracts with Apple. It is especially concerning, therefore, that you did not explicitly disclose this feature with its initial submission.

Section 3.2.2: “Except as set forth in the next paragraph, an Application may not download or install executable code. Interpreted code may be downloaded to an Application but only so long as such code: (a) does not change the primary purpose of the Application by providing features or functionality that are inconsistent with the intended and advertised purpose of the Application as submitted to the App Store, (b) does not create a store or storefront for other code or applications, and (c) does not bypass signing, sandbox, or other security features of the OS.” Your app violates Section 3.2.2 by downloading new code that changes the purpose of your app by adding an unauthorized payment system. This payment model is not authorized under the App Store Review Guidelines, and must be removed from your app in order to cure this breach.

Section 3.3.3: “Without Apple’s prior written approval or as permitted under Section 3.3.25 (In-App Purchase API), an Application may not provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store, Custom App Distribution or TestFlight.” Your app violates Section 3.3.3 by allowing end users to purchase digital items within the app without using the In-App Purchase API. This payment model is not authorized under the App Store Review Guidelines, and must be removed from your app in order to cure this breach. When you accepted the Apple Developer Program License Agreement, you expressly agreed in Section 3.1(c) to “comply with the terms of and fulfill Your obligations under this Agreement...” and in Section 3.2(f) to “not, directly or indirectly, commit any act intended to interfere with the Apple Software or Services, the intent of this Agreement, or Apple’s business practices including, but not limited to, taking

actions that may hinder the performance or intended use of the App Store, Custom App Distribution, or the Program." As you have breached your obligations under the Apple Program Developer License Agreement, Apple will exercise its right to terminate your Developer Program membership under Section 11.2 if the violations described above are not cured within 14 days of transmission of the notice of termination of your Apple Developer Program License Agreement, dated August 14, 2020.

We hope that you choose to cure your breaches of the Apple Program License Agreement and continue to participate in the program. We value our developers and we want to see them all achieve success on the App Store. The breaches outlined above, however, if not cured, will force us to terminate your membership in the program, as explained in the notice of August 14.

As we previously informed you, you can appeal this decision with the [App Review Board](#) at any time within 14 calendar days of transmission of the notice of termination of your Apple Developer Program License Agreement, dated August 14, 2020. When submitting your appeal, be sure to select "I would like to appeal an app rejection or app removal" from the drop-down menu on the Contact the App Review Team page.

If you have any questions about this information, please reply to this message to let us know.

Best regards,

App Store Review

Attached Images:

The screenshot shows the payment method selection screen for a purchase of 5,000 V-Bucks.

PAYMENT METHOD (highlighted)

CHECKOUT

CHOOSE A PAYMENT METHOD

Credit Card (selected)

CARD DETAILS

* Card Number

Card icons: American Express, Discover, JCB, Maestro, MasterCard, Visa

* Month Year

* CVV * Zipcode

ORDER SUMMARY

5,000 V-Bucks
By Epic Games

Price: USD \$31.99

Total: USD \$31.99

You Pay: USD \$31.99

Need Help? Contact Us

CHECKOUT

V-BUCKS

1,000 V-BUCKS \$7.99 (12% EXTRA!)

2,800 V-BUCKS \$19.99 (25% EXTRA!)

5,000 V-BUCKS \$31.99 (25% EXTRA!)

7,800 V-BUCKS \$59.99 (35% EXTRA!)

13,500 V-BUCKS \$79.99 (35% EXTRA!)

BACK

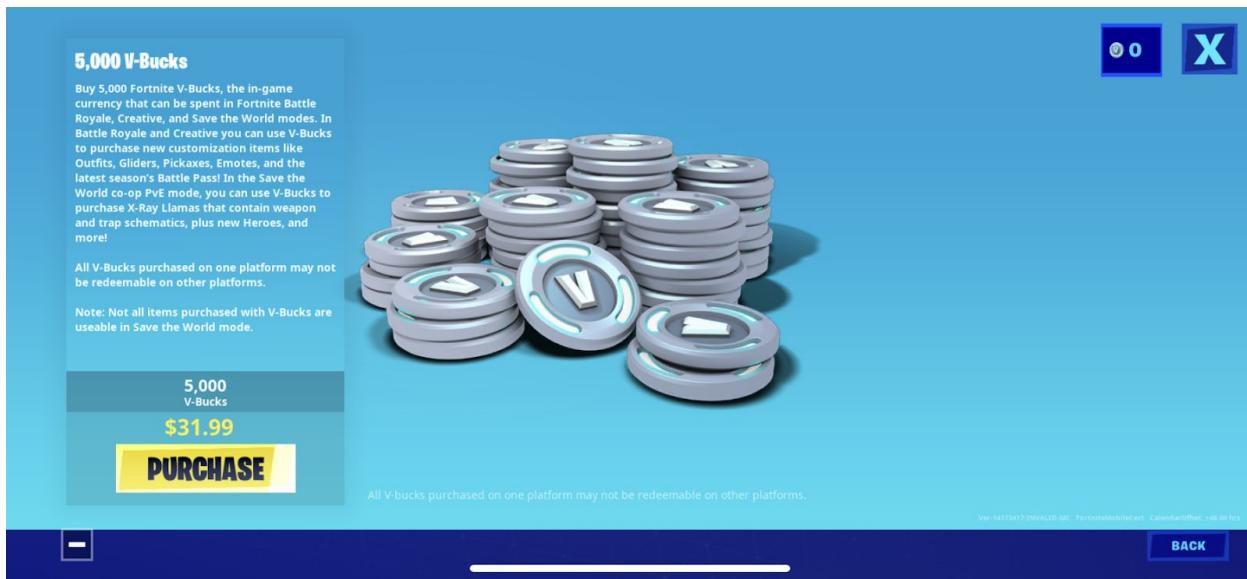
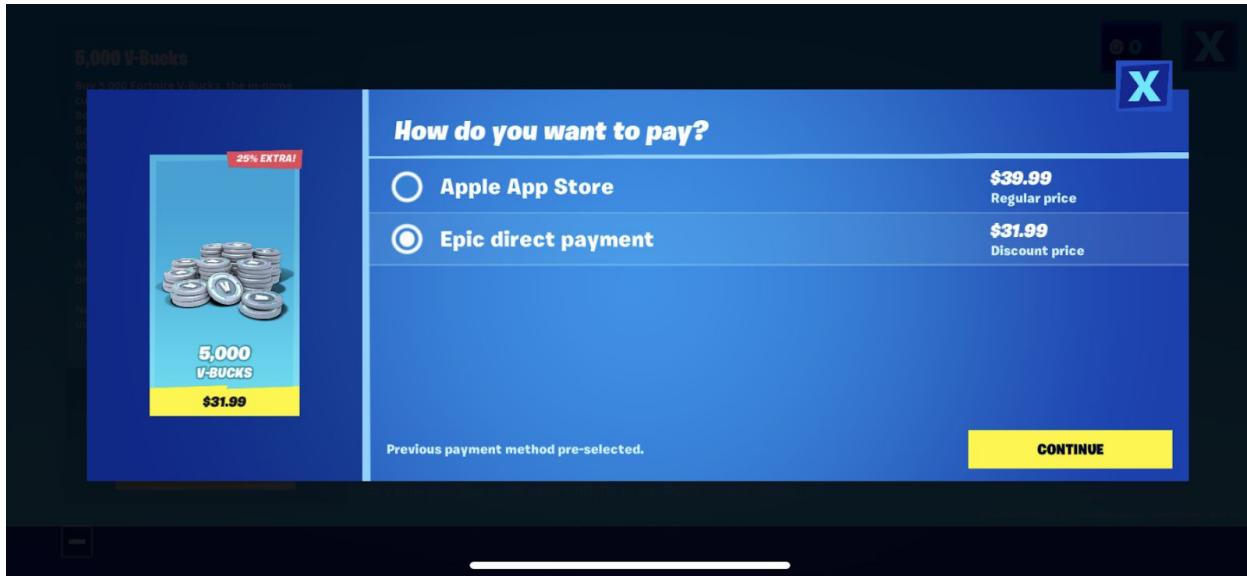


Exhibit H

Subject: RE: Termination Notice

From: <appreview@apple.com>

Date: Fri, Aug 28, 2020, 2:40 PM

Subject: Termination Notice

To: <appleid-games@epicgames.com>



Hello Epic Games, Inc.,

This letter serves as notice of termination of the Apple Developer Program License Agreement (the “ADP Agreement”) and the Apple Developer Agreement (the “Developer Agreement”) between Epic Games, Inc. (“you”) and Apple effective immediately pursuant to the terms of those agreements, respectively.

Pursuant to Section 3.2(f) of the ADP Agreement, you agreed that you would not “commit any act intended to interfere with the Apple Software or Services, the intent of this Agreement, or Apple’s business practices including, but not limited to, taking actions that may hinder the performance or intended use of the App Store, B2B Program (Apple Business Manager), or the Program.” On August 13, Mr. Sweeney informed Apple that “Epic will no longer adhere to Apple’s payment processing” requirements, and immediately proceeded to activate a previously-undisclosed Epic direct payment function on Fortnite. Thus, you have violated this Section of its ADP with Apple, among others (including the incorporated App Store Review Guidelines).

Apple is exercising its right in Apple’s sole discretion to terminate your status as a registered Apple Developer pursuant to the Apple Developer Agreement and is terminating the Developer Agreement and the ADP Agreement pursuant to their terms. We would like to remind you of your obligations with regard to all software and other confidential information that you obtained from Apple as an Apple developer and under the ADP Agreement. You must promptly cease all use of and destroy such materials and comply with all the other termination obligations set forth in Section 11.3 of the ADP Agreement and Section 10 of the Apple Developer Agreement. Please note that, among others referenced in the agreements, your obligations in Section 7.1 of Schedule 2 to the ADP Agreement survive termination.

This letter is not intended to be a complete statement of the facts regarding this matter, and nothing in this letter should be construed as a waiver of any rights or remedies Apple may have, all of which are hereby reserved. Finally, please note that we will deny your reapplication to the Apple Developer Program for at least a year considering the nature of your acts.

Sincerely,

Apple Inc.

Paul J. Riehle (SBN 115199)
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FAEGRE DRINKER BIDDLE & REATH LLP
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Facsimile: (212) 474-3700

Attorneys for Plaintiff Epic Games, Inc.

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

EPIC GAMES, INC.,

Plaintiff

APPLE INC

VS.

Defendant

No. 4:20-CV-05640-YGR

**DECLARATION OF NICHOLAS
PENWARDEN IN SUPPORT OF
PLAINTIFF EPIC GAMES, INC.'S
MOTION FOR A PRELIMINARY
INJUNCTION**

Date: September 28, 2020, 9:30 a.m. (via Zoom Platform)

Courtroom: 1, 4th Floor

Judge: Hon. Yvonne Gonzalez Rogers

1 I, Nicholas Penwarden, declare as follows:

2 1. I am Vice President of Engineering at Epic Games, Inc. (“Epic”). I submit this
3 declaration in support of Epic’s Motion for a Preliminary Injunction. The contents of this
4 declaration are based on my personal knowledge. If called as a witness, I could and would
5 competently testify thereto.

6 2. I joined Epic in 2011 and have been Vice President of Engineering at Epic for over
7 a year. Prior to my time as Vice President of Engineering, I was the Director of the *Unreal*
8 *Engine*, the Development Manager for *Unreal Engine 4*, the Lead Graphics Programmer and a
9 Senior Engine Programmer at Epic. In total, I have nine years of experience working on *Unreal*
10 *Engine*. In my current position, I am responsible for outlining and executing the vision for the
11 development of the company’s *Unreal Engine* software, which is a software suite available to
12 third-party developers that allows them to create three-dimensional and immersive digital content.
13 I am responsible for the development roadmap for the *Unreal Engine* and management of the
14 engineering team behind the *Unreal Engine*, and I am ultimately responsible for user support for
15 the *Unreal Engine*’s community of 11 million users. During the time that I have been involved
16 with the *Unreal Engine*, the *Unreal Engine* has received numerous technology and entertainment
17 industry awards, including the first ever Emmy Award for Technology and Engineering for its use
18 in the production of animation.

19 3. As described in more detail in the Declaration of Timothy Sweeney, dated
20 September 4, 2020, the *Unreal Engine* has applications across a broad range of industries,
21 including very wide adoption for the development of video games. One reason for the *Unreal*
22 *Engine*’s popularity among game developers is the breadth of its cross-platform capabilities.
23 Historically, *Unreal Engine 3* (the previous iteration of the engine, which was released in 2004)
24 supported software developed to run on Windows PC, PlayStation 3, and Xbox360. In 2010,
25 Epic expanded *Unreal Engine*’s capabilities to support the iOS and Android platforms as well,
26 allowing developers to offer their *Unreal*-powered applications on players’ smartphones and
27 tablets. As of today, *Unreal Engine 4*, which was released in 2014, supports Windows PCs,
28 macOS, PlayStation 4, PlayStation 5, Xbox One, Xbox Series X, Nintendo Switch, iOS, Android

1 and Stadia. *Unreal Engine* 5 was publicly announced on May 13, 2020, and is currently
 2 scheduled for release next year.

3 4. A large number of developers have used the *Unreal Engine* in developing apps for
 4 use on Apple platforms. As of today, the *Unreal Engine* toolkit has been installed on almost half
 5 a million Mac computers and is used by millions of developers overall to develop their games and
 6 other software. Third-party developers have used the *Unreal Engine* to create some of the top
 7 apps currently on the App Store. For example, the popular game PlayerUnknown’s Battlegrounds
 8 (“PUBG”) alone is installed on hundreds of millions of mobile devices.

9 5. Like other platform providers, Apple makes certain software development tools
 10 widely available to developers that make programs intended to run on iOS and macOS. Apple’s
 11 core tool is Xcode, which provides developers the software features they need to design, develop,
 12 and debug software for use on iOS and macOS. Apple also offers developers software
 13 development kits (“SDKs”), which extend the core Xcode to include additional tools including
 14 “compilers” (computer programs important to software development because they translate
 15 programmed computer code into machine code readable and executable by a computer) and other
 16 frameworks that developers need to ensure their games or other software will work on Apple’s
 17 devices. For a fee of \$99 a year—paid for each separate Apple Developer Program account, of
 18 which Epic has several—a developer obtains the ability to test and deploy software that runs on
 19 iOS and macOS using Apple’s Xcode and other tools.

20 6. On August 14, 2020, at 12:04 a.m. Pacific time, Apple posted a notice in one of
 21 Epic’s accounts with the Apple Developer Program, which stated that it would terminate Epic’s
 22 membership within 14 days unless Epic met certain conditions set by Apple. Without
 23 participation in the Apple Developer Program, developing commercial software to run on Apple
 24 iOS devices is impossible. Indeed, without an Apple Developer Program account, developers are
 25 not able even to test their software on their own personal iOS devices, much less develop and
 26 distribute applications for public consumption.

27 7. Apple’s August 14 notice also contained a list of additional consequences that it
 28 said would flow from the termination of Epic’s Developer Program Account. That list expressly

1 mentions consequences for the *Unreal Engine*. One item on the list is that Epic will “lose access”
2 to “[a]ll Apple software, SDKs, APIs [application programming interfaces], and developer tools”.
3 These are software and tools of the type that platform providers—including Apple, Microsoft,
4 Google and others—make widely available to developers in order to facilitate the development of
5 software that will run on the platforms. These tools are typically made available by platform
6 providers either for free or at a modest cost.

7 8. Apple’s revocation of its developer software and tools will make it impossible for
8 Epic to continue to support *Unreal Engine* on Apple’s platforms, as Epic will lose the ability to
9 create new versions of *Unreal Engine* for use on both iOS and macOS. It also means that as
10 Apple upgrades its own operating systems, Epic will not be able to develop updated versions of
11 *Unreal Engine* designed to support those updates. Apple has already announced plans to release
12 updated versions of iOS and macOS—called iOS 14 and macOS Big Sur, respectively—this
13 coming fall. Without access to the software and development tools that Apple makes widely
14 available, Epic will not be able to support iOS 14 or macOS Big Sur with *Unreal Engine*.
15 Additionally, Apple typically requires that developers fully switch to Apple’s latest SDKs and
16 developer tools six months after the release of a new iOS version in order to submit new apps, or
17 to submit updates to existing apps. Thus, by spring 2021, it is likely that Apple will refuse to
18 accept any new apps and updates to existing apps that use the *Unreal Engine* due to Epic’s
19 inability to access those tools.

20 9. Apple’s statement that it intends to terminate all of Epic’s accounts with the Apple
21 Developer Program and terminate Epic’s access to, among other things, “[a]ll Apple software,
22 SDKs, APIs, and developer tools”, including for purposes of developing and supporting the
23 *Unreal Engine*, has prompted numerous *Unreal Engine* licensees to reach out to Epic about the
24 potential impact to the *Unreal Engine* of Apple’s actions. Specifically, Epic’s licensees have
25 expressed concern that Apple’s actions would disrupt and impede Epic’s ability to continue to
26 support *Unreal Engine* for Apple devices and for Epic’s engineers to continue to provide support
27 to developers working on iOS and macOS projects.

28 10. Dozens of *Unreal Engine* licensees have expressed concern that projects currently

1 in development for iOS and macOS will be disrupted, that they may not be able to launch such
 2 projects on iOS or macOS as they had planned, or that they may need to explore alternative 3D
 3 engines for future projects. The *Unreal Engine* licensees that have contacted Epic are not limited
 4 to game developers but also include licensees that use *Unreal Engine* for other applications and
 5 businesses, including automotive design, film and television, and engineering and construction.¹

6 11. Licensee One, a creative studio that specializes in animation and visual effects, has
 7 told Epic that in light of Apple’s intent to terminate Epic’s access to iOS development tools for
 8 *Unreal Engine* it could potentially be forced to delay the release of an iOS application it created
 9 for a customer using *Unreal Engine*. Licensee One’s customer requested that the project be put
 10 on hold while Licensee One explored alternative 3D engines that could be used to complete the
 11 project. After this Court issued its temporary restraining order enjoining Apple from terminating
 12 Epic’s Developer Program accounts that relate to *Unreal Engine*, Licensee One informed Epic
 13 that its customer had decided to continue using *Unreal Engine* to complete the project.

14 12. Licensee Two and Licensee Three, which are film production studios, have
 15 expressed concern to Epic that the virtual production tools that they have developed using
 16 *Unreal Engine* could be rendered inoperable if Apple denies Epic continued access to the
 17 necessary developer tools and other software. These studios’ *Unreal Engine*-based virtual
 18 production tools have been used, for example, in television series to create high-quality visual
 19 effects.

20 13. Epic has also received inquiries from companies that deal with software tools that
 21 facilitate architecture, engineering, and construction (“AEC”). An Epic business partner,
 22 Licensee Four, expressed serious concerns that its customers would no longer have access to the
 23 latest version of the macOS “TwinMotion”—a 3D-immersion software based on *Unreal Engine*,
 24 which produces images, panorama pictures, and virtual reality videos used in AEC. Licensee
 25 Four has developed tight integrations between its own AEC software and TwinMotion. These
 26 integrations would be significantly impaired should Apple terminate Epic’s developer accounts.

27 28 ¹ The names of specific companies have been redacted due to confidentiality concerns, but
 the communications can be made available to the Court for *in camera* review.

1 Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true
2 and correct and that I executed this declaration on September 4, 2020, in Nags Head, North
3 Carolina.

4
5 
6 /s/ [Nicholas Penwarden \(Sep 4, 2020 21:31 EDT\)](#)
Nicholas Penwarden

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13 Facsimile: (212) 474-3700

14 || Attorneys for Plaintiff Epic Games, Inc.

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

18 || EPIC GAMES, INC..

No. 4:20-CV-05640-YGR

19 Plaintiff.

**DECLARATION OF TIMOTHY
SWEENEY IN SUPPORT OF
PLAINTIFF EPIC GAMES, INC.'S
MOTION FOR A PRELIMINARY
INJUNCTION**

vs.

Date: September 28, 2020 at 9:30 a.m. (via Zoom Platform)

Courtroom: 1 4th Floor

Judge: Hon. Yvonne Gonzalez Rogers

1 I, Timothy Sweeney, declare as follows:

2 1. I am the founder and Chief Executive Officer of Epic Games, Inc. (“Epic”), the
 3 plaintiff in this action. I submit this declaration in support of Epic’s Motion for a Preliminary
 4 Injunction. The contents of this declaration are based on my personal knowledge. If called as a
 5 witness, I could and would competently testify thereto.

6 **Epic Games**

7 2. I founded Epic in 1991 in my parents’ basement. Over the years, Epic has
 8 developed a number of popular videogames, as well as a software suite called *Unreal Engine* that
 9 allows other developers to create three-dimensional content for use in games, movies, television,
 10 architecture, art, virtual reality experiences, and other applications. Epic also operates the Epic
 11 Games Store, a digital storefront for computer games played on personal computers running the
 12 Windows operating system and Mac operating system. In addition, Epic offers Epic Online
 13 Services, a free software development kit (“SDK”) that provides developers with a suite of
 14 services for running online cross-platform games.

15 **Fortnite**

16 3. Currently, Epic’s most popular and successful game is *Fortnite*. As of June 2020,
 17 *Fortnite* topped 350 million registered users around the world. *Fortnite* is an online videogame
 18 and social entertainment space. It is available for Microsoft Windows, macOS, PlayStation 4,
 19 Xbox One, and Nintendo Switch. In addition, a mobile version of *Fortnite* was released on
 20 Apple’s mobile operating system (“iOS”) in April 2018 and on the Android mobile operating
 21 system in October 2018. More than 116 million registered users have accessed *Fortnite* on an
 22 iOS device—more than any other platform. They have spent more than 2.86 billion hours in the
 23 app. From the time *Fortnite* was launched on iOS through August 13, 2020, it averaged 2.5
 24 million daily iOS players, representing nearly 10% of *Fortnite*’s total average daily players. 63%
 25 of *Fortnite* users on iOS access *Fortnite* only on iOS.

26 4. *Fortnite* includes three main game modes: (i) *Battle Royale*, an elimination and
 27 survival match involving up to 100 players; (ii) *Save the World*, a mode that involves up to four
 28 players teaming up against non-playable computer characters; and (iii) *Creative*, where players

1 can build custom structures on a private island for use in other game modes. In *Fortnite*, players
 2 can create new environments, dance, chat, socialize, and even attend concerts, video premieres,
 3 and film screenings.

4 5. *Fortnite* is one of the world's largest event venues. Travis Scott's in-game concert
 5 in April 2020 drew over 2 million iOS users. Three of Christopher Nolan's films were virtually
 6 screened in *Fortnite* in June 2020. Exclusive episodes of ESPN's *The Ocho* and the Discovery
 7 Channel's *Tiger Shark King* aired on August 8 and 10, 2020, respectively. In July 2020, *Fortnite*
 8 players could attend airings of *We the People*, a series of discussions on racial equity and voter
 9 suppression in America. *Fortnite* is more than just a game. *Fortnite* is a destination where
 10 friends meet online to hangout, socialize, build worlds, and share experiences.

11 6. *Battle Royale* is the most popular *Fortnite* gameplay mode. *Battle Royale*
 12 storylines and gameplay evolve over time, as new chapters and seasons are released periodically.
 13 A season typically lasts around ten weeks and is a subset of a larger chapter. The current *Fortnite*
 14 iteration is Chapter 2, Season 4, which was released on August 27, 2020.

15 7. Although the *Battle Royale* gameplay mode is available to download and play free
 16 of charge, users can make a range of in-app purchases in *Fortnite* for digital content used in the
 17 app, including digital avatars, costumes, dances, and other cosmetic items. From a business
 18 perspective, in-app purchasing is an important part of the *Fortnite* model because it is seamless
 19 for users. If users had to leave the app to purchase digital content, they would be much less likely
 20 to do so. *Fortnite* has two primary methods for in-app purchases: a subscription model, called a
 21 "Battle Pass", and à la carte purchases. A Battle Pass lasts for the duration of a season and
 22 enables players to unlock a wide variety of items, as well as new gameplay features called
 23 "challenges". Some *Fortnite* content is purchased with real-world currency, but most purchases
 24 are made with V-Bucks, an in-game currency. The average iOS player spends roughly double
 25 what the average Android player spends on in-app purchases in *Fortnite*.

26 8. Most gameplay in *Fortnite* is multi-player. People can play online with friends
 27 and family, with teams, or with other gamers of similar skill levels with whom they are matched.
 28 *Fortnite* offers cross-platform play. That means that players using different videogaming

1 systems—including personal computers, dedicated gaming consoles, and mobile devices like
 2 smartphones and tablets—can play together in the same online space. Since September 2018,
 3 *Fortnite* cross-platform play has been available across Sony’s PlayStation 4, Microsoft’s Xbox
 4 One, the Nintendo Switch, Windows personal computers, Mac personal computers, and certain
 5 Android and (when accessible) iOS mobile devices. Epic pioneered cross-platform play for the
 6 industry by persuading Sony, Microsoft, and Nintendo to erase the artificial barriers between
 7 players on different gaming platforms, making *Fortnite* the first game to achieve full cross-play
 8 functionality across mobile, Windows and Mac personal computers, and all three major consoles.

9 9. For players to play together online, they must have the same “version” of *Fortnite*
 10 software. Successive versions introduce new gameplay and content, both at the beginning of a
 11 new season and during the course of a season. For example, *Fortnite* Chapter 1, Season 4
 12 introduced shopping carts as the first land vehicles available in the game, which then ceased to be
 13 available at the end of Season 8. Chapter 2 elevated aquatic gameplay by introducing game maps
 14 that included rivers and navigation by boat. By Chapter 2, Season 3, portions of game maps were
 15 flooded, the superhero Aquaman was added as a character, and sharks were introduced in
 16 challenges and (to players’ delight) as methods of transportation. The current version of *Fortnite*
 17 (Version 14.00) launched a fully *Marvel*-themed season—the largest crossover event that *Fortnite*
 18 has ever seen, complete with the ability for players to unlock the likes of Iron Man, Thor, and
 19 Mystique as characters. These updated versions are critical for *Fortnite* to provide users with a
 20 dynamic, ever-evolving experience, and to maintain users’ enjoyment and engagement. Having a
 21 purely static environment without these updates would materially degrade the user experience.

22 **Epic Games Store and Epic Online Services**

23 10. For Windows and Mac personal computer users, Epic offers *Fortnite* and other
 24 applications for download through its online storefront Epic Games Store (“EGS”). Epic
 25 launched EGS in December 2018 as an online digital storefront for Epic’s own games as well as
 26 third-party games. Today, EGS has over 160 million registered users, over 200 third-party
 27 developers, and nearly 300 third-party games. EGS currently competes with other online
 28 distributors of personal computer games, such as Steam and GOG. EGS provides developers

1 with a variety of complementary services and charges developers a 12% fee on the sale of games
 2 and applications through EGS. Epic also charges a 12% fee for in-game purchases that are
 3 processed by Epic, but Epic does not require developers that distribute their games through EGS
 4 to use Epic's in-game purchasing system. Developers are free to process in-game purchases with
 5 their own payment processing system or to make use of third-party payment processors. Epic
 6 collects no fees from developers that (1) distribute their games for free through EGS and (2) do
 7 not use Epic's in-game payment processing. For example, *Magic: The Gathering Arena* is
 8 available to download for free on EGS and does not use Epic's payment processing services for
 9 in-game payments. While Epic therefore earns no direct revenues from hosting *Magic: The*
 10 *Gathering Arena* on EGS, Epic still benefits from including the game as part of its curated set of
 11 offerings through EGS by bringing more players to the store. Epic also benefits from creating
 12 relationships with new developers who use Epic's distribution avenues.

13 11. Epic also offers a suite of backend online gaming services to third-party game
 14 developers for free through Epic Online Services ("EOS"). EOS includes tools to track in-game
 15 analytics, provide real-time player stats and leaderboards, and allow players to see when their
 16 friends are online on any platform to help them stay connected. Although Epic does not collect
 17 any fees from developers that use EOS, Epic still benefits because EOS encourages wider
 18 adoption of all of Epic's offerings and makes cross-play and other open and interconnected online
 19 features more accessible to all users.

20 **Attempts To Negotiate with Apple**

21 12. The only way Apple allows iOS users to access Epic's games, or any other
 22 developers' games, is through the App Store. Apple's rules block alternate software storefronts
 23 from its official App Store and also prohibit web browsers on iOS from directly downloading
 24 consumer apps or app stores through the Internet. Apple has created rules and restrictions that
 25 prevent on iOS devices the open distribution of software that is currently available on personal
 26 computers, including Apple's own Mac computers. Under these rules, Epic is unable to offer
 27 EGS to iOS users at all.

28 13. In addition to restricting the open distribution of software on iOS devices, Apple

1 restricts the digital content purchase options for software on iOS devices. Users of Epic's games
 2 on iOS who wish to purchase digital content are required to use Apple's In-App Purchase
 3 ("IAP"), which imposes a 30% tax on such transactions. Moreover, Apple restricts Epic's control
 4 over the customer service relationship—Epic cannot directly refund players for App Store
 5 purchases and players are required to ask Apple for a refund.

6 14. On June 30, 2020, I wrote to Apple's senior leadership team asking for Apple to
 7 allow Epic to provide a competing app store and competing payment processing, and expressed
 8 the wish that Apple "also make these options equally available to all iOS developers in order to
 9 make software sales and distribution on the iOS platform as open and competitive as it is on
 10 personal computers". In that email, I explained that providing these options to iOS device users
 11 would allow consumers "an opportunity to pay less for digital products and developers would
 12 earn more from their sales". Attached hereto as **Exhibit A** is a true and correct copy of my June
 13 30, 2020 email.

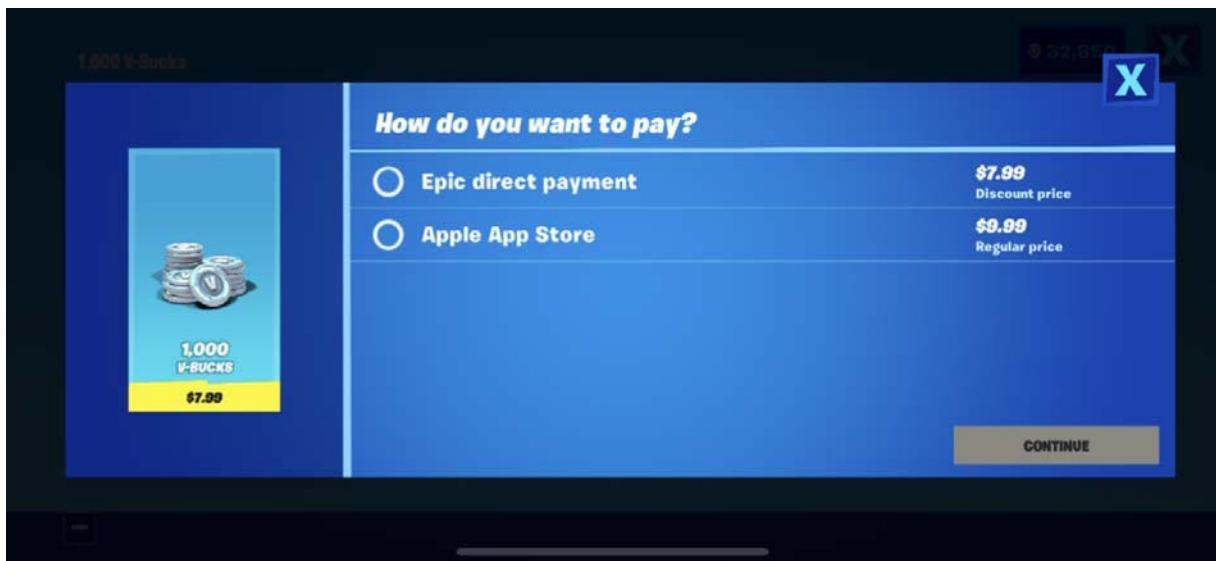
14 15. On July 10, 2020, Apple's legal team sent a response rejecting my requests.
 15 Attached hereto as **Exhibit B** is a true and correct copy of that response.

16 16. On July 17, 2020, I again wrote to Apple, expressing my continued disagreement
 17 with Apple's policies and practices and stating that "[i]f Apple someday chooses to return to its
 18 roots building open platforms in which consumers have freedom to install software from sources
 19 of their choosing, and developers can reach consumers and do business directly without
 20 intermediation, then Epic will once again be an ardent supporter of Apple". I received no further
 21 response from Apple. Attached hereto as **Exhibit C** is a true and correct copy of my July 17,
 22 2020 email.

23 17. Given Apple's refusal to change its policies, Epic took a stand against Apple to
 24 demonstrate the harms caused by Apple's restrictions. On the morning of August 13, 2020, I
 25 informed Apple that Epic would be launching Epic direct payment in *Fortnite* on iOS, and
 26 expressed Epic's hope that Apple would "reflect on its platform restrictions and begin to make
 27 historic changes that bring to the world's billion iOS consumers the rights and freedoms enjoyed
 28 on the world's leading open computing platforms including Windows and macOS". Attached

1 hereto as **Exhibit D** is a true and correct copy of my August 13, 2020 email.

2 18. Later on August 13, 2020, Epic announced a 20% price reduction for in-app
 3 purchases on all platforms, including but not limited to iOS. At the same time, as described in
 4 more detail in the Declaration of Andrew Grant, dated September 4, 2020 (the “Grant
 5 Declaration”), Epic introduced the option for *Fortnite* players on iOS to make in-app purchases
 6 using Epic’s payment system. iOS users looking to make purchases within *Fortnite* were given a
 7 choice, as shown in the below screenshot of the in-game payment menu:



19. Players could continue to make their purchases using Apple’s IAP, in which case
 20 they would pay the higher prices, or they could use Epic’s direct pay option and pay the new
 21 lower prices.

Apple’s Retaliation

22. 20. In retaliation for Epic making this lower-cost option available to users, on
 23 August 13, 2020, at approximately 11:19 a.m. Pacific time, Apple removed *Fortnite* from the App
 24 Store. Since that time, new users have been unable to download the app on iOS devices, and iOS
 25 users who have already downloaded prior versions of the app have not received subsequent
 26 updates to *Fortnite* (either automatically or by searching the App Store for the update). From
 27 August 13 to August 27, 2020 (essentially the period during which users could choose between
 28 Epic’s direct pay option and Apple’s IAP), 53.4% of iOS *Fortnite* players who made an in-app
 purchase chose to use Epic’s direct payment, while 46.6% continued to use only Apple’s IAP.

1 21. Apple’s actions have “broken” *Fortnite* for millions of existing players. Epic
 2 typically releases updates to *Fortnite* multiple times every month, but with *Fortnite* out of the
 3 App Store, existing iOS users are unable to update the game. As detailed in the Grant
 4 Declaration, Apple rejected Epic’s submission of the *Fortnite* build for the new season on
 5 August 26, 2020. On August 28, 2020, Apple terminated the Epic account in Apple’s Developer
 6 Program through which *Fortnite* was submitted to the App Store, meaning that *Fortnite* and
 7 Epic’s other apps registered under the terminated account are no longer available on iOS for
 8 downloading by new users, for downloading by existing players who had deleted the app from
 9 their device, or for updating. Apple’s termination notice stated that Apple would deny Epic’s
 10 “reapplication to the Apple Developer Program for at least a year”, which will prevent Epic from
 11 continuing to develop *Fortnite* and its other apps registered under the terminated account for iOS
 12 during that time. (Grant Decl., Ex. H.)

13 22. As a result, all existing iOS users of *Fortnite* are now stuck playing an outdated
 14 version of the game. Because iOS users can no longer update the game, they cannot update to the
 15 new season, which was released on August 27, 2020. Daily active *Fortnite* users on iOS have
 16 declined by over 60% since Apple removed *Fortnite* from the App Store. Not only that, but the
 17 average hours per week spent by iOS users in *Fortnite* have also declined significantly. Due to
 18 Apple’s actions, Epic is unable to ensure continued support for *Fortnite* on macOS, and thus
 19 macOS users likewise have lost the ability to download the latest *Battle Royale* season. iOS and
 20 macOS users are now unable to play *Fortnite* with other players who have the current version and
 21 new season available on other platforms. The millions of people who play *Fortnite* on iOS and
 22 macOS devices every day are unable to play with their friends and family who use other
 23 platforms—and the millions of others who play on other platforms are deprived of the ability to
 24 interact through *Fortnite* with players on iOS and macOS devices. Likewise, they will not be
 25 able to attend future concerts, movie nights, or other social events in *Fortnite* that Epic has
 26 planned. And existing iOS users who previously deleted the app are unable to play at all.

27 23. Much of the joy in *Fortnite* comes from interacting with other people in the virtual
 28 world. *Fortnite* connects players from around the globe in a social experience that, for many,

1 could not be replicated outside of the app, where distance and other difficulties keep people apart.
 2 *Fortnite* is a forum for friends and family to connect and play, to build and create together, and to
 3 share cultural experiences. Apple's actions have closed this social gathering space used by many
 4 people. The angry outcry in response to Apple's actions is causing serious harm to Epic's
 5 reputation and goodwill among its users. In the entertainment software industry, delayed releases
 6 or mishandled launches of games often lead to criticism of the developer and/or publisher of the
 7 software. What Apple has done here is much worse. Millions of people who were playing
 8 *Fortnite* on iOS and macOS devices are now suddenly unable to continue enjoying the game the
 9 way they had been. Apple's retaliation against Epic for giving players a choice of how they want
 10 to pay, and the option to pay less, is causing a massive disruption to Epic's player base that will
 11 only get worse as time goes on.

12 24. Moreover, Apple's retaliation and the resulting loss of millions of iOS and macOS
 13 users threatens to stunt *Fortnite*'s continued evolution from a social videogame into a more
 14 immersive and varied social space. One of the factors that makes *Fortnite* so special is its
 15 groundbreaking ability to provide a forum for a wide variety of virtual social experiences such as
 16 concerts, movie nights, and social and political discussions all in a single, freely accessible world.
 17 In the future, Epic plans to offer many more events and new features in *Fortnite*, with the ultimate
 18 goal of creating the *Fortnite Metaverse*, a robust real-time, three-dimensional social medium
 19 complete with its own economy, where people will be able to create and engage in any number of
 20 shared experiences. As more and more people use their mobile devices as a primary tool for
 21 connecting and socializing with other people, however, the vitality of *Fortnite* as a social space
 22 will increasingly depend on access for mobile users.

23 25. In the short time since Apple's retaliatory action, Epic has received numerous
 24 complaints through its user support ticket system regarding Apple's removal of *Fortnite* from the
 25 App Store. Attached hereto as **Exhibit E** is a true and correct copy of a set of user support tickets
 26 directed to Epic's customer support team regarding Apple's removal of *Fortnite* from the App
 27 Store (the names and usernames of the users submitting these support tickets have been redacted
 28 to protect customer privacy).

1 26. In addition, I have personally received numerous complaints regarding Apple’s
 2 removal of *Fortnite* from the App Store. Attached hereto as **Exhibit F** is a true and correct copy
 3 of a set of customer emails sent to me regarding Apple’s removal of *Fortnite* from the App Store
 4 (the names and email addresses of the users submitting these complaints have been redacted to
 5 protect customer privacy).

6 27. There is a significant risk that frustrated iOS users driven away from *Fortnite* due
 7 to Apple’s actions will never return to the app. There are a number of competing free-to-play
 8 battle royale games such as *PlayerUnknown’s Battlegrounds* (“PUBG”) and Activision’s *Call of
 9 Duty: Warzone* that remain available on the App Store, and which iOS users may turn to instead.

10 **Unreal Engine**

11 28. In addition to terminating Epic’s developer account for at least a year and
 12 removing *Fortnite* and Epic’s other apps registered under that account from the App Store, Apple
 13 is also retaliating against a separate part of Epic’s business—*Unreal Engine*.

14 29. First created in 1998, *Unreal Engine* is a software suite available to third-party
 15 developers to create three-dimensional and immersive digital content for use in games and other
 16 applications. *Unreal Engine* users also enjoy free access to products and services developed by
 17 Epic affiliates, including Quixel Megascans, an online scan library of photorealistic three-
 18 dimensional content, and Twinmotion architectural visualization tools. Epic also offers the
 19 *Unreal Engine Marketplace*, an e-commerce platform through which developers can create and
 20 sell art, animation, textures, and other assets to use with *Unreal Engine* projects.

21 30. Millions of developers use *Unreal Engine*. Popular videogames that rely on
 22 *Unreal Engine* include *Fortnite*, PUBG, Minecraft Dungeons, Rocket League, Batman: Arkham
 23 Series, Star Wars Jedi: Fallen Order, Mortal Kombat, Street Fighter V, Final Fantasy VII
 24 Remake, Tony Hawk 1-2 Remastered, Bioshock, Borderlands, Infinity Blade, Mass Effect, Tom
 25 Clancy’s Rainbow Six, Unreal Tournament, and Gears of War 4, among others. These games are
 26 played by hundreds of millions of people around the world. PUBG alone has hundreds of
 27 millions of users on Android and iOS mobile devices.

28 31. *Unreal Engine* is also used far beyond the realm of videogames. Developers use it

1 to make digital content for a wide range of commercial uses, including architecture projects, film
 2 & television production, medical training, and more. *Unreal Engine* received its first Emmy in
 3 2018 for its contribution to televised broadcasts such as the 2018 Winter Olympics, Super Bowl
 4 LII, and numerous e-sports tournaments. Since 2016, *Unreal Engine* has been used in more than
 5 100 film and television productions. For example, *The Mandalorian*—Disney’s television series
 6 in the *Star Wars* franchise—was filmed on a stage set within a huge oval LED display. The
 7 exteriors and interiors—virtually every background and set—were created in *Unreal Engine* and
 8 displayed in real time behind the actors. Similarly, the popular HBO series *Westworld* turned to
 9 *Unreal Engine* to develop many of its visual effects. Car makers, including Audi and Ford, have
 10 used *Unreal Engine* for a variety of uses including automotive design and engineering, as well as
 11 developing digital showrooms in which customers can configure their vehicles with high-fidelity
 12 visuals. In aerospace, NASA and Boeing use *Unreal Engine* to train astronauts using virtual
 13 reality, and Gulfstream visualizes its jets for its employees and clients. *Unreal Engine* has even
 14 helped brain surgeons train for and perform some of the most intricate and challenging aspects of
 15 brain surgeries by allowing for detailed real-time digital anatomy simulations.

16 32. Open access to *Unreal Engine* is a core part of Epic’s business philosophy.
 17 *Unreal Engine* is free to use for non-commercial purposes, and anyone can download *Unreal*
 18 *Engine* and learn to create their own projects. For developers who use *Unreal Engine* to develop
 19 and sell their games or other projects commercially, Epic typically collects a 5% royalty on
 20 revenue generated after the developer reaches \$1 million in gross sales. Developers then submit a
 21 royalty report and pay any royalties due to Epic on a quarterly basis. Alternatively, customers
 22 can negotiate custom or royalty-free licenses with Epic.

23 33. *Unreal Engine* is uniquely valuable to developers given the breadth of its cross-
 24 platform capabilities. Historically, *Unreal Engine 3* (the previous iteration of the engine, which
 25 was released in 2004) supported software developed to run on Windows personal computers,
 26 PlayStation 3, and Xbox 360. In 2010, Epic expanded *Unreal Engine*’s capabilities to support the
 27 iOS and Android platforms as well, allowing developers to offer their *Unreal*-powered
 28 applications on players’ smartphone and tablet devices. Since then, Epic has continued to

1 develop and expand *Unreal Engine*'s platform offerings, releasing regular updates to *Unreal*
 2 *Engine* to add new features and enhanced developer tools. The current iteration of the engine,
 3 *Unreal Engine 4*, was initially launched in 2014 and has since gone through 25 update releases.
 4 Today, developers can use *Unreal Engine* to develop games and other software for Windows
 5 personal computers, PlayStation 4, PlayStation 5, Xbox One, Xbox Series X, Nintendo Switch,
 6 Google Stadia, Mac personal computers, iOS mobile devices, and Android OS mobile devices.

7 34. In 2014, Guinness World Records named *Unreal Engine* the most successful
 8 videogame engine in history.

9 **Apple's Further Retaliation**

10 35. As described in more detail in the Grant Declaration, at 12:04 a.m. Pacific time on
 11 August 14, 2020, Apple notified Epic that its “membership in the Apple Developer Program is
 12 suspended” and that its “Apple Developer Program Account will be terminated” within 14 days
 13 unless Epic takes certain steps that Apple requires. Among other things, Apple stated that
 14 *Fortnite* violated the Apple Developer Program License Agreement “by allowing end users to
 15 purchase digital items within the app without using the In-App Purchase API. This payment
 16 model is not authorized under the App Store Review Guidelines, and must be removed from your
 17 app in order to cure this breach.” (Grant Decl., Ex. C.)

18 36. In the August 14 notice to Epic, Apple further stated that “[i]f your membership is
 19 terminated, you may no longer submit apps to the App Store, and your apps still available for
 20 distribution will be removed”.

21 37. But Apple’s August 14 notice was not even limited to Epic’s iOS apps. It said that
 22 upon termination from the Apple Developer Program, Epic “will also lose access to the following
 23 programs, technologies, and capabilities” and gave an extensive list. That list mentioned not just
 24 tools and capabilities related to apps for the App Store but also expressly included matters related
 25 to the *Unreal Engine*, including “engineering efforts to improve hardware and software
 26 performance of Unreal Engine on Mac and iOS hardware”.

27 38. As of now, Apple has not terminated Epic’s affiliates’ Developer Program
 28 accounts. However, if Apple is permitted to terminate Epic’s affiliates’ Developer Program

1 accounts, the consequences will be devastating. According to Apple's August 14 notice, upon
 2 termination, Epic would lose access to the widely available SDKs, application programming
 3 interfaces ("APIs"), and other developer tools necessary to develop software for use on iOS and
 4 macOS. As described in more detail in the Declaration of Nicholas Penwarden, dated September
 5 4, 2020, without access to these SDKs, APIs, and other tools, Epic would be unable to develop
 6 future updates to the *Unreal Engine* for use on iOS and macOS, and would thus be forced to
 7 discontinue *Unreal Engine* for iOS and macOS.

8 39. This would be an existential threat to the *Unreal Engine*. Many game developers
 9 rely on engines like the *Unreal Engine* to develop commercially successful games that will run
 10 across a wide range of gaming platforms, and over many generations and new versions of the
 11 game. Therefore, one key factor that developers consider when choosing an engine is the range
 12 of platforms the engine is compatible with, and the likelihood that the underlying engine they
 13 select will continue to support the major gaming platforms such as Windows and Mac computers,
 14 Xbox and PlayStation gaming consoles, and iOS and Android devices. An engine that cannot
 15 support Apple's platforms will not be a viable option for any developer that wants its software to
 16 be made available to the hundreds of millions of active iOS and macOS users, or even for those
 17 developers that want to reserve the possibility of expanding to iOS or macOS in the future.

18 40. Epic's business will be harmed as soon as it loses access to Apple's software tools
 19 and SDKs. Developers invest considerable time and resources learning to use and to develop
 20 games based on *Unreal Engine*, often with the expectation that those games will be supported on
 21 Apple's platforms. This is particularly true because the mobile gaming category is substantially
 22 larger than computing or console gaming, and mobile remains a high-growth area in the gaming
 23 industry. If Epic can no longer develop future updates for the *Unreal Engine* that support iOS
 24 and macOS, developers will not choose to use *Unreal Engine* to develop any games or other
 25 products for use on Apple devices. The loss of *Unreal Engine*'s ability to support these important
 26 platforms will therefore cause irreparable harm to Epic's product offering, as many developers
 27 will select a competing engine for their new projects, or for the next versions of their games. In
 28 addition, the third-party developers who rely on Epic's engine and support are in jeopardy of

losing the long-term support of Epic and its *Unreal Engine* tools for use in connection with Apple devices.

41. Apple's retaliatory actions to block Epic's ability to continue to develop and support its *Unreal Engine* for iOS and macOS would thus not only harm developers who already use *Unreal Engine*, but it would also cripple the engine's desirability and future commercial viability across all platforms.

42. If Apple terminates Epic's affiliates' Developer Program accounts, Epic will also lose the ability to distribute its *Houseparty* app to iOS users, which would have catastrophic effects on Epic's ability to maintain the user base of this social networking service, which it acquired last year, and further integrate *Houseparty* into Epic's other apps.

43. Apple’s August 14 notice, as well as Apple’s subsequent rejection notices concerning new builds of *Fortnite* submitted to Apple for review since then, suggested that Apple would not terminate Epic’s Developer Program account only if Epic affirmatively submitted a revised version of *Fortnite* that complied with all of Apple’s restrictions. That was not and is not an acceptable path for Epic. In Epic’s view, too many companies have been forced to accept these restrictions for too long. The restrictions harm consumers, app developers and potential competitors to Apple, and it is time for them to end.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct and that I executed this declaration on September 4, 2020, in Cary, North Carolina.

/s/ *Timothy Sweeney* (Sep 4, 2020 20:47 EDT)
Timothy Sweeney

Exhibit A



Tim Sweeney <tim.sweeney@epicgames.com>

Consumer Choice & Competition

1 message

Tim Sweeney <tim.sweeney@epicgames.com>

To: Tim Cook [REDACTED], Phil Schiller [REDACTED], Craig Federighi [REDACTED], Matt Fischer [REDACTED]

Tue, Jun 30, 2020 at 7:00 PM

Dear Tim, Phil, Craig, Matt,

Because of restrictions imposed by Apple, Epic is unable to provide consumers with certain features in our iOS apps. We would like to offer consumers the following features:

1) Competing payment processing options other than Apple payments, without Apple's fees, in Fortnite and other Epic Games software distributed through the iOS App Store;

2) A competing Epic Games Store app available through the iOS App Store and through direct installation that has equal access to underlying operating system features for software installation and update as the iOS App Store itself has, including the ability to install and update software as seamlessly as the iOS App Store experience.

If Epic were allowed to provide these options to iOS device users, consumers would have an opportunity to pay less for digital products and developers would earn more from their sales. Epic is requesting that Apple agree in principle to permit Epic to roll out these options for the benefit of all iOS customers. We hope that Apple will also make these options equally available to all iOS developers in order to make software sales and distribution on the iOS platform as open and competitive as it is on personal computers.

As you know, Epic was required to accept your standard, non-negotiable contracts, like the Apple Developer Program License Agreement, in order to offer products on iOS devices through the iOS App Store. Epic is also required to comply with Apple's unilateral standards documents to obtain app approval, like Apple's App Store Review Guidelines. Apple's contracts and standards documents contain restrictive provisions that prohibit Epic from offering a competing app store and competing payment processing options to consumers. Apple would need to provide a side letter or alter its contracts and standards documents to remove such restrictions to allow Epic to provide a competing app store and competing payment processing option to iOS customers.

Please confirm within two weeks if Apple agrees in principle to allow Epic to provide a competing app store and competing payment processing, in which case we will meet with your team to work out the details including Epic's firm commitment to utilize any such features diligently to protect device security, customer privacy, and a high-quality user experience. If we do not receive your confirmation, we will understand that Apple is not willing to make the changes necessary to allow us to provide Android customers with the option of choosing their app store and payment processing system.

Best Regards,

Tim Sweeney
Founder & CEO
Epic Games

Exhibit B



July 10, 2020

Via Email: **REDACTED**

Canon Pence
General Counsel
Epic Games, Inc.
620 Crossroads Blvd
Cary, NC 27518

Dear Mr. Pence:

I am counsel in the Apple Legal Department and I am writing in response to Mr. Sweeney's email to Tim Cook, Phil Schiller, Craig Federighi, and Matt Fischer on June 30, 2020. The email was disappointing and requires a formal response.

The App Store is not simply a marketplace -- it is part of a larger bundle of tools, technologies and services that Apple makes available to developers to develop and create great applications for iPhone, iPad and other Apple products. We know Epic knows this. Epic has been a major beneficiary of this investment and support. Epic has made great use of Apple-provided tools, such as TestFlight, VOIP, Stickers, iCloud document storage, ARKit, Messages Extension, ReplayKit, and Push Notifications. To highlight one example, for years now, Epic has used Apple's groundbreaking graphics technology, Metal. When Apple launched Metal for Mac at WWDC in 2015, Mr. Sweeney's colleague Billy Bramer stood on stage and explained how Metal "revolutionized graphic design" and "enable[d] developers like us to create richer 3D worlds." *Apple – WWDC 2015*, Youtube (June 15, 2015), https://www.youtube.com/watch?v=_p8AsQhaVKI. Epic, like countless developers, continues to use Metal to make its games sharper, faster, and more responsive. Apple doesn't charge separately for the use of Metal or any of the other tools that Epic has used to develop great games on iOS.

Not only has Apple supplied tools and technologies for Epic to build its apps, but it also provided a marketplace—the App Store—to help make them a success. Because of the App Store, Epic has been able to get Fortnite and other apps into



the hands of millions instantly and at no cost, as Apple charges nothing upfront to distribute apps that are free to download. This exposure has earned Epic hundreds of millions of dollars from sales of in-app content, and brought with it lucrative brand partnerships and paid product placement. *See Fortnite Emerges as a Social Media Platform for Gen Z, AdAge* (June 10, 2019), <https://adage.com/article/digital/fortnite-emerges-social-media-platform-gen-z/2176301>. Of course, Epic could not have achieved this success without great apps, but it nonetheless underscores the value Apple brings to developers like Epic.

Still, Epic has many ways to reach consumers, including through Android stores, PC-based platforms, consoles (Xbox, Nintendo, Play Station) and its very own app marketplace. Public reports indicate that Fortnite alone “generated \$1.8 billion in revenue in 2019,” *Fortnite Creator Epic Games Raising \$750M at \$17B Valuation: Report*, The Street (June 15, 2020), <https://www.thestreet.com/investing/fortnite-creator-epic-games-raising-750m-at-17b-valuation>, or over seven times the \$245 million yielded by App Store receipts for all Epic apps. Epic made its own decision to utilize the App Store as another one of its channels and can hardly be surprised that this entails acceptance of a license agreement and related policies since Epic’s own developers must do the same. *See Epic Online Services Developer Agreement* <https://dev.epicgames.com/en-US/services/terms/agreements> (“If you do not or cannot agree to the terms of this Agreement, do not download or use the SDK or access any Services.”).

Apple has hundreds of thousands of developers distributing apps on the App Store, and Apple is proud that it offers them all, from the student in her living room to some of the largest companies in the world, the same terms and opportunities.

That brings us to the demands in Mr. Sweeney’s email. Epic requests the right to offer a “competing Epic Games Store app” through the App Store that would seemingly allow iOS device users to install apps from Epic directly. And Epic wants to offer “competing payment processing options” in Fortnite and other Epic apps instead of using Apple’s in-app purchase (IAP) system. As you know, Apple has never allowed this. Not when we launched the App Store in 2008. Not now. We understand this might be in Epic’s financial interests, but Apple



strongly believes these rules are vital to the health of the Apple platform and carry enormous benefits for both consumers and developers. The guiding principle of the App Store is to provide a safe, secure and reliable experience for users and a great opportunity for all developers to be successful but, to be clear, when it comes to striking the balance, Apple errs on the side of the consumer.

Epic Store Within The App Store. As for the first request, Apple designed the App Store to be a secure and trusted place for consumers to discover and download software. Central to this is Apple's requirement that every iOS app undergo rigorous, human-assisted review. Apple invests significant resources to ensure that apps meet high standards for privacy, security, content, and quality; we have reviewers located on three continents, representing 81 languages, and reviewing on average 100,000 submissions per week.

That investment has paid off not just for Apple, but also for app developers large and small, including Epic. Because of Apple's rules and efforts, iOS and the App Store are widely recognized as providing the most secure consumer technology on the planet. And as a result, consumers can download and pay for an app and in-app content without worrying that it might break their device, steal their information, or rip them off. This level of security benefits developers by providing them with an active and engaged marketplace for their apps.

One way Apple helps maintain the confidence of its users is by not approving apps that create “an interface for displaying third-party apps, extensions, or plug-ins similar to the App Store or as a general-interest collection.” App Store Review Guideline § 3.2.2. Absent this guideline, Apple would have no reliable way of delivering on its commitment to consumers that *every* app available via the App Store meets Apple's exacting standards for security, privacy, and content. Consumers rightly rely on that commitment in buying Apple devices and in purchasing from the App Store. They will quite properly hold Apple to account for any shortfall in performance. The health of Apple's ecosystem and the strength of its reputation as a maker of high-quality hardware accordingly depend upon rules like Guideline § 3.2.2.

Although Mr. Sweeney represented that, if Epic offered its own iOS app store, Epic would “protect device security, consumer privacy, and a high-quality user



experience,” we cannot be confident that Epic or any developer would uphold the same rigorous standards of privacy, security, and content as Apple. Indeed, since Apple treats all developers according to the same terms, Epic is essentially asking Apple to outsource the safety and security of Apple’s users to hundreds of thousands of iOS developers. Even if such a model were feasible (and it is not), we are simply unwilling to risk our users’ trust in such a way. Incorporating third party app stores into iOS would undermine Apple’s carefully constructed privacy and security safeguards, and seriously degrade the consumer experience and put Apple’s reputation and business at risk.

Circumventing IAP. Epic also requests to offer payment processing options within Epic’s apps other than via IAP. IAP is the App Store’s centralized payment system. It lets users purchase digital goods and services within apps without the inconvenience and security risks of registering their payment information with each developer. As you note, Apple’s App Review Guidelines require that apps use IAP to unlock additional features and functionalities. *See App Store Review Guideline § 3.1.1.*

Again, this rule is central to the App Store’s business model and successes. IAP supports the seamless consumer experience and is the means by which Apple gets paid for the valuable services and consumer base that it provides. To take advantage of Apple’s App Store, the bargain is simple: if you charge for software purchased through the App Store, Apple takes a percentage of the charge as commission. This business model has remained unchanged since the App Store launched.

Mr. Sweeney does not take issue with that model in his email—perhaps because Epic takes full advantage of it. Apple takes no cut from Epic’s in-app advertising, nor from sales of items, like skins and currency, that iOS app users obtain outside of the App Store. And, as already discussed, Apple charges nothing for enabling millions of iOS users to play Fortnite for free. Without IAP, however, Apple would have no practical or reliable way of collecting its commission on in-app digital sales. Indeed, the IAP requirement applies equally for the very same reason to the Mac App Store, which you regard as “open and competitive.”



* * *

Mr. Sweeney recently stated that “[i]t’s up to the creator of a thing to decide whether and how to sell their creation.” Tim Sweeney (@TimSweeneyEpic), Twitter (June 16, 2020, 11:53 PM), <https://twitter.com/TimSweeneyEpic/status/1273101468875329537>. We agree. It seems, however, that Epic wishes to make an exception for Apple and dictate the way that Apple designs *its* products, uses *its* property and serves *its* customers. Indeed, it appears that Mr. Sweeney wants to transform Apple’s iOS devices and ecosystem into “an open platform… like the first Apple computers, where users had the freedom to write or install any software they wished.” <https://twitter.com/TimSweeneyEpic/status/1273090414476738567>.

In the first place, this ignores the fundamental reality that the iPhone operates in an entirely different environment than a laptop or desktop computer and meets wholly different user expectations. As Steve Jobs explained in 2007, “[y]ou don’t want your phone to be like a PC. The last thing you want is to have loaded three apps on your phone and then you go to make a call and it doesn’t work anymore. These are more like iPods than they are like computers.” Steve Jobs Walks the Tightrope Again, N.Y. Times (Jan. 12, 2007), <https://www.nytimes.com/2007/01/12/technology/12apple.html>.

The App Store is not a public utility. Epic appears to want a rent-free store within the trusted App Store that Apple has built. Epic wants “equal access” to Apple’s operating system and “seamless” interaction between your store and iOS, without recognizing that the seamlessness of the Apple experience is built on Apple’s ingenuity, innovation, and investment. Epic wants access to all of the Apple-provided tools like Metal, ARKit and other technologies and features. But you don’t want to pay. In fact you want to take those technologies and then charge others for access. Apple has invested billions of dollars to develop technologies and features that developers like Epic can use to make great apps as well as a safe and secure place for users to download these apps. Apple designs its products and services to make developers successful through the use of custom chips, cameras, operating system features, APIs, libraries, compilers, development tools, testing, interface libraries, simulators, security features, developer services, cloud



services, and payment systems. These innovations are properly protected by intellectual property laws and Epic has no right to use them without a license from Apple. As a signatory to the Apple Developer Agreement and the Apple Developer Program License Agreement, Epic has acknowledged these IP rights (just as Epic's developers do the same with respect to Epic's intellectual property). *See Apple Developer Program License Agreement § 2.5.*

Surely Epic must understand that Apple is entitled to a return on its investment and the use of its property. After all, Epic takes great pains to protect *its own* investments and intellectual property. Epic rightly demands royalties from games built using its development software. *See Unreal Engine End User Agreement § 5,* <https://www.unrealengine.com/en-US/eula/publishing>. And it tightly controls how its games, designs, and content may be used, because, in its own words: "we spend a lot of time, thought, and money creating our intellectual property and need to protect it." *Fan Content Policy*, <https://www.epicgames.com/site/en-US/fan-art-policy>. Plus, Mr. Sweeney recently suggested that it's reasonable for other industry players, such as console manufacturers, to charge for distributing software. Tim Sweeney (@TimSweeneyEpic), Twitter (June 17, 2020, 11:29 AM), <https://twitter.com/TimSweeneyEpic/status/1273276548569841667>. And Epic's major investor, China's Tencent, also charges developers to take advantage of its platform. *See Tencent opens up WeChat Mini-Games Platform to External Devs*, Pocket Gamer (Apr. 11, 2018), <https://www.pocketgamer.biz/asia/news/67901/tencent-opens-up-wechat-mini-games-platform-to-external-devs/>.

Yet somehow, you believe Apple has no right to do the same, and want all the benefits Apple and the App Store provide without having to pay a penny. Apple cannot bow to that unreasonable demand. We must therefore respectfully decline to make the changes you request.

Sincerely,

A handwritten signature in black ink, appearing to read "D G Vetter".

Douglas G. Vetter
Vice President & Associate General Counsel

Exhibit C



Tim Sweeney <tim.sweeney@epicgames.com>

Response to June 30 Email

Tim Sweeney <tim.sweeney@epicgames.com>

Fri, Jul 17, 2020 at 4:49 PM

To: Tim Cook [REDACTED], Phil Schiller [REDACTED], Craig Federighi [REDACTED], Matt Fischer [REDACTED]
[REDACTED], Douglas Vetter [REDACTED]

Cc: Canon Pence [REDACTED]

Hi Tim, Phil, Craig, Matt, Douglas,

It's a sad state of affairs that Apple's senior executives would hand Epic's sincere request off to Apple's legal team to respond with such a self-righteous and self-serving screed -- only lawyers could pretend that Apple is protecting consumers by denying choice in payments and stores to owners of iOS devices. However, I do thank you for the prompt response and clear answer to my two specific requests.

If Apple someday chooses to return to its roots building open platforms in which consumers have freedom to install software from sources of their choosing, and developers can reach consumers and do business directly without intermediation, then Epic will once again be an ardent supporter of Apple. Until then, Epic is in a state of substantial disagreement with Apple's policy and practices, and we will continue to pursue this, as we have done in the past to address other injustices in our industry.

Tim Sweeney

[Quoted text hidden]

Exhibit D



Gena Feist <gena.feist@epicgames.com>

Fortnite payments

1 message

Tim Sweeney <tim.sweeney@epicgames.com>

To: Tim Cook [REDACTED], Phil Schiller [REDACTED], Craig Federighi [REDACTED], Matt Fischer [REDACTED], Douglas [REDACTED]

Bcc: gena.feist@[REDACTED]

Thu, Aug 13, 2020 at 5:08 AM

Dear Tim, Phil, Craig, Matt, Douglas,

I'm writing to tell you that Epic will no longer adhere to Apple's payment processing restrictions.

Today, Epic is launching Epic direct payments in Fortnite on iOS, offering customers the choice of paying in-app through Epic direct payments or through Apple payments, and passing on the savings of Epic direct payments to customers in the form of lower prices.

We choose to follow this path in the firm belief that history and law are on our side. Smartphones are essential computing devices that people use to live their lives and conduct their business. Apple's position that its manufacture of a device gives it free rein to control, restrict, and tax commerce by consumers and creative expression by developers is repugnant to the principles of a free society.

Ending these restrictions will benefit consumers in the form of lower prices, increased product selection, and business model innovation.

Henceforth, all versions of Fortnite that Epic submits to the App Store will contain these two payment options, side by side, for customers to choose among.

We hope that Apple will reflect on its platform restrictions and begin to make historic changes that bring to the world's billion iOS consumers the rights and freedoms enjoyed on the world's leading open computing platforms including Windows and macOS. In support of this path, Epic's public explanation of our payment service will be neutral and factual to provide Apple with a chance to consider taking a supportive route and communicating it in a way of Apple's choosing.

If Apple chooses instead to take punitive action by blocking consumer access to Fortnite or forthcoming updates, then Epic will, regrettably, be in conflict with Apple on a multitude of fronts - creative, technical, business, and legal - for so long as it takes to bring about change, if necessary for many years.

Tim Sweeney
Epic Games

Exhibit E

How will we be able to update on iPhones?
Did you guys just screw over all your mobile players?

 REDACTED

✓ 2h ago

If Fortnite doesn't return to Apple store I want a refund on all my items

 REDACTED

✓ 2h ago

I'm mad right now because of the banning of iOS will my account be refunded if this does not happen I will be mad please refund my account back onto my credit card message me back

 REDACTED

✓ 2h ago

I saw that the game got banned!!Can you review my account and i would like a refund for my whole account please

 REDACTED

✓ 37m ago

If you are not going to allow updates on iOS I fully expect all my money back from everything I have purchased. Please let me know when and how to receive this refund. I paid you a lot money for a game you have cancelled on me.

 REDACTED

✓ 1h ago

I need to know what's going on with the game, I had recently invested a lot of money in this game for my children, I had even made a purchase today, I am currently on hold with apple. Please respond, I have nothing of apple products I'm not understanding.

 REDACTED

✓ 16m ago

Ok so sense u guys PERM Removed Fornight from Apple / Andriod severs onces a update happens they wont be able to play anymore??? so are you going to refund all of the money us parents have spent?? IVE SPENT ALOT of money on this game for my Daughter and im BEYOND Mad right now like you just Destoryed a Little girls heart now she was very passionate about this game and Loved playing it! now u have ripped that away from her for good like wtf? so will u be full refunding ppl who where Android / Apple players now? or Not? or is their a Way kids can download the update and keep playing on their tablet and phones



REDACTED

✓ 5m ago

My son and I both play Fortnite on an IPad. How the hell are we supposed play now that the App Store removed it. That will mean it won't be able to update now. And don't give me a ridiculous comment about what other platforms I can play since I'm not rich and can't simply go buy another platform. This is ridiculous on both sides. Billionaires screwing us over yet again



REDACTED

✓ 2h ago

Please tell me i will be able to play in season 4 on iOS please tell me I'm about to cry

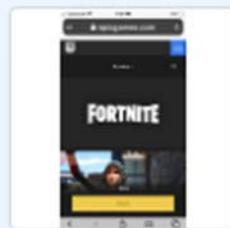


REDACTED

✓ 3h ago

I can't download Fortnite. My phone is compatible but it won't show it in my AppStore and when I go to your website to download it it says it's downloaded all though it is no where in my home menu. Please help me fix this as I want to play again!

Attachments



REDACTED

✓ 41m ago

Apple banned Fortnite so I can't get anything and I want to know if I can redeem anything or something like that because I feel scammed by having spent so much money on your game and then I can't end up using it on anything



REDACTED

✓ 1h ago

Why are you removing fortnite from iOS and android I am displeased by this am requesting to have it put it back on ios and android



REDACTED

✓ 36m ago

Dear Epic Games, is that true what I saw so you can no longer play on mobile phone something happened please say I can still play I would really like to play FORTNITE but I read that you can no longer play on apple please say that that is not true.



REDACTED

✓ 41m ago

Since they removed Fortnite from the Apple store how are we going to receive updates? Is there a way to do it from the epic games website? Can that be done because it's not fair for the Apple users, Including myself as an apple user.....



REDACTED

✓ 1h ago

hello, i wanted to ask, since the app store deleted fortnite, but i still have it downloaded, what am i suppose to do? it wont let me in any games because it tells me that the servers are offline. does this mean i cant play anymore?



REDACTED

✓ 1h ago

So now what are you going to do? You guys are saying that next season will begin as planned. How are the mobile players supposed to download and update the app now?



REDACTED

✓ 2h ago

Hey my name is [REDACTED] and I live in the u.s. and I spent a lot of money on my account on fortnite that I plan my iPad with I'm just answering my accounts going to get banned before I get a chance to spend my v-bucks on the account if you get a chance please contact me back at the email address sent to you hey be nice to hear from someone soon cuz I'm really concerned and scared for my account thank you for your time



REDACTED

✓ 1h ago

Because of what's happening with apple blocking Fortnite on ios, i am requesting a refund for vbucks. I would like the vbucks i bought today (2020-08-13) and everything i have bought thus far on my account.



REDACTED

✓ 1h ago

Why are you guys deleting fortnite from Apple? This is the only way I can play fortnite. I have no other option. :(Also, when is this all going down?



REDACTED

✓ 2h ago

I'm super worried about this legal action stuff against apple and Fortnite mobile is literally the only thing I have. I can't afford a PS4 or Xbox and that's why I got very good on Fortnite mobile so maybe one day I could play and win money but if I can't update the game then idk what's going to happen

Sent from my iPhone



REDACTED

✓ 5h ago

Hi, I just got to know today that fortnite is not in the App Store anymore and there's a serious issue between Apple and Epic Games. I really like fortnite and I wanted to ask if it'll be back on ipad at least within a months time. I know that from the 27th which is the new season I won't be able to update my game so that's sad. Hope I get an answer 😊



REDACTED

✓ 11m ago

BG

I'm reaching out because I solely play fortnite on ios devices and now, with the recent issues between apple and epic and the game being taken off the app store, i am no longer able to enjoy the game to the fullest extent. I've easily put over \$1,000 into this game over the last few years and i don't think it's fair at all for those of us who've invested time and money into this game to just be "sh^{RED}out of luck" because of a disagreement between epic and apple. i would like to get a refund for all the money i've put into this game considering i'm no longer able to play with friends on cross platforms, play the new season, or even earn XP/complete challenges which are some of the major "selling points" for this game.

27 August 1:57 PM

NG**To**

27 August 10:17 PM

...

If I cannot transfer the balance somehow. I would like to request a refund from epic. The vbucks I purchased from epic are pretty much useless. If it truly transferred to PC I have no use for it. If it's stuck in iOS it is useless. Thank you for you help. I apologize for my previous e-mail. Just really frustrated with this all.

REDACTED

KS

I am extremely upset about IOS not being updated to the latest season on Fortnite not only did we not get the latest update it now means my daughters and I can no longer play with my husband and son. Also to take away the challenges means we can not level up. Through no fault of our own I feel we are being punished. It makes it worse when you have other members of the family playing on a different platform so you can see what you exactly what you are missing. Surely this is makes no business sense as all IOS users will not be purchasing the latest battle pass. It also is very hard to explain to kids why one has updated and not the other after all the hype!!! Please can you tell me when we will get the update.

27 August 2:20 PM

CG Hi, I really enjoy playing fortnite with my friends but i am unable to get myself a tv and playstation to play with them. So I have been using an apple device. I was really looking forward to playing this new season and am greatly disappointed that I will not get to see it due to the update for ios not being available. I play with my little sister as well who is 12 and she will be very upset when her game becomes plain.

27 August 3:58 PM

NG Hello,

27 August 4:05 PM

I am a massive fan of Fortnite and currently play every single day since season 4 release on iOS in 2018. I am deeply upset that I cannot do the update on Fortnite on my ios (iPad Pro) of chapter 2 season 4 which I have been most looking forward to play due to being a marvel and Fortnite fan. I have autism which is no excuse it helps. People like me to play something we love and enjoy. Please please please can you resolve the iOS and epic games issues as it would be kind for fans like us to play otherwise you will end up loosing fans like myself you been dedicated fans.

Kind regards

REDACTED

LG This is really unfair this needs to be fixed I want to play the new chapter of fortnite and can't how is this fair I am really upset about this I have purchased stuff in the ap and can't even play the new version which I've been looking forward to come one fix this

27 August 1:01 PM

TI I am really upset with not being able to play on IOS. I have been playing on IOS since it came out. I was getting better and invested into an iPad get even more better. I can't afford a console, and it would take time to get as good as I was in IOS. So my one question is: Will you guys please, please, please make a deal with the AppStore to get Fortnite back up? I'm aware that it IS Apples fault. But US MOBILE PLAYERS NEED AN OPTION.

27 August 12:08 PM

RI Hi, I play Fortnite on my iPad which is iOS. Fortnite is no longer on the App Store and I can not find a way to update it. Can someone please let me know a way I can update my Fortnite otherwise I'd like to have a refund of all my money spent and wasted on your game. Please get back to me soon as I'm upset and angry and would like an explanation of how to update it on an iPad, or some sort of way I can get all my money back from that account. Thank you.

27 August 8:10 AM

MH I am absolutely heartbroken that Fortnite season 4 cannot feature on iOS. Im gutted because season 4 battle pass and theme is all about Marvel. I am a die hard Marvel fan and I'm so upset that I've had to miss out on my favourite thing. Please could you reason with Apple and stop the mega drop (that has been happening for many weeks, so people have had more chance to get what they want) and stick with the guidelines so that Fortnite can be back in the App Store therefore allowing all iOS players to update it to the newest season. The old patch 13.40v already feels so empty and outdated. I feel like I'm living in the past. I know so many of us mobile gamers can agree on this and we all have had to miss out on what I think is the best season to feature on Fortnite yet. Please could you sort it out with Apple so that millions of us gamers can be happy again.

29 August 11:52 AM

Exhibit F

From: [REDACTED]
Date: Mon, Aug 31, 2020 at 7:19 AM
Subject: [REDACTED]an ardent fan heart broken over apple feud
To: tim@epicgames.com <tim@epicgames.com>

Dear Tim Sweeney,
I have been an ardent fan of Fortnite for the past two years and wanted you to know what a catastrophic affect this ongoing feud with Apple has affected my life.
Two years ago my grandkids exposed me to your wonderful Fortnite game and taught me the basics. Im a 66 year old grandma who plays by the name [REDACTED]. This has been a godsend to me since they live in Nashville and I live in Champaign, IL. For the past few years almost every night my grandkids call me and we play together as a squad or duo, and I get to talk and visit with them more than i ever expected. Little do they realize that this was my strategy all along to stay in touch with them. I keep up my fortnite skills so i have my share of wins which they are so impressed with me. I even just purchased a new i pad pro to get better graphics since this is the device i use.

Unfortunately my grandkids play on their computers and nintendo Switches so now they no longer can play with me, or have our usual fun interactions . My 10 year old granddaughter cried over this and that broke my heart.

Please I hope you will settle this conflict so we can get on with our fun times and visits.
Sincerely, [REDACTED]

From: [REDACTED]
Date: Thu, Aug 27, 2020 at 5:09 PM
Subject: Apple situation....
To: <tim@epicgames.com>

Hello Mr. Sweneey.
I am a happy play and customer on Fortnite. I love the game and I was looking forward for the new update. I love the idea of the avengers. I Avery disappointed that I can no longer play on my iPhone. You have discouraged a lot of people. I don't see why you can't make amends with apple so that you can make even more money with the other apple players. I even just bought some more Vbucks yesterday and I was very ready for this update. But now I can't even pay anymore... I was even going to buy the battle pass and the extra 20 levels. So please for the sake of all the apple users around the world... Please fix this.

From: [REDACTED]
Date: Thu, Aug 27, 2020 at 6:05 PM
Subject: Fortnite.
To: <tim@epicgames.com>

Hi Tim,
My name is [REDACTED]
I am so upset that fortnite is not available on the Apple App Store. This is the only thing that has made me enjoy quarantine.
For this loss of enjoyment I am asking for compensation of a settlement of a Nintendo switch so I can play fortnite.

I am sure with your net worth you will be able to fork out a Nintendo switch.

Please don't ruin my life

[REDACTED]

From: [REDACTED] REDACTED

Date: August 30, 2020 at 7:53:54 AM EDT

To: "tim.sweeney@epicgames.com" <tim.sweeney@epicgames.com>

Subject: Personnal Statement

Hi^^,

I totally understand your situation with the AppStore and more broadly with apple.

I really like playing Fortnite and above all I must admit, this season is quite atypical and I wanted to play it but it must be understood that I do not have the immediate means to buy an Android phone or a new computer that can support the game (I'm currently a student and don't have time to work alongside). I just wanted you to take this into account, and I'm not the only one in this case.

Hoping you will read and take this mail into account, I wish you a good day,
Best regards,

[REDACTED]

From: [REDACTED] REDACTED

Date: Mon, Aug 31, 2020 at 1:59 AM

Subject: Epic Games Fortnite

To: <tim@epicgames.com>

Hello. I am writing this email regarding the removal of Fortnite from the apple store. I play Fortnite in an apple device and I was looking forward to the new season of the game. But when I read that it won't be available on apple devices I was devastated. There are many other people like me hoping to play the new season. Please get Fortnite back in the apple store.

Regards,
An Epic Gamer