No. 23-___

IN THE

Supreme Court of the United States

Epic Games, Inc.,

Petitioner,

v.

Apple, Inc.,

Respondent.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

This case presents two critical questions regarding the legal standards governing the Rule of Reason, which determines the outcome of nearly every Sherman Act case. It is well settled that a restraint that has both pro- and anti-competitive effects is unlawful if a "less-restrictive alternative" will achieve the same benefits while harming competition less. The circuits are divided, however, on two issues that were outcome-determinative in this case: (1) the legal test for identifying a less-restrictive alternative; and (2) if no less-restrictive alternative exists, whether the restraint is valid even when (as in this case) the court finds harms to competition that vastly outweigh the benefits.

The Questions Presented are:

1. Must a less-restrictive alternative be free from additional costs to the defendant?

2. If there is no less-restrictive alternative, is the restraint invalid if the harms to competition substantially outweigh the restraint's procompetitive justification?

PARTIES TO THE PROCEEDING

The parties to the proceeding are as follows:

1. Petitioner is Epic Games, Inc. ("Epic"), which was plaintiff in the district court and appellant and cross-appellee in the court of appeals.

2. Respondent is Apple Inc., which was defendant in the district court and appellee and cross-appellant in the court of appeals.

RELATED PROCEEDINGS

This case was designated under Northern District of California rules as related to the following cases:

1. *Cameron v. Apple Inc.*, No. 19-cv-03074 (N.D. Cal.), judgment entered June 10, 2022.

2. *In re Apple iPhone Antitrust Litigation*, No. 11-cv-06714 (N.D. Cal.) judgment entered; *Pepper v. Apple Inc.*, No. 14-15000 (9th Cir.), judgment entered January 1, 2017, remanded to the district court July 16, 2019; *Apple Inc. v. Pepper*, No. 17-204 (S. Ct.), judgment entered June 17, 2019.

3. *SaurikIT, LLC v. Apple Inc.*, No. 20-cv-08733 (N.D. Cal.), judgment entered September 12, 2022; *SaurikIT, LLC v. Apple Inc.*, No. 22-16527 (9th Cir.).

4. *Epic Games, Inc. v. Apple Inc.*, No. 20-cv-5640 (N.D. Cal.), judgment entered September 10, 2021; *Epic Games, Inc. v. Apple Inc.*, Nos. 21-16506, 21-16695 (9th Cir.), judgment entered April 24, 2023.

CORPORATE DISCLOSURE STATEMENT

Pursuant to Supreme Court Rule 29.6, Epic states that it has no parent corporation and that Tencent Holdings Ltd. owns more than 10% of Epic stock.

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PETITION FOR A WRIT OF CERTIORARI

Petitioner respectfully petitions this Court for a writ of certiorari to review the judgment of the U.S. Court of Appeals for the Ninth Circuit.

OPINIONS BELOW

The opinion of the court of appeals (Pet. App. A) is reported at 67 F.4th 946 (9th Cir. 2023). The district court's opinion (Pet. App. B) is reported at 559 F. Supp. 3d 898 (N.D. Cal. 2021).

JURISDICTION

The court of appeals issued its opinion on April 24, 2023. Pet. App. A. The court denied a timely petition for rehearing en banc on June 30, 2023. Pet. App. C. This Court has jurisdiction under 28 U.S.C. § 1254(1).

RELEVANT STATUTORY PROVISIONS

Relevant statutory provisions are reproduced in Appendix D to this Petition.

STATEMENT OF THE CASE

Petitioner Epic sued respondent Apple Inc. (Apple) under the Sherman Act, challenging agreements and practices that Apple applies to the ubiquitous iPhone. Specifically, Apple forecloses any competition for either its App Store or its payment solution, using that exclusivity to collect billions of dollars in supracompetitive profits. The Ninth Circuit held that Epic's claims failed under the Rule of Reason. The court recognized that these restraints cause massive harm to competition, affecting one billion iPhone users, by imposing huge supracompetitive costs and diminishing innovation and quality. By contrast, the court found that the only procompetitive rationale that Apple could not achieve without blocking competition was its

"nebulously defined and weakly substantiated" interest in recovering "*some* compensation" for its intellectual property.

The court concluded that Epic had not identified a "less-restrictive alternative" to achieve that vague compensation rationale, however, because the proposed alternative (an ordinary IP licensing program) would have entailed an additional administrative cost. The court then held that Epic's claims were properly dismissed, reasoning that it was not necessary to separately balance the restraints' pro- and anti-competitive effects. It thus made no difference that the restraints' harms to competition obviously vastly outweigh any benefits.

1. Overwhelmingly, Sherman Act cases are resolved under the "Rule of Reason," which seeks to determine whether a restraint harms competition overall. In *Ohio v. American Express*, in which the parties had agreed that the Rule of Reason should be implemented through a three-step burden-shifting regime, this Court explained that:

> Under this framework, the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market. If the plaintiff carries its burden, then the burden shifts to the defendant to show a procompetitive rationale for the restraint. If the defendant makes this showing, then the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means.

138 S. Ct. 2274, 2284 (2018) (citations omitted). Subsequently, this Court in *National Collegiate Athletic Association v. Alston* cautioned that *American Express* had

not in fact specified a legal test to be applied in all Rule of Reason cases. *See* 141 S. Ct. 2141, 2160 (2021).

In the wake of *American Express* and *Alston*, this Court has not yet decided two recurring questions:

> 1) What constitutes a "less-restrictive alternative"? All agree that it is one that achieves the restraint's procompetitive benefits while causing less harm to competition. But must the alternative also be just as efficient and inexpensive for the defendant? Or is the fact that the alternative would impose an additional cost or burden disqualifying, even if that alternative is dramatically better for competition?
>
> 2) What does the court do if the plaintiff fails to prove the existence of a less-restrictive alternative (however defined)? Does that end the Rule of Reason inquiry, such that the plaintiff's failure to carry that burden means the case is over, and the defendant prevails even if the plaintiff has proven that the restraint causes competitive harm that far outweighs any benefit?

2. This Petition arises from Epic's antitrust challenges to two policies ("the restraints") that Apple applies to (and enforces through agreements regarding) the iPhone. First, "[d]evelopers can distribute their apps to iOS [iPhone] devices only through Apple's App Store." Pet. App. 7a. Second, "[d]evelopers are also required to use Apple's in-app payment processor (IAP) for any purchases [of digital goods] that occur within their [applications]." *Ibid.*

In-app purchases notably occur directly between the developer and iPhone user. Apple is involved only because it inserts itself: Apple requires that the transactions be conducted using its own payment processor. Those

purchases are often made by consumers years after the app is downloaded. But Apple nonetheless takes 15-30% of each sale (generally in perpetuity), collecting billions of dollars in annual profits.

Petitioner Epic is a software company. Its flagship product is *Fortnite*. Until barred by Apple for daring to offer users an alternative (cheaper) means to make in-app purchases within *Fortnite*, Epic distributed *Fortnite* to iPhone users through the App Store—the only access point developers have to their customers: a billion iPhone users.

Epic also offers digital goods—such as outfits—that users can purchase for use within *Fortnite*. Epic has invested vast sums in developing not just *Fortnite* but those digital add-ons, to which Apple contributes nothing. But Apple required Epic to use its IAP and pay the 30% commission on every in-app purchase that any iPhone user made directly from Epic, no matter how many years after downloading *Fortnite* from the App Store.

As relevant here, Epic challenged the restraints under the Sherman Act, seeking only injunctive relief. The district court analyzed the case under a market for "mobile-game transactions—*i.e.*, game transactions on iOS and Android smartphones and tablets." Pet. App. 14a. Apple has market power there; indeed, its "52 to 57% market share and barriers to entry," *id.* at 16a, put it "near the precipice" of monopoly power, *id.* at 355a. The volume of commerce affected is also breathtaking: Over 300,000 developers have created iPhone gaming apps that "generate an estimated $100 billion in annual revenue." *Id.* at 7a.

At trial, the district court analyzed Epic's claims under the Rule of Reason using the three-step, burden-shifting regime described in *American Express*. At the first step, the district court found that Apple's restraints cause *enormous*

harm to competition. *See e.g.*, Pet. App. 263a ("Apple's initial rate of 30%, although set by historic gamble, has apparently allowed it to reap supracompetitive operating margins."); *id.* at 312a ("Apple employs these policies so that it can extract supracompetitive commissions from this highly lucrative gaming industry."); *id.* at 283a ("Because this competition is currently precluded, Apple's restrictions reduce innovation in 'core' game distribution services."); *see also id.* at 269a, 278a-83a, 311a-12a, 367a n.606.

At the second step, the district court found that the restraints further two pro-competitive interests. Principally, the court thought that they create a "walled garden" that differentiates the iPhone as providing greater privacy and security than non-Apple phones. Pet. App. 368a. The restraints also incidentally allow Apple to recoup its investment in its intellectual property. But the court found that Apple had identified neither the relevant IP nor its value. *Id.* at 158a.

At the third step, the district court concluded that Epic had not identified a less-restrictive alternative to Apple's restraints. Pet. App. 372a-76a. The court ruled that this was the "last step" of the analysis, *id.* at 372a, rejecting Epic's argument that the court should further balance the restraints' effects. On the district court's view, it made no difference if the restraints' harm to competition was vastly greater than any benefit.

The district court then turned to certain of Epic's related claims under state law, which it concluded were subject to the identical legal standard. *See* Pet. App. 391a-92a (in deciding the state law claims, "courts employ the rule of reason . . . as in the federal context"). It therefore held that those state claims failed under the same three-step inquiry, with respect to which the court (as noted) had

expressly rejected any inquiry into the balance of harms and benefits. Incorporating its conclusions with respect to the Sherman Act, the court held with respect to these state law claims:

> Here, the Court has carefully considered the evidence in the record and has determined, based on the rule of reason, that the [restraints] have procompetitive effects that offset their anticompetitive effects [*i.e.*, steps one and two], and that Epic Games has not shown that these procompetitive effects can be achieved with other means that are less restrictive [*i.e.*, step three]. These findings, which defeat Counts 3 and 5 [Epic's federal claims], also defeat Counts 7 and 8 [Epic's state law claims].

Id. at 392a-93a. *See also* Apple C.A. Br. 29 ("Epic's claims under the Cartwright Act mirrored its claims under Section 1 of the Sherman Act, and the district court rejected those claims on the same basis."). The court accordingly rejected Epic's state law claims. *Id.* at 393a, 417a.

3. Epic appealed, supported in substance by numerous *amicus* briefs, including from the United States Government, a coalition of thirty-five states, and leading antitrust scholars. The Ninth Circuit affirmed in relevant part, however, by a divided vote. The panel unanimously held that the district court had "erred as a matter of law on several issues," Pet. App. 21a, but the majority deemed all those errors "harmless," *id*. at 22a, 38a, 40a-41a, 43a, 66a, 69a-70a.

The majority accepted the district court's market definition. Pet. App. 40a. Then, applying the Ninth Circuit's burden-shifting regime under the Rule of Reason, the

majority affirmed the district court's findings at steps one and two.

The Ninth Circuit first agreed that Epic had proved that Apple's practices directly cause enormous anti-competitive harms. Pet. App. 45a-49a. Apple thus extracts many billions of dollars in "supracompetitive commissions"; and by "foreclos[ing] would-be competitors" from offering other app stores and payment providers, it "reduc[es] innovation" and "quality." *Id.* at 45a-46a.

The majority then accepted that Apple had identified pro-competitive interests in both differentiating its product and recovering "*some* compensation" for its intellectual property. Pet. App. 51a. But it deemed the latter interest to be very narrow because (as the district court had found) Apple had not proved that it was entitled to a particular amount of compensation, or even identified the relevant intellectual property. Apple was thus strikingly left only with a "general goal" that was "nebulously defined and weakly substantiated." *Id.* at 51a.

At step three, the majority narrowed the case significantly by rejecting the district court's reliance on the principal pro-competitive interest asserted by Apple: differentiating its product as providing greater privacy and security. The court agreed that it would be a less-restrictive alternative to prohibiting all competing app stores for Apple to continue to review all applications for privacy and security issues both electronically and with human review (as it does today), but then allow the reviewed applications to be distributed through third-party alternatives. Pet. App. 63a-64a (discussing "a notarization model that incorporates human app review"); *see also id.* at 65a n.18 (strongly suggesting that Epic is correct that privacy and security are not a justification for excluding competing

payment providers either, but finding it unnecessary to reach that question). Apple already deploys a similar model on its Mac computers, where Apple offers to scan all apps for malware but then scanned apps can be distributed by developers through Apple's store, directly by the developer, or through third-party stores. This alternative, when augmented by human review, the court concluded, "would clearly be 'virtually as effective' in achieving Apple's security and privacy rationales (it contains all the elements of Apple's current model)." *Id.* at 64a.

With respect to Apple's indeterminate interest in receiving "some compensation" for its intellectual property, the panel applied the Ninth Circuit's rule that a "less-restrictive alternative" must not impose significant additional costs. Pet. App. 60a (citing *Cnty. of Tuolumne v. Sonora Cmty. Hosp.*, 236 F.3d 1148, 1159 (9th Cir. 2001)). Epic's view was that Apple could simply license its IP to recoup its investment, without requiring that all transactions be handled by Apple itself. But with respect to competing app stores, the Ninth Circuit deemed it unclear how Apple could license its intellectual property. Pet. App. 62a. With respect to payment processing, the court recognized that Apple could create a licensing regime, but accepted the district court's conclusion that the burden of auditing the licensing payments was disqualifying because they "would seemingly impose both increased monetary and time costs." *Id.* at 66a.

The Ninth Circuit then addressed the legal question whether, when a plaintiff fails to establish a less-restrictive alternative, the court should go on to weigh the restraint's pro- and anti-competitive effects. As noted, the court itself had expressly found harms that included *billions* of dollars in supracompetitive commissions, whereas the pro-competitive benefits in receiving some IP compensation

were nebulous and weak. In Epic's view, with such disparity between harms and benefits, the restraints were unlawful, even if no less-restrictive alternative could produce the exact same, small benefits at the same cost.

The panel majority accepted that it was "bound by" circuit precedent to recognize some form of weighing inquiry, but believed it was entirely free to determine the *form* of that inquiry because prior precedent had been "inconsistent." Pet. App. 66a-68a. Although the Ninth Circuit had repeatedly cited a three-step inquiry that did not include balancing (*see infra* at 18), that was not uniformly true. In determining the form of that inquiry given this inconsistency, the majority explained that it was "skeptical of the wisdom of" *any* balancing, because it believed that the purpose of the three-step burden shifting inquiry was already to determine if a restraint was anti-competitive on balance. *Id.* at 68a.

The majority resolved that inconsistency and its own skepticism by holding that any balancing is effectively duplicative of the first three steps: "In most instances, this will require nothing more than . . . briefly confirming the result suggested by a step-three failure: that a business practice without a less-restrictive alternative is not, on balance, anticompetitive." Pet. App. 68a-69a. That confirmation could take the form of "just one sentence." *Id.* at 67a. Here, the majority deemed it sufficient that the district court—despite having expressly refused to engage in balancing—had recited each of the first three steps and concluded that Epic's claims failed as a result. *Id.* at 69a (holding that the district court's summary of reasons for rejecting Epic's parallel state law claims under the three-step federal law standard "satisfied the [district] court's obligation").

Judge Thomas dissented on several grounds. He agreed with the majority that the district court committed serious legal errors. Pet. App. 92a. But unlike the majority, he "would reverse the district court and remand to evaluate the claims under the correct legal standard." *Ibid*. According to Judge Thomas, the majority's application of the Rule of Reason, despite rejecting fundamental aspects of the district court's decision, "amounts to appellate court fact-finding." *Id.* at 94a. Further, because the district court expressly "did not undertake" a balancing inquiry, Judge Thomas concluded that "[r]emand for a formal balancing should be required." *Id.* at 95a.

The Ninth Circuit denied rehearing en banc. Pet. App. C. This Petition followed.

REASONS FOR GRANTING THE WRIT

This Court should grant certiorari to decide both Questions Presented. First, the ruling below conflicts with the holding of this Court and other circuits that a "less-restrictive alternative" is one that achieves the restraint's pro-competitive effects while causing less harm; the fact that it imposes some cost is not disqualifying. Part I, *infra*. Second, the ruling below conflicts with the holding of this Court and other circuits that the ultimate inquiry under the Rule of Reason is whether the restraint is anti-competitive on balance. Specifically, if the plaintiff fails to establish a less-restrictive alternative, the court must go on to determine whether the restraint is invalid because its anti-competitive harms outweigh its pro-competitive benefits. Part II, *infra*. Particularly given the importance of the Questions Presented and this case in particular—in which the restraints impose billions of dollars in supracompetitive costs and apply to one billion consumers, whereas the benefits are nebulous and weak—this Court's intervention is required. Part III, *infra*.

I. This Court Should Determine the Test for What Constitutes a Less-Restrictive Alternative.

Certiorari should be granted to review the Ninth Circuit's holding that a "less-restrictive alternative" may not impose an additional burden or cost on the defendant. That ruling conflicts with this Court's holding that a less-restrictive alternative is simply one that achieves the restraint's pro-competitive benefits. The Ninth Circuit has appended a significant additional limitation to that rule that is inconsistent with both the letter and logic of this Court's precedents, and that threatens to grant antitrust immunity to an array of anti-competitive practices. The Ninth Circuit's ruling also conflicts with decisions of other courts of appeals that faithfully apply this Court's decisions, holding that a pro-competitive substitute is a less-restrictive alternative if it can achieve the "same benefit" with less harm to competition, without regard to whether it puts a further burden on the defendant. As a consequence, the Ninth Circuit is far less likely than other courts to deem a severely anti-competitive restraint to be prohibited by the Sherman Act.

1. The Ninth Circuit holds that no less-restrictive alternative exists unless "a restraint is *patently and inexplicably* stricter than is necessary to accomplish all of its procompetitive objectives." *O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049, 1075 (9th Cir. 2015). Just as important here, the Ninth Circuit holds that a substitute that achieves *all* of a restraint's pro-competitive benefits is nonetheless irrelevant unless it does so "*without significantly increased cost*" to the defendant. *Cnty. of Tuolumne*, 236 F.3d at 1159 (emphasis in original). Moreover, as this case demonstrates, that cost is disqualifying even if it is merely an indeterminate administrative burden.

This case is the perfect example of the Ninth Circuit's rule in operation, as well as the damage it does to sound antitrust enforcement. The district court found and the Ninth Circuit accepted that Apple's practices cause an array of serious anti-competitive harms: they impose billions of dollars in supracompetitive costs; and they impair both quality and innovation in app stores and payment solutions affecting hundreds of thousands of developers and one billion iPhone users. On the other hand, the court concluded that Apple had proved that its "walled garden" achieves two pro-competitive interests: it differentiates the iPhone as providing greater privacy and security; and it allows Apple to recoup from developers some indeterminate investment in its intellectual property. The Ninth Circuit rejected the parties' challenges to those findings.

The Ninth Circuit panel then concluded that Apple could achieve its valid pro-competitive interests through means that would not harm competition. *See supra* at 8. But it dismissed Epic's complaint on the ground that the alternative that would accomplish the least important justification would impose on Apple a cost: the burden (borne by virtually all IP licensors) of auditing licensing payments from developers. Applying the Ninth Circuit's extremely demanding standard, the court found that this burden compelled holding that there was no less-restrictive alternative to precluding competition. *See ibid.*[1]

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[1] Because the district court and panel majority decided the case on the premise that the law permits Apple to charge a licensing fee, we assume so arguendo. Further proceedings relating to the scope and implementation of any injunction would address the details of any licensing scheme. Any such fee must not become a vehicle for Apple to

2. The Ninth Circuit's rule cannot be reconciled with this Court's precedents, which straightforwardly ask whether "substantially less restrictive means exist to achieve any proven procompetitive benefits." *Alston*, 141 S. Ct. at 2126. This Court has explored and elaborated on the Rule of Reason in numerous rulings that draw in turn on common law traditions, *Nat'l Soc'y of Prof. Engineers v. United States*, 435 U.S. 679, 688 (1978)—none of which suggest that the cost to the defendant of a pro-competitive alternative is a relevant consideration.

Notably, the Ninth Circuit did not base its rule on any decision of this Court. Instead, it grafted the cost requirement onto the legal standard announced by this Court's precedents without explanation, citing the Areeda & Hovenkamp treatise and providing no further explanation. *Cnty. of Tuolumne*, 236 F.3d at 1159. But the court of appeals weaponized that requirement. The treatise is unambiguous that if the court rejects a proposed alternative (for example, because of its cost), it must then go on to balance the restraint's harms and benefits. *See infra* at 22-23.

The Ninth Circuit's rule elevates the question of "cost" dramatically above the considerations that this Court's precedents deem most relevant under the Sherman Act. Properly understood, a substitute is a less-restrictive alternative where it causes substantially less harm, while achieving the restraint's pro-competitive benefits. Here, for example, Epic proposed that Apple could permit

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reimpose its supracompetitive charges by another name. Instead, any fee must be tied to the actual value contributed by Apple's intellectual property and the administrative costs Apple actually incurs for services it actually renders.

competing app stores and payment solutions, which is the exact opposite of its current exclusionary practices. Apple obviously could adopt a licensing regime that specifically addresses and provides compensat ion for the intellectual property used by developers. Unquestionably, that "alternative" regime better achieves the competitive goals of the Sherman Act in every respect. But merely because it would impose an administrative burden, the Ninth Circuit reflexively rejected it as a matter of law.

The fact that the Ninth Circuit deemed dispositive—that an alternative would impose some additional cost to the defendant—bears no relationship to the point of the Rule of Reason. The cost of a proposed pro-competitive alternative does not make the challenged restraint any less anti-competitive. The fact that there is no other equally cheap way to achieve the restraint's meager pro-competitive benefits does not immunize it from antitrust enforcement.

Consider a straightforward hypothetical. Assume that a party with market power chooses between two options that have the same pro-competitive benefits. The party chooses the option that causes *greater* harm to competition but is cheaper for it to implement. Obviously, the mere fact that the defendant has two ways to accomplish an anti-competitive end—one cheaper than the other—is not a defense to antitrust liability. But that is the absurd consequence of the Ninth Circuit's rule that an alternative that provides the same pro-competitive benefits while causing less harm to competition is not a "less-restrictive alternative" if it would impose additional costs on the defendant.

Importantly, Apple's mechanism for avoiding the costs of a licensing scheme is foreclosing competition, which is anathema under the Sherman Act. Apple is simply saying

that it is cheaper for it to recover the value of its IP if it controls all aspects of every transaction, to the exclusion of all competitors who could service the same transactions more cheaply, or in ways that are qualitatively better, or both. But the Sherman Act does not legitimize anti-competitive practices on the ground that they are more cost-effective *for the party foreclosing competition*.

This is thus not an instance in which Apple's means of collecting revenue is an incidental aspect of its business practices. Rather, Apple forces developers to use its products rather than competitors, specifically to enable its collection of monopoly rents. Apple recognizes that if developers were permitted to use other app stores or payment solutions, the developers would switch to a superior alternative and simply pay Apple a license fee rather than grossly supra-competitive commissions. Apple then would bear the burden of administering the licensing regime. But its obvious motivation for the restraint is to collect the massive commissions, not to avoid the cost of licensing, which is infinitely smaller and could be passed on as part of the license fee in any event.

This is also the least-appropriate case in which to assign such talismanic significance to the "cost" of a proposed alternative. Apple would simply be required to bear the same cost as every other IP licensor; that is no novel or overwhelming burden. Further, the relevance of any expense must account for the importance of the corresponding procompetitive benefit that the restraint seeks to achieve. Here, that benefit is trivial and, at best, barely satisfies Apple's burden at the second step. The Ninth Circuit *itself* recognized that Apple's interest in recovering the value of its intellectual property is "nebulously defined and weakly substantiated." Pet. App. at 51a. It upends the Sherman Act to hold that the vast harm

to competition from Apple's restraints are immunized from antitrust liability merely because Apple would otherwise incur a cost to achieve such a minor benefit that does not remotely compare to the harm to competition.

2. The ruling below also conflicts with the precedent of the Second, Third, and Fifth Circuits, which faithfully adhere to this Court's rulings. The settled precedent of those courts of appeals considers only whether an alternative achieves a restraint's pro-competitive alternatives. The question that the Ninth Circuit deemed dispositive here—whether that alternative imposes some "cost" on the defendant—is not relevant, much less an excuse to violate the Sherman Act. Under those courts' precedents, licensing is a less-restrictive alternative because it would permit Apple to recoup the value of its IP without precluding competition in app stores and payment solutions. There is thus "significant disparity across and even within circuits as to the order of operation of the means-ends analysis and balancing, in addition to the significance of each." Gabe Feldman, *The Demise of the Rule of Reason*, 24 Lewis & Clark L. Rev. 951, 962 (2020).

The Second Circuit holds that "[l]ess restrictive alternatives are 'those that would be less prejudicial to competition as a whole.'" *N. Am. Soccer League, LLC v. United States Soccer Fed'n, Inc.*, 883 F.3d 32, 45 (2d Cir. 2018) (quoting *Cap. Imaging Assoc., P.C. v. Mohawk Valley Med. Assoc., Inc.*, 996 F.2d 537, 543 (2d Cir. 1993) (not adopting district court's use of "cost" as an element of the inquiry). *See also 1-800 Contacts v. FTC*, 1 F.4th 102, 121 (2d Cir. 2021). The test in the Third and Fifth Circuits is whether "another viable option . . . can achieve the same benefits." *United States v. Brown Univ.*, 5 F.3d 658, 679 (3d Cir. 1993). *See also Impax Lab'ys, Inc. v. FTC*, 994 F.3d 484, 497 (5th Cir. 2001) (whether "that same benefit could be

achieved with less damage to competition"). Certiorari should be granted to resolve that conflict.

II. This Court Should Determine, If There Is No Less-Restrictive Alternative, Whether the Restraint Is Invalid If It Causes Substantial Harm to Competition on Balance.

Certiorari should also be granted to review the Ninth Circuit's holding that if the plaintiff fails at the third stage to establish a "less-restrictive alternative," the defendant effectively prevails as a matter of course. That holding cannot be reconciled with this Court's precedents, which require the court to engage in a substantive and serious weighing of the restraint's pro- and anti-competitive effects. The ruling below also conflicts with the express holding of six other circuits that if the plaintiff fails to establish a less-restrictive alternative, the restraint is invalid if it harms competition on balance.

1. This case squarely presents the question whether the plaintiff's failure to establish a less-restrictive alternative is essentially fatal to its case under the Rule of Reason even where the challenged conduct causes anti-competitive harms that dwarf any pro-competitive benefit—in other words, where the conduct is clearly anti-competitive overall. Any rigorous inquiry into the balance of pro- and anti-competitive effects in this case would easily find in Epic's favor. The panel accepted the district court's findings that Apple has market power. In turn, Apple's exclusion of competition causes substantial consumer harm. With no competition, Apple can leverage its market power to maintain its 15-30% commission rate. The Apple App Store's profit margin exceeds an astonishing 75% and, the district court found, is impervious to competitive pressures. Pet. App. 171a-72a,

261a, 263a-64a, 264a n.459. Substantial non-economic harms occur too. Apple blocks the development of more innovative and higher-quality app stores and payment solutions, including those that would provide greater privacy and security—and reduces its investment in its own products. *Id.* at 280a-83a.

Given the ready availability of a licensing regime as an alternative, Apple's pro-competitive interest reduces to avoiding an administrative burden regularly borne by virtually all other IP licensors. Even assuming that administrative savings in collecting Apple's IP royalties count as a pro-competitive benefit, any robust balancing inquiry would still come out in Epic's favor. The point of the Sherman Act is to foster competition, which lowers consumer prices and increases the quality of goods. This case directly implicates those core purposes on a massive scale involving billions of dollars every year and one billion consumers. That trounces any administrative burden from licensing.

2. The Ninth Circuit's refusal to weigh the harms and benefits of Apple's restraint follows a line of that court's recent precedent—particularly in the wake of this Court's decision in *American Express*—adopting a three-step burden-shifting inquiry, without more. *See AYA Healthcare Servs., Inc. v. AMN Healthcare, Inc.*, 9 F.4th 1102, 1111 (9th Cir. 2021); *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020); *O'Bannon*, 802 F.3d at 1070.

Notably, the Ninth Circuit twice previously rejected antitrust challenges to practices after finding no less-restrictive alternative, without proceeding to engage in a weighing of pro- and anti-competitive effects. In *O'Bannon* in particular, "the court punished the plaintiff for not showing a less restrictive alternative and ignored the balancing stage of the analysis. If it had proceeded that far,

the plaintiff likely would have won. A full analysis would have found potent anticompetitive effects and flimsy pro competitive justifications." Michael A. Carrier, *The Four-Step Rule of Reason*, 33 Antitrust 50, 53 (2019). *See also Hairston v. Pacific 10 Conference*, 101 F.3d 1315, 1319 (9th Cir. 1996); Feldman, *The Demise of the Rule of Reason*, *supra* at 967 (In *O'Bannon*, "the Ninth Circuit did not attempt to balance the competitive effects of the restrictions or to otherwise determine their net competitive effect. In fact, the court did not even mention the relevance of the overall competitive effect of the challenged rules.").

3. The decision below cannot be reconciled with this Court's precedents. Time and again, this Court has made clear that the Rule of Reason exists to "distinguish[] between restraints with anticompetitive effect that are harmful to the consumer and restraints stimulating competition that are in the consumer's best interest." *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886 (2007). Justice Brandeis' classic, oft-repeated formulation of "[t]he true test of legality is whether the restraint is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition." *Chicago Bd. of Trade v. United States*, 246 U.S. 231, 238 (1918). *See also Nat'l Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 104 (1984) ("[T]he essential inquiry remains the same—whether or not the challenged restraint enhances competition."). The most obvious way to make that determination is that the "factfinder *weighs all of the circumstances* of a case in deciding whether a restrictive practice should be prohibited as imposing an unreasonable restraint on competition." *Leegin*, 551 U.S. at 885 (quoting *Cont'l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 49 (1977)) (emphasis added).

This Court has already obliquely rejected the Ninth Circuit's contrary legal standard, which all but eliminates any role for weighing. But this case demonstrates more forceful direction is required. *See* Carrier, *The Four-Step Rule of Reason*, *supra* at 50 (The Rule of Reason "now—thanks to the Ninth Circuit, with an assist from the Supreme Court [in *American Express*]—[] is kneecapped, with balancing extricated from its framework.").

In *American Express*, this Court cited the three-step burden-shifting framework in applying the Rule of Reason. But importantly, the Court made clear that the *parties* to that litigation had merely *agreed* that a three-step inquiry applied. Because only the first step was contested in that case, it was not necessary for either the parties or this Court to address whether and when a weighing of interests is required. Notably, all of the authorities cited by this Court recognize that a balancing of pro- and anti-competitive effects may ultimately be required. *See* Carrier, *The Four-Step Rule of Reason*, *supra* at 53.

In *Alston*, this Court took an initial step towards eliminating the misunderstanding engendered by *American Express*. It explained that the "three steps do not represent a rote checklist, nor may they be employed as an inflexible substitute for careful analysis." 141 S. Ct. at 2160. The ultimate inquiry remains whether the challenged practice harms competition on balance. "The whole point of the rule of reason," the Court explained, "is to furnish 'an enquiry 'meet for the case, looking to the circumstances, details, and logic of a restraint' to ensure that it unduly harms competition before a court declares it unlawful." *Ibid*. And the Court reiterated its prior holding that the Rule of Reason "weighs all of the circumstances." *Ibid*.

Nonetheless, the Ninth Circuit has repeatedly erred in concluding that its three-part test was endorsed by this

Court in *American Express*. In this case, in particular, the majority read both *American Express* and *Alston* as having "discussed only the three agreed-upon steps." Pet. App. 67a. That is precisely the view of those decisions that Apple urged the Ninth Circuit to adopt. Apple C.A. Br. 86 ("Nor was the district court required to take a fourth step. Twice in the last five years, the Supreme Court has outlined the 'three-step, burden-shifting framework' for assessing Section 1 claims under the rule of reason—articulating an additional 'balancing' step in neither case."). *See also AYA Healthcare*, 9 F.4th at 1111 (applying only three-step inquiry, citing *American Express*); *Qualcomm*, 969 F.3d at 991 (same). Given the Ninth Circuit's repeated, heavy reliance on this Court's recitation of the three-step framework in *American Express*, including after this Court's cautionary ruling in *Alston*, this Court's intervention is required.

4. The Ninth Circuit acknowledged in this case that the Rule of Reason exists to determine whether a given practice is anti-competitive on balance. But the court held that the *test* used to make that determination is the three-step burden-shifting regime that essentially excludes any substantive role for weighing pro- and anti-competitive interests. On that basis, the court held that there is virtually no role for a conscious balancing of a practice's pro- and anti-competitive consequences. Similarly, in *AYA Healthcare*, the Ninth Circuit nominally recognized that a court "weighs" the restraint's effects, but made clear that to do so it "appl[ies] a three-step burden shifting framework." 9 F.4th at 111.

Critically, the question whether courts should go on to weigh a restraint's pro- and anti-competitive effects is not merely an issue of process. The issue is not whether the inquiry should be divided into three steps or four, or

whether the burden of proof should shift at a different point. Instead, the question profoundly affects the substantive scope of the Sherman Act. The result of the Ninth Circuit's ruling is that if the plaintiff fails to establish a less-restrictive alternative, there is no liability; the restraint is lawful. That rule would immunize a wide array of restraints with enormous anti-competitive consequences, merely because they have some meager pro-competitive benefit for which there is no less-restrictive alternative.

The majority below opined that a robust balancing inquiry is unnecessary because the other steps of the Rule of Reason analysis are "already intended to assess a restraint's overall effect." Pet. App. 68a. That makes no sense. Nothing about the finding that a pro-competitive alternative would create an administrative burden suggests that Apple's actual preclusion of competition produces more benefits than harms (or that this is even a close call).

The Ninth Circuit's reasoning fundamentally misunderstands the burden-shifting regime, which is not a substitute for a weighing of a practice's competitive consequences. "A few decisions describe the rule of reason's burden-shifting framework itself as a sort of 'balancing,' but they are hardly the same thing. . . . None of this requires or even contemplates a cardinal weighing of pro- and anticompetitive effects. Indeed, the sequence of evidentiary steps, with its shifting burdens, is an attempt to avoid general balancing." 7 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 1507e (2023); *see also id.* ("Once we have identified the types and magnitudes of threats to competition, legitimate objectives, and possible alternatives, we still have to reach an 'on balance' judgment about 'reasonableness.'").

Correctly understood, the burden-shifting regime identifies the cases that can be resolved as a preliminary matter without having to engage in balancing. *See Leegin*, 551 U.S. at 898-99 ("Courts can . . . devise rules over time for offering proof, or even presumptions where justified, to make the rule of reason a fair and efficient way to prohibit anticompetitive restraints and to promote procompetitive ones."); Carrier, *The Four-Step Rule of Reason*, *supra* at 51 ("[T]he four-part framework provides a practical approach that can simplify the antitrust analysis, enabling courts to dispose of many cases without needing to address some of the complexities implicated by the complete four-step analysis."). The first three steps assign the parties the appropriate burdens of proof "based on which party has access to the various categories of evidence and information" (*Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 464 (7th Cir. 2020)), and are "particularly conducive to summary judgment motions or motions on the pleadings," 7 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 1507d (2023). There is a significant administrative benefit to resolving claims in that manner, *when possible*, without a fact- or judgment-intensive inquiry that can require the court to balance potentially incommensurate benefits and harms.

The three-step regime is thus a process of elimination. The case is simply over at the outset if the plaintiff cannot prove any anti-competitive effect. Conversely, liability exists if the defendant cannot then establish a pro-competitive justification for a practice that harms competition. In turn, the plaintiff will prevail if it can show that there is a less-restrictive alternative that achieves that pro-competitive benefit. In each of those instances, the burden-shifting regime resolves the Rule of Reason inquiry

so that it is not necessary for the court to go further to conduct a balancing of interests.

But while those three steps will often make the court's application of the Rule of Reason more administrable, they will not and should not eliminate *all* cases. They do not leave a null set. There remain to be addressed practices that harm competition, but also have some pro-competitive benefits (however meager) that cannot be achieved through a less-restrictive alternative. In those cases, the essential question under the Rule of Reason remains: Is the practice anti-competitive on balance? That question cannot be answered without going on to weigh its positive and negative effects on competition.

The Ninth Circuit's contrary rule produces absurd results that directly contradict the essential purpose of the Rule of Reason. As the United States explained in its brief to the court below, that rule "could significantly harm competition and consumers by allowing a minor benefit to condone a major harm." Dkt. 56, U.S. Br. 7. The amici states concurred: "Apple amassed billions in supracompetitive profits from one billion iPhone users. Without balancing, this type of immense harm to consumers can go unanswered with just the slightest showing of procompetitive benefit." Dkt. 55, 35 States Br. 5. Balancing is accordingly "the most important inquiry in a case like this." *Id.* at 18.

Importantly, this is not a case in which the balancing even arguably calls for comparing incommensurate interests. If it were, then arguably a court should be more hesitant to engage in balancing. Here, there are easily weighable economic interests on both sides of the equation: the billions of dollars in supracompetitive commissions charged by Apple, versus its substantially

lesser interests in having an administratively convenient way to recoup its intellectual property investment.

If anything, under the Ninth Circuit's assessment of the pro-competitive benefits of the restraints, Epic should have prevailed at step two of the burden-shifting inquiry. Apple had the burden to prove that its preclusion of competition produced a pro-competitive benefit. But both the district court and court of appeals recognized that it failed to do so with any specificity, identifying neither the intellectual property involved nor its value. *See supra* at 6-7. Apple also failed to explain how developers utilize that IP, and why Apple is not already appropriately compensated through its sale of iPhones and the fees directly paid by developers for the right to offer iPhone applications. Of note, in the closely analogous context of Apple's Macintosh computers, it does not collect a license fee from app developers.

Putting aside Apple's failure of proof at step two, its entitlement to "*some* compensation" is most fairly treated as a small offset against the billions of dollars that (as the district court found at step one) Apple collects in supracompetitive profits through its massive commission. Perhaps Apple is fairly regarded as lawfully entitled to some small additional portion of those profits, given its investment in its intellectual property. Put another way, Apple's legitimate IP compensation is already accounted for at step one, because it is not supracompetitive. But the remainder is, and that interest in compensation does not get counted yet *again* at step two.

4. Certiorari is also warranted because, particularly given the precedent of the Ninth Circuit, "[t]he rule of reason has degenerated into a morass of inconsistent, incoherent, and often conflicting frameworks that are incompatible with the fundamental competition-protecting function of antitrust law." Feldman, *The Demise*

of the Rule of Reason, *supra* at 989. In particular, the ruling below conflicts with the precedent of six other circuits. Those courts hold that if the defendant prevails on the third step of the burden-shifting regime—such that there is no less-restrictive alternative—the court must then engage in a substantive balancing of the restraint's pro-and anticompetitive effects. They would conclude without difficulty that the billions of dollars in supracompetitive costs and reduced innovation and quality in app stores and payment solutions vastly outweigh the meager administrative costs to Apple of administering a licensing regime.

Those six circuits thus squarely hold that, if the three-step framework does not resolve the case, "the court must balance the anticompetitive and procompetitive effects of the restraint. If the anticompetitive harms outweigh the procompetitive benefits, then the [restraint] is illegal." *Impax Labs.*, 994 F.3d at 492 (citing *Apani Sw., Inc. v. Coca-Cola Enters.*, 330 F.3d 620, 627 (5th Cir. 2002). The lead appellate decision adopting that rule is the D.C. Circuit's seminal, unanimous en banc ruling in *United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001), which was expressly adopted—including the requirement of weighing the restraint's effects—by the Second, Third, Fifth, and Seventh Circuits. *See Viamedia,* 951 F.3d at 464; *Mylan Pharms., Inc. v. Warner Chilcott Pub. Ltd. Co.*, 838 F.3d 421, 438 (3rd Cir. 2016); *New York ex rel. Schneiderman v. Actavis PLC*, 787 F.3d 638, 652 (2nd Cir. 2015). This Court should grant certiorari to resolve the conflict.

III. The Importance of the Questions Presented and of This Specific Case Reinforce That Certiorari Is Warranted.

The Court's determination whether to grant certiorari should be informed by the significance of the Questions Presented and the unique importance of this particular case. Apple's exclusionary practices govern its relationship with hundreds of thousands of developers and one billion consumers. The defined market produces $100 billion in revenue, every year. This Petition raises critical legal issues within this important factual context.

"Antitrust law assesses most conduct under the Rule of Reason." Dkt. 52, 38 Professors (Carrier, Hovenkamp et al.) Br. 1. Most cases are resolved at step one because the plaintiff fails to prove the defendant's practices cause anticompetitive harms. But in critically important cases that involve demonstrated consumer harm, like this one, courts address the questions raised here: whether the plaintiff has identified less-restrictive alternatives; and whether the anticompetitive harms outweigh their pro-competitive benefits.

Those questions are central not only to private suits but also to governmental enforcement actions. The brief of the United States expresses its "strong interest" in the case, given that the ruling—including the failure to conduct a robust balancing analysis—"could significantly harm antitrust enforcement." Dkt. 56, U.S. Br. 1. Thirty-five states concur that a ruling in Apple's favor on the balancing of competitive effects "could frustrate future enforcement actions in the Ninth Circuit." Dkt. 55, 35 States Br. 25.

The serious concerns expressed by antitrust enforcers show that these legal questions—and the factual context in which they arise—will only grow in importance. The

United States has stressed that the legal rules adopted here will be important "especially in the digital economy." Dkt. 56, U.S. Br. 7. The "smartphone industry" alone, "with hardware, products, and services, is approaching a trillion dollars annually." Dkt. 55, 35 States Br. 2.

The Ninth Circuit's rule effectively immunizes an array of anti-competitive practices from liability. A party with market power often can choose between alternative means of harming competition, and generally will have selected the one that is most economically efficient for it. According to the Ninth Circuit, so long as the practice has some pro-competitive benefit (however minor), liability cannot attach if an alternative would be more expensive.

Further, the ruling below grants a sweeping antitrust defense in cases involving high-technology industries. Apple escaped liability because it asserted an entirely unquantified interest in recouping its investment in unidentified intellectual property. Its defense turned on the proposition that it is more efficient to eliminate competition altogether, so that it is a direct recipient of all payment streams. In the modern era, many monopolists can make the identical assertions that their platforms were based on investments in intellectual property that can most efficiently be recouped if they face no competition.

Large technology companies exercise extraordinary control over the availability, price, and innovation of tools that are central to Americans' everyday lives. All of those enterprises have intellectual property for which they are entitled to "some compensation." Pet. App. 378a. These enterprises may often prefer to exclude competition and obtain monopoly rents by establishing "walled gardens," which could incidentally simplify the collection of compensation. The panel majority nonetheless concluded that administrative burdens associated with collecting

compensation defeat the viability of a less restrictive alternative. That rule virtually guarantees severe anticompetitive harm and effectively insulates the most monopolistic tech-platform practices from antitrust scrutiny.

CONCLUSION

The Petition for a Writ of Certiorari should be granted.

Respectfully submitted,

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Dated: September 27, 2023

APPENDIX

TABLE OF APPENDICES

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT, FILED APRIL 24, 2023

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 21-16506
D.C. No. 4:20-cv-05640-YGR

EPIC GAMES, INC.,

Plaintiff-Counter-Defendant-Appellant,

v.

APPLE, INC.,

Defendant-Counter Claimant-Appellee.

No. 21-16695
D.C. No. 4:20-cv-05640-YGR

EPIC GAMES, INC.,

Plaintiff-Counter-Defendant-Appellee,

v.

APPLE, INC.,

Defendant-Counter-Claimant-Appellant.

Appendix A

Appeal from the United States District Court for the Northern District of California. Yvonne Gonzalez Rogers, District Judge, Presiding.

November 14, 2022, Argued and Submitted,
San Francisco, California
April 24, 2023, Filed

Before: SIDNEY R. THOMAS and MILAN D. SMITH, JR., Circuit Judges, and MICHAEL J. MCSHANE,* District Judge.

Opinion by Judge Milan D. Smith, Jr.;
Partial Concurrence and Partial Dissent
by Judge S.R. Thomas.

SUMMARY**

Antitrust

The panel affirmed in part and reversed in part the district court's judgment, after a bench trial, against Epic Games, Inc., on its Sherman Act claims for restraint of trade, tying, and monopoly maintenance against Apple, Inc.; in favor of Epic on its claim under California's Unfair Competition Law; against Epic on Apple's claim for breach of contract; and against Apple on its claim for attorney

* The Honorable Michael J. McShane, United States District Judge for the District of Oregon, sitting by designation.

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

fees. The panel affirmed except for the district court's ruling respecting attorney fees, where it reversed and remanded for further proceedings.

The panel explained that, when Apple opened the iPhone to third-party app developers, it created a "walled garden," rather than an open ecosystem in which developers and users could transact freely without mediation from Apple. Epic alleged that Apple acted unlawfully by restricting app distribution on iOS devices to Apple's App Store, requiring in-app purchases on iOS devices to use Apple's in-app payment processor, and limiting the ability of app developers to communicate the availability of alternative payment options to iOS device users. These restrictions were imposed under the Developer Program Licensing Agreement ("DPLA"), which developers were required to sign in order to distribute apps to iOS users. The district court rejected Epic's Sherman Act §§ 1 and 2 claims challenging the first and second restrictions, principally on the factual grounds that Epic failed to propose viable less restrictive alternatives to Apple's restrictions. The district court concluded that the third restriction was unfair pursuant to the California UCL and enjoined Apple from enforcing it against any developer. The district court held that Epic breached its contract with Apple but was not obligated to pay Apple's attorney fees.

On Epic's appeal, the panel affirmed the district court's denial of antitrust liability and its corresponding rejection of Epic's illegality defense to Apple's breach of contract counter-claim. The panel held that the district

court erred as a matter of law in defining the relevant antitrust market and in holding that a non-negotiated contract of adhesion, such as the DPLA, falls outside the scope of Sherman Act § 1, but those errors were harmless. The panel held that, independent of the district court's errors, Epic failed to establish, as a factual matter, its proposed market definition and the existence of any substantially less restrictive alternative means for Apple to accomplish the procompetitive justifications supporting iOS's walled-garden ecosystem.

On Apple's cross-appeal, the panel affirmed as to the district court's UCL ruling in favor of Epic, holding that the district court did not clearly err in finding that Epic was injured, err as a matter of law when applying California's flexible liability standards, or abuse its discretion when fashioning equitable relief. Reversing in part, the panel held that the district court erred when it ruled that Apple was not entitled to attorney fees pursuant to the DPLA's indemnification provision.

Concurring in part and dissenting in part, Judge S.R. Thomas wrote that he fully agreed with the majority that the district court properly granted Epic injunctive relief on its California UCL claims. Judge S.R. Thomas also fully agreed that the district court properly rejected Epic's illegality defenses to the DPLA but that, contrary to the district court's decision, the DPLA did require Epic to pay attorney fees for its breach. On the federal claims, Judge S.R. Thomas also agreed that the district court erred in defining the relevant market and erred when it held that a non-negotiated contract of adhesion falls

outside the scope of Sherman Act § 1. Unlike the majority, however, Judge S.R. Thomas would not conclude that these errors were harmless because they related to threshold analytical steps and affected Epic's substantial rights. He would remand for the district court to re-analyze the case using the proper threshold determination of the relevant market.

OPINION

M. SMITH, Circuit Judge:

Epic Games, Inc. sued Apple, Inc. pursuant to the Sherman Act, 15 U.S.C. §§ 1-2, and California's Unfair Competition Law (UCL), Cal. Bus. & Prof. Code § 17200 *et seq.* Epic contends that Apple acted unlawfully by restricting app distribution on iOS devices to Apple's App Store, requiring in-app purchases on iOS devices to use Apple's in-app payment processor, and limiting the ability of app developers to communicate the availability of alternative payment options to iOS device users. Apple counter-sued for breach of contract and indemnification for its attorney fees arising from this litigation.

After a sixteen-day bench trial involving dozens of witnesses and nine hundred exhibits, the district court rejected Epic's Sherman Act claims challenging the first and second of the above restrictions—principally on the factual grounds that Epic failed to propose viable less restrictive alternatives to Apple's restrictions. The court then concluded that the third restriction is unfair pursuant to the UCL and enjoined Apple from enforcing it

against any developer. Finally, it held that Epic breached a contract with Apple but was not obligated to pay Apple's attorney fees. Epic appeals the district court's Sherman Act and breach of contract rulings; Apple cross-appeals the district court's UCL and attorney fees rulings. We affirm the district court, except for its ruling respecting attorney fees, where we reverse and remand for further proceedings.

FACTUAL AND PROCEDURAL HISTORY

I. The Parties

Apple is a multi-trillion-dollar technology company that, of particular relevance here, sells desktop and laptop computers (Macs), smartphones (iPhones), and tablets (iPads). In 2007, Apple entered, and revolutionized, the smartphone market with the iPhone—offering consumers, through a then-novel multi-touch interface, access to email, the internet, and several preinstalled "native" apps that Apple had developed itself. Shortly after the iPhone's debut, Apple decided to move on from its native-apps-only approach and open the iPhone's (and later, the iPad's) operating system (iOS) to third-party apps.[1]

This approach created a "symbiotic" relationship: Apple provides app developers with a substantial consumer base, and Apple benefits from increased consumer appeal

1. The iPad has its own operating system (iPadOS) that is derived from iOS. For convenience, we use "iOS" to refer to both the iPhone and iPad's operating systems and collectively refer to iPhones and iPads as "iOS devices."

given the ever-expanding pool of iOS apps. Apple now has about a 15% market share in the global smartphone market with over 1 billion iPhone users, and there are over 30 million iOS app developers. Considering only video game apps, the number of iOS games has grown from 131 in the early days of the iPhone to over 300,000 by the time this case was brought to trial. These gaming apps generate an estimated $100 billion in annual revenue.

Despite this general symbiosis, there is periodic friction between Apple and app developers. That is because Apple, when it opened the iPhone to third-party developers, did not create an entirely open ecosystem in which developers and users could transact freely without any mediation. Instead, Apple created a "walled garden" in which Apple plays a significant curating role.[2] Developers can distribute their apps to iOS devices only through Apple's App Store and after Apple has reviewed an app to ensure that it meets certain security, privacy, content, and reliability requirements. Developers are also required to use Apple's in-app payment processor (IAP) for any purchases that occur within their apps. Subject to some exceptions, Apple collects a 30% commission on initial app purchases (downloading an app from the App Store) and subsequent in-app purchases (purchasing add-on content within an app).

Epic is a multi-billion-dollar video game company with three primary lines of business, each of which

2. Many game consoles—including the Microsoft Xbox, Nintendo Switch, and Sony PlayStation—provide ecosystems that can similarly be labeled "walled gardens."

figures into various aspects of the parties' appeals. First, Epic is a video game developer—best known for the immensely popular *Fortnite*, which has over 400 million users worldwide across gaming consoles, computers, smartphones, and tablets. Epic monetizes *Fortnite* using a "freemium" model: The game is free to download, but a user can purchase certain content within the game, ranging from game modes to cosmetic upgrades for the user's character. *Fortnite* is also notable as one of the first major video games to feature "cross-play," "cross-progression," and "cross-wallet." Cross-play permits users on different platforms to play with one another. Smartphone users, for example, can play against friends on gaming consoles. Cross-progression allows users to retain their in-game progress across every device they own. Users can, for example, play *Fortnite* in the morning on their smartphones and then pick up with their progress saved on their gaming consoles in the evening. Cross-wallet allows users to spend *Fortnite*'s in-game currency on one device even if they purchased it on another. This cross-functionality gives the estimated 32 to 52% of *Fortnite* users who own multiple gaming devices flexibility regarding where and how they play as well as on which devices they make in-game purchases.

Second, Epic is the parent company of a gaming-software developer. Epic International (a Swiss subsidiary) licenses *Unreal Engine* to game developers. *Unreal Engine* offers developers a suite of tools to create three-dimensional content; in return, Epic International receives 5% of a licensee's gross revenue from a product developed using *Unreal Engine* after that product generates

$1,000,000 in revenue. Although *Unreal Engine* is not on Apple's App Store, Epic International does offer several complementary apps there. *Unreal Remote* and *Live Link Face*, for example, allow users to capture live-action footage and then view it on *Unreal Engine*. Thus, Epic—through its subsidiary—continues to be affected by the policies that govern the App Store.

Third, Epic is a video game publisher and distributor. It offers the Epic Games Store as a game-transaction platform on PC computers and Macs and seeks to do the same for iOS devices. As a distributor, Epic makes a game available for download on the Epic Games Store and covers the direct costs of distribution; in exchange, Epic receives a 12% commission—a below-cost commission that sacrifices short-term profitability to build market share. The Epic Games Store has over 180 million registered accounts and over 50 million monthly active users. Through the Epic Games Store, Epic is a would-be competitor of Apple for iOS game distribution and a direct competitor when it comes to games that feature cross-platform functionality like *Fortnite*.

II. The Developer Program Licensing Agreement

Apple creates its walled-garden ecosystem through both technical and contractual means. To distribute apps to iOS users, a developer must pay a flat $99 fee and execute the Developer Program Licensing Agreement (DPLA). The DPLA is a contract of adhesion; out of the millions of registered iOS developers, only a handful have convinced Apple to modify its terms.

By agreeing to the DPLA, developers unlock access to Apple's vast consumer base—the over 1 billion users that make up about 15% of global smartphone users. They also receive tools that facilitate the development of iOS aps, including advanced application-programming interfaces, beta software, and an app-testing software. In essence, Apple uses the DPLA to license its IP to developers in exchange for a $99 fee and an ongoing 30% commission on developers' iOS revenue.

The DPLA contains the three provisions that give rise to this lawsuit and were mentioned in the introduction. First, developers can distribute iOS apps only through the App Store (the distribution restriction). Epic Games, for example, cannot make the Epic Games Store available as an iOS app and then offer *Fortnite* for download through that app. Second, developers must use Apple's IAP to process in-app payments (the IAP requirement). Both initial downloads (where an app is not free) and in-app payments are subject to a 30% commission. Third, developers cannot communicate out-of-app payment methods through certain mechanisms such as in-app links (the anti-steering provision). "Apps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than [IAP]." Nor can developers use "points of contact obtained from account registration within the app (like email or text) [to] encourage users to use a purchasing method other than [IAP]."

III. Apple and Epic's Business Relationship

In 2010, Epic agreed to the DPLA. Over the next few years, Epic released three games for iOS, each of which Apple promoted at major events. In 2015, however, Epic began objecting to Apple's walled-garden approach. Epic's CEO Tim Sweeney argued, in an email seeking a meeting with Apple senior leadership, that it "doesn't seem tenable for Apple to be the sole arbiter of expression and commerce" for iOS users, and explained that Epic runs a competing game-transaction platform that it "would love to eventually" offer on iOS. Nothing came of this email, and Epic continued to offer games on iOS while complying with the DPLA's terms. In 2018, Epic released *Fortnite* on iOS—amassing about 115 million iOS users.

In 2020, Epic renewed the DPLA with Apple but sought a "side letter" modifying its terms. In particular, Epic desired to offer iOS users alternatives for distribution (the Epic Games Store) and in-app payment processing (Epic Direct Pay). Apple flatly rejected this offer, stating: "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 prove a safe, secure, and reliable experience for users . . . ."

Once Apple rejected its offer, Epic kicked into full gear an initiative called "Project Liberty": a two-part plan it had been developing since 2019 to undermine Apple's control over software distribution and payment

processing on iOS devices, as well as Google's influence over Android devices. Project Liberty coupled a media campaign against Apple and Google with a software update expressly designed to circumvent Apple's IAP restriction. On the media-campaign side, Epic lowered the price of *Fortnite*'s in-app purchases on all platforms but Apple's App Store and Google's Google Play Store; it formed an advocacy group (the Coalition for App Fairness), tasking it with "generating continuous media . . . pressure" on Apple and Google; and it ran advertisements portraying Apple and Google as the "bad guys" standing in the way of Epic's attempt to pass cost-savings onto consumers.

On the IAP-circumvention side, Epic submitted a *Fortnite* software update (which Epic calls a "hotfix") to Apple for review containing undisclosed code that, once activated, would enable *Fortnite* users to make in-game purchases without using Apple's IAP. Unaware of this undisclosed code, Apple approved the update and it was made available to iOS users. Shortly thereafter Epic activated the undisclosed code and opened its IAP alternative to users. That same day, Apple became aware of the hotfix and removed *Fortnite* from the App Store. Apple informed Epic that it had two weeks to cure its breaches of the DPLA, or otherwise Apple would terminate Epic Games' developer account.

IV. Procedural History

A. Pre-Trial Proceedings

Only three days after Apple removed *Fortnite* from the App Store, Epic filed a 62-page complaint against Apple in the Northern District of California seeking a temporary restraining order (TRO) reinstating *Fortnite* and enjoining Apple from terminating Epic's iOS developer account.[3] The district court granted Epic's prayer in part and denied in part—leaving *Fortnite* off the App Store but temporarily preventing Apple from taking any adverse action regarding Epic's developer account. After the TRO expired, Apple terminated Epic's developer account. The court then issued a preliminary injunction preventing Apple from terminating the developer accounts of Epic's subsidiaries (including Epic International) and scheduled a bench trial on an expedited basis, with trial beginning just about eight months after Epic filed its complaint.

Epic brought claims for permanent injunctive relief pursuant to the Sherman Act and the UCL. Epic's requested relief, though somewhat vague, would essentially convert iOS into an entirely open platform: Developers would be free to distribute apps through any means they wish and use any in-app payment processor they choose.

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3. The same day, Epic filed a 60-page complaint against Google, challenging its policies regarding the Google Play Store on Android devices—*i.e.*, smartphones and tablets that use the main operating-system alternative to iOS. *See* Complaint for Injunctive Relief, *Epic Games, Inc. v. Google LLC*, No. 3:20-cv-05671 (filed Aug. 13, 2020 N.D. Cal.).

Taken together, this relief would create a pathway for developers to bypass Apple's 30% commission altogether, though Epic made open-ended assurances at trial that its relief would allow Apple to collect a commission—just not in the manner that the DPLA establishes. Apple brought counter-claims for breach of contract and indemnification for its attorney fees related to this litigation.[4]

B. The District Court's Rule 52 Order

After a sixteen-day bench trial, the district court issued a 180-page order pursuant to Federal Rule 52 detailing its findings of facts and conclusions of law.

1. Market Definition

The district court began its analysis by defining the relevant market for Epic's Sherman Act claims. Epic proposed two *single-brand* markets: the *aftermarkets* for iOS app distribution and iOS in-app payment solutions, derived from a *foremarket* for smartphone operating systems. Apple, by contrast, proposed the market for *all* video game transactions, whether those transactions occur on a smartphone, a gaming console, or elsewhere. The district court ultimately found a market between those the parties proposed: mobile-game transactions—*i.e.*, game transactions on iOS and Android smartphones and

4. We omit any discussion of the following claims that the parties asserted below but do not address before our court: (1) Epic's Cartwright Act claims; (2) Apple's counter-claim for breach of the implied covenant of good faith and fair dealing; and (3) Apple's counter-claim for unjust enrichment.

tablets. Compared to Epic's proposed aftermarkets, the district court's relevant market was both broader and narrower—broader in that it declined to focus exclusively on iOS, but narrower in that it considered only video game transactions instead of all app transactions. Compared to Apple's proposed market, the district court's relevant market was narrower—excluding game-console and streaming-service transactions.

The district court rejected Epic's proposed single-brand markets on several grounds. It held that there was no foremarket for smartphone and tablet operating systems because Apple does not license or sell iOS. More critically, it analyzed Epic's aftermarkets in the alternative and found a failure of proof. Epic presented no evidence regarding whether consumers unknowingly lock themselves into Apple's app-distribution and IAP restrictions when they buy iOS devices. A natural experiment facilitated by Apple's removal of *Fortnite* from the App Store showed that iOS *Fortnite* users switched about 87% of their pre-removal iOS spending to other platforms—suggesting substitutionality between the App Store and other game-transaction platforms. The district court also rejected Epic's relevant market-definition expert as "weakly probative" and "more interested in a result [that] would assist his client than in providing any objective ground to assist the court in its decision-making" (cleaned up). Among other flaws, the expert's analysis contradicted his own academic articles on how to analyze two-sided markets; used consumer-survey wording that departed from well-established market-definition principles; failed to account for holiday-season idiosyncrasies; and excluded minors (who are an important

segment of mobile-game purchasers). The district court then turned to Apple's proposed relevant market definition and refined it from *all* game transactions to *mobile* game transactions by relying extensively on the "practical indicia" of markets enumerated in the Supreme Court's decision in *Brown Shoe v. United States*, 370 U.S. 294, 325, 82 S. Ct. 1502, 8 L. Ed. 2d 510 (1962).

2. Sherman Act Section 1: Restraint of Trade

The district court then rejected Epic's Sherman Act Section 1 restraint-of-trade-claim. As a threshold matter, the court held that the DPLA was not a "contract[]" that fell within the scope of Section 1 because it was a "contract of adhesion," not a truly bargained-for agreement. It then, in the alternative, applied the Rule of Reason—the antitrust liability standard applicable to most cases.

At step one of the Rule of Reason, the district court found that Epic proved substantial anticompetitive harms through both direct and indirect evidence. Apple has for years charged a supracompetitive commission on App Store transactions that it set "without regard" for competition. That commission, in turn, creates an "extraordinary high" operating margin of 75% for App Store transactions. Moreover, Apple has market power in the mobile-games-transactions market, evidenced by its 52 to 57% market share and barriers to entry in the form of network effects. Apple uses that market power to prevent would-be competitors like Epic from offering app-distribution and payment-processing alternatives, reducing innovation and Apple's own investment in the App Store in the process.

At step two of the Rule of Reason, the district court found that Apple established non-pretextual, legally cognizable procompetitive rationales for its app-distribution and IAP restrictions. The district court credited Apple's rationale that its restrictions seek to enhance consumer appeal and differentiate Apple products by improving iOS security and privacy. It also *partially* accepted Apple's rationale that the restrictions are a means of being compensated for third-party developers' use of its intellectual property—crediting it generally but rejecting it "with respect to the [App Store's] 30% commission rate specifically."

At step three of the Rule of Reason, the district court rejected Epic's proposed less restrictive alternatives (LRAs) as severely underdeveloped. As a purported LRA to Apple's app-distribution restriction, Epic primarily advanced a "notarization model" based on Apple's approach to security on the Mac operating system (macOS). On macOS, Apple does not mandate an exclusive distribution channel, as it does on iOS; nor does Apple condition distribution of an app on first submitting that app to Apple for review. But when a developer chooses to forego submitting an app to Apple, that app—regardless of how it is distributed to Mac users—will carry a warning that Apple has not scanned it for malware. Critically, the macOS notarization model does not contain a layer of human review as iOS app review does. Given this discrepancy, the district court found that such a model would not be as effective as Apple's current model in achieving Apple's security and privacy goals. It briefly considered whether Apple could close the gap by

imposing a security and privacy floor on third-party app stores, but then noted that it is unclear whether doing so would comport with Epic's requested injunctive relief. In any event, the court found that Epic failed to prove the notarization model would accomplish Apple's IP-compensation rationale because Epic's requested relief "leave[s] unclear whether Apple can collect licensing fee royalties and, if so, how it would do so."

As a purported LRA for the IAP requirement, Epic proposed opening in-app payment processing to competing vendors. The district court again rejected the proposed LRA as not being as effective as Apple's current model in accomplishing its security and privacy goals. More fundamentally, there was little in the record showing how Epic envisioned Apple accomplishing its IP-compensation goal through the proposed LRA. Because the court upheld the app-distribution restriction, Apple would still be entitled to its 30% commission on in-app purchases within apps downloaded from the App Store. On its own initiative, the district court floated the idea of Apple permitting multiple in-app payment processors while reserving a right to audit developers to ensure compliance with the 30% commission. But it quickly rejected that as an alternative because it "would seemingly impose both increased monetary and time costs."

3. Sherman Act Section 1: Tying

The district court rejected Epic's Sherman Act claim that Apple ties in-app payment processing (IAP) to app distribution (the App Store). It did so on the grounds that

neither of the purported separate products were actually separate. As a result, it did not decide which liability standard—*per se* condemnation or the Rule of Reason—would govern the arrangement's lawfulness.

4. Sherman Act Section 2: Monopoly Maintenance

The district court also rejected Epic's claim that Apple monopolized the market for mobile-games transactions. Though Apple has significant market power, the court found it to be insufficiently durable given the rapidly changing nature of the market. In any event, the court reiterated its Rule of Reason analysis to hold that Apple did not maintain its power through anticompetitive conduct.

5. Unfair Competition Law

The court then applied the UCL to Apple's anti-steering provision. The court found that Epic is sufficiently injured to seek injunctive relief because Epic is a competing games distributor and would earn additional revenue but for Apple's restrictions. On the merits, the court applied the competitor-suit "tethering test" and consumer-suit "balancing test" and found the anti-steering provision to be "unfair" pursuant to both. The court concluded that Epic satisfied all the requirements for injunctive relief and the nature of Epic's injury warranted an injunction preventing Apple from enforcing the provision against any developer.

6. Breach of Contract

Turning to Apple's counter-claims, the district found Epic liable for breach of the DPLA. Epic had stipulated that the Project Liberty hotfix breached the DPLA's IAP requirement, so the only dispute was whether Epic could prove that the contract was illegal, void as against public policy, or unconscionable. The district court rejected each of these affirmative defenses.

7. Attorney Fees

Finally, the district court rejected Apple's indemnification claim, which asserted Epic was obligated to pay its attorney fees incurred in this litigation. The DPLA provides that Epic "agree[s] to indemnify and hold harmless [Apple] . . . from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys' fees and court costs . . . , incurred by [Apple] and arising from or related to" Epic's "breach of any certification, covenant, obligation, representation or warranty in [the DPLA]." Applying a principle of California contract law requiring a clear statement before finding an indemnification clause to apply to disputes between the parties themselves, the district court construed the provision as applicable only to third-party claims.

C. Post-Trial Proceedings

Following the handing down of the district court's order, the parties timely appealed and cross-appealed.

Apple also moved to stay the UCL injunction pending appeal—arguing that Epic lacked standing in light of its developer account termination and that injunctive relief was inappropriate. The district court denied the motion and a panel of our court granted it in part.

JURISDICTION AND STANDARD OF REVIEW

We have jurisdiction pursuant to 28 U.S.C. § 1291. In an appeal following a bench trial, we review the district court's factual findings for clear error and its conclusions of law *de novo*. *Oakland Bulk & Oversized Terminal, LLC v. City of Oakland*, 960 F.3d 603, 612 (9th Cir. 2020). We specify the applicable standards of review throughout our opinion.

ANALYSIS

On appeal, Epic challenges the district court's Sherman Act and breach of contract rulings. We affirm the district court's denial of antitrust liability and its corresponding rejection of Epic's illegality defense to Apple's breach of contract counter-claim. Though the district court erred as a matter of law on several issues, those errors were harmless. Independent of the district court's errors, Epic failed to establish—as a factual matter—its proposed market definition and the existence of any substantially less restrictive alternative means for Apple to accomplish the procompetitive justifications supporting iOS's walled-garden ecosystem.

On cross-appeal, Apple challenges the district court's UCL and attorney fees rulings. We affirm in part and reverse and remand in part. The district court did not clearly err in finding that Epic was injured, err as a matter of law when applying California's flexible liability standards, or abuse its discretion when fashioning equitable relief. The district court did, however, err when it held that Apple was not entitled to attorney fees pursuant to the DPLA's indemnification provision.

I. Market Definition

We begin with Epic's appeal. Epic argues that the district court incorrectly defined the relevant market for its antitrust claims to be mobile-game transactions instead of Epic's proposed aftermarkets of iOS app distribution and iOS in-app payment solutions. Epic contends both that the district court erred as a matter of law by requiring several threshold showings before finding a single-brand market and that, once those errors are corrected, the record compels the conclusion that Epic established its single-brand markets. We agree that the district court erred in certain aspects of its market-definition analysis but conclude that those errors were harmless. Despite some threshold errors, the district court proceeded to analyze Epic's evidence pursuant to the proper legal framework and did not clearly err in rejecting Epic's proposed relevant markets. In particular, Epic failed to produce any evidence showing—as our precedent requires—that consumers are generally unaware of Apple's app-distribution and IAP restrictions when they purchase iOS devices.

A. General Market-Definition Principles

The Sherman Act contains two principal prohibitions. Section 1 targets *concerted* action, rendering unlawful "every contract, combination . . . , or conspiracy, in restraint of trade." 15 U.S.C. § 1. Section 2 targets *independent* action, making it unlawful to "monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States." *Id.* § 2; *see Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 767, 104 S. Ct. 2731, 81 L. Ed. 2d 628 (1984) ("The Sherman Act contains a 'basic distinction between concerted and independent action.'" (quoting *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761, 104 S. Ct. 1464, 79 L. Ed. 2d 775 (1984))).[5]

There are two general categories of liability standards for Sherman Act claims. *Flaa v. Hollywood Foreign Press Ass'n*, 55 F.4th 680, 685 (9th Cir. 2022). "A small group of restraints are unreasonable *per se* because they 'always or almost always tend to restrict competition and decrease output.'" *Id.* (quoting *Ohio v. Am. Express Co.*

5. This concerted/independent distinction is somewhat imprecise because Section 2 also encompasses certain concerted action—*i.e.*, "conspiring with any other person or persons" to monopolize a market. *See Dreamstime.com, LLC v. Google LLC*, 54 F.4th 1130, 1137 (9th Cir. 2022) ("Section 2 of the Sherman Act prohibits concerted and independent action that 'monopolize[s] or attempt[s] to monopolize.'"). However, because the distinction is a useful shorthand that is accurate in the mine-run of cases and used throughout the Supreme Court's and our court's decisions, we adopt it here as well.

("*Amex*"), 138 S. Ct. 2274, 2283, 201 L. Ed. 2d 678 (2018)). When a *per se* prohibition applies, we deem a restraint unlawful without any "elaborate study of the industry" in which it occurs. *Id.* (quoting *Texaco Inc. v. Dagher*, 547 U.S. 1, 5, 126 S. Ct. 1276, 164 L. Ed. 2d 1 (2006)). Most restraints, however, are subject to the Rule of Reason: a multi-step, burden-shifting framework that "requires courts to conduct a fact-specific assessment" to determine a restraint's "actual effect" on competition. *Amex*, 138 S. Ct. at 2284 (quoting *Copperweld*, 467 U.S. at 768).

The Rule of Reason applies "essentially the same" regardless of "whether the alleged antitrust violation involves concerted anticompetitive conduct under § 1 or independent anticompetitive conduct under § 2." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020); *see also Flaa*, 55 F.4th at 685 ("Because the legal tests for sections 1 and 2 of the Sherman Act similar, we can 'review claims under each section simultaneously.'" (quoting *Qualcomm*, 969 F.3d at 991)).

In most, though not all, Rule of Reason cases, a "threshold step" is defining the relevant market in which the alleged restraint occurs. *Qualcomm*, 969 F.3d at 992; *see also Amex*, 138 S. Ct. at 2285 ("[C]ourts usually cannot properly apply the rule of reason without an accurate definition of the relevant market.").[6] Because Epic asserts

6. Despite dicta in *Qualcomm* suggesting the contrary, we have never held that a precise market definition is an absolute requirement "in any antitrust case." *Qualcomm*, 969 F.3d at 992. We apply *per se* rules (*e.g.*, the prohibition against price-fixing) without inquiring into market power. *See, e.g.*, *Dagher*, 547 U.S. at 5 (*per se*

Rule of Reason claims and presented both direct and indirect evidence of Apple's market power, we begin our analysis with market definition.

The relevant market for antitrust purposes is "the area of effective competition"—*i.e.*, "the arena within which significant substitution in consumption or production occurs." *Amex*, 138 S. Ct. at 2285 (quoting Phillip E. Areeda & Herbert Hovenkamp, *Fundamentals of Antitrust Law* § 5.02 (4th ed. 2017)); *see also Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997) ("The relevant market is the field in which meaningful competition is said to exist."). A relevant market contains both a geographic component and a product or service component. *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018).

A market comprises "any grouping of sales whose sellers, if unified by a monopolist or a hypothetical cartel" could profitably raise prices above a competitive level.

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rules require "no elaborate study of the industry"). Moreover, as the Supreme Court noted in *Amex*, it has previously applied the Rule of Reason—in its so-called "quick look" cases—without first defining the exact contours of the relevant market. 138 S. Ct. at 2285 n.7 (citing *FTC v. Ind. Fed'n of Dentists*, 476 U.S. 447, 106 S. Ct. 2009, 90 L. Ed. 2d 445 (1986), and *Catalano, Inc. v. Target Sales, Inc.*, 446 U.S. 643, 100 S. Ct. 1925, 64 L. Ed. 2d 580 (1980)); *see also* 1 Julian Von Kalinowski, Peter Sullivan & Maureen, *Antitrust Laws and Trade Regulation* § 12.01[3] (2022) ("Usually, the 'quick look' does not require a detailed analysis of the relevant market and market power."); Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 1911a (4th ed. 2022) ("[D]ifferent applications of the rule of reason require different types and levels of inquiry.").

Rebel Oil Co., Inc. v. Atl. Richfield Co., 51 F.3d 1421, 1434 (9th Cir. 1995). If the "sales of other producers [could] substantially constrain the price-increasing ability of the monopolist or hypothetical cartel, these other producers must be included in the market." *Id.* To conduct this inquiry, courts must determine which products have a "'reasonable interchangeability of use' or sufficient 'cross-elasticity of demand'" with each other. *Hicks*, 897 F.3d at 1120 (quoting *Brown Shoe*, 370 U.S. at 325); *see also United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 400, 76 S. Ct. 994, 100 L. Ed. 1264 (1956) (emphasizing "the responsiveness of the sales of one product to price changes of [another]").

Often, this inquiry involves empirical evidence in the form of a "SSNIP" analysis. That analysis echoes *Rebel Oil* and uses past consumer-demand data and/or consumer-survey responses to determine whether a hypothetical monopolist could profitably impose a **S**mall, **S**ignificant, **N**on-transitory **I**ncrease in **P**rice above a competitive level. As we have previously summarized this analysis:

> [A]n economist proposes a narrow geographic and product market definition and then iteratively expands that definition until a hypothetical monopolist in the proposed market would be able to profitably make a small but significant non-transitory increase in price ("SSNIP"). At each step, if consumers would respond to a SSNIP by making purchases outside the proposed market definition, thereby

> rendering the SSNIP unprofitable, then the proposed market definition is too narrow. At the next step, the economist expands the proposed geographic or product market definition to include the substituted products or area. This process is repeated until a SSNIP in the proposed market is predicted to be profitable for the hypothetical monopolist.

Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., 20 F.4th 466, 482 n.1 (9th Cir. 2021). SSNIP analyses are relevant to both Clayton Act merger challenges and Sherman Act restraint-of-trade or monopolization cases. *See id.* (Sherman Act section 2 monopolization claim); *Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke's Health Sys., Ltd.*, 778 F.3d 775, 783 (9th Cir. 2015) (Clayton Act section 7 merger challenge).[7]

Courts also consider several "practical indicia" that the Supreme Court highlighted in *Brown Shoe*: "[1] industry or public recognition of the [market] as a separate economic entity, [2] the product's peculiar characteristics and uses, [3] unique production facilities,

7. Thus, to the extent the district court held that a SSNIP analysis applies only to merger challenges, it erred. However, because Sherman Act cases may involve markets in which a defendant has substantial market power or monopoly power (and has *already* exercised that power to charge a supracompetitive price), a SSNIP analysis in such cases "must not be used uncritically, and alternative indicia of market power should be explored." Areeda & Hovenkamp, *Antitrust Law*, *supra*, ¶ 539. Otherwise, a court may risk a false negative: *over*-defining a market and finding no market power where, in fact, it does exist.

[4] distinct customers, [5] distinct prices, [6] sensitivity to price changes, and [7] specialized vendors." *Brown Shoe*, 370 U.S. at 325; *Olin Corp. v. FTC*, 986 F.2d 1295, 1299 (9th Cir. 1993) (invoking *Brown Shoe* indicia); *see also* Areeda & Hovenkamp, *Antitrust Law*, *supra*, ¶ 533 (describing these indicia as having "evidentiary usefulness" in determining cross-elasticity of demand).

B. Single-Brand Aftermarkets

"[I]n some instances one brand of a product can constitute a separate market." *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 482, 112 S. Ct. 2072, 119 L. Ed. 2d 265 (1992); *see also Newcal Indus., Inc. v. Ikon Office Sol.*, 513 F.3d 1038, 1048 (9th Cir. 2008) ("[T]he law permits an antitrust claimant to restrict the relevant market to a single brand of the product at issue[.]"). More specifically, the relevant market for antitrust purposes can be an *aftermarket*—where demand for a good is entirely dependent on the prior purchase of a durable good in a *foremarket*.

In *Kodak*, the Supreme Court considered the question of whether a lack of market power in the foremarket (photocopier machines, generally) categorically precludes a finding of market power in the aftermarket (replacement parts for and servicing of Kodak-brand photocopiers), which Kodak had allegedly achieved by contractually limiting customers to Kodak-provided parts and services. 504 U.S. at 455, 466. The Supreme Court rejected Kodak's invitation to impose an across-the-board rule because it was not convinced that the rule—which "rest[ed]

on a factual assumption about the cross-elasticity of demand" in aftermarkets—would always hold true. *Id.* at 470. The Supreme Court thus folded aftermarkets into the framework for assessing markets generally, evaluating cross-elasticity of demand to determine whether a hypothetical monopolist could profitably charge a supracompetitive price. *See id.* at 469 ("The extent to which one market prevents exploitation of another market depends on the extent to which consumers will change their consumption of one product to a price change in another, *i.e.*, the 'cross-elasticity of demand.'" (quoting *Du Pont*, 351 U.S. at 400)).

Explaining its skepticism of the factual assumption underlying *Kodak*'s proposed categorical rule, the Court reasoned that "significant" (1) information costs and (2) switching costs "could create a less responsive connection between aftermarket prices and [foremarket] sales," particularly where the percentage of "sophisticated purchasers" able to accurately life-cycle price is low. *Id.* at 473, 475; *see also id.* 477 n.24 (a "crucial" element is that the aftermarket restrictions were not "generally known" by foremarket consumers). That is, these conditions might "lock-in" unknowing customers such that competition in the foremarket cannot "discipline [competition in] the aftermarkets," meaning a hypothetical monopolist could price its aftermarket products at a supracompetitive level without a substantial number of customers substituting to other products. *Id.* at 486; *see also* Von Kalinowski *et al.*, *supra*, § 24.02[5] (*Kodak* single-brand aftermarket requires "high switching costs," "high information costs," and "substantial" ability to "exploit 'ignorant'

consumers"). Whether a plaintiff has proven such a lock-in must be resolved "on a case-by-case basis, focusing on the 'particular facts disclosed by the record.'" *Kodak*, 504 U.S. at 467 (quoting *Maple Flooring Mfrs. Ass'n v. United States*, 268 U.S. 563, 579, 45 S. Ct. 578, 69 L. Ed. 1093 (1925)).

In *Newcal*, we considered how to square *Kodak* with our prior holding in *Forsyth* that contractual obligations are generally "not a cognizable source of market power." *Newcal*, 513 F.3d at 1047 (citing *Forsyth v. Humana, Inc.*, 114 F.3d 1467 (9th Cir. 2017)). We reasoned that the "critical distinction" between *Kodak*, on the one hand, and *Forsyth*, on the other, is that "the Kodak customers did not knowingly enter a contract that gave Kodak the exclusive right to prove parts and services for the life of the equipment." *Id.* at 1048. Put otherwise, the "simple purchase of a Kodak-brand equipment" was not "functionally equivalent to the signing of a contractual agreement" limiting aftermarket choices. *Id.*; *see also id.* at 1049 ("[T]he law permits an inquiry into whether a consumer's selection of a particular brand in the competitive market is the functional equivalent of a contractual commitment, giving that brand an agreed-upon right to monopolize its consumers in an aftermarket."). Kodak thus differed markedly from *Forsyth*, which involved medical-insurance policyholders who entered into insurance contracts with Humana knowing that certain hospitals would carry higher deductibles and co-payments than others. *See id.* at 1048-49.

Our knowledge-based distinction in *Newcal* flowed directly from the Supreme Court's emphasis in *Kodak* on a defendant's ability to use not "generally known" aftermarket restrictions to exploit unsophisticated consumers. *Kodak*, 504 U.S. at 477 n.24. And, as in *Kodak*, we made sure to emphasize that the aftermarkets inquiry does not end as soon as a plaintiff checks the *Kodak*-based boxes related to consumer knowledge, information costs, and switching costs. "Even when a submarket is an *Eastman Kodak* market, though, it must bear the 'practical indicia' of an independent economic entity in order to qualify as a cognizable submarket under *Brown Shoe*." *Newcal*, 513 F.3d at 1051.

In sum, to establish a single-brand aftermarket, a plaintiff must show: (1) the challenged aftermarket restrictions are "not generally known" when consumers make their foremarket purchase; (2) "significant" information costs prevent accurate life-cycle pricing; (3) "significant" monetary or non-monetary switching costs exist; and (4) general market-definition principles regarding cross-elasticity of demand do not undermine the proposed single-brand market.[8]

8. Epic and the district court interpret *Newcal* to impose a different four-part test. In doing so, they mistakenly rely on a portion of *Newcal* where we determined that the *specific* complaint before us plausibly alleged lack of consumer awareness such that it fell on the *Kodak* side of the *Kodak*/*Forsyth* divide. *See Newcal*, 513 F.3d at 1049 ("In determining whether this case is more like . . . *Forsyth* or more like *Eastman Kodak*, there are four relevant aspects of the complaint.").

C. Standard of Review

"We review relevant market definitions as fact findings reversible only if the evidence compels a conclusion contrary to the [factfinder's] verdict." *Optronic*, 20 F.4th at 482; *see also Saint Alphonsus*, 778 F.3d at 784 (finding "no clear error" in the district court's market definition). Where a plaintiff asserts a *Kodak*-style single-brand aftermarket, it bears the burden of "rebut[ting] the economic presumption that . . . consumers make a knowing choice to restrict their aftermarket options when they decide in the initial (competitive) market to enter a[] . . . contract." *Newcal*, 513 F.3d at 1050.

D. Epic's Legal Challenges

With these principles in mind, we now turn to Epic's arguments that the district court committed legal error when it (1) held a market can never be defined around a product that the defendant does not license or sell, (2) required lack of consumer awareness to establish a *Kodak*-style market, (3) purportedly required a change in policy to establish a *Kodak*-style market, and (4) required Epic to establish the "magnitude" of switching costs. We agree with Epic on its first argument and, to the extent the district court did impose a change-in-policy requirement, Epic's third argument. But we reject Epic's second and fourth arguments as squarely foreclosed by *Kodak* and *Newcal*.[9]

9. We also reject Apple's suggestion that Epic's antitrust claims should have automatically failed as soon as the district court adopted a market of mobile-game transactions, instead of Epic's proposed

Appendix A

1. Unlicensed or Unsold Product Markets

First, the district court erred by imposing a categorical rule that an antitrust market can *never* relate to a product that is not licensed or sold—here smartphone operating systems. To begin, this categorical rule flouts the Supreme Court's instruction that courts should conduct market-definition inquiries based not on "formalistic distinctions" but on "actual market realities." *Amex*, 138 S. Ct. at 2285 (quoting *Kodak*, 504 U.S. at 466-67).

Moreover, the district court's rule is difficult to square with decisions defining a product market to include vertically integrated firms that self-provision the relevant product but make no outside sales. For example, the D.C. Circuit in *Microsoft* noted that "Apple had a not insignificant share of worldwide sales of operating systems," even though Apple did not sell or license macOS but instead only included it in its own Mac computers. *United States v. Microsoft Corp.*, 253 F.3d 34, 73, 346 U.S. App. D.C. 330 (D.C. Cir. 2001). While the *Microsoft* court ultimately excluded macOS from its market, it did so on

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aftermarkets. None of the authorities Apple cites comes anywhere close to supporting its radical argument that, where parties offer dueling market definitions, the case immediately ends if the district court finds the record supports the defendant's proposed market (or a third in-between market, as was the case here) rather than the plaintiff's market. Instead, our precedent squarely forecloses such an argument. *See Rebel Oil*, 51 F.3d at 1421 (rejecting the plaintiff's proposed market but stating that such a rejection was "not fatal" to its claim, and remanding to determine whether the defendant possessed market power in the defendant-proposed market that the court adopted).

fact-bound substitutability grounds, not the categorical grounds that the district court used here. *Id.* at 52.

Finally, the district court's rule overlooks that there may be markets where companies offer a product to one side of the market for free but profit in other ways, such as by collecting consumer data or generating ad revenue. *See, e.g.*, *FTC v. Facebook, Inc.*, 581 F. Supp. 3d 34, 44-45, 55 (D.D.C. 2022) (finding FTC plausibly alleged a market of personal social networks even though "all [are] provided free of charge" to users). It puts form over substance to say that such products cannot form a market because they are not directly licensed or sold.

2. Lack of Consumer Knowledge

Second, the district court did not err when it required Epic to produce evidence regarding a lack of consumer knowledge of Apple's app-distribution and IAP restrictions. Such a requirement comes directly from *Kodak* and *Newcal*. The former stated that it is "crucial" that aftermarket restrictions are not "generally known." *Kodak*, 504 U.S. at 477 n.24. The latter placed the burden on a plaintiff to "rebut the economic presumption that . . . consumers make a knowing choice to restrict their aftermarket options" when they make a foremarket purchase. *Newcal*, 513 F.3d at 1050.[10]

10. As Epic correctly notes in its opening brief, *Kodak* does not impose a requirement that a plaintiff show "complete ignorance" of a defendant's aftermarket restrictions; it need only show that the restrictions are not "generally known." *Kodak*, 504 U.S. at 477 n.24. We need not decide what amounts to "general[]" unawareness

3. Change in Policy

Third, Epic argues that the district court erred by holding that a plaintiff can establish a *Kodak*-style aftermarket only if it shows that the defendant adopted its aftermarket restrictions *after* some portion of consumers purchased their foremarket durable goods. Had the district court actually imposed such an absolute change-in-policy requirement, it would have erred. As explained above, *Kodak* and *Newcal* require a showing of a lack of consumer awareness regarding aftermarket restrictions. *Newcal*, 513 F.3d at 1050. A change in policy is of course *one* way of doing so; a consumer cannot knowingly agree to a restriction that did not exist at the time of the foremarket transaction. But it is not the *exclusive* means of doing so. Indeed, *Kodak* itself contemplated that some sophisticated, high-volume consumers would be able to accurately life-cycle price goods in the foremarket. *Kodak*, 504 U.S. at 476. Such life-cycle pricing would be impossible if those consumers were unaware that they would be restricted to certain vendors in the aftermarket.

But contrary to Epic's assertion, we do not read the district court's order as running counter to these principles. The district court explained that "other circuits have aligned with the contours of *Newcal* . . . regarding knowledge and/or post-purchase policy changes" and that the "breadth of antitrust law" requires that a restriction "must not have been sufficiently disclosed to consumers."

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because Epic presented *no* evidence of consumer unawareness. *See infra* section I.E.

It then quoted the operative language from *Newcal* that focuses on lack of knowledge, not the necessity of a policy change. Finally, it examined the record to find neither a change in policy nor proof that iOS device purchasers are unaware of the distribution and IAP restrictions. *See infra* section I.E. The district court appropriately treated a change in policy as one, but not the exclusive, way of establishing *Kodak* and *Newcal*'s general-lack-of-knowledge requirement.

4. Significant Switching Costs

Fourth, the district court did not err when it required Epic to produce evidence about the *magnitude* of switching costs. *Kodak* explicitly requires that switching costs—whether monetary or non-monetary—be "significant." *Kodak*, 504 U.S at 473. This showing need not be extensive; among other things, a plaintiff can point to the "heavy initial outlay" of the foremarket good and brand-specific purchases. *Id.* at 477. By requiring such a showing, the district court was simply fulfilling its *Kodak* obligation of ensuring that switching costs are "significant."[11]

E. Epic's Clear-Error Challenge

We now turn to the main thrust of Epic's market-definition argument: that it is entitled, as a factual matter, to a finding in favor of its proposed aftermarkets. Though Epic attempts to avoid the clear-error label, its

11. As explained in the following section, we express no view on whether the district court erred when applying this significance requirement to Epic's proffered evidence regarding switching costs.

argument requires it to carry the heavy of burden on appeal of showing that the district court clearly erred in finding that (1) Epic failed to show a lack of general consumer awareness regarding Apple's restrictions on iOS distribution and payment processing, (2) Epic failed to show significant switching costs, and (3) the empirical evidence in the record and the *Brown Shoe* practical indicia support a market of mobile-game transactions, not Epic's iOS-specific aftermarkets.[12]

Beginning with the first prong, Epic had the burden of showing a lack of consumer awareness—whether through a change in policy or otherwise. Epic identified a purported change in policy, contrasting the App Store's now-immense profitability with a pre-launch statement from Steve Jobs that Apple did not "intend to make money off the App Store['s]" 30% commission. The district court reasonably found this statement to simply reflect Jobs's "initial expectation" about the App Store's performance, not an announcement of Apple policy. Especially in light of the district court's finding that Apple has "maintained the same general rules" for distribution and payment processing since the App Store's early days, it did not clearly err in concluding that Epic failed to prove a lack of consumer awareness through a change of policy.

Nor did the district court clearly err in finding that Epic otherwise failed to establish a lack of awareness. Indeed, the district court squarely found: "[T]here is *no*

12. The district court did not rule against Epic on the remaining prong of the *Kodak/Newcal* test: the presence of significant information costs that make accurate life-cycle pricing difficult.

evidence in the record demonstrating that consumers are unaware that the App Store is the sole means of digital distribution on the iOS platform" (emphasis added). And on appeal, Epic fails to cite any evidence that would undermine the district court's characterization of the record.

Because of this failure of proof on the first prong of Epic's *Kodak/Newcal* showing, we need not reach—and do not express any view regarding—the other factual grounds on which the district court rejected Epic's single-brand markets: (1) that Epic did not show significant switching costs, and (2) that empirical evidence and the *Brown Shoe* factors rebut Epic's proposed aftermarkets.

Moreover, the district court's finding on *Kodak/Newcal*'s consumer-unawareness requirement renders harmless its rejection of Epic's proposed aftermarkets on the legally erroneous basis that Apple does not license or sell iOS as a standalone product. *See supra* section I.D.1. To establish its single-brand aftermarkets, Epic bore the burden of "rebut[ting] the economic presumption that . . . consumers make a knowing choice to restrict their aftermarket options when they decide in the initial (competitive) market to enter a[] . . . contract." *Newcal*, 513 F.3d at 1050. Yet the district court found that there was "no evidence in the record" that could support such a showing. As a result, Epic cannot establish its proposed aftermarkets on the record before our court—even after the district court's erroneous reasoning is corrected.

In his partial dissent, our colleague, Judge Thomas, disagrees with our conclusion that the error discussed in section I.D.1 is harmless. First, Judge Thomas contends that we lack any "direct authority for [this] proposition." While we do not have a *Kodak*-specific case to cite, treating an error as harmless in light of an independent and sufficient alternative finding is standard fare in appellate courts. *See, e.g.*, *United States v. Wright*, 46 F.4th 938, 944 (9th Cir. 2022) ("[The district court's . . . error was harmless in light of its alternative holding . . . ." (capitalization standardized)); *Tommasetti v. Astrue*, 533 F.3d 1035, 1042 (9th Cir. 2008) ("Although the ALJ's step four determination constitutes error, it is harmless error in light of the ALJ's alternative finding at step five."); *United States v. Koenig*, 912 F.2d 1190, 1190 (9th Cir. 1990) ("We agree [with the appellant's assertion of error], but conclude that the district court made alternative rulings that render any error harmless."). Second, and relatedly, Judge Thomas argues that our harmless-error conclusion runs counter to precedent instructing that, outside of certain exceptions, "courts usually cannot apply the rule of reason without an accurate definition of the relevant market." *Amex*, 138 S. Ct. at 2285. But that argument misconstrues the effect of the district court's finding on the consumer-unawareness prong. If, as Judge Thomas requests, we were to just correct the district court's erroneous reasoning and then remand, the district court's market definition on remand would be foreordained. Given the total lack of evidence on consumer-unawareness, Epic cannot establish its proposed aftermarkets. So, contrary to the partial dissent's assertion, we do not proceed to apply the Sherman Act's liability standards without first

defining a relevant market. Epic's proposed aftermarkets fail, and Apple did not cross-appeal the district court's rejection of its proposed market. The district court's middle-ground market of mobile-games transaction thus stands on appeal, and it is that market in which we assess whether Apple's conduct is unlawful pursuant to the Sherman Act.

II. Sherman Act Section 1: Unreasonable Restraint

With the relevant market for Epic's antitrust claims established (mobile-game transactions), we turn to the district court's rejection of Epic's Sherman Act Section 1 restraint-of-trade claim. Section 1 prohibits "[e]very contract, combination . . . , or conspiracy, in restraint of trade." 15 U.S.C. § 1. Courts have long read Section 1 to "outlaw only *unreasonable* restraints." *Amex*, 138 S. Ct. at 2283 (quoting *State Oil v. Khan*, 522 U.S. 3, 10, 118 S. Ct. 275, 139 L. Ed. 2d 199 (1997)). Thus, a Section 1 inquiry has both a threshold component (whether there is a contract, combination, or conspiracy) and a merits component (whether it is unreasonable). *Qualcomm*, 969 F.3d at 988-89. While a restraint can be unreasonable *per se* or pursuant to the Rule of Reason, the parties agree that the latter standard applies here.

Epic contends that the district court (1) incorrectly found that the DPLA was not a "contract[]" within the scope of Section 1, (2) misapplied steps two and three of the Rule of Reason, and (3) omitted a fourth balancing step after it found that Epic failed to satisfy its step-three burden. Apple asserts—as an alternative basis

for affirming the district court's denial of Sherman Act liability—that the court erred at step one of the Rule of Reason. We agree with Epic on its first and third arguments but find the errors to be harmless; we reject Epic's and Apple's remaining arguments.

A. Existence of a Contract

The district court erred when it held that a non-negotiated contract of adhesion like the DPLA falls outside of the scope of Section 1. That holding plainly contradicts Section 1's text, which reaches "[*e*]*very contract*, combination . . . , or conspiracy" that unreasonably restrains trade. 15 U.S.C. § 1 (emphasis added). To hold that a contract is exempt from antitrust scrutiny simply because one party "reluctant[ly]" accepted its terms "would be to read the word[] 'contract'" out of the statute. *Systemcare, Inc. v. Wang Lab'ys Corp.*, 117 F.3d 1137, 1143 (10th Cir. 1997).

Moreover, the district court's contract-of-adhesion exemption is difficult to square with numerous antitrust cases involving agreements in which one party set terms and the other party reluctantly acquiesced. *See, e.g.*, *Amex*, 138 S. ct. at 2282 ("Amex's business model sometimes causes friction with merchants"); *Perma Life Mufflers, Inc. v. Int'l Parts Corp.*, 392 U.S. 134, 142, 88 S. Ct. 1981, 20 L. Ed. 2d 982 (1968) (the plaintiff "unwillingly complied with the restrictive . . . agreements"), *overruled on other grounds by Copperweld*, 467 U.S. 752; *Barry v. Blue Cross of Cal.*, 805 F.2d 866, 869 (9th Cir. 1986) (contract "terms and structure were made by" the defendant). Given the

number of cases in which the district court's exemption would have been decisive, it is telling that the dog never barked.

Additionally, as the district court itself recognized, its holding is "not particularly consistent" with ties being cognizable pursuant to Section 1. In a classic tie, the defendant "exploit[s] . . . its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 12, 104 S. Ct. 1551, 80 L. Ed. 2d 2 (1984), *overruled on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 126 S. Ct. 1281, 164 L. Ed. 2d 26 (2006). "If such conduct were to be labelled 'independent,' virtually all tying arrangements would be beyond the reach of Section 1." *Image Tech. Serv., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 619 (9th Cir. 1990).

Moreover, Section 1 is primarily concerned with firms that exercise market power—*i.e.*, the "special ability . . . to force a [a contracting partner] to do something that he would not do in a competitive market." *Jefferson Parish*, 466 U.S. at 13-14. The district court's rule would preclude Section 1 suits and illegality defenses to breach of contract claims where they are most needed: when dealing with restraints imposed by firms that have market power but lack the monopoly power that triggers Section 2 scrutiny.[13]

13. The decisions that the district court relied on are readily distinguishable. An express agreement is "direct evidence of 'concerted activity.'" *Paladin Assocs., Inc. v. Mont. Power Co.*,

Thus, the district court erred on this threshold issue. But because the court, in the alternative, properly applied the Rule of Reason, its error was harmless.

B. Rule of Reason Step One: Anticompetitive Effects

The district court did not err when it found that Epic made the Rule of Reason's required step-one showing. At step one, "the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market." *Amex*, 138 S. Ct. at 2284. Antitrust plaintiffs can make their step-one showing either "directly or indirectly." *Id.*; *accord PLS.Com, LLC v. Nat'l Ass'n of Realtors*, 32 F.4th 824, 834 (9th Cir. 2022); *Aya Healthcare Servs., Inc. v. AMN Healthcare, Inc.*, 9 F.4th 1102, 1112 (9th Cir. 2021); *Rebel Oil.*, 51 F.3d at 1434.

"To prove a substantial anticompetitive effect *directly*, the plaintiff must provide 'proof of actual detrimental effects [on competition],' such as reduced output, increased

328 F.3d 1145, 1153 (9th Cir. 2003). But the district court relied exclusively on cases in which there was *no* direct evidence of concerted activity and a plaintiff instead produced circumstantial evidence to show that the defendants were acting in concert. *See, e.g.*, *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 104 S. Ct. 1464, 79 L. Ed. 2d 775 (1984). Where a plaintiff puts forward only circumstantial evidence, courts must conduct a searching inquiry, lest they mistake parallel conduct (which is legal) for concerted activity (which is subject to Section 1 scrutiny). *Id.* at 768; *see In re Musical Instruments & Equip. Antitrust Litig.*, 798 F.3d 1186, 1193-94 (9th Cir. 2015). Where there is an express contract, that concern is simply not present.

prices, or decreased quality in the relevant market." *PLS. Com*, 32 F.4th at 834 (emphasis added) (quoting *Amex*, 138 S. Ct. at 2284). Importantly, showing a reduction in output is one form of direct evidence, but it "is not the only measure." *O'Bannon v. NCAA*, 802 F.3d 1049, 1070 (2015) (emphasis removed) (quoting Areeda & Hovenkamp, *Antitrust Law*, supra, ¶ 1503b(1)).

To prove substantial anticompetitive effects *indirectly*, the plaintiff must prove that the defendant has market power and present "some evidence that the challenged restraint harms competition." *Amex*, 138 S. Ct. at 2284. Market power is the ability for a defendant to profitably raise prices by restricting output. *Id.* at 2288; *see also Jefferson Parish*, 466 U.S. at 13-14 (market power is the ability "to force a purchaser to do something that he would not do in a competitive market"). In other words, a firm with market power is a price-*maker*, not the price-*takers* that economic theory expects in a competitive market. Pursuant to this indirect-evidence route, "[t]he existence of market power is a significant finding that casts an anticompetitive shadow over a party's practices in a rule-of-reason case." *Hahn v. Or. Physicians' Serv.*, 868 F.2d 1022, 1026 (9th Cir. 1988).

Market power is generally inferred from the defendant's possession of a high market share and the existence of "significant barriers to entry." *Rebel Oil*, 51 F.3d at 1434. Whether a defendant possesses market power is a factual question that we review for clear error. *Cf. L.A. Land Co. v. Brunswick Corp.*, 6 F.3d 1422, 1425 (9th Cir. 1993) (possession of monopoly power is a fact question).

A plaintiff must also present "some evidence" that the defendant uses that market power to harm competition. *Amex*, 138 S. Ct. at 2284; *see also Aya Healthcare*, 9 F.4th at 1113 (citing *Tops Mkts., Inc. v. Quality Mkts., Inc.*, 142 F.3d 90, 97 (2d Cir. 1998), for the proposition that "market power alone does not suffice as indirect evidence for a rule-of-reason analysis"). This inquiry need not always be extensive or highly technical. It is sufficient that the plaintiff prove the defendant's conduct, as matter of economic theory, harms competition—for example that it increases barriers to entry or reduces consumer choice by excluding would-be competitors that would offer differentiated products. *See N. Am. Soccer League, LLC v. U.S. Soccer Fed'n Inc.*, 883 F.3d 32, 42 (2d Cir. 2018).

Here, the district concluded that Epic produced both sufficient direct and indirect evidence to show that Apple's distribution and IAP restrictions impose substantial anticompetitive effects. In terms of direct evidence, the court found that Apple has for years extracted a supracompetitive commission that was set "almost by accident" and "without regard" to its own costs and has produced "extraordinarily high" operating margins that "have exceeded 75% for years." The court found that "the economic factors driving" other platforms' rates "do not apply equally to Apple," with "nothing other than legal action seem[ing] to motivate Apple to reconsider pricing and reduce rates." With respect to indirect evidence, the district court found that Apple has market power: Apple had a mobile-games market share of 52 to 57% for the three years in evidence, and network effects and information restrictions create barriers to entry. The

court found that Apple wielded that market power to foreclose would-be competitors like Epic from offering app-distribution and payment-processing alternatives—reducing innovation and Apple's own investment in the App Store in the process.

1. Direct Evidence

Apple challenges both the district court's direct-and indirect-evidence conclusions on several grounds—some legal, some factual. We are not persuaded that the district court erred at step one of the Rule of Reason.[14]

First, Apple argues that the district court's direct-evidence conclusion cannot stand because Epic did not show that Apple's restrictions reduced output. We squarely rejected this argument in *O'Bannon*. There, the NCAA similarly argued that liability was foreclosed because output in the relevant market "increased steadily over time." 802 F.3d at 1070. "Although output reductions are one common kind of anticompetitive effect in antitrust cases, a 'reduction in output is not the *only* measure of anticompetitive effect.'" *Id.* (citation omitted). Nor does *Amex* displace our holding in *O'Bannon*. A showing of

14. We also reject Apple's threshold argument that the district court erred by not isolating the effects of Apple's unilateral product-design decisions from the effects of the contractual restrictions that are properly within the scope of Section 1. This argument runs counter to the record. When conducting its Rule of Reason analysis, the district court noted that Epic "appear[ed] to disclaim any challenge to Apple's code signing restrictions," so the court "consider[ed] only the DPLA restrictions."

decreased output was essential in that case because the plaintiff "failed to offer any reliable measure of Amex's transaction price or profit margins" and "the evidence about whether Amex charges more than its competitors was ultimately inconclusive." *Amex*, 138 S. Ct. at 2288.

Second, Apple argues that Epic's evidence of supracompetitive pricing fails as a matter of law because Apple never raised its commission. A supracompetitive price is simply a "price[] above competitive levels." *Rebel Oil*, 51 F.3d at 1434. Apple cites no binding precedent in support of its proposition that the charging of a supracompetitive price must always entail a price increase, though we recognize that it ordinarily does.

Third, Apple attacks the supracompetitive-pricing finding on factual grounds by asserting that Apple charges a substantially similar commission as its competitors. That assertion is true as far as *headline* rates go, but the district court reasonably based its supracompetitive-price finding on *effective* commission rates instead of headline rates. The district court found Apple's reliance on headline rates to be "suspect" because, unlike the App Store, other platforms "frequently negotiate[] down" the rates they charge developers. The court noted that Amazon has a headline rate of 30% but an effective commission rate of 18%. And it credited testimony that game-console transaction platforms often "negotiate special deals for large developers." While the district court's finding that the Google Play Store (the App Store's "main competitor") charges a 30% rate seemingly undermines the characterization of Apple's commission

as supracompetitive, we cannot say that the district court clearly erred absent evidence about the Google Play Store's effective commission—the metric that the district court at trial found to be the key to determining the competitiveness of a price in this market.

Fourth, Apple argues that the district court's direct-evidence finding fails as a matter of law because *Amex* requires Epic to establish anticompetitive effects on both sides of the two-sided market for mobile-game transactions (developers and users). Apple's argument falls short both legally and factually. We have previously held: "*Amex* does not require a plaintiff to [show] harm to participants on both sides of the market. All *Amex* held is that to establish that a practice is anticompetitive in certain two-sided markets, the plaintiff must establish an anticompetitive impact on the 'market as a whole.'" *PLS.com*, 32 F.4th at 839 (quoting *Amex*, 138 S. Ct. at 2287). In any event, the district court found that, while Apple's restrictions "certainly impact developers," there was "some evidence" that the restrictions also "impact[] consumers when those costs are passed on."

2. Indirect Evidence

We are not persuaded by Apple's argument that the district court erred in concluding that Epic established indirect evidence of anticompetitive effects. Apple does not take issue with the district court's finding of a 52 to 55% market share (other than noting it was the court's "own . . . calculation"); nor does Apple challenge the court's barriers-to-entry finding. It instead argues that

the finding that Apple wields its market power in an anticompetitive manner is speculative. But, supported by basic economic presumptions, the district court reasonably found that, without Apple's restrictions, would-be competitors could offer iOS users alternatives that would differentiate themselves from the App Store on price as well as consumer-appeal features like searchability, security, privacy, and payment processing. Indeed, it found competition in the PC-gaming market to be a "vivid illustration": Steam had long charged a 30% commission, but upon Epic's entry into the market, it lowered its commission to 20%. Epic's indirect-evidence showing was sufficient. *See N. Am. Soccer League*, 883 F.3d at 42 (market power combined with a restriction that "reduce[s] consumer choice" satisfies step one).

C. Step Two: Procompetitive Rationales

The district court correctly held that Apple offered non-pretextual, legally cognizable procompetitive rationales for its app-distribution and IAP restrictions. If a plaintiff establishes at step one that the defendant's restraints impose substantial anticompetitive effects, then the burden shifts back to the defendant to "show a procompetitive rationale for the restraint[s]." *NCAA v. Alston*, 141 S. Ct. 2141, 2160, 210 L. Ed. 2d 314 (2021) (quoting *Amex*, 138 S. C.t at 2284). A procompetitive rationale is "a [1] nonpretextual claim that [the defendant's] conduct is [2] indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal." *Qualcomm*, 969 F.3d at 991.

Here, the district court accepted two sets of rationales as non-pretextual and legally cognizable. First, it found that Apple implemented the restrictions to improve device security and user privacy—thereby enhancing consumer appeal and differentiating iOS devices and the App Store from those products' respective competitors. Second, the court *partially* accepted Apple's argument that it implemented the restrictions to be compensated for its IP investment. While the court credited the IP-compensation rationale generally, it rejected the rationale "with respect to the 30% commission rate specifically." On appeal, Epic raises three arguments challenging Apple's rationales as legally non-cognizable.

1. Partial Acceptance of Apple's IP-Compensation Rationale

Epic argues that the district court may not credit Apple's IP-compensation rationale while finding that the rationale was pretextual "with respect to the 30% commission rate *specifically*" (emphasis added). We have held that IP-compensation is a cognizable procompetitive rationale, *Kodak*, 125 F.3d at 1219 ("desire to profit from . . . intellectual property" is presumptively procompetitive), and we find no error in the district court's *partial* crediting of that rationale here.

The district court's acceptance of the rationale generally, while rejecting a specific application of it, resembles the district court's analysis in the NCAA litigation that culminated in *Alston*, 141 S. Ct. 2141. There, the district court credited the NCAA's amateurism-as-

consumer-appeal rationale but found that the NCAA's "rules and restrictions on [amateurism] ha[d] shifted markedly over time," that the NCAA adopted some restrictions "without any reference to considerations of consumer demand," and that some were "not necessary to consumer demand." *Id.* at 2163. The court did not, as Epic requests here, resolve the case at step two and hold that the NCAA's shaky proof meant it lacked *any* procompetitive rationale. Instead, the "deficiencies in the NCAA's proof of procompetitive benefits at the second step influenced the analysis at the third [step]." *Id.* at 2162. Because the NCAA's amateurism-as-consumer-appeal rationale was nebulously defined and weakly substantiated, the plaintiffs had more flexibility at step three to fashion less restrictive alternatives.

The same is true here. Because the district court accepted only a general version of Apple's IP-compensation rationale (that Apple was entitled to "*some* compensation"), Epic at step three needed only to fashion a less-restrictive alternative calibrated to achieving that general goal, instead of one achieving the level of compensation that Apple currently achieves through its 30% commission. There is no legal requirement—as Epic suggests—that district courts make pretext findings on an all-or-nothing basis. When district courts at step two partially credit a rationale, step three will necessarily take that partial finding into account.

2. Cognizability of Apple's Privacy/Security Rationales

Epic and its *amici* next argue that Apple's security and privacy rationales are *social*, not procompetitive, rationales and therefore fall outside the purview of antitrust law. We reject this argument.

To begin, Epic waived this argument by failing to raise it below. *See Friedman v. AARP, Inc.*, 855 F.3d 1047, 1057 (9th Cir. 2017) ("Our general rule is that we do not consider an issue not passed upon below."). In the parties' pre-trial joint submission on elements and remedies, Epic agreed that "enhancing consumer appeal"—the goal of Apple's security and privacy efforts—is a cognizable procompetitive justification. At trial, one of Epic's experts conceded that "[p]rotecting iPhone users from security threats is a procompetitive benefit." And Epic made no reference to cognizability in its proposed findings of fact and conclusions of law.

Even setting aside Epic's failure to raise this argument below, we are not persuaded by it. *See Carrillo v. County of Los Angeles*, 798 F.3d 1210, 1223 (9th Cir. 2015) (courts of appeal have discretion to address pure questions of law if doing so will not prejudice the opposing party). Epic's argument characterizes Apple as asserting security and privacy as independent justifications in and of themselves. But, throughout the record, Apple makes clear that by improving security and privacy features, it is tapping into consumer demand and differentiating its products from those of its competitors—goals that are

plainly procompetitive rationales. *See, e.g., Qualcomm*, 969 F.3d at 991 (listing enhanced "consumer appeal" as a legitimate procompetitive rationale); *O'Bannon*, 802 F.3d at 1072-73 (considering the NCAA's amateurism rationale that "plays a role in increasing consumer demand"). Consumer surveys in the record show that security and privacy is an important aspect of a device purchase for 50% to 62% of iPhone users and 76% to 89% of iPad users worldwide. Even Epic's CEO testified that he purchased an iPhone over an Android smartphone in part because it offers "better security and privacy." And the district court found that, because Apple creates a "trusted app environment, users make greater use of their devices."

With Apple's restrictions in place, users are free to decide which kind of app-transaction platform to use. Users who value security and privacy can select (by purchasing an iPhone) Apple's closed platform and pay a marginally higher price for apps. Users who place a premium on low prices can (by purchasing an Android device) select one of the several open app-transaction platforms, which provide marginally less security and privacy. Apple's restrictions create a heterogenous market for app-transaction platforms which, as a result, increases interbrand competition—the primary goal of antitrust law. *See, e.g., Leegin Creative Leather Prods. Inc. v. PSKS, Inc.*, 551 U.S. 877, 895, 127 S. Ct. 2705, 168 L. Ed. 2d 623 (2007); *State Oil*, 522 U.S. at 15.[15] Antitrust law assumes

15. Epic argues that interbrand competition in the smartphone market is irrelevant because in the app-transactions market Epic is Apple's would-be competitor—*i.e.*, the DPLA prevents interbrand competition between the App Store and the Epic Games Store in the

that competition best allocates resources by allowing firms to compete on "all elements of a bargain—quality, service, safety, and durability—and not just the immediate cost." *Nat'l Soc'y of Pro. Eng'rs v. United States*, 435 U.S. 679, 695, 98 S. Ct. 1355, 55 L. Ed. 2d 637 (1978). If we were to accept Epic and its *amici*'s argument, then no defendant could cite competing on non-price features as a procompetitive rationale.

To avoid this conclusion, Epic and its *amici* rely on a line of cases stemming from *National Society of Professional Engineers*. But neither that case nor its progeny support their argument that improved quality is a social, rather than procompetitive, rationale. Instead, the *Professional Engineers* line of cases holds that a defendant cannot severely limit interbrand competition on the theory that *competition itself* is ill-suited to a certain market or industry. *See id.* at 694-96. Epic's selection of quotes from *Professional Engineers* and other cases—without acknowledging the distinct context in which they occurred—is unconvincing.

In *Professional Engineers*, a professional association with about 12,000 engineers adopted a rule prohibiting its members from engaging in competitive bidding on

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game-transactions market. But this was also true in *Kodak*: The independent service operators were would-be competitors of Kodak in the service market. Still, the Court entertained (while ultimately rejecting on factual grounds) Kodak's procompetitive rationale that its service restrictions ensured high-quality products and thus promoted interbrand competition in the foremarket for photocopiers. *Kodak*, 504 U.S. at 482-84.

construction projects. *Id.* at 681. This "absolute ban" on competitive bidding imposed substantial anticompetitive effects, and the Society's sole justification was that competition in the construction-engineering market would lead engineers to perform "inferior work with consequent risk to safety and health." *Id.* at 692-94. In other words, competition in the construction engineering industry was not in the "public benefit." *Id.* The Supreme Court rejected this request for a judge-made exemption from the Rule of Reason, which "does not support a defense based on the assumption that competition itself is unreasonable," and stated that the Society's argument should be "addressed to Congress." *Id.* at 696.

Indiana Federation of Dentists likewise involved a request for an exemption from the Rule of Reason. There, an association of dentists, which had a nearly 100% market share in one area and a nearly 70% market share in another, adopted a rule prohibiting its members from submitting x-rays to dental insurers. *Ind. Fed. of Dentists*, 476 U.S. at 448-49. The rule made it prohibitively expensive for insurers to impose cost-containment measures and thus eliminated interbrand competition regarding cooperation with patients' insurers. *Id.* at 449. The Federation argued that competition would undermine "quality of care"—that, without the rule, consumers would make "unwise and even dangerous choices" regarding dental procedures. *Id.* at 463. The Supreme Court rejected this argument—that competition was ill-suited for the dental industry—as squarely foreclosed by *Professional Engineers. Id.*

Trial Lawyers Association followed a similar track, but with respect to a requested exemption from a *per se* rule. A professional association comprising about 90% of "regulars" appointed for indigent criminal defense in the Superior Court of the District of Columbia entered into a group boycott against the District until it "substantially increase[d]" hourly rates. *FTC v. Sup. Ct. Trial Lawyers' Ass'n*, 493 U.S. 411, 416, 110 S. Ct. 768, 107 L. Ed. 2d 851 (1990). The Association argued that its actions were not unlawful because the District had a "constitutional duty" to provide adequate representation to indigent defendants, which required it to provide meaningful compensation to their attorneys. *Id.* at 423. The Court refused to exempt the Association's conduct from the normal application of antitrust's *per se* prohibition on group boycotts, concluding that "[t]he social justifications proffered for respondents' restraint of trade . . . do not make it any less unlawful." *Id.* at 424.

The Supreme Court followed suit last term in *Alston* when it rejected the NCAA's sweeping plea for leniency. The NCAA argued that something more deferential than the Rule of Reason should apply to its restrictions on student-athlete compensation because the NCAA's amateurism restrictions advance the "societally important non-commercial objective of higher education." *Alston*, 141 S. Ct. at 2158. The Supreme Court held that this argument—that the NCAA "should be exempt from the usual operation of the antitrust laws"—should be directed to Congress, not a court. *Id.* at 2160.

Apple's rationales categorically differ from those asserted in the above cases. Apple did not agree with other app-transaction platforms (*e.g.*, the Google Play Store) to eliminate *interbrand* competition and then invoke security and privacy to avoid the "normal operation" of the Rule of Reason. *Id.* at 2147. Rather, Apple imposed *intrabrand* limitations (that iOS devices use Apple distribution and payment-processing channels) and contends that these restrictions tap into consumer demand for a private and secure user experience and distinguish the App Store from its open-platform competitors.

3. Cognizability of Cross-Market Rationales

Epic finally argues that, even if Apple's security and privacy restrictions are procompetitive, they increase competition in a *different market* than the district court defined and in which Epic showed step-one anticompetitive effects, and thus are not legally cognizable at step two. In Epic's view, Apple's rationales relate to the market for smartphone operating systems (or the market for smartphones), while the anticompetitive effects of Apple's restrictions impact the market for mobile-game transactions.

The Supreme Court's precedent on this issue is not clear. While *amici* argued in *Alston* that cross-market justifications fail as a matter of law, the Supreme Court "express[ed] no view[]" on the argument. 141 S. Ct. at 2155. Dicta from one *per se* decision provides some support for Epic's position. *See United States v. Topco Assocs., Inc.*, 405 U.S. 596, 609-10, 92 S. Ct. 1126, 31 L. Ed. 2d 515 (1972)

(courts are unable "to weigh, in any meaningful sense, destruction of competition in one sector of the economy against promotion of competition in another sector"). But the Supreme Court has considered cross-market rationales in Rule of Reason and monopolization cases. *See Kodak*, 504 U.S. at 482-84 (relevant market of Kodak-brand service and parts; procompetitive rationale in market for photocopiers); *NCAA v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 104-17, 104 S. Ct. 2948, 82 L. Ed. 2d 70 (1984) (relevant market of college football television; procompetitive rationale of protecting the market for college football tickets). Our court's precedent is similar. While we have never expressly confronted this issue, we have previously considered cross-market rationales when applying the Rule of Reason. *See O'Bannon*, 802 F.3d at 1069-73; *In re NCAA Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1266-71 (9th Cir. 2020) (M. Smith, J., concurring).

We decline to decide this issue here. Like Epic's general cognizability argument, Epic did not raise this argument below. Nor did it raise this argument in its opening brief before our court, denying Apple an opportunity to respond. *See Miller v. Fairchild Indus., Inc.*, 797 F.2d 727, 738 (9th Cir. 1986).

More importantly, we need not decide this issue because Epic's argument rests on an incorrect reading of the record. Contrary to Epic's contention, Apple's procompetitive justifications *do* relate to the app-transactions market. Because use of the App Store requires an iOS device, there are two ways of increasing

App Store output: (1) increasing the *total* number of iOS device users, and (2) increasing the *average* number of downloads and in-app purchases made by iOS device users. Below, the district court found that a large portion of consumers factored security and privacy into their decision to purchase an iOS device—increasing total iOS device users. It also found that Apple's security-and privacy-related restrictions "provide[] a safe and trusted user experience on iOS, which encourages both users and developers to transact freely"—increasing the per-user average number of app transactions.

D. Step Three: Substantially Less Restrictive Means

The district court did not clearly err when it held that Epic failed to prove the existence of substantially less restrictive alternatives (LRAs) to achieve Apple's procompetitive rationales. At step three of the Rule of Reason, "the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means." *Alston*, 141 S Ct. at 2160 (quoting *Amex*, 138 S. Ct. at 2284). When evaluating proposed alternative means, courts "must give wide berth to [defendants'] business judgments" and "must resist the temptation to require that enterprises employ the least restrictive means of achieving their legitimate business objectives." *Id.* at 2163, 2166; *see also id.* at 2161 ("[A]ntitrust law does not require businesses to use anything like the least restrictive means of achieving legitimate business purposes."). As such, this circuit's test—which the Supreme Court approved

in *Alston*—requires a "*substantially* less restrictive" alternative. *O'Bannon*, 802 F.3d at 1070 (emphasis added) (quoting *Tanaka v. Univ. of S. Cal.*, 252 F.3d 1059, 1063 (9th Cir. 2001)). To qualify as "substantially less restrictive," an alternative means "must be 'virtually as effective' in serving the [defendant's] procompetitive purposes . . . without significantly increased cost." *Id.* at 1074 (quoting *County of Tuolumne v. Sonora Cmty. Hosp.*, 236 F.3d 1148, 1159 (9th Cir. 2001)).

Because LRAs inform the injunctive relief that a district court may enter if a plaintiff prevails, courts must also keep in mind "a healthy respect for the practical limits of judicial administration" when evaluating proposed LRAs. *Alston*, 141 S. Ct. at 2163. Courts should not "impose a duty . . . that it cannot explain or adequately and reasonably supervise." *Id.* (quoting *Verizon Commc'ns Inc. v. L. Offs. Of Curtis V. Trinko, LLP*, 540 U.S. 398, 415, 124 S. Ct. 872, 157 L. Ed. 2d 823 (2004)).

We review a district court's findings on the existence of substantially less restrictive means for clear error. *See, e.g., NCAA Antitrust Litig.*, 958 F.3d at 1260; *O'Bannon*, 802 F.3d at 1074. This includes both the "virtually as effective" and "significantly increased cost" components encompassed in that finding. *See NCAA Antitrust Litig.*, 958 F.3d. at 1260.

Appendix A

1. Proposed LRA to the Distribution Restriction

Epic argues that Apple already has an LRA at its disposal for the distribution restriction: the "notarization model" that Apple uses for app distribution on its desktop and laptop operating system (macOS).[16] The notarization model sits somewhere between iOS's "walled garden" and the open-platform model that characterizes some app-transaction platforms. Unlike on iOS, the Mac Store (the Apple-run equivalent of the iOS App Store for Mac computers) is *not* the exclusive means for macOS users to download apps; instead, users can download apps from the Mac Store or anywhere else on the internet. Also unlike on iOS, a developer can distribute a macOS app to users without first submitting it to Apple. But, regardless of how the developer distributes that app, it will carry a warning that Apple has not scanned it for malware. The developer, however, can choose to submit the app to Apple. If the app passes Apple's malware scan, then the developer can distribute the app to users—again, through the Mac Store or otherwise—without the warning that accompanies unscanned apps.

The malware scanning that Apple performs in the notarization model is not the same as the full app review that it conducts on iOS apps. Importantly, the notarization model does not include *human* review—a contextual review that, as found by the district court,

16. In the district court, Epic also proposed the "enterprise model" (which Apple already implements for some iOS apps), but Epic does not advance that model on appeal as a proposed LRA.

cannot currently be automated. As part of iOS human review, a reviewer confirms that an app corresponds to its marketing description to weed out "Trojan Horse" apps or "social engineering" attacks that trick users into downloading by posing as something they are not. The reviewer also checks that the app's entitlements are reasonable for its purpose—rejecting, for example, a Tic-Tac-Toe game that asks for camera access and health data, while approving camera access for a social media app. On occasion, human review also detects novel, well-disguised malware attacks. Despite Epic carrying the burden at step three of the Rule of Reason, it was not clear before the district court—and still is not entirely clear—how Epic proposes that the notarization model translates from macOS to iOS. In particular, it is unclear whether the proposed model would incorporate human review and what type (if any) of licensing scheme Apple could implement to complement the notarization model.[17] Whatever the precise form of Epic's proposed notarization model, the district court did not err in rejecting it.

First, to the extent Epic argues that Apple could jot-for-jot adopt macOS's notarization model without

17. There is even some discrepancy between the injunctive relief Epic requests and the basic mechanics of the notarization system. As explained, the notarization model labels unscanned apps with a warning. Yet Epic requested an injunction that would prohibit Apple from in any way "impeding or deterring the distribution of iOS apps" through non-App Store "distribution channel[s]." A malware warning would seemingly steer some consumers back to the App Store—raising some question of whether it would violate the "impeding or deterring" prohibition.

adding human review, Epic failed to establish that this model would be "virtually as effective" in accomplishing Apple's procompetitive rationales of enhancing consumer appeal and distinguishing the App Store from competitor app-transaction platforms by improving user security and privacy. *See O'Bannon*, 802 F.3d at1073. The district court ultimately found that the record contained "some evidence" that macOS computers experience higher malware rates than iOS devices. It also noted a third-party report that Android devices have higher malware rates than iOS ones due to Trojan Horse apps being distributed through open app-transaction platforms. And it credited Apple's anecdotal evidence that human review sometimes detects novel malware attacks that slip through malware scans. Moreover, the district court found "compelling" Apple's explanation of why human review is necessary "against certain types of attacks." And it found that "Epic Games did not explain how, if at all" a purely automated process could screen for such threats. It also noted that Epic's security expert testified that he did not consider fraud-prevention in his security analysis, that his opinion on the value-added of human app review "may change" if he did, and that automated protections "do not protect users against" social-engineering threats. Based on this record, the district court did not clearly err in finding that a process without human app review would not be "virtually as effective" as Apple's current model.

Second, to the extent Epic proposes a notarization model that incorporates human app review, Epic failed to develop how Apple could be compensated in such a model for third-party developers' use of its IP. Epic argues

that "app review can be relatively independent on app distribution" and envisions a model in which a developer would submit an app, Apple would review it, and then "send it back to the developer to be distributed directly or in another store." For example, Epic could submit a gaming app to Apple; Apple would scan it for malware and subject it to human review; and then Epic could choose to distribute it through the App Store, the Epic Games Store, or both.

While such a model would clearly be "virtually as effective" in achieving Apple's security and privacy rationales (it contains all elements of Apple's current model), Epic simply failed to develop how such a model would allow Apple to be compensated for developers' use of its IP. At closing argument, the district court asked Epic whether its requested injunctive relief would allow Apple to impose some sort of licensing fee. Epic responded that "Apple can charge," but it offered no concrete guidance on how to do so. Instead, Epic stated only that Apple "could charge certain developers more than others based on the advantage that they take of the platform" and that it "expect[s], given the innovation in Cupertino, that [Apple] would find ways to profit from their intellectual property and other contributions." The district court accordingly found that Epic's proposed distribution LRAs "leave unclear whether Apple can collect licensing royalties and, if so, how it would do so" and thus declined to consider them as "not sufficiently developed."

On appeal, Epic attempts to transfigure into an LRA the district court's off-hand statement noting the

absence of "evidence that Apple could *not* create a tiered licensing scheme[,] which would better correlate the value of its intellectual property to the various levels of use by developers." It is, however, Epic's burden at step three to prove that a tiered licensing scheme (or some other payment mechanism) *could* achieve Apple's IP-compensation rationale. Without any evidence in the record of what this tiered licensing scheme would look like, we cannot say that it would be "virtually as effective" without "significantly increased cost." *O'Bannon*, 802 F.3d at 1074. Nor can we even "explain" it, let alone direct the district court to craft an injunction that it could "adequately and reasonably supervise." *Alston*, 141 S. Ct. at 2163.

2. Proposed LRA to the IAP Requirement

Epic proposes access to competing payment processors as an LRA to Apple's IAP requirement. Like the distribution requirement LRA, this LRA suffers from a failure of proof on how it would achieve Apple's IP-compensation rationale.[18] As the district court noted, in a world where Apple maintains its distribution restriction but payment processing is opened up, Apple would still

18. As Epic argues, the district court's ultimate conclusion on the security rationale (that opening up payment processing would undermine Apple's "competitive advantage on security issues") seems difficult to square with several of the court's antecedent factual findings (*e.g.*, that "Apple has not show how its [IAP] process is any different" and that "any potential for fraud prevention [through IAP] is not put into practice"). Because Epic's LRA fails on the IP-compensation aspect, we need not decide whether the district court clearly erred when it also rejected the LRA for not being virtually as effective in accomplishing Apple's security and privacy rationales.

be contractually entitled to its 30% commission on in-app purchasers. Apart from any argument by Epic, the district court "presume[d]" that Apple could "utilize[e] a contractual right to audit developers . . . to ensure compliance with its commissions." But the court then rejected such audits as an LRA because they "would seemingly impose both increased monetary and time costs."

E. Step Four: Balancing

Epic—along with several *amici*, including the United States and thirty-four state attorneys general—argue that the district court erred by not proceeding to a fourth, totality-of-the-circumstances step in the Rule of Reason and balancing the anticompetitive effects of Apple's conduct against its procompetitive benefits. We hold that our precedent requires a court to proceed to this fourth step where, like here, the plaintiff fails to carry its step-three burden of establishing viable less restrictive alternatives. However, the district court's failure to expressly do so was harmless in this case.

We have been inconsistent in how we describe the Rule of Reason. Some decisions, when describing the Rule of Reason, contemplate a fourth step. *See, e.g., Qualcomm*, 969 F.3d at 991; *County of Tuolumne*, 236 F.3d at 1160. Others do not. *See, e.g., NCAA Antitrust Litig.*, 958 F.3d at 1263; *Tanaka*, 252 F.3d at 1063. Because of the paucity of cases that survive step one (let alone require a court to exhaust the three agreed-upon steps), most of our decisions have not required us to actually proceed to the

portion of the analysis where Epic and its *amici* argue balancing would occur.[19]

The exception is *County of Tuolumne*, which provides the most on-point guidance regarding the existence of a fourth step. There, we held: "Because plaintiffs have failed to meet their burden of advancing viable less restrictive alternatives, we reach the balancing stage. We must balance the harms and benefits of the [challenged restrictions] to determine whether they are reasonable." 236 F.3d at 1160 (citation omitted). We then concluded, with just one sentence of analysis, that "any anticompetitive harm is offset by the procompetitive effects of [defendant's] effort to maintain the quality of patient care that it provides." *Id.*

Supreme Court precedent neither requires a fourth step nor disavows it. In the Court's two most recent Rule of Reason decisions, it discussed only the three agreed-upon steps. *See Alston*, 141 S. Ct. at 2160; *Amex*, 138 S. Ct. at 2284. But the Court did not characterize that test as the *exclusive* expression of the Rule of Reason. *Alston* stated that the Court "has *sometimes* spoken of 'a three-step, burden-shifting framework," emphasized that those "steps do not represent a rote checklist" or "an inflexible substitute for careful analysis," and approvingly cited one of the Areeda and Hovenkamp treatises as using a

19. In *Alston*, the Supreme Court cited an *amicus* brief reporting that courts have decided 90% of Rule of Reason cases since 1977 at step one. 141 S. Ct. at 2160-61. A similar *amicus* brief filed in this case echoes this statistic and reports that the figure rises to 97% when considering only post-1999 cases.

"slightly different 'decisional model.'" 141 S. Ct. at 2160 (emphasis added).

We are skeptical of the wisdom of superimposing a totality-of-the-circumstances balancing step onto a three-part test that is already intended to assess a restraint's overall effect. Neither Epic nor any *amicus* has articulated what this balancing really entails in a given case. Epic argues only that the district court must "weigh[]" anticompetitive harms against procompetitive benefits, and the United States describes step four as a "qualitative assessment of whether the harms or benefits predominate." Nor is it evident what value a balancing step adds. Several *amici* suggest that balancing is needed to pick out restrictions that have significant anticompetitive effects but only minimal procompetitive benefits. But the three-step framework is already designed to identify such an imbalance: A court is likely to find the purported benefits pretextual at step two, or step-three review will likely reveal the existence of viable LRAs. We are thus "wary about [this] invitation[] to 'set sail on a sea of doubt.'" *Alston*, 141 S. Ct. at 2166 (quoting *United States v. Addyston Pipe & Steel Co.*, 85 F. 271, 284 (6th Cir. 1898) (Taft, J.)).

Nonetheless, we are bound by *County of Tuolumne* and mindful of *Alston*'s warning that the first three steps of the Rule of Reason are not a "rote checklist." Therefore, where a plaintiff's case comes up short at step three, the district court must proceed to step four and balance the restriction's anticompetitive harms against its procompetitive benefits. In most instances, this will

require nothing more than—as in *County of Tuolumne*—briefly confirming the result suggested by a step-three failure: that a business practice without a less restrictive alternative is not, on balance, anticompetitive. But the Sherman Act is a flexible statute that has and will continue to evolve to meet our country's changing economy, so we will not "embarrass the future" by suggesting that will always be the case. *Nw. Airlines, Inc. v. Minnesota*, 322 U.S. 292, 300, 64 S. Ct. 950, 88 L. Ed. 1283 (1944).

Turning to the record here, the district court's failure to explicitly reach the fourth step was harmless. Even though it did not expressly reference step four, it stated that it "carefully considered the evidence in the record and . . . determined, based on the rule of reason," that the distribution and IAP restrictions "have procompetitive effects that *offset* their anticompetitive effects" (emphasis added). This analysis satisfied the court's obligation pursuant to *County of Tuolumne*, and the court's failure to expressly give this analysis a step-four label was harmless.

III. Sherman Act Section 1: Tying

In addition to its general restraint-of-trade claim, Epic brought a Section 1 claim asserting that Apple unlawfully tied together app distribution (the App Store) and in-app payment processing (IAP). On appeal, Epic argues that (1) the district court clearly erred when it found that Epic did not identify separate products, and (2) we can enter judgment in its favor because the tie is unlawful, either *per se* or pursuant to the Rule of Reason. We agree with

Epic that the district court clearly erred in its separate-products finding, but we find that error to be harmless. The Rule of Reason applies to the tie involved here, and, for the reasons already explained, Epic failed to establish that Apple's design of the iOS ecosystem—which ties the App Store and IAP together—is anticompetitive.

A. Existence of a Tie

"A tying arrangement is 'an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier.'" *Kodak*, 504 U.S. at 461 (quoting *N. Pac. R. Co. v. United States*, 356 U.S. 1, 5-6, 78 S. Ct. 514, 2 L. Ed. 2d 545 (1958)). To prove the existence of a tie, a party must make two showings.

First, the arrangement must, of course, involve two (or more) separate products. Pursuant to *Jefferson Parish* and *Kodak*, we apply a consumer-demand test when conducting this inquiry: To constitute two separate products, "[t]here must be sufficient consumer demand so that it is efficient for a firm to provide" the products separately. *Kodak*, 504 U.S. at 462 (citing *Jefferson Parish*, 466 U.S. at 21-22). Importantly, the separate-products inquiry "turns not on the functional relation between them, but rather on the character of the demand for the two items." *Jefferson Parish*, 466 U.S. at 19 & n.30. This consumer-demand test, in turn, has two parts: (1) that it is possible to separate the products, and (2) that it is efficient to do so, as inferred from circumstantial evidence. *See* Areeda & Hovenkamp, *Antitrust Law, supra*, ¶¶ 1743-45.

The efficiency showing does not require a full-blown economic analysis. Because the showing is just a threshold step to reaching the merits of a tie (including, sometimes, the application of a *per se* rule), it would be incongruous to require a resource-intensive showing. *See N. Pac. R. Co.*, 356 U.S. at 5 (*per se* rules are meant to "avoid[] the necessity for an incredibly complicated and prolonged economic investigation"). Accordingly, the existence of separate products is inferred from "more readily observed facts." Areeda & Hovenkamp, *Antitrust Law, supra*, ¶ 1745c. These include consumer requests to offer the products separately, disentangling of the products by competitors, analogous practices in related markets, and the defendant's historical practice. *See Jefferson Parish*, 466 U.S. at 22 (noting that patients and surgeons "often request specific anesthesiologists [the tied service] to come to a hospital [the tying service]" and "other hospitals often permit anesthesiologic services to be purchased separately"); *Kodak*, 504 U.S. at 463 (finding sufficient at the 12(b)(6) stage allegations that "consumers would purchase service without parts" and that the defendant had sold them "separately in the past").

Second, even where a transaction involves separate products, it is not necessarily a tie; the seller must also "*force* the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Jefferson Parish*, 466 U.S. at 12. Were a buyer merely to agree "to buy [a] second product on its own merits" absent any coercion, there would be no tie. Areeda & Hovenkamp, *Antirust Law, supra*, ¶ 1752.

We review a finding that no tie occurred for clear error. *Krehl v. Baskin-Robbins Ice Cream Co.*, 664 F.2d 1348, 1354 (9th Cir. 1982) (reviewing separate-products finding for clear error); *Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1346 (9th Cir. 1987) (treating coercion as a fact question).

Here, the district court found that there was no tie because app distribution and IAP are not separate products. It based this finding on four rationales—each of which is either clearly erroneous or incorrect as a matter of law.

To begin, the district court erred as a matter of law when it concluded that IAP was not separate from app distribution because IAP is "integrated into . . . iOS devices." *Jefferson Parish* expressly rejects an approach to the separate-products inquiry based on the "functional relation" between two purported products. 466 U.S. at 19.

Next, the district court clearly erred when it found that "Epic Games presented no evidence showing that demand exists for IAP as a standalone product." Here, the App Store and IAP clearly can be separated because Apple *already does* so in certain contexts, namely that IAP is not required for in-app purchases of physical goods. The efficiency showing is also met. Epic produced evidence that it, Facebook, Microsoft, Spotify, Match, and Netflix, have all tried to convince Apple to let them develop their own in-app payment solutions. The Epic Games Store—a direct competitor of Apple in the mobile-

games submarket—delinks distribution from payment processing. And prior to IAP's development in 2009, Apple distributed apps through the App Store but permitted developers to use their own in-app payment systems.

Relatedly, the district court clearly erred when it reasoned that, even if Apple did not require IAP, Apple would still be entitled to collect a commission on payments made and, therefore, "no economically rational developer would choose to use the alternative [payment] processor." The district court itself found that "Epic Games raises legitimate concerns" about the non-price features of IAP, including that: "Apple does a poor job of mediating disputes between a developer and its customers"; that Apple's one-size-fits-all refund approach "leads to poor [customer] experiences"; and that IAP's exclusion of developers from transactions "can also increase fraud."

Finally, the district court erred as a matter of law when it concluded that a product in a two-sided market can *never* be broken into multiple products. Despite Apple's strained effort to portray this as a factual finding, the district court imposed a bright-line legal rule. But *Amex* simply does not stand for the proposition that any two-sided platform will necessarily relate only to one market. Instead, it emphasized that market definition must "reflect[] commercial realities." 138 S. Ct. at 2285. Indeed, if *Amex* truly required a one-platform, one-market rule, then the district court's market definition—mobile gaming transactions, instead of *all* app transactions—would be erroneous, despite the court's extensive findings that game

and non-game apps are characterized by significantly different demand.[20]

B. Lawfulness of the Tie

A tie can be unlawful pursuant to either a modified *per se* rule or the Rule of Reason. A tie is *per se* unlawful if (1) the defendant has market power in the tying product market, and (2) the "tying arrangement affects a 'not insubstantial volume of commerce' in the tied product market." *Blough v. Holland Realty, Inc*, 574 F.3d 1084, 1089 (9th Cir. 2009) (quoting *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 912-13 (9th Cir. 2008)). The first prong requires the market-power inquiry standard throughout antitrust law. The second prong requires only that the tie affect an amount of commerce in the tied product market that is not "*de minimis*." *Datagate, Inc. v. Hewlett-Packard Co.*, 60 F.3d 1421, 1426 (9th Cir. 1995). These requirements are met here: Apple has market power in the app-distribution market. And the tie affects a non "de minimis" amount of commerce in the in-app-payment-processing market: Apple requires IAP to be used for more than half of the transactions that comprise a $100 billion market.

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20. We also reject Apple's argument that that there is no tie because "thousands of developers . . . offer no in-app purchase[s]." True, a classic tie is: "I will sell you X widgets only if you buy Y bolts from me." Here, the DPLA essentially provides: "Apple will sell you app-distribution transactions only if you buy your in-app-purchase-processing *requirements* from Apple." Substituting a requirements term for a quantity term does not change the nature of the agreement. *See Kodak*, 504 U.S. at 461 (ties include agreement[s] "to sell one product but only on the condition that the buyer . . . not purchase that product from any other supplier" (citation omitted)).

Nonetheless, we join the D.C. Circuit in holding that *per se* condemnation is inappropriate for ties "involv[ing] software that serves as a platform for third-party applications." *Microsoft*, 253 F.3d at 89. "It is only after considerable experience with certain business relationships that courts classify them as *per se* violations." *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 9, 99 S. Ct. 1551, 60 L. Ed. 2d 1 (1979) (quoting *Topco Assocs.*, 405 U.S. at 606). That is because *per se* condemnation embodies a judicial assessment that a category of restraints is "plainly anticompetitive" and "lack[ing] . . . [in] any redeeming virtue" such that it can be "conclusively presumed illegal." *Id.* at 7-8 (citations omitted). Given the costs of improperly condemning a practice across the board, extending a *per se* rule requires caution and judicial humility. *See White Motor Co. v. United States*, 372 U.S. 253, 263, 83 S. Ct. 696, 9 L. Ed. 2d 738 (1963) ("We need to know more than we do about the actual impact of these arrangements on competition to decide whether they . . . should be classified as per se violations of the Sherman Act."); *Microsoft*, 253 F.3d at 94 ("We do not have enough empirical evidence regarding the effect of [the] practice . . . to exercise sensible judgment regarding that entire class of behavior."). Based on the record, we do not have the level of confidence needed to universally condemn ties related to app-transaction platforms that combine multiple functionalities. *See Microsoft*, 253 F.3d at 93 ("[B]ecause of the pervasively innovative character of platform software markets, tying in such markets may produce efficiencies that courts have not previously encountered and thus the Supreme Court had not factored into the per se rule as originally conceived.").

The tie in this case differs markedly from those the Supreme Court considered in *Jefferson Parish* and prior tying cases. Particularly, "[i]n none of these cases was the tied good . . . technologically integrated with the tying good." *Microsoft*, 253 F.3d at 90. Moreover, none of the ties presented any purported procompetitive benefits that could not be achieved by adopting quality standards for third-party suppliers of the tied good, as Apple does here. *Id.; see also Int'l Salt Co. v. United States*, 332 U.S. 392, 398, 68 S. Ct. 12, 92 L. Ed. 20 (1947) (noting purported benefit can be achieved by implementing quality control for machine consumables), *abrogated on other grounds by Ill. Tool*, 547 U.S. 28; *Int'l Bus. Machs. Corp. v. United States*, 298 U.S. 131, 139, 56 S. Ct. 701, 80 L. Ed. 1085 (1936) (same).

Moreover, while *Jefferson Parish*'s separate-products test filters out procompetitive bundles from *per se* scrutiny in traditional markets, we are skeptical that it does so in the market involved here. Software markets are highly innovative and feature short product lifetimes—with a constant process of bundling, unbundling, and rebundling of various functions. In such a market, any first-mover product risks being labeled a tie pursuant to the separate-products test. *See Microsoft*, 253 F.3d at 92. If *per se* condemnation were to follow, we could remove would-be popular products from the market—dampening innovation and undermining the very competitive process that antitrust law is meant to protect. The Rule of Reason guards against that risk by "afford[ing] the first mover an opportunity to demonstrate that an efficiency gain from its 'tie' adequately offsets any distortion of consumer choice." *Id.*

Applying the Rule of Reason to the tie involved here, it is clearly lawful. Epic's tying claim (that app distribution and payment processing are tied together) is simply a repackaging of its generic Section 1 claim (that the conditions under which Apple offers its app-transactions product are unreasonable). For the reasons we explained above, Epic failed to carry its burden of proving that Apple's structure of the iOS ecosystem is unreasonable. *See supra* section II.

IV. Sherman Act Section 2: Monopoly Maintenance

We now consider Epic's Sherman Act Section 2 claim that Apple unlawfully maintained a monopoly. Section 2 makes it unlawful to "monopolize, or attempt to monopolize, or combine or conspire . . . to monopolize" a market. 15 U.S.C. § 2. A Section 2 monopolization claim "has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71, 86 S. Ct. 1698, 16 L. Ed. 2d 778 (1966); *accord Qualcomm*, 969 F.3d at 990; *Microsoft*, 253 F.3d at 50.

At step one, the plaintiff must establish that the defendant possesses monopoly power, which is the substantial ability "to control prices or exclude competition." *Grinnell*, 384 U.S. at 571; *accord United States v. Syufy Enters.*, 903 F.2d 659, 664 (9th Cir. 1990). Monopoly power differs in degree from market power,

requiring "something greater." *Kodak*, 504 U.S. at 481; *see also* Areeda & Hovenkamp, *Antitrust Law*, *supra*, ¶ 600b (market power and monopoly power exist along a spectrum). Like market power, monopoly power can be established either directly or indirectly. *Rebel Oil*, 51 F.3d at 1434; *see Microsoft*, 253 F.3d at 51.

At step two, the plaintiff must show that the defendant acquired or maintained its monopoly through "anticompetitive conduct." *Trinko*, 540 U.S. at 407. This anticompetitive-conduct requirement is "essentially the same" as the Rule of Reason inquiry applicable to Section 1 claims. *Qualcomm*, 969 F.3d at 991; *see also Microsoft*, 253 F.3d at 59 ("[I]t is clear . . . that the analysis under section 2 is similar to that under section 1 regardless whether the rule of reason label is applied." (citation omitted)). Where, like here, the plaintiff challenges the same conduct pursuant to Sections 1 and 2, we can "review claims under each section simultaneously." *Qualcomm*, 969 F.3d at 991. And if "a court finds that the conduct in question is not anticompetitive under § 1, the court need not separately analyze the conduct under § 2." *Id.*

At step one in this case, the district court found that although Apple possesses "considerable" market power in the market for mobile-game transactions, that power is not durable enough to constitute monopoly power given the influx nature of the market. It then, at step two, echoed its Rule of Reason conclusion that Epic failed to establish Apple's restrictions were anticompetitive.

We affirm the district court's rejection of Section 2 liability. Epic does not argue on appeal that the district court clearly erred in finding that Apple lacks monopoly power in the mobile-games market. It argues only that the district court erred in rejecting its single-brand markets in which Apple would have a 100% market share—an argument we reject above. *See supra* section I. Moreover, even assuming Apple has monopoly power, Epic failed to prove Apple's conduct was anticompetitive. *See supra* sections II—III.

V. Breach of Contract

Apple counter-sued Epic for breach of contract. Epic stipulated that it breached the DPLA when it implemented the *Fortnite* hotfix, which allowed it to process in-game transactions in violation of Apple's IAP restriction. Epic raised several affirmative defenses, however, and argued that the DPLA is illegal, void as against public policy, and unconscionable. The district court rejected each defense, and Epic now challenges the illegality holding on appeal.[21]

21. In its briefs, Epic also asserts that the district court erred in ruling that the DPLA was neither void-against-public-policy nor unconscionable, but the only substantive argument it makes is that the DPLA violates the Sherman Act. These doctrines, however, do not sound in express illegality. *See* Cal. Civ. Code § 1667(2) (a contract is void if it is "contrary to the policy of express law, though not expressly prohibited"); *Lhotka v. Geographic Expeditions, Inc.*, 181 Cal. App. 4th 816, 821, 824, 104 Cal. Rptr. 3d 844 (2010) (a contract is unconscionable if there is a disparity in bargaining power and the contract "reallocates risks in an objectively unreasonable or unexpected manner"). As such, Epic's invocation of these doctrines without any relevant argument is insufficient to raise them on appeal. *See Singh v. Am. Honda Fin. Corp.*, 925 F.3d 1053, 1075 n.22 (9th Cir. 2019).

The parties agree that Epic's illegality defense rises and falls with its Sherman Act claims. Because we affirm the district court's holding that Epic failed to prove Apple's liability pursuant to the Sherman Act, we also affirm its rejection of Epic's illegality defenses.

VI. California's Unfair Competition Law

We now turn to Apple's cross-appeal, beginning with its arguments concerning the UCL. The district court found that Epic suffered an injury sufficient to confer Article III standing, concluded that Apple's anti-steering provision violates the UCL's unfair prong, and entered an injunction prohibiting Apple from enforcing the anti-steering provision against any developer. Apple challenges each aspect on appeal. We affirm.

A. Standing

Article III limits federal courts' jurisdiction to "[c]ases" and "[c]ontroversies." U.S. Const. art. III, § 2. "One essential aspect of this [limitation] is that any person invoking the power of a federal court must demonstrate standing to do so." *Va. House of Delegates v. Bethune-Hill*, 139 S. Ct. 1945, 1950, 204 L. Ed. 2d 305 (2019) (quoting *Hollingsworth v. Perry*, 570 U.S. 693, 704, 133 S. Ct. 2652, 186 L. Ed. 2d 768 (2013)). Constitutional standing requires a showing of: "(1) a concrete and particularized injury, that (2) is fairly traceable to the challenged conduct, and (3) is likely to be redressed by a favorable decision." *Id.* Article III requires "that an 'actual controversy' persist throughout all stages of litigation." *Id.* at 1951 (quoting *Hollingsworth*, 570 U.S. at 705).

Apple terminated Epic's iOS developer account in August 2020. Then in September 2021 after the district court issued its order holding that Epic breached the DPLA, Apple informed Epic that it had no intention of reinstating Epic's developer account. As a result, Epic has no apps remaining on the App Store. Apple therefore argues that Epic is no longer injured by the anti-steering provision. Apple's argument, however, overlooks two critical aspects of the record. First, while Epic itself has no apps on the App Store, its subsidiaries do—causing Epic to be injured through the anti-steering provision's effects on its subsidiaries' earnings. Second, Epic is a competing game distributor through the Epic Games Store and offers a 12% commission compared to Apple's 30% commission. If consumers can learn about lower app prices, which are made possible by developers' lower costs, and have the ability to substitute to the platform with those lower prices, they will do so—increasing the revenue that the Epic Games Store generates. As such, the district court did not clearly err in finding that Apple's anti-steering provision injures Epic.

B. Merits

As relevant here, the UCL prohibits "any [1] unlawful, [2] unfair or [3] fraudulent business act or practice." Cal. Bus. & Prof. Code § 17200. As the UCL's three-prong structure makes clear, a business practice may be "unfair," and therefore illegal under the UCL, "even if not specifically proscribed by some other law." *Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 180, 83 Cal. Rptr. 2d 548, 973 P.2d 527 (1999). The unfair

prong is "intentionally framed in its broad, sweeping language, precisely to enable judicial tribunals to deal with the innumerable 'new schemes which the fertility of man's invention would contrive.'" *Id.* (quoting *Am. Philatelic Soc. v. Claibourne*, 3 Cal. 2d 689, 698, 46 P.2d 135 (1935)); *see also People ex rel. Mosk v. Nat'l Research Co. of Cal.*, 201 Cal. App. 2d 765, 772, 20 Cal. Rptr. 516 (1962) (the UCL covers unfair practices that "may run the gamut of human ingenuity and chicanery").

The California Supreme Court has refined this "wide standard," *Cel-Tech*, 20 Cal. 4th at 181, into two tests relevant to this litigation. First, to support "any finding of unfairness to *competitors*," a court uses the "tethering" test, which asks whether the defendant's conduct "threatens an incipient violation of an antitrust law, or violates the policy or spirit of one of those laws because its effects are comparable to or the same as a violation of the law, or otherwise significantly threatens or harms competition." *Id.* at 186-87 (emphasis added). Second, to support a finding of unfairness to *consumers*, a court uses the balancing test, which "weigh[s] the utility of the defendant's conduct against the gravity of the harm to the alleged victim." *Progressive W. Ins. Co. v. Super. Ct.*, 135 Cal. App. 4th 263, 285, 37 Cal. Rptr. 3d 434 (2005) (citation omitted). These tests "are not mutually exclusive." *Lozano v. AT&T Wireless Servs., Inc.*, 504 F.3d 718, 736 (9th Cir. 2007) (citing *Schnall v. Hertz Corp.*, 78 Cal. App. 4th 1144, 93 Cal. Rptr. 2d 439 (2000)).

Here, the district court applied both tests. Through the Epic Games Store, Epic is a games-distribution

competitor of Apple—triggering the competitor test. Through its subsidiaries that have apps on the App Store, Epic consumes the app transactions that Apple offers in a two-sided market—triggering the consumer test. *Cf. Amex*, 138 S. Ct. at 2286 (each side of two-sided market "jointly consume[s] a single product" (citation omitted)). Applying the tethering test, the court found that the anti-steering provisions "decrease [consumer] information," enabling supracompetitive profits and resulting in decreased innovation. It relied on Apple's own internal communications for the proposition that the anti-steering provision prevents developers from using two of the three "most effective marketing activities," push notifications and email outreach. It then reiterated these factual findings to conclude that the provision also violates the balancing test.

Apple does not directly challenge the district court's application of the UCL's tethering and balancing tests to the facts of this case. Instead, Apple makes two arguments attacking UCL liability as a matter of law. Neither is supported by California law.

1. Safe-Harbor Doctrine

Apple argues that Epic's failure to establish Sherman Act liability forecloses UCL liability pursuant to the UCL's "safe harbor" doctrine, which bars a UCL action where California or federal statutory law "absolutely preclude[s] private causes of action or clearly permit[s] the defendant's conduct." *Zhang v. Sup. Ct.*, 57 Cal. 4th 364, 379-80, 159 Cal. Rptr. 3d 672, 304 P.3d 163 (2013). The safe-harbor

doctrine emphasizes that there is a "difference between (1) not making an activity unlawful, and (2) making that activity lawful." *Cel-Tech*, 20 Cal. 4th at 183; *accord Zhang*, 57 Cal. 4th at 379. Accordingly, in every instance where a court found the Sherman Act to preclude a UCL action, a *categorical* antitrust rule formed the basis of the decision. We held that the judge-made baseball exemption—that "the business of providing public baseball games for profit . . . [is] not within the scope of the federal antitrust laws"—precluded a UCL action. *City of San Jose v. Off. of the Com'r of Baseball*, 776 F.3d 686, 689 (9th Cir. 2015) (quoting *Toolson v. N.Y Yankees, Inc.*, 346 U.S. 356, 357, 74 S. Ct. 78, 98 L. Ed. 64 (1953)). A California Court of Appeal similarly held that the *Colgate* doctrine—that it is lawful for a company to unilaterally announce the terms on which it will deal—precluded a UCL action. *Chavez v. Whirlpool Corp.*, 93 Cal. App. 4th 363, 367, 373, 375, 113 Cal. Rptr. 2d 175 (2001).

Neither Apple nor any of its *amici* cite a single case in which a court has held that, when a federal antitrust claim suffers from a *proof deficiency*, rather than a *categorical legal bar*, the conduct underlying the antitrust claim cannot be deemed unfair pursuant to the UCL. Indeed, in a leading case on the safe-harbor exception, the California Supreme Court permitted a UCL claim against a predatory-price scheme to proceed even though the plaintiff failed to prove—as state antitrust law requires—that the defendant intended to harm competition through the scheme. *Cel-Tech*, 20 Cal. 4th at 183. Apple's rule would convert any Rule of Reason shortcoming into a UCL defense and undermine the UCL's three-prong structure

by collapsing the "unfair" and "unlawful" prongs into each other. We reject Apple's proposed rule as foreclosed by California law.[22]

2. Importation of Sherman Act Principles

Apple next argues that two principles from Sherman Act case law preclude UCL liability here. We find neither argument persuasive. First, Apple contends that the Supreme Court's decision in *Amex*—finding in favor of American Express in a suit challenging its anti-steering provision—bars UCL liability stemming from Apple's anti-steering provision. Apple does not explain how *Amex*'s fact-and market-specific application of the first prong of the Rule of Reason establishes a categorical rule approving anti-steering provisions, much less one that sweeps beyond the Sherman Act to reach the UCL. *Amex* was based on the plaintiff's failure to establish direct evidence of anticompetitive effects through a reduction in output, supracompetitive pricing, or excessively high profit margins; it was not a blanket approval of anti-steering provisions. *See Amex*, 138 S. Ct. at 2288.

Second, Apple argues that the UCL mandates trial courts to define a relevant market and then conduct the balancing test within that market (similar to the Rule of Reason). Again, Apple does not cite any California

22. Several *amici* contend that, under current California case law, the UCL provides insufficient guidance to businesses. That argument, however, fundamentally misunderstands our role when we interpret and apply state law while exercising diversity or supplemental jurisdiction.

authority for this proposition. Moreover, such a rule runs contrary to California courts' repeated instruction that "[n]o inflexible rule can be laid down as to what conduct will constitute unfair competition." *E.g., Pohl v. Anderson*, 13 Cal. App. 2d 241, 242, 56 P.2d 992 (1936) (citation omitted). It also contradicts a California Supreme Court decision that conducted something akin to quick-look review (in which a precise market-definition is not needed) when confronted with significant restrictions on the free flow of price information. *See Oakland-Alameda Cnty. Builders' Exch. v. F. P. Lathrop Constr. Co.*, 4 Cal. 3d 354, 363-64, 93 Cal. Rptr. 602, 482 P.2d 226 (1971) (invalidating a prohibition on unsealing competitor bids after bidding had culminated on the grounds that it "restrain[ed] open price competition and unlawfully tamper[ed] with the pricing structure").

C. Injunctive Relief

Apple also argues that (1) the district clearly erred when it found that Epic's injuries were irreparable, and (2) it abused its discretion when applying the injunction against all developers, not just Epic's subsidiaries that have apps on the App Store. We disagree.

Even where the UCL authorizes injunctive relief pursuant to state law, a federal court must also ensure that the relief comports with "the traditional principles governing equitable remedies in federal courts." *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 844 (9th Cir. 2020). To issue an injunction, the court must find: "(1) that [the plaintiff] has suffered an irreparable injury; (2) that

remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *Galvez v. Jaddou*, 52 F.4th 821, 831 (9th Cir. 2022) (quoting *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391, 126 S. Ct. 1837, 164 L. Ed. 2d 641 (2006)). Moreover, injunctive relief must be no "more burdensome to the defendant than necessary to provide complete relief to the plaintiff[]." *L.A. Haven Hospice, Inc. v. Sebelius*, 638 F.3d 644, 664 (9th Cir. 2011) (quoting *Califano v. Yamasaki*, 442 U.S. 682, 702, 99 S. Ct. 2545, 61 L. Ed. 2d 176 (1979)). We review a district court's decision to grant a permanent injunction, and the scope of that injunction, for an abuse of discretion and review the factual findings underlying the injunction for clear error. *NCAA Antitrust Litig.*, 958 F.3d at 1253.

1. Issuance of the Injunction

First, the district court did not clearly err in finding that Epic suffered an injury for which monetary damages would be inadequate. While economic injury is generally not considered irreparable, it is where the underlying injury does not readily lend itself to calculable money damages. *See Rent-A-Ctr., Inc. v. Canyon Television & Appliance Rental, Inc.*, 944 F.2d 597, 603 (9th Cir. 1991). Here, the district court found that the anti-steering provision "is not easily remedied with money damages," a finding that has ample support in the record. In 2019, there were over 300,000 games on the App Store. Calculating

the damages caused by the anti-steering provision would require a protracted and speculative inquiry into: the availability of each of those 300,000 games on the Epic Games Store, the percentage of revenue on each game that comes from users who multi-home and can therefore substitute, and how high the substitution rate would be among those multi-home users.[23]

2. Scope of the Injunction

Second, the district court did not abuse its discretion when setting the scope of the injunctive relief because the scope is tied to Epic's injuries. The district court found that the anti-steering provision harmed Epic by (1) increasing the costs of Epics' subsidiaries' apps that are still on the App Store, and (2) preventing other apps' users from becoming would-be Epic Games Store consumers. Because Epic benefits in this second way from consumers of other developers' apps making purchases through the Epic Games Store, an injunction limited to Epic's subsidiaries would fail to address the full harm caused by the anti-steering provision.

VII. Attorney Fees

We reverse the district court's holding that the DPLA's indemnification provision does not require Epic to

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23. Apple also asserts—in one sentence and without any authority—that the district court abused its discretion in failing to hold that Apple's unclean-hands argument precluded injunctive relief. This passing statement was insufficient to raise this issue on appeal. *See Singh*, 925 F.3d at 1075 n.22.

pay Apple's attorney fees related to this litigation. Based on the DPLA's choice-of-law provision, we interpret its indemnification provision pursuant to California contact-interpretation principles. We review the district court's interpretation of a contract *de novo*. *Shivkov v. Artex Risk Sols., Inc.*, 974 F.3d 1051, 1058 (9th Cir. 2020).

California courts presume that "[a] clause that contains the words 'indemnify' and 'hold harmless' generally obligates the indemnitor to reimburse the indemnitee for any damages the indemnitee becomes obligated to pay third persons—that is, it relates to *third party* claims, *not* attorney fees incurred in a breach of contract action *between the parties* to the indemnity agreement itself." *Alki Partners, LP v. DB Fund Servs., LLC*, 4 Cal. App. 5th 574, 600, 209 Cal. Rptr. 3d 151 (2016) (emphasis added). However, courts also look to "the context in which the language appears." *Id.* A contract, therefore, can rebut this presumption with language that "specifically provide[s] for attorney's fees in an action on the contract." *Id.* at 600-01 (emphasis omitted) (citation omitted). For example, the California Court of Appeal read an indemnification clause to cover intra-party disputes when the clause covered all losses "whether or not arising out of third party [c]laims." *Dream Theater, Inc. v. Dream Theater*, 124 Cal. App. 4th 547, 556-57, 21 Cal. Rptr. 3d 322 (2004). And it did the same where an indemnification clause was accompanied by a clause clarifying that, in addition to the remedies listed in the indemnification clause, each party could also seek specific performance for certain breaches of the contract—a provision that "would be unnecessary if indemnification only referred to third

party claims." *Zalkind v. Ceradyne, Inc.*, 194 Cal. App. 4th 1010, 1028, 124 Cal. Rptr. 3d 105 (2011).

Turning to the facts here, section 10 of the DPLA provides that Epic "agree[s] to indemnify and hold harmless, and upon Apple's request, defend, Apple[] . . . from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys' fees and court costs . . . , incurred by [Apple] and arising from or related to" several enumerated grounds. One grounds, clause (i), applies to Epic's "breach of any certification, covenant, obligation, representation or warranty in [the DPLA]."

Clause (i) rebuts the *Alki Partners* presumption by "specifically provid[ing] for attorney's fees in an action on the contract." 4 Cal. App. 5th at 600-01. It expressly refers to Epic's "*breach*" of its obligations pursuant to the DPLA—contemplating an intra-party action for breach of contract, not claims by third parties. The surrounding context of section 10 buttresses this conclusion. Section 14.3 of the DPLA disclaims that the agreement "is not for the benefit of any third parties." Indeed, Epic has not identified a single situation in which a third-party could possibly sue Apple pursuant to clause (i). Therefore, we hold that clause (i) contemplates intra-party disputes and Apple is entitled to attorney fees pursuant to it.[24]

24. We express no opinion on what portion of Apple's attorney fees incurred in this litigation can be fairly attributed to Epic's breach of the DPLA, such that they fall within the scope of clause (i).

CONCLUSION

To echo our observation from the NCAA student-athlete litigation: There is a lively and important debate about the role played in our economy and democracy by online transaction platforms with market power. Our job as a federal Court of Appeals, however, is not to resolve that debate—nor could we even attempt to do so. Instead, in this decision, we faithfully applied existing precedent to the facts as the parties developed them below. For the foregoing reasons, we **AFFIRM IN PART AND REVERSE AND REMAND IN PART**.

S.R. THOMAS, Circuit Judge, concurring in part and dissenting in part:

I agree with much of the majority opinion. I fully agree that the district court properly granted Epic injunctive relief on its California Unfair Competition Law claims. I also fully agree that the district court properly rejected Epic's illegality defenses to the Developer Program Licensing Agreement ("DPLA") but that, contrary to the district court's decision, the DPLA does require Epic to pay attorney fees for its breach. On the federal claims, I also agree that the district court erred in defining the relevant market and erred when it held that a non-negotiated contract of adhesion falls outside of the scope of Section 1 of the Sherman Act. However, unlike the majority, I would not conclude that these errors were harmless. An error is harmless if it "do[es] not affect the substantial rights of the parties." 28 U.S.C. § 2111. The district court's errors relate to threshold analytical steps, and the errors affected Epic's substantial rights. Thus, I would reverse the district court and remand to evaluate the claims under the correct legal standard.

"A threshold step in any antitrust case is to accurately define the relevant market . . . ." *Fed. Trade Comm'n v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020). "Without a definition of [the] market there is no way to measure [the defendant's] ability to lessen or destroy competition." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285, 201 L. Ed. 2d 678 (2018) (alterations in original) (quoting *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177, 86 S. Ct. 347, 15 L. Ed. 2d 247 (1965)).

I agree with the majority that the district court erred in rejecting Epic's proffered foremarket. The district court rejected the foremarket of mobile operating systems because Apple does not sell or license its operating system separately from its smartphones. But we have previously recognized that such a market can exist. *See Digidyne Corp. v. Data Gen. Corp.*, 734 F.2d 1336, 1338-39 (9th Cir. 1984), *implicitly overruled on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 31, 126 S. Ct. 1281, 164 L. Ed. 2d 26 (2006) (holding that separate markets existed for software and hardware even when they were always bundled together).

The district court then rejected Epic's proposed aftermarket of solutions for iOS app payment processing ("IAP") because IAP is integrated into the operations system. This conclusion was not only legally erroneous, but in contradiction to the district court's factual finding of separate demand. *See Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 19, 104 S. Ct. 1551, 80 L. Ed. 2d 2 (1984) ("[W]hether one or two products are involved turns . . . on the character of the demand for the two items . . . . not on the functional relation between them . . . .").

I also agree with the majority that the district court erred in holding that a non-negotiated contract of adhesion falls outside of the scope of § 1 of the Sherman Act and, therefore, the Developer Program License Agreement was not a contract covered under § 1. "'*[E]very* commercial agreement'. . . among two or more entities" qualifies as a § 1 agreement. *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1154 n.7 (9th Cir. 2003) (emphasis in original) (quoting *Nw. Wholesale Stationers, Inc. v. Pac. Stationery & Printing Co.*, 472 U.S. 284, 289, 105 S. Ct.

2613, 86 L. Ed. 2d 202 (1985)). This includes a contract of adhesion. *See Perma Life Mufflers, Inc. v. Int'l Parts Corp.*, 392 U.S. 134, 141-142, 88 S. Ct. 1981, 20 L. Ed. 2d 982 (1968), *overruled on other grounds by Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 777, 104 S. Ct. 2731, 81 L. Ed. 2d 628 (1984).

The majority holds that the errors were harmless given the district court's analysis of the remaining steps in the Rule of Reason analysis. However, there is no direct authority for that proposition, and it amounts to appellate court fact-finding. Indeed, the Supreme Court has instructed that "courts usually cannot properly apply the rule of reason without an accurate definition of the relevant market." *Am. Express*, 138 S. Ct. at 2285.

Correction of these errors would have changed the substance of the district court's Rule of Reason analysis. *See Qualcomm*, 969 F.3d at 992. Unless the correct relevant market is identified, one cannot properly assess anticompetitive effects, procompetitive justifications, and the satisfaction of procompetitive justifications through less anticompetitive means. The analysis is different; therefore, the errors affected substantial rights and cannot be considered harmless.

Relying on the district court's market does not solve this problem. The parties formulated arguments around their own markets—not the district court's market. Remand would have given the parties an opportunity to argue whether the DPLA worked unfair competition in the district court's market.

The effect on substantial rights in this case is magnified by the majority's holding that, under *County of Tuolumne v. Sonora Community Hospital*, when the plaintiff shows anticompetitive effects but fails to show a less restrictive alternative to the defendant's procompetitive justification, the court must balance the anticompetitive harms against the procompetitive benefits. 236 F.3d 1148, 1160 (9th Cir. 2001). The district court did not undertake a formal *Tuolumne* balancing analysis as such, although the majority concludes that the district court's analysis was sufficient. Remand for a formal balancing should be required. Regardless, the effect of the legal errors on any balancing is obvious. The district court analyzed anticompetitive effects in terms of increases in the cost of mobile gaming transactions—the court's relevant market. But the court could have found greater increases in costs if its analysis concerned Epic's markets, and this would change a properly conducted balancing analysis. In essence, any balancing done out of the context of a relevant market necessarily involves putting a thumb on the balancing scale. Accordingly, the district court's legal errors "affect[ed Epic's] substantial rights" and therefore were not harmless. *See* 28 U.S.C. § 2111. I would remand for the district court to re-analyze the case using the proper threshold determination of the relevant market.

Therefore, I respectfully concur in part and dissent in part.

APPENDIX B — ORDER OF THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA, FILED SEPTEMBER 10, 2021

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

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

EPIC GAMES, INC.,

Plaintiff,

v.

APPLE INC.,

Defendant.

APPLE INC.,

Counterclaimant,

v.

EPIC GAMES, INC.,

Counter-Defendant.

September 10, 2021, Decided
September 10, 2021, Filed

Appendix B

RULE 52 ORDER AFTER TRIAL ON THE MERITS

Plaintiff Epic Games, Inc. sued Apple, Inc. alleging violations of federal and state antitrust laws and California's unfair competition law based upon Apple's operation of its App Store. Broadly speaking, Epic Games claimed that Apple is an antitrust monopolist over (i) Apple's *own system* of distributing apps on Apple's *own devices* in the App Store and (ii) Apple's *own system* of collecting payments and commissions of purchases made on Apple's *own devices* in the App Store. Said differently, plaintiff alleged an antitrust market of one, that is, Apple's "monopolistic" control over its own systems relative to the App Store. Apple obviously disputed the allegations.

Antitrust law protects competition and not competitors. Competition results in innovation and consumer satisfaction and is essential to the effective operation of a free market system. Antitrust jurisprudence also evaluates both market structure and behavior to determine whether an actor is using its place in the market to artificially restrain competition.

Central to antitrust cases is the appropriate determination of the "relevant market." Epic Games structured its lawsuit to argue that Apple does not compete with anyone; it is a monopoly of one. Apple, by contrast, argues that the effective area of competition is the market for all digital video games in which it and Epic Games compete heavily. In the digital video game market, Apple argues that it does not enjoy monopoly power, and therefore does not violate federal and state law.

Appendix B

The Court disagrees with both parties' definition of the relevant market.

Ultimately, after evaluating the trial evidence, the Court finds that the relevant market here is ***digital mobile gaming transactions***, not gaming generally and not Apple's own internal operating systems related to the App Store. The mobile gaming market itself is a *$100 billion industry*. The size of this market explains Epic Games' motive in bringing this action. Having penetrated all other video game markets, the mobile gaming market was Epic Games' next target and it views Apple as an impediment.

Further, the evidence demonstrates that most App Store revenue is generated by mobile gaming apps, not all apps. Thus, defining the market to focus on gaming apps is appropriate. Generally speaking, on a *revenue basis*, gaming apps account for approximately 70% of all App Store revenues. This 70% of revenue is generated by less than 10% of all App Store consumers. These gaming-app consumers are primarily making in-app purchases which is the focus of Epic Games' claims. By contrast, over 80% of all consumer accounts generate virtually no revenue, as 80% of all apps on the App Store are free.

Having defined the relevant market as digital mobile gaming transactions, the Court next evaluated Apple's conduct in that market. Given the trial record, the Court cannot ultimately conclude that Apple is a monopolist under either federal or state antitrust laws. While the Court finds that Apple enjoys considerable market share of over 55% and extraordinarily high profit margins, these

factors alone do not show antitrust conduct. Success is not illegal. The final trial record did not include evidence of other critical factors, such as barriers to entry and conduct decreasing output or decreasing innovation in the relevant market. The Court does not find that it is impossible; only that Epic Games failed in its burden to demonstrate Apple is an illegal monopolist.

Nonetheless, the trial did show that Apple is engaging in anticompetitive conduct under California's competition laws. The Court concludes that Apple's anti-steering provisions hide critical information from consumers and illegally stifle consumer choice. When coupled with Apple's incipient antitrust violations, these anti-steering provisions are anticompetitive and a nationwide remedy to eliminate those provisions is warranted.

The Court provides its findings of facts and conclusions of law below.[1]

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1. The Court notes several pending administrative motions to seal relating to the parties' proposed findings of facts and conclusions of law, pending motions, and submitted and docketed materials. *See* Dkt. Nos. 517, 650, 656, 696, 702, 707, 777, 778, 810. These motions are **Granted** to the extent that they remain sealed and are not referenced in this Order. Otherwise, to the extent the information is referenced and included in this Order, the motions are **Denied**. Previously sealed documents remain sealed unless otherwise noted in this Order.

Appendix B

PART I

FINDINGS OF FACT

To determine the relevant market, the Court must first understand the industry and the markets in that industry. This is a heavily *factual* inquiry. Thus, in this Order, the Court explains in detail, the facts underpinning each parties' theory and other relevant facts uncovered during the trial. These details include the background of the parties, their products, the industry, and the markets in which they compete.[2] To assist the reader, given the length of this Order, an outline is included in an Appendix hereto.

I. THE PARTIES

A. Overview

Some basic background information may be helpful. Epic Games is a multi-billion dollar video game company. It defines the relevant market by way of Apple's own internal operating system. Apple has maintained control of its own operating system for mobile devices, called

2. In considering these issues, the Court conducted a sixteen-day bench trial, admitted over 900 exhibits, and, to expedite the in-court proceedings, considered pre-trial submissions including written testimony of the experts and designations of deposition transcripts. The Court in this Order refers to the findings of facts ("FOF") and conclusions of law ("COL") for the parties' arguments as these documents effectively served as the parties' post-trial briefs. *See* Dkt. Nos. 777-4 (Epic Games' filing), 778-4 (Apple's filing).

iOS, since its inception in 2007. Apple's creation and cultivation of the iOS device (and its ecosystem) has been described as a walled garden. Said differently, it is a closed platform whereby Apple controls and supervises access to any software which accesses the iOS devices (defined as iPhones and iPads; also referred to collectively as iOS devices). Apple justifies this control primarily in the name of consumer privacy, security, as well as monetization of its intellectual property. Evidence supports the argument that consumers value these attributes. Due in part to this business model, Apple has been enormously successful and its devices are now ubiquitous.

Both Apple and third-party developers like Epic Games have symbiotically benefited from the ever-increasing innovation and growth in the iOS ecosystem. There is no dispute in the record that developers like Epic Games have benefited from Apple's development and cultivation of the iOS ecosystem, including its devices and underlying software. Nor is there any dispute that developers like Epic Games have enhanced the experience for iOS devices and their consumers by offering a diverse assortment of applications beyond that which Apple can or has provided.

Until this lawsuit, Epic Games' flagship video game product, *Fortnite*, could be played on iOS devices. The product generated an immensely profitable revenue stream for Epic Games. However, Epic Games was also required by contract to pay Apple a 30% commission on every purchase made through the App Store, whether an initial download or an in-app purchase. Consequently,

Fortnite generated a profitable revenue stream for Apple as well. Epic Games tried to use *Fortnite* as leverage to force Apple to reduce its commission fee and to open its closed platform. When Apple refused, Epic Games breached its contract, which it concedes, and filed this lawsuit. Apple countersued for breach of contract.

Plaintiff focuses its challenge on Apple's control over the distribution of apps to its users and the requirement that developers of apps use Apple's in-app purchases or in-app payments ("IAP") system[3] if purchases are offered in the app. Under this IAP system and under its agreements with app developers, Apple collects payments made to developers, remits 70% to the developers, and keeps a 30% commission. This rate has largely remained unchanged since the inception. The trial also contained evidence of Apple's use of anti-steering provisions to limit information flow to consumers on the payment structure related to in-app purchases.

Once acceptable, Apple's commission rate is now questioned by some consumers and some developers, like Epic Games, as being overly burdensome and violative of competition laws. Indeed, two related lawsuits were already pending before the Court well before the commencement

3. The Court notes that it uses the term IAP in this Order to refer exclusively to Apple's IAP systems, as described and discussed later herein. *See supra* Facts § II.C. The Court clarifies, however, that certain witnesses use the term IAP to refer generically to any app purchases or payments made in games and apps. The Court notes that the underlying transcripts and cited materials in which IAP is being referenced clarifies which of the two is being discussed.

of this action. The first, *In Re Apple iPhone Antitrust Litigation*, 4:11-cv-6714-YGR (*Pepper*), was filed in 2011 on behalf of a class of iOS device consumers alleging harm from the commission rate. The second, filed in 2019 after *Pepper* returned from the Supreme Court of the United States, *Donald Cameron v. Apple Inc.*, 4:19-cv-3074-YGR (*Cameron*), on behalf of a class of iOS app developers also alleging violations of antitrust and competitions laws.

The Court begins the analysis with Epic Games.

B. Plaintiff Epic Games

Epic Games is a video game developer founded in 1991 by Tim Sweeney.[4] It is headquartered in Cary, North Carolina, has more than 3,200 employees in offices around the world, and was recently valued at $28.7 billion. Mr. Sweeney serves as the controlling shareholder and chairman of the Board of Directors.[5] Other notable shareholders include: (1) Tencent Holdings, Ltd., a Chinese video game company and one of the largest gaming companies in the world, which owns about thirty-seven percent of Epic Games, with two board seats; and (2) Sony Corporation, a major player in the console gaming market, which also owns about 1 to 2 percent of Epic Games.[6]

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4. Trial Tr. (Sweeney) 89:19, 112:18-25.

5. *Id.* 112:18-113:14, 165:17-166:1, 179:7-8.

6. *Id.* 178:24-179:6, 179:21-180:3.

Appendix B

Epic Games first began publishing games for other developers when the company started.[7] Around 1998, it moved away from publishing other companies' products to developing its own product.[8] During the mid-2000's, the company, which had been focused on personal computers ("PC") games up to that point, shifted to developing for game consoles.[9]

In addition to game development, Epic Games offers software development tools and distributes apps.[10] Epic Games now touts a number of different lines of business, much of which occurred during the pendency of this lawsuit and on the eve of trial, such as distribution of non-game apps.

The Court summarizes each of the three significant areas of its business: (1) gaming software development (*e.g., Unreal Engine*, Epic Online Services); (2) game developer (*e.g., Fortnite* and other video games); and (3) gaming distributor (*e.g.*, the Epic Games Store). The Court thereafter summarizes the prior relationship between Epic Games and Apple.

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7. *Id.* 172:6-8.

8. *Id.* 172:21-173:3.

9. DX-3710.005-.006.

10. Trial Tr. (Sweeney) 93:22-94:17 ("Epic is in a variety of businesses all tied to the common theme of building and supporting real-time 3D content, both through consumer products and to developers, and . . . other services that socially connect users together."), 166:6-12.

Appendix B

1. Gaming Software Developer: Unreal Engine and Epic Online Services

As a gaming software developer, Epic Games licenses two notable products to other developers: *Unreal Engine* and Epic Online Services.[11]

The first, *Unreal Engine*, is a software suite that allows developers to create three-dimensional and immersive digital content.[12] It is not used by *consumers* and is not an app on the App Store.[13] Developers wishing to use *Unreal Engine* must be licensed by nonparty Epic S.A.R.L. ("Epic International"), an Epic Games Swiss subsidiary.[14] Epic International licenses *Unreal Engine* because it sought to protect their intellectual property rights.[15] Licensed developers are governed by the End User License Agreement.[16]

Epic Games profits from *Unreal Engine* by charging fees for paid content.[17] Separately, Epic International

11. *Id.* 94:5-7; Trial Tr. (Grant) 662:8-13.

12. *Id.* 116:17-22 ("The *Unreal Engine* is a development tool aimed at content creators rather than consumers. It contains content creation tools, real-time 3D graphics, capabilities, and real-time physics and simulation technology that is used by a wide variety of industries to make a variety of 3D content.").

13. *Id.* 162:19-163:14.

14. *Id.* 162:5-12; Trial Tr. (Grant) 724:11-16.

15. Trial Tr. (Grant) 754:13-19.

16. DX-4022; Trial Tr. (Grant) 667:3-11, 753:19-754:7.

17. DX-4022.006-.007 (§ 4).

charges a royalty on products that use any version of the *Unreal Engine* (typically 5% of gross revenue).[18] In the past, developers were required to pay royalties after a product exceeded $3,000 in revenue per quarter. After a change in policy in 2020, Epic International is now owed royalties after a product earns $1,000,000 through the product's life.[19]

Epic International therefore profits in perpetuity from any success a developer enjoys using the *Unreal Engine*.[20] As Epic Games' former chief financial officer stated, this model ensures that if developers succeed, Epic Games "can participate in that success."[21] For instance, in 2019, *Unreal Engine* generated about $97 million in revenue for Epic International,[22] which enjoys a 100 percent gross margin on its "engine business."[23]

Although *Unreal Engine* itself is not available on the App Store, Epic Games develops apps that work in

18. DX-4022.007-.008 (§ 5).

19. Trial Tr. (Grant) 681:4-7, 754:20-755:4.

20. DX-4022.008 ("The royalty will be payable under this Agreement with respect to each Product for as long as any Engine Code or Content (including as modified by you under the License) incorporated in or used to make the Product are protected under copyright or other intellectual property law."); Ex. Depo. (Penwarden) 30:7-8.

21. Ex. Depo. (Babcock) 180:5-9.

22. DX-3795.009.

23. DX-3359.003.

conjunction with *Unreal Engine*, including *Unreal Remote* and *Live Link Face*, and distributes on iOS. These apps "provide[] a means for people who work in the movie or TV industry to capture performances and view them on *Unreal Engine*."[24] They do not include competitive game play.[25] Separate and apart from the App Store, Epic Games also provides *Unreal Marketplace*, a store for pre-created two-dimensional and three-dimensional assets for purchase by *Unreal* developers.[26]

Second, in addition to *Unreal Engine*, Epic Games offers third-party developers a suite of back-end online gaming services through Epic Online Services. These services include matchmaking, Epic Games' friends system, and voice system.[27]

2. Game Developer: Fortnite

With respect to Epic Games' primary business of development and release of its own video games including its flagship video game, *Fortnite*, Epic Games develops

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24. Trial Tr. (Grant) 664:21-665:17.

25. Trial Tr. (Sweeney) 304:25-305:2 (noting there is no competitive game play associated with *Unreal Engine*).

26. Trial Tr. (Ko) 799:18-21.

27. Trial Tr. (Sweeney) 120:7-14 ("Epic Online Services . . . provides many of the social features that we built for *Fortnite* and makes them available to other companies, such as Epic's account system, Epic's matchmaking system, to put players together into a shared game session. It includes Epic's friends system. And we're soon to release the Epic Games voice system for voice chat.").

and owns through its subsidiary, other apps, such as *Houseparty*, which incorporates some optional gaming elements into its video chat application.[28]

a. *Fortnite*'s Game Modes

Fortnite is Epic Games' most popular game and app, with over 400 hundred million registered players worldwide.[29] Originally a cooperative shooter game consisting of player-versus-environment ("PVE") mechanics, *Fortnite* now has four main game modes: (i) *Save the World*, (ii) *Battle Royale*, (iii) *Creative*, and (iv) *Party Royale*.[30] Of these four game modes, "nearly half of the players coming into [*Fortnite*] on a daily basis," around 15 million users, "are playing Creative and Party Royale Modes."[31]

Save the World launched in July 2017 as the original game mode. It is a cooperative campaign consisting of PVE mechanics. Squads of up to four players team up to build

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28. *Id.* 161:10-112 ("[W]e make *Houseparty*, which is a social video application, sort of like a version of Zoom that's for friends."), 117:8-12, 305:14-21. The record does not contain any information, financial or otherwise, with respect to these other games.

29. Trial Tr. (Sweeney) 99:5-6, 100:5-7. Epic Games also owns and/or develops other games, including *Rocket League, Fall Guys, Battle Breakers, Spyjinx*, and the *Infinity Blade* series. Trial Tr. (Sweeney) 89:22-90:5, 116:8-12; Trial Tr. (Grant) 664:13-14.

30. DX-5536; Trial Tr. (Sweeney) 99:5-10, 328:4-8; Trial Tr. (Weissinger) 1354:23-24.

31. Trial Tr. (Weissinger) 1296:5-8.

forts and fight non-playable, computer monsters.[32] *Save the World* is *not available* on mobile platforms, including the iOS platform, or on the Nintendo Switch.[33]

Battle Royale is a player-versus-player ("PVP") elimination and survival match involving up to 100 players.[34] It is the most popular *Fortnite* game play mode with storylines and game play that evolve over time, as new chapters and seasons are released.[35] A season typically lasts around ten weeks and is a subset of a larger chapter.[36] This mode also offers a "sit out" feature, permitting players to observe *Battle Royale* matches instead of competing.[37] Importantly, and as discussed below, although the *Battle Royale* game play mode is available to download and play free of charge, [38] players can make in-app purchases for digital content, including digital avatars, costumes, dance moves, and other cosmetic items.[39]

Creative mode allows players to create their own content in *Fortnite*.[40] According to Epic Games' website:

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32. DX-5536.004.

33. Trial Tr. (Weissinger) 1354:18, 1354:21.

34. DX-5536.001-002.

35. Trial Tr. (Sweeney) 99:5-10, 105:21.

36. Trial Tr. (Weissinger) 1393:14-19.

37. *Id.* 1296:14-1297:5.

38. Trial Tr. (Sweeney) 108:15-16.

39. *Id.* 108:23-109:3.

40. *Id.* 328:4-8.

"Included free with Battle Royale, Fortnite Creative puts you in charge of your own Island . . . . Creative is also a great place for just creating your own scenery. . . ."[41] Content generated in *Creative* mode can be more broadly shared by other *Fortnite* players.[42] With the aid of avatar Agent Peely, an anthropomorphic banana man,[43] and Mr. Weissinger's testimony, the Court was walked through different gaming and experiences islands within the *Creative* mode hub, including "Prison Breakout," "Rockets vs. Cars," "Cars Now With Snipers," and "Creative Mayhem Regional Qualifier."[44]

The final mode, *Party Royale*, is described as "an experimental and evolving space that focuses on no sweat, all chill fun. Attractions include aerial obstacle courses, boat races, movies, and even live concerts from top artists[.]"[45]

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41. DX-5536.003.

42. DX-5539.

43. With respect to the appropriateness of Peely's "dress," the Court understood Apple merely to be "dressing" Peely in a tuxedo for federal court, as jest to reflect the general solemnity of a federal court proceeding. As Mr. Weissinger later remarked, and with which the Court agrees, Peely is "just a banana man," additional attire was not necessary but informative. Trial Tr. (Weissinger) 1443:17.

44. Matthew Weissinger is Vice President of Marketing at Epic Games. Trial Tr. (Weissinger) 1365:16-1366:1, 1367:25-1368:10, 1368:12-1371:20, 1373:22-1374:12, 1374:13-1376:6 (testimony agreeing that *Creative* mode includes game play and game mechanics).

45. DX-5536.002; *see also* Trial Tr. (Allison) 1246:20-1247:7. The Court viewed a portion of this mode whereby Peely participated

In 2017, *Fortnite* debuted on a number of platforms—including Windows, Mac, Xbox One, and PlayStation 4—with only the *Save the World* game mode. Later that year, Epic Games released *Battle Royale*—a free-to-play game mode with features available for in-app purchase. With *Battle Royale*'s success, *Fortnite* quickly "became more about Battle Royale" and, thus, a primarily "free-to-play game." The success of *Fortnite* has been profitable for both Epic Games and its partners. For instance, the Epic Games-Microsoft partnership generates hundreds of millions of dollars for both parties.[46]

b. Key Features of *Fortnite*

Fortnite has many distinct features. First, most of its game play is multiplayer and requires an Internet connection. Users can play *Fortnite* online with friends and family, with teams, or with other gamers of similar skill levels with whom they are matched.[47] Second, in order to play together online, users must have the same "version" of *Fortnite* software installed on their device or platform.[48] Third, *Fortnite* releases new content and updates, including major changes to the map and game play, on a regular basis. These updates ensure that users can enjoy new and surprising in-game experiences

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in a game called "Skydive Glide Drop," before engaging in dance to celebrate a B rank finish. Trial Tr. (Weissinger) 1363:13-1364:12.

46. Trial Tr. (Wright) 590:5-9, 592:12-17.

47. Trial Tr. (Sweeney) 107:12-18.

48. *Id.* 158:17-19.

each time they open the app. Having a purely static environment without these updates would materially degrade the player experience. [49]

Fourth, *Fortnite* features cross-play, allowing players on different platforms to play with one another.[50] Since September 2018, cross-platform play for *Fortnite* has been available on Sony's PlayStation, Microsoft's Xbox, the Nintendo Switch, Windows PCs, Mac computers, certain Android devices, and (until recently) certain iOS mobile devices.[51] In fact, Epic Games pioneered cross-platform play for the gaming industry. It persuaded both Sony and Microsoft to erase the artificial barriers between players on their console platforms, making *Fortnite* the first game to achieve full cross-play functionality across those devices, as well as PCs and mobile devices.[52] Epic Games believed so strongly in cross-platform play that it threatened litigation against Sony for using policies and practices to restrict the same.[53]

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49. *Id.* 105:21-106:14.

50. *Id.* 106:18-24, 196:8-22. Cross-platform scenarios also occur when games on one platform access "content, subscriptions, or features" acquired on other platforms or on a developer's website. PX-2790.011 (§ 313(b)).

51. Trial Tr. (Sweeney) 107:2-10, 237:15-18.

52. *Id.* 106:23-107:10, 196:18-22, 198:22-199:6.

53. DX-3125.007; Trial Tr. (Sweeney) 107:2-10, 234:3-238:12, 252:22-255:16.

Other cross-platform innovations featured on *Fortnite* include cross-progression and cross-purchase or cross-wallet. Cross-progression allows users to access the same account and maintain their progress, regardless of the platform on which they play. Thus, for users who play *Fortnite* on multiple platforms, cross-progression is an important feature.[54] Nevertheless, most *Fortnite* users play on a single platform.[55] Cross-purchases allows *Fortnite* users to buy V-Bucks, or virtual currency, on one platform and spend them on another platform. Cross-purchases are not available on Sony or Nintendo platforms.[56]

Fifth and finally, as evidenced above, *Fortnite* features gaming and non-gaming experiences.[57] For instance, *Party Royale* allows players to watch movies or TV shows, attend concerts, and participate in global cultural events within the app itself.[58]*Fortnite*'s capacity to bring people together has been particularly important during the COVID-19 pandemic.[59] Notable events include:

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54. Trial Tr. (Sweeney) 108:3-11 ("Cross-progression refers to . . . a user who owns multi devices to connect with *Fortnite* on . . . different platforms, and to have the same . . . state [of] ownership of virtual items on all different platforms . . . .").

55. PX-1054.

56. Trial Tr. (Sweeney) 197:1-5, 198:1-3, 239:3-14.

57. *Id.* 98:6-8.

58. *Id.* 98:12-99:3.

59. *Id.* 107:14-18; Trial Tr. (Weissinger) 1295:8-16.

- Travis Scott's in-game concert in April 2020, viewed by 12.3 million concurrent users, including two million iOS users;[60]

- Three of Christopher Nolan's feature-length films—*The Dark Knight*, *Inception*, and *The Prestige*—virtually screened in June 2020;[61]

- Exclusive episodes of ESPN's *The Ocho*, viewed by more than two million users, and the Discovery Channel's *Tiger Shark King*, viewed by more than 900,000 users;[62]

- *We the People*, a series of discussions on racial equality and voter suppression in the United States, viewed by 1.5 million users;[63] and

- DJ Kaskade hosted a virtual concert in March 2021.[64]

Based on these in-game experiences, Epic Games considers *Fortnite* to compete not only with gaming

60. Trial Tr. (Weissinger) 1294:10-22.

61. Trial Tr. (Sweeney) 103:12-16; Trial Tr. (Weissinger) 1289:8-25.

62. Trial Tr. (Sweeney) 104:16-24; Trial Tr. (Weissinger) 1290:5-7, 1290:16-23.

63. Trial Tr. (Sweeney) 105:5-7; Trial Tr. (Weissinger) 1291:5-11.

64. Trial Tr. (Weissinger) 1293:25-1294:1.

companies but also with other social media companies such as Facebook and Netflix.[65]

c. *Fortnite*'s Business Model: In-App Purchases and V-Bucks

Fortnite uses the "freemium" game model, under which a game is largely free to download and play but certain additional in-game features can be purchased.[66] Epic Games primarily generates revenue by selling V-Bucks, which can be used to obtain items in *Fortnite*.[67] V-Bucks can be purchased in-app or directly from Epic Games' website.[68] Players can use VBucks to purchase digital content within the app, including a "Battle Pass" (a feature that provides access to challenges and otherwise locked content) or cosmetic upgrades.[69] Unlike other games employing the freemium model, in-app purchases do not buy game play advantages in *Battle Royale*.[70] Instead, players can make in-app purchases of different items that function as forms of self-expression, including cosmetic enhancements or "skins" (*i.e.*, in-game costumes), dance

65. Trial Tr. (Sweeney) 94:4-7, 98:16-99:3.

66. *Id.* 187:15-188:3, 226:18-19.

67. *Id.* 189:9-11.

68. *Id.* 188:13-21, 298:21-23.

69. *Id.* 108:17-109:3, 188:13-189:11; Trial Tr. (Weissinger) 1300:3-7.

70. Trial Tr. (Sweeney) 110:5-10.

moves known as "emotes," and more.[71] As of December 2020, players can also subscribe to *Fortnite Group*, which provides users with the Battle Pass for each new *Battle Royale* season, a monthly allotment of 1,000 V-Bucks and exclusive cosmetics.[72]

Epic Games sells V-Bucks to consumers in various bundles and packages at increasing prices: 1,000 V-Bucks for $9.99; 2,800 V-Bucks for $24.99 and so on—all the way to 13,500 V-Bucks for $99.99. After Epic Games implemented its hotfix on iOS (discussed at length below), Epic Games dropped V-Bucks pricing by 20% for purchases made through Epic Games' direct payment option on iOS and Google Play, as well as for purchases on every other platform through which *Fortnite* was offered.[73] Notably, there is "no cost to [Epic Games for] V-Buck . . . V-Bucks themselves don't have a marginal cost."[74]

Although Epic Games claims that it would not have a viable way of monetizing *Fortnite* without being able to sell in-app content,[75] the record shows it monetizes *Fortnite* in nine other ways:[76]

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71. *Id.* 108:23-109:3; Trial Tr. (Weissinger) 1299:6-8.

72. Trial Tr. (Weissinger) 1301:15-21.

73. DX-3774.009; Trial Tr. (Sweeney) 190:6-9, 14-16.

74. Trial Tr. (Sweeney) 190:14-16.

75. Trial Tr. (Weissinger) 1303:18-1306:7.

76. DX-3691.008-.010.

Two are internal to the game. First, since December 2020, users "can subscribe to *Fortnite Crew*, a subscription" service offered by Epic Games.[77] Second, users can pay an up-front fee to gain access to one of *Fortnite*'s game modes, *Save the World*, that also has in-app content for purchase.[78]

The remaining seven are external. One, Epic Games "generates revenue . . . typically in the form of redeemable codes sold through traditional retail and online stores."[79] Two, Epic Games generates revenue through in-game advertising or cross-promotions.[80] Three, it "has received revenue for providing third-parties with promotional codes redeemable for *Fortnite* content."[81] Four, "Epic has in the past entered into hardware bundle agreements with console makers," through which "the console makers offered for sale a bundle containing their game consoles along with exclusive *Fortnite* cosmetics and V-Bucks . . . ."[82] Five, "Epic has provided other partners with redeemable codes for exclusive *Fortnite* cosmetics and V-Bucks, and Epic was paid by the partner on a per

77. Trial Tr. (Weissinger) 1357:17-25; DX-3691.009.

78. DX-3691.009.

79. *Id.*

80. DX-3691.010; *see also* Trial Tr. (Weissinger) 1306:19-1307:7, 1311:7-1312:1.

81. DX-3691.010.

82. *Id.*

redemption basis."[83] Next, it "has entered into licensing agreements with brands through which it received the revenue from sales of in-game cosmetics featuring the licensed content as well as a small portion of the brand's sales generated from *Fortnite*."[84] Finally, it "licenses *Fortnite* intellectual property to third parties to use in physical merchandise, such as toys, apparel, accessories and home goods. In some circumstances, such physical merchandise also may include a code that can be redeemed for *Fortnite* in-game content."[85]

Based on the freemium model which relies upon in-app purchases, as well as these alternative ways of monetization, *Fortnite* is quite lucrative and integral to Epic Games' overall business operations.[86] Given that *Fortnite* utilizes cross-platform technology to capture a larger audience and appears on several different platforms, Epic Games faces commission rates on its in-app purchases. Generally, plaintiff must pay 30% across most platforms. Indeed, for example, Epic Games has agreed to such a rate on all *Fortnite* transactions via the Microsoft (Xbox) Store, the PlayStation Store, the Nintendo eShop, and Google Play.[87] Epic Games has also agreed to extra payments for certain platform holders

83. *Id.*

84. *Id.*

85. *Id.*

86. Trial Tr. (Sweeney) 289:21-290:25.

87. DX-3582.004-.005; DX-3464.012, .027, .031; Trial Tr. (Sweeney) 142:19-143:1, 161:13-15; Trial Tr. (Weissinger) 1349:14-23.

above and beyond the standard 30% commission rate. For example, for all *Fortnite* transactions via the PlayStation Store, Epic Games agreed to make additional payments to Sony *above* this commission rate based on the amount of time that PlayStation users play *Fortnite* cross-platform.[88]

d. *Fortnite* on the iOS Platform

In 2018, *Fortnite* debuted on the iOS platform. Epic Games followed its prior business model and distributed *Fortnite* using a "freemium" model, in which a user can download the application for free but has the opportunity to purchase certain in-app content. Mr. Sweeney "attribute[s] a lot of [Epic Games'] success" to this business model. This kind of business model is facilitated by the App Store, including IAP.[89]

Although Epic Games has had disputes and discussions with other platform owners as to cross-play policies (including cross-platform, cross-progression, and cross-wallet), originally it did not encounter any such difficulty with Apple. Prior to *Fortnite*'s launch on iOS devices, Epic Games sought to leverage Apple's significant interest in "the mobile version of [*Fortnite Battle Royale*]" to obtain Apple's support in operationalizing cross-play capabilities and to secure marketing support from Apple. Apple cooperated: before *Fortnite*'s debut on the iPhone,

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88. Ex. Depo. (Kreiner) 52:13-19; DX-4519.003-.004; Trial Tr. (Sweeney) 198:10-21, 238:1-238:5, 308:14-23.

89. Trial Tr. (Sweeney) 187:15-188:7; Trial Tr. (Schiller) 2791:11-18; Ex. Expert 8 (Schmalensee) ¶ 134.

Apple operationalized cross-platform play. This included changing its guidelines to expressly permit cross-platform functionalities that were similar to what Epic Games sought, and Apple continued to permit such cross-functionality on *Fortnite* while the game remained on the App Store.[90] In addition to cross-platform play, Apple also facilitated cross-progression (game progress synced across platforms), and cross-wallet functionality (allowing purchases from one platform to be used on others).[91] Epic Games has acknowledged that Apple's permissive cross-platform policies contributed to *Fortnite*'s success as a cross-platform game and benefited Epic Games' business.[92]

Once *Fortnite* itself was introduced, revenues from in-app purchase on Epic Games apps through the App Store roughly doubled. Indeed, Epic Games saw iOS and other mobile platforms as key to increasing *Fortnite*'s player base, as plaintiff had already reached "a point of basically full penetration on console," making acquisition of mobile customers "hugely important."[93] Before *Fortnite* was removed from the iOS platform, more than 115 million registered players had accessed *Fortnite* on an

90. DX-3448.001; Trial Tr. (Sweeney) 232:18-25; PX-2619.010-.012 (§§ 3.1.1, 3.1.3).

91. Trial Tr. (Sweeney) 108:2-13, 197:1-14, 245:16-246:4.

92. Trial Tr. (Sweeney) 196:15-25.

93. DX-3233.003; Trial Tr. (Hitt) 2111:22-2112:15; Ex. Expert 6 (Hitt) ¶ 175 & Fig. 42; Trial Tr. (Weissinger) 1346:3-17.

iOS device.[94] Of this amount, 64% of *Fortnite* for iOS players—approximately 73 million in total—had only ever played *Fortnite* on iOS devices.[95]

That said, despite this staggering number of iOS *Fortnite* players, the vast majority of Epic Games' *Fortnite* revenue (93%) is generated on non-iOS platforms. Of the users who made a purchase between March 2018 and July 2020, *only 13.2% made a purchase on an iOS device—meaning that Epic Games was able to transact with 86.8% of paying Fortnite users without paying any commissions to Apple.*[96] Still, in only two short years, and with access to the iOS platform and Apple's support, *Fortnite* on iOS earned Epic Games more than $700 million across over 100 million iOS user accounts.[97]

3. Game Publisher and Distributor: Epic Games Store

a. Characteristics of the Epic Games Store

As noted above, Epic Games is involved in both game publishing and game distribution through its online store, the Epic Games Store, which launched in December

94. Ex. Expert 6 (Hitt) ¶¶ 62, 71, & Fig. 13.

95. *Id.*

96. *Id.* ¶ 69 & Fig. 14.

97. DX-4763.

2018.[98] By way of background, a publisher "typically funds most or all of the expenses associated with [an] entire product, including development and marketing; whereas, a distributor typically only pays the cost associated with direct distribution, such as in the digital . . . bandwidth and payment with processing fees."[99] Where Epic Games serves as a publisher, its agreements provide that it first recovers all of its costs and then splits remaining revenues 60/40 with the 40% share to the developer, or 50/50.[100] In terms of distribution, the Epic Games Store serves as a platform to sell gaming apps which operated on PC and Mac computers.[101] The store carries hundreds of games, including its own and many third-party titles.[102]

Messrs. Sweeney and Steve Allison, Vice President and General Manager of the Epic Games Store, testified that Epic Games always had an original intent to include non-gaming apps within the Epic Games Store citing to the inclusion of *Unreal Engine* on the store page, and conversations with several other non-gaming app

98. Trial Tr. (Sweeney) 124:2-5; Trial Tr. (Allison) 1198:19-20, 1218:22-1219:10.

99. Trial Tr. (Sweeney) 96:24-97:4.

100. Trial Tr. (Sweeney) 306:6-307:11; *see also* Trial Tr. (Allison) 1263:3-15; DX-3993.025.

101. Trial Tr. (Sweeney) 94:7-9, 123:10-13; Trial Tr. (Allison) 1198:19-20, 1199:17.

102. Trial Tr. 261:24-25 (Sweeney); Trial Tr. (Allison) 1210:20-23.

companies including Twitch and Discord in 2018.[103] The claim is suspect. First, the Epic Games Store only made significant moves during the pendency of this litigation and on the eve of this bench trial by including non-game apps including: the Spotify music app (December 2020), the Brave web browser, the KenShape creation tool for artists, and Itch.io, a third-party store (April 22, 2021).[104] Indeed, while Epic Games urges in this lawsuit that Apple must allow third-party app stores in the App Store, the Epic Games Store did not itself distribute any third-party app stores until a few days before trial (approximately April 22, 2021).[105] Second, neither Discord nor Twitch have submitted their own apps for inclusion on the Epic Games Store.[106] Finally, with respect to *Unreal Engine*, although the Epic Games Store links to it, the *Unreal Engine* has its own website with its own domain name and appears separate and apart from the Epic Games Store.[107]

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103. Trial Tr. (Sweeney) 123:15-124:5, 262:19-24; Trial Tr. (Allison) 1199:15-1200:1.

104. Trial Tr. (Sweeney) 124:22-125:8; Trial Tr. (Allison) 1199:13-14; *see also* Trial Tr. (Sweeney) 117:19-25, 121:19-25, 123:10-13, 124:15-24, 262:19-263:11, 265:7-11; Trial Tr. (Allison) 1243:3-11.

105. Trial Tr. (Sweeney) 263:22-265:4.

106. The Court further understands that both Twitch (an app primarily used for game streaming) and Discord (an app primarily used for voice chat in video games) operate apps that are, to use Mr. Allison's words, "game adjacent." Trial Tr. (Allison) 1119:24-25.

107. *Id.* 1239:8-13.

This conclusion is also supported by the design of the Epic Games Store's website itself which markets "games" specifically. The navigation tabs on the homepage—"games on sale," "free games," "new and trending," "new releases," "top sellers," "[t]op 20," and "coming soon"—lead to compilations consisting entirely of games. The "top news items" tab offers only news about games. The search bar prompts the user to "search all games" (and not to "search all apps"). The "help" tab describes Epic Games Store's consumers as "players." Finally, the Epic Games Store's "FAQ" describes the Epic Games Store as a "curated digital storefront for PC and Mac" that is "designed with both players and creators in mind" and is "focused on providing great games for gamers and a fair deal for game developers."[108]

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108. *Id.* 1236:5-1238:10, 1238:11-19, 1238:21-1239:5, 1239:15-1240:7. The Court is not persuaded that the Epic Games Store is anything but a game store. Indeed, the Court emphasizes that its addition of non-gaming apps during the pendency of this litigation (Spotify) and on the eve of trial (the remaining apps and software) do not demonstrate that Epic Games Store is a general app store, especially for purposes of this litigation.

First, at the time of the filing of the complaint in this action, the Epic Games Store was undisputedly a game store, and the pleadings only confirm that Epic Games sought to open Epic Games Store in its then current iteration on the iOS platform. *See* Compl. (Dkt. No. 1) ¶ 27 ("Epic also built and runs the Epic Games Store, a digital video game storefront through which gamers can download various games, some developed by Epic, and many offered by third-party game developers." (emphasis supplied)), ¶ 81 ("Epic approached Apple to request that Apple allow Epic to offer its Epic Games Store to Apple's iOS users through the App Store and direct installation."), ¶ 90 ("The Epic Games Store offers personalized features such as

Like other platforms, the Epic Games Store uses a commission model and markets an 88/12 split of all revenues to developers from the sale of their games. The evidence is also undisputed that this 88/12 commission is a below-cost price and the store is expected to operate at a loss for many years at this rate.[109]

From Epic Games Store's launch to December 2019, Epic Games collected its commission through its own payment mechanism, which it required developers to use for all game purchases and in-game purchases.[110] Epic Games no longer requires any developer to use its payment processing system, called Epic direct payment, for in-app purchases.[111] Developers who do not use Epic direct payment do not pay Epic Games anything for in-

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friends list management and game matchmaking services. Absent Apple's anticompetitive conduct, Epic would also create an app store for iOS.").

Second, the Court heard no specific evidence on these newly added apps, beyond brief descriptions of these apps and software, including on Epic Games' monetization and revenues from such apps, or even user statistics with respect to such apps, including total and relative downloads as compared to other products in the Epic Games Store.

109. Trial Tr. (Sweeney) 125:9-12, 126:1-3; Trial Tr. (Cragg) 2326:25-2327:5.

110. Trial Tr. (Allison) 1221:11-1222:16.

111. Trial Tr. (Sweeney) 125:23-25; Trial Tr. (Ko) 800:4-14; Trial Tr. (Allison) 1221:21-1222:12; *see also* Trial Tr. (Sweeney) 126:1-8; 307:15-17.

app purchases.[112] Because of this open policy, several app developers have elected to use their own payment and purchase functionality for in-app purchases, such as Ubisoft and Wizards of the Coast.[113]

Epic Games acknowledges that its commission is not merely a "payment processing" fee. The 12 percent fee is principally for access to Epic Games' customers, but also is intended to cover all of Epic Games' variable operating costs associated with selling incremental games to customers. It covers various services to game developers, including "hosting, player support, marketing of their games, and handling of refunds," "a supporter/creator marketing program," and "social media for game launches, video promotions[,] . . . featuring at physical events, such as E3[,] [a]nd sponsorships of the video games." The commission is thus "tied into these broader ecosystem benefits that [Epic Games] provide[s] to [its] developers," and is intended to cover the full "cost of operating the service," "the actual distribution cost, the internet bandwidth cost, [and] the . . . cost of maintaining it."[114]

Today, Epic Games Store has over 180 million registered accounts and more than 50 million monthly

112. Trial Tr. (Sweeney) 125:23-25.

113. Trial Tr. (Allison) 1223:8-20.

114. Trial Tr. (Allison) 1271:21-24; Trial Tr. (Sweeney) 126:9-11; Ex. Depo. (Kreiner) 242:9-243:13, 243:19-22; Ex. Depo. (Rein) 110:4-25; *see also* Trial Tr. (Allison) 1224:4-1225:7, 1232:5-13.

active users.[115] It supports more than 100 third-party app developers and publishes over 400 of their apps.[116] Epic Games Store operates a single storefront across multiple geographies.[117]

Epic Games is a would-be and self-avowed competitor of Apple in the distribution of apps.[118] Absent the restrictions imposed by Apple, Epic Games would operate a mobile version of the Epic Games Store on iOS that would compete with Apple's App Store.[119]

b. Finances of the Epic Games Store

As referenced, the Epic Games Store is not yet profitable due to Epic Games' strategic plan to grow the consumer base at the expense of near-term profits and revenue.

By charging 12% commission, the Epic Games Store will not be profitable for at least several years. Current estimates indicate negative overall earnings in the hundreds of millions of dollars through at least 2027. The anticipated loss is driven by hundreds of

115. Trial Tr. (Allison) 1220:21-25.

116. *Id.* 1220:8-10, 18-20.

117. Trial Tr. (Sweeney) 129:8-13.

118. Trial Tr. (Sweeney) 95:16-20; *see also* Trial Tr. (Allison) 1233:8-17.

119. Trial Tr. (Sweeney) 97:24-98:4; *see also* Trial Tr. (Allison) 1233:8-17.

millions of minimum guarantees that Epic Games made to developers to entice them to distribute exclusively through Epic Games Store.[120] In short, the Epic Games Store has front-loaded its marketing and user-acquisition costs to gain market share.[121] Whether this gambit will ultimately work remains to be seen; Epic Games is currently outperforming its projected business plan by "about 15 percent," and its first-party and third-party businesses are up 113% and 100%, respectively.[122] While Epic Games now says it expects the Epic Games Store to become profitable by 2023, the store's projected revenue from prior years has proven overly optimistic.[123]

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120. Trial Tr. (Sweeney) 126:12-127:6, 276:8-277:9; Trial Tr. (Allison) 1230:3-4, 1260:22-1262:8; Ex. Depo. (Kreiner) 244:2-5, 256:12-16; Trial Tr. (Cragg) 2327:3-5; DX-3712.017; DX-4638; PX-2469.007; *see also* Trial Tr. (Allison) 1232:14-22.

121. Trial Tr. (Sweeney) 126:19-23; Trial Tr. (Allison) 1214:1-1215:6, 1230:5-10; *see also* Trial Tr. (Allison) 1214:1-8 (explaining minimum guarantees), 1223:8-13 (noting that some developers have chosen not to use Epic Games' payment processor).

122. Trial Tr. (Allison) 1233:2-7.

123. *Id.* 1262:4-12 ("Q. And [this] also reflects that Epic expected to lose 330 to 440 million in unrecouped minimum guarantees is that right? A. We expect to invest 330 to 440 million in partnership deals, yes. . . . We don't use the word 'lose.'"); Trial Tr. (Sweeney) 266:1-19, 273:9-16, 276:17-277:4; DX-3818.001; DX-3993.004; Trial Tr. (Allison) 1217:25-1218:5, 1232:18-22, 1262:13-20; DX-4361.020; PX-2463.002; PX-2469.006; DX-3467.005; DX-4361.020; PX-2455.004.

4. Prior Relationship Between Apple and Epic Games

The relationship between Apple and Epic Games dates back to at least 2010.

In 2010, Epic Games agreed to and signed a Developer Product Licensing Agreement ("DPLA") with Apple. Epic International subsequently signed a Developer Agreement and DPLA (for the account associated with *Unreal Engine*). At the time of the signing of these contracts, Mr. Sweeney understood and agreed to key contractual terms including, that Epic Games (i) was required to pay a commission on in-app purchases; (ii) was prohibited from putting a store within the App Store; (iii) was prohibited from sideloading apps on to iOS devices; and (iv) was required to use Apple's commerce technology for any payments. Knowing the terms, Epic Games chose to enter into those contracts. According to Mr. Sweeney, Epic Games did not have a formal business dispute with Apple or raise major objections or have existential-level concerns about the App Store's contract terms at the time. Since 2010, there has been no material change in the terms of Epic Games' agreements with Apple, nor in Apple's business design.[124]

Epic Games released three iOS games before *Fortnite*, and Apple featured each of them at major events allowing

124. Trial Tr. (Sweeney) 166:16-170:9; Trial Tr. (Grant) 723:23-725:21. "Sideloading" is "the process of putting an application on the device that bypasses the store" or bypasses the "official platform means" of installing an application. *Id.* 733:17-22.

Epic Games to make use of Apple's brand.[125] This began with Epic Games' first iOS game, *Infinity Blade*, in 2010, which it released for iOS because of the "amazing 3D capabilities" on mobile platforms and the large number of iOS users.[126]

These collaborations notwithstanding, Epic Games and Mr. Sweeney began voicing discontent around the mid-2010s. In June 2015, Mr. Sweeney emailed Apple chief executive office Tim Cook urging Apple to consider "separating iOS App Store curation from compliance review and app distribution," and noting that "it doesn't seem tenable for Apple to be the sole arbiter of expression and commerce over an app platform approaching a billion users."[127] A few years later, in January 2018, Mr. Sweeney sought a meeting with Apple through Mark Rein, Epic Games' Vice President, "to talk about the potential for iOS and future Apple things to operate as open platforms" and discuss how Epic Games has "a PC and Mac software store and would love to eventually support it on iOS." He added: "If the App Store we[re] merely the premier way for consumers to install software, and not the sole way, then Apple could curate higher quality software overall, without acting as a censor on free expression and commerce on the platform . . . ."[128]

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125. Trial Tr. (Fischer) 937:12-20; Ex. Depo. (Malik) 117:7-24.

126. DX-3710.006; Trial Tr. (Sweeney) 89:22-90:5, 90:24-91:3.

127. PX-2374.001.

128. PX-2421.001.

Despite these disagreements, Epic Games proceeded to more closely intertwine itself with the iOS platform. In early 2018, Epic Games and Apple arranged for the release of *Fortnite*. By that time, *Fortnite* was "doing incredible" and was "basically a cultural phenomenon."[129]

5. Project Liberty

At the end of 2019 Tim Sweeney conceived of a plan called "Project Liberty"[130] which was a highly choreographed attack on Apple and Google, Inc. The record reveals two primary reasons motivating the action. First and foremost, Epic Games seeks a systematic change which would result in tremendous monetary gain and wealth. Second, Project Liberty is a mechanism to challenge the policies and practices of Apple and Google which are an impediment to Mr. Sweeney's vision of the oncoming metaverse.

The Court understands that, based on the record, the concept of a metaverse is a digital virtual world where individuals can create character avatars and play them through interactive programed and created experiences. In Mr. Sweeney's own words, a metaverse is "a realistic 3D world in which participants have both social experiences,

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129. Trial Tr. (Fischer) 937:23-938:10; Trial Tr. (Weissinger) 1337:19-21.

130. DX-3774 (board presentation); DX-4419.001 (Mr. Sweeney requested to be "in the loop on this topic 100%"); Trial Tr. (Sweeney) 88:6-7, 170:10-171:9, 280:7-10, 283:6-15 (approving the strategic decisions for Project Liberty); DX-4072 (developing a project "War Room"); DX-4561 (outlining detailed timelines).

like sitting in a bar and talking, and also game experiences . . . ."[131] In short, a metaverse both mimics the real world by providing virtual social possibilities, while simultaneously incorporating some gaming or simulation type of experiences for players to enjoy. These experiences can be created by developers such as is the case with the *Battle Royale* and *Save the World* modes in *Fortnite*. In other instances, these experiences can be user-created, such as is the case with the *Creative* and *Party Royale* modes in *Fortnite*, or general experiences in the video game *Roblox*.[132] Epic Games' and Mr. Sweeney's plans for *Fortnite* and its metaverse involved shifting the video game from primarily relying on the former modes (*i.e.*, developer designed, traditionally gaming, and competitive modes) to the latter modes (*i.e.*, social and creative

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131. Trial Tr. (Sweeney) 325:14-17. Mr. Sweeney acknowledged that the film *Ready Player One* contains a recent portrayal of an imagined and futuristic, albeit dystopian, metaverse. *Id.* 325:10. Mr. Sweeney also cited the book *Snow Crash* as an example of the depicted metaverse, which he remarked "describes this emerging social entertainment medium that transcends gaming." *Id.* 325:24-326:1.

132. For instance, Mr. Sweeney described an experience in one of these latter modes in *Fortnite*, involving utilizing player character avatars watching a Netflix show:

> All in the virtual 3D world. You can stand there and watch Netflix with your friends, and it's different than watching it in front of the TV. You can talk to your friends and you can emote and throw tomatoes at the screen. And so it is a very different experience than either a game or Netflix.

Id. 326:6-11.

modes), where users-becoming-creators would themselves be rewarded and enriched. The Court generally finds Mr. Sweeney's personal beliefs about the future of the metaverse are sincerely held.

To Mr. Sweeney and Epic Games, the metaverse is the future of both gaming and entertainment, and Apple's policies and practices are a hurdle which pose a problem. Indeed, for Mr. Sweeney, "reaching the entire base of Apple is 1 billion iPhone consumers is a paramount goal for our company, as *Fortnite* expands beyond being a game into this larger world of the metaverse."[133] Both Mr. Sweeney and Epic Games' employees and officers generally testified that "iOS is a vital platform for a business" and that it is "the only way we can access a hundred percent of [a platform's] users or at least have the option of accessing a hundred percent of that market."[134]

Project Liberty planning began in earnest in the first quarter of 2020.[135] The plan was to attack Apple's (and Google's) software distribution and payment apparatuses[136] which Epic Games described as "an attempt to provide developer choices for payment solutions and

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133. *Id.* 112:13-17.

134. *Id.* 112:3; Trial Tr. (Grant) 671:13-20.

135. Trial Tr. (Sweeney) 152:24-153:4. Notably, Epic Games decided to target *only* Apple and Google in its crusade even though it generally faced similar 30% rates on every platform where it sold products, except a computer platform.

136. Trial Tr. (Sweeney) 152:9-53:4; DX-3774.002.

bring that benefit to the customers in a platform where [that] choice is not available."[137] Said differently, the "platform fees" posed "an existential issue" to both the company's business plans and Mr. Sweeney's personal ambitions for *Fortnite*, its digital gaming and retail store, and the evolving metaverse.[138] Internally, Epic Games also hoped to revive and reinvigorate *Fortnite* by pivoting its business whereby player-developers could create new content and plaintiff could "shar[e] [a] majority of profit with [those] creators."[139]

Key to Project Liberty's deployment, Epic Games engineered a "hotfix" to covertly introduce code that would enable additional payment methods for the iOS and Android versions of *Fortnite*.[140] Hotfixes function by coding an app to check for new content that is available on the developer's server or by introducing new instructions on how to configure settings in the app.[141] In general, a developer can use hotfixes to activate content or features in an app that are in the code but are not initially available to users. The content or feature is accessible only after the app checks the developer's server and is "notified" by

137. Trial Tr. (Ko) 804:12-17.

138. DX-3774.004.

139. DX-3774.002-.004.

140. Trial Tr. (Sweeney) 153:14-15, 154:25; Trial Tr. (Grant) 736:11-15.

141. Trial Tr. (Grant) 734:10-13.

the server to display the new content or feature.[142] Across all platforms where *Fortnite* is available, including iOS, Epic Games has used hotfixes to enable hundreds of new features and content elements and to correct configuration issues since *Fortnite* was first added to the App Store.[143] By contrast, the Project Liberty hotfix has no analogue as it clandestinely enabled substantive features in willful violation of the contractual obligations and guidelines.

By May 11, 2020, the key components of Epic Games' strategy were in place: "We submit a build to Google and Apple with the ability to hotfix on our payment method . . . . We flip the switch when we know we can get by without having to update the client for 3 weeks or so. Our messaging is about passing on price savings to players."[144] In parallel, Epic Games developed "Epic Mega Drop," its simultaneous plan to lower the price of *Fortnite* items by an average of 20 percent on certain platforms.[145] " Epic Mega Drop" would reduce pricing on platforms other than Apple's and Google's, even though Epic Games was still paying 30% commissions to the console makers.[146] Epic Games also planned to assure its console partners

142. *Id.* 734:22-735:9.

143. *Id.* 735:15-19 ("It would be like a weekly occasion. We would rotate different types of game notes in and out. If there was a big event . . . taking place during the season, that would be hotfixed on at the appropriate time so users could experience it.").

144. DX-4419.002; Trial Tr. (Grant) 767:15-18.

145. Trial Tr. (Sweeney) 156:3-16.

146. DX-4561.006; Trial Tr. (Weissinger) 1431:1-5.

that the reduction in price for V-Bucks could be recouped through the sales of more expensive bundles or items with "mythic" rarity.[147]

Project Liberty included a public narrative and marketing plan. Epic Games recognized that it was "not sympathetic"[148] and that if Apple and Google blocked consumers from accessing the app, "[s]entiment will trend negative towards Epic."[149] "[T]he critical dependency on going live with our VBUCKS price reduction efforts is finding the most effective way to get Apple and Google to reconsider without us looking like the baddies."[150]

To these ends, Epic Games wanted to "[g]et players, media, and industry on 'Epic's side,'" by "[c]reat[ing] a narrative that we are benevolent," and at the same time make Apple out to be the "bad guys."[151] Epic Games retained a public relations firm and devised, in effect, a two-phase communications plan.[152] The first phase consisted of actions before the activation of the plan such as creating an affiliated advocacy group, and a second

147. Trial Tr. (Weissinger) 1436:9-19; DX-4652.003.

148. DX-4177.001; Trial Tr. (Weissinger) 1414:2-15.

149. DX-4018.054.

150. DX-4419.002.

151. DX-4561.020; DX-3641.001.

152. DX-4561.020; DX-3641.001; DX-3681.012; DX-4185.001; DX-4561.037-.038; Trial Tr. (Weissinger) 1413:9-12, 1417:19-1418:7. Epic Games paid it $300,000 in connection with Project Liberty.

phase that would galvanize public sentiment through social media outreach and videos.[153]

With regard to the first phase, Epic Games implemented its plan throughout the summer of 2020 by creating the Coalition for App Fairness, and "charged [it] with generating continuous media and campaign tactic pressure" on Apple and Google. Epic Games hired a consultant to "help to establish a reason for [the Coalition] to exist (either organic or manufactured)." Epic Games then concealed the Coalition's existence until after the hotfix was triggered on August 13, 2020.[154]

Epic Games assumed its breach would result in the removal of *Fortnite* from the iOS and Android platforms. In fact, Mark Rein, Epic Games' co-founder, predicted "there's a better than 50% chance Apple and Google will immediately remove the games from their stores the minute we do this" and Daniel Vogel, the Chief Operating Officer, predicted Google and Apple will immediately pull the build for new players." "They may also sue us to make an example," he added.[155]

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153. DX-4561.037-.038

154. DX-3774.003; DX-3297.002; Trial Tr. (Weissinger) 1418:17-1420:5-8. One of the members of the Coalition for App Fairness is Eristica, a company that developed an app rejected by App Review that "paid folks to participate in a dare challenge" and when it was rejected "one of the dares was daring someone to jump off a bridge and video it" and other challenges "could also risk some pretty serious harm." Trial Tr. (Kosmynka) 1087:9-1088:18.

155. DX-4419.001-.002; *see also* Ex. Depo. (Shobin) 59:24-60:5 (Epic Games understood that Project Liberty "jeopardize[d] *Fortnite*'s availability on the App Store").

While Epic Games was willing to wage war against Apple and Google, it was not so inclined to crusade against the console platform owners: namely, Nintendo (Switch), Microsoft (Xbox), and Sony (PlayStation). Epic Games therefore planned to warn these console partners in advance about an upcoming pricing change for V-Bucks and to reassure them that they were not "next on [Epic Games'] list." As explained in an email to Microsoft on August 5, 2020, Mr. Sweeney alluded to Project Liberty which he boasted would "highlight the value proposition of consoles and PCs, in contrast to mobile platforms." Two days later he wrote, "you'll enjoy the upcoming fireworks show."[156]

Project Liberty required extensive planning and testing. Specialized engineers and an in-house information security team attempted to hack the code to ensure that Apple could not "reveal the intent" of the hotfix when it was submitted.[157] Epic Games also used analytics to determine the number of players that would receive the hotfix once triggered.[158]

By the end of June 2020, Epic Games had no interest in the parallel litigation which was pursuing similar ends.

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156. DX-4561.005, .024; DX-4652.001, .010; Trial Tr. (Weissinger) 1431:6-15; DX-4579.001; DX-3478.001; Trial Tr. (Sweeney) 292:14-293:8, 294:2-10.

157. Trial Tr. (Grant) 765:11-766:2.

158. Apple Ex. Depo. (Shobin) 239:9-25; DX-3083; *see also* Trial Tr. (Schmid) 3241:20-24 (explaining that Epic Games used TestFlight and App Analytics).

Nor did it intend to wait for the resolution of the ongoing *Pepper* and *Cameron* cases. Epic Games merely "ignored" them and "went forward on [its] own."[159] In other words, Epic Games decided it would rush to court with its own plan to protect its self-avowed interests in the "metaverse" and had established a rough timeline, to which it generally adhered: first communicating with Apple in June/July and then implementing the hotfix and marketing blitz in August.[160]

Thus, on June 30, 2020, Epic Games renewed the DPLAs for its account, the Epic International account, and a related entity (KA-RA S.a.r.l.) account by the payment of separate consideration.[161] With this backdrop, Epic Games sought a "side letter" or other special deal from Apple that would provide plaintiff with unique, preferable terms.[162] Mr. Sweeney sent an email to Apple executives, including Mr. Cook, requesting the ability to offer iOS consumers with: (i) 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"; and (ii) 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

159. Trial Tr. (Sweeney) 155:13-25.

160. DX-4561.005.

161. Trial Tr. (Sweeney) 283:16-284:1.

162. *Id.* 149:4-7, 285:7-22.

to install and update software as seamlessly as the iOS App Store experience."[163] Mr. Sweeney highlights that these two offerings would allow consumers to pay less for digital products and allow developers to earn more money. Although Mr. Sweeney wrote that he "hope[d] that Apple w[ould] 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,"[164] Mr. Sweeney admitted while testifying under oath that he "would have" accepted a deal "for [Epic Games] and no other developers."[165] In his email, Mr. Sweeney did not offer to pay Apple any portion of the 30 percent it charges on either app distribution or for in-app purchases.

On July 10, 2020, Apple Vice President and Associate General Counsel Douglas G. Vetter responded to Mr. Sweeney's email with a formal letter communicating, in essence: No. As relevant here, Mr. Vetter wrote:

> 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

163. DX-4477.

164. *Id.*

165. Trial Tr. (Sweeney) 337:13-338.2.

> 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.

Mr. Vetter also reiterated that Epic Games' request to establish a separate payment processor would interfere with Apple's own IAP system, which has been used in the App Store since its inception.[166]

On July 17, 2020, Mr. Sweeney responded to what he described as a "self-righteous and self-serving screed," writing that he hoped "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." He stated that Epic Games "is in a state of substantial disagreement with Apple's policy and practices," and promised that it would "continue to pursue this, as [it] ha[s] done in the past to address other injustices in [the] industry." Epic Games did not reveal its plans to enable an alternate payment system through a hotfix.[167]

Next, in fulfilling Mr. Sweeney's promise, Epic Games covertly introduced a "hotfix" into the *Fortnite* version 13.40 update on August 3, 2020. Epic Games did

166. DX-4140.

167. DX-4480.001.

not disclose that this hotfix would enable a significant and substantive feature to *Fortnite* permitting a direct pay option to Epic Games that would be activated when signaled by Epic Games' servers. Until this signal was sent out, this direct pay option would remain dormant. When activated, however, this direct pay option would allow iOS *Fortnite* players to choose a direct pay option that would circumvent Apple's IAP system. Relying on the representations that intentionally omitted the full extent and disclosure of this hotfix, Apple approved *Fortnite* version 13.40 to the App Store.[168]

The hotfix remained inactive until the early morning of August 13, 2020, when Epic Games activated the undisclosed code in *Fortnite*, allowing Epic Games to collect in-app purchases directly.[169]*Fortnite* remained on the App Store until later that morning, when Apple removed *Fortnite* from the App Store and it remains unavailable to this day. Epic Games timed the hotfix to go live two weeks before the launch of *Fortnite*'s Season 14.

Later that same day, the second phase came into full effect. Epic Games had prepared several videos, communications, and other media to blitz Apple. Epic Games filed this action and unleashed a pre-planned, and blistering, marketing campaign against Apple both on

168. Trial Tr. (Grant) 736:1-15, 763:10-15; Trial Tr. (Sweeney) 170:16-171:9; DX-4138.002; Trial Tr. (Kosmynka) 1089:3-9.

169. Trial Tr. (Sweeney) 153:21-25, 294:11-16, 128:14-15, 154:6-10, 170:12-15; Trial Tr. (Grant) 736:6-15; Trial Tr. (Weissinger) 1426:20-1428:16.

Twitter and with the release of a parody video of the iconic Apple 1984 commercial. The video called "*1980 Fortnite*" used the game-mode style of *Fortnite* and presented an in-brand explanation of what Epic Games had done, namely a *Fortnite* character destroying an "Apple overlord." On its website, the Coalition proclaimed that: "For most purchases made within the App Store, Apple takes 30% off the purchase price. No other transaction fee—in any industry—comes close."[170] The Coalition did not announce that Epic Games faced similar 30% rates from console platform owners. Epic Games also announced a *Fortnite* tournament in support of its lawsuit with in-game prizes and it released a limited time skin in *Fortnite* called the Tart Tycoon,[171] among other actions.[172]

The following day, on August 14, 2020, Apple responded sternly. It informed Epic Games that, based on its breaches of the App Store guidelines, and the DPLA, it would be revoking all developer tools, which would preclude updates for its programs and software. Apple gave Epic Games two weeks to cure its breaches and to comply with the App Store guidelines and the agreements. Apple also identified general consequences for any failure to comply, but specifically cited *Unreal Engine* as potentially being subject to its decision should Epic Games fail to comply within the two-week period.[173]

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170. Trial Tr. (Sweeney) 295:14-17; DX-4167.002.

171. Modeled presumably on Mr. Cook's likeness.

172. DX-3724.001-.002; Trial Tr. (Sweeney) 295:2-17, 297:2-24.

173. DX-3460.

Thereafter, on August 17, 2020, Epic Games filed the request for a temporary restraining order, requesting the reinstatement of *Fortnite* with its activated hotfix onto the App Store, and enjoining Apple from revoking the developer tools belonging to the Epic Games and its affiliates. The Court declined to reinstate *Fortnite* onto the App Store, but temporarily restrained Apple from taking any action with respect to the plaintiff's affiliates' developer tools and accounts.[174]

On August 28, 2020, on the expiration of the two-week deadline, Apple terminated Epic Games' developer program account, referenced as Team ID '84.[175] Apple subsequently, and repeatedly, offered to allow Epic Games to return *Fortnite* to the App Store, so long as Epic Games agreed to comply with its contractual commitments. Epic Games has consistently declined.[176]

On October 9, 2020, the Court issued an Order Granting in Part and Denying in Part the motion for preliminary injunction.[177] Given the issuance of the injunction, and that discovery from the other two class action lawsuits could be leveraged in this action, the

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174. *See generally* Dkt. No. 48 (Order Granting in Part and Denying in Part Motion for Temporary Restraining Order). Meanwhile, discovery in the parallel cases was contentious, yet ongoing.

175. Trial Tr. (Sweeney) 171:10-172:2; Dkt. 428 ¶ 34.

176. Trial Tr. (Cook) 3918:18-3919:6.

177. *See generally* Dkt. No. 118.

Court granted Epic Games' request to conduct a bench trial on an expedited basis. Apple objected requesting, at a minimum, three additional months.

C. Apple: Relevant History of the iOS and iOS Devices

1. The Early Years

In 2007, Apple developed the iPhone creating a new and innovative ecosystem to break into the cellular device market with established competitors such as Samsung, Nokia, LG, Sony, Blackberry, Motorola, Windows Mobile, and Palm. No one disputes that the iPhone was revolutionary and fundamentally changed the cellular device market. Given the years that have passed, one may forget how fundamentally different the iPhone was to the alternatives. After 30 months of development, Apple offered consumers a new design, with a multi-touch interface powered by advanced hardware and software architecture. The device offered users the ability to access email, browse the web, and perform certain software applications by simply tapping a square-ish icon on the screen called an "app," short for a software application. These apps operate from a foundational layer of software called an operating system which, in the iPhone ecosystem, is called the iOS.

Initially, when the iPhone was first launched, Apple developed and preinstalled the device with a few "native" apps. "Native" apps are those apps which are developed for a particular mobile device as opposed to "web" apps which

are Internet-based and allow applications to be accessed and enabled on a mobile device by using a web browser on the device. Initially, Apple prohibited downloads of native apps from any third party.

Shortly after launch, Apple executives hotly debated whether to open development of native apps to third-party developers. As history knows, those in favor succeeded. The gamble literally paid off. Since 2007, the industry has continued to evolve and transform rapidly.

2. Role of App Developers Generally and Epic Games

The 2007 iPhone pales in comparison to today's version. With 20-20 hindsight, we can conclude that Apple's gamble to save a languishing company paid off.[178] The lens with which to evaluate those early seminal years matters. Apple was not the monolith it is today. It is easy, but not fair, to twist words today for self-serving reasons and forget the landscape in which they were made.

As innovators in the early days, Apple executives were navigating trying to determine what would work and what would not. A few key principles guided decision-making, at least initially. First and foremost, the iPhone was a cellphone. If the cellphone did not work or crashed, the product would not be successful regardless of all the bells and whistles. Second, given the introduction of apps, securing the device from malicious software was paramount.

178. Trial Tr. (Schiller) 2715:17-25.

Many developers responded to the iPhone launch by "jailbreaking phones and writing native applications." Jailbreaking occurs when a developer modifies Apple's iOS to enable the installation of unauthorized software, including applications from other interfaces. Jailbreaking can create severe security risks regarding installation of malicious apps and data exposure. Despite warnings regarding the risks, developers continued the practice which precipitated renewed discussions within Apple to permit authorized native apps to be developed by third-party developers.[179]

As the discussions ensued, the core principles remained: reliability of the device as a cellphone and device security. With these objectives in mind, on October 17, 2007, Apple announced that it would allow third-party developers to create iOS apps by licensing them with the interfaces and technology to do so. Apple then dedicated resources to create, and then release on March 6, 2008, a software development kit or SDK as well as information for a series of application programming interfaces or APIs to allow developers to create apps which would work on Apple's proprietary operating system. The APIs unlocked features such as location awareness functionality, media applications, video playback, and numerous other tools to enhance the developer's ultimate product.

The creation, constant update, and modernization of the SDKs and APIs was not insignificant. To protect its

179. Ex. Depo. (Forstall) 86:1-5; Ex. Expert 11 (Rubin) ¶ 76; Trial Tr. (Schiller) 2729:11-2730:17.

system, Apple built tools, kits, and interfaces that would allow other developers to build native apps. Epic Games did not introduce any evidence to rebut Apple's claim that in those initial years, the engineering work was novel, sophisticated, time-consuming and expensive. These tools simplified and accelerated the development process of native apps. Today, years later, as with many industries, it is not surprising that the more sophisticated, better financed, and larger-scale developers, such as Epic Games, may find less value in today's SDKs and APIs. That does not necessarily apply across the board to all developers, nor does it eliminate value in its entirety.

3. Apple's Contractual Agreements with Developers

Apple distributes its basic developer tools for free but charges an annual fee for membership in its developer program to distribute apps and which allows access to, for instance, more advanced APIs (many of which are protected by patents, copyrights, and trademarks) and beta software.[180] Through the DPLA, Apple licenses, wholesale, its intellectual property.

To join the "Developer Program," one must execute the DPLA, pay a fee of $99.00[181] and provide some basic information such as a valid debit/credit card; a valid

180. Trial Tr. (Schiller) 2758:3-8, 2758:17-24.

181. This fee also includes the ability to consult twice with the Apple technical services team. Each additional incident requires paying a $99 "per incident" payment.

name, address and telephone number; and sometimes, a government-issued photo identification. In the case of an entity, Apple also requires the entity's legal name, D-U-N-S number, as well as other information.

In the beginning, the App Store's U.S. storefront offered 452 third-party apps (including 131 game apps) by 312 distinct developers. In fiscal year 2019, there were over 300,000 game apps available on the App Store.[182] With over 30 million registered iOS developers,[183] it is not particularly surprising, or necessarily nefarious, that Apple does not negotiate terms generally. With few exceptions, Apple maintains the same relationships with developers whether big or small. This decision, too, is controversial as the impact varies between small and large developers.

a. Key Terms of the DPLA and App Guidelines

Relevant here, the DPLA details programming requirements, which the Court outlines first, and establishes payment terms, which the Court discusses second. While reduced here to bullet points and footnotes, the DPLA is a portfolio licensing agreement with complex and comprehensive provisions addressing not only intellectual property rights, but those relating to marketing, agency, indemnity, and myriad other considerations. Moreover, the DPLA changed over the

182. Ex. Expert 6 (Hitt) ¶ 169.

183. Trial Tr. (Schiller) 2759:9-17.

last decade. Unless otherwise stated, the Court focuses on the 79-page version (excluding schedules) governing Apple's relationship with Epic Games in August 2020.[184]

Thus, with respect to programing, developers are required to:

- Certify that they will comply with the terms of the agreement (Section 3.1)[185];
- Use the software in a manner consistent with Apple's legal rights (Section 3.2)[186];
- Create apps for Apple products which could only be distributed through the App Store (Section 3.2)[187];

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184. *Id.* 2759:22-2760:9, 2761:21-25; PX-2619; Trial Tr. (Malackowski) 3701:1-14, 3642:10-15.

185. Developers "certify to Apple and agree that," among other things, they "will comply with the terms of and fulfill [their] obligations under this Agreement, including obtaining any required consents for [their] Authorized Developers' use of the Apple Software and Services, and [developers] agree to monitor and be fully responsible for all such use by [their] Authorized Developers and their compliance with the terms of this Agreement." PX-2619.015.

186. "Applications for iOS Products, AppleWatch, 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." PX-2619.016.

187. *Id.*

- Submit proposed apps for review to ensure they were properly documented and did not contravene the program requirements (Section 3.3.2[188] and 3.3.3[189]);

188. "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.

An Application that is a programming environment intended for use in learning how to program may download and run executable code so long as the following requirements are met: (i) no more than 80 percent of the Application's viewing area or screen may be taken over with executable code, except as otherwise permitted in the Documentation, (ii) the Application must present a reasonably conspicuous indicator to the user within the Application to indicate that the user is in a programming environment, (iii) *the Application must not create a store or storefront for other code or applications*, and (iv) the source code provided by the Application must be completely viewable and editable by the user (e.g., no pre-compiled libraries or frameworks may be included with the code downloaded)." (Emphasis supplied.)

189. "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."

- Configure apps to use IAP when the purchases are subject to the commission (Section 3.2.(f)[190]); and

- Agree not to "attempt to hide, misrepresent or obscure any features, content, services or functionality" (Section 6.1)[191].

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190. "You will not, directly or indirectly, commit any act intended to interfere with . . . Apple's business practices including, but not limited to, taking actions that may hinder the performance or intended use of the App Store, ... Further, You will not engage, or encourage others to engage, in any unlawful, unfair, misleading, fraudulent, improper, or dishonest acts or business practices relating to Your Covered Products (e.g., engaging in bait and-switch pricing, consumer misrepresentation, deceptive business practices, or unfair competition against other developers)."

191. "You may submit Your Application for consideration by Apple for distribution via the App Store or Custom App Distribution once You decide that Your Application has been adequately tested and is complete. By submitting Your Application, You represent and warrant that Your Application complies with the Documentation and Program Requirements then in effect as well as with any additional guidelines that Apple may post on the Program web portal or in App Store Connect. *You further agree that You will not attempt to hide, misrepresent or obscure any features, content, services or functionality in Your submitted Applications from Apple's review or otherwise hinder Apple from being able to fully review such Applications.* . . . You agree to cooperate with Apple in this submission process and to answer questions and provide information and materials reasonably requested by Apple regarding Your submitted Application, including insurance information You may have relating to Your Application, the operation of Your business, or Your obligations under this Agreement. . . . 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,

In 2010, Apple also created the App Guidelines which are more fully discussed below.[192] As a corollary to Section 3.3.3 of the DPLA, Section 3.1.1 of the App Guidelines was the clearest articulation of the anti-steering provision with respect to in-app purchases. It reads:

> 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.*[193]

Section 2.3.10 of the Guidelines reads: ". . . don't include names, icons, or imagery of other mobile platforms in your app or metadata, unless there is a specific, approved interactive functionality" and Section 3.1.3 Other

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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. (Emphasis supplied.)

192. All developers agree to abide by the App Guidelines, among others. PX-2619.070.

193. PX-2790 (emphasis supplied).

Purchase Methods states: "The following apps may use purchase methods other than in-app purchase. Apps in this section cannot, either within the app or through communications sent to points of contact obtained from account registration within the app (like email or text) encourage users to use a purchasing method other than in-app purchase."[194]

In terms of payment, Apple knew from the outset that developers would either distribute their apps for "free" or by selling them. The DPLA contained Schedules 1 and 2 to address each category, respectively.

"Free" as used here specifically means an app for which a consumer does not pay to download, and which does not sell any digital goods or subscriptions. Thus, free apps do not generate any revenue for Apple. However, some developers monetize their free app with advertising.[195] In fiscal year 2019, 83% of apps with at least one download on the App Store were free to consumers, including 76% of game apps of which there are over 300,000.[196]

On the other hand, the "freemium model" (used by *Fortnite*) is one where the initial download is "free", but revenue comes from in-app purchases or payments for

194. Apple's anti-steering provision as it relates to subscriptions is found in Section 3.11 of the DPLA. However, as shown herein, subscriptions are not part of the action. Other related provisions in the Guidelines include 3.1.3(a) and 3.1.3(b).

195. Ex. Expert 6 (Hitt) ¶¶ 134, 206.

196. Trial Tr. (Hitt) 2094:13-23; Ex. Expert 6 (Hitt) ¶¶ 156, 169.

upgrades. Apps which do charge for downloads or digital goods bought within an app fall under the purview of Schedule 2.

Section 3.4 of Schedule 2 provides the basic 30 percent rate and reads:[197]

> Apple shall be entitled to the following commissions in consideration for its services as Your agent and/or commissionaire under this Schedule 2:
>
> (a) For sales of Licensed Applications to End-Users located in those countries listed in Exhibit B, Section 1 of this Schedule 2 as updated from time to time via the App Store Connect site, Apple shall be entitled to a commission equal to thirty percent (30%) of all prices payable by each End-User.[198]

Under the terms of the DPLA, "the Licensed Applications" cannot be activated until approved by Apple. For all digital purchases, Apple charges a 30% commission and only recently instituted some exceptions. Purchases which are not digitally confirmed, such as those related to physical goods, such as take-out food or Amazon purchases, do not result in a commission to Apple.

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197. PX-2621. Section 3.4 is preceded by sections outlining the marketing and hosting agreements between Apple and the developers, albeit Apple did not guarantee any quantifiable services.

198. PX-2621. Subsection 3.4(a) proscribes a 15% rate for subscriptions which are not part of this case.

Apple does not dictate to developers how or what to price an app or how to monetize their product. However, it did impose certain parameters, namely the prices of apps need to end in $0.99 and must appear within predesignated bands. There is no evidence that this has impacted Epic Games at all or that it has created any widespread problems. Rather, plaintiff cites only to testimony of Matthew Fischer, Apple's Vice President of App Review, that developers have asked "from time to time" for more flexibility. With respect to international pricing, Apple has a single "tier" but evidence was not admitted to show any problems with the tiered system.[199]

At best, the evidence on this issue is scant and not fully developed. Mr. Fischer testified that developers have at times asked for "more flexibility to charge different prices for in-app purchases," and Apple has consistently declined.[200] Whether this is a significant issue is unknown. Certainly, Epic Games, the plaintiff here, never asked to change the pricing. The Court suspects that it is because of the common marketing view that ending a price in $0.99 conveys a bargain price to the consumer. That said, Apple

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199. Ex. Depo. 9 (Fischer) 266:16-24. Thus, Schedule 2 to the DPLA states that Apple markets third-party apps "at prices identified by [the developer] . . . from the pricing schedule attached . . . as Exhibit C." Any price changes must be "in accordance with the pricing schedule." The tiers generally require the same price across all countries; for example, a $ 0.99 tier requires the equivalent of $ 0.99 in local currency in India. PX-2621 § 3.1, Ex. C; PX-2202; Ex. Depo 12 (Gray) 26:3-5, 195:15-196:14, 206:13-207:18, 208:6-9.

200. Ex. Depo. 9 (Fischer) 266:12-19.

did little to justify the restriction.[201] On balance, the Court finds nothing anticompetitive with these two requirements based on this record.

b. Apple's App Store as an App Transaction Platform

Having made the decision to allow third-party developers to license the tools to make "apps" for the iPhone, Apple also needed to develop a place or manner in which the developers and the users could connect. Apple wrote a series of applications, combined them all, and called it the App Store. Apple designed the App Store not only to allow third-party developers to reach consumers with their apps, but to notify customers when updates were available: "tap the Update button and [the] app will be replaced by the updated version . . . over the air, all automatically." The App Store functionality and access thereto is at the heart of the action.

Apple's late Chief Executive Order ("CEO"), Mr. Steve Jobs, recognized that the "purpose in the App Store is to add value to the iPhone" and ultimately "sell more iPhones." Apple's current Vice President of Developer Relations, Mr. Ron Okamoto, similarly acknowledged that well-known developers make Apple's platforms more

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201. Apple does not directly respond but argues that currency conversion is a benefit of IAP. *See* Apple FOF ¶ 692. To the extent this true, Apple has not explained why it cannot afford more flexibility in unique circumstances. Mr. Gray testified that Apple selected 99 cent tiers based on its prior experience without apparently consulting developers. Ex. Depo. 12 (Gray) 195:24-196:14.

attractive to users and lead them to buy Apple devices.[202] Thus, the symbiotic relationship was created.

Apple's intellectual property as it relates to the iOS ecosystem generally are significant. The record is undisputed that Apple holds approximately 1,237 U.S. patents with 559 patent applications pending. With respect to the App Store itself, Apple holds an additional 165 U.S. patents with 91 more U.S. patent applications pending. Other than these patents, Apple does not identify specifically how the rest of its intellectual property portfolio impacts the technology at issue in this case nor does it specifically justify its 30% commission based on the value of the intellectual property. It only assumes it justifies the rate.[203]

Over recent years, the evidence established that a significant portion of the App Store revenue is built upon long-term relationships between developers and consumers independent of Apple. Indeed, during a 2019-2020 presentation, Apple recognized this transition, noting that the "top monetizing game are services that entertain customers for years." Specifically, "[i]n any given month, 41% of [Apple's] monthly billings are generated from apps that were downloaded more than 180 days prior," as contrasted to 31% for apps downloaded between 30

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202. PX-2060.018-.019; Ex. Depo. (Okamoto) 324:04-325:10; Ex. Expert 1 (Evans) ¶ 19; Ex. Expert 8 (Schmalensee) ¶ 44.

203. *See generally* Ex. Expert 12 (Malackowski) (noting that the intellectual property has value, but not providing any numerical value).

and 180 days prior and to 28% for apps downloaded less than 30 days prior. "As a result, a significant share of our billings are generated not from apps that were just downloaded, but from apps that customers re-engage with long after the first download." Even Apple concedes that "this engagement is almost completely driven by [App Store] developers, and the App Store does not participate in a meaningful way."[204]

c. Apple's Commissions Rates: 30 percent; 15 percent; recent changes

Apple's establishment of a 30% commission rate has remained static since the onset. Mr. Philip Schiller, who was there at the beginning, testified that the App Store charged the same percentage as other gaming stores, like Steam and Handango. Mr. Eddy Cue, another Apple executive, who made the pricing decision with Mr. Jobs, recognized that "[t]here wasn't really any kind of App Store" when it first launched, so Apple looked at distribution of hard goods and software instead. Because distributing hard versions of software cost 40% to 50%, lowering the commission to 30% was considered a "huge decrease" intended to "get developer really excited about participating in the platform." Importantly, and undisputed, Apple chose the 30% commission without regard to or analysis of the costs to run the App Store.[205]

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204. PX-608.028.

205. Trial Tr. (Schiller) 2725:23-2726:9, 2740:8-15; Ex. Depo. 8 (Cue) 135:08-136:14, 141:13-142:09.

Prior to 2011, users could read content from subscriptions made outside iOS, but were limited to a one-time subscription, not recurring subscriptions. In 2011, Apple expanded its functionality to allow for the sales of recurring subscriptions when purchased in the app store but required a 30 percent commission.[206] Finally, in late 2020, Apple introduced the Small Business Program. That program reduced Apple's commission to 15% for developers making less than one million dollars.[207]

Apple's implementation of the Small Business Program was spurred, in part, by the COVID-19 pandemic. However, Mr. Cook also admitted that "lawsuits and all the rest of the stuff" was "in the back of [his] head." Mr. Schiller similarly testified that the Small Developer Program began with a lot of "commentary" about "App Store's commission level," but was pushed over the edge by the pandemic. He too expressly acknowledged that the current lawsuit helped "get it done" along with "scrutiny and criticism . . . from around the world."[208]

Over time, and given Apple's success, some developers have actively complained about the 30% commission. The Court recognizes that developers have sued Apple on behalf of a class arguing that the rate is too high. Unlike those developers, Epic Games challenges the levy of *any* commission and did not offer a survey showing developers agreed with this position; only the anecdotal evidence of a

206. Trial Tr. (Schiller) 3183:9-3184:25.

207. *Id.* 2810:16-2811:5.

208. Trial Tr. (Cook) 3992:4-3993:1; Trial Tr. (Schiller) 2812:1-2813:10, 3070:13-25.

couple.[209] It is logical that no developer would want to pay prices higher than is competitive or necessary. However, it is also true that, with few exceptions, not every business is entitled to have access to what is effectively shelf space if they cannot afford to pay a commission to the platform host.

While Apple's 30 percent commission began as a corollary to the 30 percent rate being charged in the gaming industry, the evidence is substantial that the economic factors driving that rate do not apply equally to Apple. Other gaming industry participants operate under a distinctly different economic model, facing different levels of competitive pressure. *See infra* Facts § II.D.2-4. For example, unlike those in the computer gaming market, nothing other than legal action seems to motivate Apple to reconsider pricing and reduce rates.[210]

4. Apple's Management of Apps — App Guidelines

Initially, Apple envisioned the App Store as a highly curated selection of apps. With only 500, then 25,000, apps in its initial collection, the vision was achievable.[211] As the

209. The Court also makes a distinction with respect to the testimony of Ms. Wright who explicitly was *not* testifying on behalf of Microsoft. Had Microsoft wanted to weigh in; it could have.

210. The Court is aware of the additional, and unchallenged, concerns relating to money laundering, fraud, and other risks that Apple debated in terms of changing the commission. Trial Tr. (Schiller) 2813:11-2814:7; PX-2390.200. While valid, at least with respect to money laundering, the reference point was 15% which is half the static 30% commission rate.

211. PX-0880.020; Trial Tr. (Schiller) 2754:7-8; 2785:15-25.

number of apps skyrockets, Apple strains in its claim that the current version of the App Store promises the same curated product. Though Apple has removed over 2 million outdated apps, and rejected those not meeting the Guidelines, the App Store still another contains 2 million apps of which over 300,000 are games.[212]

Curation in the current era merely means that an app must comply with the App Guidelines, first published in 2010. Some of the Guidelines are not reasonably controversial.[213] For instance, Apple will not authorize certain apps such as porn, malicious apps, 'unforeseen' apps, apps that invaded one's privacy, illegal apps, and even bandwidth hog[s].[214] Epic Games claims that Apple's efforts in this regard are substandard, raising concerns regarding the effectiveness and quality of the current review process. Unfortunately, Epic Games only scratched the surface and did not provide particularly compelling evidence of its perspective.[215]

Missing from the record is any normative measure of what standard guidelines should be. Perfection is not practical nor the business norm. Internal documents show

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212. Trial Tr. (Schiller) 2833:25-2834:2; 2846:11-2847:24.

213. PX-0056A; Trial Tr. (Schiller) 2833:25-2834:2.

214. PX-2619, § 3.3.20, 3.3.21, 3.3.26, 3.3.29.

215. For instance, Epic Games spent considerable time arguing that numerous apps were, in fact, porn. Upon further review, while salacious, the proffer was devoid of merit and merely emphasized the lack of evidence on this point.

that Apple responded to developers who were complaining of the time for reviewing of apps and updates. Apple promises in its Service Level Agreement to complete a review of an app quickly: 50 percent within 24 hours and 90 percent within 48 hours. Apple claims that it is completing 96 percent of the reviews within 24 hours.[216] Anecdotal evidence from Mr. Benjamin Simon, President and CEO of Down Dog, suggests that those statistics are skewed but there was no further exploration on the topic.

The App Guidelines address issues of safety, privacy, performance, and reliability. The fact that the Guidelines are not static does not raise per se concerns because the issues are similarly non-static.[217] Evidence exists to show that the Guidelines are used in appropriate ways for appropriate purposes. *See infra* Facts § V.A.2.a.ii. For instance, Apple proactively requires, much to some developers' chagrin, measures to protect data security,[218]

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216. Trial Tr. (Kosmynka) 1110:10-1111:2; Trial Tr. (Federighi) 3467:11-24, 3502:23-3504:15.

217. PX-0056A.100 ("This is a living document, and . . . may result in new rules at any time."); PX-0056; PX-2790; Trial Tr. (Fischer) 947:6-14 ("We do change the guidelines."); Trial Tr. (Kosmynka) 984:14-16; Trial Tr. (Schiller) 2833:15-21 ("They are modified at least yearly, sometimes more than once in a year.").

218. Section 1.6 states that "[a]pps should implement appropriate security measures to ensure proper handling of user information collected pursuant to the Apple [DPLA] and these Guidelines (see Guideline 5.1 for more information) and prevent its unauthorized use, disclosure, or access by third parties." PX-2790.005.

privacy, data collection and storage.[219] The data collection and disclosure requirements are not insignificant. They

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219. 5.1.1 Data Collection and Storage:

(i) Privacy Policies: All apps must include a link to their privacy policy in the App Store Connect metadata field and within the app in an easily accessible manner. The privacy policy must clearly and explicitly:

- Identify what data, if any, the app/service collects, how it collects that data, and all uses of that data.
- Confirm that any third party with whom an app shares user data (in compliance with these Guidelines) — such as analytics tools, advertising networks and third-party SDKs, as well as any parent, subsidiary or other related entities that will have access to user data — will provide the same or equal protection of user data as stated in the app's privacy policy and required by these Guidelines.
- Explain its data retention/deletion policies and describe how a user can revoke consent and/or request deletion of the user's data.

(ii) Permission Apps that collect user or usage data must secure user consent for the collection, even if such data is considered to be anonymous at the time of or immediately following collection. Paid functionality must not be dependent on or require a user to grant access to this data. Apps must also provide the customer with an easily accessible and understandable way to withdraw consent. Ensure your purpose strings clearly and completely describe your use of the data. Apps that collect data for a legitimate interest without consent by relying on the terms of the European Union's General Data Protection Regulation ("GDPR") or similar statute must comply with all terms of that law. Learn more about Requesting Permission.

(iii) Data Minimization: Apps should only request access to data relevant to the core functionality of the app and should only collect and use data that is required to accomplish the relevant task. Where possible, use the out-of process picker or a share sheet rather than requesting full access to protected resources like Photos or Contacts.

(iv) Access: Apps must respect the user's permission settings and not attempt to manipulate, trick, or force people to consent to unnecessary data access. For example, apps that include the ability to post photos to a social network must not also require microphone access before allowing the user to upload photos. Where possible, provide alternative solutions for users who don't grant consent. For example, if a user declines to share Location, offer the ability to manually enter an address.

(v) Account Sign-In: If your app doesn't include significant account-based features, let people use it without a log-in. Apps may not require users to enter personal information to function, except when directly relevant to the core functionality of the app or required by law. If your core app functionality is not related to a specific social network (e.g. Facebook, via another mechanism. Pulling basic profile information, sharing to the social network, or inviting friends to use the app are not considered core app functionality. The app must also include a mechanism to revoke social network credentials and disable data access between the app and social network from within the app. An app may not store credentials or tokens to social networks off of the device and may only use such credentials or tokens to directly connect to the social network from the app itself while the app is in use.

(vi) Developers that use their apps to surreptitiously discover passwords or other private data will be removed from the Developer Program.

(vii) SafariViewController must be used to visibly present information to users; the controller may not be hidden or obscured by other views or layers. Additionally, an app may not

require user consent, minimization, and affirmative permissions. These specifications place the customer's

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use SafariViewController to track users without their knowledge and consent.

(viii) Apps that compile personal information from any source that is not directly from the user or without the user's explicit consent, even public databases, are not permitted on the App Store.

(ix) Apps that provide services in highly-regulated fields (such as banking and financial services, healthcare, gambling, and air travel) or that require sensitive user information should be submitted by a legal entity that provides the services, and not by an individual developer.

5.1.2 Data Use and Sharing

(i) Unless otherwise permitted by law, you may not use, transmit, or share someone's personal data without first obtaining their permission. You must provide access to information about how and where the data will be used. Data collected from apps may only be shared with third parties to improve the app or serve advertising (in compliance with the Apple Developer Program License Agreement.). Apps that share user data without user consent or otherwise complying with data privacy laws may be removed from sale and may result in your removal from the Apple Developer Program.

(ii) Data collected for one purpose may not be repurposed without further consent unless otherwise explicitly permitted by law.

(iii) Apps should not attempt to surreptitiously build a user profile based on collected data and may not attempt, facilitate, or encourage others to identify anonymous users or reconstruct user profiles based on data collected from Apple-provided APIs or any data that you say has been collected in an "anonymized," "aggregated," or otherwise non-identifiable way.

concerns ahead of the developers and are on the forefront of protecting user data; measures not all developers embrace, especially where they want to monetize that data. Epic Games claims that these restrictions inhibit their ability to service customer needs. Both perspectives contain a measure of truth. However, the latter is less persuasive because the servicing is an option **after** the customer consents, while the alternative would mean that data is collected and used without the customer knowing.

Tangentially related is the App Guidelines' approach to cloud-based game streaming which is discussed below with respect to market definition. *See infra* Facts § II.D.3.d. The evidence on this front post-dated the filing of this lawsuit. Thus: in September 2020, Apple modified the Guidelines to allow for the inclusion of game streaming apps, but only if each streamed app is made available as a separate app on the App Store.[220] Nvidia, Microsoft, and Google sought to launch their game streaming services as native iOS apps before Apple modified its Guidelines, but all three were rejected by Apple.[221] None of these services chose to subsequently launch separate iOS apps—one per streamed game—as required by the new

220. PX-0056.180 ("Each streaming game must be submitted to the App Store as an individual app so that it has an App Store product page, appears in charts and search, has user rating and review, can be managed with ScreenTime and other parental control apps, appears on the user's device, etc.").

221. Trial Tr. (Patel) 438:24-439:15; Trial Tr. (Wright) 534:18-535:8; PX-2048.100 ("Stadia by Google has been rejected by ERB"); PX-2109.100 ("NVIDIA GeForce NOW has been rejected by ERB").

App Guidelines.[222] Craig Federighi, Apple's Senior Vice President of Software Engineering, testified that there are currently no streaming apps for game apps on the App Store.[223] Apple allows entertainment apps such as video and music apps to stream. The restriction only applies to gaming.

Epic Games raises legitimate concerns regarding some of the consequences of Apple's App Guidelines and its refusal to share control of data absent customer agreement.

First, Apple does a poor job of mediating disputes between a developer and its customer. Consumers do not understand that developers have effectively no control over payment issues and or even access to consumers' information. Consequently, it can be frustrating for both sides when issues arise relating to the inability to issue and manage the legitimacy of requests for refunds.[224]

With respect to refunds, the DPLA gives Apple "sole discretion" to refund a full or partial amount of user purchases. When developers want to refund a customer purchase, they must contact Apple or tell the customer to contact Apple, which independently "evaluate[s]

222. Trial Tr. (Patel) 440:25-441:4; Trial Tr. (Wright) 650:15-651:6.

223. Trial Tr. (Federighi) 3490:4-6.

224. Trial Tr. (Simon) 369:23-373:3.

that situation."[225] Thus, developers lack the ability to provide refunds and have worse customer service as the result. For example, Match Group's Operations Vice-President testified that Apple prevents Match Group from implementing its preferred refund policy or tailoring refunds to users' history, which leads to poor experiences with its products and hurts its brand.[226]

Moreover, because Apple lacks visibility into the transaction, it has created overly simplistic rules to issue refunds which can also increase fraud.[227] For example, apps have suffered from return fraud, where the customer enjoys or resells content and then obtains a refund by providing false information. Prior to 2020, Apple did not even provide developers with information that a refund had been issued, and they had no ability to remove the refunded feature to prevent its further use. Mr. Schiller explains that Apple has this requirement because customers "want to reach out to us when they

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225. PX-2621.600; Ex. Depo. 12 (Gray) 126:6-127:5, 128:2-25.

226. Ex. Depo. (Ong) 34:10-36:23, 48:17-51:06, 162:03-22; Trial Tr. (Sweeney) 91:24-92:7; Trial Tr. (Simon) 372:9-373:3; Ex. Depo. 12 (Gray) 128:8-25. Mr. Simon provides another example: Down Dog has a generally lenient refund policy that provides frequent exceptions, such as for health workers and users who liked a feature that was deprecated. Apple's approach is stricter and more uniform, which prevents Down Dog from implementing its preferred policy. Trial Tr. (Simon) 370:2-373:17.

227. Apple employees have acknowledged that this "causes some customers to be treated unfairly while also allowing for fraudulent claims to be refunded." PX-2189.100.

have a problem with the developer and want a refund."[228] That explanation is plausible if the developer caused the issue that requires a refund. However, if the refund arises from a general customer service issue, the developer is likely better suited to address the issue. Although Apple introduced new tools to address this issue in 2020, it did so only after years of complaints.[229]

Apple argues that its policies protect consumers against fraudulent attacks. The data is far from clear. What is certain is Apple's decision prohibits information from flowing directly to the customer so that customers can make these choices themselves.

Second, Epic Games argues that the lack of direct connection to consumers impacts a developer's ability to obtain key analytics, such as "real-time reporting about its customers' spending behavior." While Epic Games may profit from having "real-time reporting" about an individual spending behavior, ample evidence shows that Epic Games already reaps immense profits from impulse purchasing. Little societal value exists in allowing plaintiff to capitalize on more customer data to exploit customer habits.

Other examples, however, seem more legitimate such as Match Group's desire to obtain the information to run registered sex offender checks and age verification. Mr.

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228. Trial Tr. (Schiller) 2798:24-2799:11.

229. Ex. Depo. 12 (Gray) 146:8-147:20, 150:15-151:05; Trial Tr. (Schiller) 2799:17-2800:11; PX-2062 (complaints in 2018).

Ong attributes this fact to a "one-size-fits-all" approach that prevents it from building safety features "that are relevant to [its] users." In truth, the evidence is more mixed with a split among developers regarding the amount and usefulness of certain information with respect to analytics.[230] As noted, the issue is double-edged as it impacts user privacy.

5. App Store Operating Margins

Plaintiff's expert, Ned Barnes, through both reverse engineering and review of documents from Tim Cook's files, calculated operating margins to be over 75% for both fiscal years 2018 and 2019.[231] Mr. Barnes explained:

> Operating margin measures the profitability of a business or business segment by calculating the excess of revenue over costs. It is defined as net revenue (or sales) minus both (i) costs of goods sold ("COGS") and (ii) operating expenses ("OPEX") such as selling, general and administrative expenses, and research and development ("R&D") expenses. Operating margin percentage is calculated by dividing the nominal amount of operating margin dollars by the nominal amount of net revenue.[232]

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230. Ex. Depo. (Ong) 169:24-173:19; Trial Tr. (Sweeney) 128:22-24; PX-2362.300; Ex. Expert 8 (Schmalensee) ¶ 150; Ex. Expert 11 (Rubin) ¶ 127; DX-3922.106.

231. Ex. Expert 2 (Barnes) ¶¶ 2, 4, 5.

232. *Id.*

In addition, Mr. Barnes reviewed internal documents reflecting profit and loss ("P&L") statements specific to the App Store and presented to Apple executives. These documents support Mr. Barnes' independent conclusions.[233] Other documents indicate that at least by fiscal year 2013, the margin percentages exceeded 72%.[234]

Apple counters that it does not maintain profit and loss statements for individual divisions and that Mr. Barnes' analysis is inaccurate. The Court disagrees with the latter. Mr. Barnes made appropriate adjustments based on sound economic principles to reach his conclusions. Apple's protestations to the contrary, notwithstanding the evidence, shows that Apple has calculated a fully burdened operating margin for the App Store as part of their normal business operations. Apple's financial planning and analysis team are tracking revenues, fixed and variable operating costs, and allocation of IT, Research & Development, and corporate overheads to an App Store P&L statement. The team's calculation was largely consistent with that of Mr. Barnes. Although there are multiple ways to account for shared costs in a business unit, the consistency between Mr. Barnes' analysis and Apple's own internal documents suggest that Mr. Barnes' analysis is a reasonable assessment of the App Store's operating margin.

However, when Mr. Barnes extended the analysis to compare his findings to other online stores, he chose poorly. Mr. Barnes analyzed the operating margins for

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233. *Id.*

234. *Id.* ¶ 9.

the following online stores for the years spanning 2013 to 2019, finding operating margin percentages ranging approximately as follows: eBay (20-30 percent), Etsy (-3.2 to 12 percent), Alibaba (29-50 percent), MercardoLibre (-6.7 to 32 percent), and Rakuten (8-17 percent).[235] All of these pale in comparison to Apple, but none are driven by the same digital transactions as exist here.

While Mr. Barnes' choice is understandable,[236] he did not compare Apple with the Google Play app store, Sony PlayStation Store, Microsoft Store, Samsung Galaxy Store, and Nintendo eShop.[237] Mr. Barnes notes that these entities claim, like Apple, that they do not report sufficiently separate financial results for their app store activities. It is not clear whether sufficient public information exists to reverse engineer for these companies in the same way he reverse-engineered for Apple.

Notwithstanding Mr. Barnes' choice to compare the App Store's operating margins to those other online stores, under any normative measure, the record supports a finding that Apple's operating margins tied to the App

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235. *Id.* ¶ 22.

236. Mr. Barnes used the following "criteria" to choose the comparators: "online marketplace firms" that "(i) primarily generate online marketplace revenues from commissions and fees earned from transactions involving third-party merchants rather than as a direct seller of goods; (ii) publicly reported financial statements; (iii) at least five years of available financial statements; (iv) marketplace activities sufficiently distinguishable in operating results; and (v) profitable marketplace operations in at least one year of the last five years." *Id.* ¶ 23.

237. *Id.* ¶ 24.

Store are extraordinarily high. Apple did nothing to suggest operating margins over 70% would not be viewed as such. As discussed below, the record also shows that the bulk of the revenues generating those margins come from in-app purchases in gaming apps.

6. App Store Revenues From Mobile Gaming

As highlighted at the outset of this Order, pivotal evidence in this case reveals that gaming transactions are driving the App Store. Given the critical nature of this evidence, the Court unseals the following evidence from 2017 and sufficient evidence from the following years to make key findings. The specifics are referenced in the footnotes below and sealed to the general public. Suffice it to say, the trends increase in an upwards trajectory.

Games have played an integral part of the App Store since at least 2016. In 2016 for instance, despite game apps only accounting for approximately 33% of all app downloads, **game apps nonetheless accounted for 81% of all app store billings that year**.[238] Further, based on Apple's internal records, 2017 gaming revenues overall accounted for 76% of Apple's App Store revenues. These commissions are substantially higher than average due to the prevalent and lucrative business model employed by most game developers. Specifically, game apps are disproportionately likely to use in-app purchases for monetization.[239]

238. DX-4399.008.

239. Ex. Expert 6 (Hitt) ¶¶ 117, 120-124; DX-4178.006; PX-0059.007; DX-0608.012 (2019); Trial Tr. (Schmid) 3226:8. The actual numbers can be found in the sealed exhibits and need not be repeated in this Order.

Importantly, spending on the consumer side is also primarily concentrated on a narrow subset of consumers: namely, exorbitantly high spending gamers.[240] In the third quarter of 2017, high spenders, accounting for less than half a percent of all Apple accounts, spent a "vast majority of their spend[] in games via IAP" and generated 53.7% of all App Store billings for the quarter, paying in excess of $450 each. In that same quarter, medium spenders ($15-$450/quarter) and low spenders (<$15/quarter), constituting 7.4% and 10.8% of all Apple accounts, accounted for 41.5% and 4.9% of all App Store billing, respectively. The remaining 81.4% of all Apple accounts spent nothing and account for zero percent of the App Store billings for the quarter.[241] The trend has largely continued to the present.[242]

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240. From what little evidence there is in the record, these consumers frankly appear to be engaging in impulse purchasing and both parties' profits from this sector are significant. This specific conduct is outside the scope of this antitrust action, but the Court nonetheless notes it as an area worthy of attention.

241. *See* DX-4399.019-.020. Even within this general spend data, Apple's presentation suggests slides later that the high level of spend derives primarily from gaming apps. Indeed, a few pages later, Apple notes the top grossing apps for 2016, and states: "Not only are these all games, but they're freemium games, meaning they're free to download, and you spend money using In-App Purchases to get more features or levels." DX-4399.024.

242. *See* PX-2302.046-.047. Coincidentally, the percentage of consumers that pay nothing almost mirrors the same percentage of free apps available in the App Store.

This trend is also mirrored within the App Store's games billings. Indeed, Apple has recognized that "[g]ame spend is highly concentrated" among certain gaming consumers. Similar to the above statistics, 6% of App Store gaming customers in 2017 accounted for 88% of all App Store game billings and were gamers who spent in excess of $750 annually. Breaking down this 6% population:

- High spenders, accounting for 1% of iOS gamers, generated 64% of game billings in the App Store, spending on average $2,694 annually;

- Medium-high spenders, accounting for 3% of iOS gamers, generated 20% of game billings in the App Store, spending on average $373 annually; and

- Medium spenders, accounting for 2% of iOS gamers, generated 4% of game billings in the App Store, spending on average $104 annually.

Indeed, in strategizing on the development of the App Store and Apple's gaming business, Apple noted that it "need[s] to primarily consider how [its] service[s] would impact engagement and spend of this 6%."[243] Thus, in most economic ways, and in particular with respect to the challenged conduct, the App Store is primarily a *game* store and secondarily an "every other" app store.

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243. *See* PX-2176.176. The Court notes that the limited evidence in the record as to Google Play show that it too is similarly built on gaming transactions and a narrow subset of high spending gaming consumers and game developers. *See* DX-3913.004-.013.

II. REVIEW OF PARTIES' PROPOSED PRODUCT MARKET AND FINDING

The Court reviews the factual basis for each of the three proffered product markets. Epic Games offers two aftermarkets, namely (i) an aftermarket for the distribution of iOS apps and (ii) an aftermarket for payment processing for iOS apps. The foremarket for each hinges on the existence of a market for operating systems for smartphones.[244] Apple proposes a market for digital games transactions. The Court outlines the evidence for each in turn.

A. Epic Games: Facts Relevant to Foremarket for Apple's Own iOS

Before reviewing each of the proposed markets, the Court considers whether Apple's operating system should be viewed as a foremarket. The Court finds that it should not.

As a threshold matter, Apple urges the Court to disregard Epic Games' market definition on pleading grounds. Said differently, Epic Games did not explicitly use the terms "foremarket" and "aftermarket" in its complaint to outline its market theories. The Court agrees that Epic Games could have been more clear.

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244. A "foremarket" is "a market in which there is competition for a long-lasting product" from which "demand for a second product" derives. An "aftermarket" is the "market for the second product." Ex. Expert 1 (Evans) ¶ 40. As an example, razors are the foremarket for disposable razor blades which is the aftermarket. *Id.*

Ultimately though, Apple's argument elevates form over substance. Apple was on notice and litigated the matter.[245] Courts prefer to rule on the merits of claims rather than disregard on procedural grounds.

In terms of substance, the Court agrees with Dr. Schmalensee that plaintiff's identification of a "foremarket" for Apple's own operating system is "artificial." The proposed foremarket is entirely litigation driven, misconceived, and bears little relationship to the reality of the marketplace.[246] Quite simply, it is illogical to argue that there is a market for something that is not licensed or sold to anyone.[247] Competition exists for smartphones which are more than just the operating system.[248] Features such as battery life, durability, ease of use, cameras, and performance factor into the market.[249] Consumers should be able to choose between the type of ecosystems and antitrust law should not artificially eliminate them.[250] In essence, Epic Games ignores these

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245. *See* Compl. ¶¶ 156-183. The Court also addressed this issue in its preliminary injunction opinion, *Epic Games, Inc. v. Apple Inc.*, 493 F. Supp. 3d 817, 835-38 (N.D. Cal. 2020).

246. Ex. Expert 8 (Schmalensee) ¶¶ 6, 61.

247. Trial Tr. (Schiller) 2723:18-2725:2.

248. *Id.* 2725:9-21.

249. DX-4089.010, .035, .037.

250. *See, e.g.*, Trial Tr. (Cook) 3932:21-3933:6, 3937:12-20, 3987:18-25; Trial Tr. (Federighi) 3363:17-20, 3392:12-20. Mr. Sweeney, an iPhone user himself, admitted that he found Apple's approach to privacy and customer data security superior to Google's

marketplace realities because, as it presumably knows, Apple does not have market power in the smartphone market. Rather Apple only has 15 percent of global market share in 2020.[251]

B. Epic Games: iOS App Distribution Aftermarket

Given the Court's rejection of the foremarket theory, the aftermarket theory fails as it is tethered to the foremarket. Although the Court rejects plaintiff's foremarket construct, it nonetheless discusses additional factual problems with the aftermarket theory given plaintiff's focus on those issues. In effect, plaintiff really urges a single-brand analysis because Apple's exclusionary conduct impacts Epic Games' ability to compete in that space, both with respect to gaming and non-gaming apps.

Plaintiff claims that an aftermarket exists for four reasons. Each reason is tied to the known legal framework in which antitrust cases are litigated and which is discussed in the legal section below. That said, the four reasons are: One, the foremarket and aftermarket are related but two separate markets. Two, there are restraints in the aftermarket which are not in the foremarket. Three, the

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approach to customer privacy and customer data. Trial Tr. (Sweeney) 302:22-303:4. Mr. Sweeney further agreed that "if Apple were to compromise those fundamental differentiators,"—which the Court notes are more than the operating system—Apple may lose a competitive advantage over Android, depending on those changes. *Id.* 303:11-16; Trial Tr. (Athey) 1823:2-9 (agreeing that "privacy and security are competitive differentiators for Apple").

251. Ex. Expert 8 (Schmalensee) ¶ 64.

source of Apple's market power stems from its walled garden; not because of separate contractual agreements with consumers. Four, competition in the initial market does not discipline Apple's market in the proposed aftermarket.[252]

In terms of the trial record, the factual disputes reside in plaintiff's fourth reason which the Court addresses in this part of the Order. More specifically, the Court addresses Epic Games' evidence of (1) switching costs and alleged lock-in and (2) substitution.[253] The Court also considers Epic Games' argument as to whether the Court should consider all apps or only gaming apps.

1. Evidence of Switching Costs and Alleged "Lock-in"

Beginning with the switching costs[254] and alleged "lock-in," the Court considers Epic Games' proffer based on Apple's internal documents, expert testimony, and consumer knowledge, as well as Apple's rebuttal evidence.[255]

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252. Epic Games COL ¶¶ 84-93.

253. Epic Games FOF ¶ 218; Trial Tr. (Evans) 1507:10-1510-11, 1512:3-22.

254. Switching costs are "obstacles of moving from one product to another product." Trial Tr. (Evans) 1494:23-24. In other words, it is the costs born by leaving one platform to go to a different platform.

255. Apple FOF ¶ 399; s*ee* Trial Tr. (Schmalensee) 1930:3-14; Ex. Expert 6 (Hitt) ¶ 211.

Appendix B

a. Apple Documents

Starting with Apple documents, Epic Games cites emails showing that Apple executives were aware of the impact of switching costs from iOS to Android. For instance, a 2013 email from Eddy Cue to Tim Cook and Phil Schiller recommends using iTunes discounts (as opposed to device discounts) because "[g]etting customers using our stores . . . is one of the best things we can do to get people hooked to the ecosystem." The email asks: "Who's going to buy a Samsung phone if they have apps movies, etc. already purchased? They now need to spend hundreds more to get where they are today."[256]

Next, is an email chain from March 2016 illustrating the debate around iMessage.[257] In the email, a customer describes his experience between Google and Apple devices and provides a laundry list to both Google and Apple of the pros and the cons of each device. In advising Google of his decision to remain with Apple, he concluded with the note that "the #1 most difficult [reason] to leave the Apple universe app is iMessage" which led him to use a combination of Facebook, WeChat, WhatsApp and Slack. For him, "iMessage amounts to serious lock-in." In forwarding the email to Apple executives, they were internally advised "FYI — we hear this a lot." Phil Schiller

256. PX-0404.

257. iMessage is Apple's text messaging service that shows a blue bubble for texts sent from iOS devices (and allows for additional functionality) while displaying a green bubble for non-iOS devices without the same functionality.

then advised Tim Cook that "moving iMessage to Android will hurt us more than help us . . . ."[258] Later, in October 2016, Mr. Schiller circulated to other Apple executives a Verge article entitled "iMessage is the glue that keeps me stuck to the iPhone."[259] Despite hours on the stand, plaintiff never explored this topic with Mr. Schiller other than to confirm receipt of the third-party emails.[260]

On balance, the Court reads the emails to suggest that Apple sought to compete by distinguishing their product, and in the process, making its platforms "stickier." That, however, is not necessarily nefarious. Every business

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258. PX-0416.

259. Again, the statements themselves are hearsay and are considered for a limited purpose of state of mind and not for whether iMessage actually creates lock-in for the customer base as text messages can be shared between iOS devices and Android. *See* PX-0079 (third-party Goldman Sachs Group, Inc. analysis); PX-2356; Trial Tr. (Schiller) 2981:6-2982:25.

Epic Games also cites other documents, but the import of those documents is far less clear. For instance, a 2019 email from Mr. Federighi discusses eliminating user-entered passwords in favor of Sign in with Apple, which would make the platform more "sticky." PX-0842. However, the context of the email concerns protecting users from spam, and it immediately notes factors that undermine that stickiness, such as "heavy" use of Chrome. *Id.*; *see also* Trial Tr. (Schiller) 3169:7-22 (explaining desire to protect users from spam). Another document shows Steve Jobs discussing tying different products together to "lock" customers into the ecosystem. PX-0892. Again, that is indistinguishable from simply making the ecosystem more attractive. *See* Trial Tr. (Schiller) 2864:7-15.

260. PX-0416; Trial Tr. (Schiller) 3173:11-16, 3174:4-16.

seeks to decrease switching away from its products. Epic Games' executives, for instance, used the word "lock-in" to refer to price cuts that make it easier for users to play *Fortnite* in a hard economy. Here, the features that create lock-in also make Apple's products more attractive. Whether the conduct is procompetitive depends on other factors, including timing and whether the stickiness is at least partly tied to product attractiveness which can then decrease if the products become less attractive (for instance, through higher game prices).[261] This evidence is not persuasive of switching costs on its own.

b. Dr. Susan Athey

Next, Epic Games relies on expert testimony by Dr. Susan Athey who provides high-level, and largely theoretical, testimony about various costs incurred during switching from iOS to Android devices.[262] Unfortunately, Dr. Athey makes no effort to determine from consumers themselves whether they are motivated by loyalty and product satisfaction or because of switching costs. She conducted no original surveys. Nor does she attempt to measure the switching costs and analyze literature about their magnitude. Indeed, Dr. Athey does not cite

261. Trial Tr. (Weissinger) 1433:19-1434:16; *see, e.g.*, Trial Tr. (Cook) 3870:16-21; Trial Tr. (Schiller) 2864:16-19. Evidence shows that switching costs have decreased since the early 2010's through increased cross-platform functionality and "middleware," a term which does not exist in economic literature and which Dr. Athey created. Trial Tr. (Athey) 1782:7-1783:1, 1805:5-1806:22, 1809:17-1810:11.

262. *See generally* Ex. Expert 4 (Athey); Ex. Expert 1 (Evans).

any evidence beyond a news article, a European journal, and a biography of Steve Jobs. Nor did she analyze additional evidence or perform original analysis when forming her opinion. As such, the Court is left entirely in the dark about the *magnitude* of the switching costs and whether they present a meaningful barrier to switching *in practice*. There is simply no independent data to show that switching costs create meaningful lock-in.[263]

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263. Trial Tr. (Athey) 1777:18-24, 1794:12-1795:3, 1813:22-1814:11, 1815:11-1816:2, 1870:10-15.

Apple moves to strike Dr. Athey's opinions under Federal Rule of Evidence 702(b). Dkt. No. 721. Epic Games responds that Apple waived its objections by stipulating to the admission of expert "written direct testimony" (Dkt. No. 510) and "unadmitted materials within the scope of Rule 703" relied on by the experts (Dkt. No. 635). Epic Games further contends that Dr. Athey disclosed her opinions in her report and that she may testify "solely or primarily on experience" if she "explain[s] how that experience leads to the conclusions reached, why that experience is a sufficient basis for the opinion, and how that experience is reliable applied to the facts." Fed. R. Evid. 702 advisory committee note to 2000 Amendments ("Adv. Committee Note").

While the Court does not strike the opinion, the Court agrees with Apple that the opinion's basis is weak. Epic Games conflates the requirements of Rule 703, Rule 702, and discovery. Rule 702(b) asks "whether the expert considered enough information to make the proffered opinion reliable," while Rule 703 asks whether the data considered itself is "of a type that is reliable." *See* 29 Charles Alan Wright & Arthur R. Miller, *Federal Practice & Procedure* § 6268 (2d ed.). Federal Rule of Civil Procedure 26(a)(2)(B)(ii) further requires that an expert set forth "the facts or data considered by the [expert] in forming" the opinions in her report.

While the Court finds Dr. Athey well-intentioned, the lack of data upon which she bases her opinion leaves the Court with little objective reason to accept her theory.[264] Moreover, the market is responding, *i.e.*, both Google and Apple are creating easier paths to convert customers from

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Here, Dr. Athey does not explain how her experience provides a *sufficient* basis for her sweeping conclusions. This is not a handwriting case where an expert opines that two writings are the same based on experience. It is a complex antitrust case that requires consideration of economic data. Unexplained academic and industry experience simply does not provide sufficient basis to draw reliable conclusions. Moreover, to the extent that Epic Games asks the Court to rely on Dr. Athey's general research, such research should have been disclosed in the report so that the Court and opposing party could evaluate it.

Nevertheless, the Court recognizes that the procedural posture of this case was unique. The Court ordered that no *Daubert* motions be made in advance of the bench trial given the expedited schedule and the fact that the Court had to read and review the submission in any event. Context was helpful. That said, many issues were litigated during the course of the bench trial and Apple did stipulate to the admission of Dr. Athey's testimony. Dr. Athey apparently relied on additional sources in her expert report (which she did not cite in her written direct testimony). The Court considers her opinions, but as discussed, given the lack of data, the Court does not give those opinions much weight.

264. Last, Dr. Athey describes "mixing-and-matching" costs that users incur when trying to use devices from different ecosystems together. Dr. Evans reiterates some of this analysis in his testimony, but again, the data is weak. Ex. Expert 4 (Athey) ¶¶ 20-23; Ex. Expert 1 (Evans) ¶¶ 83-88; Trial Tr. (Evans) 1495:5-1497:3; Trial Tr. (Athey) 1755:6-1763:24.

the other and deal with the switching costs.[265] The Court can agree that it takes time to find and reinstall apps or find substitute apps; to learn a new operating system; and to reconfigure app settings. It is further apparent that one may need to repurchase phone accessories. That said, by ignoring the issue of customer satisfaction, Epic Games has failed to convince. The Court warned the parties in advance that actual data was an important consideration.

Accordingly, the expert testimony from Dr. Athey is wholly lacking in an evidentiary basis and does not show *substantial* switching costs enough to create user lock-in for iOS devices.

c. Consumer Knowledge and Post Purchase Policy Changes

From a broad perspective, Epic Games did not conduct any analysis of whether consumers know that they are buying into a walled garden. Apple argues that its business is successful precisely because of the reliability and security creating the walled garden on the iOS devices and on which it competes (discussed below). Without a consumer survey, there is no evidence that consumers are *un*aware of walled garden before purchasing the smartphone. Thus, there is no "bait-and-switch."

Plaintiff strains on the policy-change argument. Here Epic Games argues that Apple has changed its stated

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265. DX-3084A.022; Trial Tr. (Cook) 3867:12-3870:1, 3886:19-3887:5; DX-5573.

policy with respect to the commissions and thereby "lock-in" consumers and developers. The assertion is based upon two comments. The first occurred in 2008 by Steve Jobs when the App Store was launched by stating that the 30% commission was intended to "pay for running the App Store" and that Apple would be "giving all the money to the developers." The second occurred in 2011 when Phil Schiller noted in an internal email that "once we are making over $1B a year in profit from the App Store, is that enough to then think about a model where we ratchet down from 70/30 to 75/25 or even 80/20 if we can maintain a $1B a year run rate?"[266] Plaintiff claims the 30% commission rate constitutes a change in policy as compared against those two comments.

Plaintiff's argument is not grounded in legal principles. The two noted informal statements do not create a policy, especially in light of a written contract, much less one which shows the 30% is a change. However, the Court does agree that the comments confirm that the 30% is not tied to anything in particular and can be changed. Moreover, it shows that Apple used other provisions to hide information on those commission rates from the consumers, presumably to hide the profitability of the transactions, namely the use of anti-steering provisions. Without information, consumers cannot have a full understanding of costs.[267]

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266. PX-0880.021, .027; PX-0417.001.

267. Trial. Tr. (Evans) 1509:11-17; Ex. Expert 1 (Evans) ¶ 118. iv. The Court rejects the notion that Apple must affirmatively give consumers an estimate of the "amount of money a consumer spends on

d. Apple's Rebuttal Evidence

Apple introduces rebuttal evidence that low switching stems from satisfaction with Apple devices and services.

First, Apple emphasizes that consumers do switch from iOS to Android. Although the timeline for switching smartphones is longer than a few years, as many as 26% of smartphone users, including 7% of iPhone users, purchase a cellphone with a different operating system each cycle. Industry surveys suggest that iOS users are not per se "closed off" to considering Android when making decisions.[268]

Second, Apple cites consumer surveys that the lack of switching is due to consumer satisfaction with iOS. A Google survey shows that 64% of iOS users would not switch to Android simply because they "prefer iOS," which is the number one reason for not switching. Another survey shows that users who *do* switch from Android to iOS do so because they liked the speed and reliability provided by iPhones. Other surveys show high rates of satisfaction with iOS devices.[269] This evidence is significant

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apps over the lifecycle of an iPhone," especially given that consumers appear to be in different categories of spending. *See* Epic Games FOF ¶ 221.a. That is different from enforcing silence regarding commission costs.

268. DX-4310.012; Ex. Expert 6 (Hitt) ¶ 209; DX-3598.027.

269. DX-3598.027; DX-3441.006-.007. Of course, the Apple survey cuts both ways. Consumers who switched from Android to iOS did so for hardware reasons, such "speed," "quality device

not only because it was not litigation driven, but because Epic Games does not provide its own consumers surveys to show that users fail to switch even when they are dissatisfied with app price, quality, or availability. Thus, Apple's evidence strongly suggests that low switching between operating systems stems from overall satisfaction with existing devices, rather any "lock-in."

Comparing and weighing the parties' proffers, the Court finds that Epic Games failed to prove that users are "locked-in" or would not switch to Android devices in response to a significant change in game app prices, availability, or quality.[270]

2. Substitutes

In terms of substitutes given the business realities of the market, the parties' arguments hinge on their own respective definitions of the market. Epic Games spends little time on this issue with respect to its definition. For Epic Games, there is an aftermarket for iOS app distribution for which there is no substitute as it occupies the entire field.[271]

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construction," and "battery"—not app quality, price, or availability. This reinforces Dr. Evans' point that apps are a secondary consideration when purchasing a smartphone and would not lead to switching by themselves. *See also* DX-4312.043; DX-4495.044.

270. As a corollary, without proof of customers lock-in, the notion that developers would not switch to maintain that customer base is by definition also not proved.

271. Epic Games FOF ¶¶ 179-180.

Given Apple's proposed market of all digital game transactions, Apple argues that all the other game transaction platforms are substitute platforms for the App Store. Those platforms include ones accessed through all devices: mobile, tablets, consoles, and PCs. Epic Games rebuts this claim. It makes two arguments. One, because developers create apps for more than one platform, they do not view them as substitutes to reach the same consumers. Two, economic and survey evidence show a lack of substitution. The Court begins with Epic Games' arguments.

a. Single Homing and Fortnite Data

No one disputes that when developers create an app for Android versus iOS, they use a different SDK but much of the code can be ported across platforms. Using technical language, users may "single home" at a single platform while developers "multi home" across platforms. As the result, developers compete for single-homing users in a winner-take-all market and cannot afford to forego particular platforms without losing those other customers. The Court agrees that in the smartphone context, consumers typically "single home."[272]

In terms of user options on smartphones, gaming transactions on Android appear similar if not identical to gaming transactions on iOS. Most popular mobile games are available on both Android and iOS, with similar functionality. Developer support services are

272. Ex. Expert 1 (Evans) ¶¶ 48, 89.

also similar.[273] Further, a significant difference in game transaction price or availability does not exist between iOS and Android. The evidence shows that very few consumers own both Android and iOS devices, and that currently, very low switching rates exist, with only about 2% of iPhone users switching to Android each year.[274] These results are not particularly surprising if those devices provide essentially the same experience.

Whether that extends beyond the smartphone context is debatable. Thus, to establish this extension, Epic Games relies on the "natural experiment" provided by *Fortnite*'s removal in the wake of the Project Liberty.

The experts do not appear to disagree that the removal of *Fortnite* is a "degradation in quality" of the App Store and iOS devices in general.[275] Dr. Evans thus opines that *Fortnite's* removal provides an empirical study of user substitution in response to changes in quality in iOS and analyzed the data for ten weeks after its removal.

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273. *Id.* ¶¶ 74; Ex. Expert 6 (Hitt) ¶¶ 28; DX-4759.001; Trial Tr. (Simon) 390:5-19; Trial Tr. (Grant) 669:22-24, 733:7-13; Trial Tr. (Fischer) 873:3-8.

274. Dr. Hitt testified that up to 26% of iOS users switch to Android at the end of each upgrade cycle. Ex. Expert 6 (Hitt) ¶ 209. He agreed, however, that this creates no more than three to four percent change in the installed base each year. Trial Tr. (Hitt) 2162:12-2163:15.

275. Ex. Expert 1 (Evans) ¶ 127. As such, Dr. Evans opines that it supports use of a "SSNIP" test commonly used to test monopoly power. *Id.* ¶ 133; Trial Tr. (Evans) 1528:12-1530:1, 1533:1-1534:8. The Court discusses the SSNIP test and its applicability below.

Given the loyal *Fortnite* following, Dr. Evans evaluated iOS-only users. For this group, he found they only shifted 16.7% of game play minutes to other platforms and 30.7% of spending to other platforms. Applying this substitution rate to Epic Games' profit margins, Dr. Evans concludes that similar developers would not find it profitable to abandon the iOS platform because they could not make up the spending on other platforms, even if Apple raised its commission.[276]

First, Dr. Evans' decision to limit his analysis to iOS-only *Fortnite* players is questionable because it ignores other market evidence that iOS players engaged in substitution before and after the hotfix. Dr. Evans cites evidence that 90.9% of iOS *Fortnite* players play only on iOS. This is consistent with general statistics that 82.7% of *Fortnite* players play on a single platform. That said, Dr. Hitt's data shows that 35.9% of iOS *Fortnite* players multi-home. This is consistent with evidence that between 32% and 52% of all *Fortnite* players multi-home. Moreover, Dr. Hitt cites evidence that the iOS *multi-homers* account for 85% of *Fortnite* revenue from iOS in the first half of 2020, which makes them particularly important.

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276. *See* Ex. Expert 1(Evans) ¶¶ 124-134; PX-1080; Trial Tr. (Evans) 1521:2-1535:7. Dr. Evans opines that this is an "upper bound" of substitution because most other mobile games, unlike *Fortnite*, lack cross-wallet, cross-play, and other features that make it easy for *Fortnite* players to switch devices. Dr. Evans further lowers the substitution estimate after accounting for the "natural cross-progression" from iOS to "more serious" gaming on PCs and consoles. However, as Dr. Hitt correctly notes, this constitutes substitution even if it is not directly responsive to the quality decrease. Ex. Expert 1 (Evans) ¶ 129; Trial Tr. (Evans) 1527:10-14; Ex. Expert 6 (Hitt) ¶ 252.

Dr. Evans' focus, however, ignores this important group which reveals important insight: players who access *Fortnite* on iOS still spend the overwhelming majority of their *Fortnite* time and money on non-iOS platforms.[277] By limiting his analysis to players who use iOS as the *primary Fortnite* platform (*i.e.*, the platform where they spend most of their playtime and spending), the Court finds Dr. Evans likely underestimates overall substitution.[278]

Second, and ironically, the *Fortnite* data *does* show substitution. Dr. Hitt, analyzing the same data, found that 22% to 38% of strict iOS-only—users who never accessed *Fortnite* on a non-iOS platform before—shifted their game time and spending to other platforms after the iOS hotfix. Significantly, after accounting for iOS users who already played on other platforms (of whom up to half increased their spending on other platforms), Dr. Hitt shows that Epic Games retained 81% to 88% of its iOS player revenue after Project Liberty. Dr. Evans criticizes this conclusion,

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277. Specifically, *Fortnite* players with iOS accounts spend almost 90% of their play time and 87% of their spending outside of iOS. Ex. Expert 6 (Hitt) ¶ 73. Another explanation for the different conclusions rests on Dr. Evans' use of sampling: Dr. Hitt testified that Dr. Evans' confidence intervals are well in line with his own estimates. Trial Tr. (Hitt) 2145:10-22.

278. Ex. Expert 1 (Evans) ¶ 126; PX-1054; Ex. Expert 6 (Hitt) ¶¶ 68-75, 94, 249-50; DX-4767. Of course, the existence of iOS-only players who do not substitute may suggest a subset of the market for whom iOS *Fortnite* play is key. Trial Tr. (Evans) 2371:1-14. However, Epic Games did not define a market with respect to these users but for all iOS game transaction users.

arguing that it does not show substitution but rather shows that non-iOS spenders continue to spend outside iOS. The experts agree that Epic Games retained up to half of its iOS-only user revenue.[279]

In conclusion, the *Fortnite* data is basically mixed. Up to a third of iOS *Fortnite* users already play on other devices, which makes their ability to substitute a given. Another 20% undertook at least some substitution after *Fortnite* removal, including by accessing devices on which they previously played *Fortnite*. Although this was not enough to make up Epic Games' losses, the Court finds the time period of substitution significant: Dr. Evans analyzed substitution for only the ten weeks following *Fortnite's* removal. The Court finds it likely that a longer analysis would show greater substitution both because of the typical upgrade cycle for expensive devices (longer than ten weeks) and because of the timing of this Court's preliminary injunction order (immediately after the ten-week period). In particular, users may have waited to see whether this Court would reinstate *Fortnite* to the App Store before making a different purchasing decision or waited for Season 15 for which we have no data. Moreover, because *Fortnite* was removed simultaneously from Google Play and the iOS App Store, the experiment does not account for substitution between iOS and Android.

For all of these reasons, the *Fortnite* data does not reliably show lack of user substitution among game transactions on different devices.

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279. Trial Tr. (Hitt) 2142:24-2145:5; Ex. Expert 6 (Hitt) ¶¶ 97, 251; DX-4824; Trial Tr. (Evans) 2371:22-2376:6; Ex. Expert 16 (Evans) ¶¶ 26, 29-31.

b. Dr. Rossi and Dr. Evans

Last, Epic Games proffers a survey performed by Dr. Rossi and Dr. Evans' use thereof.

Beginning with the survey, Dr. Rossi asked iPhone and iPad users whether they would change their spending if iOS in-app purchases were slightly more expensive. Specifically, Dr. Rossi asked respondents to think about their in-app purchases from the App Store in the last thirty days and imagine that the spending was five percent higher. 81% of the respondents giving definite answers indicated that they would not have changed their purchases. The remainder indicated opposite with only 1.3% switching to non-iOS phones or tablets. Dr. Rossi and Dr. Evans use this data to conclude that consumer demand for iOS app transactions is relatively inelastic.[280]

Dr. Rossi's survey suffers from several methodological flaws, including the language and timing of the survey. First, the formulation of the questions was confusing. The questions did not convey that the price changes were intended to be both in future and permanent (or nontransient). Instead, his approach was explicitly backward looking. He failed to use simple phrases like "in the future" which had been considered. He claims his final,

280. "Relatively inelastic" is not formally inelastic (which requires an elasticity less than - 1), but it is less elastic than comparable markets. Trial Tr. (Evans) 1650:8-1651:15; Ex. Expert 3 (Rossi) ¶¶ 4-14; PX-1089; Ex. Expert 1 (Evans) ¶¶ 136-138.

and untested language, was intended to be more clear.[281] A comparison of the language demonstrates otherwise. By failing to make the distinction with the future, Dr. Rossi also injected the notion of customer satisfaction into the survey which likely impacted the result.[282] His justification that he conducted "structured pretests" is manufactured and not recognized in the industry.[283]

Further, given that the survey was conducted on January 20, 2021 and asked about spending in the "last 30 days," Dr. Rossi failed to account for holiday spending which is likely to be idiosyncratic. Holiday spending includes sales and price changes before, during, and after the holidays, and Dr. Rossi admitted that the results may vary for "for some products."

Next, the survey concerned all app purchases, not just game transactions, and ignored plaintiff's key demographic. Dr. Evans expressly testified that in-app transactions are not part of his proposed product markets.

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281. Compare versions in PX-1920; Trial Tr. (Rossi) 2512:15-2513:13, 2526:5-10, 2532:13-21, 2528:12-2529:2; Ex. Expert 7 (Lafontaine) ¶¶ 76-79; Trial Tr. (Evans) 1649:9-23. Dr. Rossi conducted pre-testing and interviews on the initial survey design, which asked about spending in a "similar 30-day period in the future." It is not clear whether the pre-test adequately asked about the transience issue for either past or future spending. *See* PX-1920.3; Trial Tr. (Rossi) 2521:23-2544:11.

282. Trial Tr. (Hanssens) 3541:23-3543:3.

283. Trial Tr. (Rossi) 2523:8-2, 2525:23-2527:16, 2529:20-23; *see also* Trial Tr. (Hanssens) 3539:10-13 (explaining that the terminology of "structured and "unstructured pretests" is not standard).

Yet those are the only purchases which Dr. Rossi tested.[284] Dr. Rossi also claims he did not want to include minors because he would have to obtain parental approval, but that proved not to be a problem for Dr. Hanssens, Apple's expert, who did survey minors.[285] Given the magnitude of the issues before the Court, Dr. Rossi choices did not ultimately assist in determining how a key demographic would make substitution decisions in the relevant market.

Dr. Rossi's trial testimony revealed that he was more interested in a result which would assist his client's case than in providing any objective ground to assist the Court in its decision making. Given Dr. Rossi's lack of credibility, the Court strains to adopt his findings. Although the survey is far from perfect for the reasons stated above, the Court finds it weakly probative, at most, that increases in in-app purchase content prices would not lead to significant substitution to other devices.[286]

Dr. Evans uses Dr. Rossi's survey to conduct a "SSNIP" test to confirm that iOS app distribution is a relevant

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284. Of course, these first two issues may cancel each other out: since games are disproportionately likely to use in-app purchases, an increase in in-app purchases is effectively an increase in iOS game (and subscription) prices.

285. Trial Tr. (Rossi) 2534:24-2536:19, 2545:9-22.

286. *See id.* 2509:16-2510:25. Apple also faults Dr. Rossi for the low levels of respondent spending on in-app content. However, those rates appear to be in line with the App Store median. *See* Ex. Expert 3 (Rossi) ¶ 49.

aftermarket.[287] The Department of Justice developed the test in 1982 to analyze mergers and determine what is the smallest market in which a hypothetical monopolist could impose a "*S*mall but *S*ignificant and *N*on-transitory *I*ncrease in *P*rice," usually 5 percent over the course of 12 months. Not only is this not a merger context, but as noted, the survey did not test anywhere close to an appropriate period.[288] Despite the Court's misgiving of the accuracy of any opinion stemming from this survey, it reviews Dr. Evans' reliance thereon to perform a SSNIP analysis.

As an overview, Dr. Evans first calculates an "effective" commission rate of 27.7%, and then determines that a 5% increase to consumers would correspond to a 30% increase in developer commissions. Because even this large increase in commissions would be profitable for Apple due to the lack of consumer switching, Dr. Evans concludes that iOS distribution is its own market.[289] Dr. Evans confirmed that consumer response to long-run price changes may be substantially different than for short-run ones.[290] This feature is important to Dr. Evans' analysis. As discussed above, Dr. Rossi's failure to survey properly and confirm respondents' understanding of a non-transient price increases leaves the adequacy of the survey for a SSNIP analysis in question.

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287. Ex. Expert 1 (Evans) ¶ 139.

288. *Id.* ¶¶ 35, 136, 254.

289. *Id.* ¶¶ 136-144; PX-1050; Ex. Expert 6 (Hitt) ¶ 179.

290. Trial Tr. (Evans) 1652:23-1653:02.

Appendix B

Economists lack consensus about how to design hypothetical monopoly tests properly to account for indirect network effects. While Dr. Evans has proposed one approach, another preeminent economist, Dr. Schmalensee, believes it is conceptually flawed. Even Dr. Evans himself has previously written that "even if it is technically possible to extend the hypothetical monopoly test to two-sided platforms, the challenges of implementing the SSNIP test empirically in two-sided markets are likely to be overwhelming in practice."[291]

Despite this self-acknowledged difficulty, Dr. Evans uses the SSNIP test anyway. The Court finds Dr. Evans' SSNIP analysis fatally flawed by several standards, including his own. Dr. Evans has acknowledged that a double-sided SSNIP test should include simultaneous testing of both sides of the market using at least 14 inputs. He has not followed that methodology here. Nor did Dr. Evans take into account indirect network effects in his SSNIP analysis.[292]

Indeed, Dr. Evans conducts his foremarket and aftermarket SSNIP tests on the consumer side and on the developer side separately. Then, he effectively dismisses indirect network effects by claiming that SSNIP on both developers and consumers would be profitable, because neither side would respond to the one-sided price increases

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291. Trial Tr. (Evans) 1668:5-1669:2, 1667:16-23; Trial Tr. (Cragg) 2302:7-16; Ex. Expert 8 (Schmalensee) ¶¶ 63, 81-82.

292. Ex. Expert 8 (Schmalensee) ¶¶ 84, 88; Trial Tr. (Schmalensee) 1897:5-1899:8.

he tested. As Professor Schmalensee explained, this is implausible: a price increase would reduce consumer demand for apps, which in turn would make app sales less profitable for developers, and developers may in turn react by reallocating engineering or marketing resources even if they do not leave the platform entirely. Notably, Dr. Evans does not perform *any* actual SSNIP calculations testing both sides of the market simultaneously, as required by his own research.[293]

Dr. Evans' SSNIP analysis is further based on flawed survey data from Dr. Rossi, which affects the validity of any conclusions derived therefrom. Dr. Rossi's survey and the resulting data suffer from several critical flaws.[294] The Court will not rehash the entirety of these flaws here. Suffice it to say, three errors are particularly notable:

First, the survey focuses entirely on the price of in-app purchases—which, as noted above, are *not* even within the alleged relevant market advanced by Dr. Evans—while ignoring other transactions, like initial downloads and updates, that are in the alleged relevant market advanced by Dr. Evans. As a result, Dr. Evans's analysis is unreliable and provides no insight into substitution in any alleged iOS app distribution market.[295]

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293. Ex. Expert 1 (Evans) ¶¶ 133, 138-139, 141, 262, 68; Trial Tr. (Schmalensee) 1898:10-14.

294. Trial Tr. (Schmalensee) 1897:20-23 (Dr. Evans relies on Professor Rossi's survey, which is "far from perfect"); Ex. Expert 7 (Lafontaine) ¶ 74.

295. Trial Tr. (Rossi) 2549:13-2550:1; Trial Tr. (Evans) 1646:16-1647:5; Ex. Expert 7 (Lafontaine) ¶ 75.

Second, the price increases discussed in the survey—when confined to just 30 days—also were far from significant, ranging from less than $0.25 to $1.50. And the significance of the price increases were dampened even further by the survey's discussion of switching costs.[296] This is despite the fact that the App Store is highly dependent on a narrow subset of high earning gaming apps and an equally narrow subset of high and medium consumer spenders. In other words, these consumers and developers were not adequately captured by Dr. Rossi's survey, which reflected only small increases in price.

Finally, the survey was limited to the United States, not the global market that Dr. Evans posits.[297]

Given the flaws in both the underlying survey and Dr. Evans' calculations thereon, the Court finds this evidence wholly unpersuasive of substitution.

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296. Trial Tr. (Rossi) 2539:13-2540:16, 2543:12-2544:25. The Court further notes that Dr. Rossi's survey appears have been inappropriately based on an increase in the total cost of the in-app purchases and subscriptions, instead of based on an increase in the amount of Apple's commission rate. The Department of Justice website, which Dr. Evans approvingly cites in his report, notes that in cases involving an analogous transaction in oil pipelines, the appropriate SSNIP analysis is based on the cost of transporting the oil (amount from the commission rate), not on the cost of the oil at the terminal end point (total cost of the in-app-purchases). *See* Ex. Expert 1 (Evans) ¶ 253, n. 113; *see also* U.S. Department of Justice and the Federal Trade Commission, "Horizontal Merger Guidelines," August 19, 2010, at § 4.1.2, https://www.justice.gov/atr/horizontal-merger-guidelines-08192010.

297. Trial Tr. (Evans) 1653:3-16.

c. Mobile Devices (Tablets and the Switch)

As outlined above, Apple's product market is all digital gaming transactions. It therefore focuses on platform substitutes for those transactions. Apple suggests two categories of platforms: (1) mobile devices (tablets and the Switch) and (2) non-mobile devices.

iPads are indisputably part of the Apple ecosystem. Evidence shows that 60% of iPhone users also use an iPad (tablet), so they have access to both devices. Documents also show that Apple seeks to decrease switching costs from iPhones and iPads to "lock customers into [its] ecosystem." Thus, tablet transactions are substitutes for those on smartphones because they are part of the same ecosystem and users have access and easy switching ability between the devices.[298]

In evaluating Apple's market definition, Dr. Evans excludes tablets on the sole ground that they lack certain hardware features, like a cellular connection. This is not persuasive: as Dr. Hitt notes, tablets possess most of the unique hardware features Dr. Evans assigns to

298. Ex. Expert 1 (Evans) ¶¶ 43-44, 75; Ex. Expert 6 (Hitt) ¶ 189; Trial Tr. (Federighi) 3357:15-18; Trial Tr. (Fischer) 874:24-875:11; PX-0416; DX-3174.003; PX-0892. Moreover, Epic Games' arguments to the contrary contradict its own theory that users and developers select "ecosystems" rather than devices. As Dr. Evans explains, "Apple and Google have created highly differentiated ecosystems around their respective operating systems," and developers and consumers select devices based on the ecosystem.

smartphones. Epic Games has not demonstrated that the slight remaining hardware differences are sufficient to prevent substitution for smartphone and tablet game transactions. Accordingly, tablet game transactions are substitutes for smartphone game transactions and part of the same market.[299]

d. Non-Mobile Devices (Consoles and PCs)

Consumers frequently own multiple devices and could in theory substitute across them for game transactions. Surveys conducted by Apple show that gamers are especially likely to use several devices, with 56% playing on both mobile and non-mobile platforms.[300]

However, there are two issues with this data. First, it inappropriately uses statistics about gamers as a whole to draw conclusions about iOS gamers.[301] Apple has not shown that gamers as a whole are representative of iOS gamers. It may well be that 55-60% of U.S. gamers play on more than one device, but that *iOS* gamers switch considerably less often. This outcome is plausible: Apple's

299. Ex. Expert 6 (Hitt) ¶¶ 230-233; Ex. Expert 1 (Evans) ¶ 43 n.3.

300. Ex. Expert 6 (Hitt) ¶¶ 57, 61; DX-3174; Trial Tr. (Wright) 550:3-10, 631:19-22.

301. As explained below, Apple also uses statistics about *Fortnite* to draw conclusions about the gaming industry. That suffers from a similar problem: no evidence in the record shows that *Fortnite* is representative of other games.

evidence shows that large portions of the population—including young children, older adults, and most teenage girls—play predominantly on mobile. Multi-platform play, on the other hand, is driven by different segments. Thus, Apple's own evidence shows that mobile gamers are *not necessarily* like other gamers.[302]

Recognizing this issue, Apple offers evidence by Dr. Hanssens, who conducted two surveys on iOS App Store users and *Fortnite* players, respectively. The first survey shows that 99% of App Store consumers use or could use at least one other non-iOS device. The second survey shows that 99% of iOS *Fortnite* players use or could use non-iOS devices. Moreover, 94% of iOS *Fortnite* players played games on non-iOS devices in the last 12 months.[303]

While Dr. Hanssen is considerably more credible and independent that Dr. Rossi, Dr. Hanssen's survey is also severely flawed and ultimately unreliable.[304] First, he reports that 30-43% of respondents "regularly" use a Microsoft Windows phone even though Microsoft had 0% market share in smartphones in 2018 and no longer sells phones. This data point alone calls into question the

302. DX-4170.008, .024.

303. DX-4663.001; DX-4754.001; Ex. Expert 6 (Hitt) ¶ 58.

304. Notably, Dr. Hanssens was the only expert to explain that his work was not directed by attorneys; nor was he aware of how his work fit into Apple's strategy thus, demonstrating independence. For this reason, the Court finds Dr. Hanssens quite credible.

reliability of the survey overall.[305] Second, Dr. Hanssen's surveys do not address substitution because he only measures access. Dr. Hanssen acknowledges this: the surveys "did not address substitution at all" because doing so would require questions about willingness and ability to switch, as well as actual behavior in different circumstances. Thus, the ultimate value of Dr. Hanssens's survey is limited.

With respect to actual substitution, Apple relies solely on three "natural experiments" examined by Dr. Hitt.[306]

First, Dr. Hitt considers users who downloaded a console or PC game "companion" app, such as the Xbox companion app as a proxy for those who own or play games on a console or a PC. Dr. Hitt finds that users who download the console or PC companion app increase their iOS game spending at a slightly lower rate—19% as opposed to 24% growth in iOS game spending as compared to a control group who did not have the companion app. Because V-Bucks are the same on both platforms, Dr. Hitt concludes that the use of both devices shows substitution. That said, the group that downloaded the companion app spent *more* on iOS games than the group that did not.

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305. To Dr. Hanssens' credit, he readily acknowledges these issues and eventually removed the respondents who reported Windows phone use. However, this amounts to 30-43% of an already small survey pool rendering the exercise unreliable. Trial Tr. (Hanssens) 3580:15-3581:14; 3568:12-17, 3570:3-14, 3574:2-8, 3576:11-3578:17, 3551:18-3552:18; DX-4312.178; Ex. Report 6 (Hitt) ¶ 71.

306. Trial Tr. (Hanssens) 3551:22-3554:6, 3557:11-13; Ex. Expert 6 (Hitt) ¶¶ 82-99; *see also* Ex. Expert 13 (Cragg) ¶¶ 43-48.

This is consistent with complementary gaming if spending increases.[307] Both conclusions are logical.

Second, Dr. Hitt considers the natural experiment provided by the entry of *Fortnite* on the Nintendo Switch. Dr. Hitt finds that when *Fortnite* launched on Switch, iOS *Fortnite* spending and playtime decreased. Dr. Hitt acknowledges that *Fortnite* spending across *all* platforms decreased during that time by 33%. Thus, to control for the general decrease, he compares iOS spending for users who played and did not play *Fortnite* on Switch. Dr. Hitt then concludes that iOS *Fortnite* players who played on Switch played and spent relatively less time on iOS. Again, the evidence is consistent with substitution but does not establish it.[308]

Next, Dr. Hitt's data also shows that players who used both iOS and Switch increased their *overall* spending and playtime in *Fortnite*. The absolute numbers for iOS *Fortnite* revenue actually increased after the introduction of Switch. Dr. Cragg converts this data to plausibly opine that this shows complementary playing—users who acquired a second device became more engaged in the game—rather than substitution. Using this lens, the evidence is as consistent with complementary playing as with substitution.[309]

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307. Ex. Expert 6 (Hitt) ¶¶ 69-72, 82-87; DX-4792; Ex. Expert 13 (Cragg) ¶ 56.

308. Ex. Expert 6 (Hitt) ¶¶ 73-86; DX-4822; DX-4823; Trial Tr. (Schmalensee) 1935:22-1936:4.

309. Ex. Expert 13 (Cragg) ¶¶ 50-64; PX-1023; PX-1022; Trial Tr. (Schmalensee) 1935:22-1936:16; Trial Tr. (Cragg) 2280:15-23.

Third, Dr. Hitt analyzes *Fortnite* data following its removal from iOS. As described above for Dr. Evans, this evidence is mixed at best: while some iOS-only *Fortnite* players switched, that number was not significant enough to recoup losses and represented only 16% of playtime minutes and at most half of Epic Games' revenue from these users. Thus, the Court does not consider it persuasive either way.[310]

Accordingly, Dr. Hitt's and Dr. Cragg's analyses show evidence of both substitution and complementary playing without a definitive answer either way.[311] Ultimately, the Court proceeds without resolving the issue on this record.

3. Gaming v. Non-Gaming and Apple's App Store

As explained above, Epic Games argues that its aftermarket should be defined to include all apps not just gaming apps as the distribution on the App Store is not limited.

The evidence demonstrates that the App Store, in its current form, generates virtually all its revenue upon a business model now rooted in the gaming market: both on game developers and gaming consumers. This is proved by both financial considerations and other notable distinctions

310. Dr. Hitt also relies on evidence from Spotify and Netflix subscription option removals from iOS apps. As this evidence concerns subscriptions, not games, the Court does not consider it for the reasons stated above.

311. Ex. Expert 6 (Hitt) ¶¶ 94-105.

between gaming and non-gaming apps. The Court notes eight other significant differences which exist between game apps and non-game apps as the Court considers the relevant product market.

First, in recent years, game app revenues constitute between 60-75 percent of all app transactions for Apple's App Store. Indeed, game app transactions are responsible for a significant majority of the revenue generated in the App Store.[312]

Second, there is industry and public recognition of a distinct market for digital game app transactions as opposed to non-gaming apps. Indeed, many general app stores on mobile and tablet devices, including the App Store, Google Play app store, and the Amazon App Store, distinguish between game transactions and non-game transaction by categorizing game apps into a separate tab of apps entirely. This distinction reflects the recognition by the platforms that consumers distinguish between these types of apps, and that both consumers and platform owners would benefit from having games apps separately gathered in one place.[313]

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312. The precise numbers are found in sealed documents. *See* Ex. Expert 6 (Hitt) ¶ 117 (62.9% in 2018); Trial Tr. (Hitt) 2126:16-19 (same); DX-4178.006 (76% in 2017); PX-0059.007 (68% in 2019). As previously discussed, *supra* n.243, the Google Play app store appears to be similarly built and reliant upon revenues generated from gaming apps and transactions. *See also* DX-3913.004-.013.

313. Trial Tr. (Schmid) 3205:4-11; Ex. Expert 6 (Hitt) ¶ 126, Fig. 35; Ex. Expert 7 (Lafontaine) ¶ 26; DX-5552.

Both Apple's App Store and internal business structure support and reflect this division. On the App Store, editors consider a different set of factors when curating games for spotlight marketing (*i.e.* the "Today" page) than they do when curating other non-gaming apps. Moreover, Apple internally tracks the categories differently, as Apple routinely tracked "Games" billings separately from other parts of the App Store business. Further, there are two heads of business development for the division spearheading the App Store: one division head specifically for games and another division head for all non-gaming categories.[314]

Third, game app transactions are a distinct product because they exhibit peculiar characteristics and uses. Game apps and their transactions are not substitutes for non-game apps, which include a diversity of categories and purposes. Indeed, Dr. Evans conceded and confirmed in a lengthy exchange that game transactions are *not* substitutes for non-game transactions on the App Store. Epic Games' other expert witness, Dr. Cragg, contradicted Dr. Evans on this point by asserting the opposite—that non-game transactions are substitutes for game transactions.[315] The Court finds Dr. Evans more credible on this point.[316]

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314. Trial Tr. (Fischer) 933:12-20; Trial Tr. (Schmid) 3205:4-11, 3226:8-12; Ex. Expert 6 (Hitt) ¶ 127; Ex. Expert 7 (Lafontaine) ¶ 26; DX-4178.006; DX-4399.008.

315. Ex. Expert 6 (Hitt) ¶ 117, Fig. 30; Ex. Expert 7 (Lafontaine) ¶ 26; Trial Tr. (Evans) 1641:7-1642:24; Trial Tr. (Cragg) 2301:19-2302:1.

316. Apple demonstrated on cross examination that Mr. Cragg was willing to stretch the truth in support of desired outcome for his

Fourth, game developers often use specialized technology to create their game apps. For example, specialized middleware tools like the Unity engine and Epic Games' *Unreal Engine* are primarily used by game developers. Using these specialized tools and graphics engines, game developers tend to "really push the limits of what graphics processing can do" to the extent that they are "in a different category" from other developers as a result.[317]

Fifth, game apps have distinct consumers and producers: gamers and game developers. Gamers are recognized as a discrete, albeit diverse, subset of app consumers. Moreover, game developers, including Epic Games, tend to specialize in the development of game apps and related gaming software. For instance, among the set of developers who had sold at least one game or item of in-app content in 2019, 88% of their App Store revenue was derived from game apps. Indeed, as Michael Schmid, Head of Game Business Development at Apple, remarked:

> So game developers are quite separate from app developers in many circumstances. There are exceptions like big organizations like Microsoft that, you know, have Microsoft Office as well as, you know, Minecraft and other — other games.

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client. By contrast, Dr. Evans was willing to concede points contrary to the position of his client. The Court finds this difference significant in weighing the credibility of each.

317. Trial Tr. (Schmid) 3226:23-3227:13; Ex. Expert 6 (Hitt) ¶ 265. The Court notes, however, that, at least with respect to *Unreal Engine*, there is also evidence that it has some application beyond the game creation. *See supra* Facts § I.B.1.

> But generally speaking, game developers are focused on just developing games, and app developers are often focused on a single app or a suite of apps.[318]

Sixth, game app transactions differ in pricing structure, including in monetization models and effective prices, from non-gaming app transactions. In general, games monetize in different ways than do non-gaming apps. For example, game apps make nearly all of their revenue from in-app purchases (non-subscriptions). This differs from other major categories of apps, where music, fitness, and other apps make virtually all of their revenue from subscriptions. Indeed, there were no game apps among the top subscription apps for fiscal year 2019.[319]

Moreover, the pricing and effective commission paid on each transaction differs significantly between game apps and non-game apps. Specifically, there is considerable variation in the average transaction price between app genres, including game apps and other apps. For example, the average transaction price for game apps is $ 9.65, while the averages for other app genres range between $ 7.11 for photo and video apps and $ 14.10 for health and fitness apps. Similar variation between game apps and non-game

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318. Trial Tr. (Schmid) 3226:13-22, 3350:5-3352:3; Ex. Expert 6 (Hitt) ¶ 125, Fig. 34; DX-3248.019-.020.

319. Trial Tr. (Lafontaine) 2045:3-9; Trial Tr. (Hitt) 2188:18-2189:8; Trial Tr. (Schmid) 3227:14-24 ("[M]any app developers now are really focused on subscription revenue and growing a subscription business, whereas game developers not as much."), 3230:1-20; Ex. Expert 6 (Hitt) ¶¶ 121-23, Figs. 30-32; PX-0608.016.

apps is found in the average download price for apps and the effective commission paid on each transaction.[320]

Seventh, game apps are distributed by specialized vendors. The availability of game apps versus non-game apps in the wider market different significantly. Indeed, game apps have multiple avenues for distribution through various transaction platforms and devices, which differs in both kind and degree from those available to non-gaming apps. Some of these devices and platforms available to gaming apps are specifically designed for such games—and not non-gaming apps. For example, game consoles (PlayStation, Xbox, Switch) are designed with gaming as their primary purpose with other limited related entertainment functionality (*e.g.*, film, music, and television streaming). Similarly, the game transaction platforms available on these devices focus almost exclusively on game transactions, including the PlayStation Store, Xbox Game Store, and Nintendo eShop.[321]

Eighth and finally, platforms providing game app transactions are subject to unique and emerging competitive pressures. The rise of hybrid console platforms along with cross-platform games and cross-platform gaming services (*e.g.*, cloud-based streaming services) reflect the ongoing dynamic nature of the wider gaming market. For instance, Nvidia's GeForce Now

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320. Ex. Expert 6 (Hitt) ¶¶ 123, 124, Figs. 32-33.

321. Ex. Expert 6 (Hitt) ¶ 117; Ex. Expert 7 (Lafontaine) ¶ 34; Ex. Expert 8 (Schmalensee) ¶ 104; Trial Tr. (Wright) 555:13-556:5, 583:8-18; Trial Tr. (Grant) 697:14-20.

game streaming platform (available via web browsers or the GeForce Now client) only became available in February 2020 and has a library of 850 games (including *Fortnite*, though planned to be released in October 2021 on GeForce's iOS game streaming service), with 2,500 games to be added. Microsoft similarly is in development of its own cloud gaming service, internally named xCloud, that will be added to its Game Pass Ultimate Subscription.[322] With these numerous alternative distribution options, developers are having to determine in the initial planning which platforms to utilize in creating game apps. This compares to non-game app developers who generally distribute on more limited devices and platforms. As an example: Mr. Schmid credibly remarked on the state of the market for developers:

> On the game side it's very common. Some of our biggest game developers will have games on many different platforms. Sometimes those games are cross-platformed. Sometimes they are specific to mobile or even exclusive to a console in certain cases.

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322. Ex. Expert 8 (Schmalensee) ¶¶ 104, 107; Trial Tr. (Wright) 565:20-566:1; Trial Tr. (Patel) 422:12-15, 427:4-17, 429:11-14, 461:13-462:5, 477:7-15, 526:15-18; Trial Tr. (Sweeney) 176:22-177:12. *See also infra* Facts § II.D.3.d. Indeed, the Court notes that the only third-party app stores that Epic Games identified during the course of the bench trial as having sought to be offered through the App Store are "gaming app stores," and not "any other kind of store." *See* Trial Tr. (Evans) 1552:22-1553:8. This suggests that there are indeed competitive pressures and consumer demands for games apps that are incentivizing and encouraging game developers to reach consumers through multiple platforms.

> On the app side, same thing except it's more typical that an app, for instance, like Yelp would be -- the entity itself, the company, and the app would only be, you know, one app as opposed to a game developer that would have many games.[323]

Accordingly, in light of the foregoing, the Court finds that there is a substantial distinction between the transactions for gaming apps and non-gaming apps.

C. Epic Games: Facts Relevant to iOS In-App Payment Processing Aftermarket

Epic Games' assertion that the iOS in-app payment processing aftermarket is a relevant antitrust market relies on the assumption that Apple maintains a "lawful monopoly in the iOS app distribution market."[324] Because Epic Games cannot show such a market even exists, the argument fails at the outset.

Nevertheless, the Court addresses the argument because another fundamental problem exists. As discussed below, one must define an antitrust market in terms of the relevant product. If there is no product, such as with the mobile operating systems discussed above, there can be no market based thereon. Plaintiff's proposal begs the question of whether IAP is a product.

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323. Trial Tr. (Schmid) 3207:10-18.

324. Ex. Expert 1 (Evans) ¶ 220.

Appendix B

Apple's IAP or "in-app purchasing" system is a collection of software programs working together to perform several functions at once in the specific context of a transaction on a digital device. Apple uses the system to manage transactions, payments, and commissions within the App Store, but it also uses the system in other "stores" on iOS devices, such as "the iTunes Store on iOS, Apple Music, iCloud or Cloud services" and "physical retail stores".[325] The system is not something that is bought or sold.

IAP is not integrated into the App Store itself, even though it is integrated into an iOS device.[326] By "integrated," the Court only means that the application has been engineered specifically to work seamlessly on the device. Neither side focused on the engineering to find otherwise.

More specifically, Apple's IAP, as used here, is a secured system which tracks and verifies digital purchases, then determines and collects the appropriate commission on those transactions. In this regard, the system records all digital sales by identifying the customer and their payment methods, tracking and accumulating transactions; and conducts fraud-related checks. IAP simultaneously provides information to consumers so that they can view their purchase history, share subscriptions with family members and across

325. Ex. Depo. 12 (Gray) 65:17-22, 66:23-67:2, 110:2-7, 110:9-15; PX-0523; PX-0526.

326. *See, e.g.*, PX-0526.

devices, manage spending by implementing parental controls, and challenge and restore purchases.

Apple also intends the system to provide the customer with a single interface which can be used, and trusted, with respect to all purchases regardless of the developer. Importantly, the system has become more sophisticated over time, but the record does not detail the various versions.[327] Notably the IAP system requires developers to independently verify delivery of inapp purchasing content; it cannot verify that kind of delivery itself.[328]

With respect to the commission and the transfer of money between a developer and both Apple and the consumer, Apple engages third-party payment processors.[329] Given the volume of transactions at issue, Apple pays those processors somewhere in the range of one to two percent.[330]

The Court agrees that simple payment processing can occur outside of IAP and plaintiff points to examples

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327. PX-0526; Ex. Depo. (Forstall) 252:06-252:13, 252:16-254:10; Trial Tr. (Schiller) 2796:4-2799:11.

328. Ex. Depo. 12 (Gray) 112:18-114:10.

329. Trial Tr. (Schiller) 2796:4-2799:11; Ex. Expert 8 (Schmalensee) ¶¶ 136, 161-62; Trial Tr. (Evans) 1565:3-6; 1664:16-18 (Q: ". . . I'm asking you if in your relevant market, Apple is a competing payment processor? A. Largely no.").

330. Ex. Depo. 12 (Gray) 78:10-79:8.

of this happening in 2009.[331] However, those examples only concern simple payment processing, *not* all the functionality outlined in the preceding paragraph, including the functionality to ensure Apple received its commission. Nor do the examples show that Apple was waiving its commission for those developers. Rather, in December 2008, the product was new, so, by definition, in flux.

Epic Games ignores this other functionality to argue that Apple merely "matches" developers to consumers; a "matching" service.[332] This statement is partially true, but Apple has never argued that it levies a commission merely because it matches the developers with the customers. Apple argues that it uses this model to monetize its intellectual property against the entire suite of functions as well as to pay for the 80% of all apps which are free and generate no direct revenue stream from the developers other than the annual $ 99.00 developer fee.

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331. *See* Ex. Depo. (Forstall) 230:05-231:02; PX-0888; PX-1701.002; PX-1813; PX-1818.001; PX-1703.001-.002; PX-1709.001. Mr. Forstall testified that he generally remembered that developers were trying to collect payment directly through apps prior to 2009, but Epic Games introduced only stray emails to show this took place. Regardless, Epic Games does not claim that Apple had market power in 2009, so this theory of purported price increase has little relevance. Ex. Depo. (Forstall) 230:05, 230:16-230:18, 230:20-230:22; Trial Tr. (Evans) 1670:24-1671:2; *e.g.*, PX-1709. Moreover, it merely shows that the nascent business was in flux.

332. As noted above, this aftermarket relies on the distribution market where the "match" is made. Payment is necessarily rendered thereafter. *See* Trial Tr. (Evans) 1596:8-1597:1.

Creating a seamless system to manage all its e-commerce was not an insignificant feat. Further, expanding it to address the scale of the growth required a substantial investment, not to mention the constant upgrading of the cellphones to allow for more sophisticated apps.[333] Under current e-commerce models, even plaintiff's expert conceded that similar functionalities for other digital companies were not separate products.[334] Under all models, Apple would be entitled to a commission or licensing fee, even if IAP was optional.[335] Payment processors have the ability to provide only one piece of the functionality. There is no evidence that they can provide the balance. Thus, the Court finds Epic Games has not shown that IAP is a separate and distinct product.[336]

D. Apple: Digital Video Game Market

Apple proposes that the wider global digital video gaming market is the relevant product market. Epic Games opposes this product market. The Court summarizes the

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333. Trial Tr. (Malackowski) 3619:2-14; Trial Tr. (Fischer) 933:20-934:16 (describing Apple's investment in the 2017 redesign); Trial Tr. (Schiller) 2877:2-20.

334. Trial Tr. (Evans) 1654:17-1655:22, 1657:8-22, 1659:25-1660:16 (agreeing that similar functionalities at Uber, Lyft, Grubhub, Wish, StubHub, DoorDash, Instcart, Postmates, Amazon Shopping, Wal-Mart, and eBay are not separate products).

335. Ex. Expert 8 (Schmalensee) ¶ 157.

336. Epic Games also relies on Section II.F. of its Findings of Fact which relates to iOS App Store Profitability. In evaluating IAP, the Court has focused on functionality.

evidence with respect to global digital video gaming. Given how the cases was litigated, much of the evidence relates to plaintiff specifically.

1. Defining a Video Game

The Court begins with a definition of "video game." Unfortunately, no one agrees and neither side introduced evidence of any commonly accepted industry definition. The evidence included one witness, Mr. Weissinger, who acknowledged that, even with his deep background in the gaming industry, he was not familiar with any industry standard definition of a video game.[337] Mr. Sweeney, for instance, defined a game as follows:

> I think game involves some sort of win or loss or a score progression, on whether it is an individual or social group of competitors. With a game you're trying to build up to some outcome that you achieve, as opposed to an open-ended experience like building a *Fortnite Creative* island or writing a Microsoft Word document. There is no score keeping mechanic and you are never done or you never win.[338]

Mr. Trystan Kosmynka, Apple's current Head of App Review, admittedly "not an expert in gaming,"[339] noted

337. Trial Tr. (Weissinger) 1297:25-1298:2 ("Q. In your view, is there an industry standard definition of what could be called a game? A. I don't think so, no.").

338. Trial Tr. (Sweeney) 328:13-19.

339. *Id.* 1190:10.

that "games are incredibly dynamic," that "[g]ames have a beginning, [and] an end," and that "[t]here's challenges in place."[340]

At a bare minimum, video games appear to require some level of interactivity or involvement between the player and the medium. In other words, a game requires that a player be able to input some level of a command or choice which is then reflected in the game itself.[341] This gaming definition contrasts to other forms of entertainment, which are often passive forms enjoyed by consumers (*e.g.*, films, television, music). Video games are also generally graphically rendered or animated, as opposed to being recorded live or via motion capture as in films and television.[342]

Beyond this minimum, the video gaming market appears highly eclectic and diverse. Indeed, neither Mr. Sweeney's nor Mr. Kosmynka's descriptions, which focus on linear narratives and competitive modes, captures the diversity of gaming that appears to exist in the gaming

340. Trial Tr. (Kosmynka) 1015:23-25.

341. For instance, the Court is generally aware that one of the first commercially successful games, *Pong*, consisted of minimal input from the player of moving a paddle up or down. Of course, modern console, computer, and mobile gaming now permit dynamic inputs beyond just one input. For instance, modern controllers for gaming consoles now include at least two analog sticks, a directional pad (d-pad), and several buttons found on both the front face and side edges of each controller. *See generally* PX-2776 (Nintendo Switch); PX-2777 (Sony PlayStation 5); PX-2778 (Microsoft Xbox Series X).

342. Though, the Court understands that some games, such as older *Mortal Kombat* games, have utilized motion capture technology in rendering graphics and animations in the game.

industry today. Mr. Allison acknowledges that while some games are competitive, and are appropriately labeled as such on the Epic Games Store's website, other games are not necessarily competitive.[343] Given the genre of simulation games like *The Sims* or *SimCity*, or open-ended sandbox games like *Minecraft*, the Court cannot conclude that any linear narrative is required to qualify as a video game.[344] Thus, the Court concludes that video games include a diverse and eclectic genre of games, that are tied together at minimum through varying degrees of interactivity and involvement from a game player.[345]

Some of Epic Games' fact witnesses suggested in their testimony that *Fortnite* was much more than a video game: it is a metaverse. The Court previously discussed Mr. Sweeney's sincere beliefs as to *Fortnite* and the metaverse. A metaverse is a virtual world in which a user can experience many different things—consume content,

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343. Trial Tr. (Allison) 1241:16-1242:18. Although not in the record, the Court generally understands that: (1) *The Oregon Trail* is a game that simulates crossing the United States of America via the historic Oregon Trail in the nineteenth (19th) century; and (2) that *The Sims* is a life simulation game that simulates general modern life (*i.e.*, socializing, employment, romance, family, skills, etc.) through player characters known as sims.

344. Of course, many games are also narrative driven as recognized by Mr. Kosmynka. Microsoft's internal review of *The Last of Us Part II*, a Sony PlayStation exclusive video game, confirms that at least some games are focused more on the narrative of the game as opposed to the game play itself. *See* PX-2476.002.

345. Indeed, the genre of gaming seems to include a diversity of genres and styles, with no strict consensus on what a game *must* include in order to be defined as a game.

transact, interact with friends and family, as well as play.[346] According to Mr. Sweeney, game play need not be a part of a user's metaverse experience, which is more to mimic the reality of life than to present game play.[347]

As discussed, to Messrs. Sweeney and Weissinger "*Fortnite* is a phenomena that transcends gaming."[348] Because of the inclusion of these social and creative experiences, Mr. Weissinger testified that he would not consider the *Party Royale* and *Creative* modes as qualifying as a game.[349]

Plaintiff's characterization of *Fortnite* notwithstanding, the Court need not reach a conclusive definition of a video game or game because by all accounts, *Fortnite* itself is both externally and internally considered a video game.[350]

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346. Trial Tr. (Sweeney) 99:17-22; Trial Tr. (Weissinger) 1295:10-11 (describing a metaverse as a "social place where people can experience events together and hang out together"); Trial Tr. (Kosmynka) 1127:18-23 ("So my own understanding of the Metaverse is a . . . virtual world where you go with your particular character and are with players that you know, players you may not know, and you navigate around that Metaverse, which could include additional worlds in various experiences.").

347. Trial Tr. (Sweeney) 99:23-25.

348. *Id.* 98:6-8; Trial Tr. (Weissinger) 1295:8-21.

349. Trial Tr. (Weissinger) 1439:8-11 ("There are experiences beyond that, and there are some experiences that are separate and excluded from that as well. So there are some that I don't think I would qualify it as a game.").

350. Trial Tr. (Sweeney) 93:22-94:17, 111:13-17, 116:6-12, 324:14-23; Trial Tr. (Wright) 647:24-25; DX-5552; Trial Tr. (Allison) 1246:7-

Epic Games markets *Fortnite* to the public as a video game,[351] and further promotes events within *Fortnite* at video game related events.[352] Although *Fortnite* contains creative and social content beyond that of its competitive shooting game modes, there is no evidence or opinion in the record that a video game like *Fortnite* is considered by its parts (*i.e.*, the modes within the game) instead of in its totality. By both Mr. Sweeney and Mr. Weissinger's own descriptions, the metaverse, as an actual product, is very new and remains in its infancy.[353] At this time, the general market does not appear to recognize the metaverse and its corresponding game modes in *Fortnite* as anything separate and apart from the video game market.[354] The

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1247:18; Trial Tr. (Weissinger) 1354:1-1376:15 (explaining the various game modes within *Fortnite*, all of which are and/or contain games).

351. *See, e.g.*, DX-5536.001; Trial Tr. (Allison) 1245:9-1247:18 (discussing DX-5536.001); DX-5541 (YouTube video demonstrating game play mechanics of *Fortnite*); Trial Tr. (Schmid) 3205:1-3 ("Q. And do you know, for example, what category of app Epic chose for *Fortnite*? A. They chose games.").

352. *See* Trial Tr. (Weissinger) 1336:11-15 (describing then upcoming collaborated events at the "Video Game Awards").

353. *See* Trial Tr. (Weissinger) 1295:9-10; Trial Tr. (Sweeney) 99:14-15; Trial Tr. (Schiller) 2834:24-2835:5.

354. There was also much discussion about a similar metaverse game, *Roblox*, which contains creative experiences that are similar to those offered in the creative and party modes in *Fortnite*, and whether it too qualified as a video game. The discussion was not initially helped by Mr. Kosmynka, whose self-acknowledged unfamiliarity with the video game market and lack of knowledge on *Roblox*'s game classification caused him to use imprecise terminology in his testimony. *See* Trial Tr. (Kosmynka) 1015:18-1016:7, 1190:9-

Court need not further define the outer boundaries of the definition of video games for purposes of this dispute.[355]

2. General Video Game Market

The wider video game market appears dynamic, innovative, and competitive. This wider market includes at least four distinct submarkets for digital game app distribution:

1. online mobile app transaction platforms (*i.e.*, the App Store, the Google Play app store, and the Samsung Galaxy Store);

2. online gaming stores found on desktop and personal computers ("PCs"), including online transaction platforms focused on game

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1191:6. Indeed, Mr. Schmid noted that while *Roblox* may have renamed the internal games offered within *Roblox* as "experiences," it is "not saying that *Roblox* has decided they are no longer a game." Trial Tr. (Schmid) 3295:15-17.

355. The Court leaves the thornier further questions of what is properly included and excluded in the definition of a video game to the academics and commentators. For instance, one example that arose beyond the issue of *Roblox* was the recent genre of films and shows on Netflix that allow users to make a choice akin to a "choose your own adventure," including in *Black Mirror: Bandersnatch*, and *Unbreakable Kimmy Schmidt: Kimmy vs the Reverend. See* Trial Tr. (Wright) 576:24-577:2. The Court need not determine whether this interactivity is sufficient to convert these forms of media into a video game. Suffice it to say, these examples as well as the ongoing efforts in the metaverse, appear to be an ongoing trend of converging entertainment mediums where the lines between each medium are beginning to mesh and overlap.

distribution (*e.g.*, Valve Steam), and developers' own stores that directly distribute their games (*e.g.*, Epic Games Store);

3. digital stores on consoles (*i.e.*, Sony PlayStation, Microsoft Xbox, and Nintendo Switch); and,

4. more recently, streaming game services (*e.g.*, Nvidia GeForce Now, Microsoft Xbox Cloud Gaming, Google Stadia).[356]

The gaming market today is the result of actions taken by competitors in the last two decades. The first successful online platform focused on game distribution was Steam, which launched in 2003. Steam By pioneering digital distribution on the PC, Steam enjoyed "a real boom in both Steam's business and just PC gaming and digital gaming in general." Steam "is a dominant player in the space and was in 2018 with 70 to 85 percent market share depending on how you define the space."[357]

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356. Trial Tr. (Sweeney) 95:23-96:1, 135:21-24, 138:23-25, 177:23-178:14; Trial Tr. (Wright) 637:18-24, 642:19-643:5 (stating that mobile is part of the gaming industry); DX-5532.011 (Microsoft 10-K); Trial Tr. (Schiller) 2748:7-13, 2867:9-20; Trial Tr. (Schmid) 3240:1-7 ("We [Apple] compete with Google Play and the other many Android marketplaces. We compete with the consoles, so Switch, PlayStation, Xbox. We certainly compete with PC and the — the PC stores like Epic Games Store or Steam. And now more and more we're competing with the cloud gaming and — and the many companies that are getting involved in cloud gaming.").

357. Trial Tr. (Allison) 1201:23-1204:24, 1248:12-22; Trial Tr. (Sweeney) 173:13-74:25.

Steam's success resulted in the rise of other PC-focused digital distribution platforms. In addition, the console platform owners created their own digital marketplaces: Microsoft launched Xbox Live Marketplace in 2005 (now Xbox Games Store on Xbox Series X and S), Sony launched the PlayStation Store in 2006, and Nintendo launched the Wii Shop Channel that same year (now the Nintendo eShop on the Switch). Most of these platforms, including Steam, charged a 30% commission.[358]

Since the App Store launched in 2008, the marketplace participants for game app distribution increased.[359] For example, Google announced the Android Market in 2008 (which later became Google Play in 2012), Nokia and Samsung launched their Ovi Store and Galaxy Apps Store in 2009, and Nintendo launched its eShop for its 3DS device in 2011.[360]

Today, "[t]here are many ways to monetize [an] app on the App Store," and Apple, like other industry participants, facilitates a variety of business models for developers. At least with respect to the App Store, there are at least five business models developers can use to make money on their apps: the free, freemium, subscription, paid, and

358. Ex. Expert 8 (Schmalensee) ¶ 41, Ex. 1; PX-2476.006 (discussing competing gaming stores); Trial Tr. (Wright) 546:7-15; *see also* Trial Tr. (Sweeney) 191:910.

359. Trial Tr. (Schiller) 2748:1-13; *see also id.* 2772:13-17; PX-0888 (describing competitor commerce models on Xbox, Nintendo, and PlayStation).

360. Ex. Expert 8 (Schmalensee) ¶ 41, Ex. 1.

paymium models. The record shows that under the "paid model," (also called the "download and install" model), for instance, a developer may charge a price for the user to download the app. As discussed, a developer may instead choose the "freemium model," allowing users to download an app for free but permitting in-app purchases. Alternatively a developer can offer subscriptions to users (for sale in the app, through a different platform, or online), can sell users digital currencies that can be used in the app (for sale in the app, through a different platform, or online), can sell advertisements in the app, or can charge for in-app promotions and events.[361]

3. Four Submarkets

The Court summarizes the evidence with respect to each of the four distinct submarkets as it impacts the market definition:

a. Mobile Gaming

With respect to mobile gaming, the two dominant players are Apple (App Store) and Google (Google Play app store), with several other Android OS players including the Samsung (Samsung Galaxy Store). Importantly, both third-party and internal market reports recognize mobile gaming as a distinct market within the wider video gaming

361. PX-2790.009; Trial Tr. (Fischer) 925:24-926:1; DX-4614; Trial Tr. (Schiller) 2768:1-8, 2773:23-2774:5, 2779:12-21, 2791:11-18, 2858:11-22, 3094:11-22, 3100:9-22.

market.[362] Indeed, mobile gaming is "a vast part of the overall gaming industry," so market participants, such as Microsoft, look "at mobile as a segment of the game industry as a whole," and "[i]n any industry analysis, mobile would have to be part of the consideration."[363] Subsumed in mobile gaming are related Android and iOS tablets offered by Apple, Google, Amazon, and Samsung.[364] Notably, whereas Apple iOS devices are closed platform or walled garden devices, Google Android devices are open platform devices.

Apple has always viewed Google Play as a significant competitor, including with respect to games transactions. There is further evidence of platform competition with the Samsung Galaxy store, as well.[365] Apple also understood that other Android marketplace platforms were competitive forces. For example, when Amazon launched its Android app marketplace, Mr. Schiller wrote internally: "[T]he 'threat level' is not 'medium', it is 'very high.'" Later, at the Fourth Annual App Store Global Management Team Summit, Apple spent considerable time discussing competition from Google, Samsung, and Amazon.[366]

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362. *See generally* DX-3248 (identifying mobile gaming as one segment in the video game industry); PX-2477/DX-5523 (same).

363. Trial Tr. (Wright) 638:9-11, 639:1-2, 643:1-2.

364. Trial Tr. (Grant) 697:10-13; *see also* DX-3248.004 (defining mobile gaming as tablets and smartphones); PX-2477/DX-5523.002 (defining mobile as "[g]ames executing locally on a phone/tablet form factor (e.g., Clash of Clans); primarily iOS and Android").

365. Trial Tr. (Schmid) 3239:23-3240:2; Ex. Expert 6 (Hitt) ¶ 142.

366. Trial Tr. (Schiller) 2866:1-20; DX-4447.001; DX-3734.041-.053.

Several other platform distributors own and maintain apps that offer some functionality and limited game streaming in connection with their original platforms. Steam also offers a variety of iOS applications through the App Store that allow Steam customers to manage their account and even stream games from their Steam library to their iOS device. PlayStation and Xbox have similar apps in the App Store that allow customers of those consoles to stream games from their consoles in order to play on their iOS device.[367]

Although relatively newer than both PC gaming and console gaming, mobile gaming constitutes a significant portion of the video gaming market. Indeed, as of 2017, it was forecasted that mobile gaming would generate *more than half of all game revenue globally*, and that the market would top more than $ 100 billion by 2021.[368] Similarly, Microsoft's internal report reflects that mobile gaming accounted for "more than half of the industry revenue in CY2019."[369]

Notably, the overwhelming majority of gaming revenue in mobile gaming derives from free-to-play games, or freemium model games.[370] As contrasted to other platforms, women gamers of all ages (*e.g.*, millennials, gen-x, and boomers) and gen-x male gamers are predominately

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367. Trial Tr. (Athey) 1843:7-19, 1844:10-14, 1851:1-23.

368. DX-3248.008.

369. PX-2477/DX-5523.008.

370. PX-2477/DX-5523.053; Trial Tr. (Schiller) 2791:11-18; Ex. Expert 8 (Schmalensee) ¶ 134; DX-3734.030.

more likely to play and game on mobile devices, with an overwhelming focus and interest on casual games.[371]

The mobile gaming market is slightly more nuanced domestically in the United States than it is globally. At least as of 2017, console gaming accounted for 43% of gaming revenue, whereas smartphone and tablets together accounted for approximately 40% of gaming revenue, with the remaining 17% of gaming revenue in browser and PC gaming.[372] Console gaming still accounted for a larger share in the United States and Western European countries, whereas mobile gaming generally made up a larger share of gaming revenue in the remaining parts of the world, but especially in Asia and in developing countries, where mobile gaming was already by 2017 the majority in gaming revenue.[373]

In general, the rate charged by platform owners such as Apple and Google, and those third-party app stores on Android such as Samsung, remain at 30%, notwithstanding both Apple and Google's recent moves to lower this rate for developers earning less than one million dollars annually to 15%. The Court notes however that some third-party mobile device marketplaces have decreased their rate after negotiations between it and developers.[374]

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371. *See generally* DX-4217. The Court notes that it uses the same terminology employed in the cited third-party report to describe the age ranges of certain groups.

372. DX-3248.028.

373. *See generally* DX-3248.

374. *See* Trial Tr. (Schiller) 2810:16-2811:5, 2815:17-23; DX-4168; DX-4096.001; Trial Tr. (Hitt) 2088:10-14; Trial Tr. (Cook) 3860:4-10; Ex. Expert 8 (Schmalensee) ¶ 41, Ex. 1.

b. PC Gaming

PC gaming is characterized by an open market which includes several digital gaming marketplaces, such as Valve Corporation's Steam Store and more recently Epic Games' Epic Games Store, and several direct distribution platforms operated by larger game developers. As noted above, Steam retains a significant market share in the PC gaming area.

In the United States, as of 2017 PC gaming only accounted for approximately 15% of all gaming revenue. Globally, PC gaming does not account for a majority of gaming revenue in any country, though it has a significant market around or at least one-third (1/3) share in several Eastern European countries and in both China and South Korea.[375] Of the demographics, "male boomer" aged gamed in the United States are more often playing games on the PC, with an interest in casual games.[376]

Similar to mobile gaming, PC gaming generated a majority of its gaming revenue from free-to-play or freemium games. Though, unlike mobile gaming, there is a sizable portion of PC gaming's revenue that is derived from pay-to-play games (*i.e.*, games purchased up-front).[377]

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375. *See generally* DX-3248.

376. *See generally* DX-4217; *supra* n.371 (using report terminology to describe age ranges).

377. *See* DX-5523.053 (23.3 billion attributed to free-to-play games versus 7.4 billion attributed to pay-to-play).

Appendix B

A platform's commission rate in the PC gaming area, historically 30%, now varies among the competing platforms. Steam's 30% cut, adopted since its inception in the early 2000s, was reduced in 2018 shortly before the launch of the Epic Games Store. Steam currently uses a tiered commission rate, whereby larger game sales and revenues decrease the commission rate, as low as to 20% for the highest tier of sales and revenues.[378] Meanwhile the Epic Games Store charges a 12% commission for app distribution, as well as a 12% commission for in-app purchases when the app developer chooses to use Epic Games' direct payment for in-app purchases.[379] Given that the 12% commission rate results in an operating loss, the move could be viewed as merely a litigation tactic. However, on the eve of trial, Microsoft recently announced, that it will be reducing its commission from 30% to 12% in the Windows Store.[380] In terms of digital game sales on PCs and Macs, the Epic Games Store is "[a] clear and strong number two" behind Steam.[381] *See*

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378. Trial Tr. (Allison) 1209:13-1210:1.

379. Trial Tr. (Sweeney) 126:1-7.

380. Trial Tr. (Wright) 553:17-554:6; Trial Tr. (Allison) 1221:4-7, 1275:20-1276:5 ("Microsoft has switched to an 88/12 share on the Windows 10 Store.").

381. *See* Trial Tr. (Sweeney) 123:15-124:5, 262:19-263:11, 263:22-265:4, 265:7-11; Trial Tr. (Allison) 1199:15-1200:1, 1243:3-11. Among those mentioned was Itchio.io. With respect to this app, Apple's counsel alluded to certain sexually explicit video games (*i.e.*, "Sisterly Lust") offered by Itch.io. Given that the corresponding materials (*e.g.*, storefront game pages) were not submitted to the Court, the Court cannot conclude one way or another whether this

supra Facts § I.B.3. With respect to its expansion to non-gaming apps, the move was likely litigation related. *Id.* In addition, many other developers launched major digital distribution platforms for their own and others' titles: Ubisoft launched Ubisoft Connect in 2012 and Bethesda launched Bethesda.net in 2016.[382]

c. Console Gaming

There are three recognized market participants in the console gaming arena: Microsoft Corporation Xbox Series X and S (formerly Microsoft Xbox One), Sony Corporation PlayStation 5 (formerly PlayStation 4), and Nintendo Co. Ltd. Switch.[383] The evidence reflects that the market is split between two similar products (*i.e.*, the Xbox and the PlayStation) fiercely competing on both power, graphics, processing, and speed, and one product (*i.e.*, the Switch) that has innovated to compete on mobility.[384]

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particular game, or other games offered on Itch.io, are as problematic as so alluded or suggested by Apple's counsel. Nonetheless, the Court finds that Apple's questioning and Mr. Allison's answers thereto illustrate some problems that may occur when permitting "stores within stores": namely, disparate guidelines and policies, and the difficulty of reviewing materials hosted by third parties. *See* Trial Tr. (Allison) 1257:5-1258:8, 1258:21-1259:22, 1280:20-1281:22.

382. *See* Ex. Expert 8 (Schmalensee) ¶ 41, Ex. 1.

383. *See* DX-5523.002 (defining console gaming as "[g]ames and services [offered] on home consoles (e.g. Xbox and PlayStation) and handheld/hybrid consoles (e.g. Nintendo Switch)").

384. *See generally* PX-2776 (Nintendo Switch); PX-2777 (Sony PlayStation 5); PX-2778 (Microsoft Xbox Series X).

These three devices are generally considered "single purpose" or "special purpose" devices—as compared to mobile and PC devices, which are more general-purpose devices. In other words, these gaming consoles are generally made for the narrower purposes of gaming or entertainment (*e.g.*, video or music streaming).[385] These platforms "are designed to give you a gaming experience. [For example, p]eople buy an Xbox because they want to play games." In contrast, mobile and computer devices are general-purpose devices because there is a "wide, wide variety" of "different ideas and applications that can come through it." As a special purpose device, for instance, Microsoft's Xbox console is designed and marketed "to optimize the game experience," and it cannot perform many of the functions that mobile devices can, such as requesting a rideshare, taking a photo, or obtaining driving directions.[386]

Both the Xbox Series X and S and the PlayStation 5 were released in 2020, with their prior models (the Xbox One and PlayStation 4) released in the 2010s. With respect to these two devices, both have substantially similar hardware that renders cutting edge graphics similar to those on certain PCs and desktops, and can render and run more realistic simulations than would be possible on

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385. *See* Trial Tr. (Sweeney) 138:23-25; Ex. Expert 1 (Evans) ¶¶ 50, 53-54; Trial Tr. (Evans) 1459:5-1461:20; *see also* Ex. Expert 6 (Hitt) ¶ 117; Ex. Expert 7 (Lafontaine) ¶ 34; Trial Tr. (Wright) 556:4-5, 583:8-13; Trial Tr. (Grant) 697:19-20.

386. *See* Trial Tr. (Wight) 535:20-536:12, 555:24-556:5, 557:10-15.

mobile or other devices.[387] Indeed, the PlayStation and Xbox have the same reliance on additional peripherals and equipment: namely, a television or screen, speakers, and a controller.[388] Both devices further require a constant connection to a power outlet, as well as, for some games, access to the Internet via WiFi or ethernet cable.[389]

Games developed for the Xbox and PlayStation leverage the competitive advantages inherent in these systems. For example, with respect to Xbox console games, "developers have taken a design choice to build an experience that they want to have rendered . . . with all the compute power, graphic fidelity, that this box provides." This contrasts to mobile games, which are generally designed for a "more casual" gaming experience and the "vast majority are free to play and then have in-app purchase mechanisms as part of them." In some instances, console game titles that are rewritten to run on iOS devices can be "different games" in that "[t]hey feel different," "operate different[ly]," and could be "leveraging the marketing brand of that," while being a "different version of the game that is written to run on [mobile devices]."[390]

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387. *See* Trial Tr. (Sweeney) 139:17-23, 145:18-20, 145:24-25.

388. *See id.* 138:18-21 ("A console is a fixed function device as [it is] typically plugged into a television and controlled using a game controller or a joystick."); Trial Tr. (Wright) 537:10-13.

389. *See* Trial Tr. (Wright) 536:13-537:13.

390. *See id.* 539:22-25, 636:11-17.

Appendix B

The remaining player in the console gaming market, the Nintendo Switch uniquely competes on a separate ground: mobility.[391] Nintendo introduced the Switch, a quasi-mobile device, in 2017, and the eShop became the Switch's online store.[392] Unlike the PlayStation and the Xbox, the distinguishing feature of the Switch is that it can be played in *either* a conventional console manner (*i.e.*, with a separate screen and controller) *or* a mobile handheld fashion (*i.e.*, in a modified tablet form, whereby the separating controllers attach to the sides of the tablet).[393] Because of this mobility, there is substantial overlap in the design, form, and function with mobile devices with

391. The Court notes a glaring lack of evidence on the Nintendo Switch, and its previously related but distinct products, in the record. Indeed, the Court is aware that both Sony and Nintendo, at one point, sold separate handheld gaming devices (*e.g.*, Nintendo Gameboy, Nintendo DS, Sony PlayStation Vita). No evidence or explanation was provided on what occurred with these products or the handheld device market, though, the Court surmises that the rise of the mobile gaming market likely subsumed the handheld gaming market and perhaps led to Nintendo's decision to switch to mobility as a competitive edge for the Switch. Regardless, the Court notes the lack of evidence on this point, as well, as the Nintendo Switch generally, where evidence is limited to third-party testimony and certain Nintendo documents. Indeed, neither party called a Nintendo affiliated witness in this action to inquire on issues of competition in the general or console gaming market. Instead, the Court is left with a limited record on these matters.

392. *See* Trial Tr. (Grant) 696:8-11; Ex. Expert 6 (Hitt) ¶ 190 & Fig. 1.

393. *See generally* PX-2776 (Nintendo Switch). Although not reflected in the record, the Court notes that one version of the Switch, the Switch Lite, can *only* be played in a mobile and handheld manner.

respect to gaming.[394] Moreover, Mr. Sweeney twice stated in a matter of minutes that the performance of *Fortnite* on the Switch and smartphones are, in fact, "similar."[395] The only identified difference between the Switch and certain mobile devices is that, like the PlayStation and Xbox, a Switch must also rely on a WiFi connection.[396] However, not all tablets, including some iPads, have or permit cellular connection, and must similarly rely on WiFi.[397]

Based on the business models and choices undertaken by the players in the console gaming market, both Microsoft and Sony are in more direct competition with each other, while the Nintendo Switch remains more distantly in the competitive orbit of these two devices. Microsoft considers Sony's PlayStation a "direct competitor" to the

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394. *See* Trial Tr. (Grant) 696:6-11 (describing similarities in screen size, portability, and other features between smartphones and the Switch); Ex. Expert 6 (Hitt) ¶¶ 87-91.

395. *See* Trial Tr. (Sweeney) 139:17-18 ("The performance of *Fortnite* and Nintendo Switch is similar to many smartphones."); *id.* 140:8-9 ("The performance of *Fortnite* on smartphones and Switch is similar.").

396. *See* Trial Tr. (Evans) 1459:5-1461:20; Trial Tr. (Sweeney) 140:9-11.

397. The Court notes that Epic Games' proposed product market includes both iPhone *and* iPad devices, without regard to whether these iPad devices are limited to those relying on cellular connections or not. Indeed, notwithstanding the distinction raised by some Epic Games witnesses, Epic Games states in its final proposed findings of facts and conclusions of law that "[t]here are no differences between iOS and iPadOS that are relevant to the facts herein." Epic Games FOF ¶ 25 n.1.

Xbox because of the similarities in the hardware of these devices. In contrast, Microsoft considers the Switch as competition to the Xbox but "to a *much* lesser extent."[398] In relation to other devices, Ms. Lori Wright, Microsoft's Vice President of Xbox Business Development, noted that Microsoft does not consider cellular or tablet devices such as the iPhone or iPad as competitors to the Xbox.[399]

Moreover, on the limited record before the Court, Microsoft and Sony appear to have a different business model whereby digital downloads, including games, in-app purchases, and downloadable content, and physical game purchases effectively subsidize the initial cost of the gaming device. There is some evidence that console manufacturers, especially Microsoft and Sony, sell hardware at a loss and recoup those losses through the subsequent sale of software.[400] This is in contrast to the

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398. Trial Tr. (Wright) 537:14-21 (emphasis supplied). Indeed, Ms. Wright only identified the Switch as a competitor after having been asked the substantively same question for a second time, wherein she identified the Switch as competition but qualified her answer by noting that the Switch competes "much less" than the PlayStation against the Xbox. *Id.* This appears to be in keeping with internal Microsoft documents reviewing its competitors, where numerous PlayStation games are identified over two-thirds of the page, in contrast to Switch games, which are limited primarily to just Nintendo published games and are relegated to the remaining third of the page along with games launched on PC. *See* PX-2476.006.

399. Trial Tr. (Wright) 537:22-538:2. There is no evidence one way or the other in the record to confirm whether Sony would have a different view than Microsoft on this question of competition.

400. *See* Trial Tr. (Wright) 551:24-13; Trial Tr. (Weissinger) 1350:18-1351:7; Trial Tr. (Evans) 1476:2-8. Apple contests this

limited documents and testimony that are in the record which reflect that Nintendo makes a profit on the sale of hardware, *i.e.*, the Switch.[401]

Despite these differences, there are similarities amongst the players in the console gaming market. Like iOS devices, the Switch, PlayStation, and Xbox have also adopted "closed platforms" or "walled gardens" as Nintendo, Sony, and Microsoft do not allow users to install software on their consoles outside of the platform's official store.[402] Moreover, unlike mobile gaming devices, console gaming platforms use similar controllers consisting of analog sticks, dpads, and buttons located on the face and edges of the controller.[403]

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assertion where Epic Games did not seek admission of any documents supporting that testimony, and no such documents are otherwise in the record. *See* Trial Tr. (Evans) 1736:3-20. The Court however finds Ms. Wright credible in her statements, especially wherein they are not particularly flattering revelations for her employer, Microsoft (*i.e.*, that Microsoft does not make a profit on the sale of the Xbox hardware).

401. DX-5322; *see also* Trial Tr. (Evans) 1736:21-24.

402. *See* Trial Tr. (Sweeney) 180:17-184:9; Trial Tr. (Wright) 554:10-16. The Court notes that Mr. Sweeney testified that he understood that Nintendo permitted "Switch games to be sold by at least one third-party retailer digitally." *See* Trial Tr. (Sweeney) 239:18-240:3. Mr. Sweeney did not identify this third-party retailer, nor is there any further evidence in the record reflecting any arrangement between Nintendo and a third-party with respect to a third-party digital store.

403. Trial Tr. (Grant) 695:4-9; *see also* PX-2274.001.

The standard commission rate across these console platforms is, like both the App Store and Google Play app store, 30%.[404] Although Epic Games witnesses and other third-party witnesses testified that console makers regularly engage in negotiations with developers and secure terms that factor into the overall value that the app developer receives.[405]

Compared to mobile gaming and PC gaming, the gaming revenue generated by console games in 2019 derived overwhelmingly from pay-to-play or buy-to-play games, as opposed to free-to-play or freemium games.[406] Demographics show that millennial male gamers are most often playing on a gaming console, with an interest in playing action games.[407]

d. Cloud-Based Game Streaming

A newer and ongoing innovation in the gaming industry includes cloud-based game streaming platforms. The companies involved in cloud-based game streaming include: Google Stadia, Nvidia's GeForce Now, Microsoft

404. *See* Ex. Expert 6 (Hitt) ¶¶ 161-162, 256; Ex. Expert 8 (Schmalensee) ¶ 41, Ex. 1; DX-3955.003; *see also* DX-3582.004-.005; DX-3464.012, .027, .031; Trial Tr. (Sweeney) 142:19-143:1, 161:13-15; Trial Tr. (Weissinger) 1349:14-23.

405. Trial Tr. (Sweeney) 310:1-17; Trial Tr. (Schmalensee) 1958:1-3; Trial Tr. (Wright) 586:11-21.

406. *See* DX-5523.002, .053.

407. *See generally* DX-4217.

Xbox Cloud Gaming, and Amazon's Luna. Cloudbased game streaming services provide the experience of playing a game on a device that is being streamed from a remote data or server center. Unlike the other video game submarkets, cloud-based game streaming is not tied to a single device, and is instead a multi-platform service. Indeed, Microsoft has recognized in its 10-K that its Xbox Live services face competition from Amazon, Apple, Facebook, Google, Tencent, and these new "game streaming services."[408]

In light of the unique and innovative nature of cloud-based game streaming, certain issues arise that do not otherwise arise as compared to other gaming submarkets. Game streaming operates similarly to audio and television/film streaming, but further requires the transmission of user input in the game to a remote data center which then processes and renders the user's inputs and choices in the game back to a user's device through an audio and visual stream. The service at minimum requires some wireless or cellular connection to maintain connectivity to these remote data centers. Given this technological framework, the most significant of these issues is the issue

408. Trial Tr. (Sweeney) 135:21-136:5, 177:18-178:14, 256:16-25; Trial Tr. (Cook) 3866:14-22; Trial Tr. (Hitt) 2119:20-2120:14; Trial Tr. (Patel) 422:1, 442:5-12, 471:10-472:21; Ex. Expert 6 (Hitt) ¶ 144; Ex. Expert 6 (Schmalensee) ¶ 120; Trial Tr. (Wright) 647:5-13. The Court notes that Mr. Patel's allegiances became quite apparent when he reluctantly, and hesitantly, equivocated in answering basic questions on cross examination with respect to cross-platform playing of games. Trial Tr. (Patel) 463:18-464:16. The Court accepts his testimony with some discounting based on his bias for controversial issues.

of latency. As Mr. Aashish Patel, the Director of Product Management for Nvidia's GeForce Now, describes it, latency "[a]t a high level, [i]s from when you trigger an action to when you see the effect of an action."[409] In other words, latency is the time it takes between when an action is input into a controller or device and when the change is reflected in game. Methods reducing latency ensure there is no lag or delay in displaying the changes on screen or in game. Higher latency can impact game play, especially in certain competitive games.[410]

The Court summarizes the game streaming services from the record: Google Stadia is a game streaming service launched in November 2019 and is available on iOS through web streaming. Stadia offers a subscription model that provides access to a library of games.[411]

Nvidia GeForce Now launched in February 2020 and is also accessible through iOS as well as through the GeForce Now client. Nvidia GeForce Now allows users to stream games previously acquired or purchased from

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409. Trial Tr. (Patel) 433:13-17.

410. *Id.* 422:2-7, 434:18-23 ("Depending on the user and the game, the user may feel uncomfortable with the latency, doing an action and seeing the action performed later, it could result in if they are in a racing game, turning too late, for example."), 435:5-11 ("Depending on the game, yes, there can be competitive disadvantages for a user with higher latency."); Trial Tr. (Sweeney) 135:18-136:9; Trial Tr. (Grant) 712:17-714:10.

411. Trial Tr. (Sweeney) 256:16-25; Trial Tr. (Fischer) 901:19-21, 902:8-11; Ex. Expert 6 (Hitt) ¶ 144.

digital game distribution platforms (such as Steam or Epic Games Store). The GeForce service played on iOS as a web-based service has received mostly positive reviews and has performed excellently even on older devices, notably for which Apple receives no commission or payment. By the third quarter 2020, GeForce had 5 million users with a goal of doubling that within a year. GeForce also has doubled its price for new users. Mr. Patel also raised the issue of the need for an Internet connection and capacity issues for streaming, but those issues arise regardless of whether GForce is offered as a native app or a web app. With expanding bandwidth over the past five years, the overall streaming experience is now vastly better.[412]

Microsoft Xbox Cloud Gaming with Xbox Game Pass Ultimate (formerly known as Project xCloud) is another subscription-based streaming service that allows users to stream games to their Android devices. Xbox Cloud Gaming became available for selected Android devices and was recently launched on iOS, after some support from Apple engineers, in beta version. Press reviews say that the Xbox Cloud Gaming experience is very strong on PC and iOS. Ms. Wright states that it is a "great sign" for the prospects of Xbox Cloud Gaming that the beta is expanding. Epic Games does not support Xbox Cloud

412. Trial Tr. (Sweeney) 137:12-16; Trial Tr. (Patel) 422:12-15, 425:4-11, 456:15-24, 458:6-18, 459:18-460:5, 460:8-461:3, 464:11-465:1, 466:18-24, 469:18-23, 470:4-15, 471:25-472:21, 473:24-474:13, 475:5-15, 476:12-19 (acknowledging that "Nvidia and GeForce Now are not in the middle of that transaction" and receive no commission and instead all of that revenue goes to the developer).

Gaming because it views "Microsoft's efforts with xCloud to be competitive with Epic Games' own PC offerings.[413] The Court understands that Epic Games therefore views certain multiplatform game streaming services as a threat to its currently single platform game store.

The Court notes that with respect to the iOS platform, both Nvidia and Microsoft maintain web apps instead of native apps. This is due to Apple's guidelines and rules prohibiting stores within applications and requiring the submission of each individual game to the App Store. Both companies would prefer to provide their services as native apps instead of web apps due to the ease of both optimizing the experience for game streaming users on devices and reducing latency. Neither company, however, provided evidence or testimony on the relative differences in latency between webs apps and native apps, even as to the iOS platform's Safari web browser. The Court cannot otherwise discern based on the limited record whether being limited to web apps has otherwise affected these services—especially considering the foregoing evidence showing positive reception among consumers and the industry to both services on the iOS platform.[414]

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413. Trial Tr. (Wright) 565:20-567:19, 609:22-11:7, 611:21-621:1, 613:11-12; Ex. Expert 8 (Schmalensee) ¶ 120; Ex. Depo. (Kreiner) 106:19-107:6.

414. Trial Tr. (Patel) 427:9-428:6, 429:11-430:2, 433:13-434:17, 438:11-14; 530:24-531:22; Trial Tr. (Wright) 577:3-579:10. Mr. Patel only characterized the additional latency as a result of using web apps as "a bit higher" than native apps, but otherwise provided no relative or quantitative comparison. Trial Tr. (Patel) 434:16-17. Indeed, Mr. Patel's later testimony hedged as to the actual latency problems with

4. Competition Among Platforms and Findings of Relevant Product Market

Given the multitude and diversity of platforms available to consumers, it is not surprising that there is, at a base and general level, *some* competition amongst them in the overall video game market. As Mr. Sweeney remarked publicly in 2012:

> [W]e have a lot of platforms coming together. There are the tablet platforms, there are the smartphone platforms, and computers, you know, PC and Macintosh, and then there are consoles, Xbox 360, PlayStation, Wii, and some new handheld dedicated gaming devices, and God knows what else.
>
> This is too many platforms. And we're seeing now, iPad sales have surpassed the sales of desktop PCs. That's a real revelation to me. This is a product that wasn't invented until a few years ago, and it's basically supplanting the personal computer industry as we know it.

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web apps, and he further did not identify any specific latency issues with the iOS platform's Safari web browser. *Id.* 530:1-16 (responding that with web apps, "you *could* argue that in some instances, it's worse than native application decoding," and web apps "*could*" increase latency (emphasis supplied)). Mr. Patel later conceded that regardless of whatever app model they used (*e.g.*, web app or native app), "[t]he majority of the process is the same." *Id.* 532:2-9.

> Over time, these platforms will be winnowed down into a much smaller set of competing platforms. You know, there might be one or two or maybe three winners worldwide across everything—computers, game platforms, smartphones.
>
> So we should expect a lot of consolidation here, and winners and losers according to who picks the right directions and executes successfully on them.[415]

According to Apple, it faces intense pressure as it competes for developers and users across these platforms.

In a general sense, consumers have a choice of devices and transaction platforms through which to acquire, modify, and play games. Apple's mode of competing resorts to its historic model: user-friendly, reliable, safe, private, and secure. Mr. Sweeney does not dispute that "what is on a particular store is part of the competitive landscape among different stores in which customers make decisions between stores based on the quality, selection, and other policies of stores." Similarly, developers also have a choice among the distribution channels, including various transaction platforms, through which to distribute their apps to consumers. In some measure, Apple must likewise make its platform attractive to developers.[416] Given that

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415. DX-3768 at 26:1-23; Trial Tr. (Sweeney) 243:10-244:9.

416. Trial Tr. (Schiller) 2748:6-24; *id.* 2867:9-20 (describing the App Store's competition with Steam); Ex. Expert 8 (Schmalensee) ¶¶ 122-126; Trial Tr. (Sweeney) 261:19-23; Trial Tr. (Hitt) 2130:5-7;

Apple built and modeled the App Store in part on its gaming competitors (*e.g.*, Nintendo, Sony, and Microsoft), harnessing these competitors' in-app purchasing systems from the gaming context,[417] it is not surprising that Apple now faces competition amongst these very same players.[418]

Of course, the Court must determine where the *actual* competition lies between these platforms based on the current state of play in the overall market. This is a close question where the general video game market appears to be evolving and dynamic. While there is some competition amongst the players in the general video game market, the Court cannot say that this overall competition is sufficient for purposes of defining a relevant product market—at least not at this time.

What makes this determination difficult is that the market appears to be somewhat in flux. With the recent success of truly cross-platform games like Microsoft's *Minecraft* and Epic Games' own *Fortnite*,[419]

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see also Trial Tr. (Schmid) 3240:1-7; DX-4399.046-.054 (Apple has also benchmarked the App Store against Android Market, Google Play, and other competitors in a 2017 presentation, where it listed Google Play in the "Competition" section, along with Facebook Messenger games, publishers, platform marketplaces, and social platforms).

417. *See generally* PX-0888.

418. DX-4178.008.

419. The record demonstrates that the App Store is one of several competing platforms, such as the PlayStation and Xbox, with respect to cross-platform play for *Fortnite*. Trial Tr. (Sweeney) 236:19-237:2; DX-3125.005.

these disparate platforms, each with their own unique and competitive advantages, are truly competing for consumers who wish to consume these increasingly popular cross-platform games and any transactions made therein. Indeed, video games can and are able to be ported across multiple devices.[420] However, not all games are like *Minecraft* or *Fortnite*; the market still reflects that video games are, for the most part, cabined to certain platforms that take advantage of certain features of that platform, such as graphics and processing, or mobility.[421] The record reflects that the industry players are only slowly and recently reacting to compete against the wider gaming platforms.

With cross-platform games like *Fortnite* available on multiple devices, these platforms are truly competing against one another for these in-app transactions. For instance, an internal Epic Games email from September 2018 notes that "purchase behavior may have changed with the addition of mobile, especially Apple and more recently Android, where users are just logging onto their mobile app to purchase." In other words, "most players are still playing on PC/Epic platform[s] as they did before, but purchasing on other platforms like mobile because it may be easier and more convenient [i.e.] when the store updates."[422] This is despite the fact that iOS *Fortnite* players consisted of only approximately 10% of daily active

420. *See generally* Trial Tr. (Grant) 671:2-673:20.

421. *See generally supra* Facts §§ II.B.1-2, II.D.3.

422. DX-3867.

users, and *Fortnite* players generally prefer playing on alternative platforms.[423]

In response to this exact scenario, where gamers play on one platform but spend on another, some other platform owners have enacted substantive policies regarding cross-wallet and cross-play restrictions. Sony, for instance, enacts a cross-play policy that compensates Sony where players spend on other platforms but primarily game on Sony's PlayStation platform.[424] Meanwhile, Sony and Switch have enacted policies that limit the cross-wallet functionality across platforms.[425] Also unlike certain consoles, Apple does not require price parity; that is, developers are free to price their in-app content on apps downloaded from the App Store higher than the same content sold through other platforms.[426]

While these policies and cross-platform games might evidence some convergence of competition amongst them at some point in the future, the relevant product market does not appear to be so wide as to include all platforms at this time. This is especially so given the distinct submarkets discussed above: namely, mobile gaming, computer gaming, and console gaming.

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423. *See* Trial Tr. (Weissinger) 1346:18-1347:1; DX-3233.009.

424. DX-3094.006.

425. *See* Trial Tr. (Sweeney) 197:1-18, 238:9-239:17; Trial Tr. (Schmid) 3208:8-16; Ex. Depo. (Kreiner) 83:12-16.

426. *See* Trial Tr. (Schiller) 2819:18-2820:2; DX-3582.003.

The question remains however on where (i) the Nintendo Switch, which is distinctly both a hybrid console and mobile gaming device, and (ii) game streaming services, a multiplatform game service also available on iOS platforms, fall in the general market and the above submarkets. Facially, the inclusion of the Switch and game streaming services in a relevant product market defined as mobile gaming transactions has logical appeal. The Switch is essentially a game specific tablet with detachable controllers on its sides. Its inclusion would make logical sense where tablets are also included in the relevant product market. Witnesses also confirmed that games (including *Fortnite*) for both the Switch and mobile devices operate substantially the same on both devices. Moreover, what evidence exists in the record shows that the Switch generally competes significantly differently as compared to the other two console players—the PlayStation and Xbox.

The inclusion of game streaming services has similar logical considerations. Because such services are multiplatform, they can reach the same audience of consumers on the iOS platform as the App Store can by virtue of their design. Specifically, whether by native app or web app, game streaming services are just as available to consumers on the iOS platform as the games are on the App Store. These services essentially compete with the wider market given the lack of a need for any corresponding device. Indeed, due to the multiplatform nature of such services, even players in other submarkets, including Epic Games, have come to view such services as a competitor in their established market spaces.

Despite the foregoing, neither the Switch nor game streaming services are appropriately part of the mobile gaming market—at least not at this time. First, as previously noted, the record is limited as to both Nintendo and the Switch. Nonetheless, the Court notes that there is in evidence one real world example that shows that the Switch's mobility competes against iOS devices for gaming: the introduction of *Fortnite* on the Switch. As the experts' analyses show, the introduction of the Switch shows both substitution and complementary play without a definitive answer. *See supra* Facts § II.B.2.

Second, both products are too new for a determination of whether they should or should not be included in the relevant product market. The Switch and especially game streaming services are relatively new products in the market. Indeed, Nvidia's GeForce Now service only launched months before the filing of this action, and Microsoft's service remained in beta testing at the time of the bench trial. It is unclear at this time whether consumes will or do consider these products reasonably interchangeable and substitute in sufficient numbers between the competing products already in the mobile gaming market.

In sum, in light of the lack of evidence in the record, and the recent introduction of the Switch and game streaming services to the market, the Court declines to include either device or service in the relevant product market for mobile gaming transactions. While the record does not reflect that these products are appropriately included in the relevant product market at this time, the Court does find that these products evidence, at a

minimum, market entrants into this mobile gaming space. Whether these entrants will occupy the same space as Apple and Google remain, however, to be seen by both consumers and developers.

Thus, the Court concludes that the competition lies within the smaller recognized mobile gaming transactions submarket, however, this submarket does not include the Switch or game streaming services.

E. Apple's Market Share

For the reasons set forth above, the Court concludes that the competition lies within the smaller recognized mobile gaming transactions submarket, however, this submarket does not include the Switch or game streaming services. The Court next calculates Apple's market share.

The *only* evidence of market share in the proposed market concerning video gaming comes primarily from Apple's expert witness, Dr. Hitt.[427] As discussed, Apple's proposed definition of the market includes all video game platforms, which the Court rejects as the relevant market. Consistent with Apple's proposal, but inconsistent with the Court's finding that mobile gaming is the relevant product market, Dr. Hitt's analysis relies upon the assumption that the App Store has many competitors, including other game transaction platforms, for mobile, PC, and console, as well as game streaming services, and limits the scope to the United States.[428]

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427. Ex. Expert 6 (Hitt) ¶ 117.

428. *See supra* Facts § II.D.; Trial Tr. (Schiller) 2867:1-20; Trial Tr. (Cook) 3865:23-3867:5.

Since data on the number of game transactions is not readily available, Dr. Hitt's analysis uses the dollar value of game transactions facilitated as a proxy for the most appropriate measure for estimating market share. To reach his opinion he analyzes: (i) the total revenue for digital game transactions on the App Store in the United States; and (ii) the total revenue for digital game transactions across all digital game transaction platforms in the United States.[429] Again, Dr. Hitt's analysis does not narrow in on the mobile gaming market and Apple's market position therein. Based on his analysis and his review of the relevant evidence, Dr. Hitt finds and concludes that Apple's video game market share based on total revenue from digital game transactions is 37.5%.[430] Based on his calculations, Dr. Hitt concludes: (i) that this video game market share is inconsistent with Apple's ability to exercise market power; and (ii) that this lack of concentration in the video game market suggests Apple does not possess monopoly power in the relevant product market.[431] While Dr. Hitt's report and analysis aids the Court, it is overbroad for purposes of the Court's finding that the market is limited to mobile gaming.

Despite the limitations of Dr. Hitt's analysis, a similar calculation based on evidence in the record reveals a much more significant *mobile* gaming market share. Apple's

429. *See* Ex. Expert 6 (Hitt) ¶¶ 137-138.

430. *Id.* ¶¶ 8, 117, 123-128.

431. *Id.* ¶¶ 138, 140-141.

internal business records[432] show a consistent belief that Apple's market share of the global video gaming market increased over time beginning in 2015 with 18%; 2016 with either 21.8% or 23%; 2017 with either 24% or 27%; 2018 with 23.8%; 2019 with 23.9% or 25%; and 2020 forecasted at a range between 24.7% and 31%.[433]

The Court has the most evidence for the year 2017. Using Apple's internal documents the Court is able to calculate Apple's market share at 57.1% in the global *mobile* gaming industry. The Court reaches that value by taking Apple's own internal records for 2017 which show Apple's internal calculation that it controls 24%[434] of the

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432. The Court relies on Apple's business records as admissions.

433. Compare four internal forecasting documents, namely, DX-4178.008 (2017 Review), PX-0602.027 (2018 Review), PX-0608.014 (2019 Review), and PX-2302.022 (forecasting 2021 and 2020).

434. *See* PX-2302.022 (reporting 24% market share). The Court notes a discrepancy between two sets of presentations calculating market share from 2015 to 2020 in the wider video gaming industry. The Court notes that the figures found in the most recent Apple presentation, along with figures found in the 2019 review (PX-0608), appear to match and correspond with third-party data found elsewhere in the record. *See* DX-3248. For that reason, the Court concludes that these figures in the most recent presentation are the more correct and updated versions. The market share rates found in the other (generally older) presentations appear to use estimates instead of the actual total revenue in the video game industry for certain years resulting in a lower total annual amount, which appears to inflate Apple's market share in these other presentations. *Compare* DX-4178.007 (2017 presentation, stating 109 billion in total game revenue in the entire industry in 2017) *with* DX-3248.008 (2018 market report, stating 121.7 billion in total game revenue in the entire industry in 2017).

global video gaming market and dividing the number by 42%[435] which reflects Apple's belief of the portion of the *mobile* gaming market relative to the global video gaming market (24% divided by 42% equals 57.1%).

Using this same methodology, the Court can calculate Apple's market share in the *mobile* industry before 2017, as 52.9% in 2015 and 54.5% in 2016. This computation is consistent with a view that the market share was less than 57.1% in 2017.[436]

Similarly, for 2020, Apple estimates that its own global market share in the wider video gaming industry is 28.2%, and cites on its internal business record to an external Newzoo report that states that mobile gaming (including mobile and tablets) accounted for 49% of global gaming revenue in 2020.[437] Using these figures and the same

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435. *Compare* DX-4178.007 *with* DX-3248.008. The comparison shows a discrepancy in the portion of the mobile gaming market for the year 2017: namely Apple reports it as 42% in its presentation and third-party Newzoo reports it as 46% in its 2018 Global Games Market Report. The delta between these two figures is a few percentage points: using the third-party Newzoo figure in the Court's methodology, Apple's global market share is computed at 52.1% for 2017.

436. Relying on the same documents, for 2015, the Court takes Apple's 18% market share divided by 34% of the mobile share of the global market. For 2016, the Court takes Apple's 21.8% market share divided by 40% of the mobile share of the global market.

437. The Court notes that the 2020 Newzoo report is not in evidence, however, it is found as a "Reference" citation at the bottom of Apple's presentation. *See* PX-2302.022. These third-party

methodology as above, Apple would have 57.6% market share in the global mobile gaming industry in 2020.[438]

The Court understands that the market share would likely be less if the Switch were included in the relevant product market.[439] However, the record is bare of evidence and, in any event, the new market entry would not have had such a compelling entrance as to discount the market share to under 30%.[440] Nonetheless, even assuming the market were limited to both mobile gaming *and* console

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references are often noted in presentations but only a few source documents are in evidence. The Court relies upon the reference because Newzoo is a credible third-party report that others in the industry rely upon.

438. The same level of precision does not exist for 2018 and 2019 given the trial record. While the Court has evidence of Apple's market share in the wider gaming market and for certain years for the *mobile* gaming market, there is no discrete information or evidence for which it could calculate or find Apple's market share within *mobile* gaming for the years 2018 and 2019.

439. For instance, the Court lacks any revenue specific information regarding the Switch with which to include in any market share determination. As to game streaming services, given the only recent introduction of such products to market, the Court would expect any inclusion of such services to have a minimal impact, if any, on the overall market share calculations in this section.

440. *See* Trial Tr. (Bornstein) 4091:4-4092:3. Given the Court did not adopt the parties' market definitions, Epic Games' counsel would not commit to whether tablets would be included in that hypothetical market. Assuming a mobile and handheld device market as the relevant market, there are numerous tablet platforms and at least one mobile gaming console platform (Nintendo Switch) that would have to be included in such a market.

gaming (including the Switch, PlayStation, and Xbox), Apple would still have, at a minimum, market power.[441] For the years in the record, the Court's methodology based upon the records shows that Apple would have a market share of such a defined global video gaming market (*e.g.* mobile and console) of 32.9% 2017, and of 31.1% in 2016.[442] For the most recent year 2020, based on estimated and projected revenue and on the cited 2020 Newzoo report, Apple's market share would be 36.6% of such a defined video gaming market.

III. PROPOSED GEOGRAPHIC MARKET AND FINDING

The parties offer differing perspectives on the geographic market. Epic Games argues for a global market, excluding China, and Apple asserts a domestic market.

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441. The Court also assumes for purposes of this analysis that the video game revenue cited in the corresponding Newzoo report is all attributable to digital game transactions. The Court notes that this overinclusion of non-digital game transactions *and* of the PlayStation and Xbox would depress Apple's market share if the Court were to only include digital game transactions attributed to the Switch. Nonetheless, the purpose of this analysis is to demonstrate that Apple retains market power above 30% even with the overinclusion of these additional platforms and non-digital transactions.

442. The Court notes that the Switch was released in March 2017, and thus, the inclusion would only affect the years 2017 and later. The Court discloses that Apple's market share for 2015 would be 27%.

With respect to its theory, Epic Games argues for a global market because smartphones, and thereby, the smartphones' operating system, are sold globally. Moreover, smartphones generally work regardless of the location with the exception of China where the operating systems are, in fact, different because they are installed by original equipment manufacturers in China.[443] Apple does not challenge the *geographic* market for smartphones, although for the reasons set forth above, it heavily contests the notion that a separate market exists for operating systems.

By contrast, Apple focuses on app gaming transactions arguing that the geographic market is domestic. Apple highlights that consumers access the App Store with country-specific digital storefronts which means that consumers enter into transactions through a digital store-front based on their home country. Generally, Apple customers do not have access to foreign storefronts, and cannot readily switch between storefronts outside of their home country. The same is true for customers in foreign countries.[444] The Court understands that many console and other game transaction platforms similarly organize their stores with geographic overlays.[445] Providers have created

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443. Ex. Expert 1 (Evans) ¶¶ 70-71; Trial Tr. (Cook) 3970:10-16; *see also* Trial Tr. (Cook) 3942:18-19, 22 (agreeing that "in China, the iCloud service is operated by a Chinese company").

444. Trial Tr. (Schiller) 2754:20-2755:9 ("It's how we've been told we need to structure the stores.").

445. *Id.* 2754:14-2755:15; Ex. Expert 7 (Lafontaine) ¶ 9; Trial Tr. (Lafontaine) 2066:24-2067:6; *see also* Trial Tr. (Evans) 1565:12-14.

impediments to switching geographic registration, such as prohibiting it as part of the terms of service, requiring country specific credit cards, and installing software which may make the app inoperable.[446]

Geographic constraints are less pronounced for developers. Foreign and domestic developers can publish on both foreign and domestic platforms. However, they can only access the consumer on the consumer's own domestic storefront.[447] Apple principally relies on Dr. Lafonatine to argue that the "competitive conditions each platform faces varies from country to country. The set of apps available across the world is not uniform. So one accessing the App Store's U.S. storefront would not have an identical selection of game apps to a consumer accessing a foreign storefront. Moreover, different countries feature different slates of competing platforms, with differing relative market shares. All of the above factors affect demand and substitution, creating different market conditions in each country."[448] However, the factual basis for her opinion is weak.[449]

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446. Ex. Expert 7 (Lafontaine) ¶ 91; DX-4931.001; DX-4920.001 (noting for Microsoft that "[i]f you change your country or region in Microsoft Store, *the stuff you got in one region might not work in another* . This includes: Xbox Live Gold, Xbox Game Pass, Apps, games, music purchases, and movie and TV purchases and rentals").

447. Apple FOF ¶¶ 444-446 (citations omitted); *see* Ex. Expert 7 (Lafontaine) ¶ 91.

448. Apple FOF ¶¶ 447-450; Ex. Expert 7 (Lafontaine) ¶¶ 90-91, 93.

449. Further, Dr. Lafontaine acknowledged that, when reaching her geographic market limited to United States consumers,

The Court finds Apple's factual basis for its assertion to be weak. At least for purposes of this case, Apple's restrictions appear to be imposed by Apple, rather than by market forces. Importantly, the Court finds more persuasive that Apple actually treats app distribution as a global enterprise. Its rules and guidelines apply globally to all storefronts, the business development team engages with developers globally, the DPLA applies globally, and the complexity and justification for the complexity of the IAP system is due in large part because of the global nature of the business.[450] The parties agree that China is different.[451]

Thus, the Court finds the relevant geographic market to be global.

IV. MARKET POWER IN RELEVANT MARKET

In addition to Apple's market share in the relevant market of mobile gaming, the Court examines other evidence of Apple's market power in the mobile game transactions market and considers pricing, nature of restrictions, operating margins, and barriers to entry.

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she did not consider developers' ability to directly distribute apps to consumers. Indeed, she did not know whether direct distribution is limited by national boundaries. Trial Tr. (Lafontaine) 2067:7-2068:3.

450. Ex. Expert 1 (Evans) ¶¶ 145, 266; Trial Tr. (Kosmynka) 985:21-986:24; Trial Tr. (Schmid) 3221:21-3222:2; Trial Tr. (Grant) 723:25-724:4.

451. Ex. Expert 1 (Evans) ¶¶ 71, 108.

Appendix B

A. Pricing

The experts agree that the ability to set and maintain supracompetitive prices is evidence of market power. Dr. Schmalensee emphasizes, however, that two-sided platforms often have skewed pricing so supracompetitive prices on one side may not be indicative. He also opines that only price changes over time are relevant to determining market power.[452] The parties thus dispute whether Apple's commission is (i) supracompetitive and (ii) has increased or decreased over time.

As an initial matter, as detailed above, the 30% commission was not set by competition or the costs of running the App Store, but as a corollary to other gaming commission rates. Next, the evidence showed four pricing considerations after the initial rate. First, in 2009, Apple introduced IAP using the same 30% commission. Second, in 2011, Apple enabled recurring subscriptions purchases on the iPhone. Third, in 2016, Apple introduced paid search ads on the App Store. Finally, in late 2020, Apple introduced the Small Business Program. That program reduced Apple's commission to 15% for developers making less than one million dollars. *See supra* Facts § I.C.3.c.

Both parties cite these pricing changes as evidence that Apple has or lacks market power. Epic Games cites the introduction of IAP, recurring subscription payments, and search ads as evidence of price increases. This evidence is not persuasive because both IAP and recurring

452. Ex. Expert 8 (Schmalensee) ¶¶ 108-109.

subscriptions correspond to new features, not price increases on existing features. With respect to search ads, one would reasonably expect that a fundamental purpose of an app store is to provide search capability or "discoverability." Thus, by offering developers the option to pay for search ads, one could argue that this is not a new feature and therefore more probative of a price increase. On the other hand, developers do not have to use search ads which suggests this is could be viewed as a new feature. The record was undeveloped on this point.

Apple, on the other hand, cites the reduction on second year subscriptions and the Small Business Program as evidence of price decreases. The subscription reduction is highly probative; the evidence shows that Apple's decision coincided with several large developers ending in-app subscriptions through iOS apps (and therefore exercising power to leave Apple's platform). However, as described above, subscription apps face different market conditions than games, and there is no evidence of *game* developers leaving for other platforms to force a price decrease.[453] Further, the Court has explained above why the evidence on Apple's motivations regarding the Small Business Program is mixed. Regardless of whether altruism or regulatory pressure caused Apple to lower its commission, competition does not appear to have played a role.[454]

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453. *See* Ex. Expert 6 (Hitt) ¶¶ 102, 105.

454. The Court does note that after Apple introduced the Small Business Program, Google quickly followed suit on Android. However, Mr. Cook was not aware of any other store that did so. This reinforces that Apple and Google compete with one another. Trial Tr. (Cook) 3860:4-10.

Given the lack of clear evidence about price increases or decreases due to competition, Dr. Hitt focuses on Apple's average commission, which he argued decreased over time from the growing presence of free apps on which Apple receives no commission. He argues this decrease is inconsistent with market power.[455] However, the evidence is less probative because of the unique nature of Apple's business as both the device maker and app store operator.[456] Namely, Apple has repeatedly acknowledged that free apps make its platform more attractive, which helps it sell more devices.[457] As such, under a two-sided transaction platform analysis, the cost to users from purchasing devices to access free apps likely offsets the reduced price offered to developers of those apps.[458] Given Epic Games' theory that no commission should be levied, where the tipping point is in terms of that offset has not been explored.

Thus, ultimately, the pricing evidence does not show either market power or its absence. Apple's initial rate of 30%, although set by historic gamble, has apparently allowed it to reap supracompetitive operating margins. *See infra* Facts § IV.C. The choice to not raise that price further is consistent with market power if that

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455. Ex. Expert 6 (Hitt) ¶¶ 169-176, 184.

456. Notably, the price of game in-app commissions has only grown over time. This again suggests that game developers may be subsidizing the rest of the App Store. Id. ¶¶ 174-175.

457. See, e.g., Trial Tr. (Cook) 3988:14-3989:5; PX-2060.005.

458. Ex. Depo. (Okamoto) 324:04-325:10; PX-2060.018-.019; Trial Tr. (Cook) 3990:18-3991:8.

price already reflects monopoly levels.[459] Only rarely has Apple reduced its commission in response to competitive pressure, such as with the second-year subscriptions. However, because subscription apps are a separate market from game apps, that does not show lack of market power in the mobile game transaction market.[460]

B. Nature of Restrictions

Epic Games also cites the nature of the restrictions as evidence of Apple's market power. Apple uses both technical and contractual means to restrict app distribution. Technically, Apple prevents unauthorized apps from downloading on the iPhone. It does so by granting certificates to developers; no certificate means the code will not run.[461] Contractually, Apple imposes the

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459. As noted previously, Apple executives initially questioned whether they can maintain a 30% commission in response to competition. PX-0417. Apple still does not track costs or pricing on different platforms to determine its rate. Trial Tr. (Fischer) 904:18-905:6; Ex. Depo. 8 (Cue) 141:13-142:09.

460. Apple makes two additional arguments for lack of market power. First, it claims that it has not restricted output. Apple FOF ¶¶ 467-468. Again, in light of the unique business model, game output here makes Apple's platform more attractive and increases rather than decreases its profits. Second, it claims that the 30% commission is consistent with other online platforms. Apple FOF ¶¶ 469-478. This argument is discussed above and below in relation to anticompetitive conduct. In short, the use of a 30% commission by other platforms is not dispositive because those platforms have a different business model than Apple and frequently negotiate their headline rates, so their effective rates are below 30%.

461. Trial Tr. (Kosmynka) 986:9-22; Trial Tr. (Federighi) 3373:17-25, 3388:11-3389:12.

DPLA, which prohibits developers from distributing apps outside the App Store.[462]

These contractual terms are standardized and nonnegotiable—a contract of adhesion. Only a few developers have succeeded in modifying these terms by threatening to go to other platforms. Specifically, Spotify and Netflix have removed in-app purchasing functionality from iOS apps. On the other hand, both Down Dog and Match Group have testified that they have been unable to entice users to other platforms with lower prices. Match Group has employed marketing campaigns and promotions for web purchases, but the app sales have continued to "dominate." Down Dog has had better success at offering cheaper subscriptions on the web, but Apple's anti-steering provision has prevented it from directing users to the cheaper price. Thus, while 90% of Down Dog's Android users make purchases on the web, only 50% of its iOS users do so, even though about half of its total revenues still come from iOS users.

Accordingly, evidence shows Apple's anti-steering restrictions artificially increase Apple's market power by preventing developers from communicating about lower prices on other platforms.[463]

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462. PX-2619 §§ 3.2(g), 7.6. Recall that developers may license and use Apple's tools for free to create iOS apps under the Developer Agreement, but actually distributing them requires signing the DPLA. Trial Tr. (Schiller) 2757:1-2760:9.

463. Trial Tr. (Schiller) 2760:16-21; Trial Tr. (Simon) 354:83-55:1, 359:3-364:13, 401:5-20; Ex. Expert 6 (Hitt) ¶¶ 102, 105; Ex. Depo. (Ong) 24:17-26:5, 28:9-29:22.

C. Operating Margins

The experts agree that "persistently high economic profit is suggestive of market power." Dr. Schmalensee opines that operating margins and accounting profit are less probative because they fail to take into account intellectual property and similar investments that lower operating costs. Dr. Barnes criticizes this opinion as an accounting matter, and Dr. Evans opines that in this specific case, accounting profits are an appropriate measure of market power. From this issue, we see a classic battle of the experts.[464] See supra Facts §§ II.C.5, II.B.

Here, in light of all of the evidence, the circumstances of Apple's P&L statements, and Apple's low apparent investment in App Store-specific intellectual property, the Court finds that operating margins are probative of market power. As described above, the App Store operating margins are "extraordinarily high." Thus, even without comparison to other stores, the operating margins strongly show market power.[465]

Further, Apple cannot hide behind its lack of clarity on the value of its intellectual property. Not all functionality benefits all developers. Further, as discussed, Apple has

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464. Trial Tr. (Schmalensee) 1899:19-21, 1984:2-12; Trial Tr. (Evans) 1545:3-14, 1723:20-1724:19; Trial Tr. (Barnes) 2456:6-2458:11.

465. See Trial Tr. (Evans) 1545:3-14 (explaining that in a competitive market, high profits decline because companies would reduce prices and invest in quality to stave off competition).

actually never correlated the value of its intellectual property to the commission it charges. Apple is responsible for the lack of transparency and whole-cloth arguments untethered to its rates do not ultimately persuade.

D. Barriers to Entry

With respect to barriers to entry, the evidence is mixed. On the one hand, Dr. Athey plausibly opines that entry into the platform business is difficult due to the need to attract both users and developers. Said differently, developers do not develop for new platforms unless they have a healthy user base, but users only go to platforms that already have a developed ecosystem. Thus, indirect network effects often dominate and create a "winner-take-all" system that allows only a few large platforms to survive.[466] See also supra Facts § II.B.1.

On the other hand, the mobile game market is changing, including with the introduction of cross-platform policies, cross-platform services (e.g. cloud-based game streaming), and new hybrid platforms such as the Nintendo Switch. First, the introduction of cross-platform middleware like cross-wallet and cross-play has plausibly decreased barriers to new entrants. The rise of game streaming may allow for competition among platforms on iOS in the near future, even if Apple maintains its app distribution restrictions. The role of game streaming and whether it will constrain market power remains

466. Ex. Expert 4 (Athey) ¶¶ 16-19, 35-46.

to be seen.[467] See supra Facts § II.D. In light of these uncertainties, the Court finds that barriers to entry are currently relatively high but are plausibly decreasing and may be lower in the future.[468]

V. FACTS REGARDING ALLEGED ANTICOMPETITIVE EFFECT

Epic Games contends that Apple's restrictions on iOS app distribution and in-app payment processing create anticompetitive effects. As explained above, the App Store is a twosided transaction market, which may make competitive effects difficult to evaluate. In two-sided transaction markets, an anticompetitive price or restriction on one side may well reflect a competitive equilibrium on the other side.[469] Thus, the experts

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467. Trial Tr. (Athey) 1787:14-18; Trial Tr. (Patel) 424:8-9 (number of games currently on GeForce is small), 449:8-450:2 (strict limitations on usage), 481:16-484:24 (same), 483:25-484:4 (game streaming not profitable).

468. Of course, game streaming typically requires an up-front subscription fee, which makes it unlikely to replicate the "freemium" model that gains users by an initial free download. Trial Tr. (Patel) 483:13-485:14; Trial Tr. (Sweeney) 187:24-188:3 (attributing "a lot of [Epic Games'] success" to the freemium model).

469. For instance, Dr. Schmalensee offers the example of OpenTable that suspends a user's account after a certain number of no-shows. Although this may seem like an arbitrary exercise of power to the user—particularly if there are few other reservation apps in that market—the restriction helps keep the platform attractive for restaurants and thus serves a procompetitive end by increasing participation. Ex. Expert 8 (Schmalensee) ¶ 30.

agree that competitive effects can only be determined after carefully considering both sides of the transaction (developers and users), including any indirect network effects.[470]

With this in mind, the Court reviews evidence of the competitive effect of Apple's challenged conduct.

A. Anticompetitive Effects: App Distribution Restrictions

1. Effects

With respect to Apple's app distribution restrictions, Epic Games focuses on the following alleged anticompetitive effects: (a) foreclosed competition; (b) increased consumer app prices; (c) decreased output; (d) decreased innovation; and (e) effect on other markets through the restrictions on app stores. Apple, in turn, argues that the restrictions provide a safe and secure place to conduct game transactions and compensate Apple for its procompetitive investments in iOS. The Court first addresses Epic Games' evidence and then Apple's procompetitive justifications in the next section.

a. Foreclosure of Competition

With respect to the issue of foreclosing competition, the contention is not in dispute. Quite simply, Epic Games

470. Ex. Expert 1 (Evans) ¶ 216; Ex. Expert 8 (Schmalensee) ¶ 127.

wanted to open a competing app store and could not. The evidence is mixed as to the demand to do so. Epic Games relies on the experience of Microsoft and Nvidia, which tried to offer native iOS game streaming apps (xCloud and GeForce NOW) but were blocked by Apple's restrictions.[471] Both companies, however, ultimately succeeded in making their apps available through the web. Although neither party was fully satisfied with the results, their experiences do not show complete foreclosure of competition.[472]

Instead, Epic Games relies on comparative evidence with other markets. On devices without app distribution restrictions, many app and game stores exist. For instance, Windows and Mac computers host game publishers like Steam, Electronic Arts, and Activision Blizzard who directly distribute through their own stores. Apple executives have acknowledged that the Mac App Store matters primarily for Apple software and smaller developers, while developers with market power are not on the Mac store "because they don't have to be."[473] According

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471. As explained elsewhere, GeForce allows streaming of games users purchased through other platforms, such as Steam. xCloud is limited to Microsoft games. Thus, they are each a type of game store, though idiosyncratic in not needing to access device hardware (which is what allows them to work through the web). Indeed, four of the five stores blocked by Apple's challenged rule concern game streaming. Trial Tr. (Patel) 425:1-11, 432:17-433:12; Ex. Expert 1 (Evans) ¶ 166.

472. Trial Tr. (Wright) 568:13-571:8, 579:1-10; Trial Tr. (Patel) 429:11-25. Apple has also blocked Big Fish, a "game store within an app," and web stores. PX-0115; PX-0111.

473. PX-2386.

to Dr. Evans, there are at least ten third-party stores on Mac and Windows, and most top apps are distributed directly from the developer website. Indeed, several large game developers, like Google and Facebook, have tried to distribute games on iOS in recent years.[474]

The evidence also shows that smaller developers might choose direct distribution while remaining in the App Store. For instance, the CEO of Down Dog, the fitness app, testified that he would support users installing directly from a website.[475] Notably, however, these developers did not testify that they would leave the App Store altogether. That is because, as Apple shows, the App Store provides many benefits to developers, including developer tools, promotional support, and a ready audience, that enables small developers to compete with large ones. For instance, 72% of small developers lack a marketing budget, and Apple provides significant free advertising and "spotlighting" to help users discover new apps as part of its DPLA.[476]

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474. Ex. Expert 1 (Evans) ¶¶ 163-168; Trial Tr. (Allison) 1200:14-1201:14. Dr. Evans also provides comparison to the over 60 Android app stores in China and numerous third-party stores on early smartphones. However, Epic Games has not shown that those markets are sufficiently comparable to the market here. Ex. Expert 1 (Evans) ¶ 165.

475. Ex. Depo. (Ong) 33:18-34:07; Trial Tr. (Simon) 392:9-17.

476. Ex. Expert 8 (Schmalensee) ¶ 51; Trial Tr. (Fischer) 931:23-933:20, 935:15-936:23; DX-3800.038; Trial Tr. (Schiller) 2737:9-24.

While plaintiff did not survey developers, taken together, this evidence suggests that Apple's restrictions foreclose competition for large game developers who have well-known games. These developers would likely, and have the resources to, open their own stores to forego Apple's "fees, rules, and review."[477] Smaller developers, on the other hand, would likely stay on the App Store (or a comparable store) for product discovery reasons. Indeed, that is exactly what happened earlier on PCs, which bolsters the likely evaluation and outcome.[478]

b. Increased Consumer App Prices

Next, Epic Games argues that Apple's app distribution restraints increase prices for consumers. Epic Games' argument is plausible. As Dr. Evans testified, "[w]e know from economics, both theory but also practical experience, in situations where there are barriers to competition and they're removed that what typically happens [is] . . . that prices tend to fall [and] quality tends to improve."[479]

In the context of gaming, Dr. Evans's observation has vivid illustration in the PC market. The incumbent Steam store charged a 30% commission for decades before Epic Games' store entered with a 12% commission. Immediately before that time, Steam lowered its commission to 20%,

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477. PX-2386.

478. *See* Trial Tr. (Allison) 1206:1-1209:8; Trial Tr. (Evans) 1510:24-1511:7.

479. Trial Tr. (Evans) 1551:15-1552:2.

and its average commission rate declined to 10.7%. Microsoft followed suit shortly after, with other stores offering pay-what-you-want. This competition has affected platform margins, which are considerably smaller on PCs than on other devices—5% compared to 45%.[480]

Dr. Evans opines that the same would happen if Apple allowed third-party app stores on iOS. He posits that numerous third-party app stores would enter iOS in the absence of restraints and that these stores would compete for developers. The competition would exert pressure on Apple, which would have to lower prices or improve services. To calculate the resulting prices, Dr. Evans relies on several sources. First, he cites Mr. Schiller's 2011 statement that a 20% or 25% commission is "competitive."[481] Second, he uses Mr. Barnes comparisons of online marketplaces to calculate Apple's commission if its operating margins were only as high as the highest in a competitive market (Alibaba with 45.8% margins). Under that calculation, and assuming that developers would pass on half of the commission, Apple would only charge 15.6% while still being very profitable.[482]

Apple vigorously disputes this evidence. First, it points out that the 30% commission is standard for other

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480. Trial Tr. (Allison) 1209:13-1210:1, 1275:18-1276:5; Ex. Expert 1 Evans ¶¶ 170-173; DX-5523.011.

481. *See* PX-0417.

482. Ex. Expert 1 (Evans) ¶¶ 180-184; Ex. Expert 2 (Barnes) ¶ 3.

stores, including on competitive platforms.[483] For instance, Apple charges 30% on Macs, which Dr. Evans agrees is competitive. However, Apple's argument is suspect. One, Apple relies on "headline" rates that Dr. Evans and Dr. Schmalensee agree are frequently negotiated down. For example, the Amazon App Store has a headline rate of 30%, but its effective commission is only 18.1%. Both Ms. Wright and Mr. Sweeney testified that consoles frequently negotiate special deals for large developers. Sealed evidence in this case confirms the same. Two, just because it is the competitive rate for games in the console market, does not mean that the rate translates to the mobile games market. As described above, the App Store has very different operating margins than consoles, so even if the commission is the same, the economics and the nature of the products are very different. Thus, ultimately, these comparisons are not useful because the other stores do not operate in the same market.[484]

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483. Apple also argues that it charged 30% from the very beginning when it was not a monopolist. However, there is evidence that Apple did not consider the rate to be sustainable at that time and questioned whether "enough challenge from another platform or web based solutions" will cause it to adjust. PX-0417. Moreover, Apple recognized that the App Store was "brand-new," with no true comparisons in the market, and set the rate set without considering costs. Ex. Depo. 8 (Cue) 135:8-136:14, 137:23-138:14. Thus, the initial rate was at least partly protected by the iPhone's "newness" and may not reflect a competitive rate.

484. Ex. Expert 6 (Hitt) ¶¶ 166-167; Trial Tr. (Evans) 1686:6-12, 2439:1-2441:23; Trial Tr. (Schmalensee) 1958:1-5; Trial Tr. (Wright) 586:11-21; Trial Tr. (Sweeney) 310:1-17; PX-2392.003. Google, of course, operates in the same market.

Neither party grapples with the overarching issue of Apple's choice of model and how it subsidizes certain developers. Rather, each side manipulates the "zero" commission rates on free or freemium apps to their advantage. Apple relies on analysis by Dr. Hitt who argues that the average commission rate in FY2019 was 8.1% for game apps and 4.7% for all apps while Dr. Evans and Dr. Cragg ignore the category all together. Ultimately, neither analysis is helpful.[485] Developers and Apple have learned that the freemium model is significantly more lucrative than the alternatives given the ability for impulse purchases. For those, the commission rate remains at 30% notwithstanding the choice of other developers.

Last, Apple argues that the 30% rate is commensurate with the value developers get from the App Store. This claim is unjustified. One, as noted in the prior section, developers *could* decide to stay on the App Store to benefit from the services that Apple provides. Absent competition, however, it is impossible to say that Apple's 30% commission reflects the fair market value of its services. Indeed, at least a few developers testified that they considered Apple's rate to be too high for the services

485. Ex. Expert 6 (Hitt) ¶ 180; Ex. Expert 13 (Cragg) ¶ 98; Ex. Expert 16 (Evans) ¶ 50; Trial Tr. (Hitt) 2198:24-2200:6. Similarly unhelpful is Dr. Cragg's analysis of average dollar amounts of Apple's commission. Ex. Expert 13 (Cragg) ¶¶ 99-101. These numbers are coextensive with developers charging higher prices; absent some evidence that Apple caused them to do that, the analysis simply reflects broader growth in the industry. Ex. Expert 6 (Hitt) ¶ 174; Trial Tr. (Hitt) 2110:9-2111:21.

provided.[486] Two, Apple has provided no evidence that the rate it charges bears any quantifiable relation to the services provided. To the contrary, Apple started with a proposition, that proposition revealed itself to be incredibly profitable and there appears to be no market forces to test the proposition or motivate a change.

Accordingly, the Court finds that Apple's restrictions on iOS game distribution have increased prices for developers. In light of Apple's high profit margins on the App Store, a third-party store could likely provide game distribution at a lower commission and thereby either drive down prices or increase developer profits. The Court must reserve on whether Apple's restrictions have increased prices for consumers as the evidence is mixed.[487] Here, Epic Games' role as a consumer is not in the traditional sense but only in the sense of a consumer of transactions with traditional consumers. This issue was not the focus of this trial.

c. Decreased Output

The parties dispute impact on output. Apple argues that the amount of iOS game output has increased over time. On this, the Court agrees. The evidence shows that

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486. Trial Tr. (Simon) 377:3-10; Trial Tr. (Fisher) 911:4-11 (Apple received developer complaints that the rate is too high).

487. *See, e.g.*, Trial Tr. (Simon) 355:17-356:17; Trial Tr. (Sweeney) 97:7-14; Ex. Depo. (Ong) 74:8-12; *see also* Ex. Depo. 12 (Gray) 176:23-178:2; PX-0533.010 (even within the Apple ecosystem, app prices are higher on platforms where Apple charges 30% rather than 15%).

iOS game transactions exploded by 1,200% since 2008,[488] with double that growth in developer game revenue. However, that does not mean that Apple's conduct is procompetitive. As Dr. Evans explained, "high-technology industries [often] grow extraordinarily rapidly" even where "a dominant firm emerges very quickly," so "tremendous growth" in these markets is "commonplace." Using growth as a competitiveness metric would "be essentially a free pass for high-tech companies."[489]

Unfortunately, what is needed is a comparison of output in a "but-for" world without the challenged restrictions. Such comparison is not in the record. Dr. Hitt provides some evidence that iOS game revenue grew faster than the game market as a whole and, importantly, that game revenue on iOS grew faster than on Android.[490] Growth rates, however, are difficult to compare because of different initial starting points. Moreover, even assuming that iOS gaming revenue grew faster than the market, it is difficult to attribute that growth to the App Store (as opposed to, for instance, superior iPhone hardware or

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488. The growth in iOS game transactions corresponds to both strong growth in the gaming industry and strong growth in iPhone and iPad sales. Ex. Expert (Hitt) ¶¶ 183-189. These factors could cause mobile game transactions to grow even if Apple's restrictions are anticompetitive.

489. Trial Tr. (Evans) 2366:22-2367:8; Ex. Expert (Hitt) ¶ 183.

490. Game revenue grew by 2,600% between 2010 and 2018 on iOS but only 367% between 2013 and 2018 on Android. Ex. Expert 6 (Hitt) ¶¶ 183-184.

user experience). Thus, the high output may have been even higher without Apple's restrictions.[491]

Dr. Evans, on the other hand, opines that a high commission reduces output because it leads to higher prices that cause consumers to purchase less, which reduces the number of viable games. Some evidence supports that view. For instance, Apple has recognized that some developers have taken the position that they do not have the margin to support the 30% commission, which is "prohibitive [of] many things." The magnitude of the effect, however, is unclear.[492] Thus, there is no evidence that a *substantial* number of developers actually forego making games because of Apple's commission.[493]

Thus, the analysis is insufficient to determine that Apple's restrictions had either a negative or a positive impact on game transaction volume.

d. Decreased Innovation

Next, Epic Games argues that Apple's app distribution restrictions harm innovation. Epic Games makes two arguments. First, it argues that Apple's 30% commission

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491. Ex. Expert (Hitt) ¶¶ 183-185; Ex. Expert 7 (Lafontaine) ¶ 100; Trial Tr. (Hitt) 2083:8-18; Trial Tr. (Evans) 1721:11-18; Ex. Expert 16 (Evans) ¶ 75.

492. Epic Games cites testimony that Apple is aware of "some developers" who said that they would not launch native iOS apps because of Apple's 30% commission. Ex. Depo. 8 (Cue) 150:5-12.

493. Ex. Expert 1 (Evans) ¶ 275; Trial Tr. (Schiller) 3111:7-14; PX-0438.

imposes a burden on developers, who either reduce their game investment or forego making games altogether as a result. Part of this argument is related to output and fails for the same reason: Epic Games has not shown that any developer actually stopped making games because of Apple's commission, albeit they may reduce investment.[494] This, however, is a natural corollary of having to pay app store commissions and does not present a separate argument for anticompetitive effects, particularly since third-party stores would likely continue charging commissions.

Second, Epic Games argues that Apple's restrictions have reduced innovation in game distribution itself. The parties agree that the App Store provides features besides distribution, including search and discoverability to help users discover games, in-app payment processing, developer tools, and security.[495] Competition could improve each of these features: a third-party app store could provide better "matchmaking" between users and developers, could have simpler in-app payments, and could impose a higher standard for app review to create more security.[496]

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494. Trial Tr. (Sweeney) 92:8-13.

495. As explained in this Order, in-app payment processing is an integrated part of the App Store. That does not, however, mean that it would not benefit from competition. Thirdparty app stores could provide substantial innovation in payment processing by incorporating more developer-friendly tools (such as, for example, easy refunds). Thus, all of the anticompetitive effects listed in the next section for in-app payment processing apply to Apple's restrictions on distribution.

496. *See* Trial Tr. (Evans) 1560:12-25 (search and discovery is the "core element of what any store does"); Trial Tr. (Schmalensee) 1954:3-9 (App Store provides "matchmaking"). *But see* Trial Tr. (Evans) 1502:15-1503:18 (excluding in-app payment processing).

Notably, Apple conducted developer surveys in 2010 and 2017. Comparing the two indicates that Apple is not moving quickly to address developer concerns or dedicating sufficient resources to their issues. Innovators do not rest on laurels. While more developers may be "satisfied" or "very satisfied" than not, a significant portion are not.[497] For example, a top reason for dissatisfaction with the App Store is lack of functions which other platforms have, such as personalized recommendations.[498] An email summarizing 2018 write-in answers suggests that developers perceive the App Store as lacking features common to other platforms. For instance:

- "Apple store needs to have 'smart search' ability. Having to require customers to spell names exactly correct in this age is ridiculous for a multi-billion dollar company."

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497. The Court acknowledges that the survey data includes five categories (Very Satisfied, Somewhat Satisfied, Neutral, Somewhat Dissatisfied and Very Dissatisfied) and that if combining the two "satisfied" categories, more developer fall within that zone than the two "dissatisfied" categories. That said, by adding in those who are "Neutral," Apple rating is more in the range of 60-40. *See generally* DX-3922.

498. Ex. Expert 1 (Evans) ¶¶ 191-192, 196; DX-3922.066, .072, .074; DX-3877.019; *see also* DX-3800 (2015 survey). Apple responds by pointing to search ads, which it enabled in 2016 in response to these complaints. Trial Tr. (Cook) 3889:16-3890:2; PX-2284.006. That said, developers must pay for these search ads and competitors may use them to artificially drive traffic, which decreases overall app discoverability. *See* Ex. Depo. (Ong) 59:14-60:14. Thus, the search ads are, at best, a mixed blessing for poor overall matchmaking.

- "[T]he search algorithm is terrible. It is a rating based algorithm rather than a name search. I can search for my apps and type their EXACT name and they still won't come up. I may even need to scroll down 100s of pages before my app shows up."

- "Discoverability is still a significant challenge on the App Store (even after last year's update). Our organic downloads for games on Steam are much higher than our games on the App Store, even though the App Store has more active users. This doesn't make sense."

- "The App Store desperately needs A/B testing. On Google Play, I've been able to optimize my store listing and because of that, I've been able to see unbelievable growth. If Apple added A/B testing for App Store listings, everyone would see a lift in downloads and ultimately more revenue for developers as well as Apple."

Indeed, Apple's own former Head of App Review, Philip Shoemaker, has described the App Store as "antiquated," with "no radical innovation, only evolution" for the last ten years.[499]

In addition, developers complain that app review guidelines lack clarity and are inconsistently applied.[500]

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499. PX-0098.001; *see* Ex. Depo. (Shoemaker) 31:03-05, 64:13-64:20.

500. *E.g.*, Ex. Depo. (Ong) 62:15-64:16; Ex. Depo. (Shoemaker) 126:20-23; Trial Tr. (Simon) 384:7-385:8.

Part of this issue stems from the sheer number of apps submitted with only 500 human reviewers. Apple has been slow either to adopt automated tools that could improve speed and accuracy or to hire more reviewers.[501] As discussed further below, Apple's in-app payment processing tool also lacks features.

Apple's slow innovation stems in part from its low investment in the App Store. As Mr. Barnes described, "[o]nly a small amount of direct and allocated R&D . . . [flows] . . . to the Apple App Store." Apple argues that Epic Games fails to account for R&D that affects multiple lines of the business, which counts as joint costs. Even Dr. Schmalensee admitted that the estimates, which were put together specifically for Apple's CEO, show very little R&D allocated to the App Store. Thus, even if the Court accepts that some App Store revenue goes to features that indirectly benefit developers, like hardware, the evidence remains that "core" matchmaking features of the store see little investment.[502]

Ultimately, the point is not that the Apple provides bad services. It does not: most developers are satisfied

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501. Trial Tr. (Kosmynka) 1083:12-15, 996:7-12; PX-0137.001 (Google had automated review before Apple). *But see* DX-3642 (describing App Store redesign in response to developer complaints). *See also* Ex. Expert 11 (Rubin) ¶ 57.

502. Ex. Expert 1 (Evans) ¶¶ 187-189; Ex. Expert 2 (Barnes) ¶¶ 19-22; Trial Tr. (Schmalensee) 1902:2-4, 1981:16-1982:5; PX-2385.024.

with the App Store, particularly with its developer tools.[503] Rather, the point is that a third-party app store could put pressure on Apple to innovate by providing features that Apple has neglected. Because this competition is currently precluded, Apple's restrictions reduce innovation in "core" game distribution services.

e. Other Effects

Epic Games raises two other potential anticompetitive effects. First, Epic Games argues that Apple self-preferences its own apps.[504] Using partial testimony from Mr. Shoemaker, plaintiff claims that Apple used the app

503. *E.g.*, DX-3922.063. Apple also cites surveys showing very high *user* satisfaction with the iPhone. DX-4275.205; DX-4089.056. The surveys, however, concern the device as a whole and, if anything, reinforce the lesser role played by third-party apps. Thus, the most important features driving purchasing decisions all relate to hardware—battery life, performance, durability, and ease of use—which also form the top reasons for considering other devices. DX-4089.010, .035, .037. By contrast, only 28% of users consider third-party apps an important "other" aspect of their iPhone purchase decision. DX-4089.012.

504. Epic Games argues that Apple self-preferences its apps in search, but provides little evidence in support. In one email, an Apple employee states that Mr. Fischer, "feels extremely strongly about not featuring our competitors on the App Store," but Mr. Fischer says she was misinformed. PX-0058.001; Trial Tr. (Fischer) 954:12-955:12. Another email describes "boosting" certain apps over Dropbox, but Mr. Fischer immediately reversed the decision. PX-0052. As to search, Mr. Schiller testified that Apple does not use search ads for its own products, and Epic Games has not shown otherwise. Trial Tr. (Schiller) 2819:13-14.

review process "as a weapon against competitors" and placed "barriers" between competitor apps, while using the data obtained through app review to create its own apps. For example, Apple Arcade has been allowed on the store, despite being a store within a store. Google Voice, on the other hand, was rejected on "pretextual grounds" because of Apple's concern that the iPhone will "disappear . . . in guise of a Google phone."[505]

Upon review, the proffer is weak. Mr. Shoemaker clearly believes that Apple misuses its app review process. Aside from his limited deposition excerpts, however, there is little objective evidence of self-preferencing. For instance, Apple Arcade apparently complies with App Store requirements that each game be individually downloaded.[506] There is thus at least a factual dispute about whether it accords with the guidelines. As to Google Voice and Rhapsody, even Mr. Shoemaker acknowledges that they were "the first of their kind" and that "Apple just didn't know how to respond" during app review.[507]

Second, Epic Games argues Apple's restrictions reduce "middleware" that could decrease switching costs and increase competition. Dr. Athey testifies broadly to this effect, opining that new platforms face a "chicken-

505. Ex. Depo. (Shoemaker) 75:14-77:02, 78:13-78:24, 84:16-85:08, 88:02-88:08; PX-0099.006. Epic Games also cites evidence of developers' complaints that Apple's "apps are permitted to do things they are not." PX-0858.002; Trial Tr. (Kosmynka) 1028:11-1030:4. The proffered evidence has no context so it cannot be evaluated.

506. Trial Tr. (Athey) 1854:6-16.

507. PX-0099.005.

and-egg" problem where they have to attract users through apps but have to attract developers through users. Middleware could help reduce these costs by allowing for app porting from one platform to another.[508] As noted above, Dr. Athey's analysis is plausible but wholly lacking in supporting evidence. She does not show that even her preferred examples of middleware, such as the multi-platform store Steam, have meaningfully increased new entrants, particularly since each platform still requires its own APIs.[509] Thus, the evidence does not support anticompetitive effects in this area.

2. Business Justifications

Apple asserts two business justifications for its app distribution restrictions.[510] First, it argues that prohibitions on third-party app stores helps ensure a safe and secure ecosystem. This benefits both users, who enjoy stronger security and privacy, and developers, who benefit from a larger audience drawn by these features. It also benefits

508. Ex. Expert 4 (Athey) ¶¶ 42-47, 53-56.

509. *See id.* ¶ 67; Ex. Expert 6 (Hitt) ¶¶ 261-262 (while Steam decreases costs to *offer* games across platforms, it does nothing for costs to *develop* them).

510. In its Findings of Fact, Apple focuses heavily on the procompetitive nature of app stores in general. Thus, Apple argues that before it introduced the App Store, distribution was limited to the web, and that the App Store launched a new wave of innovation that benefited consumers and developers alike. Apple FOF ¶¶ 545-548. Since Epic Games does not challenge Apple's right to maintain the App Store but only its restrictions on other distribution—which may provide similar or equivalent benefits—these procompetitive effects are not directly tied to the challenged conduct.

Apple, which uses privacy and security as a competitive differentiator for its devices and operating system.[511]

Second, Apple claims that the distribution restrictions are part of its intellectual property licensing arrangement for which it is entitled to be paid. As the owner of the devices and operating system, Apple could choose not to license its IP and remain the exclusive developer of iOS apps. Instead, Apple has actively licensed, developed, and improved its IP for others, but only on the condition of iOS remaining a "walled garden." Thus, Apple argues that its contractual restrictions are necessary to protect its IP investments and prevent free riding.[512]

Epic Games responds that each of these justifications is pretextual. Apple's commission is wholly disconnected from—and not motivated by—its intellectual property investments. Epic Games also contends that an exclusive app store is not necessary to maintain security, which can be achieved through less restrictive means, such as notarization.[513]

The Court examines the evidence for each.

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511. Apple FOF ¶¶ 581-595; Trial Tr. (Schiller) 2734.21-2735:2, 2830:25-2831:3; Ex. Expert 11 (Rubin) ¶¶ 23, 56-59; Trial Tr. (Sweeney) 93:8-11; Trial Tr. (Evans) 1689:16-1690:8; Ex. Expert 8 (Schmalensee) ¶¶ 52-54.

512. Apple FOF ¶¶ 596-602; Ex. Expert 12 (Malackowski) ¶¶ 15-19, 26, 42, 51, 54.

513. Epic Games FOF ¶¶ 564-700; *see also* Trial. Tr. (Malackowski) 3662:13-17, 3666:16-3668:10-18, 3669:22-3670:7, 3692:18-3700:10; Trial Tr. (Schiller) 2738:15-24.

Appendix B

a. Security, Privacy, and Reliability

Beginning with the security justification, the Court notes at the outset that the parties adopt different definitions of security. Epic Games takes a narrow view of security as preventing an app from performing unauthorized actions or stealing user data. Thus, Epic Games' security expert, Dr. Mickens, defines a "security property" as one that "make[s] an app easier to subvert" or allows it to "improperly interact with other apps" or "expose sensitive user data to potential theft or corruption."[514]

Apple, on the other hand, takes a broader view of security that includes user privacy, reliability, and "trustworthiness." Its security expert, Dr. Rubin, opines that security concerns arise when an app targeted to children asks for a home address; when a simple Tic-Tac-Toe game requests microphone and camera access; when an app developer falsely represents their application; or when an app is so unreliable that its constant crashing endangers offline safety. Dr. Rubin also includes "objectionable content," such as pornography and pirated apps, in his definition.[515] Because these apps perform no expressly unauthorized actions—and may be affirmatively

514. Ex. Expert 5 (Mickens) ¶ 49.

515. Ex. Expert 11 (Rubin) ¶¶ 18-21. Mr. Federighi testified that security means "protecting users' data and protecting their control over the device, making sure that what happens on their device is what the user intended and isn't being manipulated by a bad actor." Trial Tr. (Federighi) 3358:5-8. This definition encompasses Dr. Rubin's examples.

authorized by the user—they raise different concerns than traditional malware.

The Court finds it useful to disaggregate these forms of security, as well as the two types of challenged restrictions (sideloading and "store-within-a-store").

i. "Narrow" Security: Malware

Under a narrow conception of security, Apple protects from malware on iOS in at least four ways. *First*, Apple uses malware scanning programs to detect whether a piece of software corresponds to known malware. *Second*, it requires developers to register with a certificate and sign their code with that certificate so that malware can be traced back to a developer and code from unknown entities can be excluded. *Third*, it uses "sandboxing" to prevent an app from doing anything that the user has not authorized.[516] *Fourth*, it includes "reliability checks" on the App Store, which include automated app scanning, as well as human review. Together, these techniques create "layered" security that creates multiple barriers to malware.[517]

All but the last of these malware protections are performed by the operating system or middleware independent of app distribution. Dr. Mickens thus opines

516. "Sandboxing" may encompass other techniques, such as memory isolation and address space layout randomization. Trial Tr. (Federighi) 3376:4-3378:14; Ex. Expert 5 (Mickens) ¶¶ 24-37.

517. Trial Tr. (Federighi) 3372:10-3375:25, 3383:16-3384:14.

that restrictions on app distribution are not necessary because the operating system implements all of the key security features. App review, by contrast, provides only secondary checks on sandbox compliance, exploit resistance, and malware exclusion, as well as "non-security" factors like privacy and legal compliance.[518]

Importantly, however, Dr. Mickens focuses only on preventing unauthorized app functions. He opines that his preferred techniques work by removing "decision-making" power from applications and vesting them in the operating system. The OS then resolves the decision by prompting users for consent. Thus, even though the OS is formally making decisions, the user ultimately determines access.[519] The evidence shows, however, that this may not be enough to protect security because users often grant permissions by mistake. Mr. Federighi credibly testified that malware may use "social engineering" techniques to trick the user into granting access and evade operating system defenses. For example, malware may represent itself as a dating app to ask for photo access—which it can then encrypt and hold for ransom against the user. Epic Games did not explain how, if at all, the operating system can protect against this type of behavior.[520]

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518. Ex. Expert 5 (Mickens) ¶¶ 6-9, 66-70; Trial Tr. (Mickens) 2559:5-12, 2571:24-2572:5.

519. Ex. Expert 5 (Mickens) ¶¶ 23, 72.

520. Trial Tr. (Federighi) 3371:3-3372:1, 3379:10-3380:13; Ex. Expert 11 (Rubin) ¶ 27.

Moreover, system-level protections do not fully prevent downloading malware in the first place. As Dr. Rubin plausibly opines, "[i]t is unwise to *first* trust users to download malicious apps, and *then* try to subsequently detect malicious apps and deny giving malicious apps the permissions they might request."[521] The evidence shows that social engineering attacks act as a dominant vector of malware distribution. A 2020 Nokia report indicates that "[i]n the smartphone sector, the main venue for distributing malware is represented by Trojanized applications," which trick users into downloading by posing as a popular app. For example, a malicious app may represent itself as free Microsoft Word to obtain downloads. A 2020 PurpleSec report confirms that "98% of cyberattacks rely on social engineering."[522]

For these types of attacks, human app review plays a meaningful role. During app review, a human reviewer confirms that an app corresponds to its marketing description. This prevents the "trojan" attacks described above, where malware tricks users into download by posing as another popular app. The human reviewer also checks that the app's entitlements are reasonable for the task it purports to accomplish. Thus, a Tic-Tac-Toe game may be rejected if it asks for camera access or health data. Last, although not directly related, app review checks for offline safety issues. Although these tasks are

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521. Ex. Expert 11 (Rubin) ¶ 30 (emphasis in original).

522. DX-4975.008; DX-4956.006; Ex. Expert 11 (Rubin) ¶ 96; Trial Tr. (Federighi) 3370:2-12; Trial Tr. (Rubin) 2763:1-9.

straightforward, they require human review and cannot be implemented by a computer or operating system.[523]

The Court agrees with Epic Games that this process is imperfect. Apple has limited ability to prevent "Jekyll and Hyde" apps that change their behavior after review, and allows some malware to slip through.[524] However, the overall error rate appears to be relatively small, with Apple's former head of app review testifying that it was around 15% in 2015. Mr. Federighi confirmed that the error rate is generally small.[525]

Removing app distribution restrictions could reduce this effectiveness. First, app stores often differ in the

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523. Trial Tr. (Federighi) 3384:22-3388:7; Trial Tr. (Kosmynka) 1087:9-21, 1090:22-1094:1; Ex. Expert (Rubin) ¶¶ 31, 36-37. Human review may also provide some benefit against novel and well-hidden malware attacks. Dr. Rubin explains that automated tools investigate based on past threats to flag content, which makes them less able to detect novel attacks. Mr. Kosmynka acknowledged that his team has found new types of threats not picked up by automated tools. He also testified that his team finds well-hidden features not picked up by automated tools, including bait and switch. Trial Tr. (Kosmynka) 1108:1-1109:11, 1095:23-1103:8; Ex. Expert (Rubin) ¶ 40.

524. These issues appear to have preceded Apple's use of dynamic analyzers, which may partly address the problem. *See* PX-0465; Trial Tr. (Kosmynka) 996:7-19, 1098:17-25.

525. PX-0465; PX-0335.006; Ex. Depo. (Shoemaker) 133:20-134:9; Trial Tr. (Federighi) 3486:15-23. Both parties also cite statistics about the overall rejection rate of app review. That says nothing about the error rate. Apps may be approved or rejected for proper and improper reasons. Trial evidence did not focus on this later issue.

quality of app review. On Android, which allows some third-party app stores, the main Google Play app store is secure, but a variety of third-party stores allow blacklisted apps to operate.[526] A Nokia report attributes higher malware rates on Android to Trojan apps on third-party app stores. This creates a problem because, as Dr. Rubin opined, "security is only as strong as the weakest link."[527] Decentralized distribution thus increases the risk of infection by giving malware more opportunities to break through. Namely, if even one app store permits malware to operate (either accidentally or as a "rogue" app store), a social engineering attack has a chance to work.[528]

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526. The parties debate whether Android is less secure than iOS. Although some industry publications show greater malware on Android, Dr. Mickens testified that they are in the same "rough equivalence class." The Court need not resolve this dispute because Android differs in other ways, such as lack of app certification and weaker sandboxing, that could affect malware rates independent of app distribution. *E.g.*, DX-4975.008; DX-4956.004; DX-4959; *see* Trial Tr. (Mickens) 2558:16-2260:8, 2630:12-2631:11; Trial Tr. (Rubin) 3774:3-2777:16.

527. Ex. Expert 11 (Rubin) ¶ 87. Of course, third-party app stores could also have increased security than Apple. For example, a Disney app store would plausibly screen apps more rigorously than Apple. Trial Tr. (Mickens) 2697:12-21.

528. DX-4401.005; DX-4975.008; Ex. Expert 11 (Rubin) ¶¶ 47-49, 87-89. The parties also debate whether centralization of app review increases or decreases its effectiveness. Dr. Mickens opines that having many stores perform app review puts more "eyeballs" on the problem and decreases the burden on any one store. Dr. Rubin opines that it fragments learning and makes each store less knowledge. The Court finds both effects plausible, but lacks evidence on their comparative magnitude. Trial Tr. (Mickens) 2702:7-21; Ex. Expert 11 (Rubin) ¶ 93.

Second, with respect to sideloading, app review is likely impossible and thus could not prevent social engineering attacks. Apple currently prevents direct distribution from the web using technical measures. If those measures were lifted, users could download—and thus could be tricked into downloading—directly from the open web. Although Epic Games presents some alternative methods that could be used to prevent malicious direct distribution (which are discussed below), there is little dispute that completely unrestricted sideloading would increase malware infections.[529]

Thus, the Court finds that centralized distribution through the App Store increases security in the "narrow" sense, primarily by thwarting social engineering attacks.

ii. "Broad" Security: Privacy, Quality, Trustworthiness

With respect to a "broader" definition of security, there is less dispute that app distribution restrictions help ensure privacy, quality, and trustworthiness. This again, stems primarily from human app review.

Privacy: Dr. Mickens agrees that computers "lack a generic way to detect which instances of user-submitted touchscreen data contain private information." While the OS can detect app access to computer-generated private data (camera roll), it lacks the capacity to distinguish

529. Trial Tr. (Federighi) 3388:24-3389:12, 3416:6-16; Trial. Tr. (Cook) 3884:22-3885:11; Ex. Expert 11 (Rubin) ¶ 54; *see also* Trial Tr. (Mickens) 2709:23-2710:2 (describing this model as "absolute mayhem").

private from nonprivate user entries. Dr. Mickens agrees that human app review can aid in this process, but opines that Apple does a poor job in practice. His only evidence for this is a Wall Street Journal that reports user tracking on popular iOS apps; he did not analyze any internal Apple data for this opinion.[530]

Apple, by contrast, proffers some evidence that the App Store imposes heightened privacy requirements. For instance, Apple requires developers to publish "privacy labels" that disclose data collection as a condition of being listed on the App Store. It also adopts the stricter privacy policies required by the European Union worldwide, including user opt-out. Not all developers like these requirements; presumably because it impacts their own bottom line. Thus, privacy concerns may be more at risk with loosened app distribution restrictions. Under the current model, large developers who rely on advertising for monetization must comply or leave the App Store to avoid these requirements.[531] Accordingly, privacy, more than other issues, likely benefits from some app distribution restrictions.[532]

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530. Ex. Expert 5 (Mickens) ¶¶ 71-75; Trial Tr. (Mickens) 2631:16-21.

531. As explained above, the evidence suggests that decentralized distribution benefits primarily large developers, who do not need to rely on a centralized app store to be discovered. While these developers are unlikely to sell outright malware, they are quite likely to monetize user data, which makes privacy a particularly sensitive issue.

532. DX-5335.015; Trial Tr. (Cook) 3847:15-3848:21; Trial Tr. (Federighi) 3408:2-3410:4, 3422:17-2423:15; Trial Tr. (Schiller)

Quality: A variety of content may be safe but objectionable, including pornography, gambling, and inappropriate marketing to children. Mr. Kosmynka testified that human app review is necessary to detect such content because computers cannot do it alone. Importantly, offensiveness is highly context dependent, which makes it difficult to automate. For example, nudity may be appropriate in a medical app but inappropriate in other contexts.[533]

Epic Games responds that Apple's app review still allows objectionable apps. For example, it points that school shooting games have appeared on the App Store.[534] However, this data is largely anecdotal and fails to provide a comparison to the "but-for" world where app review did

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3166:6-15; Ex. Expert 11 (Rubin) ¶ 84. Apple also cites "app tracking transparency" as a feature that protects user privacy. The record is not clear, however, whether this feature is implemented by the App Store or by the OS. To the extent that it is implemented by the OS, app review may play a more limited role in ensuring that apps do not incentivize relinquishing privacy. Trial Tr. (Schiller) 3166:22-3167:7; Trial Tr. (Federighi) 3407:73-408:1, 3410:5-9.

533. PX-0131; PX-1938; PX-1939; Trial Tr. (Kosmynka) 1085:19-1087:8, 1108:20-1109:11; Trial Tr. (Schiller) 3154:7-24; *see also* Trial Tr. (Mickens) 3673:16-23 (agreeing that system-level protections do not protect against inappropriate content).

534. The alleged "BDSM" apps proved hollow and demonstrates the problem with highly provocative and sexual photos as an enticement to download apps geared towards dating that ultimately does not contain pornographic material. This merely reinforces the subjective and context-dependent nature of "objectionable" content. *See* PX-0131; PX-1938; PX-1939. Trial Tr. (Kosmynka) 1085:19-1087:8, 1108:20-1109:11; Trial Tr. (Schiller) 3154:7-24.

not take place. Thus, app distribution restrictions likely reduce offensive content available on Apple's devices.

Trustworthiness: App review also protects against scams and other fraud, such as pirated or copycat apps. Dr. Mickens did not consider this aspect in his security analysis and admitted that his opinion about the value of human app review may change if these issues are included. He also agreed that system-level protections do not protect users against this type of content, which confirms that human review is necessary.[535]

As with objectionable content, Epic Games responds by showing that scams still slip through app review.[536] For the same reasons, this anecdotal evidence does not show that scams and other fraud would not be higher without app review. Thus, the Court finds that app distribution restrictions increase security in the "broad" sense by allowing Apple to filter fraud, objectionable content, and piracy during app review while imposing heightened requirements for privacy.

iii. Impact on Market

These protections have an impact on users, developers, and Apple. First, app review provides Apple with a competitive differentiator. When Apple first launched the App Store, it sought to "strike a really good path" between

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535. Trial Tr. (Kosmynka)1088:18-1090:16; Trial Tr. (Mickens) 2673:2-7, 2673:24-2675:17, 2679:21-2680:1, 2685:8-18.0

536. *See, e.g.*, PX-0060; PX-0371.

the dependability of a closed device and the ability to run third-party apps of a PC. As Mr. Jobs explained:

> It is a dangerous world out there. There are mobile viruses of all sorts that people have to put up with and so we've tried to strike a really good path here. On one side you've got a closed device like the iPod, which always works. You pick it up, it always works because you don't have to worry about third party apps mucking it up. And on the other side you've got a Windows PC where people spend a lot of time every day just getting it back up to where it's usable and we want to take the best of both. We want to take the reliability and the dependability of that iPod and we want to take the ability to run third party apps from the PC world but without the malicious applications.[537]

Since then, security and privacy have remained a competitive differentiator for Apple. Mr. Cook testified that privacy is "a very key factor, one of the top factors who people choose Apple." The documents bear this out: internal surveys show that security and privacy was an important aspect of an iPhone purchasing decision for 50% to 62% of users in most countries— and over 70% in India and Brazil—and an important part of an iPad purchasing decision for 76% to 89% of users. Indeed, Mr. Sweeney himself owns an iPhone in part because of its better security and privacy than Android.[538]

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537. PX-0880.025.

538. Trial Tr. (Cook) 3848:22-3849:7; Trial Tr. (Sweeney) 302:19-303:4; DX-4089.012; DX-3465.024.

Second, there is evidence that Apple's restrictions benefit users. As noted above, many users value their iOS devices for their privacy and security. As the result of having a trusted app environment, users make greater use of their devices, including by storing sensitive data and downloading new apps. The witnesses are unanimous that user security and privacy are valid procompetitive justifications.[539]

Third, the evidence on developers is mixed. On the one hand, developers experience delays and mistaken rejections that would not occur with sideloading or distribution through stores without app review. On the other hand, developers benefit from the safe environment created by the App Store. Based on a trusted environment, users download apps freely and without care, which benefits small and new developers whose apps might not be downloaded if users felt concern about safety. This is consistent with the indirect network effects identified by Dr. Schmalensee: the small burden on developers maintains a healthy ecosystem that ultimately benefits both sides. Thus, the evidence shows that developers both benefit and suffer from app distribution restrictions.[540]

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539. *See* Trial Tr. (Evans) 1689:22-24 ("[p]rotecting iPhone users from security threats is a procompetitive benefit"), 2415:10-13 (same for protecting users from offensive content); Trial Tr. (Sweeney) 193:3-9 (recognizing importance of privacy and security); Trial Tr. (Federighi) 3421:19-3422:7 (describing importance of security to ecosystem).

540. Trial Tr. (Simon) 384:7-385:8; Trial Tr. (Grant) 727:22-730:4; Ex. Depo. (Ong) 62:15-65:25; Trial Tr. (Federighi) 3421:16-3422:7; Ex. Expert 8 (Schmalensee) ¶ 52.

iv. Alternatives

Epic Games argues that the security and privacy benefits described above can be achieved without app distribution restrictions. As explained, most of the benefits derive from app review, which screens for social engineering attacks, filters fraud and offensive content, and impose heightened privacy requirements. Epic Games argues that the same benefits can be achieved in other ways. It focuses on two alternative models.

First, under an "enterprise program" model, Apple could focus on certifying app stores instead of apps. The Enterprise Program is an existing model for distributing apps on iOS where companies apply to distribute apps within its organization. Apple reviews the company and, if conditions are met, gives it a certificate that allows it to sign apps for distribution. Although the program has occasionally been abused, it shows that Apple could shift its review from apps to app stores, while continuing to impose standards for privacy and security.[541]

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541. Ex. Expert 5 (Mickens) ¶¶ 56-58; Trial Tr. (Mickens) 2585:24-2586:19, 2667:12-2670:1; Trial Tr. (Federighi) 3412:23-3415:17; Trial Tr. (Schiller) 3145:22-3146:8. For example, Apple could demand that third-party app stores require "privacy labels" and fraud prevention as a condition of certification. Indeed, Apple already implements this model for social media apps, which can (and do) host objectionable content but which implement their own content moderation. Trial Tr. (Evans) 2418:14-2419:1; Trial Tr. (Federighi) 3469:9-25 (noting that Parler was removed from the App Store based on inadequate content moderation).

Second, under a "notarization" model, Apple could continue to review apps without limiting distribution. The notarization model is currently used on macOS. There, Apple scans apps using automatic tools and "notarizes" them as safe before they can be distributed without a warning. Apps can still be distributed through the Mac store (with complete app review) or with a warning if not notarized, but notarization provides a "third path" between full app review and unrestricted distribution. In theory, notarization review could be expanded to include some of the checks Apple currently performs in the App Store, such as human review.[542]

The notarization model is particularly compelling because Apple contemplated a similar model when developing iOS. iOS is based on macOS and share the same kernel. Documents show that Apple initially considered using app signing for security while allowing developers to distribute freely on iOS. As one document explains, "[app] [s]igning does not imply a specific distribution method, and it's left as a policy decision as to whether signed applications are posted to the online store, or we allow developers to distribute on their own." This shows that Apple could continue performing app review even if distribution restrictions were loosened.[543]

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542. Ex. Expert 5 (Mickens) ¶¶ 85-87; Trial Tr. (Federighi) 3380:19-3381:11, 3463:9-3467:16; *see* DX-5492.103-.104.

543. PX-2756; Trial Tr. (Federighi) 3358:9-21; Trial Tr. (Mickens) 2593:13-2594:15; Ex. Expert 5 (Mickens) ¶¶ 13, 46, 89-96; PX-0877.100-.300; PX-0875.002. Under the notarization model, Apple also retains the ability to revoke notarization and turn off developer accounts associated with malware. Depending on the scope of the

Apple responds to Epic Games' proposed alternatives in several ways. First, it disputes that the Enterprise Program provides a comparable model because it is used primarily for employers, who rarely want to hack their own employees. That is factually true, but provides little insight as to why a modified model could not work. Apple points to unspecified evidence that the Enterprise Program has been used to distribute malware. As with Epic Games' evidence of fraud on the App Store, this does not show that the program is unsecure as a general matter.[544]

Second, it claims that Mac faces a different threat model and has more malware than iOS. Mr. Federighi testified that users download apps more casually on mobile devices than on computers and frequently use them to store more valuable data. The Mac model was also adopted at a time when users expected to freely download from the Internet, which limited Apple's ability to impose greater restrictions given customer expectations. In any case, Mr. Federighi testified that Mac has a "malware problem" compared to iOS. Even with notarization, 110 instances of malware broke through on the Mac in 2020.[545]

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option, this could address Mr. Federighi's concern that decentralized distribution creates a "whack-a-mole" problem. Trial Tr. (Rubin) 3794:14-3795:8; Trial Tr. (Federighi) 3392:4-20, 3451:14-2452:6.

544. For instance, it is difficult to imagine that Microsoft would be a source of malware for iOS users. *See* Trial Tr. (Mickens) 2668:16-2671:15 (explaining that the Enterprise Program is just a "point in the design space"); Trial Tr. (Schiller) 3146:13-25.

545. Trial Tr. (Federighi) 3362:2-3365:3, 3389:14-3390:8, 3393:4-25, 3394:1-19, 3401:3-24. Mr. Federighi also expressed

While Mr. Federighi's Mac malware opinions may appear plausible, they appear to have emerged for the first time at trial which suggests he is stretching the truth for the sake of the argument. During deposition, he testified that he did not have any data on the relative rates of malware on notarized Mac apps compared to iOS apps. At trial, he acknowledged that Apple only has malware data collection tools for Mac, not for iOS, which raises the question of how he knows the relative rates. Prior to this lawsuit, Apple has consistently represented Mac as secure and safe from malware.[546] Thus, the Court affords Mr. Federighi's testimony on this topic little weight.

In any case, even if notarization is less secure on Mac, that only shows the limits of malware scanning. If Apple implemented a more fulsome review, similar to the type done on the App Store, there is no reason why the results would be different. Apple's only response is that app review may not scale given developers' expectation over timing. Given that app review is already required for all apps in the App Store, the scale itself does not appear to be a problem. The question is the amount of resources Apple allocates to the issue and supply of human reviewers. *See supra* Facts § I.C.4.

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confusion about how an enterprise model would work, including how a trustworthy store would be determined. Trial Tr. (Federighi) 3416:17-3417:7. These problems appear comparable determining app trustworthiness, which Apple has managed with adequate success, as described above.

546. *Id.* 3432:19-3434:4, 3394:4-22; *see, e.g.*, PX-0741.100, .500.

Ultimately, the Court finds persuasive that app review can be relatively independent of app distribution. As Mr. Federighi confirmed at trial, once an app has been reviewed, Apple can send it back to the developer to be distributed directly or in another store. Thus, even though unrestricted app distribution likely decreases security, alternative models are readily achievable to attain the same ends even if not currently employed.[547]

b. Intellectual Property

Turning to the intellectual property justification, the Court agrees with the general proposition that Apple is entitled to be paid for its intellectual property. The inquiry though does not end with the bald conclusion. Apple provides evidence that it invests enormous sums into developing new tools and features for iOS. Apple's R&D spending in FY 2020 was $ 18.8 billion.[548] This spending runs the gamut from hardware features like an Accelerometer developed in 2007, to a gyroscope in 2010, stereo speakers in 2016, to LiDAR in 2020, all of which expand the device functions to software features that improve processing speed to combinations of the two, such as FaceTime. It also includes thousands of developer tools, SDKs, and APIs (150,000 today), many of which are

547. Trial Tr. (Federighi) 3510:5-15.

548. This number, which is taken from Apple's SEC filings, covers Apple's entire business. Internal financial documents suggest that only a small portion of this spending goes to services like the iTunes store. *Compare* DX-4581.026 (total R&D) *with* PX-2385.024 (R&D breakdown).

directed specifically at game developers. For example, Metal is a tool that allows developers to create powerful computer graphics. Additionally, Apple has invested in longer battery file, and over the last decade, core processing units (CPU) have increased one hundredfold and relative graphic performance, one thousandfold. Mr. Schiller testified that each of these features enables game developers to create new and innovative games.[549]

Epic Games does not venture to argue that Apple is not entitled to be paid for its intellectual property, but rather claims that these investments have nothing to do with the App Store *specifically*. Apple disagrees. As with other issues in this trial, the answer is somewhere in between the two extremes but the evidence was not presented in a way to make a decision with precision. That said, the record is devoid of evidence that Apple set its 30% commission rate as a calculation related to the value of its intellectual property rights. Nor is there any evidence that Apple could not create a tiered licensing scheme which would better correlate the value of its intellectual property to the various levels of use by developers.[550] More specifically, the evidentiary record is silent as to whether the $ 99 fee paid by developers whose entire app is "free," like banks or other commercial entities, is correlated

549. DX-4581.026; Ex. Expert 12 (Malackowski) ¶¶ 22, 29-33; Trial Tr. (Schiller) 2878:2-2902:10. Other examples included a retina display in 2010, Taptic Engine in 2014, and Neural Engine in 2017. None of these developments are allocated to the App Store but all support games and other applications. Trial Tr. (Schiller) 2878:6-2885:6, 2893:3-2895:15.

550. *See* Trial Tr. (Malackowski) 3662:13-17.

to the intellectual property as compared to the gaming developers who are paying 30% on each IAP transaction and who appear to be subsidizing most of the other app developers.

Thus, the Court finds that with respect to the 30% commission rate specifically, Apple's arguments are pretextual, but not to the exclusion of some measure of compensation.

B. Anticompetitive Effects: In-App Payment Restrictions

1. Effects

Turning to the evidence regarding in-app payment restrictions, Epic Games focuses on the effects on price and quality. Although in-app payment processing is an integrated part of the App Store, the Court reviews its effects because third-party app stores could compete on in-app payment processing—and thus rectify some of the effects—if app distribution restrictions were loosened. The Court also considers procompetitive justifications unique to payment restrictions as those relative to app distribution restrictions apply here as well. Lastly, the Court considers the anti-steering provision, which presents a separate subissue.[551]

551. As with the app distribution restrictions, the Court uses "app" interchangeably with "game" and does not distinguish game and non-game developers here. There is no evidence that gamers experience the effects differently, and they are more likely to be affected by the restrictions because of iOS games' disproportionate use of IAP. *See supra* Facts §§ II.B.3, V.A.

Starting with Epic Games' two arguments, the Court notes that it has already discussed them, which shows both pro- and anti-competitive benefits.[552] *See supra* Facts § V.A. Moreover, the analysis included the tradeoffs within privacy considerations. *Id.*

Apple's experts opine on other benefits, in addition to fraud prevention. With respect to the user side, Dr. Schmalensee opines that "IAP supports the ability of users to redownload apps and in-app purchase on new devices, share subscriptions and in-app features with family members, view their entire purchase history, and manage subscriptions from one place on their phone," all of which benefits users. While true, these benefits are also a reflection of the ecosystem. Dr. Athey counters that multi-platform payment processors would benefit users more by enabling the same migration, control, and sharing across platforms.[553] On the gaming side, much of this is being done through cross-wallet and cross-platform play.

On the developer side, Apple argues IAP helps streamline in-app payment functions. By providing a consistent and trusted user experience, IAP encourages

552. Ex. Depo. (Ong) 169:24-173:06; *see also* Trial Tr. (Sweeney) 128:22-24; PX-2362.300; Ex. Expert 8 (Schmalensee) ¶ 150; Ex. Expert 11 (Rubin) ¶ 127.

553. Ex. Expert 8 (Schmalensee) ¶ 150; Trial Tr. (Schmalensee) 1894:11-1895:12; Trial Tr. (Schiller) 3187:1-6; Ex. Expert 4 (Athey) ¶¶ 76-78; *cf.* PX-2235.004 (email noting difficulty of multi-platform in-app payments). Epic Games also argues that innovative features are precluded, such as carrier billing, but the evidence on this point is scant. *See* PX-2302.013; Trial Tr. (Evans) 1608:20-1609:12.

users to spend freely, which benefits developers through indirect network effects and has resulted in millions of dollars of revenue. Again, as noted above, the ability to profit from impulse purchasing can be viewed as both a sword and a shield in this context. For those developers who rely more heavily on Apple, the benefit is greater than those like Epic Games who would prefer for the revenue stream to be direct.

Beyond this significant feature, it is unclear what else IAP provides to developers. Apple agrees that it is not a payment processor; Apple delegates actual payment processing to thirdparties, such as Visa. Mr. Fischer testified that IAP provides features as part of the "commerce engine," but all of those features relate to users or Apple. Indeed, Dr. Evans shows that IAP does nothing technically aside from returning payment information.[554] Thus, there is no evidence that IAP provides developers with any unique features.[555]

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554. In its proposed findings of fact, Apple claims that IAP helps developers with currency conversion and tax collection, but its record citations do not support that claim. *See* Apple FOF ¶ 692 (citing Ex. Expert 8 (Schmalensee) ¶¶ 153-154, which does not discuss these features).

555. Ex. Depo. (Forstall) 252:21-254:4; Trial Tr. (Schiller) 2798:14-19; Ex. Expert 8 (Schmalensee) ¶¶ 152, 154; Ex. Expert 1 (Evans) ¶ 229. Apple raises three additional arguments for IAP. First, it claims that the introduction of IAP "unlocked" the freemium model of monetization. Ex. Expert 8 (Schmalensee) ¶ 134. The parties dispute whether developers used this model on iOS before IAP. Either way, Apple does not claim that freemium requires IAP at present time (as opposed to some other in-app payment processor), so this does not present a *current* procompetitive benefit. Second,

Apple cites three additional procompetitive business justifications for its payment processing restrictions. As with app distribution, Apple cites (i) security, including privacy and fraud prevention, (ii) collection of its commission, and (iii) compensation for its intellectual property. The Court addresses each justification only to the extent not already discussed above.

2. Business Justifications

a. Security

Dr. Rubin opines that by maintaining all transaction data in one place, *i.e.*, centralization, Apple is better able to detect new patterns in fraudulent transactions using algorithms. Dr. Rubin also claims that Apple benefits from its visibility into the entire transaction, which allows it to verify certain transactions.[556]

As explained above, the Court agrees that decentralization may decrease security in some instances. The other arguments cut both ways. For instance, with respect to scale and fraud mining, Dr. Rubin suggests

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Dr. Schmalensee opines that IAP is "essentially free" to developers, who would need to build their own systems or obtain third-party services for payment processing otherwise. *Id.* ¶ 152. In light of Apple's 30% commission, the Court is not persuaded that developers could not obtain these features more cheaply from other companies. Last, Apple claims that IAP helps prevent fraud and ensure privacy. This feature is addressed in the next section as a procompetitive justification.

556. Ex. Expert 11 (Rubin) ¶¶ 126-128.

that having more "data points" will always lead to better fraud detection. Apple admits, however, that IAP is not the largest in-app payment service because it processes at most 3% of in-app purchases.[557] Thus, to the extent that scale allows Apple to better detect fraud, other companies could do it better because they process more transactions. Similarly, with respect to data breaches, although a breach of a payment handler could expose some user data, a breach of Apple itself could expose all Apple users who use IAP.

One of Apple's strongest arguments for IAP security was that it can verify digital good transactions. Unlike for physical goods, Apple uses IAP after confirming that the developer has actually delivered a digital good to the user and is entitled to the corresponding payment. The evidence shows, however, that Apple itself does not perform the confirmation. Apple's Head of Pricing, Mr. Grey, testified that Apple simply asks the developer to confirm that delivery occurred and then issues a receipt. Apple has not shown how the process is any different than other payment processors, and any potential for fraud prevention is not put into practice.[558]

b. Commission Collection

Next, Apple claims that IAP provides the most efficient method for collecting its commission. Dr.

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557. Apple FOF ¶ 669; Ex. Expert 8 (Schmalensee) ¶ 170.

558. Ex. Expert 11 (Rubin) ¶ 128; Trial Tr. (Fischer) 958:12-959:2; Ex. Depo. 12 (Gray) 112:18-114:10.

Schmalensee opines that without IAP, Apple would have to rely on sellers to remit its 30% commission, with little recourse other than a lawsuit if the money was withheld. Due to the sheer volume of transactions on the App Store, this process could quickly become unwieldy.[559]

Epic Games does not directly dispute these claims. Instead, Epic Games challenges Apple's entitlement to a 30% commission in the first place.[560] Evidence exists to support both views as discussed above. *See supra* Facts §§ I.C.3., II.C., IV.A. The fact of commission is separate from the actual amount of the collection, which the Court addresses next.

A corollary point to this topic concerns Apple's restrictions on developers' ability to provide consumers with information about their transactions. Guideline Section 3.1.1 states that apps "may not include buttons, external links, or other calls to action that direct customers to purchasing mechanism other than in-app purchase."[561] This guideline does not prohibit steering toward purchasing mechanisms outside the App Store or its apps, such as on social media, as long as it does not target iOS users but other provisions imply as much.[562]

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559. Ex. Expert 8 (Schmalensee) ¶¶ 138-139, 145-146.

560. Trial Tr. (Schiller) 2826:6-7; Ex. Depo. (Ong) 58:20-59:13, 152:4-152:23; *see also* Trial Tr. (Weissinger) 1314:11-22.

561. PX-2790.010.

562. *See* PX-0257; PX-2790.011; Trial Tr. (Lafontaine) 2055:12-2056:20; Trial Tr. (Schmalensee) 1911:1-12.

The competitive effects and justifications for the anti-steering provision are coextensive with those described for Apple's commission previously. *See supra* Facts § V.A.

c. Value of the Intellectual Property

As described above, Apple has not adequately justified its 30% rate. Merely contending that its commission pays for the developer's use of the App Store platform, license to Apple's intellectual property, and access to Apple's user base only justifies a commission, not the rate itself. Nor is the rate issue addressed when Apple claims that it would be entitled to its commission even for games distributed outside the App Store because it provides the device and OS that brings users and developers together.[563]

As noted, no one credibly disputes that Apple and third-party developers act symbiotically. Apple gives developers an audience and developers make Apple's platform more attractive. Thus, Apple earns revenue each time a developer earns revenue creating a feedback loop. However, as revenues show, the ultimate effect appears to vary within developer groups depending on how a developer chooses to monetize its app.

Further, there is substantial evidence that Epic Games, and perhaps other larger developers, bring their own audience to iOS. Fortnite was already popular when it arrived on iOS and Apple sought exclusive Fortnite content to attract new users. *See supra* Facts §§ I.B.2.d,

563. Apple FOF ¶ 572; Trial Tr. (Cook) 3863:6-3864:8.

I.B.4. That said, Epic Games wanted Apple's user base, to which it did not have access, as it had already saturated its other options. Also, Match Group found that the majority of new users from the App Store organically searched for its apps (*e.g.*, by typing in "Tinder"), while Apple contributed only 6% of discovery. For these developers, Apple's role in generating in-app purchases was "nothing" but it continued to receive a 30% commission on in-app purchases.[564]

C. Combined Effects

Because Apple has created an ecosystem with interlocking rules and regulations, it is difficult to evaluate any specific restriction in isolation or in a vacuum. Thus, looking at the combination of the challenged restrictions and Apple's justifications, and lack thereof, the Court finds that common threads run through Apple's practices which unreasonably restrains competition and harm consumers, namely the lack of information and transparency about policies which effect consumers' ability to find cheaper prices, increased customer service, and options regarding their purchases. Apple employs these policies so that it can extract supracompetitive commissions from this highly lucrative gaming industry. While the evidence remains thin as to other developers, the conclusion can likely be extended.

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564. Ex. Depo. (Ong) 58:20-61:07, 152:04-23; *see also* DX-3922; *supra* Facts §§ I.C.3.b., V.A.1.

More specifically, by employing anti-steering provisions, consumers do not know what developers may be offering on their websites, including lower prices. Apple argues that consumers can provide emails to developers. However, there is no indication that consumers know that the developer does not already have the email or what the benefits are if the email was provided. For instance, Apple does not disclose that it serves as the sole source of communication for topics like refunds and other product-related issues and that direct registration through the web would also mean direct communication. Consumers do not know that if they subscribe to their favorite newspaper on the web, all the proceeds go to the newspaper, rather than the reduced amount by subscribing on the iOS device.

While some consumers may want the benefits Apple offers (*e.g.*, one-stop shopping, centralization of and easy access to all purchases, increased security due to centralized billing), Apple actively denies them the choice. These restrictions are also distinctly different from the brick-and-mortar situations. Apple created an innovative platform but it did not disclose its rules to the average consumer. Apple has used this lack of knowledge to exploit its position. Thus, loosening the restrictions will increase competition as it will force Apple to compete on the benefits of its centralized model or it will have to change its monetization model in a way that is actually tied to the value of its intellectual property.

Appendix B

PART II

APPLICATION OF FACTS TO THE LAW AND CONCLUSIONS THEREON

I. RELEVANT PRODUCT AND GEOGRAPHIC MARKET

A. Legal Framework

"A threshold step in any antitrust case is to accurately define the relevant market, which refers to 'the area of effective competition.'" *FTC v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020) ("*Qualcomm*") (quoting *Ohio v. Am. Express Co.* ("*Amex*"), 138 S. Ct. 2274, 2285, 201 L. Ed. 2d 678 (2018)); *see also Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997) ("*Image Tech Services II*") ("The relevant market is the field in which meaningful competition is said to exist.") (citation omitted). Monopoly power under the first element can be defined as "the power to control prices or exclude competition" and may be inferred from the defendant's predominant market share in the relevant market. *United States v. Grinnell Corp.*, 384 U.S. 563, 571, 86 S. Ct. 1698, 16 L. Ed. 2d 778 (1966). In addition, "courts usually cannot properly apply the rule of reason without an accurate definition of the relevant market." *Amex*, 138 S. Ct. at 2285. Without a relevant market definition, "there is no way to measure the defendant's ability to lessen or destroy competition." *Id.* (simplified).

"The relevant market must include both a geographic market and a product market." *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018) (citation omitted). The latter "must encompass the product at issue as well as all economic substitutes for the product." *Newcal Indus., Inc. v. Ikon Office Sol.*, 513 F.3d 1038, 1045 (9th Cir. 2008); *see also id.* ("The consumers do not define the boundaries of the market; the products or producers do [and] the market must encompass the product at issue as well as all economic substitutes for the product."); P. Areeda & H. Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* § 530a (4th and 5th eds., 2021 Supp.) ("To define a market is to identify those producers providing customers of a defendant firm (or firms) with alternative sources for the defendant's product or service."). "Economic substitutes have a 'reasonable interchangeability of use' or sufficient 'cross-elasticity of demand' with the relevant product." *Hicks*, 897 F.3d at 1120 (quoting *Newcal*, 513 F.3d at 1045); *see also United States v. E.I. DuPont de Nemours & Co.*, 351 U.S. 377, 404, 76 S. Ct. 994, 100 L. Ed. 1264 (1956). "Including economic substitutes ensures that the relevant product market encompasses 'the group or groups of sellers or producers who have actual or potential ability to deprive each other of significant levels of business.'" *Hicks*, 897 F.3d at 1120 (quoting *Thurman Indust., Inc. v. Pay 'N Pak Stores, Inc.*, 875 F.2d 1369, 1374 (9th Cir. 1989)); *see also DuPont*, 351 U.S. at 393 ("Illegal power must be appraised in terms of the competitive market for the product.").[565]

565. "Interchangeability implies that one product is roughly equivalent to another for the use to which it is put: while there may be some degree of preference for the one over the other, either would

A plaintiff cannot ignore economic reality and "arbitrarily choose the product market relevant to its claims"; rather, the plaintiff must "justify any proposed market by defining it with reference to the rule of reasonable interchangeability and cross-elasticity of demand." *Buccaneer Energy (USA) v. Gunnison Energy Corp.*, 846 F.3d 1297, 1313 (10th Cir. 2017) (internal quotation marks and citation omitted). The proper market definition "can be determined only after a factual inquiry into the commercial realities faced by consumers." *High Tech. Careers v. San Jose Mercury News*, 996 F.2d 987, 990 (9th Cir. 1993) (internal quotation marks and citation omitted).

It is the plaintiff's burden to establish the relevant product and geographic markets. *See Thurman Indus.*, 875 F.2d at 1373; *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1302 (9th Cir. 1978) (noting that plaintiffs bear the "burden of proof" to establish a relevant market). To meet that burden, a plaintiff must produce specific evidence supporting the proposed market definition that is "relevant to the particular legal issue being litigated." Areeda & Herbert Hovenkamp § 533c; *see also Moore v. James H. Matthews & Co.*, 550 F.2d 1207, 1218-19 (9th Cir. 1977) (plaintiff failed to establish "the relevant product market" where it failed to introduce adequate evidence

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work effectively." *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 437 (3d Cir. 1997) (internal quotation marks and citation omitted). For example, "[a] person needing transportation to work could buy a Ford or Chevrolet automobile, or could elect to ride a horse or bicycle, assuming those options were feasible." *Id.* (internal quotation marks and citation omitted).

regarding "the products involved as to price, use, quality, and characteristics"); *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 64 (D.D.C. 2011) ("Courts correctly search for a relevant market—that is a market relevant to the particular legal issue being litigated.") (simplified)).

B. Analysis

1. Relevant Product Market

Epic Games constructs a framework to argue that there are three separate product markets at issue. In the foremarket, Epic Games identifies the product market as one for "Smartphone Operating Systems." Epic Games contends in turn that there are *two* derivative and relevant aftermarkets that flow from this initial foremarket, including the "iOS App Distribution" market and "iOS In-App Payment Solutions." Epic Games logic flows as follows: the iOS in-app payment solutions market is an aftermarket of the iOS app distribution market which is further an aftermarket of the smartphone operating systems foremarket.

Apple, on the other hand, contends that there is only one relevant product: digital game transactions. This includes any and all digital gaming transactions made on any gaming platform. The Court has discussed the factual profiles of each of the proffer, *see supra* Facts § II, and turns to the determination here.

The parties agree that the Court must determine which products or services are in "the area of effective

competition" to define the product market. *Amex*, 138 S. Ct. at 2285; *Thurman Indus.*, 875 F.2d at 1374 ("For antitrust purposes, defining the product market involves identification of the field of competition: the group or groups of sellers or producers who have actual or potential ability to deprive each other of significant levels of business." (citation omitted)). The relevant product market "must encompass the product at issue as well as all economic substitutes for the product." *Newcal*, 513 F.3d at 1045. "Economic substitutes have a 'reasonable interchangeability of use' or sufficient 'cross-elasticity of demand' with the relevant product." *Hicks*, 897 F.3d at 1120 (quoting *Brown Shoe v. United States*, 370 U.S. 294, 325, 82 S. Ct. 1502, 8 L. Ed. 2d 510 (1962)); *DuPont*, 351 U.S. at 404.

The Court begins with Apple's product market definition as it more closely aligns with the Court's conclusion. Then the Court discusses the reasons why Epic Games has not properly defined the relevant product market.

a. Apple's Product Market Theory

As a threshold issue, the Court considers whether the App Store provides two-sided transaction services or as Epic Games argues "distribution services."[566] The Supreme Court has seemingly resolved the question: two-sided transaction platforms sell transactions. In

566. Trial Tr. (Evans) 1454:11-16, 1457:10-1458:25, 1707:7-17; Trial Tr. (Schmalensee) 1955:3-23.

two-sided markets, a seller "offers different products or services to two different groups who both depend on the platform to intermediate between them." *Amex*, 138 S. Ct. at 2280. Here, try as it might, Epic Games cannot avoid the obvious. Plaintiff only sells to iOS users through the App Store on Apple's platform. No other channel exists for the transaction to characterize the market as one involving "distribution services."

Plaintiff's reliance on Dr. Evans' testimony to the contrary does not persuade. First, Dr. Evans' testimony was internally inconsistent. He agrees that the App Store is a "two-sided transaction platform" and includes the features characteristic of two-sided transaction platforms. Although he testified that Apple also provides services to facilitate those transactions, those services are coextensive with "transactions" under his definition.[567] Thus, there is no substantive difference between "transactions" and "services" to facilitate those transactions. The semantic difference does not warrant departure from Supreme Court precedent.[568] Second, distribution services may improperly imply that only developers consume Apple's products. The evidence is to the contrary. By contrast, all of the experts agree that both users and developers consume App Store transactions.

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567. *See, e.g.*, Trial Tr. (Evans) 1612:7-9, 1634:2-1635:25; Trial Tr. (Schmalensee) 1882:24-1883:2; Trial Tr. (Lafontaine) 2031:25-2032:3, 2037:15-16; Ex. Expert 8 (Schmalensee) ¶ 55.

568. *See* Trial Tr. (Evans) 1612:7-9, 1634:2-1635:25; *accord* Trial Tr. (Schmalensee) 1954:3-9 (equating transactions with "matchmaking" services), 1940:23-25 (agreeing that Dr. Evans analyzed the App Store as a two-sided platform).

Accordingly, the Court finds that the relevant App Store product is transactions, not services, but that providing transactions may include facilitating services (matchmaking, developer support, etc.).[569]

i. Apps or Digital Game Transactions?

Next, the Court considers whether to narrow the scope of the transactions in terms of defining the product market. "In limited settings . . . the relevant product market may be narrowed beyond the boundaries of physical interchangeability and cross-price elasticity to account for identifiable submarkets or product clusters." *Thurman Indus.*, 875 F.2d at 1374. A submarket is "a small part of the general market of substitutable products" and "is economically distinct from the general product market." *Newcal*, 513 F.3d at 1045. Although there are "several 'practical indicia' of an economically distinct submarket," including "industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors," *id.* (quoting *Brown Shoe*, 370 U.S. at 325), they are "practical aids for identifying the areas of actual or potential competition" and "their presence or absence does not decide automatically the submarket issue." *Thurman Indus.*, 875 F.2d at 1375 (citations omitted). The Court considers these factors in its evaluation.

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569. *See, e.g.*, Ex. Expert 8 (Schmalensee) ¶¶ 55-56; Trial Tr. (Evans) 1707:2-17.

Having considered and reviewed the evidence, the Court concludes based on its earlier findings of facts that the appropriate submarket to consider is digital game transactions as compared to general non-gaming apps. *See supra* Facts § II.B.3. Indeed, the Court concluded that there were nine indicia indicating a submarket for gaming apps as opposed to non-gaming apps: (i) the App Store's business model is fundamentally built upon lucrative gaming transactions; (ii) gaming apps constitute a significant majority of the App Store's revenues; (iii) both the gaming, mobile, and software industry as well as the general public recognize a distinction between gaming apps and non-gaming apps; (iv) gaming apps and their transactions exhibit peculiar characteristics and users; (v) game app developers often employ specialized technology inherent and unique to that industry in the development of their product; (vi) game apps further have distinct producers—game developers—that generally specialize in the production of *only* gaming apps; (vii) game apps are subject to distinct pricing structures as compared to other categories of apps; (viii) games and gaming transactions are sold by specialized vendors; and (ix) game apps are subject to unique and emerging competitive pressures, that differs in both kind and degree from the competition in the market for non-gaming apps. The Court does not reiterate here the detail except to note the following significant points:[570]

570. Dr. Lafontaine suggests that combining game and non-game transactions would require a "clustering" analysis to show that they are subject to the same competitive pressures. Ex. Expert 7 (Lafontaine) ¶¶ 33-35. The Court does not address the issue here because clustering is not necessary to determine that game transactions are the proper focus.

The evidence was undisputed that over 80% of apps in the App Store are free. For those apps, the user pays nothing either inside the app or at the initial download. The developer also pays nothing aside from an up-front $99 developer fee. Apple thus does not collect commissions on those transactions. Moreover, many of those apps are subject to special treatment, such as the "reader" rule, that allows them to bypass Apple's restrictions and commissions altogether. These differences create economic distinctions between the two categories. Finally, there is insufficient evidence that most apps are impacted by Apple's alleged anticompetitive conduct.[571]

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571. Ex. Expert 6 (Hitt) ¶¶ 118, 121; DX-4178.006; PX-0059.007. Besides games, the other category of apps disproportionately affected by Apple's conduct are subscription services. DX-4178.006; DX-4526.021. There are good reasons not to include those apps in the current litigation. First, Epic Games did not sell subscription services when *Fortnite* was on the iOS platform; their representation in the case is limited to third parties. Only one of those third parties testified at trial, so the Court lacks a full picture of the true opinions of these companies. Games and subscription apps in general are distinct, with little overlap among the popular examples. *Compare* PX-0608.015 *with id.* at .016.

Second, many subscription services are subject to special rules, such as the "reader rule" that permits users to access app content purchased outside iOS on their Apple devices. Indeed, several large subscription providers (*e.g.*, Spotify and Netflix) have stopped offering subscriptions through the App Store. Although games are subject to a similar "multiplatform rule," the rule has only been in place since 2018 and the record is mixed whether game developers may be more or less able to similarly steer consumers to web transactions. Ex. Expert 6 (Hitt) ¶¶ 101-105; Trial Tr. (Schiller) 2808:6-2809:3; Trial Tr. (Sweeney) 110:12-111:1.

By contrast, game apps are disproportionately likely to use in-app purchases for monetization. Over 98% of Apple's in-app purchase revenue came from games in 2018 to 2019. Moreover, game transactions overall accounted for 76% of Apple's App Store revenues in 2017, 62.9% in 2018, and 68% in 2020. Game commissions are also substantially higher than average. Thus, in most economic ways, and in particular with respect to the challenged conduct, the App Store is primarily a *game* store and secondarily an "every other" app store.[572]

Game transactions are also widely recognized as belonging to a separate market. The App Store, Google Play, and Amazon Appstore all include separate "tabs" for apps and games which reflects that consumers view them differently. Apple analyzes them separately with different heads of business for games and non-game apps.

Third, and finally, subscription providers may present different security challenges than game stores. Mr. Kosmynka testified that games are different than passive content because they add to or require the functionality of the smartphone. Mr. Schiller confirmed that Apple allows "stores within a store" that contain purely passive content, such as books and music. Thus, Apple's procompetitive justifications may be significantly different for game and non-game stores and apps. Trial Tr. (Kosmynka) 1073:7-1074:18; Trial Tr. (Schiller) 3115:11-3117:7; Trial Tr. (Federighi) 3429:12-3430:8.

Accordingly, the Court declines to consider subscriptions in this lawsuit because they are a separate submarket for which there is insufficient evidence.

572. Ex. Expert 6 (Hitt) ¶¶ 117, 120-24; DX-4178.006; PX-0059.007; Trial Tr. (Schmid) 3226:7-12.

The developers for game apps also tend to be distinct, specializing in games with little revenue from non-game apps.[573]

Finally, the App Store is also built upon specialized consumers—those iOS consumers who play video games on iOS devices. As summarized above, it is iOS consumers who make frequent in-app purchases within gaming apps who account for the large majority of Apple's revenues in the App Store. *See supra* Facts § 1.C.6.[574] In other words, there is a specialized subset of iOS gaming consumers who are generating and accounting for a significantly disproportionate number of App Store billings and revenue.

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573. Ex. Expert 6 (Hitt) ¶¶ 125-27; DX-5552; Trial Tr. (Schmid) 3205:4-11, 3226:1-22, 3349:24-3352:3. As the Court noted, the limited record also shows that the Google Play app store similarly is constructed upon the same game transactions as the App Store. *See* DX-3913.007. Apple also argues that games are subject to unique competitive pressures, with specialized vendors and emerging dynamic competition. Ex. Expert 8 (Schmalensee) ¶ 104. The Court addresses this evidence below.

574. That said, the evidence for a single distinct "gamer" demographic is inconclusive. For instance, Michael Schmid, testified that "gamers" as he defined them are a "very large percentage of users" including "all the people you speak with," suggesting a generally diverse gaming consumer base. Trial Tr. (Schmid) 3350:5-3352:3; *see also id.* 3351:15-17 ("The Court: Well, are you saying that all app users are also gamers? The Witness: Certainly not."). But even without distinct customer demographics, the fact that only certain set of iOS consumers (*i.e.*, those users who play games on iOS), as well as the separate set of developers and industry recognition as a distinct submarket make extrapolation from games to the whole market inappropriate.

Accordingly, between digital game transactions and all app transactions, the relevant product is game transactions. Contrary to Epic Games' suggestion, that is not because plaintiff sells games. Rather, it is because game transactions are disproportionately affected by Apple's challenged conduct, overwhelmingly subsidize other apps, and are recognized as a distinct submarket. Obviously, Epic Games and Apple compete in that market space. That Epic Games is in the market was the impetus for the analysis, not the reason for the conclusion.

ii. All Gaming Transactions or Mobile Gaming Transactions?

The last metric the Court considers is whether to limit the product market to all gaming transactions or only mobile gaming transactions. Apple argues for the former; Epic Games argues (as an alternative) for the latter. The Court is again guided by the "practical indicia" framework articulated in *Newcal* and *Brown Shoe*. The Court considers these factors in its evaluation.

Having considered and reviewed the evidence, the Court concludes based on its earlier findings of facts that the appropriate submarket to consider is the mobile gaming transactions market. *See supra* Facts § II.D. This relevant product market would include mobile game transactions on both mobile phone and tablet devices, which have the competitive advantage of mobility or portability as compared to other platforms and devices. *Id.* Indeed, as the Court summarized and found there, mobile gaming exhibits several of the practical indicia

discussed in *Newcal* and *Brown Shoe* including industry and public recognition of the submarket as a separate economic entity, peculiar characteristics and uses, distinct customers and producers, and specialized vendors. The Court again does not repeat the entirety of the findings previously made, but discusses the more significant and relevant findings here:

Substantial evidence was presented showing that mobile gaming is a distinct submarket. As an initial matter, Apple's own documents recognize mobile gaming as a submarket. One industry report describes mobile gaming as a "$100 billion industry *by itself*" that accounts for 59% of global gaming revenue. While PC and console gaming has grown more slowly, mobile gaming has experienced double-digit growth driven by "the free-to-play model" with in-app purchases. "Remarkably," this rapid growth "has not significantly cannibalized revenues from the PC or console gaming markets," which suggests that consumers are not necessarily substituting among them.[575] Another industry report describes distinct user bases for mobile gaming: young children, teenage girls, and older adults are disproportionally likely to be mobile gamers only. Multiplatform gaming, by contrast, is driven by teenage boys and young adults under 25.[576]

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575. Although this might be due to the fact that mobile gaming first cannibalized the handheld and portable gaming market, which it may have supplanted and now surpassed. *See supra* n.391.

576. DX-3248.005, .008; DX-4170.008; *see also id.* at .024 (showing "segments" of gamers with multiple segments "primarily on mobile").

Even without Apple documents, the experts largely agree that mobile and non-mobile platforms provide different types of games. Dr. Hitt—whom Apple commissioned to show that game transactions are substitutable—ended up showing the opposite. In his original written direct testimony (which Apple withdrew after cross-examination), Dr. Hitt showed that only 12% and 16% of the most popular App Store games are available on consoles. Both Dr. Hitt's and Dr. Cragg's trial testimony remain in the record, and each shows that console games are largely separate from mobile games. Moreover, while Dr. Hitt originally opined that mobile games are available on PCs, his work could not be entirely reproduced during trial, as some of the games he listed as available on both platforms (PC and mobile platforms) could not be found. The fact that Apple tried and failed to show cross-availability of mobile games with PC indicates that they are distinct.[577]

This conclusion is bolstered in part by evidence from Dr. Cragg. Dr. Cragg finds that the most popular games on mobile are *only* available on mobile, with a few games also available on PCs. The types of games are also different, with many more casual games on mobile and core games on PC and console platforms. For those games that are available on multiple platforms, such as *Fortnite*, Dr. Cragg finds that the playing and spending on different platforms is complementary, rather than substitution-focused, because playing on another device *increases* the playtime and spending on the previous devices.[578]

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577. Ex. Expert 6 (Hitt) ¶ 31 & Fig. 3; Trial Tr. (Hitt) 2200:13-2201:18, 2207:6-2216:11; Ex. Expert 13 (Cragg) ¶¶ 34-39, 43-52.

578. Ex. Expert 13 Cragg ¶¶ 25-33, 79-81, Figs. 10-12; Trial Tr. (Schmid) 3207:8-18.

Industry participants also support the conclusion. Microsoft documents show that mobile gaming generates more than half of the industry revenue and profits, compared to only a quarter for consoles and PCs each. Moreover, Ms. Wright testified that Microsoft does not view game transactions for cross-platform games on iOS devices as competition to transactions on its Xbox console. Although Ms. Wright also testified that mobile is "a segment of the game industry as a whole," that is consistent with it being a separate submarket. By contrast, Steam is the largest game store on PCs. Mr. Cook's lack of familiarity with it presents strong evidence that the iOS App Store does not compete with PC game stores.[579]

Finally, as the Court concluded in the findings of facts, the Court would not at this time find that the Switch or game streaming services are part of the mobile game transactions market. This is in part due to the underdeveloped record on these products, and in part on the relative recent introduction of these products to the market. While the record supports a finding that these are new entrants into the same market space as Apple and Google, whether these products ultimately are substitutable and reasonably interchangeable by consumers remain to be seen.

Accordingly, for the same reasons that game transactions, rather than app transactions in general, are the proper focus in this case, the Court finds that

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579. DX-5523.008-.009; Trial Tr. (Wright) 547:4-9, 549:14-21, 638:6-19; Trial Tr. (Cook) 3993:2-6.

mobile gaming, including mobile devices and tablets,[580] is a separate market from gaming in general. Thus, the relevant product market is mobile gaming transactions.

b. Epic Games' Approach: Foremarket/ Aftermarket Market Definition

The Court reaffirms here the fundamental factual flaws with Epic Games' market structure. *See supra* Facts §§ II.A—C. Without a product, there is no market for the non-product, and the requisite analysis cannot occur. Thus, where there is no product or market for smartphone operating systems, there are no derivative markets. The payment solutions aftermarket also fails for the independent reason that IAP is not a product for which there is a market. Further, Epic Games' aftermarket approach to market definition is inconsistent with its recognition that the App Store constitutes a two-sided transaction platform which it fails to properly analyze. *Id.; Amex*, 138 S. Ct. at 2287. Nonetheless, the Court addresses the additional problems with Epic Games' attempt to define the market with the confines of a single brand.

Determining whether a single-brand market is proper requires "a factual inquiry into the 'commercial realities' faced by consumers." *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451, 482, 112 S. Ct. 2072, 119 L. Ed. 2d 265 (1992) ("*Eastman Kodak*") (quoting, *Grinnell*

580. As discussed in the findings of facts, *see supra* Facts §§ II.D—E., this would include both iOS and Android tablets and mobile phone devices.

Corp., 384 U.S. at 572). "Single-brand markets are, at a minimum, extremely rare" and courts have rejected such market definitions "[e]ven where brand loyalty is intense." *Apple, Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190, 1198 (N.D. Cal. 2008) (internal quotation marks and citation omitted). *But see id.* ("Antitrust markets consisting of just a single brand, however, are not per se prohibited . . . . In theory, it may be possible that, in rare and unforeseen circumstances, a relevant market may consist of only one brand of a product."). Indeed, "[a] single brand is *never* a relevant market when the underlying product is fungible." Areeda & Hovenkamp § 563d. "It is an understatement to say that single-brand markets are disfavored. From nearly the inception of modern antitrust law, the Supreme Court has expressed skepticism of single-brand markets[.]" *In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 343 (E.D.N.Y. 2019); Herbert J. Hovenkamp, *Markets in IP & Antitrust*, 100 Geo. L.J. 2133, 2137 (2012) ("[A]ntitrust law has found that a single firm's brand constitutes a relevant market in only a few situations.").

Despite the foregoing, "in some instances one brand of a product can constitute a separate market." *See Eastman Kodak*, 504 U.S. at 482; *see also Newcal*, 513 F.3d at 1048 ("[T]he law permits an antitrust claimant to restrict the relevant market to a single brand of the product at issue . . . ."). Antitrust law has continued to develop since *Eastman Kodak*. Beginning there, the Supreme Court considered whether summary judgment was appropriate for Kodak on a Sections 1 and 2 claims where the plaintiffs had argued that Kodak possessed monopoly power in the aftermarket of sales of parts and repair services, despite

not having such power in the foremarket of equipment sales. 504 U.S. at 466-471. In affirming the Ninth Circuit's reversal of summary judgment, the Supreme Court identified two factors that supported the aftermarket framework: the existence of significant (i) "information" costs and (ii) "switching costs." *Id.* at 473.

As to the first, information costs, the Supreme Court noted that "[f]or the service-market price to affect equipment demand, consumers must inform themselves of the total cost of the 'package'—[in *Eastman Kodak*] equipment, service, and parts—at the time of purchase; that is, consumers must engage in accurate lifecycle pricing." *Id.* "Much of this information is difficult—some of it impossible—to acquire at the time of purchasing," and that "even if consumers were capable of acquiring and processing the complex body of information, they may choose not to do so [as a]cquiring [such] information is expensive." *Id.* at 473, 474. Indeed, "[i]f the costs of service are small relative to the equipment price, or if consumers are more concerned about equipment capabilities than service costs, they may not find it cost efficient to compile the information." *Id.* at 474-75.

As to the second factor, switching costs, the Supreme Court stated that "[i]f the cost of switching is high, consumers who already have purchased the equipment, and are thus 'locked in,' will tolerate some level of service-price increases before changing equipment brands." *Id.* at 476. "Under this scenario, a seller profitably could maintain supracompetitive prices in the aftermarket if the switching costs were high relative to the increase in

service prices, and the number of locked-in customers were high relative to the number of new purchasers." *Id.* The Supreme Court further noted that this strategy was "likely to prove profitable" especially where a "seller could simply charge new customers below-marginal cost on the equipment and recoup the charges in service,"[581] or offer specific packages including "lifetime warranties or long-term service agreements that are not available to locked-in customers." *Id.* at 476-477.

In sum, given the presence of these two factors, the Supreme Court found a question of fact "foil[ed] the simple assumption that the equipment and service markets act as pure complements to one another." *Id.* at 477.

Since 1992, five circuit courts and numerous district courts refused to find a *Kodak*-type single-brand aftermarket where customers had knowledge of the alleged restrictive policies and were not subject to a post-purchase policy change. Big tech may ultimately convince the Supreme Court to change the calculus, but for now the state of antitrust law has that distinct parameter. The Court recounts the history.

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581. The Court notes that this identified problematic business model in *Eastman Kodak*, of selling the initial equipment near marginal cost and recouping profits in later service, appears to mirror more closely the gaming console's business models for their console platforms (selling hardware near or at a loss and recouping through the sale of games and transactions) as opposed to Apple's business model for its iOS platform (profit on both the hardware and transactions). *See supra* Facts §§ II.D.3.c.

Appendix B

Four years after *Eastman Kodak*, the Fifth Circuit in *United Farmers Ass'n, Inc. v. Farmers Insurance Exchange*, 89 F.3d 233, 238 (5th Cir. 1996) rejected a claim that insurance agents were "locked-in" to a particular insurance company because the agents "would clearly have become aware of [the alleged anticompetitive] policy long before they faced significant switching costs." A year later the Sixth Circuit similarly found that an "antitrust plaintiff *cannot succeed* on a *Kodak*-type [single-brand-aftermarket] theory when the defendant has not changed its policy after locking-in some of its customers, and the defendant has been otherwise forthcoming about its pricing structure and service policies." *PSI Repair Servs., Inc. v. Honeywell, Inc.*, 104 F.3d 811, 820 (6th Cir. 1997) (emphasis supplied). Rounding off the decade, the First Circuit found that "the easy availability of information" and "purely prospective nature" of an allegedly anticompetitive policy "helps to take [a] case out of *Kodak*'s precedential orbit." *SMS Sys. Maint. Servs., Inc. v. Digital Equip. Corp.*, 188 F.3d 11, 19 (1st Cir. 1999) (citation omitted).

Fast-forward to 2008, the Ninth Circuit in *Newcal* outlined four factors that could indicate whether an alleged market is a properly defined single-brand aftermarket under *Eastman Kodak* at the motion to dismiss stage. *See Newcal*, 513 F.3d at 1049-50. The first indicator of an aftermarket is that the market is "wholly derivative from and dependent on the primary market." *Id.* at 1049. The second indicator is that the "illegal restraints of trade and illegal monopolization relate only to the aftermarket, not to the initial market." *Id.* at 1050. The third indicator

is that the defendant's market power "flows from its relationship with its consumers" and the defendant did "not achieve market power in the aftermarket through contractual provisions that it obtains in the initial market." *Id.* The fourth indicator is that "[c]ompetition in the initial market . . . does not necessarily suffice to discipline anticompetitive practices in the aftermarket." *Id.*

While not explicitly repeated elsewhere, other circuits have aligned with the contours of *Newcal* and the foregoing cases regarding consumer knowledge and/or post-purchase policy changes. In 2014, the Federal Circuit weighed in concluding that "it is only the customers who learned about the [allegedly anticompetitive policy] after purchasing their equipment that are relevant to the 'locked-in' analysis." *DSM Desotech, Inc. v. 3D Sys. Corp.*, 749 F.3d 1332, 1346 (Fed. Cir. 2014). Two years later the Third Circuit held that no *Kodak*-type aftermarket existed "when customers were put on clear notice that purchasing [defendant's product] precluded use of [third-party] maintenance." *Avaya Inc., RP v. Telecom Labs, Inc.*, 838 F.3d 354, 405 (3d Cir. 2016).

The breadth of antitrust law on the issue has counseled that currently "to establish a single-brand aftermarket under *Kodak* and *Newcal*, the restriction in the aftermarket must not have been sufficiently disclosed to consumers in advance to enable them to bind themselves to the restriction knowingly and voluntarily." *Datel Holdings Ltd. v. Microsoft Corp.*, 712 F. Supp. 2d 974, 987

(N.D. Cal. 2010).[582] Indeed, "[m]arket imperfections" may "prevent consumers from discovering" that purchasing a product in the initial market could restrict their freedom to shop in the aftermarket. *Newcal*, 513 F.3d at 1048; *see also Red Lion Med. Safety, Inc. v. Ohmeda, Inc.*, 63 F. Supp. 2d 1218, 1231 (E.D. Cal. 1999) ("Information costs may be high, and a manufacturer may thus have considerable market power in the aftermarket, even in the absence of a change in policy."); *Ward v. Apple Inc.*, Case No. 12-cv-05404-YGR, 2017 U.S. Dist. LEXIS 41897, 2017 WL 1075049, at *7 (N.D. Cal. Mar. 22, 2017) (agreeing with *Red Lion*, 63 F. Supp. 2d at 1231-32, that a policy change is not necessary to find a valid single-brand market under *Newcal*). In other words, a plaintiff must show evidence "to rebut the economic presumption that [defendant's] consumers make a knowing choice to restrict their aftermarket options when they decide in the initial (competitive) market to" purchase in the foremarket. *Newcal*, 513 F.3d at 1050.

With these principles in mind, the Court analyzes the evidence presented.

As noted, Epic Games created a construct that largely satisfies the *Newcal* test. By definition, distribution of iOS apps and iOS payment processing derive from Apple's operating system (first factor). Next, Epic Games only

582. *See also Teradata Corp. v. SAP SE*, No. 18-CV-03670, 2018 U.S. Dist. LEXIS 209872, 2018 WL 6528009, at *16 (N.D. Cal. Dec. 12, 2018) (single-brand markets are possible only in situations in which customers face "restrictions that were undisclosed at the time of the purchase of the product from the primary market").

identified restraints that related to the distribution and payment processing, so again, by design, they do not relate to the "market for Apple's operating system" (second factor). Similarly, given that (i) consumers do not contractually agree to obtain apps only through the App Store when they purchase an iPhone; (ii) developers are contractually restricted in the aftermarket; and (iii) in light of the technical restrictions on iOS devices, Apple's market power flows from its relationship with its consumers and Apple did not achieve market power in the aftermarket through contractual provisions that it obtains in the initial market (third indicator). Thus, three of the four indicators are fulfilled.[583]

It is within the last indicator that problems arise for Epic Games given antitrust jurisprudence. Issues of lock-in or switching costs, and notice or consumer knowledge, fall under the analysis of evaluating whether competition in the initial market suffices to discipline anticompetitive practices in the aftermarkets.

First, the evidence shows no material change in the conditions for accessing the App Store for either side of the platform. In the Sixth Circuit, the absence of a

583. Epic Games did not define the foremarket as the market for sale of mobile cellular phones or mobile devices. That said, even Dr. Evans acknowledges, consumers do not buy smartphone operating systems separately from smartphones. Trial Tr. (Evans) 1621:19-23; Ex. Expert 7 (Lafontaine) ¶¶ 61-63. There is no price charged to consumers for either the iOS or the Android operating systems. *See supra* Facts § II.A.; Trial Tr. (Lafontaine) 2022:11-2023:4; Ex. Expert 1 (Evans) ¶ 139.

change in policy following the consumers' initial purchase in the alleged foremarket, which locked consumers into the alleged aftermarket (*i.e.*, the concept of lock-in), was fatal. *See PSI Repair Servs., Inc.*, 104 F.3d at 820. For consumers, iOS has always been a closed system, and the App Store has been a "walled garden" with respect to native apps from its inception; even prior to any time in which Apple was alleged to have become a monopolist. Indeed, it is undisputed by the parties that a key distinguishing feature of the iOS platform is its closed platform model, as compared to the open Android platform maintained by its main competitor Google. At the very least, previous consumers of iOS devices would have been familiar with the iOS platform and the App Store model when they repurchased a device prior to 2011.

Epic Games' reliance on a 2007 statement from Steve Jobs when he announced the 70-30 split that Apple did not intend to make a profit, much less an unpublicized, internal 2011 comment by Phil Schiller regarding a reduction of the 70-30 after a billion dollars in profit, do not change the analysis. As discussed above, these statements do not create a policy shift sufficient to show lock-in. At best, these statements reflect Apple's initial expectation that the App Store was not projected to be profitable for Apple.[584] Apple's miscalculation, while hugely

584. Moreover, this 2007 statement is better categorized as a statement concerning price—not about any restriction on iOS app distribution or payment processing that Epic Games mainly challenges. In other words, this statement taken in the best possible light for Epic Games is a misrepresentation as to price—not as to any of the then and still present restrictions on distribution or payment processing.

profitable, does not evidence consumers lock-in with iOS devices. While Apple's calculated risk returned incredible profits, the reality is that Apple has maintained the same general rules with both consumers and developers since the inception of the iOS devices. Epic Games' arguments that Apple has otherwise repeatedly increased prices does not persuade, where Apple's rate has always been 30%.[585]

Second, Epic Games failed to prove lock-in, even absent a policy shift. Given the weak showing, plaintiff either found itself with an unachievable task or insufficient time to address the issue. In short, there is no evidence in the record demonstrating that consumers *are unaware* that the App Store is the sole means of digital distribution on the iOS platform. Specifically, there is no evidence in the form of consumer survey data demonstrating the extent of consumers knowledge when purchasing of an iOS device, much less that they are unaware they are purchasing *into* a closed ecosystem that is tightly controlled by Apple.

Instead of addressing the issue head-on, Epic Games pivots to argue that the market imperfections prevent consumers from discovering the true costs of downloading

585. Indeed, Epic Games' citation to Apple's 2009 action requiring IAP to process payment for in-app digital content does not persuade where no Epic Games expert witness opines that Apple had monopoly power prior to 2010 or 2011. Even considering this action, along with Apple's 2011 and 2016 rules regarding antisteering, subscriptions, and search ads, do not demonstrate any increase in the rate for consumers *or* developers. Indeed, most of these actions enabled increased functionality for consumers and developers, permitting new business models, and relied on increasing innovation on both the iOS device and the App Store.

apps. In other words, even those consumers who know the facts about Apple's practices in the iOS app distribution market typically do not or cannot effectively take those facts into account when choosing a smartphone and operating system because the cost of distributing apps is low compared to the overall cost of a smartphone and because it is difficult to calculate and compare the lifecycle costs of smartphones between smartphone operating systems.[586]

These arguments are not supported by the record. Epic Games fails to quantify the actual cost to consumers on downloading and purchasing apps and in-app purchases. Indeed, if anything, the record reflects that cross-platform functionality and apps have only proliferated since the early 2010s, where middleware like streaming services and cross-platform games have only made switching platforms and devices easier and more convenient. That is, the market is responding and evolving.

Epic Games' sole focus on iOS devices simply ignores the market reality that is available to consumers. The Court's definition of the product as "digital mobile game transactions" takes into account that the App Store competes against other platforms for both consumers and developers. Indeed, as discussed in the findings of facts, several recent entrants into the mobile gaming submarket, from Nintendo, Microsoft, and Nvidia, show that this submarket is presently evolving and is dynamic. Moreover, the continued rise and popularity of cross-platform

586. Trial Tr. (Evans) 1508:15-1509:25.

games like *Fortnite* and *Minecraft* offered on a variety of platforms, even beyond mobile gaming devices, are making switching between platforms seamless because a consumer can carry over rewards and progress between the diverse platforms. As a result, neither consumers nor developers are "locked-in" to the App Store for digital mobile game transactions—they can and do pursue game transactions on a variety of other mobile platforms and increasingly other game platforms.[587] Although the state of the wider gaming market is not at a level where the entirety of these gaming platforms can truly be characterized as competing for purposes of antitrust law (*e.g.*, substitutes), the continued rise of cross-platform games, technologies, and innovative ways in which to reach consumers only demonstrate that these differing platforms are converging and ever intertwining.[588]

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587. On some metrics, Apple is in fact more open than some competitors in the wider digital gaming market. For instance, the record reflects that certain competitors institute restrictions on cross-platform play and cross-platform wallet. Moreover, some platform owners require revenue sharing when game players disproportionately spend on a platform other than their own. Further still, some agreements require that certain goods be charged the same as the cheapest available on other platforms.

588. The Court has further never been satisfied by Epic Games' explanation as how its aftermarket theory as to Apple would not also apply to other platform holders with similar walled garden models in the wider gaming market, including Nintendo, Microsoft, and Sony. *See Epic Games, Inc. v. Apple Inc.*, 493 F. Supp. 3d 817, 838-39 (N.D. Cal. 2020). The same three *Newcal* factors that readily apply to Apple's iOS devices would also facially apply to Nintendo's, Microsoft's, and Sony's consoles and their digital stores. Epic Games' distinction as to general purpose devices (*e.g.*, iOS devices) versus special purpose

In sum, with seasoned antitrust counsel at the helm, Epic Games created a market definition which theoretically made a strong showing within the *Newcal* and *Eastman Kodak* framework. For the reasons explained above, the market definition was fundamentally flawed, and in any event, does not satisfy all four of the *Newcal* factors. With respect to the Court's ultimate finding that the relevant market is mobile gaming transactions, the Court further finds that, at a minimum, the fourth *Newcal* factor would similarly not be adequately satisfied on the record before the Court.

2. Geographic Market

"The criteria to be used in determining the appropriate geographic market are essentially similar to those used to determine the relevant product market." *Brown Shoe*, 370 U.S. at 336 (citations omitted). "A geographic market is an area of effective competition where buyers can turn for alternate sources of supply." *Morgan, Strand, Wheeler & Biggs v. Radiology, Ltd.*, 924 F.2d 1484, 1490 (9th Cir. 1991) (simplified).

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devices (*e.g.*, game consoles) has no basis in current antitrust law. Presumably, the factors would be applied in the same fashion.

Instead, and as discussed above, consumers if anything appear to purchase a game console in the same manner they purchase an iOS device: understanding that they must purchase into an ecosystem and are limited in the later transactions for apps and games. Despite the foregoing, Epic Games does not claim that every game console manufacturer has unlawfully created and maintained a monopoly, and in fact, appears content to offer *Fortnite* and other Epic Games on those platforms without complaint. Trial Tr. (Schmalensee) 1904:15-1905:4.

"The relevant geographic market for goods sold nationwide is often the entire United States[.]" *Heerwagen v. Clear Channel Commc'ns*, 435 F.3d 219, 228 (2d Cir. 2006). As compared to others, in antitrust cases, courts regularly recognize global markets. *See, e.g., United States v. Microsoft Corp.*, 253 F.3d 34, 52, 346 U.S. App. D.C. 330 (D.C. Cir. 2001) (upholding relevant geographic market encompassing "the licensing of all Intel-compatible PC operating systems worldwide"); *United States v. Eastman Kodak Co.*, 63 F.3d 95, 108 (2d Cir. 1995) (upholding worldwide geographic market for film). The United States antitrust laws' concern with anticompetitive conduct, includes harm that such American businesses suffer relating to their transactions with foreign consumers. *See* 15 U.S.C. § 6a (Sherman Act generally applies to conduct affecting "export trade"). Importantly here, the question focuses on the area of effective competition, not the reach of United States antitrust laws which is addressed elsewhere.

Having found the relevant product market to be that of mobile gaming transactions, the Court finds the area of effective competition in the geographic market to be global, with the exception of China. As discussed in the findings of facts, *see* supra Facts § III, Apple's engagement in that market does not change based on national borders. Developers globally access the platform based on the same set of rules and agreements. Even here, Epic Games' related entity was bound by the exact same set of rules and agreements. Given the current record, the Court discerns no meaningful difference for digital mobile gaming transactions domestically than globally.

II. SECTIONS 1 AND 2 OF THE SHERMAN ACT (COUNTS 1, 3, 4, 5)

A. General Framework

As *Qualcomm* instructs, "[t]he similarity of the burden-shifting tests under §§ 1 and 2 means that courts often review claims under each section simultaneously." *Qualcomm*, 969 F.3d at 991. Indeed, "[i]f, in reviewing an alleged Sherman Act violation, a court finds that the conduct in question is not anticompetitive under § 1, the court need not separately analyze the conduct under § 2." *Id.* (citing *Williams v. I.B. Fischer Nevada*, 999 F.2d 445, 448 (9th Cir. 1993)). That result is logical as "proving an antitrust violation under § 2 of the Sherman Act is more exacting than proving a § 1 violation . . . ." *Id.* at 992 (citing *Microsoft Corp.*, 253 F.3d at 79).

Among the differences in the analysis is the type of evidence used to prove a monopoly. "[A]lthough the tests are largely similar, a plaintiff may not use indirect evidence to prove unlawful monopoly maintenance via anticompetitive conduct under § 2." *Id.* (citing *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307-08 (3d Cir. 2007) (distinguishing between proving the existence of monopoly power through indirect evidence and proving anticompetitive conduct itself, the second element of a Section 2 claim)).

Here, in light of *Qualcomm*, the Court reviews Sections 1 and 2 Sherman Act claims together. Underpinning both Sections 1 and 2 claims is the level of market power, and

possibly monopoly power, that Apple exercises in the determined product and geographic market. The Court therefore initially assesses Apple's market and monopoly power in the relevant product and geographic market before addressing Epic Games' claims under Sections 1 and 2 of the Sherman Act.

B. Assessing Apple's Market Power in the Relevant Product and Geographic Market

1. Legal Framework

Market power and monopoly power are related but distinct concepts. As the Supreme Court has stated: "market power is the ability to raise prices above those that would be charged in a competitive market." *NCAA v. Bd. of Regents of the Univ. of Oklahoma*, 468 U.S. 85, 109 n.38, 104 S. Ct. 2948, 82 L. Ed. 2d 70 (1984).[589] Monopoly power is "the power to control prices or exclude competition." *Grinnell Corp.*, 384 U.S. at 571.

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589. *See also Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 27 n.46, 104 S. Ct. 1551, 80 L. Ed. 2d 2 (1984) ("As an economic matter, market power exists whenever prices can be raised above levels that would be charged in a competitive market."), *abrogated on other grounds by Illinois Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 31, 126 S. Ct. 1281, 164 L. Ed. 2d 26 (2006); *cf.* Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* 642 (4th ed. 2005) (noting that a firm has market power "if it is profitably able to charge a price above that which would prevail under competition"); William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 Harv. L. Rev. 937, 939 (1981) ("A simple economic meaning of the term 'market power' is the ability to set price above marginal cost.").

The difference between the two is a matter of degree. "Monopoly power under § 2 requires, of course, something greater than market power under § 1." *Eastman Kodak*, 504 U.S. at 481; *see also Image Tech. Servs. II*, 125 F.3d at 1206 (same). Courts have described the distinction as "substantial" market power or an "extreme degree" of market power. *See, e.g.*, *Bacchus Indus., Inc. v. Arvin Indus., Inc.*, 939 F.2d 887, 894 (10th Cir. 1991) (defining monopoly power as "substantial" market power); *Deauville Corp. v. Federated Dep't Stores, Inc.*, 756 F.2d 1183, 1192 n.6 (5th Cir. 1985) (defining monopoly power as an "extreme degree of market power"); *Safeway Inc. v. Abbott Lab'ys*, 761 F. Supp. 2d 874, 886 n.2 (N.D. Cal. 2011) (defining monopoly power as a substantial degree of market power).[590] Courts have also required that the monopoly power be beyond fleeting or ephemeral which the Court understands to be durable and sustaining. *See United States v. Syufy Enters.*, 903 F.2d 659, 665-66 (9th Cir. 1990) ("In evaluating monopoly power, it is not market share that counts, but the ability to *maintain* market share." (emphasis in original)); *Colo. Interstate Gas Co. v. Nat. Gas Pipeline Co. of Am.*, 885 F.2d 683, 695-96 (10th Cir. 1989) (finding a firm lacked monopoly power because its "ability to charge monopoly prices will necessarily be temporary").[591]

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590. *See also* Areeda & Hovenkamp § 801 (stating that "the Sherman Act § 2 notion of monopoly power . . . is conventionally understood to mean 'substantial' market power").

591. *See also* Areeda & Hovenkamp § 801d; *Oahu Gas Serv., Inc. v. Pac. Res., Inc.*, 838 F.2d 360, 366 (9th Cir. 1988) ("A firm with a high market share may be able to exert market power in the *short run*, but [s]ubstantial market power can persist only if there are significant and continuing barriers to entry." (internal quotation marks omitted) (emphasis supplied).

"[M]arket share is just the starting point for assessing market power." *Hunt-Wesson Foods, Inc. v. Ragu Foods, Inc.*, 627 F.2d 919, 925 (9th Cir. 1980). It "should not be equated with monopoly power" but instead is "evidence from which the existence of monopoly power may be inferred . . . ." *Hunt-Wesson*, 627 F.2d at 924. Indeed, as the Ninth Circuit has cautioned, "[b]lind reliance upon market share, divorced from commercial reality, could give a misleading picture of a firm's actual ability to control prices or exclude competition." *Id.* In other words, "market share, while being perhaps the most important factor, does not alone determine the presence or absence of monopoly power." *Pac. Coast Agr. Export Ass'n v. Sunkist Growers, Inc.*, 526 F.2d 1196, 1204 (9th Cir. 1975) (affirming jury finding where defendant controlled anywhere from 45-70% of the market and competitors were fragmented with less than 12 to 18% of the market).

The threshold of market share for finding a *prima facie* case of monopoly power is generally no less than 65% market share. *See Image Tech. Servs. II*, 125 F.3d at 1206 ("Courts generally require a 65% market share to establish a prima facie case of market power."); *Hunt-Wesson*, 627 F.2d at 924-25 ("market shares on the order of 60 percent to 70 percent have supported findings of monopoly power").[592] A more conservative threshold would require a market share of 70% or higher for monopoly

592. *See also Grinnell Corp.*, 384 U.S. at 571 (noting that the Supreme Court previously found "over two-thirds of the entire domestic field of cigarettes, and over 80% of the field of comparable cigarettes' constituted 'a substantial monopoly'" before finding monopoly power where defendant had an 87% market share).

power. *See Kolon Indus. Inc. v. E.I. DuPont de Nemours & Co.*, 748 F.3d 160, 174 (4th Cir. 2014) ("Although there is no fixed percentage market share that conclusively resolves whether monopoly power exists, the Supreme Court has never found a party with less than 75% market share to have monopoly power. And we have observed that when monopolization has been found the defendant controlled seventy to one hundred percent of the relevant market." (citations omitted)); *Syufy Enters. v. Am. Multicinema, Inc.*, 793 F.2d 990, 995 (9th Cir. 1986) ("[A]s far as we know, neither the Supreme Court nor any other court has ever decided whether a market share as low as 60-69% is sufficient, standing alone, to sustain such a finding."). Relatedly, "numerous cases hold that a market share of less than 50 percent is presumptively insufficient to establish" the requisite level of market power under a Section 2 claim. *Rebel Oil Co., Inc. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438 (9th Cir. 1995).[593]

By contrast, Section 1 claims can be satisfied with less market power. For instance, the Ninth Circuit affirmed a finding of a Section 1 violation where the market share was as low as 24% but has also found market share above

593. *See also Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 512 F.2d 1264, 1274 (9th Cir. 1975) ("We do, however, wish to remind the trial court when considering this case on remand of Judge Learned Hand's famous dictum that while 90% of the market 'is enough to constitute a monopoly; it is doubtful whether sixty or sixty-four per cent would be enough; and certainly thirty-three per cent is not.' It also should be recalled that on several occasions courts have considered a 50% share of the market as inadequate to establish a proscribed monopoly." (quoting *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 424 (2d Cir. 1945)).

30% insufficient. *See, e.g., Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 512 F.2d 1264 (9th Cir. 1982). *But see also Jefferson Parish*, 466 U.S. at 26 & n.43 (30 percent market share insufficient); *Pilch v. French Hosp.*, No. CV 98-9470 CAS(CWX), 2000 U.S. Dist. LEXIS 23125, 2000 WL 33223382, at *7 (C.D. Cal. Apr. 28, 2000) (33.2 percent market share insufficient).

Here, the Court considers other market factors in the form of direct and indirect evidence. First, direct evidence is evidence "of the injurious exercise of market power" such as "evidence of restricted output and supracompetitive prices." *Rebel Oil Co.*, 51 F.3d at 1434. This kind of evidence is "direct proof of the injury to competition which a competitor with market power may inflict, and thus, [direct proof] of the actual exercise of market power." *Id.* (citing *FTC v. Indiana Fed'n of Dentists*, 476 U.S. 447, 460-61, 106 S. Ct. 2009, 90 L. Ed. 2d 445 (1986)).

The second and "more common type of proof is circumstantial evidence pertaining to the structure of the market." *Id.* To demonstrate market power indirectly, a plaintiff must: "(1) define the relevant market, (2) show that the defendant owns a dominant share of that market, and (3) show that there are significant barriers to entry and show that existing competitors lack the capacity to increase their output in the short run." *Id.* [594]

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594. *See also Microsoft Corp.*, 253 F.3d at 51 ("Because such direct proof is only rarely available, courts more typically examine market structure in search of circumstantial evidence of monopoly power. Under this structural approach, monopoly power may be

Because "[a] mere showing of substantial or even dominant market share alone cannot establish market power sufficient to carry out a predatory scheme," a plaintiff "must show that new rivals are barred from entering the market and show that existing competitors lack the capacity to expand their output to challenge the predator's high price." *Rebel Oil Co.*, 51 F.3d at 1438-39, n.10 ("telltale factors" include "market share, entry barriers and the capacity of existing competitors to expand output"). Entry barriers are market characteristics "that prevent new rivals from timely responding to an increase in price above the competitive level." *FTC v. Qualcomm Inc.*, 411 F. Supp. 3d 658, 684 (N.D. Cal. 2019) (quotation marks omitted), *rev'd on other grounds*, 969 F.3d 974 (9th Cir. 2020). They include "additional long-run costs that were not incurred by incumbent firms but must be incurred by new entrants," or "factors in the market that deter entry while permitting incumbent firms to earn monopoly returns." *L.A. Land Co. v. Brunswick Corp.*, 6 F.3d 1422, 1427-28 (9th Cir. 1993) (quotation marks omitted).

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inferred from a firm's possession of a dominant share of a relevant market that is protected by entry barriers." (citations omitted)); *Oahu Gas*, 838 F.2d at 367 ("A high market share, though it may ordinarily raise an inference of monopoly power . . . will not do so in a market with low entry barriers or other evidence of a defendant's inability to control prices or exclude competitors." (internal citation omitted)).

2. Analysis

As a starting point, the Court has found Apple's market share in mobile gaming transactions appears to fluctuate anywhere from approximately 52% to 57% over the course of the three years in evidence. *See supra* Facts § II.E. While the prior figures suggest that Apple's share in mobile gaming is increasing, the more recent year reflects some stability in the market between Apple and its main competitor, Google. That Apple has more than a majority in a mostly duopolistic, and otherwise highly concentrated, market indicates that Apple has considerable market power.

Apple's market share is below the general ranges of where courts found monopoly power under Section 2. Nonetheless, the Court considers additional direct and indirect evidence to determine whether that market share should be sufficient under Section 2 or, under any event, sufficient under Section 1.

In considering *direct* evidence of monopoly power, Epic Games has failed to demonstrate that there is a necessary restriction in the output of the relevant product—here, mobile game transactions. The record contains substantial evidence that output has increased in mobile gaming transactions. *See supra* Facts §§ IV—V. Even though the Court has concerns about the 30% rate and its appearance of being artificially higher (*i.e.*, supracompetitive) than it would be in a more competitive market, there has not been the corollary impact on output. This could be because of the technological nature of the dispute. *Id.; see also supra*

Facts § V.A.1.c. Nonetheless, given the manner in which this case was litigated, Epic Games failed to produce evidence that this rate has had any impact on the output of mobile gaming transactions.

"[S]upracompetitive pricing, on its own, is not direct evidence of monopoly power." *Safeway Inc.*,761 F. Supp. 2d at 887 (N.D. Cal. 2011) (*citing Forsyth v. Humana, Inc.*, 114 F.3d 1467, 1476 (9th Cir. 1997) ("The plaintiffs submitted evidence that [defendant] routinely charged higher prices than other [competitors] while reaping high profits. With no accompanying showing of restricted output, however, the plaintiffs have failed to present direct evidence of market power [under Section 2]."), *overruled on other grounds by Lacey v. Maricopa County*¸693 F.3d 896 (9th Cir. 2012); *see also Harrison Aire, Inc. v. Aerostar Int›l, Inc.*, 423 F.3d 374, 381 (3d Cir. 2005); *Geneva Pharmas. Tech. Corp. v. Barr Lab'ys Inc.*, 386 F.3d 485, 500 (2d Cir. 2004); *Blue Cross & Blue Shield United of Wisconsin v. Marshfield Clinic*, 65 F.3d 1406, 1412 (7th Cir. 1995). Indeed, "[t]o prove monopoly power directly, supracompetitive pricing must be accompanied by restricted output." *Safeway Inc.*, 761 F. Supp. 2d at 887 (*citing Rebel Oil Co.*, 51 F.3d at 1434). In other words, "[b]oth are required to prove monopoly power directly." *Id.*[595] Given the Court has found the record, at best,

595. Indeed, as the *Safeway* court notes and explains in a footnote:

> Plaintiffs nevertheless continue to argue that evidence of restricted output is not required because raising prices necessarily depresses sales. This is

incomplete, the lack of evidence of decreased output for mobile gaming transactions and mobile game apps is fatal in demonstrating monopoly power using direct evidence.

With respect to indirect evidence, a more mixed result emerges. A share between 52 and 57 percent is not high enough to sustain a *prima facia* case of a monopoly, but is enough to permit the Court to evaluate the state and durability of the market. This evaluation includes whether (i) new rivals are barred from entering the market (*i.e.*, the degree of entry barriers) and (ii) whether existing competitors lack the capacity to expand their output to challenge the predator's high price. In general, entry barriers are "additional long-run costs that were not incurred by incumbent firms but must be incurred by new entrants" or "factors in the market that deter entry while permitting incumbent firms to earn monopoly returns." *L.A. Land Co.*, 6 F.3d at 1427-28. Such barriers include "(1) "legal license requirements, (2) control of an essential or superior resource, (3) entrenched buyer preferences for established brands; (4) capital market evaluations imposing higher capital costs on new entrants; and, in some situations, (5) economies of scale." *Rebel Oil Co.*, 51 F.3d at 1439 (citing *L.A. Land Co.*, 6 F.3d at 1428 n.4).

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incorrect. Take for example a market in which demand outstrips supply. In such a hypothetical market, a firm could raise prices—up to a certain point—without necessarily causing a commensurate reduction in sales.

Safeway Inc., 761 F. Supp. 2d at 887 n.3.

Here, the evidence is both undeveloped and mixed. Given that mobile gaming was not a proposed product market for either party, neither party has adequately presented evidence of these barriers or competitors' ability to challenge monopolistic actions. The Court nonetheless considers the limited evidence in record.

On the one hand, only a small number of platforms, and their attendant licenses on which to distribute mobile games, exist—namely iOS and Android. Moreover, economies of scale in the form of network effects favor these established digital gaming stores and platforms over new entrants. Finally, new entrants may face information barriers to entry, as users may not know that cheaper game distribution may be available on alternative platforms.[596] Although these factors do not create "lock-in," they are evidence of some entry barriers for new companies providing mobile game transactions.

On the other hand, there are significant changes in both the wider gaming market *and* the mobile gaming market—both appear to be in flux. Indeed, the evidence reflects that the wider gaming market is both dynamic and evolving. Mobile gaming transactions do not appear to be immune to this dynamism. The introduction of the hybrid platform the Nintendo Switch in 2017 provides some evidence that the barriers of entry are not so high as to deter competitors in related markets from entering

596. *See* Ex. Expert 4 (Athey) ¶¶ 36-37, 45-46; Ex. Expert 1 (Evans) ¶ 118. Although, the Court notes that some platform owners require price parity among other platforms, such that prices are universal amongst each platform. *See supra* Facts §§ II.D.3-4.

the mobile gaming transactions market.[597] Moreover, Microsoft and Nvidia's efforts into mobile game streaming are further evidence that these entry barriers are not so substantial to prevent new market entrants.[598] Indeed, these competitors are moving into the same lucrative mobile gaming submarket without facing substantial market barriers to entry. In short, these competitors appear to be leveraging either existing intellectual property in the form of hardware and gaming content as well as existing established networks, including its own consumer and developer bases, to break into this market space. Given this recent movement by competitors, it is hard to characterize the entry barriers as oppressive or high on this record.

The evidence is further mixed on whether existing competitors, here Google, could increase output in the short run in order to erode Apple's market share. *See Pacific Coast*, 526 F.2d at 1204 (affirming jury's finding

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597. Although not in the record, the Court is further aware that Valve, a major player in the computer gaming market as the owner of the Steam platform, has also announced its own mobile and portable gaming platform. The Court does not rely on this fact in reaching its conclusions herein, but only mentions it to further support the Court's ultimate conclusion: that entries into the mobile gaming submarket appear to be possible and achievable from competitors in related gaming submarkets.

598. Of course, game streaming is still relatively new and currently does not replicate freemium games, the primary driver of App Store revenue, because, with the exception of Nvidia's free access tier, such services generally require an up-front subscription payment. *See supra* Facts § II.D.3.d.

of monopoly power where defendant had a market share of 45 to 70% in the relevant years, and the remaining competitors "were relatively small, with no single competitor controlling over 18% [or] 12%" of the market). Beyond similar market share in this market, neither party explored mobile gaming and the record is inconclusive on Google's *actual* capabilities in disciplining and competing with Apple in this sphere.

In sum, given the totality of the record, and its underdeveloped state, while the Court can conclude that Apple exercises market power in the mobile gaming market, the Court cannot conclude that Apple's market power reaches the status of monopoly power in the mobile gaming market. That said, the evidence does suggest that Apple is near the precipice of substantial market power, or monopoly power, with its considerable market share. Apple is only saved by the fact that its share is not higher, that competitors from related submarkets are making inroads into the mobile gaming submarket, and, perhaps, because plaintiff did not focus on this topic.

C. Section 1 of the Sherman Act: Apple's Unlawful Restraint of the iOS App Distribution Market (Count 3) and Unlawful Restraint on the iOS In-App Payment Solutions Market (Count 5)

Epic Games brings two counts under Section 1 of the Sherman Act for unlawful restraint of trade in the iOS app distribution aftermarket (Count 3) and in the iOS in-app payment solutions aftermarket (Count 5). The legal framework is the same for both.

Appendix B

1. Legal Framework

Section 1 of the Sherman Act prohibits "[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations." 15 U.S.C. § 1. Section 1 is understood "to outlaw only unreasonable restraints." *Amex*, 138 S. Ct. at 2283 (internal quotation marks and emphasis omitted); *State Oil Co. v. Khan*, 522 U.S. 3, 10, 118 S. Ct. 275, 139 L. Ed. 2d 199 (1997); *Standard Oil Co. of N.J. v. United States*, 221 U.S. 1, 59-60, 31 S. Ct. 502, 55 L. Ed. 619 (1911). "To establish liability under § 1, a plaintiff must prove (1) the existence of an agreement, and (2) that the agreement was in unreasonable restraint of trade." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).

Despite the broad language of the statute, antitrust law has developed to find that "[t]he essence of a Section 1 claim is concerted action." *E.W. French & Sons v. Gen. Portland*, 885 F.2d 1392, 1397 (9th Cir. 1989). "[E]xpress 'agreements'" are "direct evidence of 'concerted activity.'" *Paladin Assocs., Inc. v. Montana Power Co.*, 328 F.3d 1145, 1153 (9th Cir. 2003); *see also Sun Microsystems Inc. v. Hynix Semiconductor Inc.*, 608 F. Supp. 2d 1166, 1192 (N.D. Cal. 2009) ("One way of proving concerted action is by express agreement."). A plaintiff "need not prove intent to control prices or destroy competition to demonstrate the element of an agreement among two or more entities." *Paladin Assocs.*, 328 F.3d at 1153-54 (internal quotation marks and alterations omitted). "Unilateral conduct by a single firm, even if it appears to

restrain trade unreasonably, is not unlawful under Section 1 of the Sherman Act." *The Jeanery, Inc. v. James Jeans, Inc.*, 849 F.2d 1148, 1152 (9th Cir. 1988) (internal quotation marks omitted); *see also Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761, 104 S. Ct. 1464, 79 L. Ed. 2d 775 (1984) ("Independent action is not proscribed."). Thus, in evaluating the first element, the Sherman Act distinguishes between concerted conduct and unilateral conduct and "treat[s] concerted behavior more strictly than unilateral behavior." *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768, 104 S. Ct. 2731, 81 L. Ed. 2d 628 (1984).

With respect to the second element, some restraints are *per se* unreasonable. Where they are not, they are "judged under the 'rule of reason.'" *Amex*, 138 S. Ct. at 2284. "The rule of reason requires courts to conduct a fact-specific assessment of 'market power and market structure to assess the restraint's actual effect' on competition." *Id.* (quoting *Copperweld Corp.*, 467 U.S. at 768) (alterations omitted). "Under this rule, the factfinder weighs all of the circumstances of a case in deciding whether a restrictive practice should be prohibited as imposing an unreasonable restraint on competition." *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 885-86, 127 S. Ct. 2705, 168 L. Ed. 2d 623 (2007) (internal quotation marks and citation omitted). "Appropriate factors to consider include specific information about the relevant business and the restraint's history, nature, and effect." *Id.* (internal quotation marks and citation omitted). "Whether the businesses involved have market power is a further, significant consideration." *Id.* (citation omitted). "In its design and function the rule

distinguishes between restraints with anticompetitive effect that are harmful to the consumer and restraints stimulating competition that are in the consumer's best interest." *Id.*

As the Supreme Court recently explained:

> To determine whether a restraint violates the rule of reason, . . . a three-step, burden shifting framework applies. Under this framework, the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market. If the plaintiff carries its burden, then the burden shifts to the defendant to show a procompetitive rationale for the restraint. If the defendant makes this showing, then the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means.

Amex, 138 S. Ct. at 2284 (citations omitted); *see also Qualcomm*, 969 F.3d at 989. The three steps "do not represent a rote checklist" and are not "an inflexible substitute for careful analysis." *NCAA v. Alston* ("*NCAA*"), 141 S. Ct. 2141, 2160, 210 L. Ed. 2d 314 (2021). Rather, their purpose is "to furnish 'an enquiry meet for the case, looking to the circumstances, details, and logic of a restraint.'" *Id.* (quoting *Cal. Dental Ass'n v. FTC*, 526 U.S. 756, 781, 119 S. Ct. 1604, 143 L. Ed. 2d 935 (1999)).

2. Count 3: iOS App Distribution Market Analysis

a. Existence of an Agreement

Count 3 alleges that Apple "require[s] iOS developers distribute their apps through the App Store." Compl. ¶ 210. Starting with the first element, Epic Games relies on the DPLA to demonstrate an agreement.[599] As noted, express agreements provide "direct evidence" of concerted activity. *Paladin Assocs.*, 328 F.3d at 1153. Apple argues, however, that the DPLA does not qualify because Apple unilaterally imposes it on developers. *See Costco Wholesale Corp. v. Maleng*, 522 F.3d 874, 898 (9th Cir. 2008) (no "meeting of the minds" from unilateral rules).[600]

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599. In its Section 2 rule of reason analysis, Apple argues that technical design of iOS cannot form the basis of antitrust liability. Apple COL ¶ 249. In response, Epic Games appears to disclaim any challenge to Apple's code signing restrictions. Epic Games COL ¶ 143. The Court here considers only the DPLA restrictions on distribution.

600. In *Costco*, a retailer challenged Washington state's regulations of alcohol sales under antitrust laws. 522 F.3d at 883. Washington had required distributors to sell alcohol at a uniform price and to post those prices publicly, among other restrictions. *Id.* To evaluate the conduct, the Ninth Circuit distinguished "unilateral" restraints—which were not prohibited by the Sherman Act—from "hybrid" restraints, which involve concerted action and implicate Section 1. *Id.* at 886-87. The court found that that the price restrictions were unilateral state conduct, but that the requirement to post and adhere to the prices was "hybrid" because private parties still retained discretion. *Id.* at 894, 899. It then found that the posting

As explained above, the Sherman Act distinguishes between unilateral and concerted activity. *Jeanery*, 849 F.3d at 1152. "Concerted activity subject to § 1 is judged more sternly than unilateral activity under § 2" because it "deprives the marketplace of the independent centers of decisionmaking that competition assumes and demands." *Copperweld Corp.*, 467 U.S. at 768-69. It thus "warrant[s] scrutiny even in the absence of incipient monopoly." *Id.* Unilateral conduct, by contrast, may simply represent "robust competition." *Id.* at 767-68; *see Qualcomm*, 969 F.3d at 1005 ("hypercompetitive behavior" is not illegal under antitrust laws). Thus, even unreasonable unilateral restraints are not subject to antitrust scrutiny unless "they pose a danger of monopolization." *Copperweld Corp.*, 467 U.S. at 768.

Given this distinction, a business may set conditions for dealing unilaterally and refuse to deal with anyone who does not meet those conditions. *See Monsanto*, 465 U.S. at 761. However, where the conduct extends beyond announcing a policy and refusing to deal with non-compliant partners to coercing an agreement, the conduct falls under Section 1. *See id.* at 765; *see also Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986) (recognizing an exception to the "unilateral refusal to deal" rule where a party "imposes restraints on dealers or customers by coercive conduct and they involuntarily adhered to those restraints").

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requirement violates Section 1. *Id.* at 895. *Costco* shows that even *government command* can create "concerted activity" under Section 1. Apple's conduct here is far less unilateral.

For example, in *Jeanery*, a jeans manufacturer had set suggested prices for retailers and made clear that those who set prices below the suggested price would be terminated or receive less favorable treatment. 849 F.2d at 1150. A distributor undercut those prices and was promptly terminated. *Id.* at 1151. The Ninth Circuit found no Section 1 violation based on insufficient evidence of an agreement. *Id.* at 1155. Specifically, the Ninth Circuit found no evidence that the manufacturer "coerced" the distributors into adherence or that the distributors "communicated acquiescence to such an agreement." *Id.* at 1158-60 (reasoning that manufacturer did not nothing more than inform distributors of its policy). Conversely, such evidence was found in *Monsanto*, in which case an agricultural manufacturer threatened to withhold herbicide at a time of short supply and even complained to a distributor's parent company to force compliance, which the distributor expressly communicated in return. 465 U.S. at 764-65 & nn.9-10.

Here, the DPLA is a unilateral contract which the parties agree that a developer must accept its provisions (including the challenged restrictions) to distribute games on iOS.[601] Thus, under antitrust jurisprudence, element one would not be satisfied. *See Toscano v. Prof. Golfers Ass'n*, 258 F.3d 978 (9th Cir. 2001) (because the sponsors "did not help create anticompetitive rules" but only "agreed to purchase products" under "conditions set by the other party," they were not liable for concerted conduct under Section 1). *Id.*

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601. PX-2619; PX-2621.

That said, the Court addresses here the potential conflicts with the goals of antitrust law given this narrow view. The jurisprudence assumes that unilateral conduct may simply be the result of robust competition. That may not always be the case. Ending the analysis on that basis alone does not allow for those assumptions to be tested, especially where, as here, the Court is faced with a highly concentrated market.

Nor is the jurisprudence particularly consistent with tying claims which are allowed under Section 1. For example, a tying claim involves a seller exploiting "its control over the tying product to force the buyer into the purchase of a tied product." *Jefferson Parish*, 466 U.S. at 12. The buyer plays no role beyond purchasing the goods under conditions set by the seller. Similarly, an exclusive dealing claim involves "agreement between a vendor and a buyer that prevents the buyer from purchasing a given good from any other vendor." *Aerotec*, 836 F.3d at 1180. Again, the buyer passively accepts conditions set by the vendor. More recently, *Amex* involved an anti-steering provision as a vertical restraint imposed by American Express on merchants. 138 S. Ct. at 2277. The merchants accepted the provision as a condition of dealing with American Express without further involvement. *Id.*[602]

602. *See Image Tech. Serv., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 619 (9th Cir. 1990) ("*Image Tech Services I*") (rejecting the argument that party "acted unilaterally in tying parts to service" because otherwise, *Monsanto* "without discussing the courts' tying decisions, meant to overturn" tying arrangements); *Eastman Kodak*, 504 U.S. at 463 n.8 (conditioning sales is not a "unilateral refusal to deal").

Thus, while the Court does not find the DPLA provides sufficient evidence of an agreement, it nonetheless continues the analysis to inform the issues relating to anticompetitive and incipient antitrust conduct, especially given the anti-steering provision therein.

b. Reasonableness of the Restraint

For the reasons stated, the Court turns to the second element using the rule of reason test. *Amex*, 138 S. Ct. at 2284; *see also Copperweld Corp.*, 467 U.S. at 768 (explaining that vertical agreements "hold the promise of increasing a firm's efficiency and enabling it to compete more effectively" and so "are judged under a rule of reason"). As the Court described in *Amex*:

> The rule of reason requires courts to conduct a fact-specific assessment of "market power and market structure . . . to assess the [restraint]'s actual effect" on competition. *Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752, 768, 104 S. Ct. 2731, 81 L.Ed.2d 628 (1984). The goal is to "distinguis[h] between restraints with anticompetitive effect that are harmful to the consumer and restraints stimulating competition that are in the consumer's best interest." *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877, 886, 127 S. Ct. 2705, 168 L.Ed.2d 623 (2007).

Amex, 138 S. Ct. at 2284. Recognizing that the rule of reason is not a "rote checklist," *NCAA*, 141 S. Ct. at 2160,

the Court examines the app distribution restrictions and considers their anticompetitive effects, procompetitive rationales, and less restrictive alternatives. *Amex*, 138 S. Ct. at 2284.

i. Anticompetitive Effects

"To demonstrate anticompetitive effects on the two-sided [mobile gaming] market as a whole," plaintiff must prove that Apple's app distribution provisions increased the cost of mobile gaming transactions "above a competitive level, reduced the number of [mobile gaming] transactions, or otherwise stifled competition in the [mobile gaming] market." *See Amex*, 138 S. Ct. at 2287. Evidence of this nature is considered direct evidence. *Id.* at 2284 (simplified). Indirect evidence is also admissible and would involve "proof of market power plus some evidence that the challenged restraint harms competition." *Amex*, 138 S. Ct. at 2284.

Here, the Court recognizes significant challenges in assessing the anticompetitive effects of the app distribution restrictions. The market in mobile game transactions has grown dramatically over recent years due to growth in gaming generally, smartphone ownership, and digital transactions as a whole. Apple's commission rate has remained static throughout even though Google, Apple's main competitor (and who also charges a 30% commission rate), does not have the same app distribution restrictions. These facts suggest prices are artificially high given Apple's growing market power and growing demand. Evaluating competitive effects under these

circumstances would require isolating the effects of a particular restriction. This is particularly difficult in light of the expansive market growth caused by innovation in the field. It is for these reasons that "novel business practices—*especially* in technology markets—should not be 'conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use.'" *Qualcomm*, 969 F.3d at 990-91 (emphasis in original) (quoting *Microsoft Corp.*, 253 F.3d at 91).

Having carefully considering the evidence, the Court finds that Apple's app distribution restrictions do have *some* anticompetitive effects. The evidence here shows that, unlike the increased merchant fees in *Amex*, Apple's maintenance of its commission rate stems from market power, *not competition* in changing markets. As explained above, Apple set its 30% commission rate almost by accident when it first launched the App Store without considering operational costs, benefit to users, or value to developers, that is, both sides of the platform.[603] That commission has enabled Apple to collect extraordinary profits as Mr. Barnes credibly shows that the operating margins have exceeded 75% for years. Yet the 30% commission rate has barely budged in over a decade

603. Thus, the facts here differ from *Amex*. There, American Express raised fees only after a "careful study" of "how much additional value its cardholders offer merchants." 138 S. Ct. at 2288. It used higher merchant fees "to offer its cardholders a more robust rewards program," which created loyalty and "encourage[d] the level of spending that makes Amex valuable to merchants." *Id.* No study or evaluation exists here.

despite developer complaints and regulatory pressure. High commission rates certainly impact developers, and some evidence exists that it impacts consumers when those costs are passed on.[604]

With respect to indirect evidence, the Court discusses these effects in Facts § V.A.1., but summarizes them here. Apple holds considerable market share, 55 percent. Its restrictions harm competition by precluding developers, especially larger ones, from opening competing game stores on iOS and compete for other developers and users on price. Given this but-for-world, increased competition could result in a reduction of Apple's commissions charged to developers, who could then pass on savings to users.[605] Competing game stores could compete on features, including "search and discoverability," in-app payment processing, and security. This could improve the innovation in and perhaps quality of "matchmaking" to

604. For this reason, the spectacular growth of free apps on the App Store is not dispositive. While Apple may have decided, over time, to use freemium games to subsidize the rest of the App Store, there is no evidence that the commission is calibrated to the costs or value of providing free games, as the merchant fees in *Amex* were calibrated to providing rewards.

605. The record is bare as to who would ultimately benefit from a reduction in commissions. With the limited examples in the record, some developers, like Down Dog, pass on the entirety of the reduction in the commission to consumers, whereas Epic Games split the 30% commission by retaining 12% and remitting 18% to consumers. Thus, it is unclear the extent or degree to which developers would pass on any savings to consumers.

increase output.[606] Further, competing game stores could provide specialized stores tailored to particular groups and otherwise innovate to meet user and developer needs.

Accordingly, Epic Games has put proffered both direct and indirect evidence of anticompetitive effects under Section 1.

ii. Procompetitive Justifications

In response, Apple offers three procompetitive justifications: security, intrabrand competition, and protecting intellectual property investment. A procompetitive rationale is a "nonpretextual claim that [defendant's] conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal." *Qualcomm*, 969 F.3d at 991. It is not enough that "conduct 'has the effect of reducing consumers' choices or increasing prices to consumers.'" *Id.* at 990 (quoting *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1202 (9th Cir. 2012)). That is because these effects may arise for procompetitive reasons, such as increased interbrand competition. *See Leegin*, 551 U.S. at 891-93. In a two-sided transaction market, a court must consider procompetitive effects on both sides of the market. *Amex*, 138 S. Ct. at 2287.

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606. Under *Amex*, services for each of the two sides of the platform are both "inputs" to the single product, which is transactions. 138 S. Ct. at 2286 n.8. Although Apple does not directly restrict game transaction output, it limits the supply of these inputs on iOS, which reduces quality and may reduce output.

Here, the Court finds Apple's security justification to be a valid and nonpretextual business reason for restricting app distribution. As previously discussed, *see supra* Facts § V.A.2., centralized app distribution enables Apple to conduct app review, which includes both technical and human components. Human review in particular helps protect security by preventing social engineering attacks, the main vector of malware distribution. Human review also helps protect against fraud, privacy intrusion, and objectionable content beyond levels achievable by purely technical measures. By providing these protections, Apple provides a safe and trusted user experience on iOS, which encourages both users and developers to transact freely and is mutually beneficial. As a result, Apple's conduct "enhance[s] consumer appeal." *See Qualcomm*, 969 F.3d at 991.

As a corollary of the security justification, the app distribution restrictions promote interbrand competition. The Supreme Court has recognized that limiting intrabrand competition can promote interbrand competition. *Leegin*, 551 U.S. at 890. For example, restricting price competition among retailers who sell a particular product can help the manufacturer of that product compete against other manufacturers. *Id.* at 890-91. It is this interbrand competition that "the antitrust laws are designed primarily to protect." *Id.* at 895. Here, centralized app distribution and the "walled garden" approach differentiates Apple from Google. That distinction ultimately increases consumer choice by allowing users who value open distribution to purchase Android devices, while those who value security and the protection of a "walled garden" to purchase iOS devices. This, too, is a legitimate procompetitive justification.

Epic Games does not persuasively rebut the security justification nor shows it to be pretextual. Instead, it focuses on the lack of app distribution restrictions (besides code signing) on Mac computers. *See supra* Facts §§ V.A.1.a, V.A.2.a.iv. However, Apple submits some evidence that Mac computers have more malware than iOS and, in any case, provides a compelling explanation for app review's increased effectiveness against certain types of attacks. Epic Games also questions the effectiveness of app review in practice. *See supra* Facts § V.A. That hardly provides a reason against app review. Epic Games' security expert agrees that "mayhem" would result if unfettered app distribution were allowed.[607] Thus, plaintiff's proffer is really one of the "effectiveness" of Apple's security procedures, not the need for them. Whether the precise restrictions Apple has selected could be replicated through less restrictive means is more properly addressed in the next section. Given the trial record, the Court finds that Apple's security rationale is a valid business justification for the app distribution restrictions.[608]

As for the intellectual property justification, the specific commission rate is pretextual, as the Court previously found. As discussed in Facts § V.A.2.b, there

607. Trial Tr. (Mickens) 2709:23-2710:2.

608. Relatedly, Apple has a legitimate business justification in maintaining and improving the quality of its services, here, privacy and security. *See Cal. Computs. Prods., Inc. v. Int'l Bus. Machs. Corp.*, 613 F.2d 727, 744 (9th Cir. 1979) ("IBM, assuming it was a monopolist, had the right to redesign its products to make them more attractive to buyers whether by reason of lower manufacturing cost and price or improved performance.").

is no evidence that Apple set or maintains its specific commission rate with any consideration of the value or cost of intellectual property in mind.[609] Indeed, the Supreme Court recently rejected a justification without "any direct connection" to the challenged restraint in *NCAA*. 141 S. Ct. at 2162. There, a sport association argued that restrictions on student athlete compensation were necessary to preserve amateurism and related consumer demand. *Id.* at 2152. The Court rejected this justification based on the district court's findings that the association set those rules without any reference to considerations of consumer demand. *Id.* at 2162-63 (quoting *In re NCAA Athletic Grant-in-Aid Antitrust Litig.*, 375 F. Supp. 3d 1058, 1070, 1075, 1100 (N.D. Cal. 2019)).

Eastman Kodak is further instructive. There, the photocopier maker argued that companies providing repair services for its machines were "exploiting the investment Kodak has made in product development, manufacturing and equipment sales." *Eastman Kodak*, 504 U.S. at 485. The Supreme Court declined to accept this argument and find in Kodak's favor as a matter of law. *Id.* at 486. Ultimately, on remand, the Ninth Circuit affirmed a jury finding of pretext. The evidence showed that "patents 'did not cross [Kodak's] mind at the time Kodak began its parts policy" and that Kodak did not distinguish patented and unpatented parts in its policy. *Image Tech. Servs. II*, 125 F.3d at 1219-20.

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609. *See, e.g.*, PX-0880.021; Ex. Depo. 8 (Cue) 137:23-138:14, 140:10-141:7; Trial Tr. (Malackowski) 3692:18-21, 3693:13-17.

Like the defendants in those cases, Apple did not consider intellectual property in setting its specific commission rate, nor does it list any specific intellectual property in the DPLA. Thus, the justification with respect to the 30% commission rate is pretextual.

That said, while the Court has found the *rate itself* pretextual, the Court cannot conclude that Apple's protection of its intellectual property is pretextual. Courts have found similar justifications based on the protection of intellectual property rights valid, albeit rebuttable, procompetitive justifications. *See, e.g., Tech. Res. Servs., Inc. v. Dornier Med. Sys., Inc.*, 134 F.3d 1458, 1467 (11th Cir. 1998) (jury could have credited defendant's "need to protect its trade secrets and proprietary information"). Indeed, as the Court has found, Apple is entitled to license its intellectual property for a fee, and to guard its intellectual property from uncompensated use by others. The restrictions on app distribution on the iOS platform accomplishes that aim, whereas Epic Games' proposed alternatives (discussed in more length below) would weaken it. In short, Epic Games has failed to show that Apple's proffered intellectual property justification is pretextual as it relates to the restrictions on app distribution.

Accordingly, Apple has shown procompetitive justifications based on security and the corollary interbrand competition, as well as generally with respect to intellectual property rights.

iii. Less Restrictive Alternatives

Turning to the last step, the parties dispute whether these procompetitive justifications could be achieved through less restrictive means. Generally, "antitrust law does not require businesses to use anything like the least restrictive means of achieving legitimate business purposes." *NCAA*, 141 S. Ct. at 2161. "To the contrary, courts should not second-guess degrees of reasonable necessity so that the lawfulness of conduct turns upon judgments of degrees of efficiency." *Id.* (simplified).[610]

610. The Court notes slightly differing language at the third step between Section 1 ("plaintiff [must] demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means") and Section 2 ("the plaintiff must demonstrate that the anticompetitive harm of the conduct outweighs the procompetitive benefit"). *See Qualcomm*, 969 F.3d at 991. Although the Ninth Circuit has recently stated that the rule of reason analysis under both sections is "essentially the same," *id.*, prior case law has explicitly recognized that "there is no least restrictive alternative requirement in the context of a Section 2 claim." *Image Tech. Servs. I*, 903 F.2d at 620; *accord Apple iPod iTunes Antitrust Litig.*, No. 05-CV-0037-YGR, 2014 U.S. Dist. LEXIS 165254, 2014 WL 12719194, at *1 (N.D. Cal. Nov. 25, 2014); *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp. L.P.*, Nos. 05-CV-6419-MRP-AJW, 2008 U.S. Dist. LEXIS 112002, 2008 WL 7346921, at *16 (C.D. Cal. July 9, 2008), *aff'd* 592 F.3d 991 (9th Cir. 2010). This is, in part, because the Sherman Act "does not give judges *carte blanche* to insist that a monopolist alter its way of doing business whenever some other approach might yield greater competition." *See Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415-16, 124 S. Ct. 872, 157 L. Ed. 2d 823 (2004). Regardless, the Court notes this distinction as a potential difference between the two analyses especially where, as recognized, proving a violation of Section 2 is more exacting than proving a violation of Section 1. To

Thus, under the third step, an alternative must be "a significantly (not marginally) less restrictive means for achieving the same procompetitive benefits." *Id.* at 2164. It must be "virtually as effective in serving the procompetitive purposes" as current rules "without significantly increased cost." *In re NCAA Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1260 (9th Cir. 2020) (simplified), *aff'd* 141 S. Ct. at 2161. Where a restraint is "*patently and inexplicably* stricter than is necessary to accomplish" the proffered procompetitive objective, "an antitrust court can and should invalidate it and order it replaced with a viable [less restrictive alternative]." *Id.* (quoting *O'Bannon v. NCAA*, 802 F.3d 1049, 1075 (9th Cir. 2015) (emphasis in original)).

Here, Epic Games argues that the app distribution restrictions can be replaced with the enterprise model or the notarization model. As discussed above, *see supra* Facts § V.A.2.a.iv., Apple already implements both of these models on iOS and Mac, respectively. The enterprise model enables Apple to certify organizations, such as companies, to distribute apps to their own employees. This model could be extended to certify app stores. The notarization model allows Apple to sign apps to verify security while allowing them to be distributed as the developer wishes. Epic Games argues that these models could be implemented on iOS with minimal technical difficulty.

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the extent appellate courts perceive a practical distinction, clarity is welcomed.

However, missing from both the enterprise and notarization models is human app review which provides most of the protection against privacy violations, human fraud, and social engineering. These proposed alternatives would require Apple to either add human review to the notarization model or leave app review to third-party app stores. Apple executives suggested that the first option would not scale well.[611] Under the second option, Apple could in theory set minimum guidelines for app stores to provide a "floor" for privacy, security, and quality. However, security could increase or decrease depending on the quality and diligence of the store. Evidence shows that at least on Android, the experiment shows less security.

In evaluating remedies, no court should "impose a duty that it cannot explain or adequately and reasonably supervise." *NCAA*, 141 S. Ct. at 2163 (quoting *Verizon*, 540 U.S. at 410). Here, Epic Games has provided requests for its remedy which principally appear to eliminate app review.[612] The requests also leave unclear whether Apple

611. Trial Tr. (Federighi) 3502:22-3503:15. Professor Mickens even suggested the courts should micro-manage policy decisions.

612. *See, e.g.*, Dkt. No. 276-1 at 4 (requesting an injunction prohibiting Apple from enforcing its guidelines to "impede" or "disadvantage" app distribution outside of the App store). Although this request purports not to "prohibit Apple from taking steps to prevent the distribution of malware," it is not clear what constitutes "malware" and whether that distinction includes "broad" security (privacy, fraud, offline safety, etc.) or is limited to Dr. Mickens' definition of unauthorized access. Nor is it clear whether Apple can impose standards on other app stores.

can collect licensing royalties and, if so, how it would do so. At closing argument, Epic Games' counsel suggested that "Apple can charge" for its license, so long as it does not discriminate among developers.[613] However, it has sought to require Apple to give competing app stores access to the same "iOS functionality that the App Store has access to," which is more than the DPLA currently licenses.[614] Thus, the Court need not consider these possibilities because Epic Games has not sufficiently developed them.

In short, Epic Games has not met its burden to show that its proposed alternatives are "virtually as effective" as the current distribution model and can be implemented "without significantly increased cost." *In re NCAA Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d at 1260 (quoting *O'Bannon*, 802 F.3d at 1074). Nor has it shown that the restraints are "patently and inexplicably stricter than is necessary." *Id.* (quoting *O'Bannon*, 802 F.3d at 1074). "[A]ntitrust courts must give wide berth to business judgments before finding liability." *NCAA*, 141 S. Ct. at 2163. Here, Apple's business choice of ensuring security and protecting its intellectual property rights through centralized app distribution is reasonable, and the Court declines to second-guess that judgment on an underdeveloped record. *See In re Citric Acid Litig.*, 191 F.3d 1090, 1101 (9th Cir. 1999) ("Courts have recognized that firms must have broad discretion to make decisions based on their judgments of what is best for them . . . .").

613. Trial Tr. (Closing Arguments) 4156:20.

614. Dkt. No. 276-1 at 4.

Accordingly, the Court finds that Apple's app distribution restrictions do not violate Section 1 of the Sherman Act.

3. Count 5: iOS In-App Payment Solutions Market Analysis

In Count 5, Epic Games avers that Apple has unreasonably restrained trade in the "iOS In-App Payment Processing Market" by requiring developers to "use Apple's In-App Purchase for in-app purchases of in-app content to the exclusion of any alternative solution or third-party payment processor."[615] This claim fails for substantially the same reasons that Count 3 fails.

At step one, for the reasons stated, *supra* Facts § V.B.1. and Law § II.C.2.b.i., Epic Games has presented some direct and indirect evidence showing that Apple's IAP functionality has had anticompetitive effects.

At step two, for the reasons stated in both the Count 3 analysis as well as the Court's findings of facts with respect to IAP, *supra* Facts § V.B.2 and Law § II.C.2.b.ii, Apple has proffered more than three procompetitive justifications for the terms of the DPLA relating to IAP. One, IAP is the mechanism by which Apple can easily receive its commission and is further how Apple collects a royalty for the use of its intellectual property. Two, IAP provides consumers with a unitary safe and secure means to execute transactions on the iOS platform. Three,

615. Compl. ¶ 227.

IAP offers consumers a centralized purchasing system, whereby consumes have a convenient way to both execute and track transactions on the iOS platform.

At step three, Epic Games has identified no suitable less restrictive alternative for Apple's use of IAP based on the current record. The only alternative that Epic Games proposes is that Apple be barred from restricting or deterring in any way "the use of in-app payment processors other than IAP."[616] This proposed alternative is deficient for several reasons:

First, and most significant, as discussed in the findings of facts, IAP is the method by which Apple collects its licensing fee from developers for the use of Apple's intellectual property. Even in the absence of IAP, Apple could still charge a commission on developers. It would simply be more difficult for Apple to collect that commission.[617]

Indeed, while the Court finds no basis for the specific rate chosen by Apple (*i.e.*, the 30% rate) based on the

616. Epic Games COL ¶ 642.

617. In such a hypothetical world, developers could potentially avoid the commission while benefitting from Apple's innovation and intellectual property free of charge. The Court presumes that in such circumstances that Apple may rely on imposing and utilizing a contractual right to audit developers annual accounting to ensure compliance with its commissions, among other methods. Of course, any alternatives to IAP (including the foregoing) would seemingly impose both increased monetary and time costs to both Apple and the developers.

record, the Court still concludes that Apple is entitled to *some* compensation for use of its intellectual property. As established in the prior sections, *see supra* Facts §§ II.C., V.A.2.b., V.B.2.c., Apple is entitled to license its intellectual property for a fee, and to further guard against the uncompensated use of its intellectual property. The requirement of usage of IAP accomplishes this goal in the easiest and most direct manner, whereas Epic Games' only proposed alternative would severely undermine it. Indeed, to the extent Epic Games suggests that Apple receive nothing from in-app purchases made on its platform, [618] such a remedy is inconsistent with prevailing intellectual property law.

Second, if Apple could no longer require developers to use IAP for digital transactions, Apple's competitive advantage on security issues, in the broad sense, *see supra* Facts § V.B.2.a., would be undermined and ultimately could decrease consumer choice in terms of smartphone devices and hardware.

Third, but to a lesser extent, the use of different payment solutions for each app may reduce the quality of the experience for some consumers by denying users the centralized option of managing a single account through IAP. This would harm both consumers and developers by weakening the quality of the App Store to those that value this centralized system. Thus, the Court concludes that Apple's restrictions as to its IAP and separate payment processors do not violate Section 1 of the Sherman Act.

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618. Epic Games COL ¶ 643.

D. Section 2 of the Sherman Act: Apple's Monopoly Maintenance of the iOS App Distribution Market (Count 1) and iOS in-App Payment Solutions Market (Count 4)

Epic Games brings two claims under Section 2 arguing monopoly maintenance: Count 1 is based on its theory of the iOS distribution market and Count 4 is based on the iOS in-app payment solutions market. The legal framework is the same for both.

1. Legal Framework

Section 2 of the Sherman Act prohibits persons from "monopoliz[ing], or attempt[ing] to monopolize, or combin[ing] or conspir[ing] with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations." 15 U.S.C. § 2. A claim for unlawful monopolization under Section 2 of the Sherman Act requires that a plaintiff show: "(a) the possession of monopoly power in the relevant market; (b) the willful acquisition or maintenance of that power; and (c) causal antitrust injury." *Qualcomm Inc.*, 969 F.3d at 989-90.

To recap: monopoly power is "the power to control prices or exclude competition." *Grinnell Corp.*, 384 U.S. at 571 (quotation marks omitted). "[A] firm is a monopolist if it can profitably raise prices substantially above the competitive level," *Microsoft Corp.*, 253 F.3d at 51, "without inducing so rapid and great an expansion of output from competing firms as to make the supracompetitive price

untenable," *Harrison Aire, Inc.*, 423 F.3d at 380 (internal quotation marks omitted).

Section 2 monopolization claims "must be judged on a market-by-market basis." *Syufy Enters.*, 903 F.2d at 672 n.22; *see also Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177, 86 S. Ct. 347, 15 L. Ed. 2d 247 (1965) ("Without a definition of [the] market there is no way to measure [the defendant's] ability to lessen or destroy competition.").

2. Count 1: iOS App Distribution Market Analysis

In Count 1, Epic Games claims that Apple has a monopoly in the "iOS App Distribution Market" and has unlawfully maintained the monopoly by prohibiting iOS app developers from distributing their apps through alternative channels.

In short, this claim fails for two significant reasons: (1) Epic Games fails to prove the first element, that Apple has monopoly power in the relevant product and geographic market; and (2) Epic Games alternatively fails to satisfy the rule of reason analysis under Section 1—an acknowledged less exacting test as compared to Section 2.

First, the Court has found that the relevant market is the global mobile gaming transactions. Epic Games did not argue that Apple had monopoly power in this market. Instead, Epic Games focused on its two-tiered aftermarket theory. The Court will not rehash the failed analysis

here. Suffice it to say, neither parties' proposed markets ultimately persuaded the Court. Rather, Epic Games' proposed market ignored greater market pressures, and Apple's proposed market was overbroad in its inclusion of similar products.

As demonstrated with respect to the relevant market, Apple does not have substantial market power equating to monopoly power. While considerable, Epic Games has failed to show that Apple's market power is durable and sustaining given the current state of the relevant market. For that reason, the Court finds that Epic Games failed to prove the first element of a Section 2 claim: the possession of monopoly power in the relevant market.

Second, and alternatively, Epic Games' Section 2 claims fail to satisfy the substantively similar rule of reason analysis for similar reasons as Section 1. Epic Games' Section 1 and Section 2 claims are based on the same conduct and restrictions: namely, restrictions on both distribution of apps as well as the use of non-IAP payment processors. As the Court has found above, Epic Games has failed to persuade on this record that these ultimate restrictions are anticompetitive. Because "the three-part burden-shifting test under the rule of reason is essentially the same" under Sections 1 and 2, and "proving an antitrust violation under § 2 of the Sherman Act is more exacting than proving a § 1 violation," the analysis here applies to the monopolization claims if required and fails for the same reasons. *Qualcomm*, 969 F.3d at 991-92; *see also Williams*, 999 F.2d at 448 ("[A] § 1 claim insufficient to withstand summary judgment cannot be used as the sole basis for a § 2 claim.").

In sum, Epic Games' monopolization claims fail because Epic Games has failed to demonstrate that (i) Apple possesses monopoly power in the relevant market and that (ii) the challenged restrictions are anticompetitive under the rule of reason.

3. Count 4: iOS In-App Payment Solutions Market Analysis

In Count 4, Epic Games claims that Apple has a monopoly in the "iOS In-App Payment Processing Market" and has unlawfully maintained the monopoly by requiring "iOS app developers that sell in-app content to exclusively use Apple's In-App Purchase." This claim fails for the same reasons as Count 2.

As with its Section 2 monopolization claim for the distribution of apps (Count 2), Epic Games' Section 2 claim fails at the outset because Apple does not have monopoly power in the relevant product market.

III. SECTION 1 OF THE SHERMAN ACT: TYING CLAIM (COUNT 6)

Epic Games' Count 6 alleges a violation of Section 1 of the Sherman Act based on the existence of a tie between app distribution, on the one hand, and IAP on the other.

A. Legal Standard

Tying involves the linking of two separate products from two separate product markets. *Jefferson Parish*, 466

U.S. at 21. "[T]he essential characteristic of an invalid tying arrangement lies in the seller's exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Id.* at 12.

Tying arrangements may be evaluated under Section 1 of the Sherman Act under either *per se* or rule of reason analysis. *See id.* at 29. The *per se* rule applies "only after considerable experience with certain business relationships," *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 9, 99 S. Ct. 1551, 60 L. Ed. 2d 1 (1979) (citation omitted), shows that a restraint "always or almost always tend to restrict competition and decrease output," *Amex*, 138 S. Ct. at 2283 (citation omitted).

"For a tying claim to suffer per se condemnation, a plaintiff must prove: (1) that the defendant tied together the sale of two distinct products or services; (2) that the defendant possesses enough economic power in the tying product market to coerce its customers into purchasing the tied product; and (3) that the tying arrangement affects a not insubstantial volume of commerce in the tied product market." *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 913 (9th Cir. 2008); *see also Jefferson Parish*, 466 U.S. at 12-18; *Eastman Kodak*, 504 U.S. at 461-62.

The first element requires that the plaintiff must prove that the alleged tying product and the alleged tied product are "separate and distinct" products. *Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 974

(9th Cir. 2008). Further, if tied, the tie, would link "two separate product markets." *Jefferson Parish*, 466 U.S. at 21; *see also Microsoft Corp.*, 253 F.3d at 85 ("[U]nless products are separate, one cannot be 'tied' to the other.").

"[T]he answer to the question whether one or two products are involved turns not on the functional relation between them, but rather on the character of the demand for the two items." *Jefferson Parish*, 466 U.S. at 19; *see also Rick-Mik*, 532 F.3d at 975. There must be "sufficient demand for the purchase of [the tied product] separate from [the tying product] to identify a distinct product market in which it is efficient to offer [the tied product] separately from [the tying product]." *Jefferson Parish*, 466 U.S. at 21-22; *see also Rick-Mik*, 532 F.3d at 975.

"[T]he 'purchaser demand' test of *Jefferson Parish* examine[s] direct and indirect evidence of consumer demand for the tied product separate from the tying product. Direct evidence addresses the question whether, when given a choice, consumers purchase the tied good from the tying good maker, or from other firms. Indirect evidence includes the behavior of firms without market power in the tying good market, presumably on the notion that (competitive) supply follows demand." *Rick-Mik*, 532 F.3d at 975 (internal quotation marks and citations omitted); *see also id.* ("If competitive firms always bundle the tying and tied goods, then they are a single product.").

With respect to the second element, a tie exists where "sale of the desired ('tying') product is conditioned on purchase of another ('tied') product." *Aerotec*, 836 F.3d

at 1178. "[T]he essential characteristic of an invalid tying arrangement lies in the seller's exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Jefferson Parish*, 466 U.S. at 12. "A plaintiff must present evidence that the defendant went beyond persuasion and coerced or forced its customer to buy the tied product in order to obtain the tying product." *Paladin Assocs.*, 328 F.3d at 1159.

Finally, "the Supreme Court has condemned tying arrangements when the seller has the market power to force a purchaser to do something that he would not do in a competitive market." *Cascade Health Sols.*, 515 F.3d at 915. "[I]n all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product." *Illinois Tool Works Inc.*, 547 U.S. at 46; *Rick-Mik*, 532 F.3d at 972.

B. Analysis

At the outset, the parties dispute whether the *per se* analysis or the rule of reason analysis should control the Court's analysis. The Court need not decide this dispute. Epic Games' claim fails under either framework because a tying claim cannot be sustained where the alleged good is not a "separate and distinct product." *Rick-Mik*, 532 F.3d at 974; *Microsoft Corp.*, 253 F.3d at 85 ("[U]nless products are separate, one cannot be 'tied' to the other."). Here, Epic Games argues that a tying claim exists because Apple is forcing distributors who use the iOS app distribution

platform (the alleged tying product) to also use IAP (the alleged tied product). As discussed above, *supra* Facts § II.C., IAP is not a product. Two core factual issues lead to this conclusion: integration and consumer demand.

With respect to integration, the Court described in detail how IAP functions and the Court does not reiterate it here. Suffice it to say, IAP is not merely a payment processing system, as Epic Games suggests, but a comprehensive system to collect commission and manage in-app payments. This IAP system is not bought or sold but it is integrated into the iOS devices. "[I]ntegration [is] common" among technological products and services." *Microsoft Corp.*, 253 F.3d at 93.

Rick-Mik supports this conclusion. There, the Ninth Circuit found that Equilon's (also known as Shell Oil Co.) requirement that franchisees process all credit and debit card transactions through Equilon's own system did not involve two separate products. *Rick-Mik*, 532 F.3d at 967, 974. Said differently, the purchase of an oil company's franchise (the tying product) and the requirement that it use Equilon's credit-card processing system (the tied product) were not two distinct products. *Id.* Rather, the Court found that franchises are "almost by definition" a bundle of related products and services. *Id.* at 674. The proper inquiry was whether the allegedly tied products were "integral components of the business method being franchised." *Id.*

Here, as there, IAP is but one component of the full suite of services offered by iOS and the App Store.

Moreover, and as discussed above, the App Store is a two-sided transaction platform. *See Amex*, 138 S. Ct. at 2286 n.8 (noting that "a two-sided platform" is one that "offers different products or services to two different groups who both depend on the platform to intermediate between them"). By definition, the platform has two sides: the developer on one side providing gaming apps and the consumer on the other, purchasing the apps. This is a single platform which cannot be broken into pieces to create artificially two products.[619] *See, e.g., Serv. & Training, Inc. v. Data Gen. Corp.*, 737 F. Supp. 334, 343 (D. Md. 1990) (rejecting tying claim because alleged tied product was "one feature of [defendant's] integrated and unified product"); Areeda & Hovenkamp § 1741a ("a car with tires attached might be deemed a single product because a vehicle that can be driven is the essence of what the customer buys").

Moreover, with respect to consumer demand, Epic Games presented no evidence showing that demand exists for IAP as a standalone product. As discussed

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619. This conclusion is further bolstered by comparison to other platforms in the wider gaming market. *See Microsoft Corp.*, 253 F.3d at 88 (comparing the bundling to competitive firms); *cf. In re: Cox Enters., Inc.*, 871 F.3d 1093, 1109 (10th Cir. 2017) (bundling in the premium cable industry found to be "simply more efficient than offering them separately"). As described above, the wider gaming industry routinely use walled gardens, including the PlayStation Store, the Nintendo eShop, and the Xbox Games Store. These game stores are vertically integrated with respect to distribution, content delivery, and payment functionalities. *See supra* Facts § II.D.3.c. The only exception is Epic Games Store. However, as noted, plaintiff's move occurred in the context of litigation planning. *Id.* § I.B.3.a.

above, *supra* Facts § II.C., Epic Games' argument mischaracterizes IAP and its functionality. Payment processing is simply an input into the larger bundle of services provided by the IAP system.[620] While there may be a market for payment processing, that fact is irrelevant as IAP is not just payment processing.[621]

In sum, whether analyzed as an integrated functionality or from the perspective of consumer demand, IAP is not a separate product from iOS app distribution. Thus, Epic Games' Count 6 fails to show the existence of an illegal tie under Section 1.

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620. In fact, as noted, IAP does not itself even *process payments*—that function is performed by a third-party settlement provider like Chase Bank with which Apple contracts. And unlike the purported alternatives that Epic Games proposes (*e.g.*, PayPal), Apple has never tried to market the technology for use on other digital transaction platforms, and Epic Games does not contend otherwise.

621. The Court also notes that in the but-for world where developers could use an alternative processor, Apple would still be contractually entitled to its commission on any purchase made within apps distributed on the App Store. Thus, so long as the alternative processor charged a non-zero commission or fee for its services, no economically rational developer would choose to use the alternative processor, because on each transaction, they would *still* have to pay Apple its commission, *and* they would have to pay the alternative processor a commission for its services. For the same reason, the fact that some developers like Facebook and Spotify have tried to avoid Apple's commission by bypassing IAP is not evidence that there is separate demand for IAP, only that developers would prefer not to pay Apple a commission. Epic Games' reliance on this evidence thus "conflates competition on the merits with Epic Games' goal of avoiding Apple's 30%." *Epic Games, Inc.*, 493 F. Supp. 3d at 843.

IV. CALIFORNIA'S CARTWRIGHT ACT (COUNTS 7, 8, AND 9)

Epic Games asserts three claims against Apple under the Cartwright Act: (i) Count 7 for unreasonable restraint of trade in the iOS app distribution market; (ii) Count 8 for unreasonable restraint of trade in the iOS in-app payment solutions market; and (iii) Count 9 for tying of app distribution and payment processing. Epic Games argues that its Cartwright Act claims are based on the same conduct as the analogous Sherman Act claims. Specifically, Count 7 is based on the same conduct as Count 3; Count 8 is based on the same conduct as Count 5; and Count 9 is based on the same conduct as Count 6. The basic legal framework is the same for all three claims.

A. Legal Framework

The Cartwright Act makes "unlawful, against public policy and void" "every trust," which is defined as "a combination of capital, skill, or acts by two or more persons . . . [t]o create or carry out restrictions in trade or commerce." Cal. Bus. & Prof. Code §§ 16720(a), 16726. Interpretations of federal antitrust law are at most instructive, not conclusive, when construing the Cartwright Act, given that the Cartwright Act was modeled not on federal antitrust statutes but instead on statutes enacted by California's sister states around the turn of the 20th century." *Aryeh v. Canon Bus. Sols., Inc.*, 55 Cal. 4th 1185, 1195, 151 Cal. Rptr. 3d 827, 292 P.3d 871 (2013). "The Ninth Circuit has recognized after *Aryeh* it 'is no longer the law in California' that the Cartwright

Act is 'coextensive with the Sherman Act.'" *In re Lithium Ion Batteries Antitrust Litig.*, No. 13-MD-2420, 2014 U.S. Dist. LEXIS 141358, 2014 WL 4955377, at *10 (N.D. Cal. Oct. 2, 2014) (quoting *Samsung Elecs. Co. v. Panasonic Corp.*, 747 F.3d 1199, 1205 n.4 (9th Cir. 2014)).

B. Analysis

Epic Games argues that, even if its claims under the Sherman Act fail, it is nevertheless entitled to relief on its Cartwright Act claims because the Cartwright Act is broader in range and deeper in reach than the Sherman Act.[622] Apple disagrees arguing that where, as here, Epic Games has not identified any specific and material differences between the Cartwright Act and the Sherman Act, plaintiff cannot prevail on a Cartwright Act where its claims fail under the Sherman Act.

The Court agrees with Apple. Epic Games has not cited any authority for the contrary position. Plaintiff's authorities contain conclusory statements about the broader "reach" of the Cartwright Act relative to the Sherman Act.[623] Because the context of these statements is inapposite, the statements do not support a finding that the Cartwright Act claims here can survive notwithstanding the failure of Sherman Act claims. *See, e.g., Cianci v. Superior Court*, 40 Cal. 3d 903, 917-18, 221 Cal. Rptr. 575, 710 P.2d 375 (1985) (holding that the "broad" scope of the Cartwright Act covers entities involved in anticompetitive

622. *See* Epic Games COL ¶ 426.

623. *See* Dkt. No. 276 at 84-85; Epic Games COL ¶ 426.

conduct "in every type of business," including in the "medical profession," and noting, in dicta, that the reach of the Cartwright Act includes "threats to competition in their incipiency" similarly to Section 7 of the Clayton Act, which prohibits mergers that may substantially lessen competition); *In re Capacitors Antitrust Litig.*, 106 F. Supp. 3d 1051, 1072 (N.D. Cal. 2015) (declining to apply standard for federal antitrust standing in the context of claims brought under the Cartwright Act in light of the absence of a "definitive decision" by California courts that doing so would be permissible). Because Epic Games has not met its burden to show that it can prevail on its Cartwright Act claims despite the failure of its analogous Sherman Act claims, the Court finds and concludes that Epic Games' Cartwright Act claims fail for the same reasons as its analogous Sherman Act claims.

This conclusion is confirmed by a review of California authorities applying the Cartwright Act in the context of claims asserting an unreasonable restraint of trade, as in Counts 7 and 8, and tying, as in Count 9.

As in the context of claims under Section 1 of the Sherman Act, California courts employ the rule of reason to determine whether a restraint of trade that is not subject to *per se* treatment, such as the DPLA[624] , is unreasonable

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624. Apple argues that Epic Games' Cartwright Act claims fail for lack of concerted action because the claims challenge "only unilateral conduct," and the Cartwright Act "does not impose liability for 'wrongful conduct on the part of a single entity.'" Apple COL ¶¶ 588-589. The Court disagrees with this interpretation of Epic Games' claims. While Counts 7 and 8, as Counts 3 and 5, are

and, therefore, unlawful under the Cartwright Act. *See In re Cipro Cases I & II*, 61 Cal. 4th 116, 146, 187 Cal. Rptr. 3d 632, 348 P.3d 845 (2015) (holding that "antitrust illegality" under the Cartwright Act where a "challenged agreement involves a restraint of trade" depends on the "traditional rule of reason" analysis because both "the Cartwright Act and Sherman Act carry forward the common law understanding that 'only unreasonable restraints of trade are prohibited'" (citation omitted)). The rule of reason inquiry in the context of the Cartwright Act, as in the federal context, looks to "whether the challenged conduct promotes or suppresses competition," based on "the facts peculiar to the business in which the restraint is applied, the nature of the restraint and its effects, and the history of the restraint and the reasons for its adoption." *Id.* (internal quotation marks and citation omitted).

Here, the Court has carefully considered the evidence in the record and has determined, based on the rule of reason, that the DPLA provisions at issue in Counts 3 (app distribution) and 5 (IAP) have procompetitive effects that offset their anticompetitive effects, and that Epic Games has not shown that these procompetitive effects can be

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predicated on the theory that the DPLA is an agreement between Apple and Epic Games, it may include particular terms that would constitute unreasonable restraints of trade. *See Kolling v. Dow Jones & Co.*, 137 Cal. App. 3d 709, 719, 187 Cal. Rptr. 797 (1982) ("If a 'single trader' pressures customers or dealers into adhering to" restraints of trade, then "an unlawful combination [under the Cartwright Act] is established, irrespective of any monopoly or conspiracy, and despite the recognized right of a producer to determine with whom it will deal" (citations omitted)).

achieved with other means that are less restrictive. These findings, which defeat Counts 3 and 5, also defeat Counts 7 and 8. As noted above, Epic Games has cited no authority that compels a different conclusion.

The result is similar with respect to Count 9. As is the case with a tying claim in violation of the Sherman Act, a tying claim under the Cartwright Act requires the existence of two separate products. *See Freeman v. San Diego Ass'n of Realtors*, 77 Cal. App. 4th 171, 184, 91 Cal. Rptr. 2d 534 (1999) ("The threshold element for a tying claim is the existence of separate products or services in separate markets. Absent separate products in separate markets, the alleged tying and tied products are in reality a single product." (internal citation omitted)).

Here, as discussed above, the Court has found and concluded Epic Games' tying claim under the Sherman Act (Count 6) fails because plaintiff has not shown that IAP is a separate product from iOS App Distribution. Because the tying claim under the Cartwright Act (Count 9) is based on the same conduct as Count 6, that claim fails for the same reason as Count 6. *See Freeman*, 77 Cal. App. 4th at 184 (holding that a tying claim under the Cartwright Act fails in the absence of two separate products in separate markets). Again, Epic Games has cited no authority that warrants a different outcome.

V. SECTION 2 OF THE SHERMAN ACT: APPLE'S DENIAL OF AN ESSENTIAL FACILITY IN THE IOS APP DISTRIBUTION MARKET (COUNT 2)

The legal elements of an essential facility claim under governing Ninth Circuit precedent are undisputed. To establish such a claim, a plaintiff must show that (i) the defendant is "a monopolist in control of an essential facility"; (ii) the plaintiff "is unable reasonably or practically to duplicate the facility"; (iii) the defendant "has refused to provide [the plaintiff] access to the facility"; and (iv) "it is feasible for [the defendant] to provide such access". *Aerotec*, 836 F.3d at 1185; *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1128-29 (9th Cir. 2004); *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 542-46 (9th Cir. 1991).

Epic Games has failed to prove this claim for myriad reasons, but most convincingly for two. First, for the reasons set forth above, Epic Games has failed to prove that Apple is an illegal monopolist in control of the iOS platform. This alone is sufficient to defeat the claim. Second, the claim would still fail because Epic Games failed to prove that the iOS platform is an essential facility. The best evidence of this is Epic Games' own expert, Dr. Evans, who refused to endorse the argument that the iOS platform is an essential facility.[625] On this issue, he and Professor Schmalensee agree.[626]

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625. Not only did Dr. Evans confirm in his live testimony that he would not describe iOS or Android as utilities, Trial Tr. (Evans) 2381:21-2383:18, Dr. Evans twice declined to express any opinion related to an essential facilities claim. Trial Tr. (Evans) 1673:4-11, 2390:16-2391:2; *see also generally* Ex. Expert 1 (Evans) § II.

626. As a corollary, given that the nature of the "facility" is one solely comprised of intellectual property, as opposed to a physical

The term "essential facility" is a term of art under the antitrust laws. Caselaw describes essential facilities as those that are not capable of being replicated by competitors and serve as a conduit for the distribution of another product. For example, sports stadiums facilitate the display of indoor sports, *see Fishman v. Estate of Wirtz*, 807 F.2d 520, 532 (7th Cir. 1986), and railroad bridges permit continuation of rail service and delivery of freight, *see United States v. Terminal R.R. Ass'n*, 224 U.S. 383, 392-94, 32 S. Ct. 507, 56 L. Ed. 810 (1912). While prior cases have focused only on physical infrastructures of a finite availability (such as a bridge or a power network), an "essential facility" can exist even in the absence of such traditional physical attributes. *See MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1148 (7th Cir. 1983).

To constitute an essential facility, "access to the facility or resource must be truly 'essential' in the sense that competitors cannot simply duplicate it or find suitable alternatives, and that absent access, competitors' ability to compete will be substantially constricted." 1 William C. Holmes, Intellectual Property and Antitrust Law § 6:10 (2021)[627] ; *Paladin Assocs.*, 328 F.3d at 1162-63 (no

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structure, the question arises whether this claim could ever be recognized under Section 2 as a matter of law. Citing primarily district court cases, Apple argues it cannot be forced to license its intellectual property and to hold otherwise would chill innovation and investment. While the argument appears meritorious, the Court declines to rule on this issue as it was not fully vetted and is not necessary to the resolution of this claim.

627. Citing circuit cases: *e.g., Pittsburg County Rural Water Dist. No. 7 v. City of McAlester*, 358 F.3d 694, 721 (10th Cir. 2004)

viable claim under the "essential facilities" doctrine where customers were able to obtain gas from other pipelines and sources and noting that a facility is 'essential' only if control of the facility carries with it the power to eliminate competition in a downstream market").

Obviously, under its theory, given the proprietary nature of iOS, plaintiff could not replicate iOS. However, as defined by the Court, in terms of distribution of mobile apps, multiple avenues *do exist* to distribute the content to the consumer. Distribution can occur through web apps, by web access, and through other games stores. This doctrine does not require distribution in the manner preferred by the competitor, here native apps. The availability of these other avenues of distribution, even if they are not the preferred or ideal methods, is dispositive of Epic Games'

(affirming dismissal of an essential facilities claim where the competitor admitted that it had a "suitable available alternative water supply"); *Midwest Gas Services, Inc. v. Indiana Gas Co., Inc.*, 317 F.3d 703, 713-14 (7th Cir. 2003) (dismissing an essential facilities claim where a distributor of natural gas had other routes available even if more costly); *Paddock Publ'ns, Inc. v. Chicago Tribune Co.*, 103 F.3d 42, 44-46 (7th Cir. 1996) ("Unlike *United States v. Terminal R.R. Ass'n*, 224 U.S. 383, 32 S. Ct. 507, 56 L. Ed. 810 (1912), the granddaddy of these cases, in which the Court held that a bottleneck facility that could not feasibly be duplicated must be shared among rivals, this case does not involve a single facility that monopolizes one level of production and creates a potential to extend the monopoly to others. We have, instead, competition at each level of production; no one can 'take over' another level of production by withholding access from disfavored rivals."); *Twin Lab'ys, Inc. v. Weider Health & Fitness*, 900 F.2d 566, 570 (2d Cir. 1990) (defendant's resource was not "essential" where alternate resources existed); *Directory Sales Mgmt. Corp. v. Ohio Bell Tel. Co.*, 833 F.2d 606 (6th Cir. 1987) (same).

claim. The doctrine does not demand an ideal or preferred standard. Based on these reasons, the Section 2 claim based on an essential facilities theory fails.

VI. CALIFORNIA'S UNFAIR COMPETITION LAW (COUNT 10)

Antitrust law does not end with the Sherman Act. "States have regulated against monopolies and unfair competition for longer than federal government, and federal law is intended only 'to supplement, not to displace, state antitrust remedies.'" *In re Cipro Cases I & II*, 61 Cal. 4th at 160 (quoting *Cal. v. ARC Am. Corp.*, 490 U.S. 93, 102, 109 S. Ct. 1661, 104 L. Ed. 2d 86 (1989)); *see also* Areeda & Hovenkamp §§ 216, 2401 (describing legislative history).

California's Unfair Competition Law ("UCL") prohibits business practices that constitute "unfair competition," which is defined, in relevant part, as "any unlawful, unfair or fraudulent business act or practice." Cal. Bus. & Prof. Code § 17200. Each of these descriptions provides a separate "variety" of unfair competition. Thus, "a practice may be deemed unfair even if not specially proscribed by some other law" and even if not violating an antitrust statute. *See Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 180, 187, 83 Cal. Rptr. 2d 548, 973 P.2d 527 (1999).

The UCL permits claims to be brought by any "person," which includes "natural persons, corporations, firms, partnerships, joint stock companies, associations

and other organizations of persons." Cal. Bus. & Prof. Code §§ 17201, 17204. To bring a claim under the UCL, a plaintiff must "(1) establish a loss or deprivation of money or property sufficient to quantify as injury in fact, i.e., *economic injury*, and (2) show that the economic injury was the result of, i.e., *caused by*, the unfair business practice." *Kwikset Corp. v. Superior Court*, 51 Cal. 4th 310, 322, 120 Cal. Rptr. 3d 741, 246 P.3d 877 (2011) (emphasis in original); *see also* Cal. Bus. & Prof. Code § 17204.

Epic Games challenges Apple's conduct under the "unlawful" and "unfair" provisions of the UCL. Apple disputes both claims and further argues that Epic Games lacks "customer" standing. The Court addresses standing and then each claim.

A. Standing

The injury-in-fact requirement of the UCL incorporates standing under Article III of the United States Constitution. *Kwikset*, 51 Cal. 4th at 322-23. Accordingly, the injury in fact must be "concrete and particularized . . . and actual or imminent, not conjectural or hypothetical." *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560, 112 S. Ct. 2130, 119 L. Ed. 2d 351 (1992) (simplified). In addition, the UCL requires an economic injury. *Kwikset*, 51 Cal. 4th at 323. For example, "[a] plaintiff may (1) surrender in a transaction more, or acquire in a transaction less, than he or she otherwise would have; (2) have a present or future property interest diminished; (3) be deprived of money or property to which he or she has a cognizable claim; or (4) be required

to enter into a transaction, costing money or property, that would otherwise have been unnecessary." *Id.* Last, a plaintiff must show "a causal connection" between the defendant's conduct and the alleged injury. *Id.* at 326 (internal quotation marks and citation omitted).

Here, Apple does not dispute Epic Games' standing as a potential competitor: Epic Games wanted to open a competing iOS game store and could not. Because Epic Games would earn revenues from a competing store, it has suffered an economic injury. However, Apple challenges Epic Games' standing as a consumer. For that interpretation, Epic Games argues that it is a business customer of Apple's App Store and has been economically injured because it could not distribute games directly to consumers at lower cost.

The precise meaning of "consumer" under the UCL is undefined. Generally, the UCL makes a distinction between "consumer" and "competitor" suits. *See Cel-Tech*, 20 Cal. 4th at 187 & n.12; *Barquis v. Merchs. Collection Assn.*, 7 Cal. 3d 94, 109-10, 101 Cal. Rptr. 745, 496 P.2d 817 (1972) ; *Kasky v. Nike, Inc.*, 27 Cal. 4th 939, 949, 119 Cal. Rptr. 2d 296, 45 P.3d 243 (2002). There is no specific third category for non-competitor business.[628] Here,

628. The Court recognizes *Levitt v. Yelp! Inc.*, and finds it distinguishable. There, in terms of analyzing the UCL claim, the court found the competitor standard applied even though plaintiffs and *Yelp*! did not compete. There, "the crux of the business owners' complaint [was] that Yelp's conduct unfairly injures their economic interests [relative] to the benefit of other businesses who choose to advertise with Yelp." 765 F.3d 1123, 1136 (9th Cir. 2014). Here, Epic

despite Apple's position, both parties' experts agree that developers like Epic Games jointly consume Apple's game transactions and distribution services together with iOS users.[629] Thus, although the question is close, the Court finds that Epic Games has standing to bring a UCL claim as a quasi-consumer, not merely as a competitor.

B. "Unlawful" Practices

Under the "unlawful" prong of the UCL, Epic Games must show that Apple's conduct "can properly be called a business practice and that at the same time is forbidden by law." *Korea Supply Co. v. Lockheed Martin Corp.*, 29 Cal. 4th 1134, 1143, 131 Cal. Rptr. 2d 29, 63 P.3d 937 (2003) (internal quotation marks and citation omitted). "Virtually any law . . . can serve as a predicate for an action under Business and Professions Code section 17200." *Durell v. Sharp Healthcare*, 183 Cal. App. 4th 1350, 1361, 108 Cal. Rptr. 3d 682 (2010) (citation omitted).

Here, for the reasons stated above, Epic Games has not shown a violation of any other law. Accordingly, the claim under the "unlawful" standard fails.

Games is not claiming that it is injured relative to other developers—developers are all subject to the same restrictions. This action, unlike *Levitt*, includes a view that Epic Games is a consumer of Apple's two-sided platform.

629. Ex. Expert 8 (Schmalensee) ¶¶ 31-34, 42; Ex. Expert 1 (Evans) ¶¶ 14, 22-24.

C. "Unfair" Practices

The "unfair" prong of the UCL may differ for consumer and competitor suits. As a competitor who claims to have suffered injury from Apple's unfair practices, Epic Games must show that Apple's conduct (1) "threatens an incipient violation of an antitrust law," (2) "violates the policy or spirit of one of those laws because its effects are comparable to or the same as a violation of the law," or (3) "otherwise significantly threatens or harms competition." *Cel-Tech*, 20 Cal. 4th at 187. These findings must be "tethered to some legislatively declared policy or proof of some actual or threatened impact on competition." *Id.* at 186-87; *see also Hodsdon v. Mars, Inc.*, 891 F.3d 857, 866 (9th Cir. 2018).

As a quasi-consumer, on the other hand, Epic Games has several tests available for showing unfairness. Although some courts have continued to apply the "tethering" test stated above, others have applied a "balancing" test that requires the challenged business practice to be "immoral, unethical, oppressive, unscrupulous, or substantially injurious to consumers" based on the court's weighing of "the utility of the defendant's conduct against the gravity of the harm to the alleged victim."[630] *Drum v. San*

630. Still others have applied the "FTC test," which requires that "(1) the consumer injury must be substantial; (2) the injury must not be outweighed by any countervailing benefits to consumers or competition; and (3) it must be an injury that consumers themselves could not reasonably have avoided." *Drum*, 182 Cal. App. 4th at 257 (internal quotation marks and citation omitted). The Court notes the Ninth Circuit has declined to apply the FTC test with respect

Fernando Valley Bar Ass'ndu pon, 182 Cal. App. 4th 247, 257, 106 Cal. Rptr. 3d 46 (2010) (citations omitted). Stated otherwise, the balancing test "involves an examination of that practice's impact on its alleged victim, balanced against the reasons, justifications and motives of the alleged wrongdoer." *Nationwide Biweekly Admin., Inc. v. Superior Court of Alameda Cty.*, 9 Cal. 5th 279, 303 n.10, 261 Cal. Rptr. 3d 713, 462 P.3d 461 (2020) (internal quotation marks and citation omitted).

These tests "are not mutually exclusive." *Lozano v. AT&T Wireless Servs., Inc.*, 504 F.3d 718, 736 (9th Cir. 2007); *see also Davis v. HSBC Bank Nevada, N.A.*, 691 F.3d 1152, 1169-70 (9th Cir. 2012) (applying both tests). Accordingly, the Court considers both.

1. Tethering Test

Under the "tethering" test, "California courts require a close nexus between the challenged act and the legislative policy." *Hodsdon*, 891 F.3d at 866 (citation omitted). That is because "courts may not apply purely subjective notions of fairness" or "determine the wisdom of any economic policy," which "rests solely with the legislature." *Cel-Tech*, 20 Cal. 4th at 184 (internal quotation marks and citation omitted). However, unfair practices under this test are not limited to violations of existing laws. *Id.* at 180. Instead, California courts distinguish between conduct

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to anti-consumer conduct "in the absence of a clear holding from the California Supreme Court . . . ." *Lozano*, 504 F.3d at 736. The Court does not apply it directly, only as parallel guidance for purposes of the anticompetitive conduct which the Ninth Circuit distinguished. *Id.*

made lawful (or for which relief is barred) by a statute and conduct not prohibited by any statute. *See id.* at 183. The latter may be actionable under the "unfair" prong. *Id.*

Here, Epic Games seeks relief for the same conduct that it challenged under the Sherman and Cartwright Acts. Apple argues that separate consideration under the UCL is inappropriate.[631] The Court disagrees. *Cel-Tech* expressly recognizes that "incipient" violations of antitrust laws and violations of the "policy or spirit" of those laws with "comparable" effects are prohibited. 20 Cal. 4th at 187. Under Apple's interpretation, that standard would be rendered meaningless because any conduct that fails under the Sherman Act failed would also fail the UCL. The UCL, however, has "broad, sweeping language[] precisely to enable judicial tribunals to deal with the innumerable new schemes which the fertility of [one's] invention would contrive." *Id.* at 181 (simplified). Thus, it warrants separate consideration apart from antitrust laws.

On the present record, however, Epic Games' claims based on the app distribution and in-app payment processing restrictions fail for the same reasons as stated

631. Apple cites *Chavez v. Whirlpool Corp.*, 93 Cal. App. 4th 363, 375, 113 Cal. Rptr. 2d 175 (2001), but that case does not counsel otherwise. *Chavez* expressly rejected the notion that "an 'unfair' business act or practice must violate an antitrust law to be actionable under the unfair competition law," but found that conduct cannot be unfair where it is "deemed reasonable and condoned under the antitrust laws." *Id.* As explained here, there is a difference between conduct "deemed reasonable" and conduct for which a violation has not been shown.

for the Sherman Act. As explained, Epic Games has demonstrated real anticompetitive effects, but Apple has proffered mostly valid and non-pretextual procompetitive justifications. To a large extent that makes the conduct more than "not anticompetitive" but potentially beneficial to consumers. However, as the Court demonstrated, the procompetitive justifications were only tethered as to certain restrictions. With respect to *those* restrictions, under the *Cel-Tech* framework, Apple's conduct is protected. 20 Cal. 4th at 183.

That does not, however, end the matter.[632] "A UCL action is equitable in nature." *Korea Supply Co.*, 29 Cal. 4th at 1144. Courts have "broad discretion" to fashion equitable remedies to serve the needs of justice. *Zhang v. Superior Court*, 57 Cal. 4th 364, 371, 159 Cal. Rptr. 3d 672, 304 P.3d 163 (2013); *see also Nationwide Biweekly Admin.*, 9 Cal. 5th at 300. The statute reinforces that discretion by permitting courts to "make such orders or judgments . . . as may be necessary to prevent the use or employ by any person of any practice which constitutes unfair competition." Cal. Bus. & Prof. Code § 17203.

Epic Games did challenge and litigate the anti-steering provisions albeit the record was less fulsome. While its strategy of seeking broad sweeping relief failed,

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632. The Court recognizes a contrary unpublished opinion in *LiveUniverse, Inc. v. MySpace, Inc.*, 304 F. App'x 554, 557 (9th Cir. 2008) which summarily treated the UCL as rising and falling with the Sherman Act. The Court respectfully disagrees (on this record) for the reasons stated.

narrow remedies are not precluded.[633] As discussed at length, the evidence presented showed anticompetitive effects and excessive operating margins under any normative measure. The lack of competition has resulted in decrease information which also results in decreased innovation relative to the profits being made. The costs to developer are higher because competition is not driving the commission rate. As described, the commission rate driving the excessive margins has not been justified. Cross-reference to a historic gamble made over a decade ago is insufficient. Nor can Apple hide behind its self-created web of interlocking rules, regulations, and generic intellectual property claims; or the lack of transparency among various businesses to feign innocence.

Apple's own records reveal that two of the top three "most effective marketing activities to keep existing users coming back" in the United States, and therefore increasing revenues, are "push notifications" (no. 2) and "email outreach" (no. 3).[634] Apple not only controls those avenues but acts anticompetitively by blocking developers from using them to Apple's own unrestrained gain. As explained before, Apple uses anti-steering provisions prohibiting apps from including "buttons, external links, or other calls to action that direct customers to purchasing

633. The FTC Act, which California courts have used as guidance on the UCL, similarly permits remedies beyond the "specific violations alleged in the complaint" that were "litigated in the manner contemplated by the statute." *Sears, Roebuck & Co. v. FTC*, 676 F.2d 385, 390-91 (9th Cir. 1982).

634. DX-3922.057.

mechanisms other than in-app purchase," and from "encourag[ing] users to use a purchasing method other than in-app purchase" either "within the app or through communications sent to points of contact obtained from account registrations within the app (like email or text)."[635] Thus, developers cannot communicate lower prices on other platforms either within iOS or to users obtained from the iOS platform. Apple's general policy also prevents developers from informing users of its 30% commission.[636]

These provisions can be severed without any impact on the integrity of the ecosystem and is tethered to legislative policy. As an initial matter, courts have long recognized that commercial speech, which includes price advertising, "performs an indispensable role in the allocation of resources in a free enterprise system." *Bates v. State Bar of Arizona*, 433 U.S. 350, 364, 97 S. Ct. 2691, 53 L. Ed. 2d 810 (1977) (citation omitted). Restrictions on price information "serve to increase the difficulty of discovering the lowest cost seller . . . and [reduce] the incentive to price competitively[.]" *Id.* at 377. Thus, "where consumers have the benefit of price advertising, retail prices often are dramatically lower than they would be without advertising." *Id.* Antitrust scholars have recognized the same: "The less information a consumer has about relative price and quality, the easier it is for market participants to charge supracompetitive prices or provide inferior quality." Areeda & Hovenkamp § 2008c.

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635. PX-2790 §§ 3.1.1, 3.1.3.

636. PX-0257; Trial Tr. (Simon) 365:3-367:5; Ex. Depo. (Shoemaker) 144:10-23.

In the context of technology markets, the open flow of information becomes even more critical. As explained above, information costs may create "lock-in" for platforms as users lack information about the lifetime costs of an ecosystem. Users may also lack the ability to attribute costs to the platform versus the developer, which further prevents them from making informed choices.[637] In these circumstances, the ability of developers to provide cross-platform information is crucial. While Epic Games did not meet its burden to show actual lock-in on this record, the Supreme Court has recognized that such information costs may create the potential for anticompetitive exploitation of consumers. *Eastman Kodak*, 504 U.S. at 473-75.

Thus, although Epic Games has not proven a present antitrust violation, the anti-steering provisions "threaten[] an incipient violation of an antitrust law" by preventing informed choice among users of the iOS platform. *Cel-Tech*, 20 Cal. 4th at 187; *cf. FTC v. Neovi, Inc.*, 604 F.3d 1150, 1158 (9th Cir. 2010) (requiring that "consumers ha[ve] a free and informed choice" under the FTC test for unfairness).[638] Moreover, the anti-steering provisions violate the "policy [and] spirit" of these laws because anti-steering has the effect of preventing substitution among platforms for transactions. *Id.*

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637. Ex. Expert 1 (Evans) ¶ 118.

638. *See Cel-Tech*, 20 Cal. 4th at 185 (looking "for guidance to the jurisprudence arising under the 'parallel' section 5 of the [FTC] Act" to determine "what is unfair" under the UCL); *see also People ex rel. Mosk v. Nat'l Res. Co. of Cal.*, 20 Cal. App. 2d 765, 773 (1962) ("[D]ecisions of the federal court [as to what constitutes "unfair" under the FTC Act] are more than ordinarily persuasive.").

Accordingly, the Court finds that the anti-steering provisions violate the UCL's unfair prong under the tethering test.

2. Balancing Test

Under the balancing test, the Court must weigh "the utility of the defendant's conduct against the gravity of the harm to the alleged victim." *Drum*, 182 Cal. App. 4th at 257. Under this test the focus is on the injury to consumers. Here, the harm to users and developers who are also quasi-consumers, is considerable.[639] This trial has exposed numerous anticompetitive effects which need not be recounted in detail. The only justification Apple offers is an analogy: just like a store such as Nordstrom does not advertise prices at Macy's on its goods, Apple should not have to advertise prices on the web or on Android.[640] Apple also cites *Amex*, 138 S. Ct. at 2280, which also involved anti-steering,to justify its anti-steering provisions.

Both are distinguishable. In *Amex*, American Express prohibited merchants from dissuading customers from using Amex cards as a way of avoiding its merchant fees. *Id.* at 2283. It did so because merchants would often advertise Amex acceptance to attract users who used

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639. *E.g.*, Trial Tr. (Simon) 365:3-367:5; Trial Tr. (Evans) 1715:11-16.

640. *See* Trial Tr. (Schiller) 2821:8-20 (explaining that the "key idea" of anti-steering outside the App Store is to prevent "targeting this individual user who really is being acquired from the App Store").

American Express's rewards program, but then would steer them towards cards with lower merchant fees, such as Visa or Mastercard. *Id.* at 2289. The Court found that this was not anticompetitive because there was strong evidence of procompetitive effects (as discussed above) and "[p]erhaps most importantly, antisteering provisions *do not prevent Visa, MasterCard, or Discover from competing against Amex* by offering lower merchant fees or promoting their broader merchant acceptance." *Id.* at 2289-90 (emphasis supplied).

Here, the information base is distinctly different. In retail brick-and-mortar stores, consumers do not lack knowledge of options. Technology platforms differ. Apple created a new and innovative platform which was also a black box. It enforced silence to control information and actively impede users from obtaining the knowledge to obtain digital goods on other platforms. Thus, the closer analogy is not American Express' prohibiting steering towards Visa or Mastercard but a prohibition on letting users know that these options exist in the first place. Apple's market power and resultant ability to control how pricing works for digital transactions, and related access to digital products, distinguishes it from the challenged practices in *Amex*. The same would extend to the Nordstrom/Macy's analogy.[641] Apple has not offered any justification for the

641. Best Buy may not be the traditional "brick-and-mortar" analogy as the Court previously footnoted and Mr. Cook, ironically, referenced. According to news reports, in order for Best Buy to compete with the likes of Amazon, and not just be a place where consumers physically test product but buy them more cheaply elsewhere, the company pivoted. It appears Best Buy actually rents

actions other than to argue entitlement. Where its actions harm competition and result in supracompetitive pricing and profits, Apple is wrong. Accordingly, the harm from the anti-steering provisions outweighs its benefits, and the provision violates the UCL under the balancing test.

D. Remedies

"[T]he primary form of relief available under the UCL to protect consumers from unfair business practices is an injunction." *In re Tobacco II Cases*, 46 Cal. 4th 298, 319, 93 Cal. Rptr. 3d 559, 207 P.3d 20 (2009). A private party seeking injunctive relief under the UCL may request "public injunctive relief," *McGill v. Citibank, N.A.*, 2 Cal. 5th 945, 954, 216 Cal. Rptr. 3d 627, 393 P.3d 85 (2017), which is "relief that by and large benefits the general public and that benefits the plaintiff, if at all, only incidentally and/or as a member of the general public," *id.* at 955 (simplified). "[F]ederal courts must apply equitable principles derived from federal common law to claims for equitable [relief] under California's Unfair Competition Law[.]" *Sonner v. Premier Nutrition Corp.*,

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square footage to companies like Apple and Samsung for "branded space" where they sell their own products and provide Best Buy not only with a revenue stream but the foot traffic to compete on other products. *Compare* Trial Tr. (Cook) 3864:24-3865:3 *with* Justin Bariso, Amazon Almost Killed Best Buy. Then, Best Buy Did Something Completely Brilliant, Inc., June 24, 2021, https://www.inc.com/justin-bariso/amazon-almost-killed-best-buy-then-best-buy-did-something-completely-brilliant.htmlhttps://www.inc.com/justin-bariso/amazon-almost-killed-best-buy-then-best-buy-did-something-completely-brilliant.html. Thus, there is no need to put a sign inside Best Buy as Apple's store is already there.

971 F.3d 834, 837 (9th Cir. 2020). This means that, "even if a state authorizes its courts to provide equitable relief when an adequate legal remedy exists, such relief may be unavailable in federal court because equitable remedies are subject to traditional equitable principles unaffected by state law." *Id.* at 841 (citation omitted).

Accordingly, under *Sonner*, a plaintiff seeking equitable relief under the UCL in federal court must demonstrate: "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391, 126 S. Ct. 1837, 164 L. Ed. 2d 641 (2006).

Based on the reasoning discussed above, the Court finds the elements for equitable relief are satisfied. While Apple's conduct does not fall within the confines of traditional antitrust law, the conduct falls within the purview of an incipient antitrust violation with particular anticompetitive practices which have not been justified. Apple contractually enforces silence, in the form of anti-steering provisions, and gains a competitive advantage. Moreover, it hides information for consumer choice which is not easily remedied with money damages. The injury has occurred and continues and can best be remedied by invalidating the offending provisions. In terms of balancing, Apple's business justifications focus on other

parts of the Apple ecosystem and will not be significantly impacted by the increase of information to and choice for consumers. Rather, this limited measure balances the justification for maintaining a cohesive ecosystem with the public interest in uncloaking the veil hiding pricing information on mobile devices and bringing transparency to the marketplace.

While the Court has defined the relevant market for antitrust purposes as the market for mobile gaming transactions, UCL jurisprudence does not require that the Court import that market limitation. The Court cannot discern any principled reason for eliminating the anti-steering provisions to mobile gaming only. The lack of information and transparency extends to all apps, not just gaming apps.

Apple argues that any equitable relief issued "under state law," presumably including under the UCL, must be "limited to California" to avoid a violation of the Commerce Clause. The only authority that Apple cites to support this proposition is *Healy v. Beer Inst., Inc.*, 491 U.S. 324, 336, 109 S. Ct. 2491, 105 L. Ed. 2d 275 (1989), which holds that "[t]he Commerce Clause precludes the application of a state statute to commerce that takes place wholly outside of the State's borders, whether or not the commerce has effects within the State."[642]

In *Healy*, an association of brewers and importers of beer sought declaratory judgment that a Connecticut

642. *See* Apple COL ¶¶ 739-740.

statute was unconstitutional because it regulated out-of-state conduct in violation of the Commerce Clause. *Healy*, 491 U.S. at 326. The statute in question required out-of-state shippers of beer to affirm that their prices for beer sold to Connecticut wholesalers were no higher than prices at which those products were sold in bordering states. *Id.* at 326-27. The Supreme Court held that the Connecticut statute violated the Commerce Clause because the interaction of the Connecticut statute with beer-pricing statutes of bordering states had the "practical effect" of controlling prices "wholly outside" of Connecticut's borders. *Id.* at 336-37.

Healy is inapposite. Here, in contrast to *Healy*, there is no challenge to the constitutionality of the UCL. Rather than seeking to invalidate the UCL on the basis that it violates the Commerce Clause, Apple seeks to restrict the geographic scope of any injunction issued under the UCL to California based on the Commerce Clause. The proper scope of an injunction issued under state law is not an issue that was addressed in *Healy*. Further, even if *Healy* had any relevance to that issue, *Healy*'s holding that a state statute cannot be applied "to commerce that takes place wholly outside" of that state would nevertheless be inapposite. Here, neither the conduct at issue, nor its effects, are taking place "wholly outside" of California. Apple is headquartered in California; the DPLA is governed by California law; and the commerce affected by the conduct that the Court has found to be unfair takes place at least in part in California. Accordingly, Apple has not shown that *Healy* prevents the Court from enjoining conduct outside of California that undisputedly

harms California and its residents. *See RLH Indus., Inc. v. SBC Commc'ns, Inc.*, 133 Cal. App. 4th 1277, 1291-93, 35 Cal. Rptr. 3d 469 (2005) (holding that "the commerce clause, even as construed in *Healy*, does not necessarily prohibit state antitrust and unfair competition law from reaching out-of-state anticompetitive practices injuring state residents").

By the same token, Epic Games provides the Court with no authority that an injunction could issue globally based upon a violation of California's UCL.

Accordingly, a nationwide injunction shall issue enjoining Apple from prohibiting developers to include in their:

> Apps and their metadata buttons, external links, or other calls to action that direct customers to purchasing mechanisms, in addition to IAP.

Nor may Apple prohibit developers from:

> Communicating with customers through points of contact obtained voluntarily from customers through account registration within the app.

VII. APPLE'S COUNTERCLAIMS

Apple asserts counterclaims against Epic Games that arise out of Epic Games' breach of the DPLA, including (1) breach of contract; (2) breach of the implied covenant

of good faith and fair dealing; (3) unjust enrichment; (4) indemnification; and (5) declaratory judgment.[643] These counterclaims are based on Epic Games' covert implementation of the hotfix in *Fortnite* and its failure to pay Apple its commission on in-app purchases through *Fortnite*. Apple alleges that these acts breached the DPLA provisions requiring developers (i) not to "hide, misrepresent or obscure any features, content, services or functionality" in their apps[644] and not to "provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store"[645] ; and (ii) to pay Apple "a commission equal to thirty percent (30%) of all prices payable by each end-user" through the App Store.[646]

Plaintiff has admitted that it breached the DPLA in the manner that Apple alleges, and that Apple is entitled to relief on its counterclaim for breach of contract to the extent that the Court finds that the DPLA is enforceable. Epic Games does not admit liability as to any other counterclaim.[647]

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643. Apple asserted other counterclaims in its answer, Docket No. 66. Based on its proposed findings of fact and conclusions of law, the Court finds Apple has abandoned all counterclaims except those addressed herein. *See generally* Apple FOF and COL.

644. Apple's Answer and Counterclaims ¶ 50 (citing DPLA § 6.1).

645. *Id.* (citing DPLA §§ 3.2, 3.3.2, 3.3.3, 3.3.25).

646. *Id.* (citing DPLA, Schedule 2, §§ 1.1(a), 3.4(a)).

647. *See* Docket No. 474.

Pointing to its affirmative defenses, Epic Games contends that all of Apple's counterclaims are barred notwithstanding its admitted breach of the DPLA because the DPLA provisions it breached are unenforceable (i) under the doctrine of illegality; (ii) because they are void as against public policy; and (iii) because they are unconscionable.[648]

The Court first considers whether any of the DPLA's provisions upon which Apple's counterclaims depend are unenforceable based on Epic Games' affirmative defenses, and if they are not, the Court next considers whether Apple has shown that it is entitled to relief on each of its counterclaims.

A. Epic Games' Affirmative Defenses

1. Doctrine of Illegality

"[T]he general rule [is] that the courts will deny relief to either party who has entered into an illegal contract or bargain which is against public policy." *Tri-Q, Inc. v. Sta-Hi Corp.*, 63 Cal. 2d 199, 216, 45 Cal. Rptr. 878, 404 P.2d 486 (1965). "Where a contract has several distinct objects, of which one at least is lawful, and one at least is unlawful, in whole or in part, the contract is void as to the latter and valid as to the rest." Cal. Civ. Code § 1599.

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648. Epic Games asserted other affirmative defenses in its answer, Docket No. 106. Based on its proposed findings of fact and conclusions of law, the Court finds Epic Games has abandoned all affirmative defenses except those addressed herein. *See generally* Epic Games FOFs.

Thus, if the alleged "illegality is collateral to the main purpose of the contract, and the illegal provision can be extirpated from the contract by means of severance or restriction, then such severance and restriction are appropriate." *Marathon Entm't, Inc. v. Blasi*, 42 Cal. 4th 974, 996, 70 Cal. Rptr. 3d 727, 174 P.3d 741 (2008) (quotation marks omitted). "The burden ordinarily rests upon the party asserting the invalidity of the contract to show how and why it is unlawful." *Rock River Commc'ns, Inc. v. Universal Music Grp., Inc.*, 745 F.3d 343, 350 (9th Cir. 2014) (citation omitted).

Epic Games alleges that Apple's counterclaims are barred because "the contracts on which Apple's counterclaims are based" are "illegal and unenforceable" on the basis that they violate the Sherman Act, the Cartwright Act, and the UCL.[649]

As discussed above, the Court has found and concluded that no provision of the DPLA at issue in this action is unlawful under the Sherman Act or the Cartwright Act and only one unrelated provision under the UCL.

While the Court has found that evidence suggests Apple's 30% rate of commission appears inflated, and is potentially anticompetitive, Epic Games did not challenge the rate. Rather, Epic Games challenged the imposition of any commission whatsoever. Nor did plaintiff show either that the provision of the DPLA which required developers

649. *See* Epic Games' Answer to Counterclaims at 17 (affirmative defenses 1 and 2).

not to "provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store," was illegal or unenforceable or that it was forced to violate the agreement to bring this lawsuit.[650] Accordingly, the Court finds and concludes that Apple's counterclaims are not barred on the basis that they arise out of an illegal and unenforceable contract.

2. Void as Against Public Policy

"In general, a contract contrary to public policy will not be enforced." *Kelton v. Stravinski*, 138 Cal. App. 4th 941, 949, 41 Cal. Rptr. 3d 877 (2006). A contract need not be contrary to a statute for it to be deemed contrary to public policy. *Altschul v. Sayble*, 83 Cal. App. 3d 153, 162, 147 Cal. Rptr. 716 (1978) ("There is no requirement that a contract violate an express mandate of a statute before it may be declared void as contrary to public policy."); *see also* Cal. Civ. Code § 1667(2) ("That is not lawful which is . . . contrary to the policy of express law, though not expressly prohibited.").

"The authorities all agree that a contract is not void as against public policy unless it is injurious to the interests of the public as a whole or contravenes some established interest of society." *Rosenberg v. Raskin*, 80 Cal. App. 2d 335, 338, 181 P.2d 897 (1947). "California has a settled public policy in favor of open competition." *Kelton*, 138 Cal. App. 4th at 946. It also has a public policy of protecting consumers of goods and services. *See Margolin v.*

650. *Id.* (citing DPLA §§ 3.2, 3.3.2, 3.3.3, 3.3.25).

Shemaria, 85 Cal. App. 4th 891, 901, 102 Cal. Rptr. 2d 502 (2000) ("Both legislative enactments and administrative regulations can be utilized to further this state's public policy of protecting consumers in the marketplace of goods and services."). "Where a contract has several distinct objects, of which one at least is lawful, and one at least is unlawful, in whole or in part, the contract is void as to the latter and valid as to the rest." Cal. Civ. Code § 1599.

Plaintiff alleges that Apple's counterclaims are barred in whole or in part because the contracts on which they are based "are void as against public policy pursuant to the antitrust laws and unfair competition laws[.]"[651] Epic Games contends that the DPLA violates "the public policy in favor of competitive markets" because it forecloses all alternative app stores and non-IAP payment solutions in the iOS app distribution market and iOS in-app payment solutions market, respectively; they facilitate the imposition of Apple's supracompetitive 30% commission; and they were forced upon Epic Games through Apple's exercise of its market power.[652]

The Court is not persuaded by Epic Games' broad-brush argument that it should not be bound by certain portions of the agreement. The DPLA provisions related to the breaching conduct arising from Project Liberty were not found to be invalid. For the reasons discussed at length above, the Court has found and concluded that these

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651. *See* Epic Games' Answer to Counterclaims at 17 (affirmative defense 3).

652. *See* Epic Games FOF ¶ 547.

DPLA provisions are not contrary to the interests of the public as a whole and do not contravene some established interest of society, in the context of competition or otherwise. Accordingly, the remaining DPLA provisions are not unenforceable on the basis that they violate public policy. *Rosenberg*, 80 Cal. App. 2d at 338 ("The authorities all agree that a contract is not void as against public policy unless it is injurious to the interests of the public as a whole or contravenes some established interest of society.").

Even though the Court has found the anti-steering provisions to be unfair under the UCL, the result was a measured alternative to plaintiff's overreach. These provisions can be severed while maintaining the provisions that require honesty to control the parties' relations and the coding of apps. Epic Games never adequately explained its rush to the courthouse or the actual need for clandestine tactics. The marketing campaign appears to have resulted in indirect benefits but it does not provide a legal defense.

In light of the foregoing, the Court finds and concludes that Apple's counterclaims are not barred based on Epic Games' public policy affirmative defense.

3. Unconscionability

a. Legal Framework

"[A] contract or provision, even if consistent with the reasonable expectations of the parties, will be denied enforcement if, considered in its context, it is unduly

oppressive or 'unconscionable.'" *Graham v. Scissor-Tail, Inc.*, 28 Cal. 3d 807, 820, 171 Cal. Rptr. 604, 623 P.2d 165 (1981). "Unconscionability has generally been recognized to include an absence of meaningful choice on the part of one of the parties together with contract terms which are unreasonably favorable to the other party. Phrased another way, unconscionability has both a 'procedural' and a 'substantive' element. . . . [B]oth the procedural and substantive elements must be met before a contract or term will be deemed unconscionable. Both, however, need not be present to the same degree. A sliding scale is applied so that the more substantively oppressive the contract term, the less evidence of procedural unconscionability is required to come to the conclusion that the term is unenforceable, and vice versa." *Lhotka v. Geographic Expeditions*, 181 Cal. App. 4th 816, 821, 104 Cal. Rptr. 3d 844 (2010) (internal quotation marks and citations omitted).

"Unconscionability analysis begins with an inquiry into whether the contract is one of adhesion. The term contract of adhesion signifies a standardized contract, which, imposed and drafted by the party of superior bargaining strength, relegates to the subscribing party only the opportunity to adhere to the contract or reject it." *Armendariz v. Found. Health Psychcare Servs., Inc.*, 24 Cal. 4th 83, 113, 99 Cal. Rptr. 2d 745, 6 P.3d 669 (2000) (quotation marks and alterations omitted). "The procedural element of the unconscionability analysis concerns the manner in which the contract was negotiated and the circumstances of the parties at that time. The element focuses on oppression or surprise. Oppression

arises from an inequality of bargaining power that results in no real negotiation and an absence of meaningful choice. Surprise is defined as the extent to which the supposedly agreed-upon terms of the bargain are hidden in the prolix printed form drafted by the party seeking to enforce the disputed terms." *Gatton v. T-Mobile USA, Inc.*, 152 Cal. App. 4th 571, 581, 61 Cal. Rptr. 3d 344 (2007) (internal quotation marks and citations omitted)).

"The substantive element of the unconscionability analysis focuses on overly harsh or one-sided results," *Gatton*, 152 Cal. App. 4th at 586, or "whether a contractual provision reallocates risks in an objectively unreasonable or unexpected manner," *Lhotka*, 181 Cal. App. 4th at 821. Substantive unconscionability "traditionally involves contract terms that are so one-sided as to 'shock the conscience,' or that impose harsh or oppressive terms." *Wherry v. Award, Inc.*, 192 Cal. App. 4th 1242, 1248, 123 Cal. Rptr. 3d 1 (2011).

In California, "where a single contract provision is invalid, but the balance of the contract is lawful, the invalid provision is severed, and the balance of the contract is enforced." *Kec v. Superior Court of Orange Cnty.*, 51 Cal. App. 5th 972, 974-75, 264 Cal. Rptr. 3d 761 (2020). For example, when a contract is held to be unconscionable, "the strong legislative and judicial preference is to sever the offending term and enforce the balance of the agreement." *Lange v. Monster Energy Co.*, 46 Cal. App. 5th 436, 453, 260 Cal. Rptr. 3d 35 (2020) (quotation marks omitted); *see also* Cal. Civ. Code § 1670.5 ("If the court as a matter of law finds the contract or any clause of the

contract to have been unconscionable at the time it was made the court may refuse to enforce the contract, or it may enforce the remainder of the contract without the unconscionable clause, or it may so limit the application of any unconscionable clause as to avoid any unconscionable result.").

b. Analysis

Again, Epic Games alleges that Apple's counterclaims are barred because "the contracts on which Apple's counterclaims are based are unconscionable" on the basis that they are "are contrary to the antitrust laws and unfair competition laws[.]"[653] Epic Games contends that the DPLA provisions upon which Apple's counterclaims depend are (i) procedurally unconscionable because they are non-negotiable terms in contracts of adhesion, and (ii) are substantively unconscionable because "they foreclose all alternative app stores and non-IAP payment solutions in the iOS app distribution market and iOS in-app payment solutions market, respectively, and they facilitate the imposition of Apple's supra-competitive 30% commission."[654]

The Court finds and concludes that Epic Games has not shown that the DPLA is unconscionable. A contractual term is not unconscionable unless it is found to be *both* procedurally and substantively unconscionable. Here, the absence of substantive unconscionability is dispositive.

653. *See* Epic Games' Answer to Counterclaims at 17-18.

654. Epic Games FOF ¶ 192.

A contractual term is not substantively unconscionable unless it so "one-sided so as to 'shock the conscience,'" *Wherry*, 192 Cal. App. 4th at 1248. Based on the record before it, the Court cannot conclude that the DPLA meets that standard. Plaintiff's response that the unconscionability stems from the violations of antitrust and unfair competition laws fails.[655] Because the Court has found only one unrelated provision to violate the UCL, the Court cannot conclude that the remaining provisions are substantively unconscionable.

Epic Games points to no other evidence or authority based upon which the Court could find that the provisions at issue "shock the conscience." These are billion and trillion dollar companies with a business dispute. Epic Games itself uses adhesion contracts. Plaintiff points to no authority in which a court has held that contractual provisions similar to the ones at issue, despite their longevity and relative ubiquity, are unenforceable on the ground that they are unconscionable. The Court finds and concludes, therefore, that Apple's counterclaims are not barred on the basis that they arise out of contractual terms that are unconscionable.

The Court now turns to the question of whether Apple is entitled to relief with respect to any counterclaim that is based on breaches to DPLA provisions other than the one stricken.

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655. *See* Epic Games FOF ¶¶ 191-192.

B. Breach of Contract

Under California law[656] , "the elements of a cause of action for breach of contract are (1) the existence of the contract, (2) plaintiffs performance or excuse for nonperformance, (3) defendant's breach, and (4) the resulting damages to the plaintiff." *Oasis W. Realty, LLC v. Goldman*, 51 Cal. 4th 811, 821, 124 Cal. Rptr. 3d 256, 250 P.3d 1115 (2011). To prove causation, a plaintiff must show "the breach was a substantial factor in causing the damages." *US Ecology, Inc. v. California*, 129 Cal. App. 4th 887, 909, 28 Cal. Rptr. 3d 894 (2005).

Apple asserts a counterclaim against Epic Games for breach of contract arising out Project Liberty. In particular, Epic Games' actions violated the DPLA provisions (1) requiring developers not to "hide, misrepresent or obscure any features, content, services or functionality" in their apps[657] and not to "provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store,"[658] ; and (2) requiring Epic Games to pay Apple "a commission equal to thirty percent (30%) of all prices payable by each end-user" through the App Store.[659]

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656. The parties agree that the DPLA is governed by California law. *See* Dkt. No. 276 at 99; *see also* PX-2619 (DPLA) § 14.10 (providing that the DPLAis "governed by and construed in accordance with the laws of the United States and the State of California").

657. Dkt. No. 66 ¶ 50 (citing DPLA § 6.1).

658. *Id.* (citing DPLA §§ 3.2, 3.3.2, 3.3.3, 3.3.25).

659. *Id.* (citing DPLA, Schedule 2, §§ 1.1(a), 3.4(a)).

As noted, plaintiff has admitted that it breached the DPLA as Apple alleges and has conceded that, if the Court finds that the breached provisions of the DPLA are enforceable against Epic Games, then Apple would be entitled to relief as a result of the breach.[660]

Because Apple's breach of contract claim is also premised on violations of DPLA provisions independent of the anti-steering provisions, the Court finds and concludes, in light of plaintiffs admissions and concessions, that Epic Games has breached these provisions of the DPLA and that Apple is entitled to relief for these violation.

C. Breach of the Implied Covenant of Good Faith and Fair Dealing

"The covenant of good faith and fair dealing, implied by law in every contract, exists merely to prevent one contracting party from unfairly frustrating the other party's right to receive the benefits of the agreement actually made." *Durell*, 183 Cal. App. 4th at 1369 (emphasis and citation omitted). While "[a] breach of the implied covenant of good faith is a breach of the contract," "breach of a specific provision of the contract is not . . . necessary to a claim for breach of the implied covenant of good faith and fair dealing." *Thrifty Payless, Inc. v. The Americana at Brand, LLC*, 218 Cal. App. 4th 1230, 1244, 160 Cal. Rptr. 3d 718 (2013) (internal quotation marks and citation omitted).

660. *See* Stipulation, Dkt. No. 474.

"In California, the factual elements necessary to establish a breach of the covenant of good faith and fair dealing are: (1) the parties entered into a contract; (2) the plaintiff fulfilled his obligations under the contract; (3) any conditions precedent to the defendant's performance occurred; (4) the defendant unfairly interfered with the plaintiff's rights to receive the benefits of the contract; and (5) the plaintiff was harmed by the defendant's conduct." *Rosenfeld v. JPMorgan Chase Bank, N.A.*, 732 F. Supp. 2d 952, 968 (N.D. Cal. 2010) (citation omitted).

"In essence, the covenant is implied as a supplement to the express contractual covenants, to prevent a contracting party from engaging in conduct which (while not technically transgressing the express covenants) frustrates the other party's rights to the benefits of the contract." *Love v. Fire Ins. Exch.*, 221 Cal. App. 3d 1136, 1153, 271 Cal. Rptr. 246 (1990) (emphasis in original). It exists to "prevent one contracting party from unfairly frustrating the other party's right to receive the benefits of the agreement actually made. The covenant thus cannot be endowed with an existence independent of its contractual underpinnings. It cannot impose substantive duties or limits on the contracting parties beyond those incorporated in the specific terms of their agreement." *Durell*, 183 Cal. App. 4th at 1369 (citations omitted) (emphasis in original). "If there exists a contractual relationship between the parties, . . . the implied covenant is limited to assuring compliance with the express terms of the contract, and cannot be extended to create obligations not contemplated in the contract." *Racine & Laramie, Ltd. v. Dep't of Parks & Recreation*, 11 Cal. App. 4th 1026, 1032, 14 Cal. Rptr. 2d 335 (1992).

Apple asserts a counterclaim against Epic Games for breach of the implied covenant of good faith and fair dealing. Apple contends that "*[t]o the extent that any of Epic's bad faith actions did not breach the express terms of the [DPLA]*, Epic Games frustrated Apple's right to receive the benefits of the agreement actually made, including by publishing an update to *Fortnite* that circumvented payment of commissions to which Apple was contractually entitled, by violating the Guidelines, and by otherwise undermining Apple's operation and maintenance of the App Store."[661] Accordingly, Apple asserts this counterclaim in the alternative to its breach of contract claim.

Because the Court has found and concluded that Apple is entitled to relief on its breach-of-contract claim, the Court denies relief to Apple as to its alternative claim for breach of the implied covenant of good faith and fair dealing.

D. Unjust Enrichment

"[T]he elements for a claim of unjust enrichment" are "[1] receipt of a benefit and [2] unjust retention of the benefit at the expense of another." *Lectrodryer v. SeoulBank*, 77 Cal. App. 4th 723, 726, 91 Cal. Rptr. 2d 881 (2000). "Under California law, unjust enrichment is an action in quasi-contract, and is not cognizable when there is a valid and enforceable contract between the parties." *Cont'l Cas. Co. v. Enodis Corp.*, 417 F. App'x 668, 670 (9th Cir. 2011) (citation omitted). "The doctrine applies

661. Dkt. No. 66 ¶ 60 (emphasis supplied).

where plaintiffs, while having no enforceable contract, nonetheless have conferred a benefit on defendant which defendant has knowingly accepted under circumstances that make it inequitable for the defendant to retain the benefit without paying for its value." *Hernandez v. Lopez*, 180 Cal. App. 4th 932, 938, 103 Cal. Rptr. 3d 376 (2009).

Apple asserts a counterclaim for unjust enrichment against plaintiff based on its alleged failure to pay Apple the agreed-upon 30% commission under the DPLA, but it asserts this counterclaim only "[i]n the alternative" to its claim for breach of contract. *See* Docket No. 66 ¶ 63.

Because the Court has found and concluded that Apple is entitled to relief on its claim for breach of contract, as discussed above, the Court denies relief to Apple as to its alternative claim for unjust enrichment.

E. Indemnification

Under California law, "[a]n indemnity agreement is to be interpreted according to the language and contents of the contract as well as the intention of the parties as indicated by the contract." *Myers Bldg. Indus., Ltd. v. Interface Tech., Inc.*, 13 Cal. App. 4th 949, 968, 17 Cal. Rptr. 2d 242 (1993); *see also Herman Christensen & Sons, Inc. v. Paris Plastering Co.*, 61 Cal. App. 3d 237, 245, 132 Cal. Rptr. 86 (1976) (where the parties "have expressly contracted with respect to the duty to indemnify, the extent of that duty must be determined from the contract and not by reliance on the independent doctrine of equitable indemnity" (quotation marks omitted)). Such agreements "are construed under the same rules

that govern the interpretation of other contracts." *Alki Partners, LP v. DB Fund Servs., LLC*, 4 Cal. App. 5th 574, 600, 209 Cal. Rptr. 3d 151 (2016).

Apple asserts a counterclaim against Epic Games for indemnification in the form of the recovery of its attorneys' fees and costs of defending this litigation and pursuing its counterclaims. This counterclaim is based on Section 10 of the DPLA, which provides:

> To the extent permitted by applicable law, You agree to indemnify and hold harmless, and upon Apple's request, defend, Apple, its directors, officers, employees, independent contractors and agents (each an "Apple Indemnified Party") from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys' fees and court costs . . . incurred by an Apple Indemnified Party and arising from or related to any of the following . . . : (i) Your breach of any certification, covenant, obligation, representation or warranty in this Agreement, including Schedule 2; . . . or (vi) Your use (including Your Authorized Developers' use) of the Apple Software or services, Your Licensed Application Information, Pass Information, metadata, Your Authorized Test Units, Your Registered Devices, Your Covered Products, or Your development and distribution of any of the foregoing.[662]

662. PX-2619 ¶ 10.

Apple contends that it is entitled to indemnification from Epic Games under this indemnification provision because plaintiffs lawsuit involves claims arising from or related to its breaches of its certifications, covenants, obligations, representations, or warranties under the DPLA, and its use of the Apple Software or services, its licensed application information, its covered products, and its development and distribution of the foregoing.

Epic Games counters that Apple is not entitled to indemnification under Section 10 because that section applies only to claims brought by third parties against Apple and not "claims between Epic and Apple," and because the indemnification clause would be unconscionable to the extent that it is interpreted as covering intra-party disputes.[663]

The Court's interpretation of the indemnification provision is guided by the following principles:

> Generally, an indemnification provision allows one party to recover costs incurred defending actions by third parties, not attorney fees incurred in an action between the parties to the contract. Courts look to several indicators to distinguish third party indemnification provisions from provisions for the award of attorney fees incurred in litigation between the parties to the contract. The key indicator is an express reference to indemnification. *A*

663. Epic Games FOF ¶¶ 573, 578.

> *clause that contains the words 'indemnify' and 'hold harmless' generally obligates the indemnitor to reimburse the indemnitee for any damages the indemnitee becomes obligated to pay third persons*—that is, it relates to third party claims, not attorney fees incurred in a breach of contract action between the parties to the indemnity agreement itself. Courts also examine the context in which the language appears. Generally, if the surrounding provisions describe third party liability, the clause will be construed as a standard third party indemnification provision. *The court will not infer that the parties intended an indemnification provision to cover attorney fees between the parties if the provision "'does not specifically provide for attorney's fees in an action on the contract*[.]"

Alki Partners, 4 Cal. App. 5th at 600-01 (internal citations omitted) (emphasis supplied).

Here, the indemnification provision at issue contains the words "indemnify" and "hold harmless," and the surrounding provisions describe third-party liability, which, under *Alki Partners*, suggests that any obligation by Epic Games to reimburse Apple would arise only in the context of third-party claims, and not claims between the two. Additionally, the provision does not specifically provide for attorneys' fees and costs in an action on the contract between the parties to the contract, which also weighs against interpreting the provision at issue as covering Apple's attorneys' fees and costs in this action.

Apple argues that the indemnification provision *does* contain language specifically providing "for attorneys' fees in an action on the contract" because the indemnification provision is "triggered" by Epic Games' breach of the DPLA.[664] The Court is not persuaded. For an indemnification provision to be interpreted as covering attorneys' fees and costs in an action on a contract *between the parties*, there must be language in the contract that "reasonably can be interpreted as addressing the issue of an action *between the parties* on the contract." *Alki*, 4 Cal. App. 5th at 601 (citation and internal quotation marks omitted) (emphasis supplied). For example, attorneys' fees and costs are recoverable in an action between the parties where the indemnity provision includes "*express language* for attorney's fees incurred *in enforcing [the] indemnity agreement*." *Id.* at 602 (citations omitted) (emphasis supplied); *see also Baldwin Builders v. Coast Plastering Corp.*, 125 Cal. App. 4th 1339, 1342, 24 Cal. Rptr. 3d 9 (2005) (holding that an indemnity provision authorized the recovery of attorneys' fees on an action on the contract between the parties because it included express language that "[s]ubcontractor shall pay all costs, including attorney's fees, *incurred in enforcing this indemnity agreement*'" (emphasis supplied)). No such express language is included in the indemnification provision at issue. In light of the absence of such express language, and in light of the terms used in the indemnification provision that suggest that it covers only third-party claims, as discussed in more detail above, the Court finds and concludes that Apple has not shown that it

664. Apple FOF ¶ 841.

is entitled to recover attorneys' fees and costs from Epic Games pursuant to Section 10 of the DPLA.

F. Declaratory Judgment

1. Legal Framework

"In a case of actual controversy within its jurisdiction . . . , any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be sought. Any such declaration shall have the force and effect of a final judgment or decree and shall be reviewable as such." 28 U.S.C. § 2201(a).

Courts have "substantial discretion in deciding whether to declare the rights of litigants" under the Declaratory Judgment Act. *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 136, 127 S. Ct. 764, 166 L. Ed. 2d 604 (2007). This "substantial" discretion permits the Court to consider "equitable, prudential, and policy arguments" for or against the declaratory relief sought. *Id.* A "district court should avoid needless determination of state law issues," "should discourage litigants from filing declaratory actions as a means of forum shopping," and "should avoid duplicative litigation." *Principal Life Ins. Co. v. Robinson*, 394 F.3d 665, 672 (9th Cir. 2005) (quotation marks omitted). Courts also consider "whether the declaratory action will settle all aspects of the controversy; whether the declaratory action will serve a useful purpose in clarifying the legal relations at issue;

whether the declaratory action is being sought merely for the purposes of procedural fencing or to obtain a 'res judicata' advantage; or whether the use of a declaratory action will result in entanglement between the federal and state court systems." *Gov't Emps. Ins. Co. v. Dizol*, 133 F.3d 1220, 1225 n.5 (9th Cir. 1998). Essentially, the district court must "balance concerns of judicial administration, comity, and fairness to the litigants." *Principal Life Ins. Co.*, 394 F.3d at 672 (quotation marks omitted).

2. Analysis

Apple seeks a declaratory judgment that: (a) the DPLA is valid, lawful, and enforceable contracts; (b) Apple's termination of the DPLA with Epic Games was valid, lawful, and enforceable; (c) Apple has the contractual right to terminate the DPLA with any or all of Epic Games' wholly owned subsidiaries, affiliates, and/or other entities under its control; and (d) Apple has the contractual right to terminate the DPLA with any or all of the Epic Affiliates for any reason or no reason upon 30 days written notice, or effective immediately for any "misleading fraudulent, improper, unlawful or dishonest act relating to" the DPLA Docket No. 66 ¶ 88.

Epic Games contends that Apple is not entitled to the declaratory judgment it seeks on the basis that the challenged provisions of the DPLA are "unlawful" and that Apple's termination of the DPLA as to Epic Games was "unlawful" retaliation.[665] The parties have not litigated

665. Epic Games FOF ¶¶ 566-567.

every aspect of the DPLA, and the Court has raised concerns about issues lacking a full evidentiary record. Thus, it is not inclined to make a broad pronouncement that the DPLA in its entirety is valid, lawful, and enforceable.

That said, with respect to the sections of the DPLA requiring developers not to "provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store," DPLA §§ 3.2, 3.3.2, 3.3.3, 3.3.25, those have not been found to be unlawful under federal and state antitrust law or the UCL.

This case does not involve retaliation. Epic Games never showed why it had to breach its agreements to challenge the conduct litigated. Two parallel antitrust actions prove the contrary. Apple had contractual rights to act as it did. It merely enforced those rights as plaintiff's own internal documents show Epic Games expected. Accordingly, plaintiff's challenges to Apple's claim for declaratory relief fail as to the remaining requests.

G. Remedies

The relief to which Apple is entitled is that to which Epic Games stipulated in the event that the Court found it liable for breach of contract, namely:

(1) damages in an amount equal to (i) 30% of the $12,167,719 in revenue Epic Games collected from users in the *Fortnite* app on iOS through Epic Direct Payment between August and October 2020, plus (ii) 30% of any such revenue Epic Games collected from November 1, 2020 through the date of judgment; and

(2) a declaration that (i) Apple's termination of the DPLA and the related agreements between Epic Games and Apple was valid, lawful, and enforceable, and (ii) Apple has the contractual right to terminate its DPLA with any or all of Epic Games' wholly owned subsidiaries, affiliates, and/or other entities under Epic Games' control at any time and at Apple's sole discretion.[666]

CONCLUSION

This trial highlighted that "big tech" encompasses many markets, including as relevant here, the submarket for mobile gaming transactions. This lucrative, $100 billion, market has not been fully tapped and is ripe for economic exploitation. As a major player in the wider video gaming industry, Epic Games brought this lawsuit to challenge Apple's control over access to a considerable portion of this submarket for mobile gaming transactions. Ultimately, Epic Games overreached. As a consequence, the trial record was not as fulsome with respect to antitrust conduct in the relevant market as it could have been.

Thus, and in summary, the Court does not find that Apple is an antitrust monopolist in the submarket for mobile gaming transactions. However, it does find that Apple's conduct in enforcing anti-steering restrictions is anticompetitive. A remedy to eliminate those provisions is appropriate. This measured remedy will increase competition, increase transparency, increase consumer

666. *See* Dkt. No. 474 ¶ 3.

choice and information while preserving Apple's iOS ecosystem which has procompetitive justifications. Moreover, it does not require the Court to micromanage business operations which courts are not well-suited to do as the Supreme Court has appropriately recognized.

A separate judgment shall issue based on the findings of fact and conclusions of law set forth above, the Court will enter a separate permanent injunction barring the noted restraints.

For the reasons set forth herein, the Court finds in favor of Apple on all counts except with respect to violation of California's Unfair Competition law (Count Ten) and only partially with respect to its claim for Declaratory Relief. The preliminary injunction previously ordered is terminated.

Each party shall bear its own costs. No party shall file any post-trial motions based on previously-made arguments.

It Is So Ordered.

Date: September 10, 2021

/s/ Yvonne Gonzalez Rogers
Yvonne Gonzalez Rogers
United States District Court Judge

Appendix B

APPENDIX: ORDER OUTLINE

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PART I
FINDINGS OF FACT

I. The Parties
  A. Overview
  B. Plaintiff Epic Games
    1. Gaming Software Developer: *Unreal Engine* and Epic Online Services
    2. Game Developer: *Fortnite*
      a. *Fortnite*'s Game Modes
      b. Key Features of *Fortnite*
      c. *Fortnite*'s Business Model: In-App Purchases and V-Bucks
      d. *Fortnite* on the iOS Platform
    3. Game Publisher and Distributor: Epic Games Store
      a. Characteristics of the Epic Games Store
      b. Finances of the Epic Games Store
    4. Prior Relationship Between Apple and Epic Games
    5. Project Liberty
  C. Apple: Relevant History of the iOS and iOS Devices
    1. The Early Years
    2. Role of App Developers Generally and Epic Games
    3. Apple's Contractual Agreements with Developers
      a. Key Terms of the DPLA and App Guidelines

PART II
APPLICATION OF FACTS TO THE LAW AND CONCLUSIONS THEREON

APPENDIX C — DENIAL OF REHEARING OF THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT, FILED JUNE 30, 2023

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

June 30, 2023, Filed

No. 21-16506
D.C. No. 4:20-cv-05640-YGR
Northern District of California, Oakland

EPIC GAMES, INC.,

Plaintiff-Counter-Defendant-Appellant,

v.

APPLE, INC.,

Defendant-Counter-Claimant-Appellee.

No. 21-16695
D.C. No. 4:20-cv-05640-YGR

EPIC GAMES, INC.,

Plaintiff-Counter-Defendant-Appellee,

v.

APPLE, INC.,

Defendant-Counter-Claimant-Appellant.

Appendix C

Before: S.R. THOMAS and M. SMITH, Circuit Judges, and McSHANE,* District Judge.

ORDER

The panel has unanimously voted to deny the petitions for panel rehearing. Judge M. Smith has voted to deny the petitions for rehearing en banc, and Judges S.R. Thomas and McShane so recommend. The full court has been advised of the petitions for rehearing en banc and no judge of the court has requested a vote. Fed. R. App. P. 35. The petitions for panel rehearing and rehearing en banc (Dkt Nos. 224 and 225) are DENIED.

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* The Honorable Michael J. McShane, United States District Judge for the District of Oregon, sitting by designation.

APPENDIX D — RELEVANT STATUTORY PROVISIONS

15 U.S.C. § 1 - Trusts, etc., in restraint of trade illegal; penalty

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or *commerce* among the several *States*, or with foreign nations, is hereby declared to be illegal. Every *person* who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $100,000,000 if a corporation, or, if any other *person*, $1,000,000, or by imprisonment not exceeding 10 years, or by both said punishments, in the discretion of the court.

Appendix D

15 U.S.C. § 2 - Monopolization; penalty

Every *person* who shall monopolize, or attempt to monopolize, or combine or conspire with any other *person* or *persons*, to monopolize any part of the trade or *commerce* among the several *States*, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $100,000,000 if a corporation, or, if any other *person*, $1,000,000, or by imprisonment not exceeding 10 years, or by both said punishments, in the discretion of the court.